

**SIEMENS**



Motors

# Three-Phase Induction Motors SIMOTICS HV M

Catalog  
D 84.3

Edition  
2018

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## Related catalogs

### **SIMOTICS GP, SD, XP, DP** **Low-Voltage Motors**

Type series 1FP1, 1LE1, 1MB1 and 1PC1  
Frame sizes 71 to 315  
Power range 0.09 to 200 kW  
E86060-K5581-A111-A9-7600

D 81.1



### **High Voltage Three-phase** **Induction Motors**

SIMOTICS HV Series A-compact PLUS

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D 86.1



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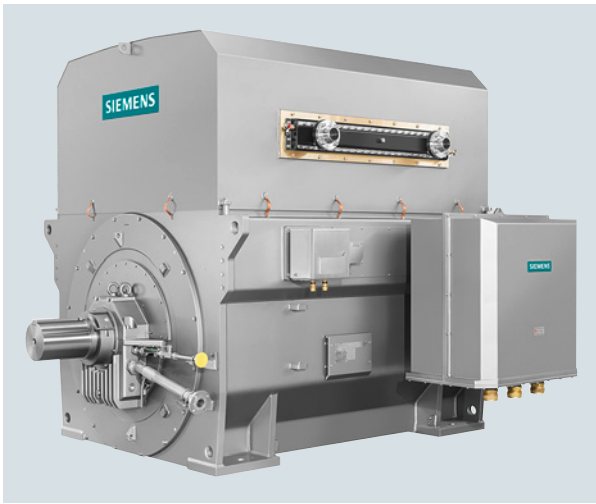
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# Three-Phase Induction Motors SIMOTICS HV M

## Motors



### Catalog D 84.3 · 2018

Supersedes:  
Catalog D 84.1 · 2017, content applying to SIMOTICS HV M  
and H-compact PLUS series

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# Digital Enterprise

The building blocks that ensure everything works together perfectly in the digital enterprise

Digitalization is already changing all areas of life and existing business models. It is placing greater pressure on industry while at the same time creating new business opportunities. Today, thanks to scalable solutions from Siemens, companies can already become a digital enterprise and ensure their competitiveness.



## Industry faces tremendous challenges



### Reduce time-to-market

Today manufacturers have to bring products to market at an ever-increasing pace despite the growing complexity of these products. In the past, a major manufacturer would push aside a small one, but now it is a fast manufacturer that overtakes a slow one.



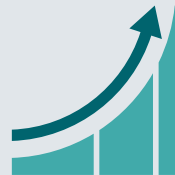
### Boost flexibility

Consumers want customized products, but at a price they would pay for a mass-produced item. That only works if production is more flexible than ever before.



### Improve quality

To ensure a high level of quality while meeting legal requirements, companies have to establish closed quality loops and enable the traceability of products.



### Boost efficiency

Today the product itself needs to be sustainable and environmentally friendly, while energy efficiency in production has become a competitive advantage.



### Increase security

Increasing networking escalates the threat to production facilities of cyberattacks. Today more than ever, companies need suitable security measures.



### The digital enterprise has already become a reality

To fully benefit from all the advantages of digitalization, companies first have to achieve complete consistency of their data. Fully digitally integrated business processes, including those of suppliers, can help to create a digital representation of the entire value chain. This requires

- the integration of industrial software and automation,
- expansion of the communication networks,
- security in automation,
- and the use of business-specific industrial services.

### MindSphere

#### The cloud-based open IoT operating system from Siemens

With MindSphere, Siemens offers a cost-effective and scalable cloud platform as a service (PaaS) for the development of applications. The platform, designed as an open operating system for the Internet of Things, makes it possible to improve the efficiency of plants by collecting and analyzing large volumes of production data.

### Totally Integrated Automation (TIA) Where digitalization becomes reality

Totally Integrated Automation (TIA) ensures the seamless transition from the virtual to the real world. It already encompasses all the necessary conditions for transforming the benefits of digitalization into true added value. The data that will form the digital twin for actual production is generated from a common base.

#### Digital Plant

Learn more about the digital enterprise for the process industry  
[www.siemens.com/digitalplant](http://www.siemens.com/digitalplant)

#### Digital Enterprise Suite

Learn more about the digital enterprise for the discrete industry  
[www.siemens.com/digital-enterprise-suite](http://www.siemens.com/digital-enterprise-suite)

# Integrated Drive Systems

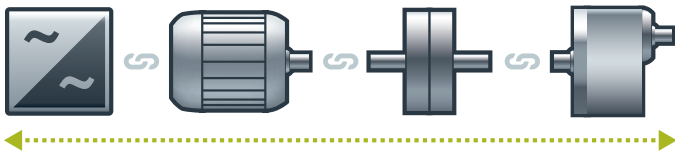
Faster on the market and in the black with Integrated Drive Systems

Integrated Drive Systems are Siemens' trendsetting answer to the high degree of complexity that characterizes drive and automation technology today. The world's only true one-stop solution for entire drive systems is characterized in particular by its threefold integration: Horizontal, vertical, and lifecycle integration ensure that every drive system component fits seamlessly into the whole system, into any automation environment, and even into the entire lifecycle of a plant.

The outcome is an optimal workflow – from engineering all the way to service that entails more productivity, increased efficiency, and better availability. That's how Integrated Drive Systems reduce time to market and time to profit.

## Horizontal integration

**Integrated drive portfolio:** The core elements of a fully integrated drive portfolio are frequency converters, motors, couplings, and gear units. At Siemens, they're all available from a single source. Perfectly integrated, perfectly interacting. For all power and performance classes. As standard solutions or fully customized. No other player in the market can offer a comparable portfolio. Moreover, all Siemens drive components are perfectly matched, so they are optimally interacting.



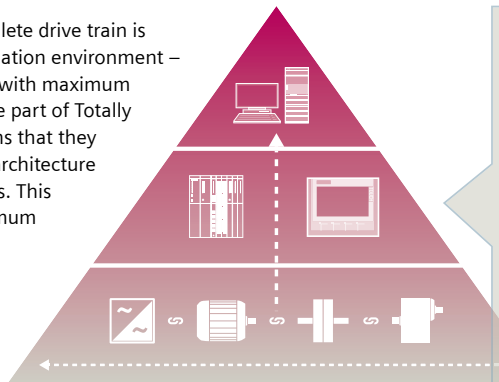
You can boost the availability of your application or plant to up to

**99%\***

\*e.g., conveyor application

## Vertical integration

Thanks to **vertical integration**, the complete drive train is seamlessly integrated in the entire automation environment – an important prerequisite for production with maximum value added. Integrated Drive Systems are part of Totally Integrated Automation (TIA), which means that they are perfectly embedded into the system architecture of the entire industrial production process. This enables optimal processes through maximum communication and control.



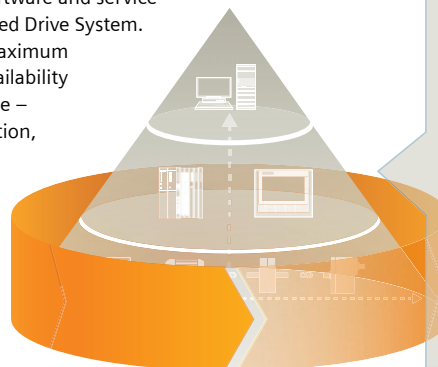
With TIA Portal you can cut your engineering time by up to

**30%**

## Lifecycle integration

**Lifecycle integration** adds the factor of time: Software and service are available for the entire lifecycle of an Integrated Drive System. That way, important optimization potential for maximum productivity, increased efficiency, and highest availability can be leveraged throughout the system's lifecycle – from planning, design, and engineering to operation, maintenance, and all the way even to modernization.

With Integrated Drive Systems, assets become important success factors. They ensure shorter time to market, maximum productivity and efficiency in operation, and shorter time to profit.



With Integrated Drive Systems you can reduce your maintenance costs by up to

**15%**

## Introduction



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	SIMOTICS HV M in shaft heights 630, 710, 800
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# Introduction

## Overview

1

### Overview

During the plant layout process, fast project execution and the highest degree of availability in operation are crucial factors. SIMOTICS HV M addresses both of these factors:

- Maximum reliability under extreme conditions – as well as preventive service concepts employing cloud-based status data analysis – ensure the high degree of availability.
- The fast, smooth project execution is based on short delivery times, user-friendly and efficient engineering tools, the highest degree of flexibility and simple integration into plants and systems as a result of the extremely low dimensions and weights referred to the particular power rating.

This is complemented by low operating costs based on minimum maintenance costs and high efficiency. SIMOTICS HV M motors are available in 2-, 4-, 6-, 8-, 10- and 12-pole versions (additional pole numbers available on request); they cover a speed control range up to 4800 rpm. The power spectrum of the series extends from 0.5 up to 19 MW at 50 Hz – and up to 21 MW at 60 Hz. As a consequence, users profit from the advantages of this modular high-voltage motor concept over a wide power range.

#### Note:

In addition to the general technical data, this catalog includes detailed descriptions of the SIMOTIC HV M standard versions and options that can be supplied by specifying order codes. It should be noted that certain order codes and combinations of order codes are not applicable for all motor types. Customized solutions can be offered on request.

### Application

SIMOTICS HV M is at home in the following industries:

- Oil & Gas
- Petrochemical & Chemical
- Steel
- Marine
- Cement
- Fiber
- Water/wastewater
- Power generation
- Mining

Typical applications are pumps, fans, compressors, mixers, mills, conveyor belts, rolling mills, ship's drives.

### Benefits

- Short delivery period and high delivery reliability
- Very reliable, even under extreme conditions
- Long service life with low maintenance costs
- High efficiency of up to 98 %
- Flexible and precisely adaptable to a wide range of applications
- High power density due to low envelope dimensions and weight
- Simple selection and configuration with standard engineering tools
- Perfectly harmonized for operation with SINAMICS medium-voltage converters
- Motor dimension drawings and 3D motor data available from the PLM software (Product Lifecycle Management) or on request

### Additional information

#### Article number code

The Article No. comprises a combination of digits and letters.

Options can be added by using an additional hyphen and the letter Z. In addition, the order codes for the corresponding options need to be specified.

Example:

**1RQ7 710-4JA60-0CG0-Z A65 + G50 + M13**

#### Ordering data:

- Complete Article No. and order code(s).
- If a quotation is available, in addition to the Article No., the quotation number should also be specified.
- When ordering a complete motor as a spare part, please specify the factory serial No. of the previously supplied motor as well as the Article No.



**Overview**

The following overview explains the meaning of the individual positions of the Article No. The selection tables in Parts 2, 3 and 4 include the motors available as standard from this range.

Structure of the Article No., shaft heights 450 mm to 560 mm			Position:															
			1	2	3	4	5	6	7	-	8	9	10	11	12	-	Z	
1st to 3rd position: Motor version	<b>Standard version</b>	<b>Degree of protection/cooling</b>																
			<b>IEC</b>	<b>NEMA</b>														
		Open-circuit ventilated	IP23/IC01	–	1	R	A											
		Open-circuit ventilated	IP24W/IC01	WP11	1	R	P											
		Air/air cooling	IP55/IC611 or IC616	TEAAC	1	R	Q											
		Air/water cooling	IP55/IC81W or IC86W	TEWAC	1	R	N											
		<b>Ex ec version</b>																
		Air/air cooling	IP55/IC611 or IC616	–	1	S	G											
		Air/water cooling	IP55/IC81W or IC86W	–	1	S	L											
		<b>Ex pxb version</b>																
		Air/air cooling	IP55/IC611 or IC616	–	1	S	B											
		Air/water cooling	IP55/IC81W or IC86W	–	1	S	Q											
		4th position: Motor version	SIMOTICS HV M						6									
5th to 6th position: Shaft height	• 450 mm						4	5										
	• 500 mm						5	0										
	• 560 mm						5	6										
7th position: Laminated core length	The laminated core length is coded in digits 0 to 9 (without fixed assignment)																	
8th position: Pole number	• 2-pole											2						
	• 4-pole											4						
	• 6-pole											6						
	• 8-pole											8						
	• 10-pole											3						
	• 12-pole											5						
	• Other pole numbers			Additional text data required								9						
9th position: Cooling method for:	<b>IEC version:</b>		<b>Cooling method:</b>															
	• With shaft-mounted fan (basic version) or shaft-mounted fan for the inner and separately-driven fan for the outer cooling circuit		IC01/IC81W													H		
			IC616													H		
	• With shaft-mounted fan for the inner and outer cooling circuits		IC611													J		
	• With separately-driven fan for the inner or for the inner and outer cooling circuits		IC86W/IC666													F		

## Introduction

### SIMOTICS HV M

Article number code · SIMOTICS HV M in shaft heights 450, 500, 560

1

#### Overview (continued)

Structure of the Article No.:	Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	Z	
10th position: Rotor version or drive converter type	<b>Line operation</b>																
	• Standard rotor with E-Cu	power-dependent											J				
	• Standard rotor with E-Cu	power-dependent											K				
	• Standard rotor with E-Cu	power-dependent											L				
	• Standard rotor with CuSi	power-dependent											M				
	• Standard rotor with CuSi	power-dependent											N				
	<b>Converter operation</b>																
	• LV drive converter; copper rotor	SINAMICS G/ SINAMCIS S											P				
	• LV drive converter; copper rotor	other converters											Q				
	• MV drive converter; copper rotor	SINAMICS GM/SINAMICS SM											S				
	• MV drive converter; copper rotor	SINAMICS PERFECT HARMONY GH150/GH180											T				
	• MV drive converter; copper rotor	other converters											U				
	<b>Special rotor</b>																
	• With E-Cu												X				
• With CuSi												Y					
11th position: Voltage code	<b>Line operation (1R.6)</b>																
	3.3 kV, 50 Hz	690 V, 50 Hz											0				
	6.6 kV, 60 Hz	690 V, 60 Hz											1				
	13.2 kV, 60 Hz	2,3 kV, 50 Hz											2				
	4.16 kV, 60 Hz	4,16 kV, 60 Hz											3				
	4.0 kV, 60 Hz	4,16 kV, 50 Hz											4				
	2.3 kV, 60 Hz	3,3 kV, 50 Hz											5				
	6.0 kV, 50 Hz	6,0 kV, 50 Hz											6				
	6.6 kV, 50 Hz	6,6 k V, 50 Hz											7				
	10 kV, 50 Hz	6,6 kV, 60 Hz											8				
Other voltage/frequency		Additional text data required										9					
12th position: Type of construction	• IM B3												0				
	• IM V1 with protective hood												4				
	• IM V1 without protective hood												8				
Z position	Options: Additional order code required. Refer to section Options and tests in Chapter 4.																

**Overview**

The following overview explains the meaning of the individual positions of the Article No. The selection tables in Parts 2, 3 and 4 include the motors available as standard from this range.

Structure of the Article No., shaft heights 630 mm to 800 mm		Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16	Z			
1st to 3th position: Motor version, Ex- protection	<b>Standard version</b>	Ex-protection																						
	Basic design, open-circuit ventilated	non Ex	1	R	A																			
	Weather protected design, open-circuit ventilated	non Ex	1	R	P																			
	Air/air cooling	non Ex	1	R	Q																			
	Air/water cooling	non Ex	1	R	N																			
	<b>Ex ec</b>																							
	Air/air cooling	Ex ec	1	S	G																			
	Air/water cooling	Ex ec	1	S	L																			
	<b>Ex pxb</b>																							
	Air/air cooling	Ex pxb	1	S	B																			
	Air/water cooling	Ex pxb	1	S	Q																			
	<b>Ex eb</b>																							
Air/air cooling	Ex eb	1	S	J																				
Air/water cooling	Ex eb	1	S	N																				
4th position: Motor series	SIMOTICS HV M					7																		
5th to 6th position: Shaft height	• 630 mm						6	3																
	• 710 mm						7	1																
	• 800 mm						8	0																
7th position: Laminated core length	The laminated core length is coded in digits 0 to 9 (without fixed assignment)																							
8th position: Pole number	• 2-pole											2												
	• 4-pole											4												
	• 6-pole											6												
	• 8-pole											8												
	• 10-pole											3												
	• 12-pole											5												
	• Other pole numbers					Additional text data required								9										
9th position: Cooling method for:	<b>Cooling method:</b>																							
	• Open inner cooling air circuit					IC01																	F	
	• Weather-protected design, open circuit					WP11																	H	
	• Air/air cooling					TEAAC – IC611																	J	
	• Air/air cooling with forced ventilation for outer air circuit					TEAAC – IC616																	K	
	• Air/air cooling with forced ventilation for inner air circuit					TEAAC – IC661																		L
	• Air/air cooling with forced ventilation for inner and outer air circuit					TEAAC – IC666																		M
	• Air/water cooling					TEWAC – IC81W																		N
• Air/water cooling with forced ventilation					TEWAC – IC86W																		P	

# Introduction

## SIMOTICS HV M

Article number code · SIMOTICS HV M in shaft heights 630, 710, 800

1

### Overview (continued)

Structure of the Article No.:	Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16	Z	
10th position: Motor for line operation or for converter operation	<b>For line operation with</b>											A									
		<ul style="list-style-type: none"> <li>• High voltage motor</li> <li>• Low voltage motor</li> </ul>										B									
	<b>For converter operation with</b>	• SINAMICS G150										C									
		• SINAMICS S120										D									
		• SINAMICS S150										E									
		• SINAMICS G180										F									
		• SINAMICS GM150										R									
		• SINAMICS SM150										S									
		• SINAMICS GH180										T									
		• SINAMICS GH150										U									
• Other converters (additional text data)										Z											
11th position: Voltage code	<b>Line operation</b>	<b>Operation with MV drive converter</b>		<b>Line/converter operation</b>							0										
		3.3 kV, 50 Hz	7.2 kV, 50 Hz	690 V, 60 Hz							1										
	6.6 kV, 60 Hz	11 kV, 50 Hz	690 V, 50 Hz							2											
	13.2 kV, 60 Hz	2.3 kV, 50 Hz	–							3											
	4.16 kV, 60 Hz	4.16 kV, 60 Hz	–							4											
	4 kV, 60 Hz	4.16 kV, 50 Hz	400 V							5											
	2.3 kV, 60 Hz	3.3 kV, 50 Hz	500 V							6											
	6.0 kV, 50 Hz	6 kV, 50 Hz	–							7											
	6.6 kV, 50 Hz	6.6 kV, 50 Hz	660 V							8											
	10 kV, 50 Hz	6.6 kV, 60 Hz	–							9											
Other voltages/frequency	Additional text data required																				
12th position: Type of construction	• IM B3 (IM 1001)										0										
	• IM V1, without protective hood (IM 3011)										8										
	• Other mounting types										9										
13th position: Temperature class (for explosion protection)	• Without temperature class										0										
	• Temperature class T2										2										
	• Temperature class T3										3										
	• Temperature class T4										4										
14th position: Rotor version	• Standard rotor – E-Cu																	C			
	• Special rotor – E-Cu																	D			
	• Standard rotor – CuSi																	E			
	• Special rotor – CuSi																	F			
	• Special rotor – with other material type																	G			
15th position: Housing and bearing version	• Steel fabricated housing / anti-friction bearings																		G		
	• Steel fabricated housing / sleeve bearing																		J		
16th position: Category	• Standard series																			0	
Z position:	Options: Additional order code required. Refer to section Options and tests in Chapter 5.																				Z

**Overview**

<b>Cooling method</b>	
IC01	Air-cooled, self-ventilated
IC81W	Air/water cooler, inner cooling circuit self-ventilated
IC86W	Air/water cooler, inner cooling circuit force-ventilated
IC611	Air/air cooler, inner cooling circuit self-ventilated, outer cooling circuit self-ventilated
IC616	Air/air cooler, inner cooling circuit self-ventilated, outer cooling circuit force-ventilated
IC666	Air/air cooler, inner cooling circuit force-ventilated, outer cooling circuit force-ventilated
TEWAC	Closed motor with air/water cooler
TEAAC	Closed motor with air/air cooler
<b>Type of protection</b>	
Ex ec	Increased safety of the motor, Zone 2
Ex pxb	Pressurized motor, increased safety of the terminal box, Zone 1
Class1, Div 2	Non-sparking motor

<b>Degree of protection</b>	
IP23	Protected against the ingress of solid foreign bodies with a diameter greater than 12 mm and water spray
IP24W	Protected against the ingress of solid foreign bodies with a diameter greater than 12 mm and splashwater. Weather-protected version.
IP55	Protected against dust and jet-water
WPII	Weather-protected motor with air intake baffles
TEWAC	Closed motor with air/water cooler
TEAAC	Closed motor with air/air cooler
<b>Type of construction</b>	
IM B3	Horizontal, with feet, without flange
IM V1	Vertical, without feet, with flanged bearing shield

## Introduction

### SIMOTICS HV M

## Cooling concepts

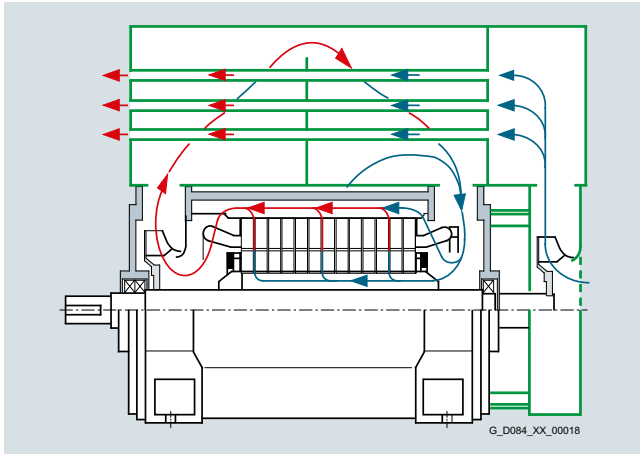
1

### Mode of operation

The following diagrams show the general mode of operation of the cooling. They do not include any design details.

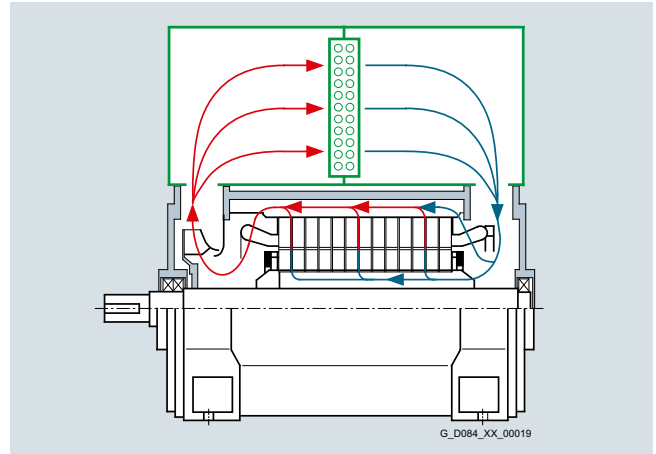
#### **Air/air heat exchanger (IC611)**

1RQ. series with one-sided ventilation

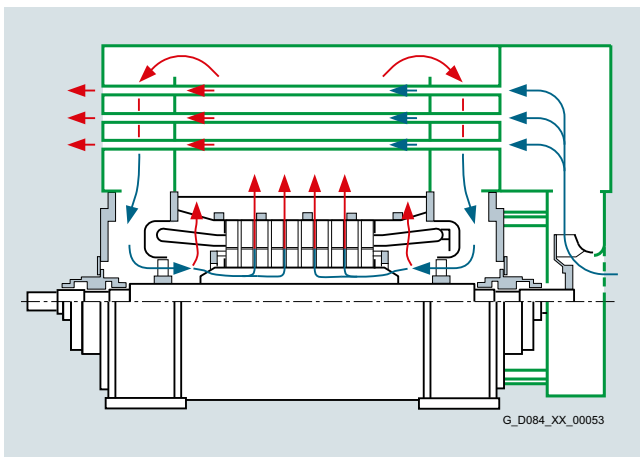


#### **Air/water heat exchanger (IC81W)**

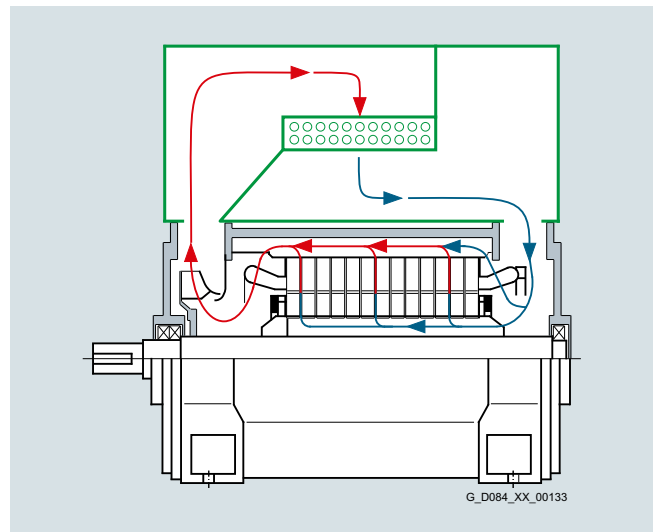
1RN6 series with one-sided ventilation



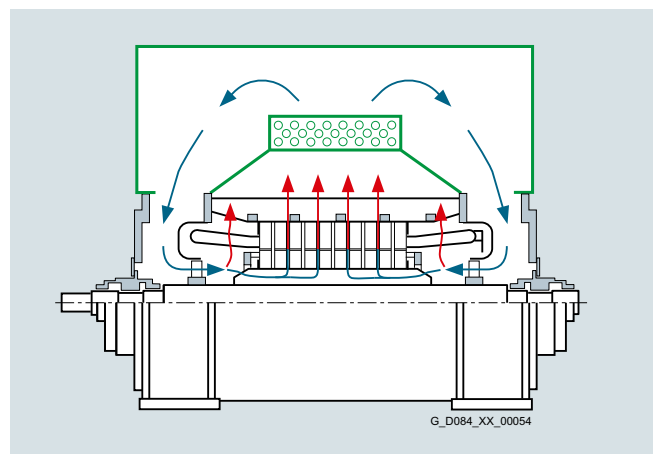
1RQ. series with two-sided ventilation



1RN7 series with one-sided ventilation

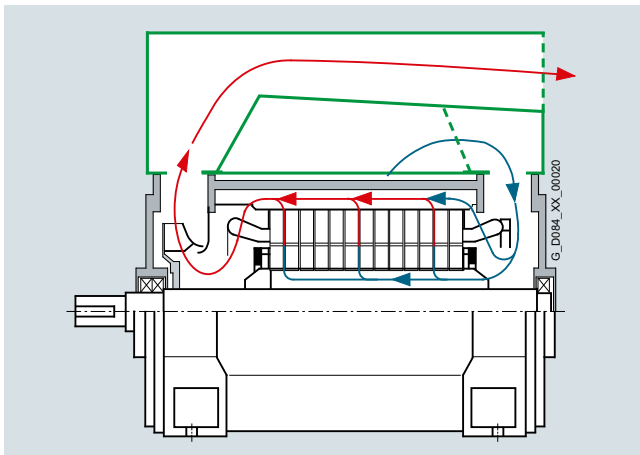


1RN. series with two-sided ventilation

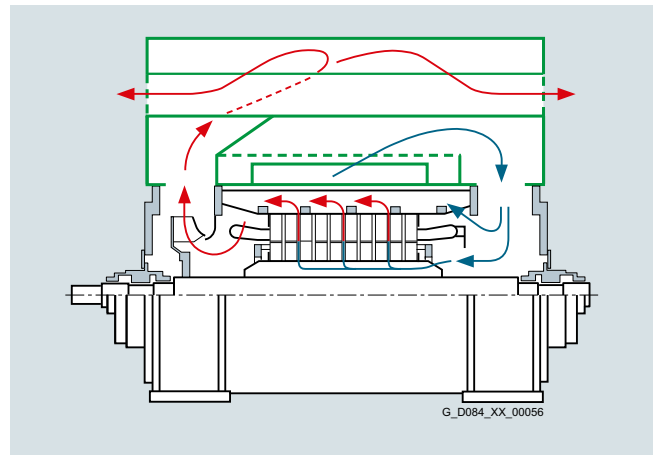


**Mode of operation** (continued)**Open-circuit ventilation (IC01)**

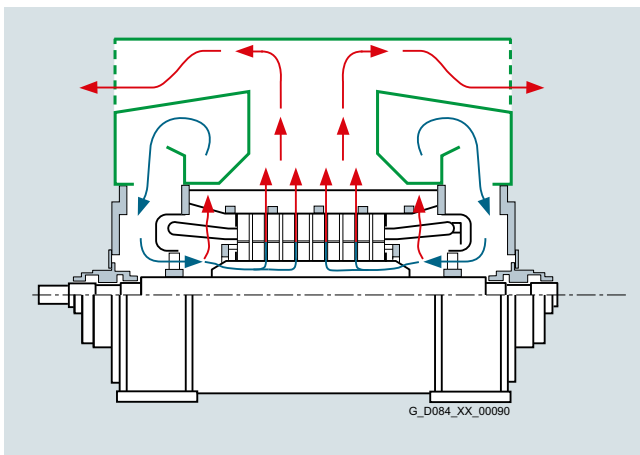
1RA. series with one-sided ventilation



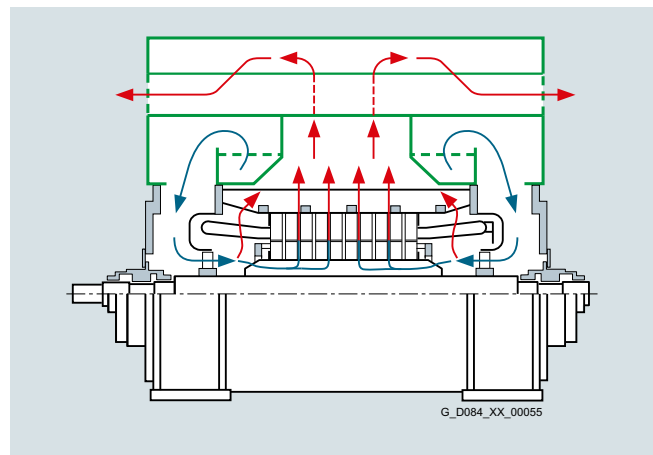
1RP. series with one-sided ventilation



1RA. series with two-sided ventilation



1RP. series with two-sided ventilation



## Introduction

### General technical versions

#### Overview

#### Overview

##### Motor protection

Series for both standard and optional monitoring and protective devices are available for motor protection.

Protective device	Description
Stator winding monitoring	6 PT100 resistance thermometers for temperature monitoring as standard.
Anti-friction bearing monitoring	Measuring nipple for shock pulse measurement as standard. Optional PT100 resistance thermometer for temperature monitoring.
Sleeve bearing monitoring	Optional PT100 resistance thermometer for temperature monitoring. Optional for circulating oil cooling: Throttle valves, manometer and flowmeter in the oil intake line. Optional holes in the oil discharge line to mount a thermometer or a sight glass to monitor the oil flow.
Shaft vibration monitoring	Optional for motors with sleeve bearings.
Air temperature monitoring in the cooling circuit	Optional using a thermometer in the cooler assembly on the air intake and air discharge side.
Leakage water monitoring	Optional using sensors in the cooler housing for water-cooled motors.
Starting and speed monitoring	Optional rotary pulse encoder for motors for converter operation.
Anti-condensation heating	Standard for SIMOTICS HV M motors.

##### Electrical design

High voltage motors have the Siemens MICALASTIC insulation system according to thermal class 155 (F).

SIMOTICS HV M motors are always carried out with copper rotors.

##### Motor connection and terminal boxes for high voltage motors

The motor terminal boxes are generously dimensioned. This design allows cables, which are generally used worldwide, to be simply and quickly connected up as well as to accommodate all of the generally used cable entry fittings.

Arrangement of the motor terminal box (standard version):

When viewing the drive side, the motor terminal box is mounted at the righthand side of the stator frame with cable entry from the bottom. When requested, it can be mounted on the lefthand side. However, it must be specified when ordering. When requested, the terminal box can be mounted, rotated through 90° or through 180° if the spatial situation at the machine permits this (except for terminal boxes with cast cable entry glands).

Terminal arrangement according to DIN 42962.

Degree of protection of the motor terminal box: IP55, IP56, IP66 – depending on the terminal box type (refer to the table).

The motor terminal boxes comprise a lower section or housing, bolted to the stator frame, and a removable cover. The 1XA8711, 1XB8911 and 1XB8751 terminal boxes that are normally used have bushings manufactured out of casting resin. All of the other terminal boxes have cast-resin post insulators with bolted bus-bars (exception: cable connector connection).

All motor terminal boxes are short-circuit proof. If a short-circuit occurs in the motor, all of the forces generated by the short-circuit current are reliably handled by the components in the terminal box (e.g. cast-resin post insulators).

Further, all motor terminal boxes are short-circuit proof. In the unlikely event of arcs occurring inside the terminal box the generated pressure will be immediately dissipated with the use of a pressure relief mechanism.

Short-circuit strength and short-circuit proof of the motor terminal boxes used as standard:

- 400 MVA at 6 kV; 0.2 s
- 700 MVA at 10 kV; 0.2 s

These values correspond to a rated peak withstand current of approx. 100 kA.

Motor connecting cable and cable entry fittings are not supplied with the motor.

##### Protection for line-operated high voltage motors against switching overvoltages

The motor windings are dimensioned according to the requirements of IEC 60034-15. If higher overvoltages can occur, over-voltage protection is required at the supply side or can be offered as a motor option.



## Overview

**Overview of the generally used motor terminal boxes**

Terminal box	Rated voltage kV	Current A	Cable entries Number	Cable entry diameter, max.
<b>1XB7 740</b>	1	1420	4	M80
<b>1XA8 711</b>	6.6	315/400 <sup>2)</sup>	1	75 mm
<b>1XB8 751</b>	6.6	630/800 <sup>2)</sup> (for parallel connection)	2	75 mm
<b>1XB8 911</b>	11	315/400 <sup>2)</sup>	1	75 mm
<b>1XD1 543-3AA</b>	11	1200	–	–
<b>1XD1 566-3AA</b>	11	2750	–	–
<b>1XD1 643-3AA</b>	13.2	800	–	–

Cable connector connection on request.

**Connection options**

Terminal box	Terminal element	Number of cables	Cable cross-section (Cu or Al), max. that can be introduced mm <sup>2</sup>	Weight kg	Degree of protection to DIN EN 60529
<b>1XB7 740</b>	Cable lug	4 cables, 3-conductor	240	85	IP55
<b>1XA8 711</b>	Connecting terminal on M16 studs Connection with cable lug and two hexagon nuts	1 cable, 3-conductor	1 x 3 x 240	42	IP55 <sup>1)</sup>
<b>1XB8 751</b>	Connecting terminal on M16 studs Connection with cable lug and two hexagon nuts	2 cables, 3-conductor	2 x 3 x 240	131	IP56
<b>1XB8 911</b>	Connecting terminal on M16 studs Connection with cable lug and two hexagon nuts	1 cable, 3-conductor	1 x 3 x 240	93	IP56
<b>1XD1 543-3AA</b>	Cable lug on busbar	6 cables, 1-conductor	300	230	IP55
<b>1XD1 566-3AA</b>	Cable lug on busbar	10 cables, 1-conductor	300	170	IP55 <sup>1)</sup>
<b>1XD1 643-3AA</b>	Cable lug on busbar	4 cables, 1-conductor	300	500	IP55

1) IP66 on request.

2) Depending on rated motor current.

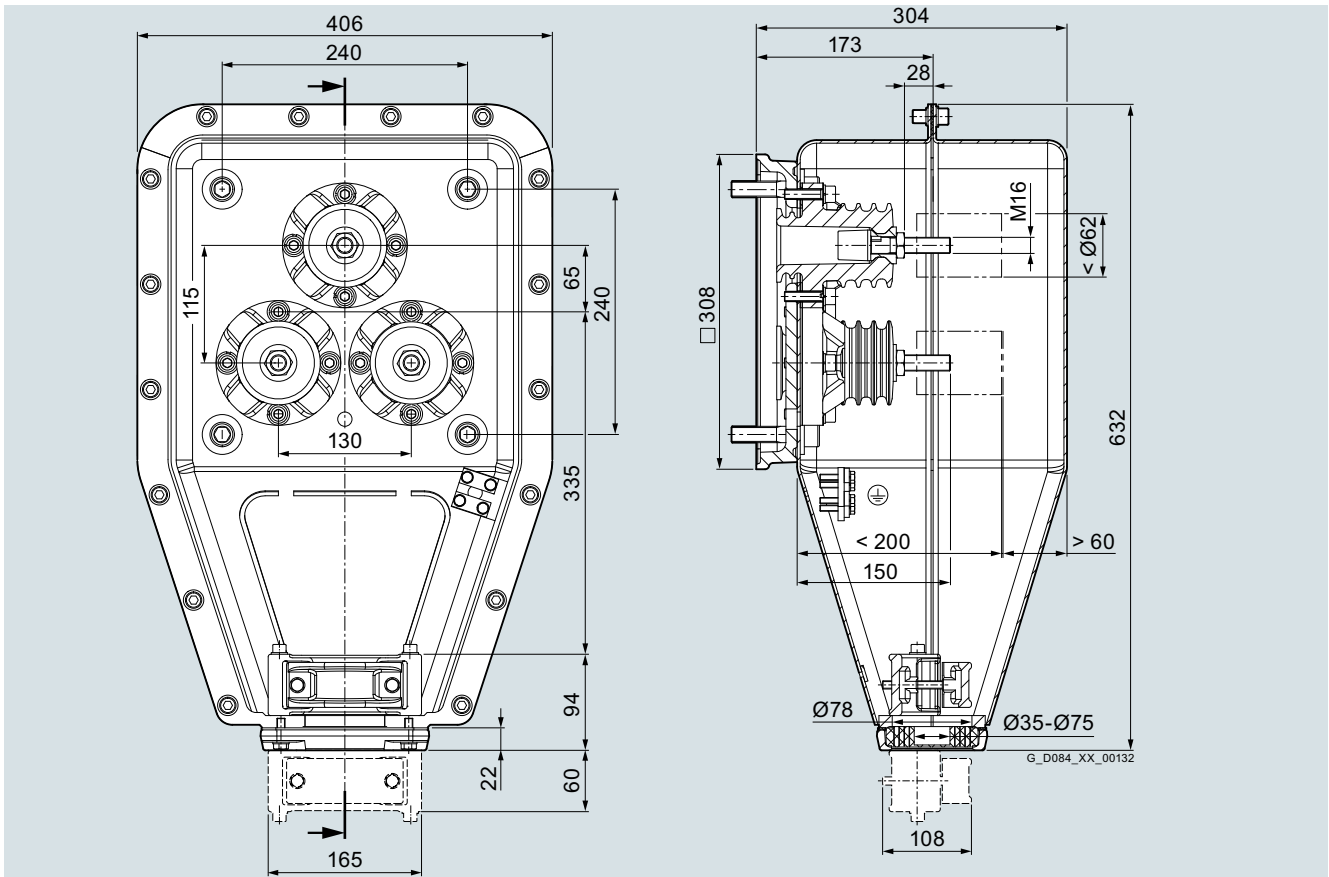
## Introduction

General technical versions

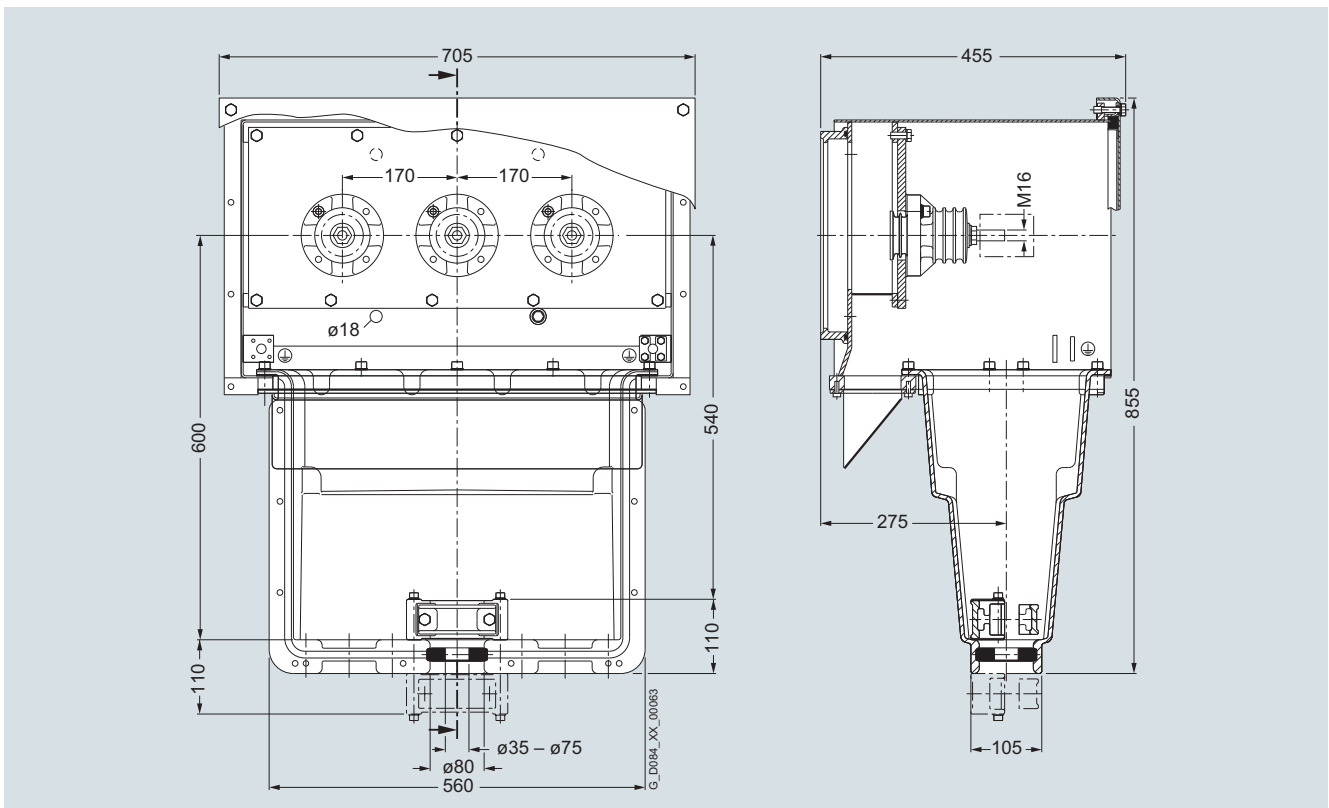
### Motor terminal boxes

#### Dimension drawings

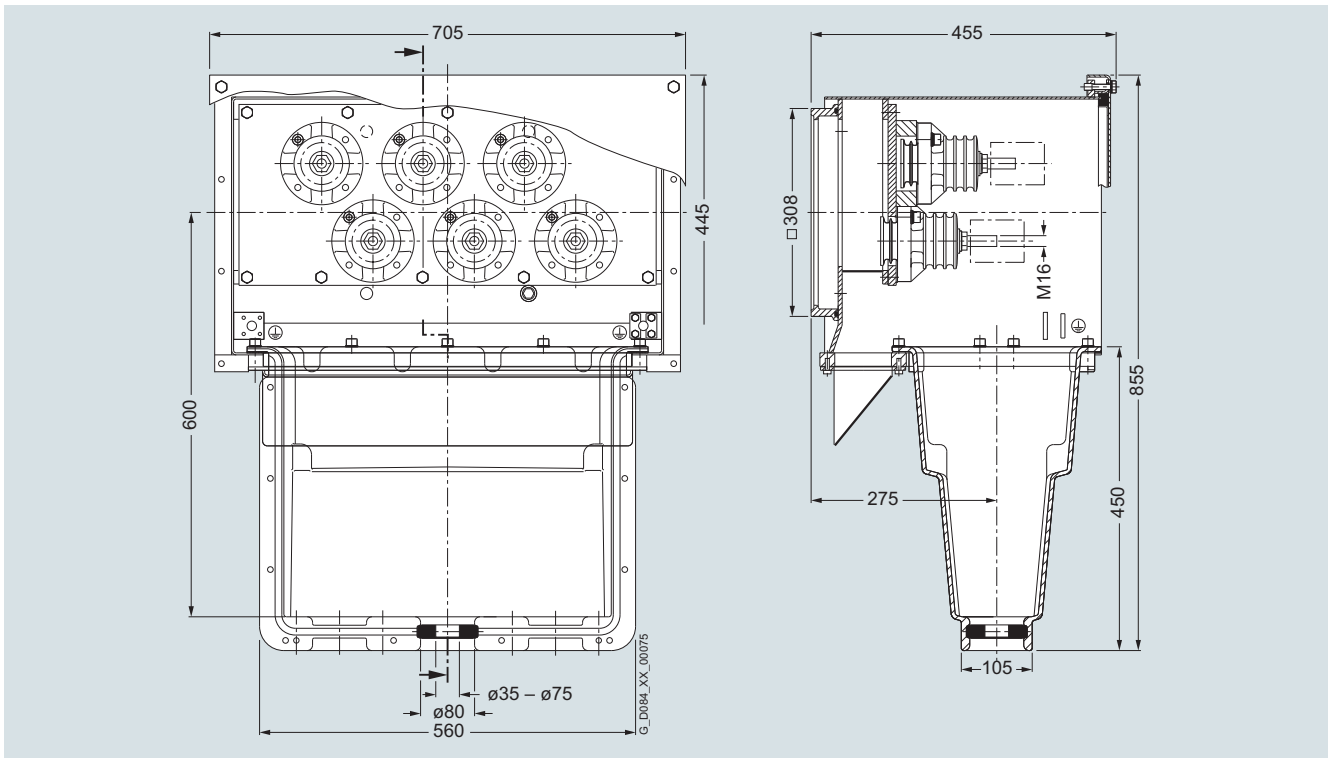
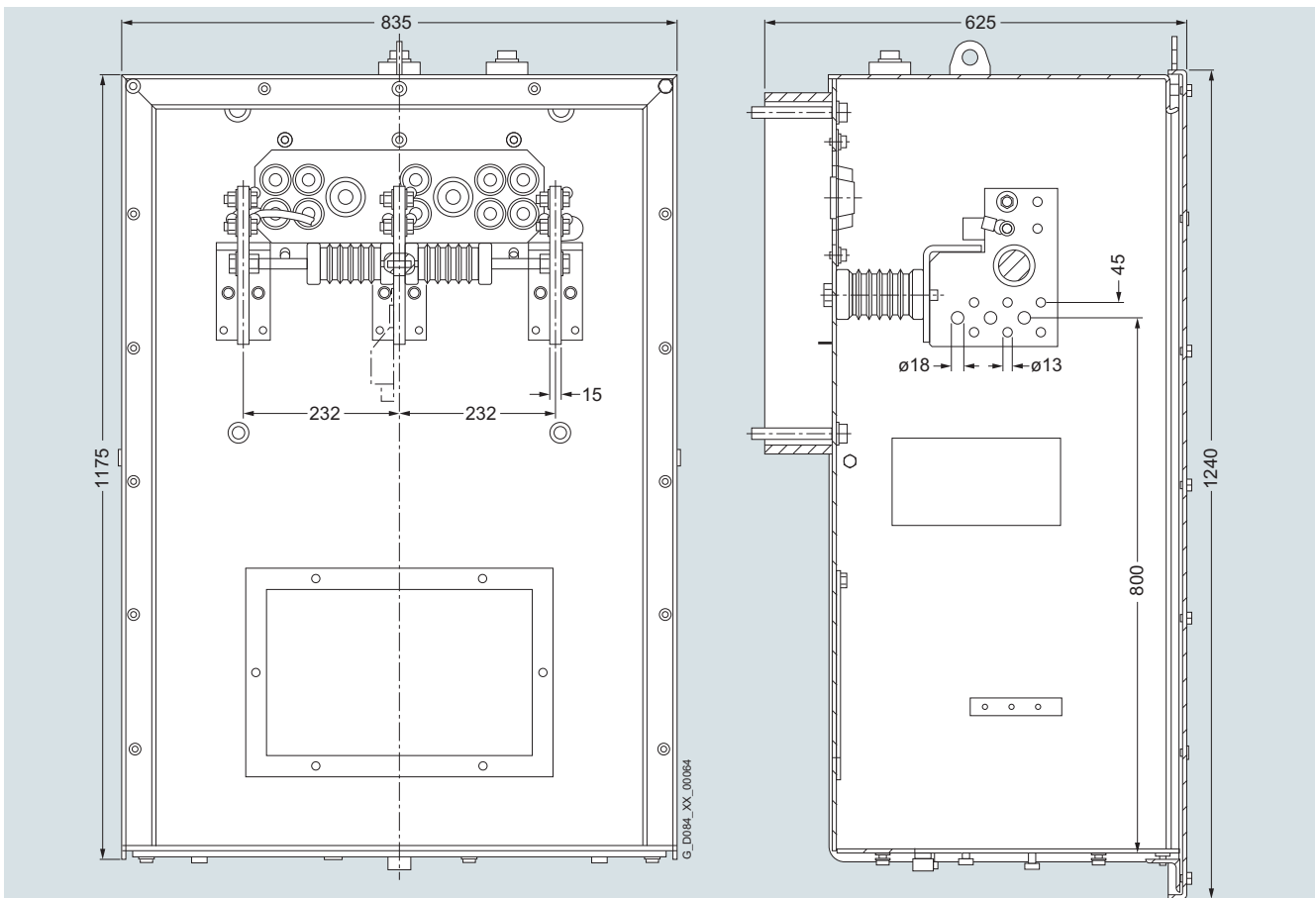
##### Terminal box type 1XA8 711 (up to 6.6 kV, 3 terminals)



##### Terminal box type 1XB8 911 (up to 11 kV)



## Dimension drawings (continued)

**Terminal box type 1XB8 751 (up to 6.6 kV, 6 terminals)****Terminal box type 1XD1 543-3AA (up to 11 kV IEC and 6.6 kV NEMA)**

## Introduction

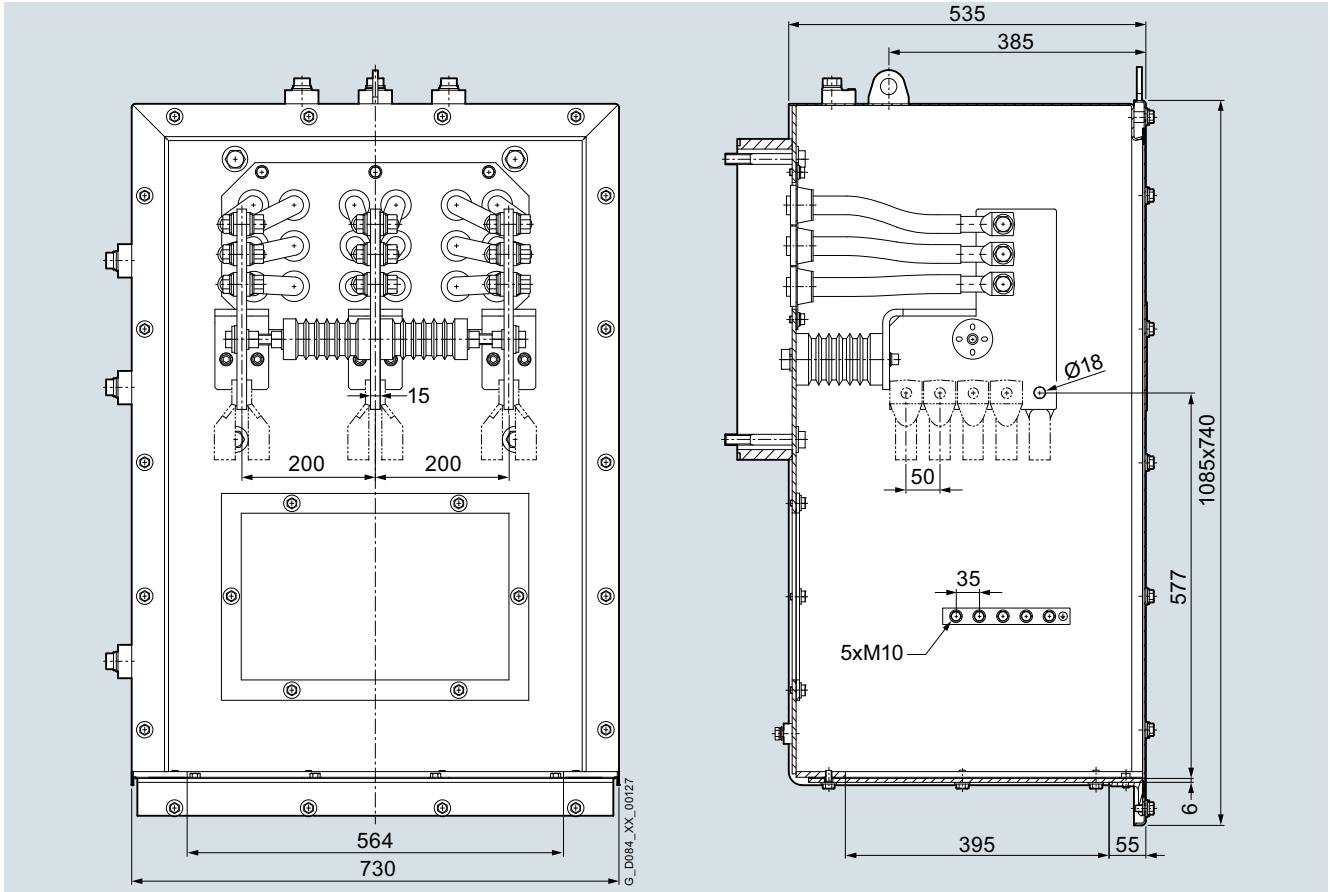
General technical versions

### Motor terminal boxes

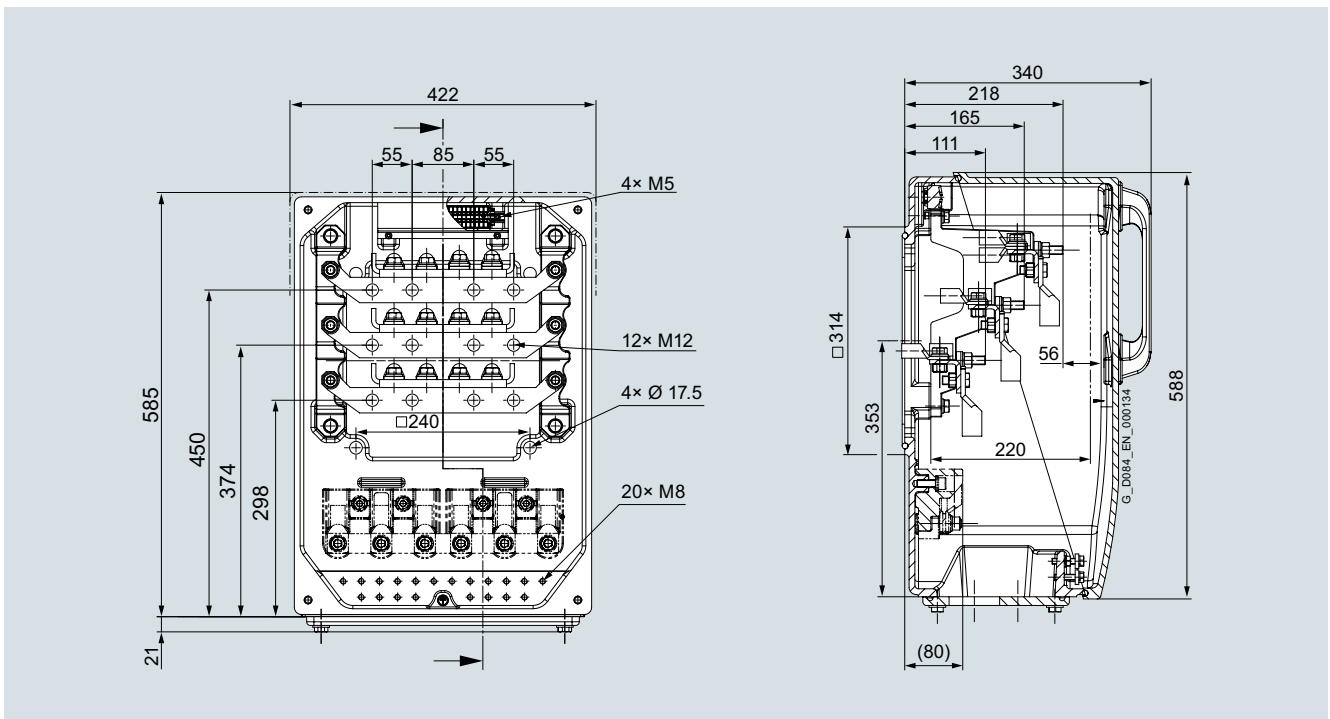
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#### Dimension drawings (continued)

##### Terminal box type 1XD1 566-3AA (up to 11 kV, 10 terminals)



##### Terminal box type 1XB7 740 (up to 1 kV, 12 terminals)



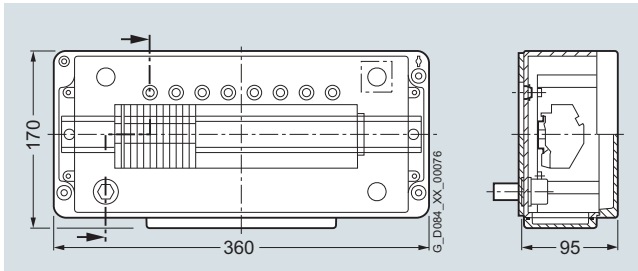
#### Dimension drawings (continued)

##### **Neutral point terminal box**

The motor terminal box is also used to form the neutral point of winding ends.

##### **Auxiliary terminal box to connect monitoring elements, anti-condensation heating**

The standard version 1XB9 014 comprises an aluminum enclosure. Max. cable cross-section that can be connected, 4 mm<sup>2</sup>.



Terminal boxes manufactured out of cast iron (1XB9 016) and stainless steel (1XB9 015) can be optionally ordered.

## Introduction

### General technical versions

#### Mechanical design

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#### Overview

##### Bearing version

Motors for connection to the line supply have anti-friction bearings or sleeve bearings as standard according to the following overview.

The bearing concepts for converter driven motors depend on the speed control range.

##### Overview, bearing versions

Motor type	Bearing version IM B3, IM B35		Number of poles 4		Number of poles $\geq 6$		IM V1
	Number of poles 2 50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	
1R.6/1S.6 45.	Anti-friction bearings (sleeve bearings optional) <sup>1)</sup>	Sleeve bearing	Anti-friction bearings (sleeve bearings optional)	Anti-friction bearings (sleeve bearings optional)	Anti-friction bearings (sleeve bearings optional)	Anti-friction bearings (sleeve bearings optional)	Anti-friction bearings (sleeve bearings not available)
1R.6/1S.6 50.							
1R.6/1S.6 56.							
1R.7/1S.7 63.							
1R.7/1S.7 71.							
1R.7/1S.7 80.							

##### Anti-friction bearings

Motor series	Type of construction	Shaft height mm	Drive end	Non-drive end
1R./1S.	IM B3	450	Deep-groove ball bearings (locating bearing)	Deep-groove ball bearings (floating bearing)
		500 ... 800	Double bearings: Deep-groove ball bearings and cylindrical-roller bearings (locating bearing)	Cylindrical-roller bearings (floating bearing)
	IM V1	450	Deep-groove ball bearings (floating bearing)	Double-row ball bearings: Deep-groove ball bearings and angular-contact ball bearings (thrust bearing)
		500 ... 560	Deep-groove ball bearings (floating bearing)	Angular-contact ball bearings (thrust bearing)
		630 ... 710	Deep-groove ball bearings (floating bearing)	Pair of angular-contact ball bearings (thrust bearing)
		800	Deep-groove ball bearings (floating bearing)	Pair of angular-contact ball bearings (thrust bearing) and deep-groove ball bearings

<sup>1)</sup> Motor types 1R.6/1S.6 504-... and 1R.6/1S.6 506-... only available with sleeve bearings.

**Overview** (continued)**Sleeve bearings**

Generally, the motors are equipped with two floating bearings. This means that the rotor must be axially guided by the bearings of the driven machine through a coupling with limited axial play. An appropriate sleeve bearing can be installed at the drive end if the motor rotor is to be axially guided.

Assignment of oil-ring lubrication or circulating-oil lubrication to the shaft heights:

The DE bearing is not insulated, the NDE bearing is insulated. Type EM center flange bearings and also type EF lateral flange bearings are used. 2-pole motors of the shaft heights 450 and 500 as well as 4-, 6- and 8-pole motors of the shaft heights 710 and 800 are equipped with center flange bearings. All other motors have lateral flange bearings. When using four lobe bore sleeve bearings (e.g. shaft height 710, 2-pole) it is mandatory that a redundant oil supply is used.

Shaft height	No. of poles	Oil ISO VG	T <sub>ambient</sub> [°C]	50 Hz				60 Hz			
				Core length				Core length			
				0	2	4	6	0	2	4	6
<b>1R.6</b>											
45.	2	22	40 ... 55	Oil ring				Oil ring			
	4	32	40 ... 55	Oil ring				Oil ring			
	≥ 6	46	40 ... 55	Oil ring				Oil ring			
50.	2	22	40 ... 50	Oil ring				Oil ring			
			55	Oil ring				Oil ring    Circulating oil			
	4	32	40 ... 55	Oil ring				Oil ring			
56.	2	22	40 ... 45	Oil ring				Circulating oil			
			50	Oil ring				Circulating oil			
			55	Circulating oil							
	4	32	40 ... 45	Oil ring				Oil ring			
			50 ... 55					Circulating oil			
	≥ 6	46	40 ... 50	Oil ring				Oil ring			
			55					Oil ring    Circulating oil <sup>1)</sup>			
<b>1R.7</b>											
63.	2	22	40 ... 60	Circulating oil				Circulating oil			
	4	32	40 ... 45	Oil ring				Circulating oil			
			50	Oil ring				Circulating oil			
55 ... 60			Circulating oil				Circulating oil				
6	46	40 ... 50	Oil ring				Oil ring				
		55	Oil ring				Oil ring    Circulating oil				
		60	Oil ring				Circulating oil				
≥ 8	46	40 ... 55	Oil ring				Oil ring				
71.	2	22	40 ... 55	Circulating oil				Circulating oil			
	4	32	40 ... 45	Oil ring				Circulating oil			
			50 ... 55	Circulating oil				Circulating oil			
	6	46	40	Oil ring				Oil ring			
			40 ... 55	Oil ring				Circulating oil			
≥ 8	46	40 ... 45	Oil ring				Oil ring				
80.	4	46	40 ... 55	Circulating oil				Circulating oil			
	≥ 6	46	40 ... 55	Circulating oil				Circulating oil			

<sup>1)</sup> Only 6-pole, with higher number of poles available with oil ring lubrication.

## Introduction

### General technical versions

## Mechanical design

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### Overview (continued)

#### Bearing insulation

##### NDE bearing insulation

#### Line operation (DOL):

For all direct online motors, NDE bearing is insulated.

#### Converter operation (VSD):

For operation with SINAMICS LV, SINAMICS PERFECT HARMONY and SINAMICS GM150/SM150 with sine-wave filter, NDE bearing is insulated.

##### DE and NDE bearing insulation

For all other than the above mentioned motor types or applications (e.g. operation with GM150/SM150 without sine-wave filter), both bearings are insulated as a standard and an earthing device is necessary.

When specified by the customer, insulated bearings can be provided at the DE and NDE for any motor type.

If both bearings are insulated, an additional detachable link is provided for this bearing insulation.

#### Vibration response

Horizontal motors up to 3600 rpm fulfill, as standard, vibration severity level A according to IEC 60034-14. Vibration severity level B as well as values for vertical motors are available on request.

#### Balancing quality

The motor rotors are balanced dynamically with half feather key (but without mounted coupling halves). The balancing quality according to ISO 1940 is, up to and including 1500 rpm, G 1.5 and beyond this, G 1.

#### Direction of rotation, fan

The direction of rotation must be specified in every order.

SIMOTICS HV M motors have unidirectional inner and outer fans. In particular, this means that for motors with two-sided ventilation bidirectional fan design is not possible.

SIMOTICS HV M motors with single side ventilation, bidirectional fan design is available on request. (Bidirectional fan design may result in reduced power rating and efficiency as well as a higher noise level.)

#### Paint finish

Unless otherwise specified in the order, the motors are supplied in the standard paint finish color RAL 7030 (stone gray). Other colors are available on request at an additional cost. Motors can be optionally supplied with a special paint finish.

The standard paint finish is classified in the "Moderate" climate group according to IEC 721-2-1. It is suitable for:

- Installed indoors or outdoors under a roof, where the motors are not exposed to any direct effects of the weather.
- Temperatures, continuously up to +100 °C, briefly up to +120 °C
- Relative air humidity up to 85 % at +25 °C continuously; briefly up to +100 % at +30 °C

The **special paint finish** is classified in the "Worldwide" climate group acc. to IEC 721-2-1. It is suitable for:

- Installed outdoors, where motors are directly exposed to the effects of the weather, e.g. direct solar radiation
- Additional temperature and humidity ranges
- Temperatures, continuously up to +120 °C, briefly up to +140 °C

Typical installation locations are industrial environments and coastal areas. For outdoor applications in salt laden atmospheres, one of the options E81, E82 or E83 should be selected.

#### Standards and regulations

The motors comply with the appropriate standards and regulations, especially those listed in the table below.

Title	IEC	DIN/EN/ISO
General specifications for rotating electrical machinery	IEC 60034-1	DIN EN 60034-1
Degrees of protection for rotating electrical machinery (IP code)	IEC 60034-5	DIN EN 60034-5
Cooling methods for rotating electrical machinery (IC code)	IEC 60034-6	DIN EN 60034-6
Types of construction, mounting types and terminal box positions for rotating electrical machinery (IM code)	IEC 60034-7	DIN EN 60034-7
Terminal designations and direction of rotation for rotating electrical machinery	IEC 60034-8	DIN EN 60034-8
Mechanical vibration of rotating electrical machinery	IEC 60034-14	DIN EN 60034-14
Rated impulse voltages for rotating electrical machinery	IEC 60034-15	DIN EN 60034-15
Electrical insulation – thermal classification	IEC 60085	DIN EN 60085
Mechanical vibration – requirements on the balancing quality of rotors	–	DIN ISO 1940-1
Determining the losses and efficiency from tests	IEC 60034-2-1	DIN EN 60034-2-1



**Overview**

The motors in this catalog are designed for operation with a flexible coupling. The maximum half coupling weights are shown in the table "Maximum allowable coupling weight".

**Note:**

Motor and driven machine have to be aligned according to manual.

If the coupling weight exceeds the maximum value, feasibility has to be checked.

**Maximum allowable coupling weight**

Shaft end diameter mm	Max. weight of half coupling	
	2-pole kg	≥ 4-pole kg
50	10	10
55	10	20
60	10	20
65	10	20
70	20	30
75	20	30
80	20	40
85	30	50
90	30	50
95	30	60
100	40	70
105	40	80
110	50	90
115	50	100
120	60	110
125	70	130
130	70	140
135	80	160
140	90	170
145	100	190
150	110	210
155	120	230
160	130	250
165	140	270
170	150	300
175	160	320
180	180	350
185	190	380
190	210	410
195	220	440
200	240	470
205	250	500
210	270	540
215	290	580
220	310	620
225	330	660
230	350	700
235	370	740
240	400	790
245	420	830
250	440	880
255	470	930
260	500	990
265	520	1040
270	550	1100
280	610	1220
290	670	1340
300	740	1480

## Introduction

General technical versions

Notes

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## Motors for line operation



## 2/2 Overview

2/3 **Air-cooled motors**2/3 SIMOTICS HV M 1RA6

Selection and ordering data

2/4 4 to 6.6 kV, 50 Hz

2/7 9 to 11 kV, 50 Hz

2/10 4 to 6.6 kV, 60 Hz

Dimension drawings

2/13 IM B3 type of construction,  
anti-friction bearings2/20 IM B3 type of construction,  
sleeve bearings2/30 IM V1 type of construction,  
anti-friction bearings2/39 SIMOTICS HV M 1RQ6 and RQ7

Selection and ordering data

2/40 4 to 6.6 kV, 50 Hz

2/46 9 to 11 kV, 50 Hz

2/52 4 to 6.6 kV, 60 Hz

Dimension drawings

2/58 IM B3 type of construction,  
anti-friction bearings, IC6112/67 IM B3 type of construction,  
sleeve bearings, IC6112/79 IM V1 type of construction,  
anti-friction bearings, IC6112/89 **Water-cooled motors**2/89 SIMOTICS HV M 1RN6 and 1RN7

Selection and ordering data

2/90 4 to 6.6 kV, 50 Hz

2/96 9 to 11 kV, 50 Hz

2/102 4 to 6.6 kV, 60 Hz

Dimension drawings

2/108 IM B3 type of construction,  
anti-friction bearings, IC81W2/117 IM B3 type of construction,  
sleeve bearings, IC81W2/128 IM V1 type of construction,  
anti-friction bearings, IC81W

## Motors for line operation

### Overview

#### Normal conditions

Selection and ordering data included in this chapter are valid for standard operating and installation conditions:

- Installation altitude of the motor  $\leq 1000$  m above sea level
- Ambient temperature (= coolant temperature for air-cooled motors) = 40 °C
- Coolant temperature for water-cooled motors = 25 °C
- Thermal class 155 (F) utilized to 130 (B)
- Continuous duty S1
- Permissible tolerances in compliance with IEC/EN 60034-1:
  - Rated voltage  $V_{\text{rated}} \pm 5\%$
  - Rated frequency  $f_{\text{rated}} \pm 2\%$

SIMOTICS HV M series is designed for direct-on-line starting under certain starting conditions.

Motor start up has not to be checked, if the following conditions are met:

- Voltage during start up is not below 0.9 x rated voltage
- Load characteristic complies with  $T \sim n^2$
- Max. load torque at rated speed does not exceed value acc. table below

Shaft height	450		500		560		630		710	
Number of poles	2	4...	2	4...	2	4...	2	4...	2	4...
<b>SIMOTICS HV M</b> max. load torque = $T_{\text{rated}} \times$	0.75	0.9	0.7	0.9	0.6	0.9	0.6	0.9	0.5	0.9

Start-up with max. permissible inertia according to "selection and ordering data" is possible either for three times from cold or two times from warm motor condition (natural coast down between consecutive starts assumed).

If limits of load characteristic and/or inertia are exceeded, the motor start-up calculation has to be checked. In this case, please contact your Siemens sales representative.

### Overview



### Technical data

#### Overview of technical data

SIMOTICS HV M 1RA6	
Rated voltage	4 ... 11 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP23/IP24W
Cooling method	IC01
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	450 ... 560 mm
Bearings	Anti-friction bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN (NEMA version on request)
Frame design for shaft heights 450 ... 560 mm	Housing: Cast iron Cooling enclosure: Steel

### Technical data (continued)

#### Power ranges for IEC motors for line operation

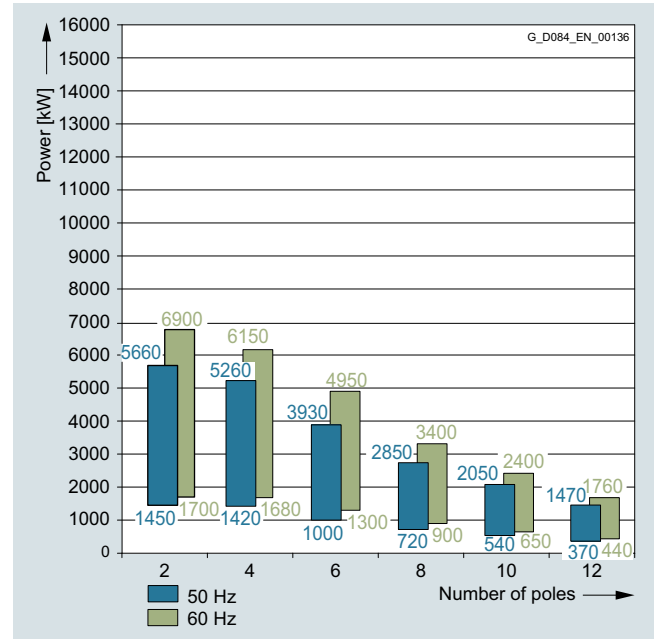
##### 1RA6 series

Insulation system, thermal class 155 (F), utilized to 130 (B).

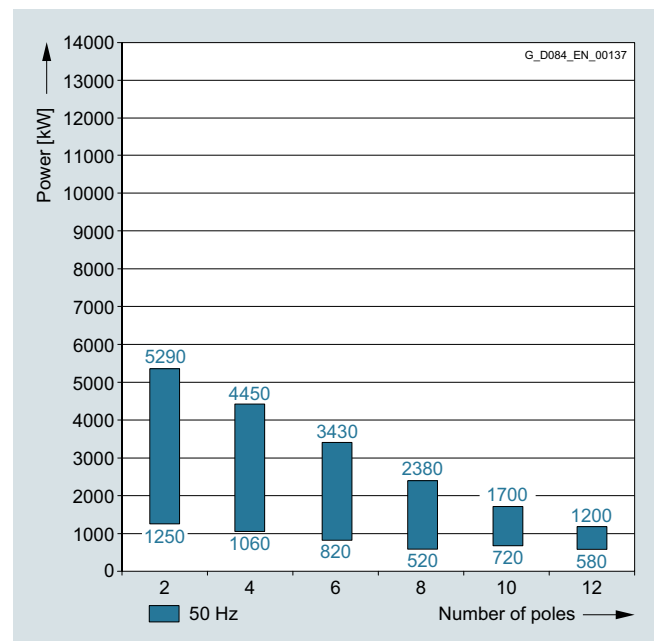
Ambient temperature up to 40 °C, installation altitude up to 1000 m.

4 to 6.6 kV; 50 Hz

4 to 6.6 kV; 60 Hz



9 to 11 kV; 50 Hz



## Motors for line operation

Air-cooled motors

## SIMOTICS HV M 1RA6

## Selection and ordering data

Rated power  IEC  kW	High voltage motor SIMOTICS HV M  Article No.	Speed  rpm	Rated current		Efficiency		Power factor		Torque  Nm	Break-down torque  $T_B/T_{rated}$ [-]	Locked-rotor torque  $T_{LR}/T_{rated}$ [-]	Locked-rotor current  $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 50 Hz</b>														
2-pole														
1450	<b>1RA6450-2HJ</b> ■ ■ 0	2970	166	95.6	96.0	0.88	0.87	4662	2.00	0.60	4.35	12	64	
1700	<b>1RA6452-2HJ</b> ■ ■ 0	2971	192	95.9	96.3	0.89	0.89	5464	2.05	0.60	4.50	14	70	
1900	<b>1RA6454-2HJ</b> ■ ■ 0	2974	210	96.2	96.5	0.90	0.89	6100	2.30	0.70	5.15	15	74	
2120	<b>1RA6456-2HJ</b> ■ ■ 0	2978	235	96.5	96.6	0.90	0.89	6798	2.45	0.70	5.50	17	81	
2500	<b>1RA6500-2HJ</b> ■ ■ 0	2972	280	96.4	96.8	0.89	0.88	8032	1.95	0.55	4.30	19	83	
2680	<b>1RA6502-2HJ</b> ■ ■ 0	2974	300	96.3	96.7	0.90	0.89	8605	2.05	0.50	4.45	21	93	
3150	<b>1RA6504-2HJ</b> ■ ■ 0	2978	345	96.8	97.1	0.91	0.90	10100	2.30	0.55	5.20	25	103	
3400	<b>1RA6506-2HJ</b> ■ ■ 0	2975	370	96.8	97.2	0.91	0.91	10913	2.15	0.55	4.85	26	115	
4000	<b>1RA6560-2HJ</b> ■ ■ 0	2974	450	96.5	96.8	0.89	0.90	12843	1.95	0.50	4.05	39	160	
4600	<b>1RA6562-2HJ</b> ■ ■ 0	2977	520	96.7	97.0	0.89	0.90	14755	2.00	0.50	4.30	44	180	
5140	<b>1RA6564-2HJ</b> ■ ■ 0	2978	560	97.0	97.2	0.91	0.91	16481	2.25	0.60	4.75	49	200	
5660	<b>1RA6566-2HJ</b> ■ ■ 0	2980	620	97.1	97.3	0.91	0.91	18137	2.40	0.60	5.25	55	220	
4-pole														
1420	<b>1RA6450-4HJ</b> ■ ■ ■ ■	1482	160	95.6	96.1	0.89	0.88	9149	2.35	0.65	4.65	21	340	
1560	<b>1RA6452-4HJ</b> ■ ■ ■ ■	1483	176	95.9	96.3	0.89	0.88	10045	2.45	0.65	4.95	24	385	
1730	<b>1RA6454-4HJ</b> ■ ■ ■ ■	1484	194	96.0	96.4	0.89	0.88	11132	2.50	0.65	5.05	27	440	
1950	<b>1RA6456-4HJ</b> ■ ■ ■ ■	1486	220	96.2	96.5	0.89	0.87	12531	2.60	0.65	5.25	30	500	
2240 <sup>2)</sup>	<b>1RA6500-4HJ</b> ■ ■ ■ ■	1485	250	96.2	96.9	0.89	0.88	14404	2.30	0.65	4.70	45	410	
2500 <sup>2)</sup>	<b>1RA6502-4HJ</b> ■ ■ ■ ■	1485	280	96.3	96.9	0.89	0.88	16076	2.35	0.65	4.90	48	460	
2800 <sup>2)</sup>	<b>1RA6504-4HJ</b> ■ ■ ■ ■	1486	315	96.4	97.0	0.89	0.88	17993	2.30	0.60	4.80	55	510	
3080 <sup>2)</sup>	<b>1RA6506-4HJ</b> ■ ■ ■ ■	1485	345	96.4	97.1	0.89	0.87	19805	2.45	0.65	5.15	60	560	
3800 <sup>2)</sup>	<b>1RA6560-4HJ</b> ■ ■ ■ ■	1489	420	96.9	97.3	0.90	0.90	24370	2.10	0.65	4.95	86	730	
4300 <sup>2)</sup>	<b>1RA6562-4HJ</b> ■ ■ ■ ■	1489	470	97.1	97.5	0.91	0.91	27576	2.05	0.65	4.85	97	800	
4800 <sup>2)</sup>	<b>1RA6564-4HJ</b> ■ ■ ■ ■	1490	520	97.2	97.6	0.91	0.91	30762	2.10	0.60	5.00	107	880	
5260 <sup>2)</sup>	<b>1RA6566-4HJ</b> ■ ■ ■ ■	1490	580	97.3	97.6	0.90	0.90	33710	2.10	0.60	5.15	117	970	

Position ■  
of the Article No.:For shaft heights  
450, 500, 560 mm:Refer to the article number  
structure on [Page 1/3](#) for:

- voltage code  
(11th position)
- type of construction  
(12th position)

Note:Efficiencies according to IEC 60034-2-1:2007;  
stray load losses determined by statistical evaluation of measurements.Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives.  
For ordering, please note the 10th and 11th position of the article number code.1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) Data of vertical motors (IM V1) on request.

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current $I_{rated}$ at 6 kV A	Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>4 ... 6.6 kV, 50 Hz</b>													
6-pole													
1000	1RA6450-6HJ	988	118	95.5	96.1	0.85	0.84	9665	2.25	0.95	4.65	28	660
1120	1RA6452-6HJ	989	132	95.7	96.2	0.85	0.84	10814	2.35	0.85	4.80	32	770
1250	1RA6454-6HJ	989	148	95.8	96.3	0.85	0.84	12069	2.40	0.95	4.95	35	870
1400	1RA6456-6HJ	990	164	96.1	96.5	0.85	0.84	13504	2.45	0.90	5.05	41	1040
1850	1RA6500-6HJ	988	215	95.8	96.5	0.86	0.85	17880	2.05	0.65	4.35	56	1280
2090	1RA6502-6HJ	988	245	95.9	96.6	0.86	0.85	20200	2.00	0.65	4.15	61	1420
2300	1RA6504-6HJ	989	270	96.0	96.7	0.86	0.85	22207	2.20	0.70	4.60	68	1560
2500	1RA6506-6HJ	989	285	96.2	96.8	0.87	0.86	24138	2.20	0.75	4.65	76	1760
2900	1RA6560-6HJ	990	330	96.4	96.9	0.87	0.87	27972	1.95	0.70	4.40	107	1640
3250	1RA6562-6HJ	990	370	96.6	97.1	0.88	0.88	31348	1.95	0.70	4.40	118	1820
3640	1RA6564-6HJ	990	410	96.6	97.1	0.88	0.88	35110	1.90	0.70	4.25	131	2000
3930	1RA6566-6HJ	990	440	96.8	97.2	0.88	0.88	37907	1.95	0.70	4.45	145	2250
8-pole													
720	1RA6450-8HJ	741	88	95.0	95.7	0.83	0.82	9278	2.10	0.75	4.30	35	730
780	1RA6452-8HJ	742	95	95.2	95.9	0.83	0.82	10038	2.15	0.75	4.40	39	890
900	1RA6454-8HJ	743	110	95.6	96.0	0.82	0.79	11567	2.55	0.85	5.20	44	1040
1030	1RA6456-8HJ	743	124	95.6	96.2	0.83	0.81	13237	2.40	0.80	4.90	51	1300
1320	1RA6500-8HJ	742	160	95.6	96.2	0.83	0.81	16987	2.15	0.55	4.55	68	1420
1480	1RA6502-8HJ	743	178	95.6	96.3	0.84	0.81	19021	2.15	0.60	4.50	75	1560
1680	1RA6504-8HJ	743	200	95.9	96.4	0.84	0.81	21591	2.25	0.60	4.60	84	1740
1850	1RA6506-8HJ	743	220	96.0	96.5	0.84	0.82	23776	2.25	0.65	4.75	93	1920
2120	1RA6560-8HJ	743	250	96.3	96.9	0.85	0.83	27246	2.10	0.65	4.50	127	2700
2400	1RA6562-8HJ	743	280	96.4	97.0	0.85	0.84	30845	2.05	0.65	4.50	140	2950
2640	1RA6564-8HJ	743	310	96.5	97.1	0.85	0.83	33930	2.10	0.65	4.75	155	3300
2850	1RA6566-8HJ	744	330	96.6	97.2	0.85	0.83	36579	2.15	0.60	4.75	171	3650

**Position ■  
of the Article No.:****For shaft heights  
450, 500, 560 mm:**Refer to the article number  
structure on [Page 1/3](#) for:

- voltage code  
(11th position)
- type of construction  
(12th position)

**Note:**Efficiencies according to IEC 60034-2-1:2007;  
stray load losses determined by statistical evaluation of measurements.Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives.  
For ordering, please note the 10th and 11th position of the article number code.1) Max. permissible external moment of inertia for three starts from cold or  
two starts from warm under the conditions described on [Page 2/2](#).

## Motors for line operation

## Air-cooled motors

## SIMOTICS HV M 1RA6

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 50 Hz</b>														
10-pole														
540	1RA6450-3HJ	590	70	93.4	93.7	0.80	0.76	8741	2.00	0.80	4.60	37	1150	
600	1RA6452-3HJ	590	76	93.7	93.9	0.81	0.76	9712	2.00	0.80	4.70	41	1350	
670	1RA6454-3HJ	591	86	93.9	94.1	0.80	0.75	10827	2.10	0.82	4.90	46	1450	
760	1RA6456-3HJ	591	97	94.1	94.2	0.80	0.75	12281	2.20	0.90	5.20	52	1800	
900	1RA6500-3HJ	591	112	94.4	94.7	0.82	0.80	14543	1.90	0.68	4.30	70	1400	
1000	1RA6502-3HJ	592	122	95.7	94.9	0.83	0.80	16132	1.90	0.70	4.50	80	1700	
1100	1RA6504-3HJ	592	134	94.8	95.0	0.83	0.80	17745	1.90	0.72	4.60	88	2200	
1250	1RA6506-3HJ	592	152	95.0	95.1	0.83	0.80	20165	1.90	0.75	4.70	99	2600	
1480	1RA6560-3HJ	593	184	95.1	95.4	0.81	0.77	23835	2.00	0.70	4.50	123	2700	
1700	1RA6562-3HJ	593	210	95.4	95.7	0.82	0.78	27378	2.00	0.70	4.50	141	4100	
1880	1RA6564-3HJ	593	230	95.6	95.7	0.82	0.78	30277	2.00	0.72	4.70	158	4400	
2050	1RA6566-3HJ	593	255	95.7	95.8	0.81	0.76	33014	2.10	0.78	5.00	173	5200	
12-pole														
370	1RA6450-5HJ	491	53	92.4	92.7	0.73	0.68	7197	1.80	0.60	4.00	37	1100	
425	1RA6452-5HJ	492	60	92.8	93.0	0.73	0.67	8249	1.80	0.63	4.20	41	1400	
475	1RA6454-5HJ	491	66	93.1	93.3	0.74	0.69	9239	1.80	0.60	4.00	46	1600	
540	1RA6456-5HJ	492	77	93.5	93.5	0.72	0.65	10482	2.00	0.68	4.40	52	2000	
680	1RA6500-5HJ	491	94	93.9	94.0	0.74	0.69	13226	1.90	0.62	4.10	70	2350	
760	1RA6502-5HJ	491	102	94.1	94.2	0.76	0.71	14782	1.80	0.60	4.00	79	2600	
840	1RA6504-5HJ	491	112	94.3	94.4	0.76	0.71	16338	1.90	0.62	4.10	87	3100	
930	1RA6506-5HJ	492	128	94.5	94.6	0.74	0.69	18052	1.90	0.62	4.30	98	3700	
1100	1RA6560-5HJ	493	150	94.5	94.8	0.75	0.71	21308	1.80	0.57	3.90	123	3600	
1230	1RA6562-5HJ	493	168	94.9	95.0	0.74	0.68	23827	1.80	0.60	4.00	141	4100	
1350	1RA6564-5HJ	494	184	95.0	95.1	0.74	0.68	26098	2.00	0.63	4.30	158	4700	
1470	1RA6566-5HJ	494	198	95.1	95.2	0.75	0.69	28418	2.00	0.65	4.30	173	5200	

## Position of the Article No.:

## For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Higher pole numbers are available on request.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).



## Selection and ordering data

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
2-pole														
1250	<b>1RA6450-2HJ</b> ■ 0	2974	86	95.5	95.8	0.88	0.88	4013	2.15	0.70	4.80	12	31	
1400	<b>1RA6452-2HJ</b> ■ 0	2977	94	95.8	96.1	0.90	0.89	4490	2.40	0.75	5.40	14	33	
1550	<b>1RA6454-2HJ</b> ■ 0	2979	104	95.9	96.2	0.89	0.89	4968	2.40	0.70	5.50	15	36	
1750	<b>1RA6456-2HJ</b> ■ 0	2980	116	96.2	96.5	0.90	0.90	5607	2.45	0.70	5.50	17	39	
2180	<b>1RA6500-2HJ</b> ■ 0	2977	146	96.1	96.6	0.90	0.89	6992	2.15	0.55	4.80	19	37	
2420	<b>1RA6502-2HJ</b> ■ 0	2976	162	96.3	96.7	0.90	0.90	7765	2.10	0.65	4.60	21	41	
2660	<b>1RA6504-2HJ</b> ■ 0	2978	174	96.5	97.0	0.91	0.91	8529	2.25	0.55	4.90	25	45	
2900	<b>1RA6506-2HJ</b> ■ 0	2976	190	96.6	97.1	0.91	0.91	9305	2.10	0.70	4.90	26	51	
3550	<b>1RA6560-2HJ</b> ■ 0	2978	240	96.5	96.8	0.89	0.90	11383	2.00	0.50	4.05	39	115	
4050	<b>1RA6562-2HJ</b> ■ 0	2982	270	96.7	96.8	0.90	0.90	12969	2.30	0.60	4.95	44	130	
4630	<b>1RA6564-2HJ</b> ■ 0	2981	305	96.9	97.1	0.91	0.91	14831	2.25	0.60	4.80	49	145	
5290	<b>1RA6566-2HJ</b> ■ 0	2984	345	97.1	97.1	0.91	0.91	16928	2.50	0.60	5.40	54	160	
4-pole														
1060	<b>1RA6450-4HJ</b> ■ ■	1485	72	95.4	95.9	0.89	0.89	6816	2.50	0.70	5.15	21	170	
1210	<b>1RA6452-4HJ</b> ■ ■	1484	82	95.5	96.1	0.89	0.89	7786	2.45	0.65	5.00	24	194	
1360	<b>1RA6454-4HJ</b> ■ ■	1486	91	95.8	96.2	0.90	0.89	8739	2.55	0.65	5.30	27	225	
1560	<b>1RA6456-4HJ</b> ■ ■	1487	104	96.0	96.4	0.90	0.88	10018	2.60	0.65	5.35	30	260	
1980 <sup>2)</sup>	<b>1RA6500-4HJ</b> ■ ■	1486	134	95.9	96.7	0.89	0.88	12723	2.45	0.75	5.15	45	200	
2180 <sup>2)</sup>	<b>1RA6502-4HJ</b> ■ ■	1486	148	96.0	96.8	0.89	0.88	14009	2.40	0.70	5.20	48	220	
2420 <sup>2)</sup>	<b>1RA6504-4HJ</b> ■ ■	1488	164	96.2	96.9	0.89	0.88	15530	2.50	0.65	5.20	55	250	
2610 <sup>2)</sup>	<b>1RA6506-4HJ</b> ■ ■	1488	176	96.3	97.0	0.89	0.88	16749	2.55	0.70	5.40	60	280	
3250 <sup>2)</sup>	<b>1RA6560-4HJ</b> ■ ■	1490	215	96.8	97.2	0.91	0.91	20829	2.15	0.60	5.00	86	420	
3600 <sup>2)</sup>	<b>1RA6562-4HJ</b> ■ ■	1491	235	96.9	97.3	0.91	0.91	23056	2.15	0.65	5.05	97	460	
4100 <sup>2)</sup>	<b>1RA6564-4HJ</b> ■ ■	1491	270	97.1	97.4	0.91	0.90	26258	2.15	0.55	5.10	107	510	
4450 <sup>2)</sup>	<b>1RA6566-4HJ</b> ■ ■	1492	290	97.2	97.5	0.91	0.90	28481	2.25	0.55	5.20	116	560	

**Position ■  
of the Article No.:****For shaft heights  
450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) Data of vertical motors (IM V1) on request.

## Motors for line operation

Air-cooled motors

## SIMOTICS HV M 1RA6

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
6-pole														
820	<b>1RA6450-6HJ</b>	990	59	95.2	95.7	0.85	0.83	7909	2.45	0.90	5.15	28	340	
920	<b>1RA6452-6HJ</b>	990	65	95.2	95.8	0.86	0.85	8874	2.40	0.95	5.10	32	400	
1000	<b>1RA6454-6HJ</b>	990	70	95.4	96.0	0.86	0.85	9645	2.40	0.95	5.10	35	460	
1150	<b>1RA6456-6HJ</b>	991	81	95.8	96.3	0.86	0.84	11081	2.45	0.85	5.15	41	560	
1450	<b>1RA6500-6HJ</b>	990	102	95.5	96.3	0.86	0.86	13986	2.15	0.70	4.55	56	830	
1650	<b>1RA6502-6HJ</b>	989	114	95.6	96.4	0.87	0.86	15931	2.10	0.70	4.50	61	910	
1850	<b>1RA6504-6HJ</b>	989	128	95.7	96.5	0.87	0.87	17862	2.10	0.70	4.65	68	1020	
2020	<b>1RA6506-6HJ</b>	990	140	95.9	96.6	0.87	0.86	19484	2.20	0.70	4.65	76	1140	
2500	<b>1RA6560-6HJ</b>	991	170	96.2	96.7	0.88	0.87	24090	2.05	0.70	4.85	107	1060	
2800	<b>1RA6562-6HJ</b>	992	190	96.5	96.9	0.88	0.87	26953	2.15	0.70	5.00	118	1160	
3150	<b>1RA6564-6HJ</b>	992	215	96.6	97.0	0.88	0.88	30322	2.10	0.70	4.75	131	1280	
3430	<b>1RA6566-6HJ</b>	992	230	96.7	97.1	0.89	0.88	33018	2.25	0.80	5.10	145	1420	
8-pole														
520	<b>1RA6450-8HJ</b>	743	38.5	94.4	95.0	0.83	0.81	6683	2.35	0.80	4.95	35	215	
560	<b>1RA6452-8HJ</b>	743	41	94.4	95.2	0.84	0.83	7197	2.25	0.75	4.80	39	290	
590	<b>1RA6454-8HJ</b>	743	43	94.3	95.1	0.84	0.83	7582	2.20	0.70	4.70	44	365	
750	<b>1RA6456-8HJ</b>	744	54	95.0	95.6	0.84	0.82	9626	2.45	0.80	5.15	51	485	
1060	<b>1RA6500-8HJ</b>	743	77	95.1	95.8	0.84	0.82	13623	2.20	0.60	4.75	68	830	
1180	<b>1RA6502-8HJ</b>	744	85	95.5	96.1	0.84	0.81	15145	2.35	0.65	4.95	75	910	
1320	<b>1RA6504-8HJ</b>	744	95	95.6	96.2	0.84	0.82	16942	2.35	0.65	5.00	84	1020	
1490	<b>1RA6506-8HJ</b>	744	108	95.7	96.3	0.84	0.82	19124	2.25	0.60	4.90	93	1120	
1800	<b>1RA6560-8HJ</b>	743	128	95.9	96.6	0.85	0.84	23134	2.00	0.60	4.50	127	1540	
1980	<b>1RA6562-8HJ</b>	744	140	96.0	96.7	0.85	0.84	25413	2.10	0.65	4.75	140	1700	
2200	<b>1RA6564-8HJ</b>	744	154	96.2	96.8	0.86	0.84	28237	2.10	0.60	4.75	155	1880	
2380	<b>1RA6566-8HJ</b>	744	166	96.3	96.9	0.86	0.84	30547	2.15	0.65	5.00	172	2100	

**Position ■  
of the Article No.:****For shaft heights  
450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
10-pole														
720	<b>1RA6500-3HJ</b>	593	55	93.8	93.9	0.80	0.76	11595	2.20	0.82	5.20	70	900	
830	<b>1RA6502-3HJ</b>	594	64	94.2	94.2	0.79	0.74	13344	2.20	0.82	5.30	80	1100	
920	<b>1RA6504-3HJ</b>	594	71	94.3	94.3	0.79	0.74	14791	2.20	0.82	5.30	88	1200	
1020	<b>1RA6506-3HJ</b>	594	79	94.5	94.5	0.79	0.75	16399	2.20	0.80	5.30	99	1400	
1250	<b>1RA6560-3HJ</b>	593	94	94.8	94.9	0.81	0.77	20131	2.10	0.72	4.70	123	1650	
1420	<b>1RA6562-3HJ</b>	593	106	94.9	95.2	0.82	0.78	22868	2.00	0.70	4.70	141	2050	
1570	<b>1RA6564-3HJ</b>	593	116	95.1	95.4	0.82	0.78	25284	2.00	0.72	5.00	158	2500	
1700	<b>1RA6566-3HJ</b>	595	128	95.3	95.4	0.80	0.75	27286	2.40	0.85	5.50	173	2700	
12-pole														
580	<b>1RA6502-5HJ</b>	493	48.0	93.3	93.3	0.74	0.68	11235	2.00	0.70	4.70	79	1350	
640	<b>1RA6504-5HJ</b>	493	53	93.5	93.6	0.74	0.68	12398	2.00	0.70	4.80	87	1500	
700	<b>1RA6506-5HJ</b>	493	58	93.6	93.7	0.75	0.69	13560	2.10	0.70	4.80	98	1600	
850	<b>1RA6560-5HJ</b>	494	69	93.8	94.1	0.76	0.71	16432	1.85	0.60	4.20	123	1750	
1000	<b>1RA6562-5HJ</b>	494	82	94.4	94.6	0.75	0.69	19332	1.95	0.65	4.50	141	2200	
1100	<b>1RA6564-5HJ</b>	494	88	94.5	94.7	0.76	0.71	21265	1.95	0.63	4.40	158	2500	
1200	<b>1RA6566-5HJ</b>	494	96	94.8	94.8	0.76	0.71	23198	1.95	0.63	4.40	173	2900	

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Motors for line operation

Air-cooled motors

### SIMOTICS HV M 1RA6

#### Selection and ordering data

Rated power  IEC  kW	High voltage motor SIMOTICS HV M  Article No.	Speed  rpm	Rated current		Efficiency		Power factor		Torque  Nm	Break-down torque  $T_B/T_{rated}$ [-]	Locked-rotor torque  $T_{LR}/T_{rated}$ [-]	Locked-rotor current  $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
<b>2-pole</b>														
1700	<b>1RA6450-2HJ</b> ■ ■ 0	3573	174	95.9	96.1	0.89	0.89	4543	2.05	0.60	4.60	13	34	
2000	<b>1RA6452-2HJ</b> ■ ■ 0	3573	200	96.1	96.4	0.90	0.90	5345	2.10	0.65	4.75	15	40	
2240	<b>1RA6454-2HJ</b> ■ ■ 0	3576	225	96.3	96.4	0.90	0.89	5981	2.25	0.65	5.10	16	45	
2500	<b>1RA6456-2HJ</b> ■ ■ 0	3580	250	96.5	96.6	0.90	0.89	6668	2.40	0.60	5.50	18	52	
3000	<b>1RA6500-2HJ</b> ■ ■ 0	3574	305	96.5	96.8	0.89	0.89	8015	1.95	0.45	4.15	20	64	
3300	<b>1RA6502-2HJ</b> ■ ■ 0	3575	330	96.6	96.9	0.90	0.89	8814	1.95	0.45	4.35	22	72	
3880	<b>1RA6504-2HJ</b> ■ ■ 0	3579	385	96.9	97.1	0.91	0.90	10352	2.30	0.55	5.05	26	80	
4250	<b>1RA6506-2HJ</b> ■ ■ 0	3578	420	97.1	97.3	0.91	0.91	11342	2.20	0.65	4.95	27	88	
4750	<b>1RA6560-2HJ</b> ■ ■ 0	3576	480	96.6	96.8	0.89	0.90	12684	1.90	0.50	4.15	39	145	
5400	<b>1RA6562-2HJ</b> ■ ■ 0	3578	540	96.8	96.9	0.90	0.91	14412	2.15	0.55	4.45	44	160	
6100	<b>1RA6564-2HJ</b> ■ ■ 0	3578	600	97.0	97.1	0.91	0.91	16280	2.15	0.55	4.70	49	180	
6900	<b>1RA6566-2HJ</b> ■ ■ 0	3581	680	97.2	97.2	0.91	0.91	18399	2.35	0.60	5.15	55	200	
<b>4-pole</b>														
1680	<b>1RA6450-4HJ</b> ■ ■ ■ ■	1782	172	95.9	96.1	0.89	0.88	9002	2.40	0.65	4.90	21	178	
1820	<b>1RA6452-4HJ</b> ■ ■ ■ ■	1784	186	96.0	96.2	0.89	0.88	9741	2.55	0.65	5.15	23	225	
2120	<b>1RA6454-4HJ</b> ■ ■ ■ ■	1784	215	96.2	96.5	0.89	0.89	11347	2.55	0.65	5.20	27	285	
2400	<b>1RA6456-4HJ</b> ■ ■ ■ ■	1785	245	96.4	96.6	0.89	0.87	12839	2.60	0.65	5.30	30	355	
2700 <sup>2)</sup>	<b>1RA6500-4HJ</b> ■ ■ ■ ■	1785	275	96.4	97.0	0.89	0.88	14444	2.40	0.70	5.00	45	250	
3000 <sup>2)</sup>	<b>1RA6502-4HJ</b> ■ ■ ■ ■	1786	305	96.5	97.0	0.89	0.88	16040	2.45	0.70	5.15	48	280	
3400 <sup>2)</sup>	<b>1RA6504-4HJ</b> ■ ■ ■ ■	1786	345	96.5	97.1	0.89	0.88	18178	2.35	0.65	4.95	55	310	
3820 <sup>2)</sup>	<b>1RA6506-4HJ</b> ■ ■ ■ ■	1786	390	96.7	97.2	0.89	0.88	20424	2.35	0.65	5.00	60	350	
4500 <sup>2)</sup>	<b>1RA6560-4HJ</b> ■ ■ ■ ■	1790	450	97.2	97.4	0.91	0.90	24006	2.20	0.65	5.10	86	550	
5000 <sup>2)</sup>	<b>1RA6562-4HJ</b> ■ ■ ■ ■	1790	490	97.3	97.5	0.91	0.91	26674	2.20	0.60	5.10	97	610	
5600 <sup>2)</sup>	<b>1RA6564-4HJ</b> ■ ■ ■ ■	1791	550	97.4	97.6	0.91	0.90	29858	2.20	0.55	5.15	107	670	
6150 <sup>2)</sup>	<b>1RA6566-4HJ</b> ■ ■ ■ ■	1790	610	97.4	97.6	0.91	0.91	32809	2.10	0.55	4.95	117	740	

#### Position ■ of the Article No.:

#### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

#### Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> Data of vertical motors (IM V1) on request.

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
<b>6-pole</b>														
1300	1RA6450-6HJ	1186	140	95.8	96.3	0.85	0.84	10467	2.10	0.80	4.35	28	550	
1450	1RA6452-6HJ	1187	156	96.0	96.4	0.85	0.84	11665	2.15	0.75	4.50	32	610	
1600	1RA6454-6HJ	1188	172	96.1	96.5	0.85	0.85	12861	2.30	0.85	4.75	35	660	
1730	1RA6456-6HJ	1189	182	96.4	96.7	0.86	0.85	13894	2.45	0.95	5.10	41	730	
2240	1RA6500-6HJ	1188	240	96.2	96.8	0.85	0.85	18005	2.05	0.65	4.35	56	970	
2500	1RA6502-6HJ	1188	265	96.3	96.9	0.86	0.85	20095	2.05	0.65	4.45	61	1060	
2800	1RA6504-6HJ	1188	295	96.4	97.0	0.86	0.85	22506	2.05	0.60	4.55	68	1200	
3100	1RA6506-6HJ	1189	325	96.5	97.1	0.87	0.86	24897	2.10	0.70	4.45	76	1320	
3500	1RA6560-6HJ	1190	360	96.9	97.2	0.88	0.87	28086	1.95	0.65	4.50	107	1380	
4000	1RA6562-6HJ	1190	420	96.9	97.3	0.87	0.87	32098	1.95	0.65	4.40	118	1520	
4500	1RA6564-6HJ	1191	470	97.0	97.4	0.87	0.87	36080	2.00	0.65	4.65	131	1680	
4950	1RA6566-6HJ	1191	510	97.2	97.5	0.88	0.88	39688	2.05	0.70	4.65	145	1860	
<b>8-pole</b>														
900	1RA6450-8HJ	890	100	95.3	95.9	0.83	0.82	9656	1.90	0.55	3.90	35	475	
1000	1RA6452-8HJ	892	110	95.5	96.0	0.83	0.81	10705	2.20	0.65	4.50	39	570	
1120	1RA6454-8HJ	891	124	95.7	96.2	0.83	0.82	12003	2.10	0.65	4.35	44	670	
1220	1RA6456-8HJ	892	132	95.9	96.3	0.84	0.82	13060	2.30	0.70	4.80	51	820	
1600	1RA6500-8HJ	893	178	96.0	96.4	0.82	0.79	17109	2.20	0.55	4.80	68	1080	
1800	1RA6502-8HJ	892	196	96.1	96.6	0.84	0.82	19269	2.10	0.55	4.40	75	1200	
2000	1RA6504-8HJ	892	215	96.2	96.7	0.84	0.82	21410	2.10	0.55	4.40	84	1340	
2200	1RA6506-8HJ	893	240	96.3	96.7	0.84	0.82	23525	2.15	0.60	4.75	93	1480	
2500	1RA6560-8HJ	893	270	96.7	97.2	0.84	0.83	26733	2.00	0.50	4.60	127	1960	
2800	1RA6562-8HJ	893	300	96.8	97.3	0.85	0.83	29941	2.10	0.55	4.60	140	2150	
3150	1RA6564-8HJ	893	330	96.8	97.3	0.85	0.84	33684	2.10	0.55	4.65	155	2400	
3400	1RA6566-8HJ	893	360	96.8	97.3	0.85	0.84	36357	1.95	0.55	4.65	171	2650	

**Position**  
of the Article No.:**For shaft heights  
450, 500, 560 mm:**Refer to the article number  
structure on [Page 1/3](#) for:

- voltage code  
(11th position)
- type of construction  
(12th position)

Note:Efficiencies according to IEC 60034-2-1:2007;  
stray load losses determined by statistical evaluation of measurements.Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives.  
For ordering, please note the 10th and 11th position of the article number code.1) Max. permissible external moment of inertia for three starts from cold or  
two starts from warm under the conditions described on [Page 2/2](#).

## Motors for line operation

Air-cooled motors

## SIMOTICS HV M 1RA6

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
10-pole														
650	1RA6450-3HJ	710	74	93.7	94.0	0.82	0.78	8743	1.90	0.72	4.50	37	650	
720	1RA6452-3HJ	710	83	94.1	94.3	0.81	0.77	9685	2.00	0.75	4.70	41	850	
800	1RA6454-3HJ	711	92	94.3	94.4	0.81	0.76	10745	2.10	0.80	4.90	46	900	
910	1RA6456-3HJ	711	104	94.5	94.6	0.81	0.77	12223	2.10	0.80	5.00	52	1100	
1080	1RA6500-3HJ	711	122	94.8	95.0	0.82	0.80	14506	1.80	0.65	4.40	70	1200	
1200	1RA6502-3HJ	712	134	95.2	95.2	0.82	0.80	16096	1.90	0.68	4.70	80	1500	
1320	1RA6504-3HJ	712	146	95.1	95.2	0.83	0.80	17705	1.90	0.70	4.70	88	1450	
1500	1RA6506-3HJ	712	166	95.4	95.5	0.83	0.79	20119	2.00	0.72	4.90	99	1900	
1780	1RA6560-3HJ	713	205	95.5	95.6	0.80	0.76	23842	2.00	0.70	4.60	123	2100	
2040	1RA6562-3HJ	713	235	95.8	95.8	0.80	0.76	27324	2.00	0.70	4.80	141	2600	
2200	1RA6564-3HJ	713	245	95.9	95.8	0.82	0.79	29467	2.00	0.68	4.60	158	2800	
2400	1RA6566-3HJ	713	270	96.0	96.0	0.81	0.77	32146	2.10	0.75	5.00	173	3300	
12-pole														
440	1RA6450-5HJ	591	56	92.9	93.1	0.74	0.71	7110	1.80	0.56	4.00	37	630	
510	1RA6452-5HJ	591	65	93.3	93.3	0.73	0.68	8241	1.80	0.60	4.20	41	850	
570	1RA6454-5HJ	592	73	93.9	93.9	0.73	0.68	9195	1.80	0.60	4.20	46	1150	
650	1RA6456-5HJ	592	82	94.0	93.9	0.74	0.68	10486	1.90	0.60	4.30	52	1300	
820	1RA6500-5HJ	592	102	94.4	94.3	0.74	0.68	13228	2.00	0.62	4.50	70	1650	
920	1RA6502-5HJ	592	114	94.6	94.6	0.75	0.70	14841	1.90	0.62	4.40	79	2000	
1020	1RA6504-5HJ	592	128	94.8	94.7	0.74	0.68	16454	2.00	0.65	4.70	87	2400	
1120	1RA6506-5HJ	592	136	94.8	94.8	0.76	0.71	18068	1.90	0.60	4.40	98	2200	
1300	1RA6560-5HJ	593	160	95.0	95.1	0.75	0.70	20936	1.80	0.53	3.90	123	2050	
1470	1RA6562-5HJ	593	182	95.2	95.3	0.74	0.69	23674	1.80	0.55	4.00	141	2500	
1620	1RA6564-5HJ	594	205	95.4	95.4	0.73	0.67	26045	2.00	0.63	4.30	158	3500	
1760	1RA6566-5HJ	594	220	95.5	95.5	0.73	0.68	28296	2.00	0.63	4.40	173	3900	

**Position ■  
of the Article No.:****For shaft heights  
450, 500, 560 mm:**Refer to the article number  
structure on [Page 1/3](#) for:

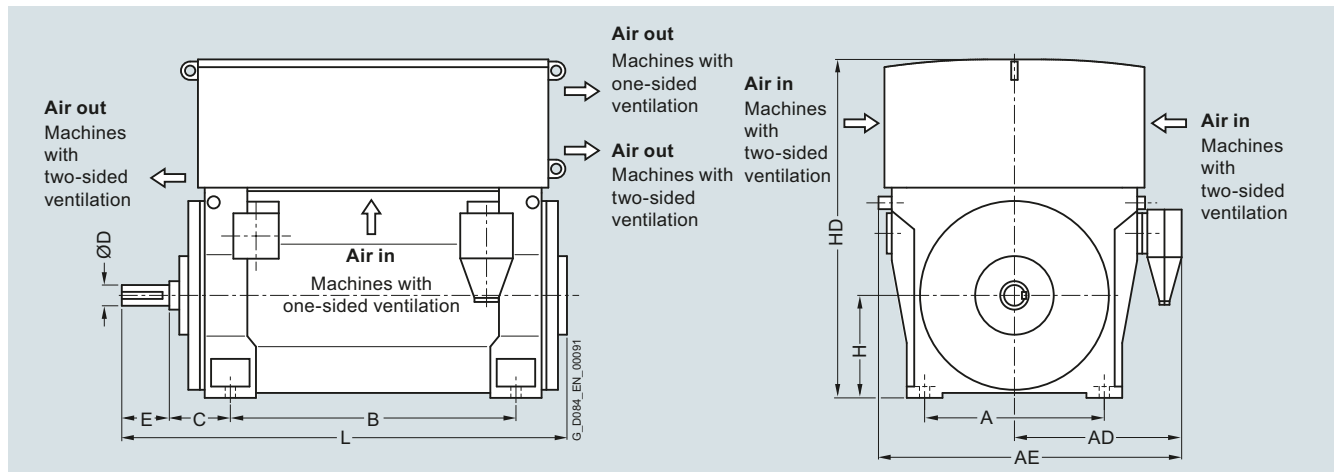
- voltage code  
(11th position)
- type of construction  
(12th position)

**Note:**Efficiencies according to IEC 60034-2-1:2007;  
stray load losses determined by statistical evaluation of measurements.

Higher pole numbers are available on request.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives.  
For ordering, please note the 10th and 11th position of the article number code.1) Max. permissible external moment of inertia for three starts from cold or  
two starts from warm under the conditions described on [Page 2/2](#).

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

## Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RA6 series

2-pole											
1RA6450-2HJ.0 <sup>2)</sup>	3700	850	930	1620	1180	280	95	130	450	1628	1843
1RA6452-2HJ.0 <sup>2)</sup>	3900	850	930	1620	1180	280	95	130	450	1628	1843
1RA6454-2HJ.0 <sup>2)</sup>	4300	850	930	1620	1400	280	95	130	450	1628	2053
1RA6456-2HJ.0 <sup>2)</sup>	4550	850	930	1620	1400	280	95	130	450	1628	2053
1RA6500-2HJ.0 <sup>2)</sup>	5450	950	1135	1835	1320	315	110	165	500	1850	2150
1RA6502-2HJ.0 <sup>2)</sup>	5600	950	1135	1835	1320	315	110	165	500	1850	2150
4-pole											
1RA6450-4HJ.0	4050	850	930	1620	1180	250	130	200	450	1408	1896
1RA6452-4HJ.0	4250	850	930	1620	1180	250	130	200	450	1408	1896
1RA6454-4HJ.0	4650	850	930	1620	1400	250	130	200	450	1408	2106
1RA6456-4HJ.0	4950	850	930	1620	1400	250	130	200	450	1408	2106
1RA6500-4HJ.0	5950	950	1135	1835	1320	280	150	200	500	1850	2150
1RA6502-4HJ.0	6150	950	1135	1835	1320	280	150	200	500	1850	2150
1RA6504-4HJ.0	6800	950	1135	1835	1500	280	150	200	500	1850	2300
1RA6506-4HJ.0	7150	950	1135	1835	1500	280	150	200	500	1850	2300
1RA6560-4HJ.0	7450	1060	1205	1975	1400	315	170	240	560	2100	2300
1RA6562-4HJ.0	7850	1060	1205	1975	1400	315	170	240	560	2100	2300
1RA6564-4HJ.0	8700	1060	1205	1975	1600	315	170	240	560	2100	2550
1RA6566-4HJ.0	9250	1060	1205	1975	1600	315	170	240	560	2100	2550

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

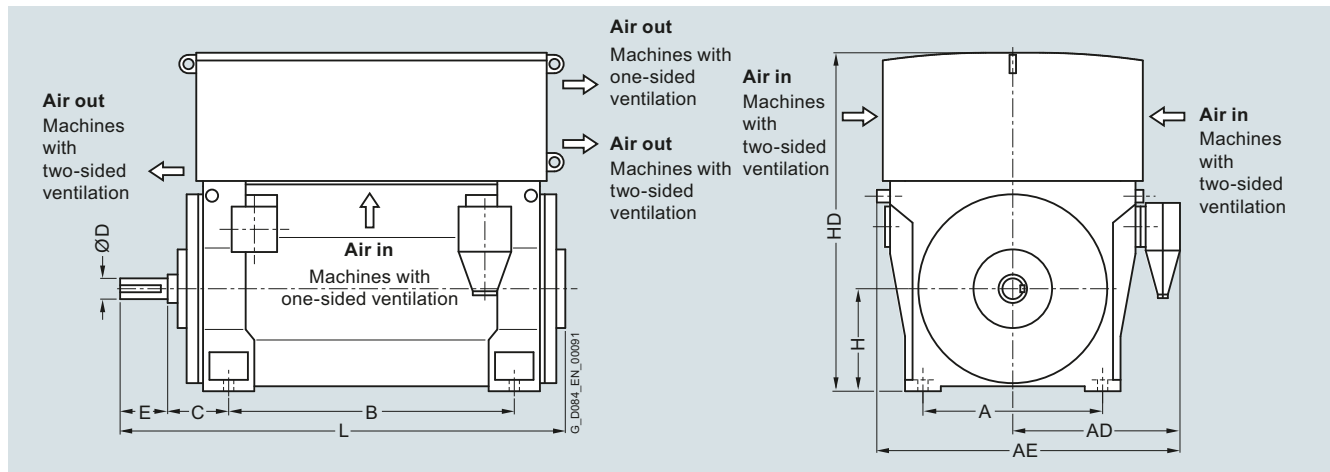
<sup>2)</sup> Anti-friction bearings only for 50 Hz operation.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RA6

#### Dimension drawings (continued)



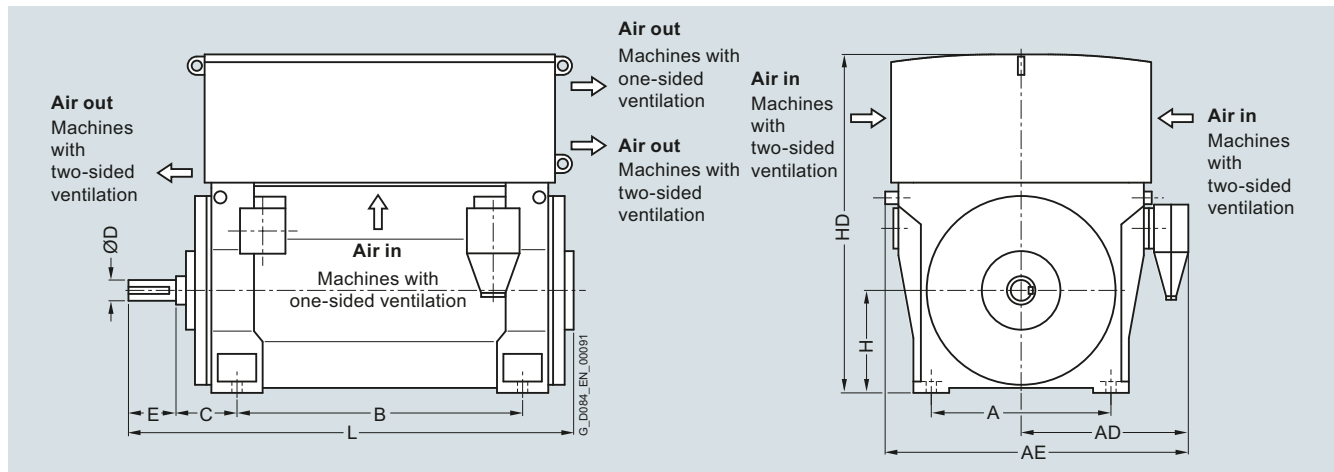
Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RA6 series</b>											
<b>6-pole</b>											
1RA6450-6HJ.0	4150	850	930	1620	1180	250	140	200	450	1408	1896
1RA6452-6HJ.0	4400	850	930	1620	1180	250	140	200	450	1408	1896
1RA6454-6HJ.0	4750	850	930	1620	1400	280	140	200	450	1408	2136
1RA6456-6HJ.0	5100	850	930	1620	1400	280	140	200	450	1408	2136
1RA6500-6HJ.0	6050	950	1135	1835	1320	315	160	240	500	1610	2150
1RA6502-6HJ.0	6350	950	1135	1835	1320	315	160	240	500	1610	2150
1RA6504-6HJ.0	6900	950	1135	1835	1500	315	160	240	500	1610	2360
1RA6506-6HJ.0	7300	950	1135	1835	1500	315	160	240	500	1610	2360
1RA6560-6HJ.0	8200	1060	1205	1975	1400	315	180	240	560	1760	2300
1RA6562-6HJ.0	8600	1060	1205	1975	1400	315	180	240	560	1760	2300
1RA6564-6HJ.0	9450	1060	1205	1975	1600	315	180	240	560	1760	2550
1RA6566-6HJ.0	10000	1060	1205	1975	1600	315	180	240	560	1760	2550
<b>8-pole</b>											
1RA6450-8HJ.0	4150	850	930	1620	1180	250	140	200	450	1408	1896
1RA6452-8HJ.0	4450	850	930	1620	1180	250	140	200	450	1408	1896
1RA6454-8HJ.0	4800	850	930	1620	1400	280	140	200	450	1408	2136
1RA6456-8HJ.0	5150	850	930	1620	1400	280	140	200	450	1408	2136
1RA6500-8HJ.0	6000	950	1135	1835	1320	315	160	240	500	1610	2150
1RA6502-8HJ.0	6300	950	1135	1835	1320	315	160	240	500	1610	2150
1RA6504-8HJ.0	6900	950	1135	1835	1500	315	160	240	500	1610	2360
1RA6506-8HJ.0	7250	950	1135	1835	1500	315	160	240	500	1610	2360
1RA6560-8HJ.0	8150	1060	1205	1975	1400	315	180	240	560	1760	2300
1RA6562-8HJ.0	8600	1060	1205	1975	1400	315	180	240	560	1760	2300
1RA6564-8HJ.0	9400	1060	1205	1975	1600	315	180	240	560	1760	2550
1RA6566-8HJ.0	9950	1060	1205	1975	1600	315	180	240	560	1760	2550

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> Anti-friction bearings only for 50 Hz operation.



## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RA6 series</b>											
10-pole											
1RA6450-3HJ.0	4150	850	930	1620	1180	250	140	200	450	1408	1896
1RA6452-3HJ.0	4450	850	930	1620	1180	250	140	200	450	1408	1896
1RA6454-3HJ.0	4800	850	930	1620	1400	280	140	200	450	1408	2136
1RA6456-3HJ.0	5150	850	930	1620	1400	280	140	200	450	1408	2136
1RA6500-3HJ.0	5250	950	1000	1760	1320	280	160	240	500	1520	2270
1RA6502-3HJ.0	5600	950	1000	1760	1320	280	160	240	500	1520	2270
1RA6504-3HJ.0	6150	950	1000	1760	1500	280	170	240	500	1520	2480
1RA6506-3HJ.0	6550	950	1000	1760	1500	280	170	240	500	1520	2480
1RA6560-3HJ.0	7100	1060	1070	1900	1400	315	180	240	560	1750	2300
1RA6562-3HJ.0	7700	1060	1070	1900	1400	315	180	240	560	1750	2300
1RA6564-3HJ.0	8500	1060	1070	1900	1600	315	190	280	560	1750	2570
1RA6566-3HJ.0	8950	1060	1070	1900	1600	315	190	280	560	1750	2570

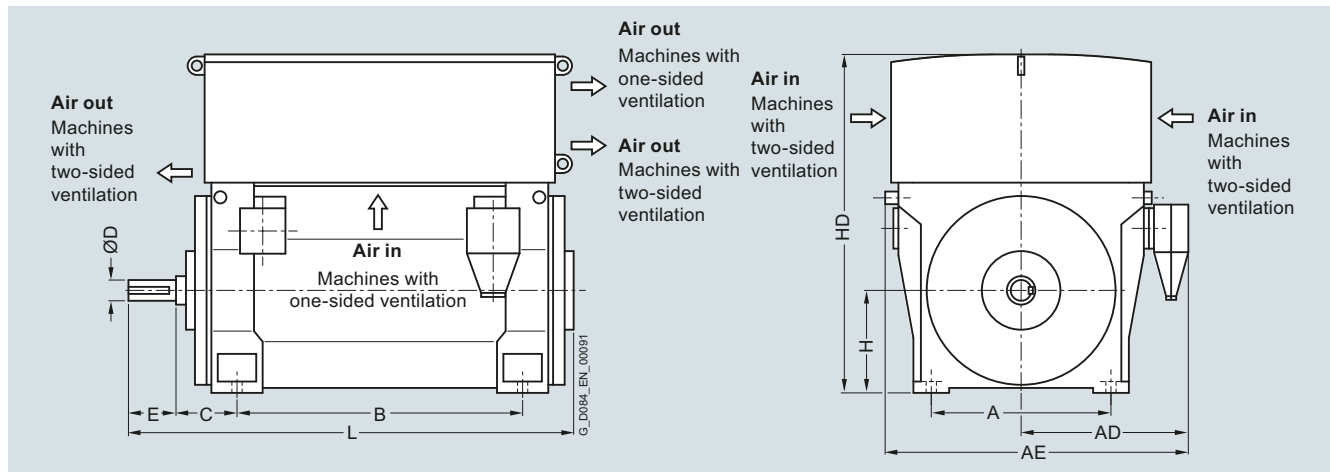
<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RA6

#### Dimension drawings (continued)

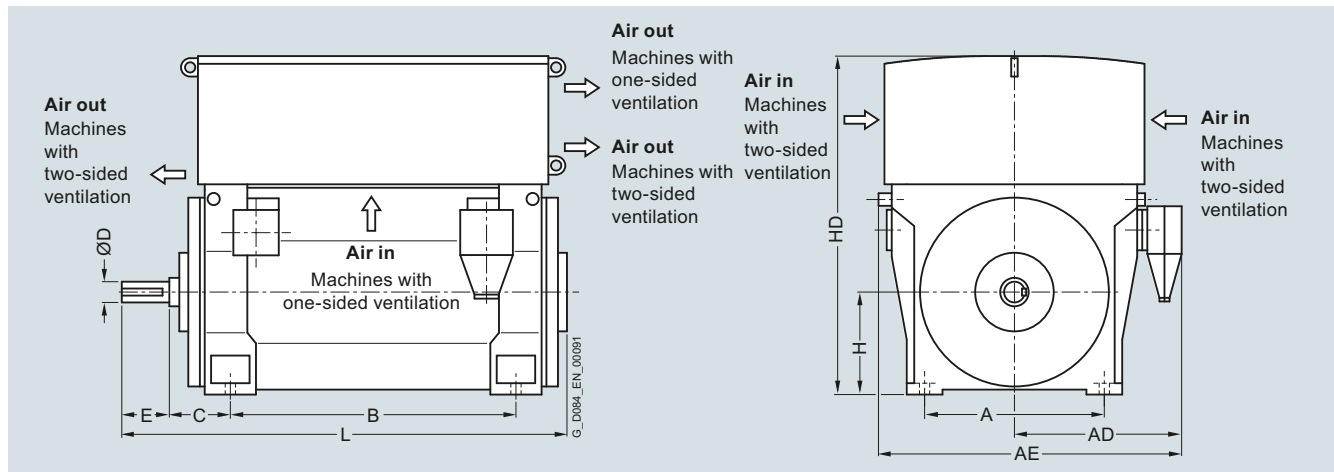


Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RA6 series</b>											
12-pole											
1RA6450-5HJ.0	4150	850	930	1620	1180	250	140	200	450	1408	1896
1RA6452-5HJ.0	4450	850	930	1620	1180	250	140	200	450	1408	1896
1RA6454-5HJ.0	4800	850	930	1620	1400	280	140	200	450	1408	2136
1RA6456-5HJ.0	5150	850	930	1620	1400	280	140	200	450	1408	2136
1RA6500-5HJ.0	5250	950	1000	1760	1320	280	160	240	500	1520	2270
1RA6502-5HJ.0	5650	950	1000	1760	1320	280	160	240	500	1520	2270
1RA6504-5HJ.0	6100	950	1000	1760	1500	280	170	240	500	1520	2480
1RA6506-5HJ.0	6550	950	1000	1760	1500	280	170	240	500	1520	2480
1RA6560-5HJ.0	7150	1060	1070	1900	1400	315	180	240	560	1750	2300
1RA6562-5HJ.0	7700	1060	1070	1900	1400	315	180	240	560	1750	2300
1RA6564-5HJ.0	8500	1060	1070	1900	1600	315	190	280	560	1750	2570
1RA6566-5HJ.0	8950	1060	1070	1900	1600	315	190	280	560	1750	2570

Note: Higher pole numbers are available on request.

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

## 9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RA6 series

2-pole											
1RA6450-2HJ.0 <sup>1)</sup>	3700	850	1070	1840	1180	280	95	130	450	1628	1875
1RA6452-2HJ.0 <sup>1)</sup>	3900	850	1070	1840	1180	280	95	130	450	1628	1875
1RA6454-2HJ.0 <sup>1)</sup>	4300	850	1070	1840	1400	280	95	130	450	1628	2085
1RA6456-2HJ.0 <sup>1)</sup>	4550	850	1070	1840	1400	280	95	130	450	1628	2085
1RA6500-2HJ.0 <sup>1)</sup>	5450	950	1270	1970	1320	315	110	165	500	1850	2150
1RA6502-2HJ.0 <sup>1)</sup>	5600	950	1270	1970	1320	315	110	165	500	1850	2150
4-pole											
1RA6450-4HJ.0	4050	850	1070	1840	1180	250	130	200	450	1408	1896
1RA6452-4HJ.0	4250	850	1070	1840	1180	250	130	200	450	1408	1896
1RA6454-4HJ.0	4650	850	1070	1840	1400	250	130	200	450	1408	2106
1RA6456-4HJ.0	4950	850	1070	1840	1400	250	130	200	450	1408	2106
1RA6500-4HJ.0	5950	950	1270	1970	1320	280	150	200	500	1850	2150
1RA6502-4HJ.0	6150	950	1270	1970	1320	280	150	200	500	1850	2150
1RA6504-4HJ.0	6800	950	1270	1970	1500	280	150	200	500	1850	2300
1RA6506-4HJ.0	7150	950	1270	1970	1500	280	150	200	500	1850	2300
1RA6560-4HJ.0	7450	1060	1340	2110	1400	315	170	240	560	2100	2300
1RA6562-4HJ.0	7850	1060	1340	2110	1400	315	170	240	560	2100	2300
1RA6564-4HJ.0	8700	1060	1340	2110	1600	315	170	240	560	2100	2550
1RA6566-4HJ.0	9250	1060	1340	2110	1600	315	170	240	560	2100	2550

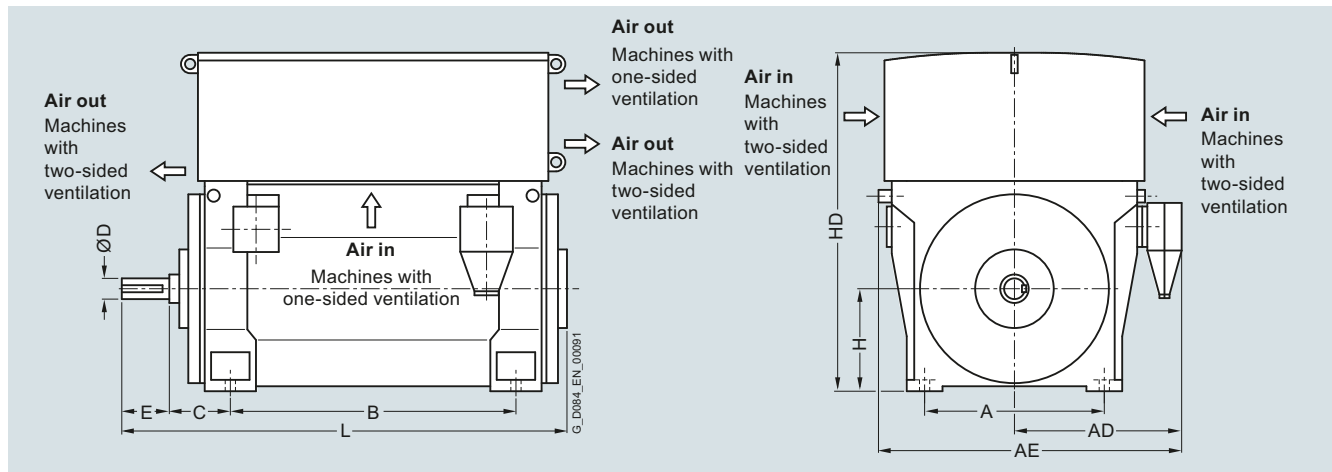
1) Anti-friction bearings only for 50 Hz operation.

## Motors for line operation

### Air-cooled motors

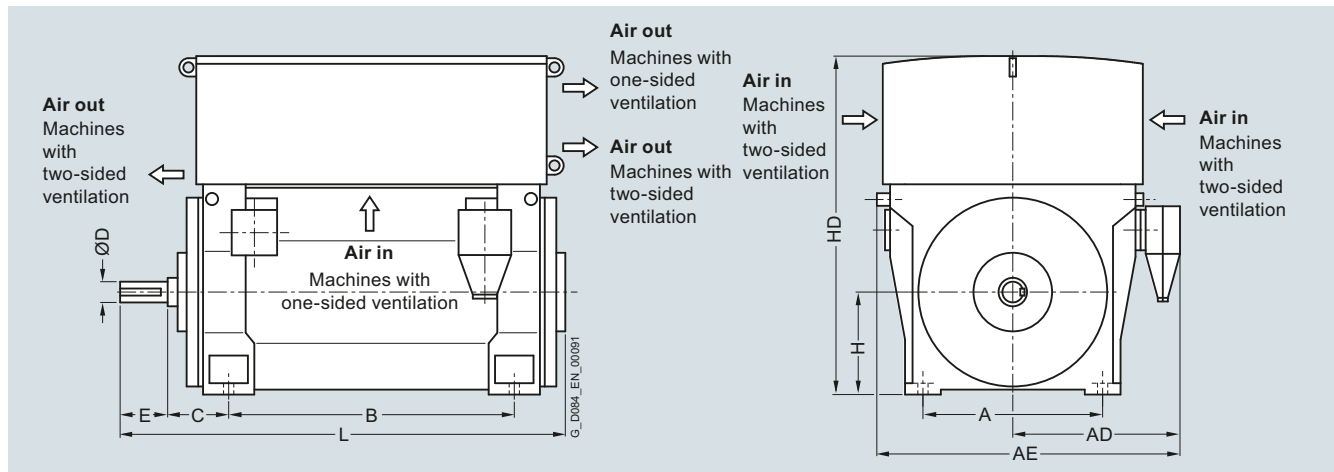
#### SIMOTICS HV M 1RA6

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RA6 series</b>											
<b>6-pole</b>											
1RA6450-6HJ.0	4150	850	1070	1840	1180	250	140	200	450	1408	1896
1RA6452-6HJ.0	4400	850	1070	1840	1180	250	140	200	450	1408	1896
1RA6454-6HJ.0	4750	850	1070	1840	1400	280	140	200	450	1408	2136
1RA6456-6HJ.0	5100	850	1070	1840	1400	280	140	200	450	1408	2136
1RA6500-6HJ.0	6050	950	1270	1970	1320	315	160	240	500	1610	2150
1RA6502-6HJ.0	6350	950	1270	1970	1320	315	160	240	500	1610	2150
1RA6504-6HJ.0	6900	950	1270	1970	1500	315	160	240	500	1610	2360
1RA6506-6HJ.0	7300	950	1270	1970	1500	315	160	240	500	1610	2360
1RA6560-6HJ.0	8200	1060	1340	2110	1400	315	180	240	560	1760	2300
1RA6562-6HJ.0	8600	1060	1340	2110	1400	315	180	240	560	1760	2300
1RA6564-6HJ.0	9450	1060	1340	2110	1600	315	180	240	560	1760	2550
1RA6566-6HJ.0	10000	1060	1340	2110	1600	315	180	240	560	1760	2550
<b>8-pole</b>											
1RA6450-8HJ.0	4150	850	1070	1840	1180	250	140	200	450	1408	1896
1RA6452-8HJ.0	4450	850	1070	1840	1180	250	140	200	450	1408	1896
1RA6454-8HJ.0	4800	850	1070	1840	1400	280	140	200	450	1408	2136
1RA6456-8HJ.0	5150	850	1070	1840	1400	280	140	200	450	1408	2136
1RA6500-8HJ.0	6000	950	1270	1970	1320	315	160	240	500	1610	2150
1RA6502-8HJ.0	6300	950	1270	1970	1320	315	160	240	500	1610	2150
1RA6504-8HJ.0	6900	950	1270	1970	1500	315	160	240	500	1610	2360
1RA6506-8HJ.0	7250	950	1270	1970	1500	315	160	240	500	1610	2360
1RA6560-8HJ.0	8150	1060	1340	2110	1400	315	180	240	560	1760	2300
1RA6562-8HJ.0	8600	1060	1340	2110	1400	315	180	240	560	1760	2300
1RA6564-8HJ.0	9400	1060	1340	2110	1600	315	180	240	560	1760	2550
1RA6566-8HJ.0	9950	1060	1340	2110	1600	315	180	240	560	1760	2550

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

## 9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RA6 series

10-pole											
1RA6500-3HJ.0	5250	950	1220	1980	1320	280	160	240	500	1520	2270
1RA6502-3HJ.0	5600	950	1220	1980	1320	280	160	240	500	1520	2270
1RA6504-3HJ.0	6150	950	1220	1980	1500	280	170	240	500	1520	2480
1RA6506-3HJ.0	6500	950	1220	1980	1500	280	170	240	500	1520	2480
1RA6560-3HJ.0	7350	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA6562-3HJ.0	7950	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA6564-3HJ.0	8750	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA6566-3HJ.0	9200	1060	1210	2040	1600	315	190	280	560	1750	2570
12-pole											
1RA6502-5HJ.0	5650	950	1220	1980	1320	280	160	240	500	1520	2270
1RA6504-5HJ.0	6100	950	1220	1980	1500	280	170	240	500	1520	2480
1RA6506-5HJ.0	6500	950	1220	1980	1500	280	170	240	500	1520	2480
1RA6560-5HJ.0	7100	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA6562-5HJ.0	7650	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA6564-5HJ.0	8450	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA6566-5HJ.0	8900	1060	1210	2040	1600	315	190	280	560	1750	2570

## Note:

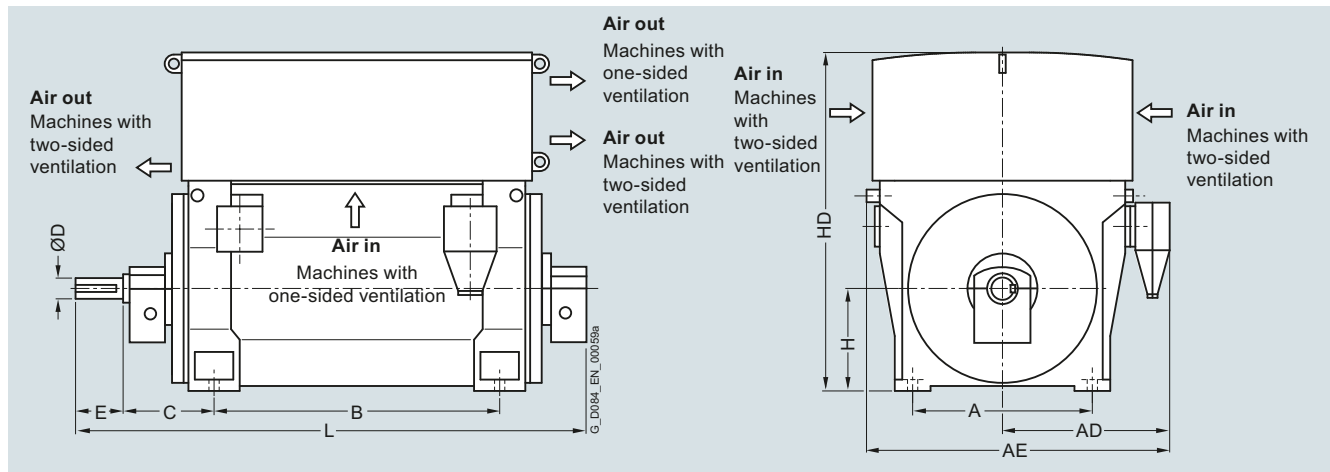
Higher pole numbers are available on request.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RA6

#### Dimension drawings

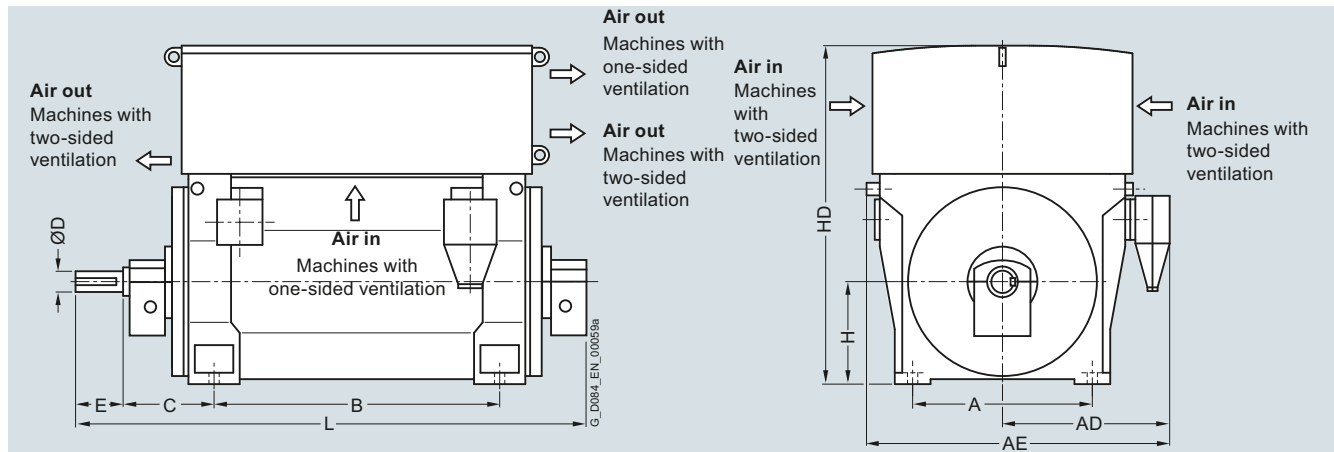


Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RA6 series</b>											
<b>2-pole</b>											
1RA6450-2HJ.0-Z K96 <sup>2)</sup>	3750	850	930	1620	1180	425	95	130	450	1628	2218
1RA6452-2HJ.0-Z K96 <sup>2)</sup>	3950	850	930	1620	1180	425	95	130	450	1628	2218
1RA6454-2HJ.0-Z K96 <sup>2)</sup>	4300	850	930	1620	1400	425	95	130	450	1628	2428
1RA6456-2HJ.0-Z K96 <sup>2)</sup>	4550	850	930	1620	1400	425	95	130	450	1628	2428
1RA6500-2HJ.0-Z K96 <sup>2)</sup>	5500	950	1135	1835	1320	450	110	165	500	1850	2500
1RA6502-2HJ.0-Z K96 <sup>2)</sup>	5650	950	1135	1835	1320	450	110	165	500	1850	2500
1RA6504-2HJ.0	6450	950	1135	1835	1500	450	110	165	500	1850	2650
1RA6506-2HJ.0	6700	950	1135	1835	1500	450	110	165	500	1850	2650
1RA6560-2HJ.0	7450	1060	1205	1975	1400	600	130	200	560	2100	2850
1RA6562-2HJ.0	7850	1060	1205	1975	1400	600	130	200	560	2100	2850
1RA6564-2HJ.0	8750	1060	1205	1975	1600	600	130	200	560	2100	3100
1RA6566-2HJ.0	9200	1060	1205	1975	1600	600	130	200	560	2100	3100

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A	AD <sup>1)</sup>	AE <sup>1)</sup>	B	C	D	E	H	HD	L

## Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RA6 series

## 4-pole

1RA6450-4HJ.0-Z K96	4100	850	930	1620	1180	500	130	200	450	1408	2438
1RA6452-4HJ.0-Z K96	4350	850	930	1620	1180	500	130	200	450	1408	2438
1RA6454-4HJ.0-Z K96	4750	850	930	1620	1400	500	130	200	450	1408	2648
1RA6456-4HJ.0-Z K96	5000	850	930	1620	1400	500	130	200	450	1408	2648
1RA6500-4HJ.0-Z K96	6250	950	1135	1835	1320	560	150	200	500	1850	2700
1RA6502-4HJ.0-Z K96	6500	950	1135	1835	1320	560	150	200	500	1850	2700
1RA6504-4HJ.0-Z K96	7150	950	1135	1835	1500	560	150	200	500	1850	2880
1RA6506-4HJ.0-Z K96	7450	950	1135	1835	1500	560	150	200	500	1850	2880
1RA6560-4HJ.0-Z K96	7650	1060	1205	1975	1400	600	170	240	560	2100	2900
1RA6562-4HJ.0-Z K96	8000	1060	1205	1975	1400	600	170	240	560	2100	2900
1RA6564-4HJ.0-Z K96	8900	1060	1205	1975	1600	600	170	240	560	2100	3100
1RA6566-4HJ.0-Z K96	9400	1060	1205	1975	1600	600	170	240	560	2100	3100

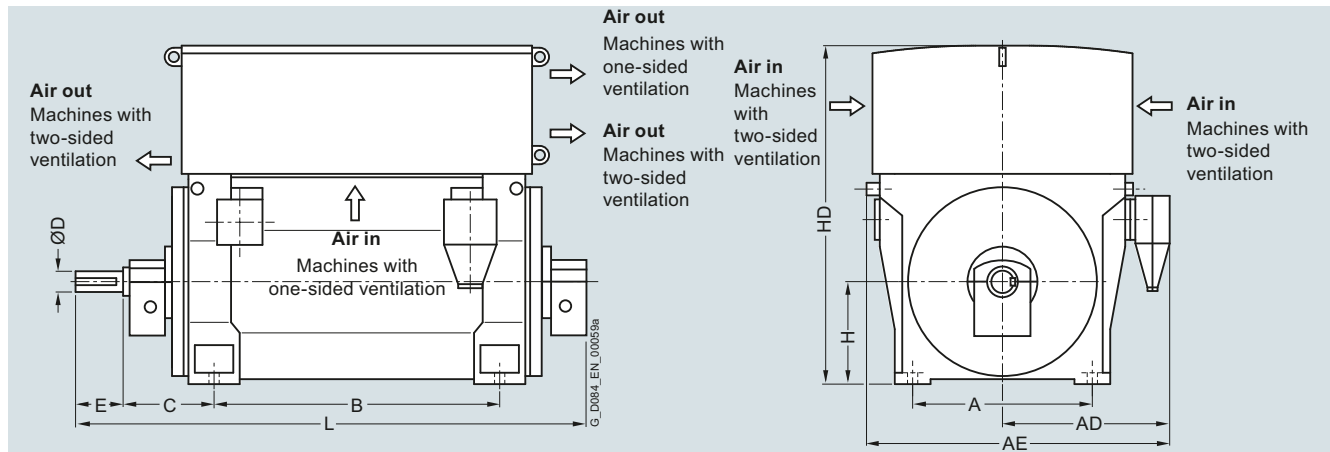
<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RA6

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A	AD <sup>1)</sup>	AE <sup>1)</sup>	B	C	D	E	H	HD	L

#### Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RA6 series

##### 6-pole

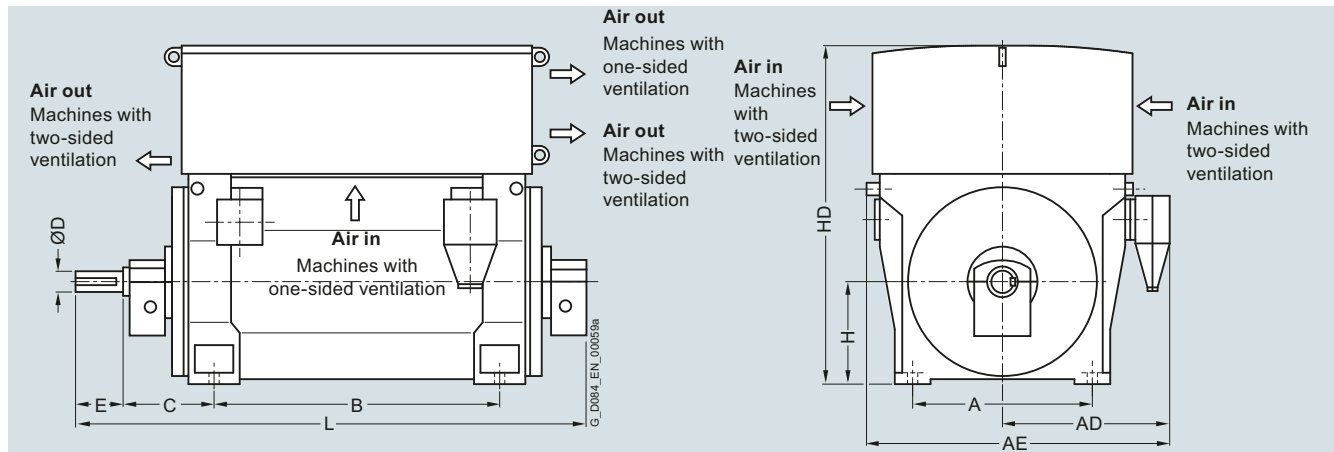
1RA6450-6HJ.0-Z K96	4200	850	930	1620	1180	500	140	200	450	1408	2438
1RA6452-6HJ.0-Z K96	4500	850	930	1620	1180	500	140	200	450	1408	2438
1RA6454-6HJ.0-Z K96	4850	850	930	1620	1400	500	140	200	450	1408	2648
1RA6456-6HJ.0-Z K96	5200	850	930	1620	1400	500	140	200	450	1408	2648
1RA6500-6HJ.0-Z K96	6250	950	1135	1835	1320	560	170	240	500	1610	2700
1RA6502-6HJ.0-Z K96	6500	950	1135	1835	1320	560	170	240	500	1610	2700
1RA6504-6HJ.0-Z K96	7100	950	1135	1835	1500	560	170	240	500	1610	2900
1RA6506-6HJ.0-Z K96	7500	950	1135	1835	1500	560	170	240	500	1610	2900
1RA6560-6HJ.0-Z K96	8450	1060	1205	1975	1400	600	170	240	560	1760	2950
1RA6562-6HJ.0-Z K96	8850	1060	1205	1975	1400	600	170	240	560	1760	2950
1RA6564-6HJ.0-Z K96	9700	1060	1205	1975	1600	600	170	240	560	1760	3150
1RA6566-6HJ.0-Z K96	10250	1060	1205	1975	1600	600	170	240	560	1760	3150

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.



## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A	AD <sup>1)</sup>	AE <sup>1)</sup>	B	C	D	E	H	HD	L
Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RA6 series											
8-pole											
1RA6450-8HJ.0-Z K96	4250	850	930	1620	1180	500	140	200	450	1408	2438
1RA6452-8HJ.0-Z K96	4550	850	930	1620	1180	500	140	200	450	1408	2438
1RA6454-8HJ.0-Z K96	4900	850	930	1620	1400	500	140	200	450	1408	2648
1RA6456-8HJ.0-Z K96	5250	850	930	1620	1400	500	140	200	450	1408	2648
1RA6500-8HJ.0-Z K96	6200	950	1135	1835	1320	560	170	240	500	1610	2700
1RA6502-8HJ.0-Z K96	6450	950	1135	1835	1320	560	170	240	500	1610	2700
1RA6504-8HJ.0-Z K96	7100	950	1135	1835	1500	560	170	240	500	1610	2900
1RA6506-8HJ.0-Z K96	7450	950	1135	1835	1500	560	170	240	500	1610	2900
1RA6560-8HJ.0-Z K96	8400	1060	1205	1975	1400	600	170	240	560	1760	2950
1RA6562-8HJ.0-Z K96	8800	1060	1205	1975	1400	600	170	240	560	1760	2950
1RA6564-8HJ.0-Z K96	9650	1060	1205	1975	1600	600	170	240	560	1760	3150
1RA6566-8HJ.0-Z K96	10150	1060	1205	1975	1600	600	170	240	560	1760	3150

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

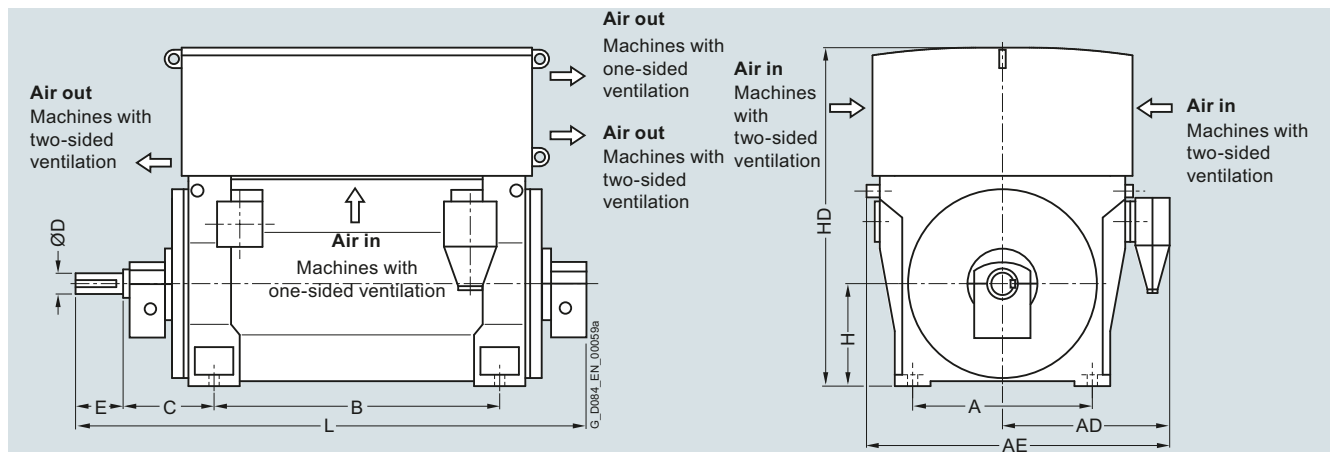
<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RA6

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A	AD <sup>1)</sup>	AE <sup>1)</sup>	B	C	D	E	H	HD	L

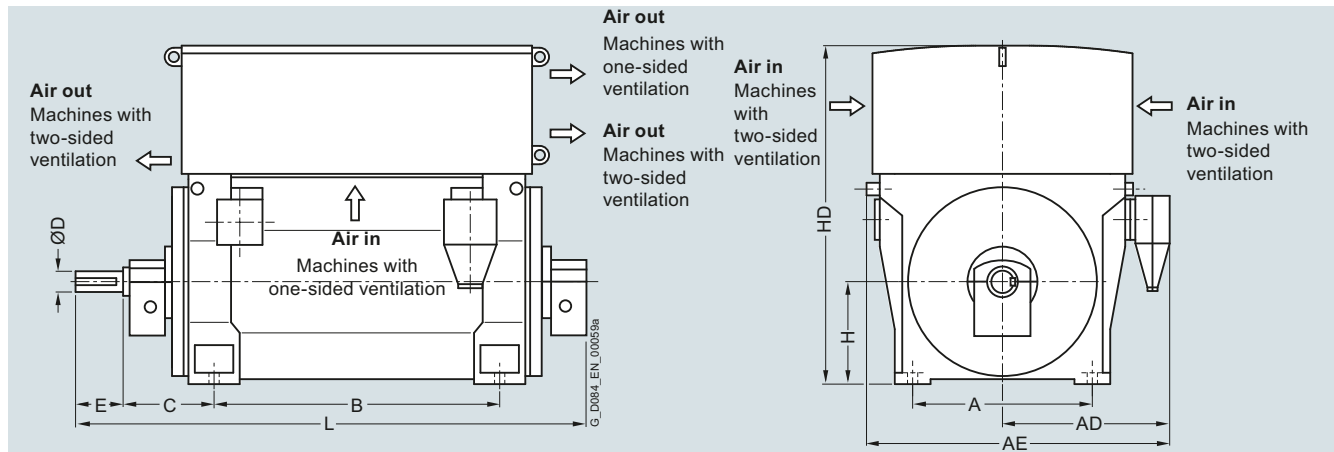
#### Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RA6 series

##### 10-pole

1RA6450-3HJ.0-Z K96	4250	850	930	1620	1180	500	140	200	450	1408	2438
1RA6452-3HJ.0-Z K96	4550	850	930	1620	1180	500	140	200	450	1408	2438
1RA6454-3HJ.0-Z K96	4900	850	930	1620	1400	500	140	200	450	1408	2648
1RA6456-3HJ.0-Z K96	5250	850	930	1620	1400	500	140	200	450	1408	2648
1RA6500-3HJ.0-Z K96	5400	950	1000	1760	1320	500	160	240	500	1520	2620
1RA6502-3HJ.0-Z K96	5800	950	1000	1760	1320	500	160	240	500	1520	2620
1RA6504-3HJ.0-Z K96	6350	950	1000	1760	1500	500	170	240	500	1520	2830
1RA6506-3HJ.0-Z K96	6700	950	1000	1760	1500	500	170	240	500	1520	2830
1RA6560-3HJ.0-Z K96	7350	1060	1070	1900	1400	530	180	240	560	1750	2670
1RA6562-3HJ.0-Z K96	7900	1060	1070	1900	1400	530	180	240	560	1750	2670
1RA6564-3HJ.0-Z K96	8700	1060	1070	1900	1600	530	190	280	560	1750	2940
1RA6566-3HJ.0-Z K96	9200	1060	1070	1900	1600	530	190	280	560	1750	2940

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A	AD <sup>1)</sup>	AE <sup>1)</sup>	B	C	D	E	H	HD	L

## Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RA6 series

## 12-pole

1RA6450-5HJ.0-Z K96	4250	850	930	1620	1180	500	140	200	450	1408	2438
1RA6452-5HJ.0-Z K96	4550	850	930	1620	1180	500	140	200	450	1408	2438
1RA6454-5HJ.0-Z K96	4900	850	930	1620	1400	500	140	200	450	1408	2648
1RA6456-5HJ.0-Z K96	5250	850	930	1620	1400	500	140	200	450	1408	2648
1RA6500-5HJ.0-Z K96	5450	950	1000	1760	1320	500	160	240	500	1520	2620
1RA6502-5HJ.0-Z K96	5800	950	1000	1760	1320	500	160	240	500	1520	2620
1RA6504-5HJ.0-Z K96	6250	950	1000	1760	1500	500	170	240	500	1520	2830
1RA6506-5HJ.0-Z K96	6700	950	1000	1760	1500	500	170	240	500	1520	2830
1RA6560-5HJ.0-Z K96	7350	1060	1070	1900	1400	530	180	240	560	1750	2670
1RA6562-5HJ.0-Z K96	7950	1060	1070	1900	1400	530	180	240	560	1750	2670
1RA6564-5HJ.0-Z K96	8700	1060	1070	1900	1600	530	190	280	560	1750	2940
1RA6566-5HJ.0-Z K96	9150	1060	1070	1900	1600	530	190	280	560	1750	2940

## Note:

Higher pole numbers are available on request.

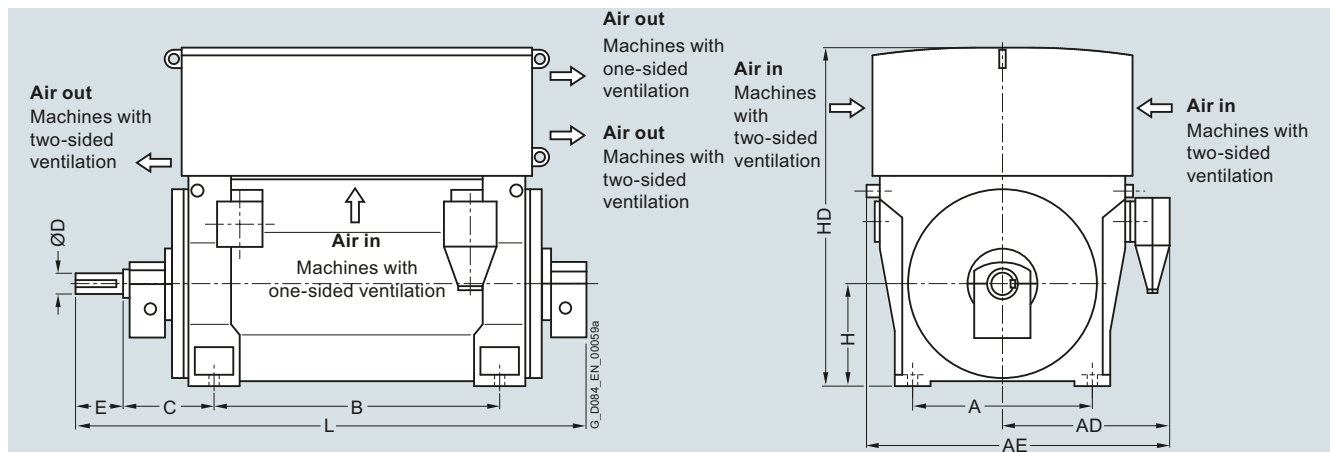
<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RA6

#### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### 9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RA6 series

##### 2-pole

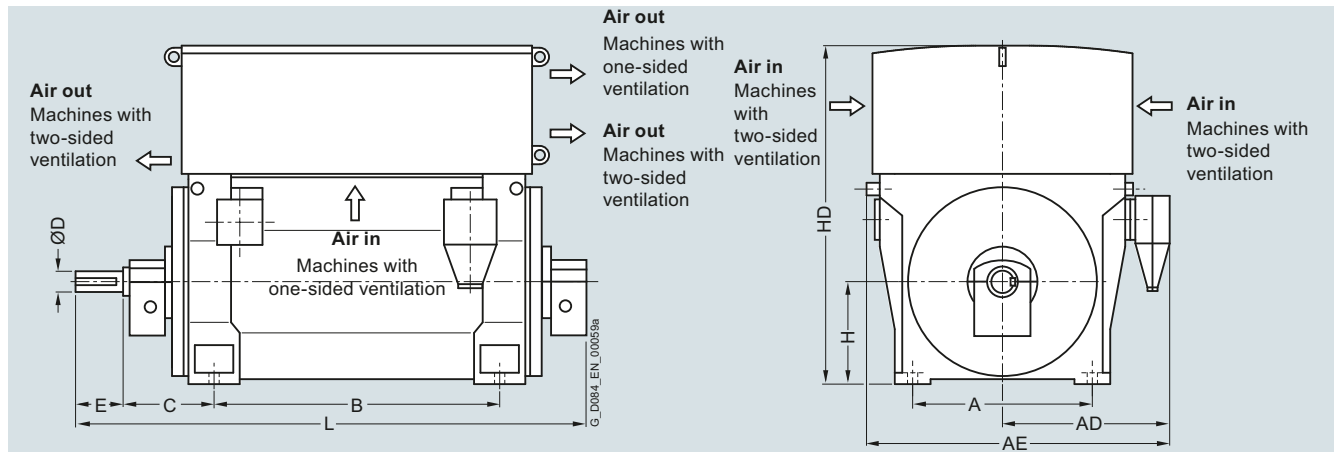
1RA6450-2HJ.0-Z K96 <sup>1)</sup>	3750	850	1070	1840	1180	425	95	130	450	1628	2218
1RA6452-2HJ.0-Z K96 <sup>1)</sup>	3950	850	1070	1840	1180	425	95	130	450	1628	2218
1RA6454-2HJ.0-Z K96 <sup>1)</sup>	4300	850	1070	1840	1400	425	95	130	450	1628	2428
1RA6456-2HJ.0-Z K96 <sup>1)</sup>	4550	850	1070	1840	1400	425	95	130	450	1628	2428
1RA6500-2HJ.0-Z K96 <sup>1)</sup>	5500	950	1270	1970	1320	450	110	165	500	1850	2500
1RA6502-2HJ.0-Z K96 <sup>1)</sup>	5650	950	1270	1970	1320	450	110	165	500	1850	2500
1RA6504-2HJ.0	6450	950	1270	1970	1500	450	110	165	500	1850	2650
1RA6506-2HJ.0	6700	950	1270	1970	1500	450	110	165	500	1850	2650
1RA6560-2HJ.0	7450	1060	1340	2110	1400	600	130	200	560	2100	2850
1RA6562-2HJ.0	7850	1060	1340	2110	1400	600	130	200	560	2100	2850
1RA6564-2HJ.0	8750	1060	1340	2110	1600	600	130	200	560	2100	3100
1RA6566-2HJ.0	9200	1060	1340	2110	1600	600	130	200	560	2100	3100

##### 4-pole

1RA6450-4HJ.0-Z K96	4100	850	1070	1840	1180	500	130	200	450	1408	2438
1RA6452-4HJ.0-Z K96	4350	850	1070	1840	1180	500	130	200	450	1408	2438
1RA6454-4HJ.0-Z K96	4750	850	1070	1840	1400	500	130	200	450	1408	2645
1RA6456-4HJ.0-Z K96	5000	850	1070	1840	1400	500	130	200	450	1408	2645
1RA6500-4HJ.0-Z K96	6250	950	1270	1970	1320	560	150	200	500	1850	2700
1RA6502-4HJ.0-Z K96	6500	950	1270	1970	1320	560	150	200	500	1850	2700
1RA6504-4HJ.0-Z K96	7150	950	1270	1970	1500	560	150	200	500	1850	2880
1RA6506-4HJ.0-Z K96	7450	950	1270	1970	1500	560	150	200	500	1850	2880
1RA6560-4HJ.0-Z K96	7650	1060	1340	2110	1400	600	170	240	560	2100	2900
1RA6562-4HJ.0-Z K96	8000	1060	1340	2110	1400	600	170	240	560	2100	2900
1RA6564-4HJ.0-Z K96	8900	1060	1340	2110	1600	600	170	240	560	2100	3100
1RA6566-4HJ.0-Z K96	9400	1060	1340	2110	1600	600	170	240	560	2100	3100

<sup>1)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

## Dimension drawings (continued)



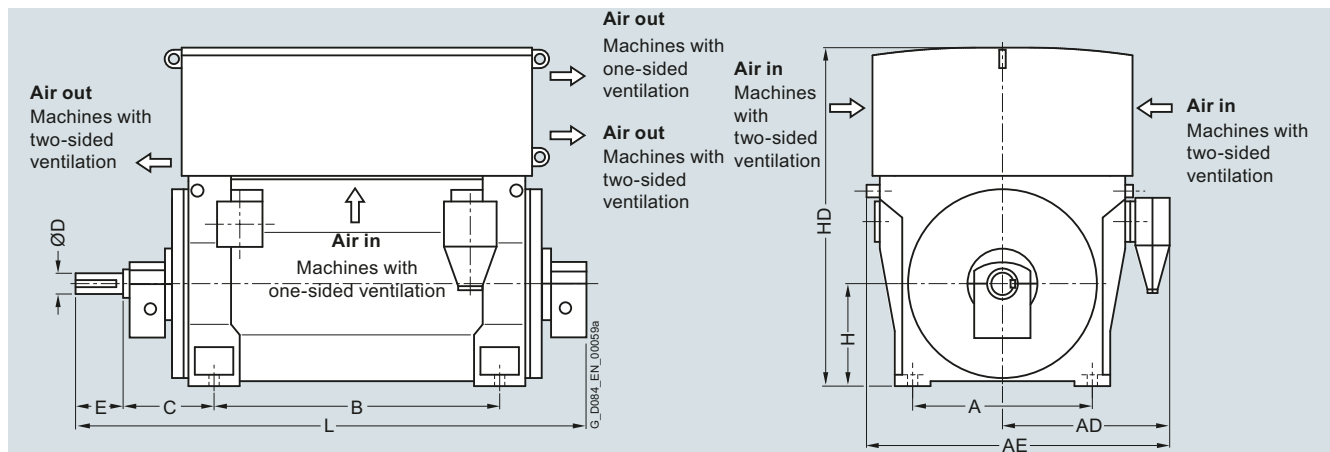
Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RA6 series</b>											
6-pole											
1RA6450-6HJ.0-Z K96	4200	850	1070	1840	1180	500	140	200	450	1408	2438
1RA6452-6HJ.0-Z K96	4500	850	1070	1840	1180	500	140	200	450	1408	2438
1RA6454-6HJ.0-Z K96	4850	850	1070	1840	1400	500	140	200	450	1408	2648
1RA6456-6HJ.0-Z K96	5200	850	1070	1840	1400	500	140	200	450	1408	2648
1RA6500-6HJ.0-Z K96	6250	950	1270	1970	1320	560	170	240	500	1610	2700
1RA6502-6HJ.0-Z K96	6500	950	1270	1970	1320	560	170	240	500	1610	2700
1RA6504-6HJ.0-Z K96	7100	950	1270	1970	1500	560	170	240	500	1610	2900
1RA6506-6HJ.0-Z K96	7500	950	1270	1970	1500	560	170	240	500	1610	2900
1RA6560-6HJ.0-Z K96	8450	1060	1340	2110	1400	600	170	240	560	1760	2950
1RA6562-6HJ.0-Z K96	8850	1060	1340	2110	1400	600	170	240	560	1760	2950
1RA6564-6HJ.0-Z K96	9700	1060	1340	2110	1600	600	170	240	560	1760	3150
1RA6566-6HJ.0-Z K96	10250	1060	1340	2110	1600	600	170	240	560	1760	3150

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RA6

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### 9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RA6 series

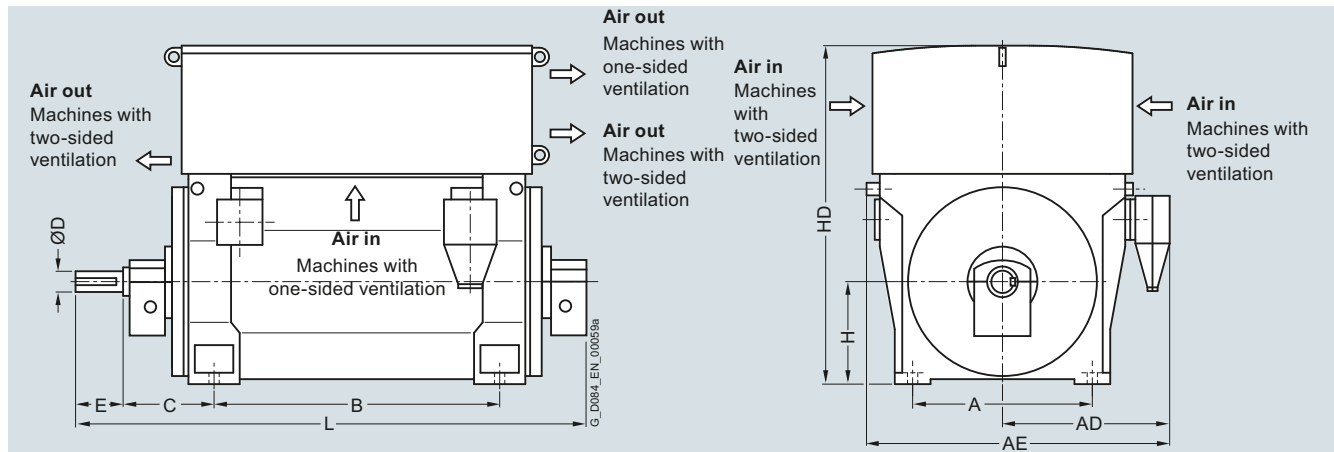
##### 8-pole

1RA6450-8HJ.0-Z K96	4250	850	1070	1840	1180	500	140	200	450	1408	2438
1RA6452-8HJ.0-Z K96	4550	850	1070	1840	1180	500	140	200	450	1408	2438
1RA6454-8HJ.0-Z K96	4900	850	1070	1840	1400	500	140	200	450	1408	2648
1RA6456-8HJ.0-Z K96	5250	850	1070	1840	1400	500	140	200	450	1408	2648
1RA6500-8HJ.0-Z K96	6200	950	1270	1970	1320	560	170	240	500	1610	2700
1RA6502-8HJ.0-Z K96	6450	950	1270	1970	1320	560	170	240	500	1610	2700
1RA6504-8HJ.0-Z K96	7100	950	1270	1970	1500	560	170	240	500	1610	2900
1RA6506-8HJ.0-Z K96	7450	950	1270	1970	1500	560	170	240	500	1610	2900
1RA6560-8HJ.0-Z K96	8400	1060	1340	2110	1400	600	170	240	560	1760	2950
1RA6562-8HJ.0-Z K96	8800	1060	1340	2110	1400	600	170	240	560	1760	2950
1RA6564-8HJ.0-Z K96	9650	1060	1340	2110	1600	600	170	240	560	1760	3150
1RA6566-8HJ.0-Z K96	10150	1060	1340	2110	1600	600	170	240	560	1760	3150

##### 10-pole

1RA6500-3HJ.0-Z K96	5400	950	1150	1980	1320	500	160	240	500	1520	2430
1RA6502-3HJ.0-Z K96	5800	950	1150	1980	1320	500	160	240	500	1520	2430
1RA6504-3HJ.0-Z K96	6300	950	1150	1980	1500	500	170	240	500	1520	2680
1RA6506-3HJ.0-Z K96	6650	950	1150	1980	1500	500	170	240	500	1520	2680
1RA6560-3HJ.0-Z K96	7550	1060	1220	2040	1400	530	180	240	560	1750	2670
1RA6562-3HJ.0-Z K96	8150	1060	1220	2040	1400	530	180	240	560	1750	2670
1RA6564-3HJ.0-Z K96	8950	1060	1220	2040	1600	530	190	280	560	1750	2960
1RA6566-3HJ.0-Z K96	9400	1060	1220	2040	1600	530	190	280	560	1750	2960

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RA6 series</b>											
12-pole											
1RA6502-5HJ.0-Z K96	5800	950	1150	1980	1320	500	160	240	500	1520	2430
1RA6504-5HJ.0-Z K96	6250	950	1150	1980	1500	500	170	240	500	1520	2680
1RA6506-5HJ.0-Z K96	6650	950	1150	1980	1500	500	170	240	500	1520	2680
1RA6560-5HJ.0-Z K96	7350	1060	1220	2040	1400	530	180	240	560	1750	2670
1RA6562-5HJ.0-Z K96	7850	1060	1220	2040	1400	530	180	240	560	1750	2670
1RA6564-5HJ.0-Z K96	8650	1060	1220	2040	1600	530	190	280	560	1750	2960
1RA6566-5HJ.0-Z K96	9150	1060	1220	2040	1600	530	190	280	560	1750	2960

Note:

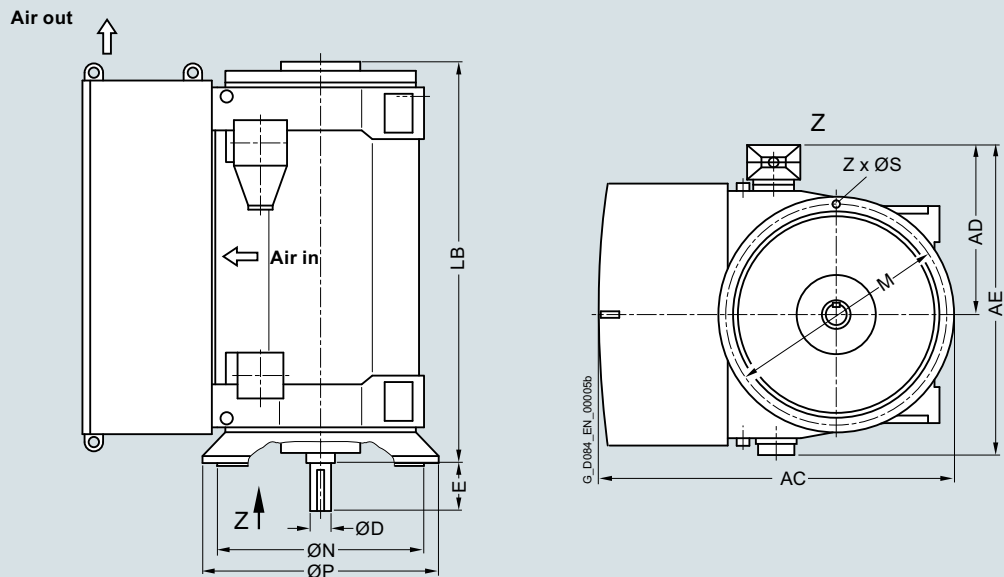
Higher pole numbers are available on request.

## Motors for line operation

Air-cooled motors

### SIMOTICS HV M 1RA6

#### Dimension drawings



Motor type	Weight kg	Dimensions											
		AC	AD <sup>1)</sup>	AE <sup>1)</sup>	D	E	LB	P	N	M	S	Z	
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Quantity

#### Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RA6 series

4-pole

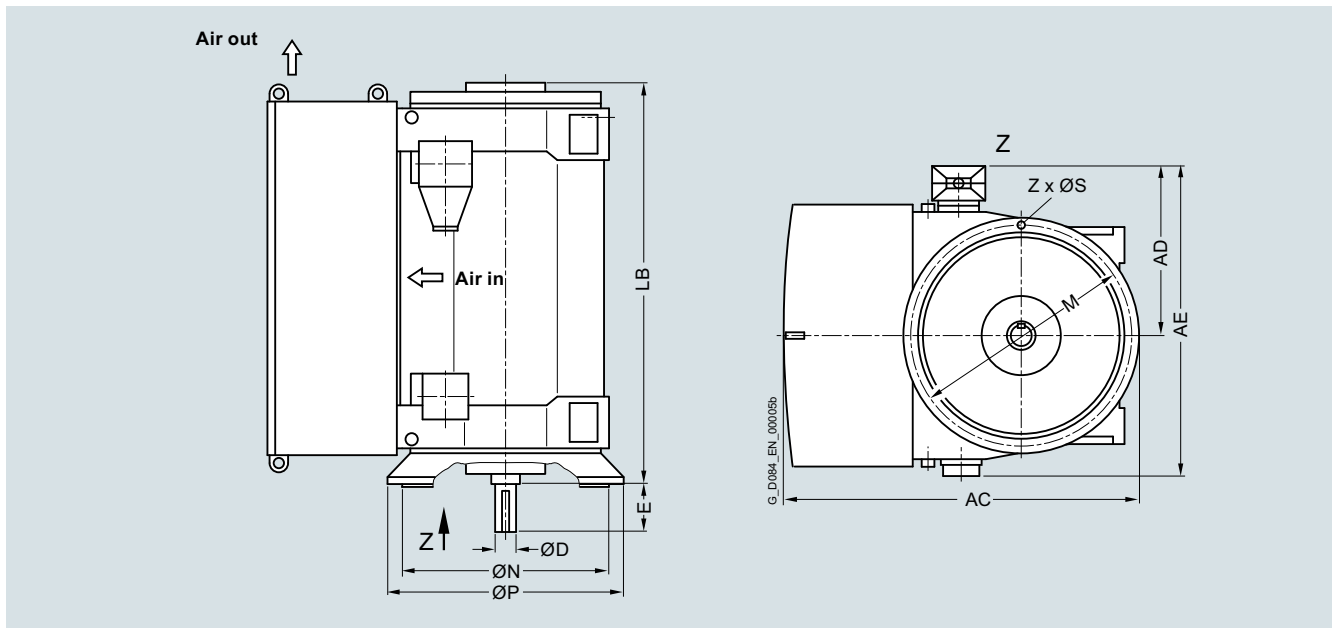
1RA6450-4HJ.8	4250	1533	930	1620	130	200	1720	1150	1000	1080	26	8
1RA6452-4HJ.8	4450	1533	930	1620	130	200	1720	1150	1000	1080	26	8
1RA6454-4HJ.8	4850	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6456-4HJ.8	5150	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6500-4HJ.8	5250	1640	1000	1810	150	200	1910	1250	1120	1180	26	16
1RA6502-4HJ.8	5450	1640	1000	1810	150	200	1910	1250	1120	1180	26	16
1RA6504-4HJ.8	6150	1640	1000	1810	160	240	2120	1250	1120	1180	26	16
1RA6506-4HJ.8	6550	1640	1000	1810	160	240	2120	1250	1120	1180	26	16
1RA6560-4HJ.8	7250	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6562-4HJ.8 <sup>2)</sup>	7700	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6564-4HJ.8 <sup>2)</sup>	8600	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA6566-4HJ.8 <sup>2)</sup>	9050	1890	1210	2100	190	280	2320	1400	1250	1320	26	16

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> Vertical type of construction, only in the 50 Hz version.



## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity

## Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RA6 series

6-pole

1RA6450-6HJ.8	4350	1533	930	1620	130	200	1720	1150	1000	1080	26	8
1RA6452-6HJ.8	4600	1533	930	1620	130	200	1720	1150	1000	1080	26	8
1RA6454-6HJ.8	4950	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6456-6HJ.8	5300	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6500-6HJ.8	5400	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA6502-6HJ.8	5750	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA6504-6HJ.8	6300	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA6506-6HJ.8	6700	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA6560-6HJ.8	7400	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6562-6HJ.8	8000	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6564-6HJ.8	8800	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA6566-6HJ.8	9300	1890	1210	2100	190	280	2320	1400	1250	1320	26	16

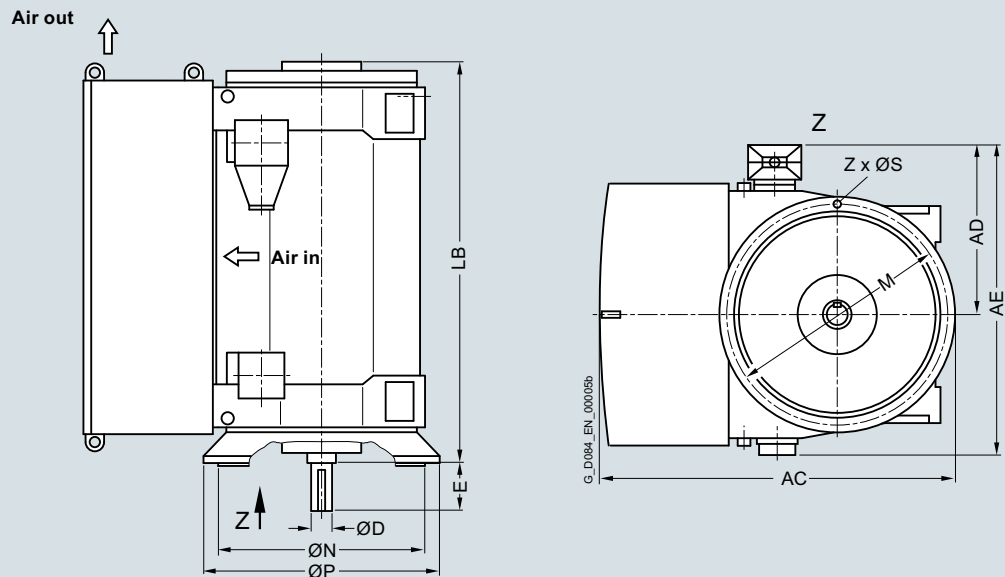
<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

## Motors for line operation

Air-cooled motors

### SIMOTICS HV M 1RA6

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity

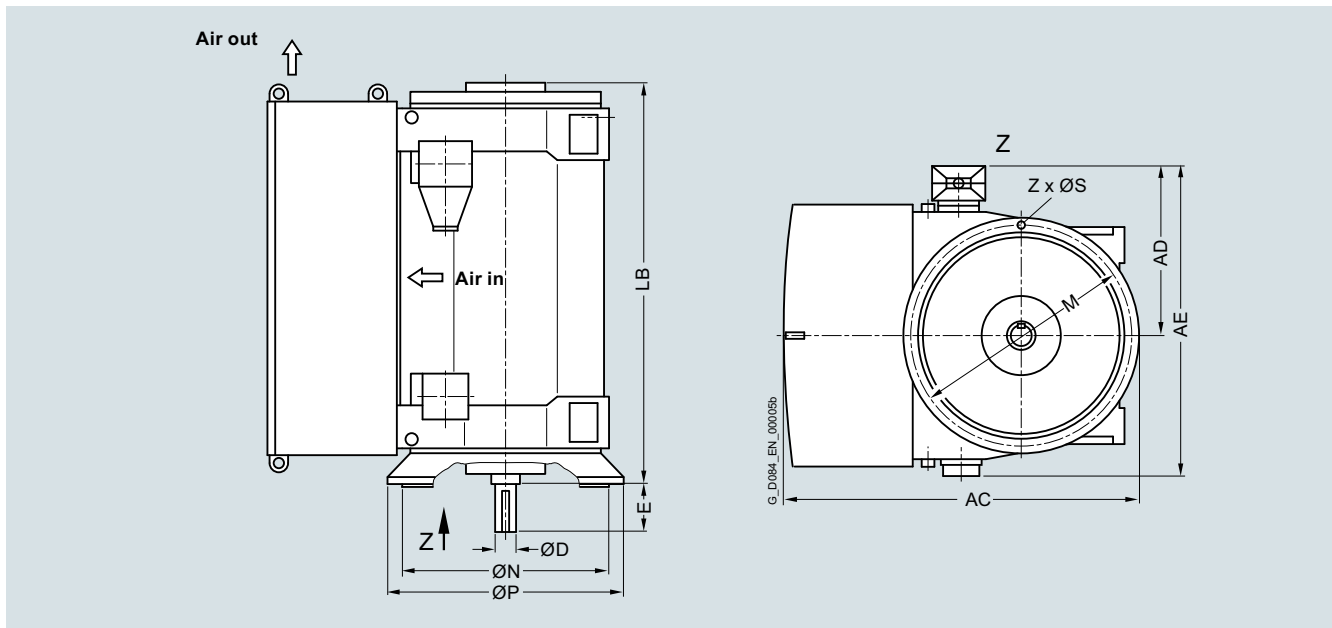
#### Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RA6 series

8-pole

1RA6450-8HJ.8	4350	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6452-8HJ.8	4650	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6454-8HJ.8	5000	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6456-8HJ.8	5350	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6500-8HJ.8	5450	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA6502-8HJ.8	5800	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA6504-8HJ.8	6300	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA6506-8HJ.8	6700	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA6560-8HJ.8	7350	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA6562-8HJ.8	7900	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA6564-8HJ.8	8700	1890	1070	1960	190	280	2320	1400	1250	1320	26	16
1RA6566-8HJ.8	9200	1890	1070	1960	190	280	2320	1400	1250	1320	26	16

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity

## Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RA6 series

10-pole

1RA6450-3HJ.8	4350	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6452-3HJ.8	4650	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6454-3HJ.8	5000	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6456-3HJ.8	5350	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6500-3HJ.8	5350	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA6502-3HJ.8	5750	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA6504-3HJ.8	6300	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA6506-3HJ.8	6650	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA6560-3HJ.8	7300	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA6562-3HJ.8	7900	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA6564-3HJ.8	8700	1890	1070	1960	190	280	2320	1400	1250	1320	26	16
1RA6566-3HJ.8	9150	1890	1070	1960	190	280	2320	1400	1250	1320	26	16

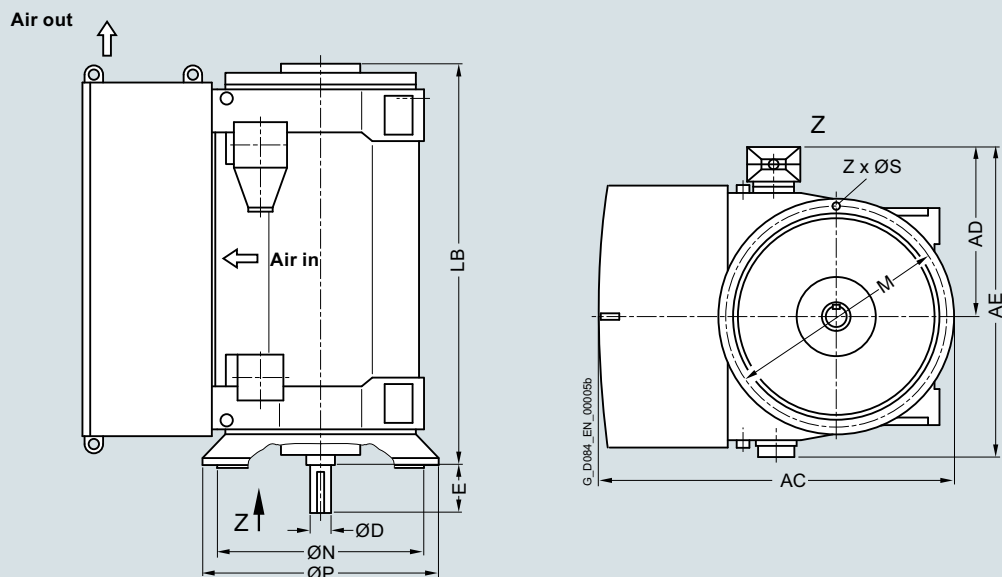
<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RA6

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions											
		AC	AD <sup>1)</sup>	AE <sup>1)</sup>	D	E	LB	P	N	M	S	Z	
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Quantity

#### Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RA6 series

##### 12-pole

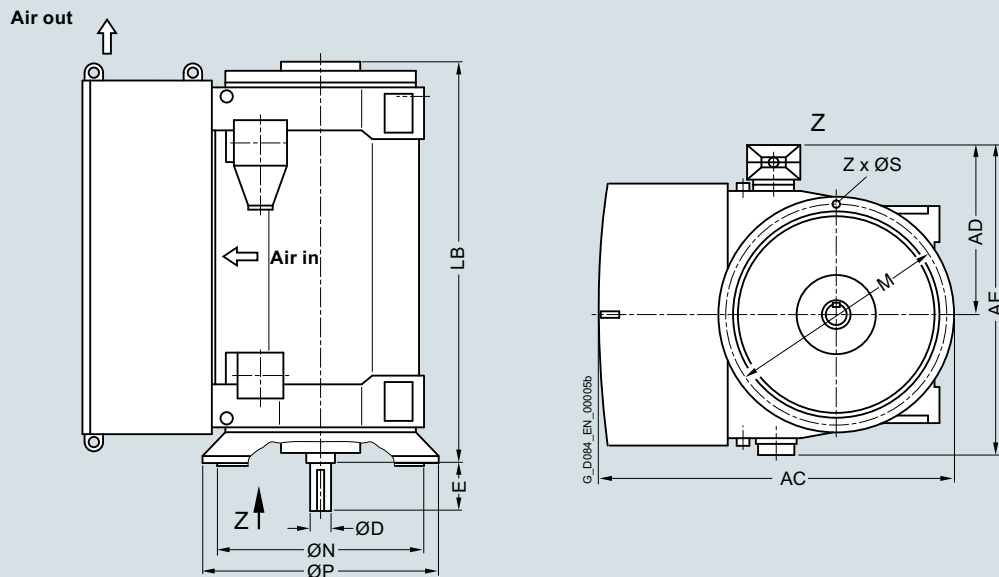
1RA6450-5HJ.8	4350	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6452-5HJ.8	4650	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6454-5HJ.8	5000	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6456-5HJ.8	5350	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6500-5HJ.8	5400	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA6502-5HJ.8	5750	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA6504-5HJ.8	6250	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA6506-5HJ.8	6650	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA6560-5HJ.8	7350	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA6562-5HJ.8	7900	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA6564-5HJ.8	8650	1890	1070	1960	190	280	2320	1400	1250	1320	26	16
1RA6566-5HJ.8	9150	1890	1070	1960	190	280	2320	1400	1250	1320	26	16

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

## Dimension drawings



Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity

## 9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RA6 series

4-pole

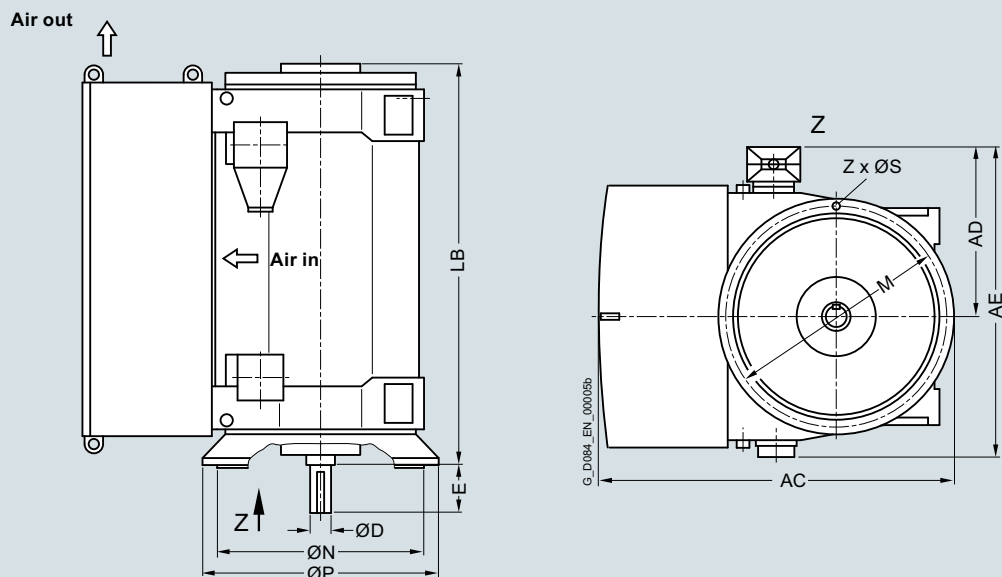
1RA6450-4HJ.8	4250	1533	1070	1840	130	200	1720	1150	1000	1080	26	8
1RA6452-4HJ.8	4450	1533	1070	1840	130	200	1720	1150	1000	1080	26	8
1RA6454-4HJ.8	4850	1533	1070	1840	130	200	1930	1150	1000	1080	26	8
1RA6456-4HJ.8	5150	1533	1070	1840	130	200	1930	1150	1000	1080	26	8
1RA6500-4HJ.8	5250	1640	1140	1950	150	200	1910	1250	1120	1180	26	16
1RA6502-4HJ.8	5450	1640	1140	1950	150	200	1910	1250	1120	1180	26	16
1RA6504-4HJ.8	6100	1640	1140	1950	160	240	2120	1250	1120	1180	26	16
1RA6506-4HJ.8	6450	1640	1140	1950	160	240	2120	1250	1120	1180	26	16
1RA6560-4HJ.8	7150	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6562-4HJ.8	7600	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6564-4HJ.8	8450	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA6566-4HJ.8	8900	1890	1210	2100	190	280	2320	1400	1250	1320	26	16

## Motors for line operation

Air-cooled motors

### SIMOTICS HV M 1RA6

#### Dimension drawings (continued)



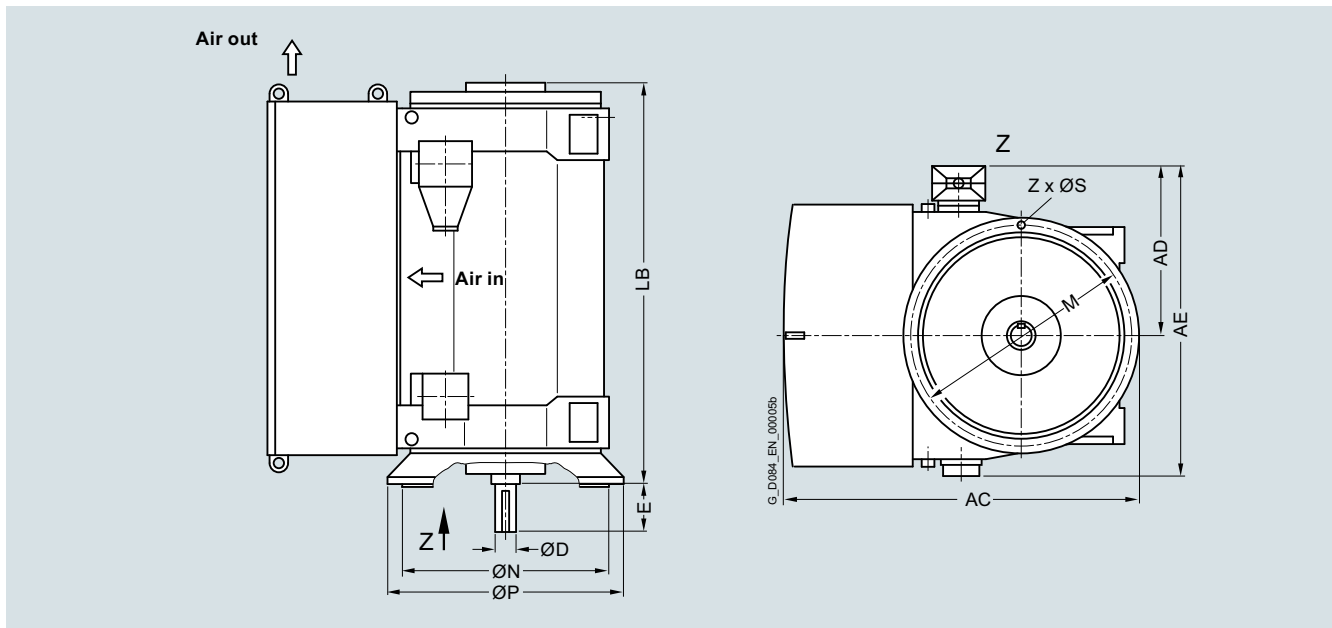
Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity

#### 9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RA6 series

6-pole

1RA6450-6HJ.8	4350	1533	1070	1840	140	200	1720	1150	1000	1080	26	8
1RA6452-6HJ.8	4600	1533	1070	1840	140	200	1720	1150	1000	1080	26	8
1RA6454-6HJ.8	4950	1533	1070	1840	140	200	1930	1150	1000	1080	26	8
1RA6456-6HJ.8	5300	1533	1070	1840	140	200	1930	1150	1000	1080	26	8
1RA6500-6HJ.8	5400	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA6502-6HJ.8	5800	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA6504-6HJ.8	6250	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA6506-6HJ.8	6650	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA6560-6HJ.8	7400	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6562-6HJ.8	7850	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6564-6HJ.8	8700	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA6566-6HJ.8	9150	1890	1210	2100	190	280	2320	1400	1250	1320	26	16

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions											
		AC	AD	AE	D	E	LB	P	N	M	S	Z	
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Quantity

## 9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RA6 series

8-pole

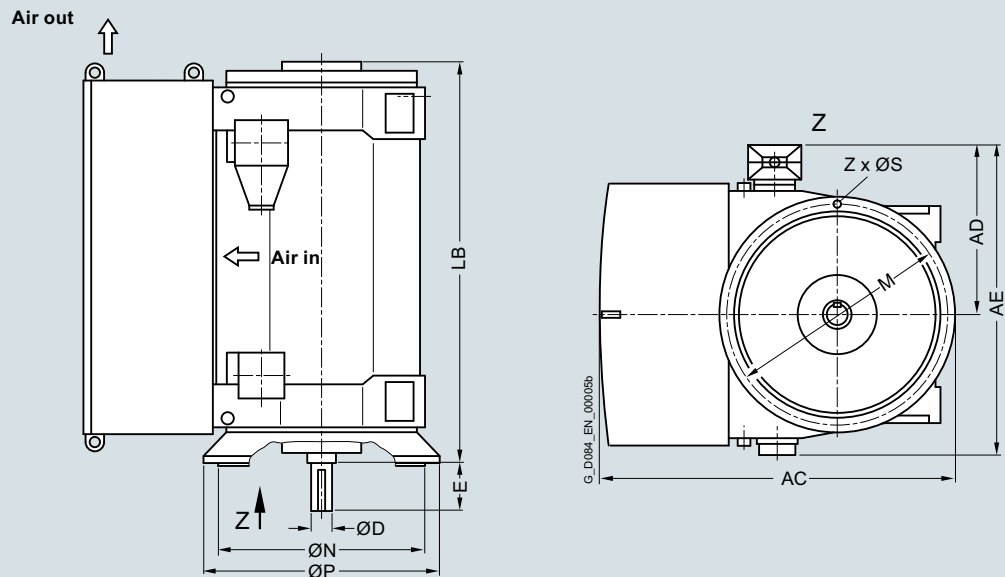
1RA6450-8HJ.8	4350	1533	1070	1840	140	200	1720	1150	1000	1080	26	8
1RA6452-8HJ.8	4650	1533	1070	1840	140	200	1720	1150	1000	1080	26	8
1RA6454-8HJ.8	5000	1533	1070	1840	140	200	1930	1150	1000	1080	26	8
1RA6456-8HJ.8	5350	1533	1070	1840	140	200	1930	1150	1000	1080	26	8
1RA6500-8HJ.8	5400	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA6502-8HJ.8	5800	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA6504-8HJ.8	6300	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA6506-8HJ.8	6650	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA6560-8HJ.8	7350	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6562-8HJ.8	7900	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6564-8HJ.8	8700	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA6566-8HJ.8	9100	1890	1210	2100	190	280	2320	1400	1250	1320	26	16

## Motors for line operation

Air-cooled motors

### SIMOTICS HV M 1RA6

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity

#### 9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RA6 series

##### 10-pole

1RA6500-3HJ.8	5350	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA6502-3HJ.8	5750	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA6504-3HJ.8	6250	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA6506-3HJ.8	6600	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA6560-3HJ.8	7450	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6562-3HJ.8	8000	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6564-3HJ.8	8750	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA6566-3HJ.8	9250	1890	1210	2100	190	280	2320	1400	1250	1320	26	16

##### 12-pole

1RA6502-5HJ.8	5750	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA6504-5HJ.8	6200	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA6506-5HJ.8	6600	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA6560-5HJ.8	7300	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6562-5HJ.8	7850	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA6564-5HJ.8	8650	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA6566-5HJ.8	9100	1890	1210	2100	190	280	2320	1400	1250	1320	26	16

#### Note:

Higher pole numbers are available on request.



## Overview



## Technical data

## Overview of technical data

SIMOTICS HV M 1RQ6, RQ7	
Rated voltage	4 ... 11 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Cooling method	IC611/IC616/IC666
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height <sup>1)</sup>	450 ... 710 mm
Bearings	Anti-friction bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN (NEMA version on request)
Frame design for shaft heights 450 ... 560 mm	Housing: Cast iron Cooling enclosure: Steel
Frame design for shaft heights 630 ... 710 mm	Housing: Steel Cooling enclosure: Steel

## Power ranges for IEC motors for line operation

1RQ6, 1SG6 (Ex ec), 1SB6 (Ex pxb) series

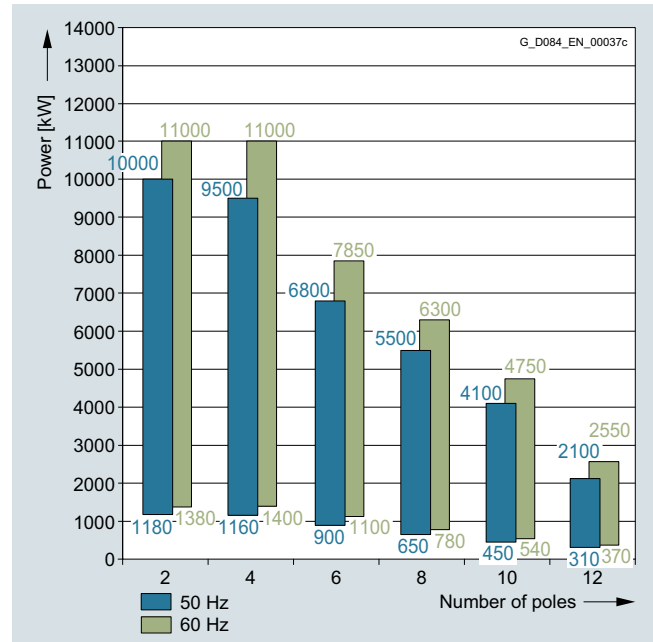
1RQ7, 1SG7 (Ex ec), 1SB7(Ex pxb) series

Insulation system, thermal class 155 (F), utilized to 130 (B).

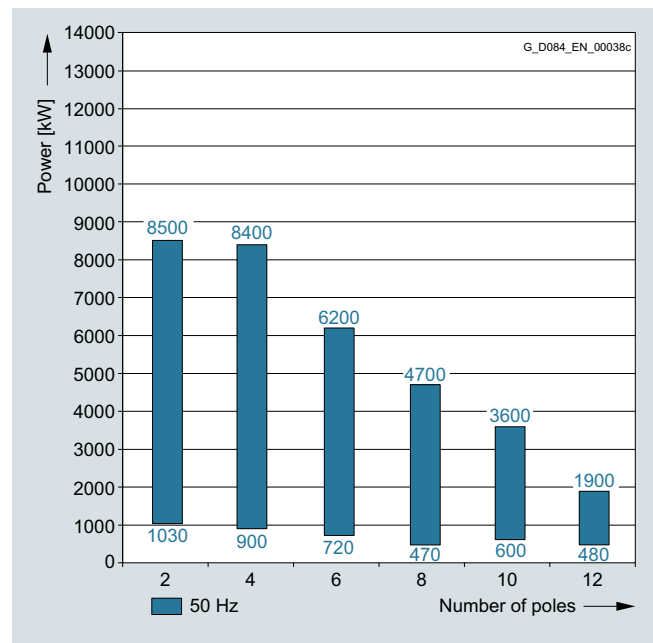
Ambient temperature up to 40 °C, installation altitude up to 1000 m.

4 to 6.6 kV; 50 Hz

4 to 6.6 kV; 60 Hz



9 to 11 kV; 50 Hz



<sup>1)</sup> For shaft height 800 motor data, refer to Chapter 3, section "Converter with non-sinusoidal output". The locked-rotor torque and locked-rotor current data are available on request.

## Motors for line operation

Air-cooled motors

### SIMOTICS HV M 1RQ6, 1RQ7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SB6/1SB7 (Ex pxb) and 1SG6/1SG7 (Ex ec).

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 50 Hz</b>														
2-pole														
1180	<b>1RQ6450-2JJ</b> ■ 0	2977	136	95.4	95.4	0.88	0.87	3785	2.45	0.75	5.40	12	74	
1320	<b>1RQ6452-2JJ</b> ■ 0	2978	150	95.7	95.8	0.89	0.88	4232	2.45	0.70	5.50	14	76	
1480	<b>1RQ6454-2JJ</b> ■ 0	2980	166	95.9	95.9	0.89	0.87	4742	2.50	0.65	5.50	15	78	
1620	<b>1RQ6456-2JJ</b> ■ 0	2980	180	96.2	96.2	0.90	0.89	5191	2.45	0.60	5.50	17	81	
1920	<b>1RQ6500-2JJ</b> ■ 0	2978	215	96.1	96.2	0.90	0.89	6156	2.25	0.65	5.25	19	71	
2180	<b>1RQ6502-2JJ</b> ■ 0	2975	240	96.3	96.6	0.90	0.90	6997	2.15	0.65	4.80	21	79	
2380	<b>1RQ6504-2JJ</b> ■ 0	2976	260	96.5	96.8	0.91	0.91	7636	2.20	0.60	5.20	25	88	
2620	<b>1RQ6506-2JJ</b> ■ 0	2977	285	96.6	96.9	0.91	0.90	8404	2.25	0.60	5.00	26	98	
3100	<b>1RQ6560-2JJ</b> ■ 0	2979	340	96.3	96.5	0.90	0.90	9937	2.10	0.55	4.60	39	170	
3450	<b>1RQ6562-2JJ</b> ■ 0	2981	380	96.5	96.5	0.90	0.91	11051	2.25	0.55	4.85	43	190	
3850	<b>1RQ6564-2JJ</b> ■ 0	2982	420	96.8	96.8	0.91	0.91	12328	2.35	0.60	5.15	49	210	
4170	<b>1RQ6566-2JJ</b> ■ 0	2982	460	96.9	96.9	0.91	0.92	13353	2.35	0.55	5.25	54	230	
4600 <sup>2)</sup>	<b>1RQ7630-2</b> ■ A ■ 0-0C ■ 0	2985	510	96.9	96.8	0.89	0.89	14716	2.40	0.80	5.20	74	269	
5100 <sup>2)</sup>	<b>1RQ7632-2</b> ■ A ■ 0-0C ■ 0	2986	560	97.0	97.0	0.90	0.89	16310	2.50	0.75	5.50	82	294	
5700 <sup>2)</sup>	<b>1RQ7634-2</b> ■ A ■ 0-0C ■ 0	2985	620	97.2	97.3	0.91	0.90	18235	2.55	0.85	5.50	91	290	
6400 <sup>2)</sup>	<b>1RQ7636-2</b> ■ A ■ 0-0C ■ 0	2986	690	97.4	97.4	0.91	0.90	20467	2.50	0.75	5.50	99	301	
7100 <sup>2)</sup>	<b>1RQ7710-2</b> ■ A ■ 0-0C ■ 0	2988	770	96.8	96.5	0.92	0.91	22690	2.30	0.85	5.30	149	263	
8000 <sup>2)</sup>	<b>1RQ7712-2</b> ■ A ■ 0-0C ■ 0	2987	850	97.0	96.7	0.93	0.92	25575	2.35	0.80	5.30	160	248	
9000 <sup>2)</sup>	<b>1RQ7714-2</b> ■ A ■ 0-0C ■ 0	2988	960	97.2	97.0	0.93	0.92	28762	2.35	0.80	5.30	175	251	
10000 <sup>2)</sup>	<b>1RQ7716-2</b> ■ A ■ 0-0C ■ 0	2987	1060	97.3	97.1	0.93	0.93	31969	2.35	0.80	5.30	189	240	

#### Position ■ of the Article No.:

#### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)

#### For shaft heights 630, 710 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- housing and bearing version (15th position)

#### Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> 1RQ7 types with rated voltage below 4.16 kV on request.

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 50 Hz</b>														
4-pole														
1160	<b>1RQ6450-4JJ</b>	1486	134	95.6	95.8	0.87	0.86	7454	2.60	0.65	5.15	21	315	
1270	<b>1RQ6452-4JJ</b>	1486	146	95.8	95.9	0.87	0.85	8161	2.65	0.60	5.20	23	350	
1350	<b>1RQ6454-4JJ</b>	1486	152	95.9	96.1	0.89	0.88	8675	2.55	0.65	5.20	26	390	
1480	<b>1RQ6456-4JJ</b>	1487	164	96.1	96.3	0.90	0.89	9504	2.75	0.75	5.50	30	435	
1880 <sup>2)</sup>	<b>1RQ6500-4JJ</b> 0	1485	215	95.6	96.1	0.89	0.88	12089	2.40	0.70	4.95	45	400	
2100 <sup>2)</sup>	<b>1RQ6502-4JJ</b> 0	1486	235	95.8	96.3	0.89	0.89	13494	2.45	0.70	5.00	48	450	
2320 <sup>2)</sup>	<b>1RQ6504-4JJ</b> 0	1486	260	96.0	96.5	0.89	0.89	14908	2.45	0.70	5.10	55	500	
2500 <sup>2)</sup>	<b>1RQ6506-4JJ</b> 0	1487	280	96.2	96.6	0.90	0.89	16054	2.55	0.70	5.35	59	550	
3150 <sup>2)</sup>	<b>1RQ6560-4JJ</b> 0	1490	350	96.7	96.9	0.90	0.90	20188	2.25	0.65	5.20	86	790	
3440 <sup>2)</sup>	<b>1RQ6562-4JJ</b> 0	1491	380	96.9	97.1	0.90	0.90	22031	2.15	0.55	5.20	96	870	
3900 <sup>2)</sup>	<b>1RQ6564-4JJ</b> 0	1491	430	97.0	97.2	0.91	0.91	24978	2.15	0.60	5.15	107	960	
4230 <sup>2)</sup>	<b>1RQ6566-4JJ</b> 0	1491	460	97.2	97.4	0.91	0.91	27091	2.20	0.60	5.20	117	1060	
4700 <sup>2) 3)</sup>	<b>1RQ7630-4</b> A 0-0C 0	1491	530	97.3	97.5	0.88	0.87	30102	2.45	0.70	5.20	145	1117	
5200 <sup>2) 3)</sup>	<b>1RQ7632-4</b> A 0-0C 0	1491	580	97.4	97.6	0.89	0.88	33304	2.45	0.75	5.20	159	1218	
5700 <sup>2) 3)</sup>	<b>1RQ7634-4</b> A 0-0C 0	1491	630	97.5	97.7	0.89	0.88	36506	2.35	0.65	5.00	178	1351	
6200 <sup>2) 3)</sup>	<b>1RQ7636-4</b> A 0-0C 0	1492	690	97.6	97.7	0.89	0.88	39682	2.60	0.75	5.50	193	1472	
7000 <sup>2) 3)</sup>	<b>1RQ7710-4</b> A 0-0C 0	1492	760	97.4	97.4	0.91	0.91	44802	2.45	0.70	5.20	262	910	
7800 <sup>2) 3)</sup>	<b>1RQ7712-4</b> A 0-0C 0	1493	850	97.5	97.5	0.91	0.91	49889	2.50	0.60	5.40	286	1014	
8600 <sup>2) 3)</sup>	<b>1RQ7714-4</b> A 0-0C 0	1493	930	97.6	97.5	0.91	0.91	55005	2.55	0.60	5.40	320	1175	
9500 <sup>2) 3)</sup>	<b>1RQ7716-4</b> A 0-0C 0	1493	1020	97.7	97.7	0.92	0.91	60762	2.55	0.60	5.50	361	1385	

**Position** of the Article No.:**For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- housing and bearing version (15th position)

Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) Data of vertical motors (IM V1) on request.

3) 1RQ7 types with rated voltage below 4.16 kV on request.

## Motors for line operation

## Air-cooled motors

## SIMOTICS HV M 1RQ6, 1RQ7

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 50 Hz</b>														
6-pole														
900	<b>1RQ6450-6JJ</b>	988	106	95.4	95.9	0.85	0.84	8698	2.30	0.90	4.70	28	780	
990	<b>1RQ6452-6JJ</b>	989	118	95.7	96.1	0.85	0.84	9558	2.45	0.95	5.10	32	880	
1120	<b>1RQ6454-6JJ</b>	989	132	95.9	96.2	0.85	0.84	10814	2.45	0.90	5.00	35	990	
1240	<b>1RQ6456-6JJ</b>	991	148	96.2	96.4	0.84	0.82	11948	2.55	0.80	5.10	40	1160	
1500	<b>1RQ6500-6JJ</b>	989	176	95.7	96.3	0.86	0.85	14483	2.15	0.70	4.75	56	1280	
1700	<b>1RQ6502-6JJ</b>	990	198	95.9	96.5	0.86	0.84	16397	2.25	0.70	4.95	61	1420	
1890	<b>1RQ6504-6JJ</b>	990	220	96.1	96.6	0.86	0.85	18230	2.25	0.70	4.80	68	1580	
2040	<b>1RQ6506-6JJ</b>	990	235	96.2	96.6	0.86	0.84	19677	2.20	0.65	4.90	76	1780	
2400	<b>1RQ6560-6JJ</b>	991	270	96.4	96.7	0.88	0.87	23126	2.10	0.70	4.85	107	1920	
2700	<b>1RQ6562-6JJ</b>	992	310	96.6	96.9	0.88	0.87	25991	2.15	0.70	4.85	118	2100	
3000	<b>1RQ6564-6JJ</b>	992	340	96.6	97.0	0.88	0.88	28878	2.15	0.70	4.75	131	2350	
3270	<b>1RQ6566-6JJ</b>	992	370	96.8	97.1	0.88	0.88	31478	2.20	0.70	4.95	145	2600	
3550 <sup>2)</sup>	<b>1RQ7630-6 A -0C</b>	994	420	96.9	97.0	0.84	0.83	34105	2.55	0.70	5.50	208	3459	
3950 <sup>2)</sup>	<b>1RQ7632-6 A -0C</b>	994	465	97.0	97.1	0.84	0.82	37947	2.60	0.70	5.50	228	3802	
4400 <sup>2)</sup>	<b>1RQ7634-6 A -0C</b>	994	520	97.1	97.1	0.84	0.83	42271	2.60	0.75	5.50	249	4067	
4800 <sup>2)</sup>	<b>1RQ7636-6 A -0C</b>	994	560	97.1	97.2	0.85	0.83	46113	2.55	0.75	5.50	270	4285	
5450 <sup>2)</sup>	<b>1RQ7710-6 A -0C</b>	995	630	97.1	97.1	0.86	0.84	52305	2.55	0.75	5.40	351	2438	
5900 <sup>2)</sup>	<b>1RQ7712-6 A -0C</b>	996	690	97.2	97.1	0.85	0.83	56567	2.60	0.70	5.40	396	3069	
6350 <sup>2)</sup>	<b>1RQ7714-6 A -0C</b>	996	740	97.3	97.1	0.85	0.83	60881	2.60	0.65	5.40	445	3901	
6800 <sup>2)</sup>	<b>1RQ7716-6 A -0C</b>	996	780	97.3	97.2	0.86	0.84	65196	2.60	0.65	5.40	493	4326	

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) 1RQ7 types with rated voltage below 4.16 kV on request.

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 50 Hz</b>														
8-pole														
650	1RQ6450-8JJ	743	81	95.3	95.7	0.81	0.78	8354	2.60	0.85	5.20	35	960	
710	1RQ6452-8JJ	744	88	95.6	95.9	0.81	0.77	9112	2.65	0.85	5.35	39	1060	
780	1RQ6454-8JJ	742	94	95.4	96.0	0.84	0.82	10038	2.25	0.75	4.65	44	1160	
870	1RQ6456-8JJ	744	106	95.7	96.0	0.82	0.78	11166	2.60	0.80	5.20	51	1300	
1120	1RQ6500-8JJ	743	136	95.5	96.0	0.83	0.80	14394	2.15	0.55	4.55	68	1400	
1250	1RQ6502-8JJ	743	152	95.6	96.1	0.83	0.80	16065	2.15	0.55	4.85	75	1540	
1380	1RQ6504-8JJ	744	168	95.8	96.2	0.83	0.80	17712	2.35	0.65	4.85	83	1720	
1500	1RQ6506-8JJ	744	180	95.9	96.3	0.84	0.81	19252	2.35	0.65	4.85	93	1900	
1750	1RQ6560-8JJ	743	205	96.1	96.7	0.85	0.84	22491	2.05	0.60	4.45	127	2600	
1950	1RQ6562-8JJ	743	230	96.2	96.8	0.85	0.85	25062	2.00	0.60	4.35	140	2900	
2140	1RQ6564-8JJ	743	250	96.3	96.9	0.86	0.85	27504	2.05	0.65	4.50	155	3200	
2300	1RQ6566-8JJ	744	270	96.5	97.0	0.86	0.84	29520	2.15	0.65	4.85	171	3550	
2650 <sup>2)</sup>	1RQ7630-8A-OC	744	320	96.4	96.6	0.83	0.82	34013	2.30	0.55	5.00	255	3254	
3000 <sup>2)</sup>	1RQ7632-8A-OC	744	355	96.5	96.7	0.84	0.82	38505	2.30	0.60	5.10	281	3109	
3350 <sup>2)</sup>	1RQ7634-8A-OC	744	395	96.7	96.8	0.84	0.82	42998	2.30	0.55	5.10	307	3900	
3700 <sup>2)</sup>	1RQ7636-8A-OC	744	440	96.7	96.9	0.84	0.83	47490	2.30	0.55	5.00	333	3768	
4000 <sup>2)</sup>	1RQ7710-8A-OC	745	465	96.9	97.0	0.85	0.84	51271	2.40	0.65	4.90	434	8043	
4500 <sup>2)</sup>	1RQ7712-8A-OC	746	520	96.9	97.1	0.86	0.84	57602	2.40	0.70	4.90	493	6260	
5000 <sup>2)</sup>	1RQ7714-8A-OC	746	580	97.1	97.2	0.86	0.85	64003	2.40	0.70	5.00	557	7869	
5500 <sup>2)</sup>	1RQ7716-8A-OC	746	630	97.2	97.3	0.86	0.84	70403	2.40	0.60	4.90	616	9358	

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) 1RQ7 types with rated voltage below 4.16 kV on request.

## Motors for line operation

Air-cooled motors

## SIMOTICS HV M 1RQ6, 1RQ7

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 50 Hz</b>														
10-pole														
450	<b>1RQ6450-3JJ</b>	592	59	93.7	93.6	0.78	0.72	7259	2.30	1.00	5.40	39	1250	
500	<b>1RQ6452-3JJ</b>	592	66	93.9	93.8	0.78	0.72	8066	2.40	1.00	5.50	43	1500	
560	<b>1RQ6454-3JJ</b>	592	74	94.1	94.0	0.77	0.71	9034	2.40	1.00	5.50	48	1650	
610	<b>1RQ6456-3JJ</b>	593	82	94.2	94.0	0.76	0.69	9824	2.50	1.00	5.50	54	1950	
740	<b>1RQ6500-3JJ</b>	593	94	94.6	94.6	0.80	0.76	11917	2.20	0.83	5.20	74	1600	
820	<b>1RQ6502-3JJ</b>	593	104	94.8	94.8	0.80	0.76	13206	2.30	0.85	5.40	84	1950	
900	<b>1RQ6504-3JJ</b>	593	114	94.9	94.9	0.80	0.76	14494	2.30	0.90	5.40	92	2500	
1020	<b>1RQ6506-3JJ</b>	593	128	95.1	95.1	0.80	0.74	16427	2.30	0.90	5.50	103	3100	
1220	<b>1RQ6560-3JJ</b>	594	156	95.2	95.1	0.79	0.74	19614	2.30	0.85	5.20	128	3000	
1400	<b>1RQ6562-3JJ</b>	594	176	95.5	95.4	0.80	0.75	22508	2.30	0.85	5.40	146	4600	
1550	<b>1RQ6564-3JJ</b>	594	194	95.6	95.6	0.80	0.75	24920	2.40	0.85	5.50	163	5100	
1660	<b>1RQ6566-3JJ</b>	595	215	95.7	95.7	0.78	0.72	26644	2.40	0.85	5.50	178	5700	
2000 <sup>2)</sup>	<b>1RQ7630-3 A -0C</b>	595	245	96.4	96.7	0.81	0.79	32098	2.40	0.55	4.80	257	6826	
2200 <sup>2)</sup>	<b>1RQ7632-3 A -0C</b>	595	265	96.3	96.7	0.83	0.81	35308	2.30	0.60	4.70	284	5774	
2420 <sup>2)</sup>	<b>1RQ7634-3 A -0C</b>	595	290	96.4	96.8	0.83	0.81	38839	2.25	0.55	4.70	310	6475	
2650 <sup>2)</sup>	<b>1RQ7636-3 A -0C</b>	595	320	96.5	96.9	0.83	0.81	42530	2.25	0.55	4.70	336	7242	
2950 <sup>2)</sup>	<b>1RQ7710-3 A -0C</b>	595	345	96.5	96.7	0.85	0.83	47345	2.60	0.65	4.70	431	9428	
3300 <sup>2)</sup>	<b>1RQ7712-3 A -0C</b>	596	385	96.7	96.8	0.85	0.83	52873	2.65	0.65	4.80	490	11082	
3700 <sup>2)</sup>	<b>1RQ7714-3 A -0C</b>	595	430	96.8	96.9	0.86	0.84	59382	2.60	0.60	4.70	556	14542	
4100 <sup>2)</sup>	<b>1RQ7716-3 A -0C</b>	595	470	96.8	97.0	0.87	0.85	65801	2.55	0.65	4.70	618	15981	

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#)

2) 1RQ7 types with rated voltage below 4.16 kV on request

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current $I_{rated}$ at 6 kV A	Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>4 ... 6.6 kV, 50 Hz</b>													
12-pole													
310	1RQ6450-5JJ	493	46.0	92.7	92.5	0.71	0.64	6005	2.00	0.72	4.60	39	1250
350	1RQ6452-5JJ	493	52	93.1	92.7	0.70	0.62	6780	2.20	0.78	4.90	43	1600
400	1RQ6454-5JJ	493	58	93.4	93.2	0.71	0.66	7748	2.00	0.72	4.60	48	1800
450	1RQ6456-5JJ	493	64	93.6	93.4	0.72	0.66	8717	2.10	0.75	4.80	54	1950
540	1RQ6500-5JJ	492	76	94.0	93.9	0.73	0.67	10482	2.10	0.70	4.60	74	2200
610	1RQ6502-5JJ	493	85	94.3	94.2	0.73	0.67	11816	2.20	0.75	4.80	84	3000
670	1RQ6504-5JJ	493	95	94.4	94.3	0.72	0.65	12979	2.30	0.78	5.00	91	3700
740	1RQ6506-5JJ	493	104	94.6	94.4	0.72	0.65	14335	2.30	0.78	5.20	102	4400
920	1RQ6560-5JJ	494	128	94.7	94.8	0.73	0.67	17785	2.00	0.67	4.50	128	4100
1020	1RQ6562-5JJ	495	144	94.9	94.9	0.72	0.65	19679	2.10	0.72	4.60	146	4700
1120	1RQ6564-5JJ	495	158	95.0	95.0	0.72	0.65	21608	2.20	0.72	4.80	163	5300
1220	1RQ6566-5JJ	495	172	95.2	95.1	0.72	0.65	23537	2.30	0.75	4.80	178	5900
1600 <sup>2)</sup>	1RQ7630-5 A -0C	495	205	95.8	96.1	0.78	0.75	30866	2.20	0.55	4.30	263	7967
1800 <sup>2)</sup>	1RQ7632-5 A -0C	495	235	95.9	96.2	0.77	0.73	34725	2.25	0.55	4.30	290	8683
1950 <sup>2)</sup>	1RQ7634-5 A -0C	495	250	96.0	96.3	0.78	0.74	37618	2.30	0.60	4.40	317	8900
2100 <sup>2)</sup>	1RQ7636-5 A -0C	495	270	96.1	96.3	0.78	0.74	40512	2.40	0.65	4.70	345	10218

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Higher pole numbers are available on request.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) 1RQ7 types with rated voltage below 4.16 kV on request.

## Motors for line operation

Air-cooled motors

### SIMOTICS HV M 1RQ6, 1RQ7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SB6/1SB7 (Ex pxb) and 1SG6/1SG7 (Ex ec).

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
2-pole														
1030	<b>1RQ6450-2JJ</b>	2978	71	95.1	95.2	0.88	0.87	3302	2.20	0.60	5.00	12	32	
1130	<b>1RQ6452-2JJ</b>	2980	77	95.5	95.5	0.89	0.88	3621	2.40	0.65	5.50	14	34	
1230	<b>1RQ6454-2JJ</b>	2980	83	95.6	95.8	0.89	0.89	3941	2.40	0.60	5.50	15	35	
1330	<b>1RQ6456-2JJ</b>	2981	88	95.9	96.1	0.91	0.90	4260	2.45	0.60	5.50	17	38	
1690	<b>1RQ6500-2JJ</b>	2979	114	95.9	96.1	0.90	0.90	5417	2.30	0.60	5.15	19	53	
1800	<b>1RQ6502-2JJ</b>	2979	118	96.0	96.3	0.91	0.90	5769	2.35	0.70	5.20	21	59	
1990	<b>1RQ6504-2JJ</b>	2979	130	96.2	96.4	0.92	0.91	6379	2.35	0.70	5.15	25	66	
2130	<b>1RQ6506-2JJ</b>	2979	138	96.3	96.6	0.92	0.92	6827	2.35	0.75	5.20	26	73	
2740	<b>1RQ6560-2JJ</b>	2983	182	96.1	96.1	0.90	0.90	8771	2.45	0.55	5.25	39	105	
3000	<b>1RQ6562-2JJ</b>	2982	200	96.3	96.4	0.90	0.91	9606	2.20	0.55	4.65	43	115	
3340	<b>1RQ6564-2JJ</b>	2982	220	96.5	96.5	0.91	0.91	10695	2.30	0.55	4.90	49	130	
3550	<b>1RQ6566-2JJ</b>	2983	230	96.6	96.7	0.92	0.92	11364	2.35	0.55	5.20	54	145	
3900	<b>1RQ7630-2 A 0-0C</b>	2987	260	96.7	96.6	0.89	0.88	12468	2.50	0.80	5.50	73	339	
4300	<b>1RQ7632-2 A 0-0C</b>	2986	285	96.8	96.8	0.90	0.90	13751	2.50	0.75	5.50	82	305	
4750	<b>1RQ7634-2 A 0-0C</b>	2986	310	97.0	96.9	0.91	0.91	15191	2.50	0.80	5.50	91	348	
5300	<b>1RQ7636-2 A 0-0C</b>	2986	345	97.1	97.1	0.91	0.91	16950	2.45	0.75	5.40	99	327	
6000	<b>1RQ7710-2 A 0-0C</b>	2988	385	96.4	96.1	0.93	0.92	19175	2.30	0.65	5.10	148	289	
6700	<b>1RQ7712-2 A 0-0C</b>	2988	430	96.6	96.3	0.93	0.92	21412	2.25	0.65	5.10	160	312	
7500	<b>1RQ7714-2 A 0-0C</b>	2988	480	96.9	96.6	0.93	0.93	23969	2.35	0.75	5.40	175	325	
8500	<b>1RQ7716-2 A 0-0C</b>	2988	540	97.1	96.9	0.93	0.93	27165	2.35	0.80	5.40	189	320	

#### Position ■ of the Article No.:

#### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)

#### For shaft heights 630, 710 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- housing and bearing version (15th position)

#### Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).



## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
4-pole														
900	<b>1RQ6450-4JJ</b>	1484	61	95.1	95.4	0.89	0.89	5791	2.45	0.65	5.05	21	154	
1000	<b>1RQ6452-4JJ</b>	1485	68	95.4	95.7	0.89	0.89	6430	2.50	0.65	5.10	23	194	
1120	<b>1RQ6454-4JJ</b>	1486	75	95.5	95.8	0.90	0.89	7197	2.55	0.65	5.25	27	250	
1250	<b>1RQ6456-4JJ</b>	1485	84	95.7	96.0	0.90	0.90	8038	2.45	0.65	5.05	30	310	
1570 <sup>2)</sup>	<b>1RQ6500-4JJ</b> 0	1487	106	95.2	95.8	0.89	0.89	10082	2.50	0.75	5.20	45	200	
1670 <sup>2)</sup>	<b>1RQ6502-4JJ</b> 0	1486	114	95.3	95.8	0.89	0.88	10731	2.40	0.65	5.00	48	220	
1860 <sup>2)</sup>	<b>1RQ6504-4JJ</b> 0	1487	126	95.6	96.1	0.89	0.89	11944	2.35	0.60	4.90	55	250	
2060 <sup>2)</sup>	<b>1RQ6506-4JJ</b> 0	1488	140	95.8	96.3	0.89	0.88	13220	2.55	0.65	5.50	59	280	
2650 <sup>2)</sup>	<b>1RQ6560-4JJ</b> 0	1492	176	96.5	96.7	0.90	0.90	16960	2.25	0.60	5.35	86	460	
2930 <sup>2)</sup>	<b>1RQ6562-4JJ</b> 0	1492	192	96.7	96.9	0.91	0.90	18752	2.25	0.55	5.20	96	510	
3300 <sup>2)</sup>	<b>1RQ6564-4JJ</b> 0	1491	215	96.8	97.0	0.91	0.91	21135	2.20	0.60	5.10	107	560	
3550 <sup>2)</sup>	<b>1RQ6566-4JJ</b> 0	1492	230	96.9	97.1	0.91	0.91	22721	2.30	0.60	5.35	116	620	
3950 <sup>2)</sup>	<b>1RQ7630-4</b> A 0-0C 0	1492	265	97.1	97.4	0.89	0.88	25281	2.50	0.75	5.40	145	793	
4350 <sup>2)</sup>	<b>1RQ7632-4</b> A 0-0C 0	1492	290	97.2	97.4	0.89	0.88	27841	2.50	0.70	5.30	159	656	
4800 <sup>2)</sup>	<b>1RQ7634-4</b> A 0-0C 0	1492	320	97.3	97.5	0.89	0.88	30722	2.50	0.70	5.40	176	674	
5300 <sup>2)</sup>	<b>1RQ7636-4</b> A 0-0C 0	1493	355	97.4	97.6	0.89	0.88	33899	2.50	0.65	5.40	193	794	
6000 <sup>2)</sup>	<b>1RQ7710-4</b> A 0-0C 0	1493	390	97.2	97.2	0.91	0.91	38376	2.50	0.65	5.40	262	1014	
6700 <sup>2)</sup>	<b>1RQ7712-4</b> A 0-0C 0	1493	430	97.3	97.3	0.92	0.92	42853	2.50	0.65	5.30	287	1157	
7500 <sup>2)</sup>	<b>1RQ7714-4</b> A 0-0C 0	1493	485	97.4	97.4	0.92	0.92	47970	2.50	0.70	5.30	322	1337	
8400 <sup>2)</sup>	<b>1RQ7716-4</b> A 0-0C 0	1493	540	97.5	97.5	0.92	0.93	53726	2.50	0.70	5.30	363	1369	

**Position**  
of the Article No.:**For shaft heights  
450, 500, 560 mm:**Refer to the article number  
structure on [Page 1/3](#) for:

- voltage code  
(11th position)
- type of construction  
(12th position)

**For shaft heights  
630, 710 mm:**Refer to the article number  
structure on [Page 1/5](#) for:

- cooling method  
(9th position)
- voltage code  
(11th position)
- housing and bearing  
version (15th position)

Note:Efficiencies according to IEC 60034-2-1:2007;  
stray load losses determined by statistical evaluation of measurements.1) Max. permissible external moment of inertia for three starts from cold or  
two starts from warm under the conditions described on [Page 2/2](#).

2) Data of vertical motors (IM V1) on request.

## Motors for line operation

Air-cooled motors

### SIMOTICS HV M 1RQ6, 1RQ7

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current $I_{rated}$ at 10 kV A	Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>9 ... 11 kV, 50 Hz</b>													
6-pole													
720	<b>1RQ6450-6JJ</b>	991	52	95.1	95.5	0.84	0.82	6937	2.55	0.85	5.25	28	380
800	<b>1RQ6452-6JJ</b>	990	57	95.2	95.6	0.85	0.84	7716	2.50	0.90	5.25	31	435
890	<b>1RQ6454-6JJ</b>	990	63	95.3	95.8	0.85	0.85	8584	2.40	0.85	5.05	35	490
1030	<b>1RQ6456-6JJ</b>	992	73	95.7	96.0	0.85	0.83	9915	2.55	0.80	5.20	40	570
1180	<b>1RQ6500-6JJ</b>	991	82	95.3	95.9	0.87	0.86	11370	2.30	0.75	4.90	55	740
1320	<b>1RQ6502-6JJ</b>	991	93	95.7	96.2	0.86	0.85	12719	2.35	0.70	5.00	61	820
1470	<b>1RQ6504-6JJ</b>	991	102	95.6	96.2	0.87	0.86	14164	2.25	0.70	4.95	68	910
1570	<b>1RQ6506-6JJ</b>	991	108	95.7	96.3	0.87	0.86	15128	2.30	0.75	5.10	76	1020
2050	<b>1RQ6560-6JJ</b>	992	140	96.0	96.4	0.88	0.87	19733	2.10	0.70	4.80	107	1180
2230	<b>1RQ6562-6JJ</b>	992	152	96.2	96.5	0.88	0.87	21466	2.20	0.70	5.10	118	1300
2500	<b>1RQ6564-6JJ</b>	992	170	96.3	96.7	0.88	0.88	24065	2.15	0.70	5.00	131	1460
2710	<b>1RQ6566-6JJ</b>	993	182	96.5	96.8	0.89	0.88	26061	2.30	0.80	5.30	145	1600
3100	<b>1RQ7630-6 A -0C</b>	994	220	96.7	96.8	0.85	0.84	29782	2.50	0.70	5.50	207	1867
3500	<b>1RQ7632-6 A -0C</b>	994	245	96.8	97.0	0.85	0.84	33624	2.50	0.75	5.40	229	1938
3900	<b>1RQ7634-6 A -0C</b>	994	275	96.9	97.1	0.85	0.84	37467	2.55	0.70	5.50	249	2237
4250	<b>1RQ7636-6 A -0C</b>	994	300	97.0	97.1	0.85	0.84	40829	2.50	0.70	5.40	270	2059
4750	<b>1RQ7710-6 A -0C</b>	995	330	96.9	96.9	0.86	0.84	45587	2.50	0.70	5.30	348	2769
5200	<b>1RQ7712-6 A -0C</b>	996	365	97.1	96.9	0.85	0.83	49855	2.50	0.60	5.20	393	3162
5700	<b>1RQ7714-6 A -0C</b>	996	395	97.1	97.0	0.86	0.84	54649	2.50	0.60	5.30	446	3132
6200	<b>1RQ7716-6 A -0C</b>	996	430	97.2	97.1	0.86	0.84	59443	2.60	0.65	5.50	493	3895

#### Position of the Article No.:

##### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

##### For shaft heights 630, 710 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

#### Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
8-pole														
470	<b>1RQ6450-8JJ</b>	743	34	94.4	95.0	0.84	0.82	6040	2.35	0.75	4.95	35	250	
500	<b>1RQ6452-8JJ</b>	744	36.5	94.5	95.1	0.84	0.81	6417	2.55	0.80	5.35	39	320	
530	<b>1RQ6454-8JJ</b>	744	38.5	94.4	95.0	0.84	0.82	6802	2.45	0.80	5.20	44	390	
590	<b>1RQ6456-8JJ</b>	745	44	95.1	95.4	0.81	0.78	7562	2.55	0.70	5.10	50	495	
880	<b>1RQ6500-8JJ</b>	744	64	94.9	95.5	0.84	0.81	11294	2.20	0.55	4.65	68	780	
1000	<b>1RQ6502-8JJ</b>	744	72	95.1	95.7	0.84	0.82	12835	2.20	0.55	4.60	75	860	
1120	<b>1RQ6504-8JJ</b>	743	81	95.2	95.8	0.84	0.83	14394	2.15	0.55	4.45	83	960	
1200	<b>1RQ6506-8JJ</b>	744	85	95.4	96.0	0.85	0.83	15402	2.20	0.60	4.65	93	1060	
1480	<b>1RQ6560-8JJ</b>	744	104	95.9	96.4	0.85	0.83	18995	2.15	0.55	4.75	127	1600	
1650	<b>1RQ6562-8JJ</b>	744	116	96.0	96.6	0.85	0.83	21177	2.20	0.60	4.95	140	1760	
1830	<b>1RQ6564-8JJ</b>	744	130	96.1	96.6	0.85	0.83	23488	2.20	0.60	4.90	154	1960	
1960	<b>1RQ6566-8JJ</b>	745	138	96.2	96.7	0.85	0.83	25122	2.30	0.65	5.05	171	2150	
2200	<b>1RQ7630-8 A -0C</b>	745	158	96.2	96.4	0.84	0.82	28199	2.35	0.55	5.10	255	2417	
2450	<b>1RQ7632-8 A -0C</b>	745	174	96.4	96.6	0.84	0.82	31404	2.35	0.55	5.10	281	3023	
2700	<b>1RQ7634-8 A -0C</b>	744	192	96.5	96.7	0.84	0.83	34655	2.35	0.55	5.20	307	3540	
3000	<b>1RQ7636-8 A -0C</b>	744	215	96.6	96.8	0.84	0.83	38505	2.35	0.55	5.20	334	3594	
3350	<b>1RQ7710-8 A -0C</b>	746	235	96.6	96.7	0.85	0.83	42882	2.65	0.70	5.50	434	6479	
3750	<b>1RQ7712-8 A -0C</b>	746	260	96.8	96.9	0.86	0.83	48002	2.70	0.70	5.50	493	7440	
4200	<b>1RQ7714-8 A -0C</b>	746	295	96.9	96.9	0.85	0.83	53762	2.70	0.65	5.50	556	8648	
4700	<b>1RQ7716-8 A -0C</b>	746	325	97.0	97.1	0.86	0.84	60163	2.65	0.70	5.40	616	7484	

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Motors for line operation

Air-cooled motors

## SIMOTICS HV M 1RQ6, 1RQ7

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current $I_{rated}$ at 10 kV A	Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>9 ... 11 kV, 50 Hz</b>													
10-pole													
600	<b>1RQ6500-3JJ</b>	595	48.0	93.8	93.6	0.77	0.71	9630	2.40	0.85	5.50	74	900
680	<b>1RQ6502-3JJ</b>	594	51	94.2	94.2	0.81	0.76	10933	2.30	0.90	5.50	84	1150
750	<b>1RQ6504-3JJ</b>	594	57	94.3	94.3	0.81	0.76	12058	2.30	0.90	5.50	92	1300
820	<b>1RQ6506-3JJ</b>	594	61	94.5	94.5	0.82	0.77	13184	2.30	0.90	5.50	103	1600
1050	<b>1RQ6560-3JJ</b>	594	81	94.7	94.7	0.79	0.73	16881	2.40	0.85	5.50	128	1850
1180	<b>1RQ6562-3JJ</b>	594	90	95.0	95.0	0.80	0.75	18971	2.30	0.85	5.50	146	2300
1300	<b>1RQ6564-3JJ</b>	595	100	95.2	95.1	0.79	0.74	20866	2.40	0.82	5.50	163	2600
1400	<b>1RQ6566-3JJ</b>	595	112	95.3	95.0	0.76	0.69	22471	2.60	0.82	5.50	178	2750
1900	<b>1RQ7630-3 A -0C</b>	595	140	96.2	96.5	0.81	0.78	30494	2.35	0.55	4.80	256	3430
2100	<b>1RQ7632-3 A -0C</b>	595	154	96.2	96.5	0.82	0.79	33703	2.30	0.55	4.70	283	3228
2350	<b>1RQ7634-3 A -0C</b>	595	174	96.4	96.7	0.81	0.78	37716	2.40	0.55	4.90	309	4808
2600	<b>1RQ7636-3 A -0C</b>	595	192	96.5	96.7	0.81	0.78	41728	2.40	0.55	4.90	335	4029
2850	<b>1RQ7710-3 A -0C</b>	596	198	96.5	96.7	0.86	0.83	45663	2.70	0.65	4.90	433	10480
3100	<b>1RQ7712-3 A -0C</b>	596	220	96.6	96.7	0.85	0.82	49669	2.80	0.70	5.00	490	10104
3350	<b>1RQ7714-3 A -0C</b>	596	235	96.6	96.8	0.85	0.83	53674	2.80	0.70	5.00	554	12016
3600	<b>1RQ7716-3 A -0C</b>	596	255	96.7	96.7	0.85	0.82	57680	2.85	0.70	5.10	612	10744

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
12-pole														
480	<b>1RQ6502-5JJ</b>	494	42.0	93.4	93.4	0.70	0.62	9279	2.40	0.85	5.40	84	1500	
530	<b>1RQ6504-5JJ</b>	494	46.0	93.5	93.5	0.70	0.62	10246	2.40	0.85	5.40	91	1650	
580	<b>1RQ6506-5JJ</b>	494	50	93.7	93.9	0.72	0.64	11213	2.50	0.85	5.40	102	1800	
720	<b>1RQ6560-5JJ</b>	495	60	94.0	94.4	0.74	0.67	13891	2.10	0.70	4.80	128	1950	
840	<b>1RQ6562-5JJ</b>	495	71	94.4	94.7	0.72	0.65	16206	2.30	0.78	5.00	146	2500	
920	<b>1RQ6564-5JJ</b>	495	77	94.6	94.9	0.73	0.66	17749	2.30	0.75	5.00	163	2950	
1000	<b>1RQ6566-5JJ</b>	495	83	94.8	95.1	0.73	0.67	19293	2.30	0.75	5.00	178	3400	
1400	<b>1RQ7630-5 A -0C</b>	495	108	95.3	95.7	0.79	0.75	27008	2.25	0.60	4.50	264	3757	
1550	<b>1RQ7632-5 A -0C</b>	495	120	95.4	95.8	0.78	0.74	29902	2.30	0.60	4.50	290	3473	
1700	<b>1RQ7634-5 A -0C</b>	496	134	95.6	95.9	0.77	0.73	32729	2.55	0.65	4.90	317	4727	
1900	<b>1RQ7636-5 A -0C</b>	496	148	95.8	96.0	0.77	0.73	36580	2.60	0.70	5.10	345	5052	

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Motors for line operation

Air-cooled motors

### SIMOTICS HV M 1RQ6, 1RQ7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SB6/1SB7 (Ex pxb) and 1SG6/1SG7 (Ex ec).

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current $I_{rated}$ at 6.6 kV A	Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>4 ... 6.6 kV, 60 Hz</b>													
2-pole													
1380	<b>1RQ6450-2JJ</b> ■ 0	3575	144	95.3	95.3	0.88	0.88	3686	2.05	0.60	4.65	13	44
1500	<b>1RQ6452-2JJ</b> ■ 0	3578	152	95.7	95.6	0.90	0.89	4003	2.30	0.65	5.25	15	46
1700	<b>1RQ6454-2JJ</b> ■ 0	3579	172	95.9	95.8	0.90	0.89	4535	2.35	0.60	5.50	16	48
1850	<b>1RQ6456-2JJ</b> ■ 0	3582	188	96.1	96.0	0.90	0.89	4931	2.45	0.55	5.50	18	51
2240	<b>1RQ6500-2JJ</b> ■ 0	3580	225	96.2	96.1	0.90	0.89	5974	2.30	0.55	5.25	20	63
2500	<b>1RQ6502-2JJ</b> ■ 0	3579	250	96.3	96.3	0.91	0.90	6670	2.20	0.65	5.00	22	70
2800	<b>1RQ6504-2JJ</b> ■ 0	3578	275	96.5	96.6	0.92	0.91	7472	2.25	0.55	5.00	26	78
3150	<b>1RQ6506-2JJ</b> ■ 0	3576	315	96.6	96.8	0.91	0.91	8411	2.10	0.65	4.85	27	86
3550	<b>1RQ6560-2JJ</b> ■ 0	3581	360	96.2	96.0	0.89	0.90	9466	2.15	0.55	4.65	39	130
4000	<b>1RQ6562-2JJ</b> ■ 0	3582	400	96.4	96.2	0.90	0.90	10663	2.30	0.55	4.85	43	145
4500	<b>1RQ6564-2JJ</b> ■ 0	3581	450	96.6	96.5	0.91	0.92	11999	2.25	0.55	4.75	49	160
4900	<b>1RQ6566-2JJ</b> ■ 0	3581	490	96.7	96.6	0.91	0.92	13066	2.25	0.50	4.80	54	180
5400 <sup>2)</sup>	<b>1RQ7630-2</b> ■ A ■ 0-0C ■ 0	3585	550	96.5	96.3	0.89	0.89	14384	2.45	0.80	5.40	74	161
5900 <sup>2)</sup>	<b>1RQ7632-2</b> ■ A ■ 0-0C ■ 0	3586	600	96.7	96.5	0.89	0.89	15711	2.40	0.70	5.30	82	178
6500 <sup>2)</sup>	<b>1RQ7634-2</b> ■ A ■ 0-0C ■ 0	3586	650	97.0	96.8	0.90	0.90	17309	2.40	0.70	5.30	90	188
7200 <sup>2)</sup>	<b>1RQ7636-2</b> ■ A ■ 0-0C ■ 0	3585	710	97.1	96.9	0.91	0.91	19179	2.45	0.65	5.40	99	183
8000 <sup>2)</sup>	<b>1RQ7710-2</b> ■ A ■ 0-0C ■ 0	3588	790	96.3	95.7	0.92	0.92	21291	2.30	0.75	5.30	147	147
9000 <sup>2)</sup>	<b>1RQ7712-2</b> ■ A ■ 0-0C ■ 0	3587	880	96.5	96.0	0.93	0.92	23959	2.30	0.75	5.30	159	135
10000 <sup>2)</sup>	<b>1RQ7714-2</b> ■ A ■ 0-0C ■ 0	3588	970	96.7	96.2	0.93	0.92	26614	2.35	0.65	5.30	175	139
11000 <sup>2)</sup>	<b>1RQ7716-2</b> ■ A ■ 0-0C ■ 0	3588	1060	96.9	96.4	0.93	0.93	29275	2.40	0.60	5.40	189	135

#### Position ■ of the Article No.:

##### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)

##### For shaft heights 630, 710 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- housing and bearing version (15th position)

#### Note:

Efficiencies according to IEC 60034-2-1:2007;  
stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives.  
For ordering, please note the 10th and 11th position of the article number code.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> 1RQ7 types with rated voltage below 4.16 kV on request.

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current $I_{rated}$ at 6.6 kV A	Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>4 ... 6.6 kV, 60 Hz</b>													
4-pole													
1400	1RQ6450-4JJ	1785	146	95.6	95.7	0.88	0.87	7489	2.55	0.60	5.20	21	200
1470	1RQ6452-4JJ	1787	152	95.7	95.7	0.88	0.86	7855	2.60	0.55	5.25	23	240
1680	1RQ6454-4JJ	1785	172	96.0	96.1	0.89	0.88	8987	2.50	0.60	5.15	27	295
1850	1RQ6456-4JJ	1785	186	96.2	96.3	0.90	0.89	9897	2.50	0.60	5.15	30	355
2240 <sup>2)</sup>	1RQ6500-4JJ	1785	230	95.6	95.9	0.89	0.88	11983	2.30	0.60	4.85	45	250
2500 <sup>2)</sup>	1RQ6502-4JJ	1786	255	95.8	96.1	0.89	0.88	13366	2.40	0.65	5.05	48	290
2800 <sup>2)</sup>	1RQ6504-4JJ	1787	285	96.1	96.4	0.89	0.88	14962	2.45	0.65	5.15	55	320
3120 <sup>2)</sup>	1RQ6506-4JJ	1787	320	96.2	96.5	0.89	0.88	16672	2.45	0.60	5.25	59	360
3670 <sup>2)</sup>	1RQ6560-4JJ	1791	370	96.7	96.7	0.90	0.90	19567	2.20	0.55	5.10	86	660
4200 <sup>2)</sup>	1RQ6562-4JJ	1792	420	96.9	96.8	0.90	0.89	22381	2.25	0.55	5.30	96	730
4750 <sup>2)</sup>	1RQ6564-4JJ	1791	480	97.1	97.1	0.90	0.90	25326	2.15	0.50	5.05	106	800
5100 <sup>2)</sup>	1RQ6566-4JJ	1792	510	97.1	97.1	0.90	0.90	27177	2.30	0.55	5.50	116	880
5500 <sup>2) 3)</sup>	1RQ7630-4 A 0-0C 0	1792	560	97.3	97.3	0.88	0.87	29309	2.50	0.70	5.40	144	663
6000 <sup>2) 3)</sup>	1RQ7632-4 A 0-0C 0	1792	610	97.4	97.4	0.88	0.87	31973	2.45	0.65	5.30	159	732
6600 <sup>2) 3)</sup>	1RQ7634-4 A 0-0C 0	1792	670	97.5	97.6	0.89	0.88	35170	2.50	0.60	5.30	177	825
7250 <sup>2) 3)</sup>	1RQ7636-4 A 0-0C 0	1792	730	97.6	97.6	0.89	0.88	38634	2.50	0.65	5.40	192	889
8000 <sup>2) 3)</sup>	1RQ7710-4 A 0-0C 0	1793	790	97.3	97.1	0.91	0.91	42607	2.55	0.65	5.50	262	529
9000 <sup>2) 3)</sup>	1RQ7712-4 A 0-0C 0	1793	880	97.4	97.3	0.92	0.92	47932	2.50	0.65	5.40	288	553
10000 <sup>2) 3)</sup>	1RQ7714-4 A 0-0C 0	1793	980	97.5	97.4	0.92	0.92	53258	2.50	0.65	5.40	322	659
11000 <sup>2) 3)</sup>	1RQ7716-4 A 0-0C 0	1793	1080	97.6	97.5	0.92	0.92	58584	2.50	0.65	5.50	363	744

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- housing and bearing version (15th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) Data of vertical motors (IM V1) on request.

3) 1RQ7 types with rated voltage below 4.16 kV on request.

## Motors for line operation

Air-cooled motors

## SIMOTICS HV M 1RQ6, 1RQ7

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
6-pole														
1100	<b>1RQ6450-6JJ</b>	1188	120	95.7	96.0	0.84	0.84	8841	2.30	0.80	4.80	28	530	
1210	<b>1RQ6452-6JJ</b>	1190	132	95.9	96.1	0.84	0.83	9709	2.40	0.80	4.95	31	600	
1350	<b>1RQ6454-6JJ</b>	1189	144	96.0	96.2	0.85	0.84	10842	2.40	0.80	4.95	35	660	
1460	<b>1RQ6456-6JJ</b>	1190	156	96.3	96.5	0.85	0.84	11715	2.45	0.85	5.15	41	770	
1800	<b>1RQ6500-6JJ</b>	1190	190	96.2	96.6	0.86	0.85	14444	2.30	0.70	4.80	56	1000	
2000	<b>1RQ6502-6JJ</b>	1190	210	96.4	96.8	0.86	0.84	16049	2.30	0.70	5.00	61	1120	
2240	<b>1RQ6504-6JJ</b>	1189	235	96.1	96.5	0.86	0.86	17990	2.10	0.60	4.60	68	1240	
2500	<b>1RQ6506-6JJ</b>	1190	265	96.6	96.9	0.86	0.85	20061	2.25	0.60	4.70	76	1380	
2850	<b>1RQ6560-6JJ</b>	1191	295	96.7	97.0	0.88	0.88	22850	2.00	0.65	4.60	107	1440	
3200	<b>1RQ6562-6JJ</b>	1190	330	96.8	97.1	0.88	0.87	25678	1.95	0.65	4.65	118	1580	
3500	<b>1RQ6564-6JJ</b>	1192	360	96.9	97.2	0.88	0.88	28039	2.15	0.70	4.90	131	1740	
3830	<b>1RQ6566-6JJ</b>	1192	390	97.0	97.3	0.89	0.88	30682	2.15	0.70	5.00	145	1940	
4250 <sup>2)</sup>	<b>1RQ7630-6A-0C</b>	1194	455	96.9	96.8	0.84	0.83	33990	2.50	0.65	5.40	207	2090	
4700 <sup>2)</sup>	<b>1RQ7632-6A-0C</b>	1194	500	97.0	97.0	0.84	0.83	37589	2.50	0.65	5.50	228	2236	
5200 <sup>2)</sup>	<b>1RQ7634-6A-0C</b>	1194	550	97.1	97.1	0.85	0.83	41588	2.55	0.70	5.50	249	2404	
5650 <sup>2)</sup>	<b>1RQ7636-6A-0C</b>	1194	600	97.2	97.1	0.85	0.84	45187	2.55	0.70	5.50	270	2564	
6300 <sup>2)</sup>	<b>1RQ7710-6A-0C</b>	1195	660	97.0	96.8	0.86	0.84	50343	2.55	0.70	5.40	350	1502	
6800 <sup>2)</sup>	<b>1RQ7712-6A-0C</b>	1195	710	97.2	96.9	0.86	0.84	54339	2.50	0.65	5.40	396	1828	
7350 <sup>2)</sup>	<b>1RQ7714-6A-0C</b>	1196	770	97.2	97.0	0.86	0.84	58685	2.55	0.65	5.40	446	2267	
7850 <sup>2)</sup>	<b>1RQ7716-6A-0C</b>	1196	820	97.3	97.1	0.86	0.85	62677	2.55	0.60	5.40	493	2557	

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) 1RQ7 types with rated voltage below 4.16 kV on request.



## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
8-pole														
780	<b>1RQ6450-8JJ</b>	892	86	95.4	95.8	0.83	0.81	8350	2.20	0.65	4.50	35	660	
880	<b>1RQ6452-8JJ</b>	892	97	95.6	96.0	0.83	0.82	9420	2.25	0.70	4.60	39	770	
980	<b>1RQ6454-8JJ</b>	892	108	95.7	96.1	0.83	0.81	10491	2.40	0.75	4.95	44	890	
1090	<b>1RQ6456-8JJ</b>	893	120	96.0	96.2	0.83	0.81	11655	2.50	0.80	5.20	51	1080	
1320	<b>1RQ6500-8JJ</b>	893	146	95.9	96.3	0.83	0.81	14115	2.05	0.45	4.40	68	1060	
1500	<b>1RQ6502-8JJ</b>	893	164	96.1	96.5	0.83	0.81	16040	2.15	0.50	4.50	75	1180	
1700	<b>1RQ6504-8JJ</b>	893	184	96.1	96.5	0.84	0.82	18178	2.10	0.50	4.50	83	1320	
1800	<b>1RQ6506-8JJ</b>	893	194	96.2	96.6	0.84	0.82	19248	2.20	0.55	4.65	93	1460	
2120	<b>1RQ6560-8JJ</b>	894	230	96.6	97.0	0.84	0.82	22644	2.30	0.60	5.00	127	2100	
2360	<b>1RQ6562-8JJ</b>	893	250	96.7	97.1	0.85	0.83	25236	2.10	0.60	4.85	140	2350	
2630	<b>1RQ6564-8JJ</b>	894	280	96.6	97.0	0.85	0.83	28092	2.20	0.55	4.80	155	2550	
2900	<b>1RQ6566-8JJ</b>	893	310	96.7	97.0	0.85	0.84	31011	2.10	0.55	4.85	171	2850	
3180 <sup>2)</sup>	<b>1RQ7630-8 A ■ ■ -0C ■ 0</b>	895	350	96.4	96.4	0.83	0.81	33929	2.35	0.50	5.20	255	2273	
3460 <sup>2)</sup>	<b>1RQ7632-8 A ■ ■ -0C ■ 0</b>	894	375	96.6	96.6	0.84	0.82	36958	2.35	0.55	5.20	281	2385	
3760 <sup>2)</sup>	<b>1RQ7634-8 A ■ ■ -0C ■ 0</b>	894	405	96.7	96.8	0.84	0.83	40163	2.30	0.55	5.10	307	2810	
4100 <sup>2)</sup>	<b>1RQ7636-8 A ■ ■ -0C ■ 0</b>	894	440	96.8	96.9	0.84	0.83	43794	2.35	0.55	5.20	334	2948	
4500 <sup>2)</sup>	<b>1RQ7710-8 A ■ ■ -0C ■ 0</b>	896	475	96.8	96.8	0.86	0.84	47959	2.50	0.70	5.20	434	5154	
5000 <sup>2)</sup>	<b>1RQ7712-8 A ■ ■ -0C ■ 0</b>	896	520	97.0	97.0	0.86	0.85	53288	2.55	0.75	5.30	494	6049	
5600 <sup>2)</sup>	<b>1RQ7714-8 A ■ ■ -0C ■ 0</b>	896	590	97.1	97.1	0.86	0.85	59683	2.45	0.65	5.10	560	7048	
6300 <sup>2)</sup>	<b>1RQ7716-8 A ■ ■ -0C ■ 0</b>	896	650	97.2	97.3	0.87	0.86	67143	2.45	0.70	5.20	619	7357	

**Position ■  
of the Article No.:****For shaft heights  
450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights  
630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) 1RQ7 types with rated voltage below 4.16 kV on request.

## Motors for line operation

Air-cooled motors

## SIMOTICS HV M 1RQ6, 1RQ7

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
10-pole														
540	1RQ6450-3JJ	711	63	93.9	93.8	0.80	0.75	7253	2.20	0.88	5.30	39	700	
600	1RQ6452-3JJ	712	71	94.2	94.1	0.79	0.73	8048	2.30	0.90	5.50	43	900	
670	1RQ6454-3JJ	712	80	94.3	94.2	0.78	0.73	8987	2.40	1.00	5.50	48	950	
730	1RQ6456-3JJ	713	88	94.5	94.3	0.77	0.72	9778	2.40	0.90	5.50	54	1100	
900	1RQ6500-3JJ	713	104	94.9	94.7	0.80	0.76	12055	2.10	0.78	5.20	74	1400	
1000	1RQ6502-3JJ	713	114	95.1	94.9	0.80	0.75	13394	2.20	0.82	5.30	84	1700	
1100	1RQ6504-3JJ	713	126	95.1	94.9	0.80	0.76	14734	2.20	0.82	5.30	92	1700	
1250	1RQ6506-3JJ	713	144	95.4	95.1	0.80	0.75	16743	2.30	0.88	5.50	103	2250	
1460	1RQ6560-3JJ	714	172	95.4	95.2	0.78	0.72	19528	2.40	0.85	5.40	128	2400	
1680	1RQ6562-3JJ	714	196	95.7	95.5	0.78	0.72	22471	2.40	0.85	5.50	146	2800	
1820	1RQ6564-3JJ	714	210	95.7	95.6	0.80	0.76	24343	2.30	0.80	5.40	163	3200	
1930	1RQ6566-3JJ	715	225	95.9	95.6	0.79	0.73	25778	2.40	0.80	5.50	178	3600	
2420 <sup>2)</sup>	1RQ7630-3 A -0C	715	265	96.5	96.7	0.83	0.81	32321	2.30	0.55	4.80	258	4130	
2660 <sup>2)</sup>	1RQ7632-3 A -0C	715	290	96.6	96.8	0.83	0.81	35526	2.40	0.55	4.90	284	4922	
2930 <sup>2)</sup>	1RQ7634-3 A -0C	715	325	96.7	96.8	0.82	0.79	39132	2.40	0.55	5.00	310	4780	
3220 <sup>2)</sup>	1RQ7636-3 A -0C	715	350	96.7	96.9	0.83	0.81	43005	2.35	0.55	4.90	336	5345	
3550 <sup>2)</sup>	1RQ7710-3 A -0C	716	380	96.7	96.6	0.85	0.81	47346	2.95	0.70	5.30	433	8421	
3900 <sup>2)</sup>	1RQ7712-3 A -0C	716	415	96.8	96.8	0.85	0.83	52014	2.90	0.65	5.30	493	9676	
4300 <sup>2)</sup>	1RQ7714-3 A -0C	716	455	96.9	96.8	0.85	0.82	57349	2.95	0.70	5.30	557	11529	
4750 <sup>2)</sup>	1RQ7716-3 A -0C	716	510	97.0	96.9	0.84	0.80	63350	3.00	0.65	5.30	612	13189	

## Position of the Article No.:

## For shaft heights 450, 500, 560 mm:

Refer to the article number structure on Page 1/3 for:

- voltage code (11th position)
- type of construction (12th position)

## For shaft heights 630, 710 mm:

Refer to the article number structure on Page 1/5 for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

## Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on Page 2/2.

<sup>2)</sup> 1RQ7 types with rated voltage below 4.16 kV on request.

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current $I_{rated}$ at 6.6 kV A	Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>4 ... 6.6 kV, 60 Hz</b>													
12-pole													
370	1RQ6450-5JJ	592	48.0	93.1	92.9	0.72	0.66	5969	2.00	0.68	4.60	39	700
425	1RQ6452-5JJ	593	57	93.5	93.0	0.70	0.63	6844	2.20	0.72	4.80	43	1000
480	1RQ6454-5JJ	593	63	94.0	93.7	0.71	0.65	7730	2.10	0.72	4.80	48	1300
540	1RQ6456-5JJ	593	69	94.1	93.9	0.73	0.68	8696	2.00	0.68	4.70	54	1500
650	1RQ6500-5JJ	593	84	94.3	94.1	0.72	0.66	10468	2.20	0.70	4.80	74	1600
730	1RQ6502-5JJ	593	91	94.5	94.3	0.74	0.70	11756	2.10	0.65	4.70	84	1800
820	1RQ6504-5JJ	593	104	94.7	94.4	0.73	0.68	13206	2.20	0.70	4.80	91	2100
900	1RQ6506-5JJ	593	116	94.8	94.5	0.72	0.66	14494	2.30	0.75	5.20	102	2400
1100	1RQ6560-5JJ	594	138	95.0	94.9	0.73	0.67	17685	2.00	0.62	4.50	128	2400
1220	1RQ6562-5JJ	594	152	95.2	95.1	0.74	0.68	19614	2.10	0.65	4.50	146	3000
1320	1RQ6564-5JJ	595	166	95.3	95.1	0.73	0.67	21187	2.20	0.68	4.60	163	3300
1450	1RQ6566-5JJ	595	180	95.4	95.3	0.74	0.68	23273	2.20	0.68	4.60	178	3800
1950 <sup>2)</sup>	1RQ7630-5 A -0C	594	225	96.0	96.2	0.79	0.76	31349	2.15	0.50	4.20	264	5556
2150 <sup>2)</sup>	1RQ7632-5 A -0C	595	250	96.0	96.3	0.78	0.75	34506	2.20	0.55	4.30	290	5356
2350 <sup>2)</sup>	1RQ7634-5 A -0C	594	270	96.1	96.3	0.79	0.76	37779	2.20	0.60	4.40	318	5356
2550 <sup>2)</sup>	1RQ7636-5 A -0C	595	295	96.3	96.5	0.78	0.74	40926	2.40	0.60	4.70	345	8267

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Higher pole numbers are available on request.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

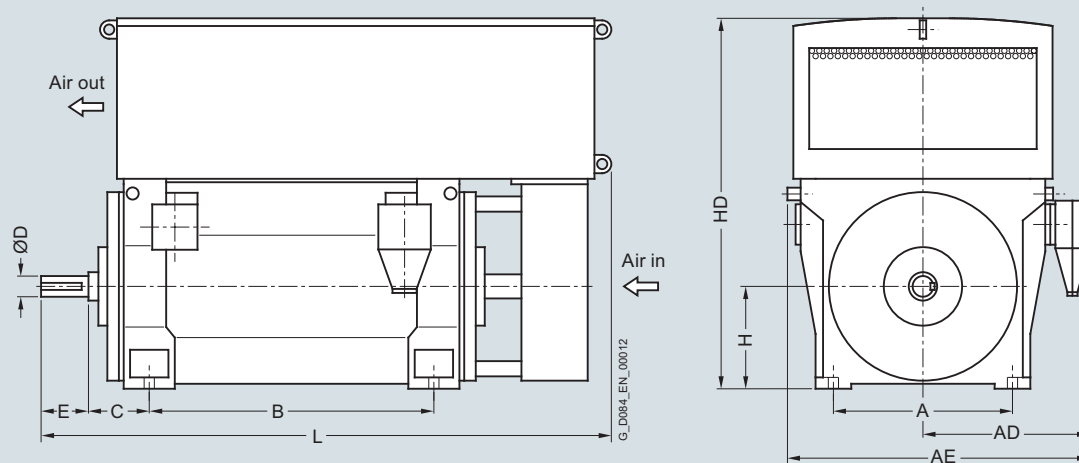
2) 1RQ7 types with rated voltage below 4.16 kV on request.

## Motors for line operation

Air-cooled motors

SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611</b>											
<b>2-pole</b>											
1RQ6450-2JJ.0 <sup>3)</sup>	4250	850	930	1620	1180	280	95	130	450	1842	2425 <sup>4)</sup>
1RQ6452-2JJ.0 <sup>3)</sup>	4450	850	930	1620	1180	280	95	130	450	1842	2425 <sup>4)</sup>
1RQ6454-2JJ.0 <sup>3)</sup>	4800	850	930	1620	1400	280	95	130	450	1842	2635 <sup>4)</sup>
1RQ6456-2JJ.0 <sup>3)</sup>	5050	850	930	1620	1400	280	95	130	450	1842	2635 <sup>4)</sup>
1RQ6500-2JJ.0 <sup>3)</sup>	6100	950	1135	1835	1320	315	110	165	500	2040	3450 <sup>4)</sup>
1RQ6502-2JJ.0 <sup>3)</sup>	6250	950	1135	1835	1320	315	110	165	500	2040	3450 <sup>4)</sup>
<b>4-pole</b>											
1RQ6450-4JJ.0	4550	850	930	1620	1180	250	130	200	450	1842	2455
1RQ6452-4JJ.0	4750	850	930	1620	1180	250	130	200	450	1842	2455
1RQ6454-4JJ.0	5200	850	930	1620	1400	250	130	200	450	1842	2665
1RQ6456-4JJ.0	5450	850	930	1620	1400	250	130	200	450	1842	2665
1RQ6500-4JJ.0	6600	950	1135	1835	1320	280	150	200	500	2040	2900
1RQ6502-4JJ.0	6800	950	1135	1835	1320	280	150	200	500	2040	2900
1RQ6504-4JJ.0	7550	950	1135	1835	1500	280	150	200	500	2040	3050
1RQ6506-4JJ.0	7850	950	1135	1835	1500	280	150	200	500	2040	3050
1RQ6560-4JJ.0	8250	1060	1205	1975	1400	315	170	240	560	2300	3000
1RQ6562-4JJ.0	8600	1060	1205	1975	1400	315	170	240	560	2300	3000
1RQ6564-4JJ.0	9550	1060	1205	1975	1600	315	170	240	560	2300	3250
1RQ6566-4JJ.0	10100	1060	1205	1975	1600	315	170	240	560	2300	3250
1RQ7630-4J..0-OCG0	12200	1320	1340	2340	1600	375	200	280	630	2710	3950 <sup>4)</sup>
1RQ7632-4J..0-OCG0	12800	1320	1340	2340	1600	375	200	280	630	2710	3950 <sup>4)</sup>
1RQ7634-4J..0-OCG0	13800	1320	1340	2340	1800	375	200	280	630	2710	4150 <sup>4)</sup>
1RQ7636-4J..0-OCG0	14300	1320	1340	2340	1800	375	200	280	630	2710	4150 <sup>4)</sup>
1RQ7710-4J..0-OCG0	17100	1500	1800	2900	2000	375	220	350	710	3080	4500 <sup>4)</sup>
1RQ7712-4J..0-OCG0	17800	1500	1800	2900	2000	375	220	350	710	3080	4500 <sup>4)</sup>
1RQ7714-4J..0-OCG0	19200	1500	1800	2900	2240	375	220	350	710	3080	4740 <sup>4)</sup>
1RQ7716-4J..0-OCG0	20500	1500	1800	2900	2240	375	220	350	710	3080	4740 <sup>4)</sup>

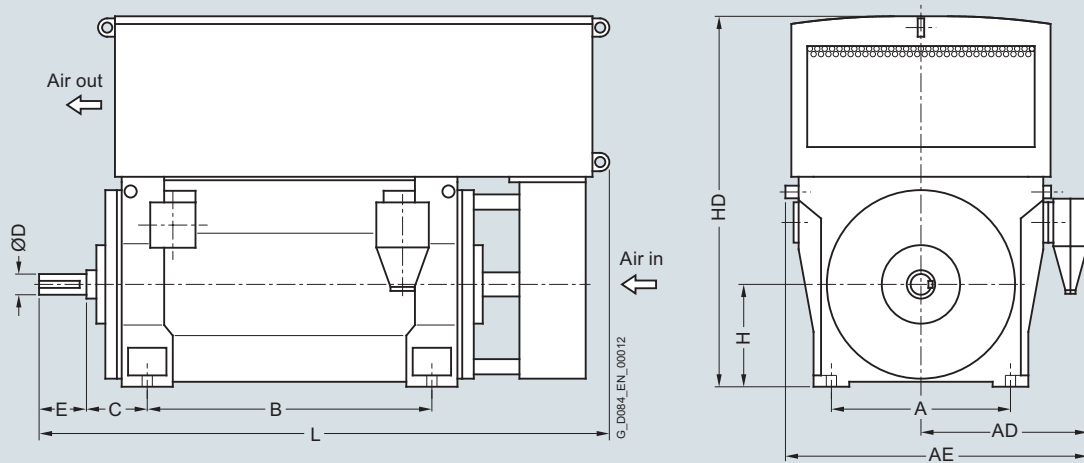
<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

<sup>3)</sup> Anti-friction bearings only for 50 Hz operation.

<sup>4)</sup> Including air inlet silencer.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611

## 6-pole

1RQ6450-6JJ.0	4650	850	930	1620	1180	250	140	200	450	1842	2455
1RQ6452-6JJ.0	4900	850	930	1620	1180	250	140	200	450	1842	2455
1RQ6454-6JJ.0	5300	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6456-6JJ.0	5650	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6500-6JJ.0	6750	950	1135	1835	1320	315	160	240	500	1990	2850
1RQ6502-6JJ.0	7050	950	1135	1835	1320	315	160	240	500	1990	2850
1RQ6504-6JJ.0	7700	950	1135	1835	1500	315	160	240	500	1990	3300
1RQ6506-6JJ.0	8050	950	1135	1835	1500	315	160	240	500	1990	3300
1RQ6560-6JJ.0	9100	1060	1205	1975	1400	315	180	240	560	2240	3000
1RQ6562-6JJ.0	9550	1060	1205	1975	1400	315	180	240	560	2240	3000
1RQ6564-6JJ.0	10450	1060	1205	1975	1600	315	180	240	560	2240	3250
1RQ6566-6JJ.0	11000	1060	1205	1975	1600	315	180	240	560	2240	3250
1RQ7630-6J..0-0CG0	12700	1320	1340	2340	1600	375	200	280	630	2710	3410
1RQ7632-6J..0-0CG0	13300	1320	1340	2340	1600	375	200	280	630	2710	3410
1RQ7634-6J..0-0CG0	14100	1320	1340	2340	1800	375	200	280	630	2710	3610
1RQ7636-6J..0-0CG0	14800	1320	1340	2340	1800	375	200	280	630	2710	3610
1RQ7710-6J..0-0CG0	17200	1500	1800	2900	2000	375	220	350	710	3080	3960
1RQ7712-6J..0-0CG0	18300	1500	1800	2900	2000	375	220	350	710	3080	3960
1RQ7714-6J..0-0CG0	19800	1500	1800	2900	2240	375	220	350	710	3080	4200
1RQ7716-6J..0-0CG0	20800	1500	1800	2900	2240	375	220	350	710	3080	4200

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

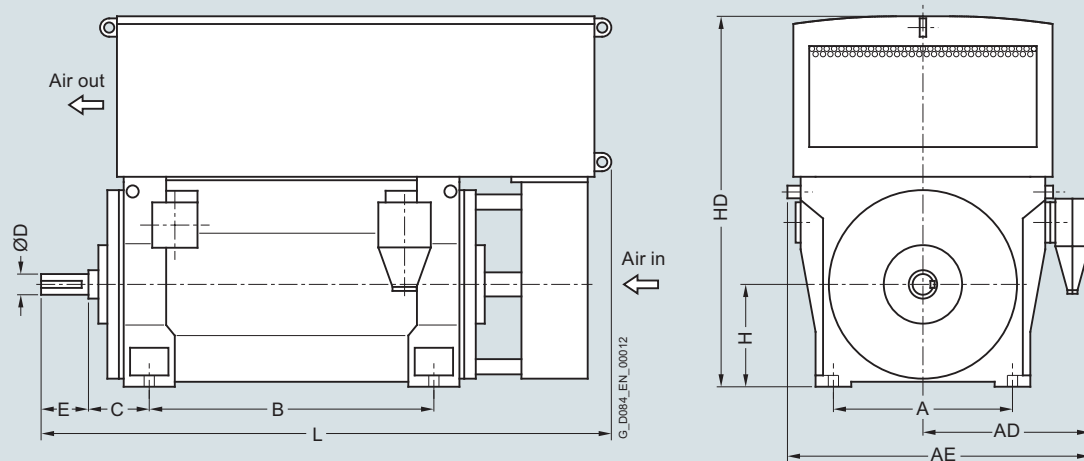
<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611

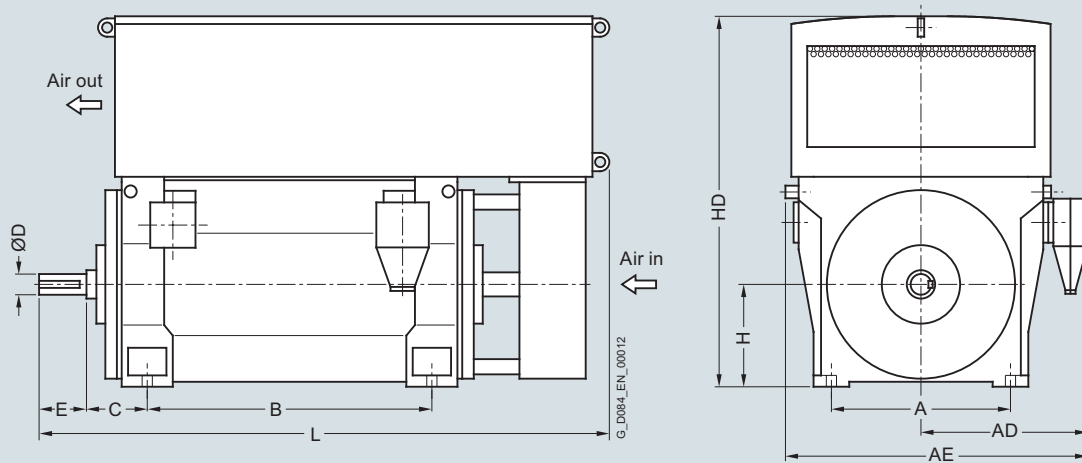
##### 8-pole

1RQ6450-8JJ.0	4650	850	930	1620	1180	250	140	200	450	1842	2455
1RQ6452-8JJ.0	4950	850	930	1620	1180	250	140	200	450	1842	2455
1RQ6454-8JJ.0	5350	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6456-8JJ.0	5700	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6500-8JJ.0	6750	950	1135	1835	1320	315	160	240	500	1990	2850
1RQ6502-8JJ.0	7000	950	1135	1835	1320	315	160	240	500	1990	2850
1RQ6504-8JJ.0	7650	950	1135	1835	1500	315	160	240	500	1990	3300
1RQ6506-8JJ.0	8000	950	1135	1835	1500	315	160	240	500	1990	3300
1RQ6560-8JJ.0	9050	1060	1205	1975	1400	315	180	240	560	2240	3000
1RQ6562-8JJ.0	9450	1060	1205	1975	1400	315	180	240	560	2240	3000
1RQ6564-8JJ.0	10400	1060	1205	1975	1600	315	180	240	560	2240	3250
1RQ6566-8JJ.0	10900	1060	1205	1975	1600	315	180	240	560	2240	3250
1RQ7630-8J..0-0CG0	12400	1320	1340	2340	1600	375	200	280	630	2570	3410
1RQ7632-8J..0-0CG0	13000	1320	1340	2340	1600	375	200	280	630	2570	3410
1RQ7634-8J..0-0CG0	13800	1320	1340	2340	1800	375	200	280	630	2570	3610
1RQ7636-8J..0-0CG0	14400	1320	1340	2340	1800	375	200	280	630	2570	3610
1RQ7710-8J..0-0CG0	16500	1500	1800	2900	2000	375	220	350	710	2710	3960
1RQ7712-8J..0-0CG0	17400	1500	1800	2900	2000	375	220	350	710	2710	3960
1RQ7714-8J..0-0CG0	18900	1500	1800	2900	2240	375	220	350	710	2710	4200
1RQ7716-8J..0-0CG0	19900	1500	1800	2900	2240	375	220	350	710	2710	4200

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611</b>											
10-pole											
1RQ6450-3JJ.0	4650	850	930	1620	1180	250	140	200	450	1842	2455
1RQ6452-3JJ.0	4950	850	930	1620	1180	250	140	200	450	1842	2455
1RQ6454-3JJ.0	5350	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6456-3JJ.0	5700	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6500-3JJ.0	6000	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ6502-3JJ.0	6300	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ6504-3JJ.0	6900	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ6506-3JJ.0	7300	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ6560-3JJ.0	8000	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ6562-3JJ.0	8600	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ6564-3JJ.0	9450	1060	1070	1900	1600	315	180	240	560	2260	3180
1RQ6566-3JJ.0	9900	1060	1070	1900	1600	315	180	240	560	2260	3180
1RQ7630-3J..0-0CG0	12400	1320	1340	2340	1600	375	200	280	630	2570	3410
1RQ7632-3J..0-0CG0	12900	1320	1340	2340	1600	375	200	280	630	2570	3410
1RQ7634-3J..0-0CG0	13700	1320	1340	2340	1800	375	200	280	630	2570	3610
1RQ7636-3J..0-0CG0	14300	1320	1340	2340	1800	375	200	280	630	2570	3610
1RQ7710-3J..0-0CG0	16400	1500	1800	2900	2000	375	220	350	710	2710	3960
1RQ7712-3J..0-0CG0	17400	1500	1800	2900	2000	375	220	350	710	2710	3960
1RQ7714-3J..0-0CG0	18900	1500	1800	2900	2240	375	220	350	710	2710	4200
1RQ7716-3J..0-0CG0	20000	1500	1800	2900	2240	375	220	350	710	2710	4200

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

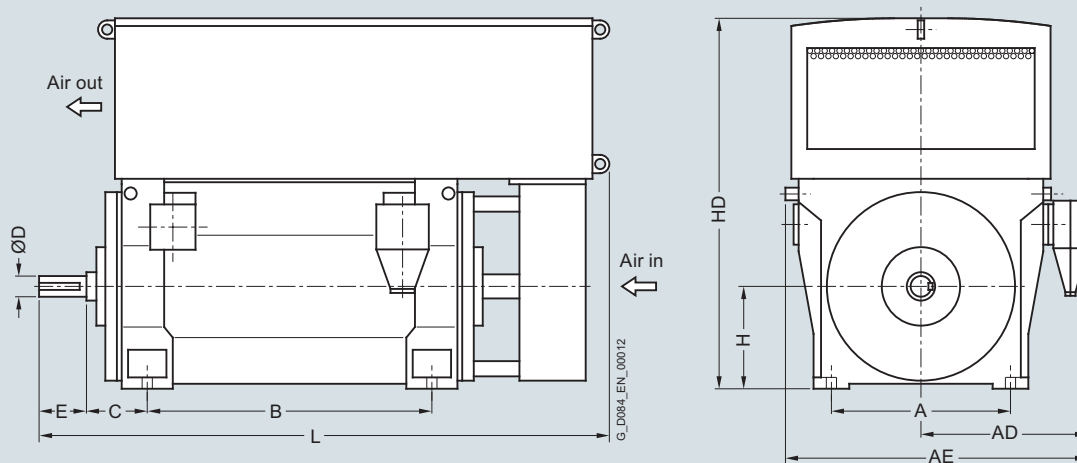
<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request

## Motors for line operation

Air-cooled motors

SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611

12-pole

1RQ6450-5JJ.0	4650	850	930	1620	1180	250	140	200	450	1842	2455
1RQ6452-5JJ.0	4950	850	930	1620	1180	250	140	200	450	1842	2455
1RQ6454-5JJ.0	5350	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6456-5JJ.0	5700	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6500-5JJ.0	6000	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ6502-5JJ.0	6300	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ6504-5JJ.0	6900	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ6506-5JJ.0	7300	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ6560-5JJ.0	8050	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ6562-5JJ.0	8600	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ6564-5JJ.0	9400	1060	1070	1900	1600	315	180	240	560	2260	3180
1RQ6566-5JJ.0	9900	1060	1070	1900	1600	315	180	240	560	2260	3180
1RQ7630-5J..0-OCG0	12300	1320	1340	2340	1600	375	200	280	630	2570	3410
1RQ7632-5J..0-OCG0	12900	1320	1340	2340	1600	375	200	280	630	2570	3410
1RQ7634-5J..0-OCG0	13700	1320	1340	2340	1800	375	200	280	630	2570	3610
1RQ7636-5J..0-OCG0	14300	1320	1340	2340	1800	375	200	280	630	2570	3610

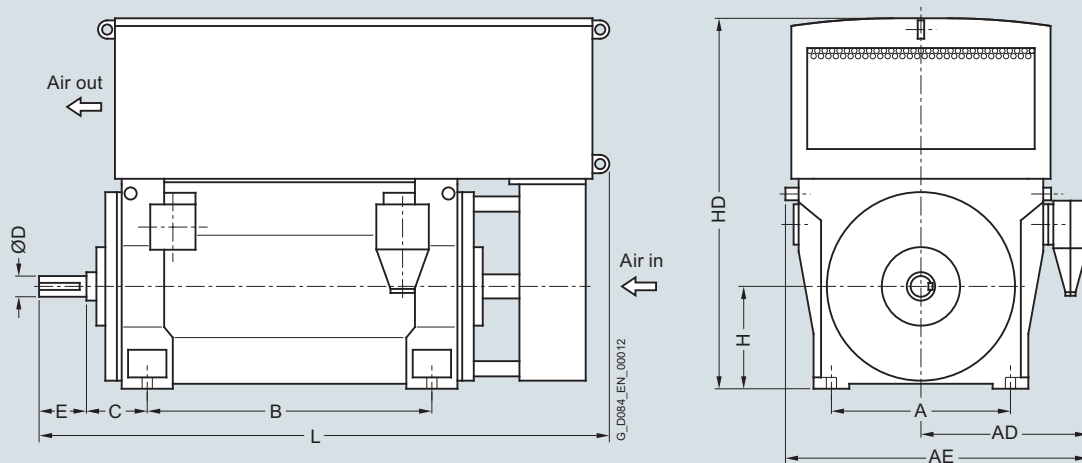
Note: Higher pole numbers are available on request.

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.



## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611</b>											
<b>2-pole</b>											
1RQ6450-2JJ.0 <sup>2)</sup>	4250	850	1070	1840	1180	280	95	130	450	1842	2425 <sup>3)</sup>
1RQ6452-2JJ.0 <sup>2)</sup>	4450	850	1070	1840	1180	280	95	130	450	1842	2425 <sup>3)</sup>
1RQ6454-2JJ.0 <sup>2)</sup>	4800	850	1070	1840	1400	280	95	130	450	1842	2635 <sup>3)</sup>
1RQ6456-2JJ.0 <sup>2)</sup>	5050	850	1070	1840	1400	280	95	130	450	1842	2635 <sup>3)</sup>
1RQ6500-2JJ.0 <sup>2)</sup>	6100	950	1270	1970	1320	315	110	165	500	2040	3450 <sup>3)</sup>
1RQ6502-2JJ.0 <sup>2)</sup>	6250	950	1270	1970	1320	315	110	165	500	2040	3450 <sup>3)</sup>
<b>4-pole</b>											
1RQ6450-4JJ.0	4550	850	1070	1840	1180	250	130	200	450	1842	2455
1RQ6452-4JJ.0	4750	850	1070	1840	1180	250	130	200	450	1842	2455
1RQ6454-4JJ.0	5200	850	1070	1840	1400	250	130	200	450	1842	2665
1RQ6456-4JJ.0	5450	850	1070	1840	1400	250	130	200	450	1842	2665
1RQ6500-4JJ.0	6600	950	1270	1970	1320	280	150	200	500	2040	2900
1RQ6502-4JJ.0	6800	950	1270	1970	1320	280	150	200	500	2040	2900
1RQ6504-4JJ.0	7550	950	1270	1970	1500	280	150	200	500	2040	3050
1RQ6506-4JJ.0	7850	950	1270	1970	1500	280	150	200	500	2040	3050
1RQ6560-4JJ.0	8250	1060	1340	2110	1400	315	170	240	560	2300	3000
1RQ6562-4JJ.0	8600	1060	1340	2110	1400	315	170	240	560	2300	3000
1RQ6564-4JJ.0	9550	1060	1340	2110	1600	315	170	240	560	2300	3250
1RQ6566-4JJ.0	10100	1060	1340	2110	1600	315	170	240	560	2300	3250
1RQ7630-4J..0-OCG0	12100	1320	1340	2340	1600	375	200	280	630	2710	3950 <sup>3)</sup>
1RQ7632-4J..0-OCG0	12600	1320	1340	2340	1600	375	200	280	630	2710	3950 <sup>3)</sup>
1RQ7634-4J..0-OCG0	13500	1320	1340	2340	1800	375	200	280	630	2710	4150 <sup>3)</sup>
1RQ7636-4J..0-OCG0	14100	1320	1340	2340	1800	375	200	280	630	2710	4150 <sup>3)</sup>
1RQ7710-4J..0-OCG0	17600	1500	1800	2900	2000	375	220	350	710	3080	4500 <sup>3)</sup>
1RQ7712-4J..0-OCG0	18400	1500	1800	2900	2000	375	220	350	710	3080	4500 <sup>3)</sup>
1RQ7714-4J..0-OCG0	19800	1500	1800	2900	2240	375	220	350	710	3080	4740 <sup>3)</sup>
1RQ7716-4J..0-OCG0	21000	1500	1800	2900	2240	375	220	350	710	3080	4740 <sup>3)</sup>

<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

<sup>2)</sup> Anti-friction bearings only for 50 Hz operation.

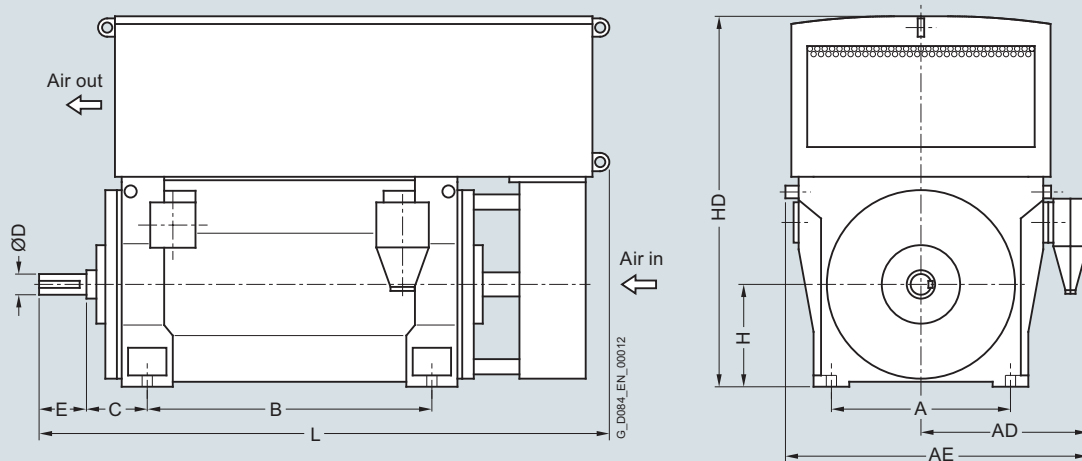
<sup>3)</sup> Including air inlet silencer.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

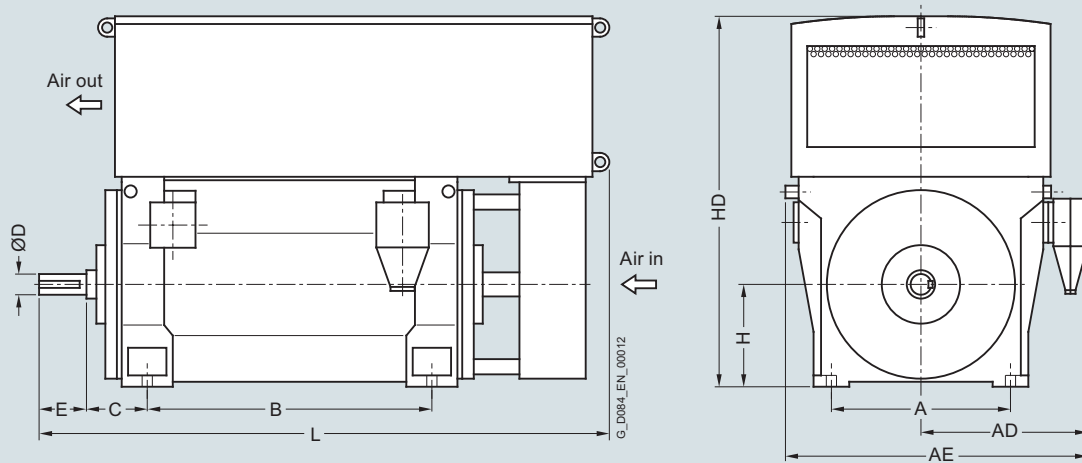
#### 9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611

##### 6-pole

1RQ6450-6JJ.0	4650	850	1070	1840	1180	250	140	200	450	1842	2455
1RQ6452-6JJ.0	4900	850	1070	1840	1180	250	140	200	450	1842	2455
1RQ6454-6JJ.0	5300	850	1070	1840	1400	280	140	200	450	1842	2665
1RQ6456-6JJ.0	5650	850	1070	1840	1400	280	140	200	450	1842	2665
1RQ6500-6JJ.0	6750	950	1270	1970	1320	315	160	240	500	1990	2850
1RQ6502-6JJ.0	7050	950	1270	1970	1320	315	160	240	500	1990	2850
1RQ6504-6JJ.0	7700	950	1270	1970	1500	315	160	240	500	1990	3300
1RQ6506-6JJ.0	8050	950	1270	1970	1500	315	160	240	500	1990	3300
1RQ6560-6JJ.0	9100	1060	1340	2110	1400	315	180	240	560	2240	3000
1RQ6562-6JJ.0	9550	1060	1340	2110	1400	315	180	240	560	2240	3000
1RQ6564-6JJ.0	10450	1060	1340	2110	1600	315	180	240	560	2240	3250
1RQ6566-6JJ.0	11000	1060	1340	2110	1600	315	180	240	560	2240	3250
1RQ7630-6J..0-0CG0	12600	1320	1340	2340	1600	375	200	280	630	2710	3410
1RQ7632-6J..0-0CG0	13100	1320	1340	2340	1600	375	200	280	630	2710	3410
1RQ7634-6J..0-0CG0	14000	1320	1340	2340	1800	375	200	280	630	2710	3610
1RQ7636-6J..0-0CG0	14600	1320	1340	2340	1800	375	200	280	630	2710	3610
1RQ7710-6J..0-0CG0	17800	1500	1800	2900	2000	375	220	350	710	3080	3960
1RQ7712-6J..0-0CG0	18800	1500	1800	2900	2000	375	220	350	710	3080	3960
1RQ7714-6J..0-0CG0	20300	1500	1800	2900	2240	375	220	350	710	3080	4200
1RQ7716-6J..0-0CG0	21400	1500	1800	2900	2240	375	220	350	710	3080	4200

<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

**9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611**

## 8-pole

1RQ6450-8JJ.0	4650	850	1070	1840	1180	250	140	200	450	1842	2455
1RQ6452-8JJ.0	4950	850	1070	1840	1180	250	140	200	450	1842	2455
1RQ6454-8JJ.0	5350	850	1070	1840	1400	280	140	200	450	1842	2665
1RQ6456-8JJ.0	5700	850	1070	1840	1400	280	140	200	450	1842	2665
1RQ6500-8JJ.0	6750	950	1270	1970	1320	315	160	240	500	1990	2850
1RQ6502-8JJ.0	7000	950	1270	1970	1320	315	160	240	500	1990	2850
1RQ6504-8JJ.0	7650	950	1270	1970	1500	315	160	240	500	1990	3300
1RQ6-506-8JJ.0	8000	950	1270	1970	1500	315	160	240	500	1990	3300
1RQ6560-8JJ.0	9050	1060	1340	2110	1400	315	180	240	560	2240	3000
1RQ6562-8JJ.0	9450	1060	1340	2110	1400	315	180	240	560	2240	3000
1RQ6564-8JJ.0	10400	1060	1340	2110	1600	315	180	240	560	2240	3250
1RQ6-566-8JJ.0	10900	1060	1340	2110	1600	315	180	240	560	2240	3250
1RQ7630-8J..0-0CG0	12300	1320	1340	2340	1600	375	200	280	630	2570	3410
1RQ7632-8J..0-0CG0	12800	1320	1340	2340	1600	375	200	280	630	2570	3410
1RQ7634-8J..0-0CG0	13700	1320	1340	2340	1800	375	200	280	630	2570	3610
1RQ7636-8J..0-0CG0	14300	1320	1340	2340	1800	375	200	280	630	2570	3610
1RQ7710-8J..0-0CG0	16200	1500	1800	2900	2000	375	220	350	710	2710	3960
1RQ7712-8J..0-0CG0	17200	1500	1800	2900	2000	375	220	350	710	2710	3960
1RQ7714-8J..0-0CG0	19400	1500	1800	2900	2240	375	220	350	710	2710	4200
1RQ7716-8J..0-0CG0	20400	1500	1800	2900	2240	375	220	350	710	2710	4200

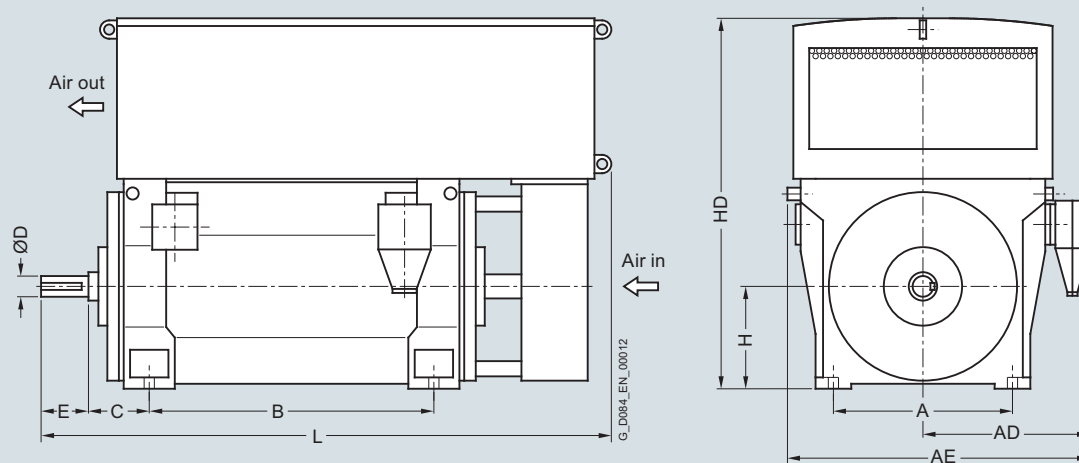
<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Motors for line operation

Air-cooled motors

SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings (continued)

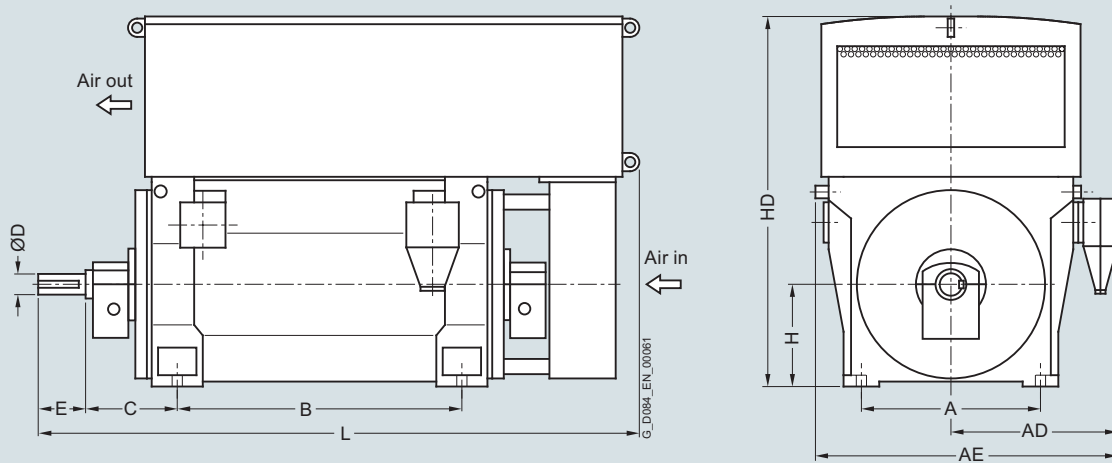


Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611</b>											
<b>10-pole</b>											
1RQ6500-3JJ.0	6000	950	1220	1980	1320	280	150	200	500	2000	2660
1RQ6502-3JJ.0	6300	950	1220	1980	1320	280	150	200	500	2000	2660
1RQ6504-3JJ.0	6850	950	1220	1980	1500	280	160	240	500	2000	2910
1RQ6506-3JJ.0	7250	950	1220	1980	1500	280	160	240	500	2000	2910
1RQ6560-3JJ.0	8200	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ6562-3JJ.0	8900	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ6564-3JJ.0	9700	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ6566-3JJ.0	10100	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ7630-3J..0-OCG0	12300	1320	1340	2340	1600	375	200	280	630	2570	3410
1RQ7632-3J..0-OCG0	12800	1320	1340	2340	1600	375	200	280	630	2570	3410
1RQ7634-3J..0-OCG0	13700	1320	1340	2340	1800	375	200	280	630	2570	3610
1RQ7636-3J..0-OCG0	14200	1320	1340	2340	1800	375	200	280	630	2570	3610
1RQ7710-3J..0-OCG0	16400	1500	1800	2900	2000	375	220	350	710	2710	3960
1RQ7712-3J..0-OCG0	17300	1500	1800	2900	2000	375	220	350	710	2710	3960
1RQ7714-3J..0-OCG0	19500	1500	1800	2900	2240	375	220	350	710	2710	4200
1RQ7716-3J..0-OCG0	20400	1500	1800	2900	2240	375	220	350	710	2710	4200
<b>12-pole</b>											
1RQ6502-5JJ.0	6350	950	1220	1980	1320	280	150	200	500	2000	2660
1RQ6504-5JJ.0	6850	950	1220	1980	1500	280	160	240	500	2000	2910
1RQ6506-5JJ.0	7250	950	1220	1980	1500	280	160	240	500	2000	2910
1RQ6560-5JJ.0	8000	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ6562-5JJ.0	8550	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ6564-5JJ.0	9400	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ6566-5JJ.0	9850	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ7630-5J..0-OCG0	12200	1320	1340	2340	1600	375	200	280	630	2570	3410
1RQ7632-5J..0-OCG0	12700	1320	1340	2340	1600	375	200	280	630	2570	3410
1RQ7634-5J..0-OCG0	13600	1320	1340	2340	1800	375	200	280	630	2570	3610
1RQ7636-5J..0-OCG0	14100	1320	1340	2340	1800	375	200	280	630	2570	3610

Note: Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611</b>											
<b>2-pole</b>											
1RQ6450-2JJ.0-Z K96 <sup>3)</sup>	4250	850	930	1620	1180	425	95	130	450	1842	2575 <sup>4)</sup>
1RQ6452-2JJ.0-Z K96 <sup>3)</sup>	4500	850	930	1620	1180	425	95	130	450	1842	2575 <sup>4)</sup>
1RQ6454-2JJ.0-Z K96 <sup>3)</sup>	4850	850	930	1620	1400	425	95	130	450	1842	2790 <sup>4)</sup>
1RQ6456-2JJ.0-Z K96 <sup>3)</sup>	5100	850	930	1620	1400	425	95	130	450	1842	2790 <sup>4)</sup>
1RQ6500-2JJ.0-Z K96 <sup>3)</sup>	6100	950	1135	1835	1320	450	110	165	500	2040	3550 <sup>4)</sup>
1RQ6502-2JJ.0-Z K96 <sup>3)</sup>	6250	950	1135	1835	1320	450	110	165	500	2040	3550 <sup>4)</sup>
1RQ6504-2JJ.0	7100	950	1135	1835	1500	450	110	165	500	2040	3750 <sup>4)</sup>
1RQ6506-2JJ.0	7350	950	1135	1835	1500	450	110	165	500	2040	3750 <sup>4)</sup>
1RQ6560-2JJ.0	8150	1060	1205	1975	1400	600	130	200	560	2300	3900 <sup>4)</sup>
1RQ6562-2JJ.0	8550	1060	1205	1975	1400	600	130	200	560	2300	3900 <sup>4)</sup>
1RQ6564-2JJ.0	9500	1060	1205	1975	1600	600	130	200	560	2300	4130 <sup>4)</sup>
1RQ6566-2JJ.0	9950	1060	1205	1975	1600	600	130	200	560	2300	4130 <sup>4)</sup>
1RQ7630-2J..0-0CJ0	11800	1320	1340	2340	1600	600	180	240	630	2710	4920 <sup>4)</sup>
1RQ7632-2J..0-0CJ0	12400	1320	1340	2340	1600	600	180	240	630	2710	4920 <sup>4)</sup>
1RQ7634-2J..0-0CJ0	13300	1320	1340	2340	1800	600	180	240	630	2710	5120 <sup>4)</sup>
1RQ7636-2J..0-0CJ0	13900	1320	1340	2340	1800	600	180	240	630	2710	5120 <sup>4)</sup>
1RQ7710-2J..0-0CJ0	16500	1500	1800	2900	2000	560	200	280	710	3080	4630 <sup>4)</sup>
1RQ7712-2J..0-0CJ0	17000	1500	1800	2900	2000	560	200	280	710	3080	4630 <sup>4)</sup>
1RQ7714-2J..0-0CJ0	18400	1500	1800	2900	2240	560	200	280	710	3080	4870 <sup>4)</sup>
1RQ7716-2J..0-0CJ0	19100	1500	1800	2900	2240	560	200	280	710	3080	4870 <sup>4)</sup>

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

<sup>3)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

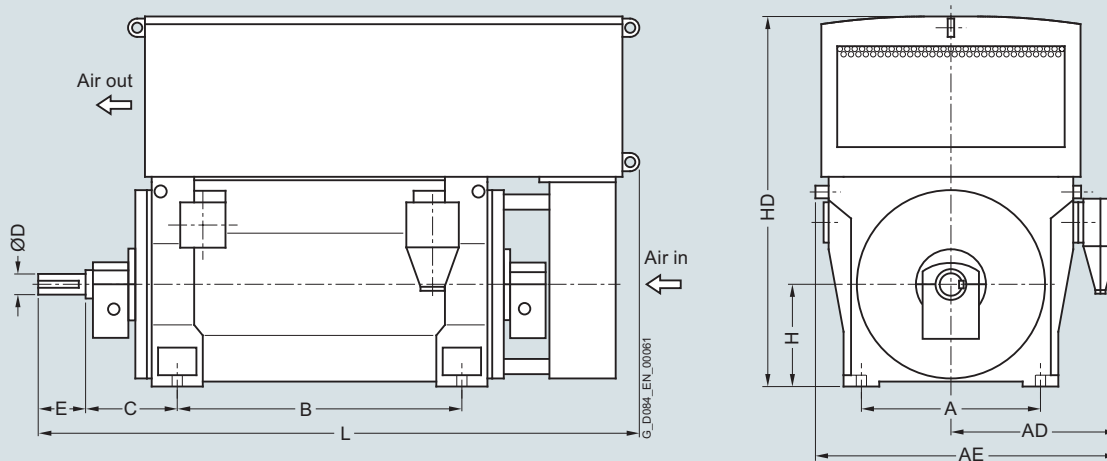
<sup>4)</sup> Including air inlet silencer.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611

##### 4-pole

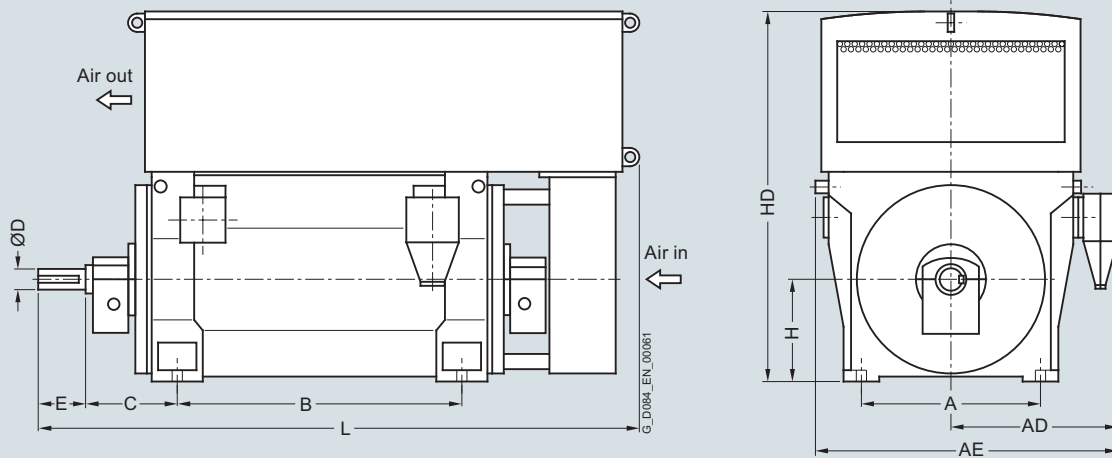
1RQ6450-4JJ.0-Z K96	4650	850	930	1620	1180	500	130	200	450	1842	2705
1RQ6452-4JJ.0-Z K96	4900	850	930	1620	1180	500	130	200	450	1842	2705
1RQ6454-4JJ.0-Z K96	5300	850	930	1620	1400	500	130	200	450	1842	2915
1RQ6456-4JJ.0-Z K96	5550	850	930	1620	1400	500	130	200	450	1842	2915
1RQ6500-4JJ.0-Z K96	6900	950	1135	1835	1320	560	150	200	500	2040	3150
1RQ6502-4JJ.0-Z K96	7100	950	1135	1835	1320	560	150	200	500	2040	3150
1RQ6504-4JJ.0-Z K96	7800	950	1135	1835	1500	560	150	200	500	2040	3350
1RQ6506-4JJ.0-Z K96	8100	950	1135	1835	1500	560	150	200	500	2040	3350
1RQ6560-4JJ.0-Z K96	8350	1060	1205	1975	1400	600	170	240	560	2300	3270
1RQ6562-4JJ.0-Z K96	8750	1060	1205	1975	1400	600	170	240	560	2300	3270
1RQ6564-4JJ.0-Z K96	9700	1060	1205	1975	1600	600	170	240	560	2300	3500
1RQ6566-4JJ.0-Z K96	10200	1060	1205	1975	1600	600	170	240	560	2300	3500
1RQ7630-4J..0-0CJ0	12300	1320	1340	2340	1600	630	200	280	630	2710	4210 <sup>3)</sup>
1RQ7632-4J..0-0CJ0	12800	1320	1340	2340	1600	630	200	280	630	2710	4210 <sup>3)</sup>
1RQ7634-4J..0-0CJ0	13800	1320	1340	2340	1800	630	200	280	630	2710	4410 <sup>3)</sup>
1RQ7636-4J..0-0CJ0	14400	1320	1340	2340	1800	630	200	280	630	2710	4410 <sup>3)</sup>
1RQ7710-4J..0-0CJ0	17500	1500	1800	2900	2000	710	220	350	710	3080	4840 <sup>3)</sup>
1RQ7712-4J..0-0CJ0	18200	1500	1800	2900	2000	710	220	350	710	3080	4840 <sup>3)</sup>
1RQ7714-4J..0-0CJ0	19500	1500	1800	2900	2240	710	220	350	710	3080	5080 <sup>3)</sup>
1RQ7716-4J..0-0CJ0	20800	1500	1800	2900	2240	710	220	350	710	3080	5080 <sup>3)</sup>

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

<sup>3)</sup> Including air inlet silencer.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611</b>											
<b>6-pole</b>											
1RQ6450-6JJ.0-Z K96	4800	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6452-6JJ.0-Z K96	5050	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6454-6JJ.0-Z K96	5450	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6456-6JJ.0-Z K96	5800	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6500-6JJ.0-Z K96	6900	950	1135	1835	1320	560	170	240	500	1990	2850
1RQ6502-6JJ.0-Z K96	7200	950	1135	1835	1320	560	170	240	500	1990	2850
1RQ6504-6JJ.0-Z K96	7850	950	1135	1835	1500	560	170	240	500	1990	3300
1RQ6506-6JJ.0-Z K96	8200	950	1135	1835	1500	560	170	240	500	1990	3300
1RQ6560-6JJ.0-Z K96	9300	1060	1205	1975	1400	600	170	240	560	2240	3300
1RQ6562-6JJ.0-Z K96	9750	1060	1205	1975	1400	600	170	240	560	2240	3300
1RQ6564-6JJ.0-Z K96	10650	1060	1205	1975	1600	600	170	240	560	2240	3500
1RQ6566-6JJ.0-Z K96	11150	1060	1205	1975	1600	600	170	240	560	2240	3500
1RQ7630-6J..0-0CJ0	12800	1320	1340	2340	1600	630	200	280	630	2710	3670
1RQ7632-6J..0-0CJ0	13400	1320	1340	2340	1600	630	200	280	630	2710	3670
1RQ7634-6J..0-0CJ0	14200	1320	1340	2340	1800	630	200	280	630	2710	3870
1RQ7636-6J..0-0CJ0	14800	1320	1340	2340	1800	630	200	280	630	2710	3870
1RQ7710-6J..0-0CJ0	17300	1500	1800	2900	2000	670	220	350	710	3080	4250
1RQ7712-6J..0-0CJ0	18400	1500	1800	2900	2000	670	220	350	710	3080	4250
1RQ7714-6J..0-0CJ0	19900	1500	1800	2900	2240	670	220	350	710	3080	4490
1RQ7716-6J..0-0CJ0	20900	1500	1800	2900	2240	670	220	350	710	3080	4490

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

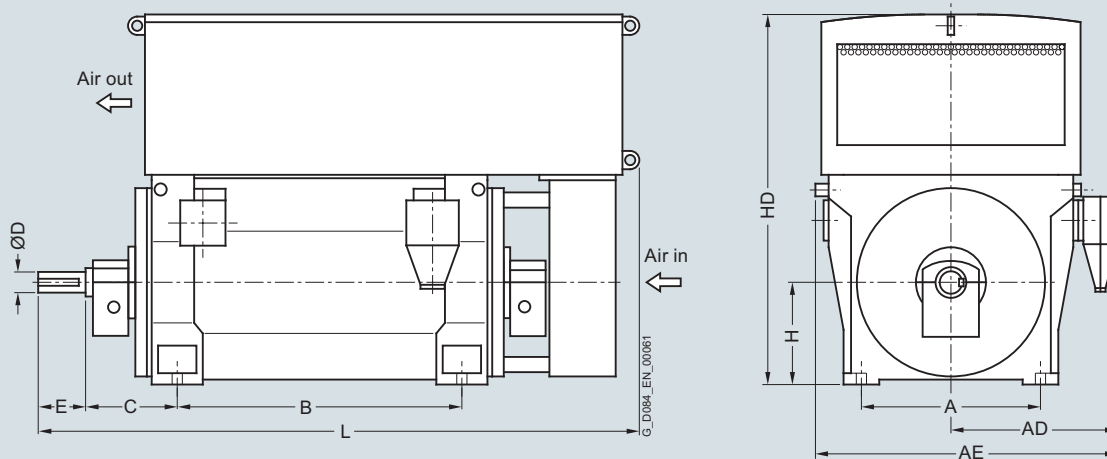
<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611

##### 8-pole

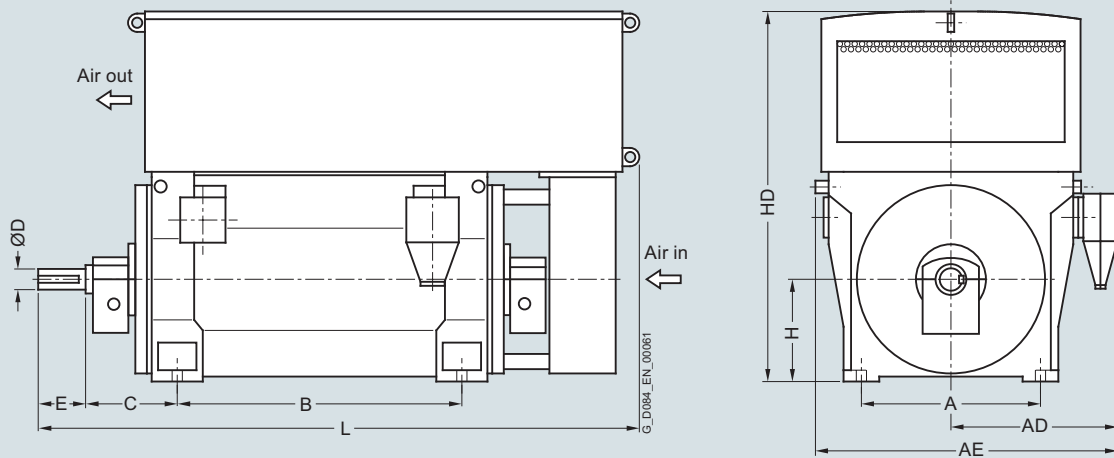
1RQ6450-8JJ.0-Z K96	4800	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6452-8JJ.0-Z K96	5100	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6454-8JJ.0-Z K96	5500	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6456-8JJ.0-Z K96	5850	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6500-8JJ.0-Z K96	6900	950	1135	1835	1320	560	170	240	500	1990	2850
1RQ6502-8JJ.0-Z K96	7150	950	1135	1835	1320	560	170	240	500	1990	2850
1RQ6504-8JJ.0-Z K96	7800	950	1135	1835	1500	560	170	240	500	1990	3300
1RQ6506-8JJ.0-Z K96	8150	950	1135	1835	1500	560	170	240	500	1990	3300
1RQ6560-8JJ.0-Z K96	9250	1060	1205	1975	1400	600	170	240	560	2240	3300
1RQ6562-8JJ.0-Z K96	9650	1060	1205	1975	1400	600	170	240	560	2240	3300
1RQ6564-8JJ.0-Z K96	10550	1060	1205	1975	1600	600	170	240	560	2240	3500
1RQ6566-8JJ.0-Z K96	11100	1060	1205	1975	1600	600	170	240	560	2240	3500
1RQ7630-8J..0-0CJ0	12400	1320	1340	2340	1600	630	200	280	630	2570	3670
1RQ7632-8J..0-0CJ0	13000	1320	1340	2340	1600	630	200	280	630	2570	3670
1RQ7634-8J..0-0CJ0	13900	1320	1340	2340	1800	630	200	280	630	2570	3870
1RQ7636-8J..0-0CJ0	14400	1320	1340	2340	1800	630	200	280	630	2570	3870
1RQ7710-8J..0-0CJ0	16500	1500	1800	2900	2000	670	220	350	710	2710	4250
1RQ7712-8J..0-0CJ0	17400	1500	1800	2900	2000	670	220	350	710	2710	4250
1RQ7714-8J..0-0CJ0	18900	1500	1800	2900	2240	670	220	350	710	2710	4490
1RQ7716-8J..0-0CJ0	20000	1500	1800	2900	2240	670	220	350	710	2710	4490

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.



## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611

## 10-pole

1RQ6450-3JJ.0-Z K96	4800	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6452-3JJ.0-Z K96	5100	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6454-3JJ.0-Z K96	5500	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6456-3JJ.0-Z K96	5850	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6500-3JJ.0-Z K96	6100	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ6502-3JJ.0-Z K96	6500	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ6504-3JJ.0-Z K96	7050	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ6506-3JJ.0-Z K96	7400	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ6560-3JJ.0-Z K96	8150	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ6562-3JJ.0-Z K96	8750	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ6564-3JJ.0-Z K96	9600	1060	1070	1900	1600	530	180	240	560	2260	3400
1RQ6566-3JJ.0-Z K96	10050	1060	1070	1900	1600	530	180	240	560	2260	3400
1RQ7630-3J..0-0CJ0	12400	1320	1340	2340	1600	630	200	280	630	2570	3670
1RQ7632-3J..0-0CJ0	12900	1320	1340	2340	1600	630	200	280	630	2570	3670
1RQ7634-3J..0-0CJ0	13800	1320	1340	2340	1800	630	200	280	630	2570	3870
1RQ7636-3J..0-0CJ0	14300	1320	1340	2340	1800	630	200	280	630	2570	3870
1RQ7710-3J..0-0CJ0	16400	1500	1800	2900	2000	670	220	350	710	2710	4250
1RQ7712-3J..0-0CJ0	17400	1500	1800	2900	2000	670	220	350	710	2710	4250
1RQ7714-3J..0-0CJ0	19000	1500	1800	2900	2240	670	220	350	710	2710	4490
1RQ7716-3J..0-0CJ0	20000	1500	1800	2900	2240	670	220	350	710	2710	4490

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

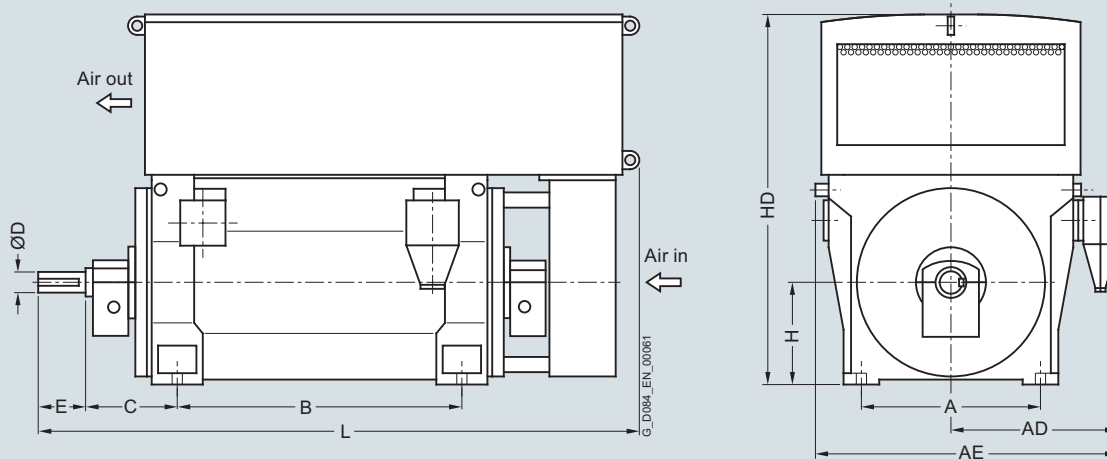
<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Motors for line operation

Air-cooled motors

SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611

12-pole

1RQ6450-5JJ.0-Z K96	4800	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6452-5JJ.0-Z K96	5100	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6454-5JJ.0-Z K96	5500	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6456-5JJ.0-Z K96	5850	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6500-5JJ.0-Z K96	6100	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ6502-5JJ.0-Z K96	6500	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ6504-5JJ.0-Z K96	7050	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ6506-5JJ.0-Z K96	7450	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ6560-5JJ.0-Z K96	8200	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ6562-5JJ.0-Z K96	8750	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ6564-5JJ.0-Z K96	9550	1060	1070	1900	1600	530	180	240	560	2260	3400
1RQ6566-5JJ.0-Z K96	10050	1060	1070	1900	1600	530	180	240	560	2260	3400
1RQ7630-5J..0-0CJ0	12300	1320	1340	2340	1600	630	200	280	630	2570	3670
1RQ7632-5J..0-0CJ0	12900	1320	1340	2340	1600	630	200	280	630	2570	3670
1RQ7634-5J..0-0CJ0	13700	1320	1340	2340	1800	630	200	280	630	2570	3870
1RQ7636-5J..0-0CJ0	14300	1320	1340	2340	1800	630	200	280	630	2570	3870

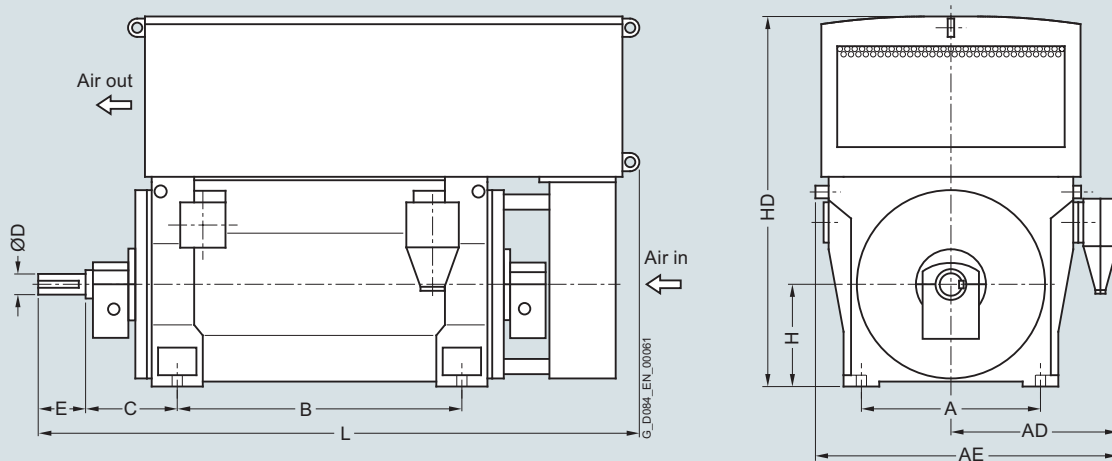
#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611</b>											
<b>2-pole</b>											
1RQ6450-2JJ.0-Z K96 <sup>2)</sup>	4250	850	1070	1840	1180	425	95	130	450	1842	2575 <sup>3)</sup>
1RQ6452-2JJ.0-Z K96 <sup>2)</sup>	4500	850	1070	1840	1180	425	95	130	450	1842	2575 <sup>3)</sup>
1RQ6454-2JJ.0-Z K96 <sup>2)</sup>	4850	850	1070	1840	1400	425	95	130	450	1842	2790 <sup>3)</sup>
1RQ6456-2JJ.0-Z K96 <sup>2)</sup>	5100	850	1070	1840	1400	425	95	130	450	1842	2790 <sup>3)</sup>
1RQ6500-2JJ.0-Z K96 <sup>2)</sup>	6100	950	1270	1970	1320	450	110	165	500	2040	3550 <sup>3)</sup>
1RQ6502-2JJ.0-Z K96 <sup>2)</sup>	6250	950	1270	1970	1320	450	110	165	500	2040	3550 <sup>3)</sup>
1RQ6504-2JJ.0	7100	950	1270	1970	1500	450	110	165	500	2040	3750 <sup>3)</sup>
1RQ6506-2JJ.0	7350	950	1270	1970	1500	450	110	165	500	2040	3750 <sup>3)</sup>
1RQ6560-2JJ.0	8150	1060	1340	2110	1400	600	130	200	560	2300	3900 <sup>3)</sup>
1RQ6562-2JJ.0	8550	1060	1340	2110	1400	600	130	200	560	2300	3900 <sup>3)</sup>
1RQ6564-2JJ.0	9500	1060	1340	2110	1600	600	130	200	560	2300	4130 <sup>3)</sup>
1RQ6566-2JJ.0	9950	1060	1340	2110	1600	600	130	200	560	2300	4130 <sup>3)</sup>
1RQ7630-2J..0-0CJ0	11600	1320	1340	2340	1600	600	180	240	630	2710	4920 <sup>3)</sup>
1RQ7632-2J..0-0CJ0	12200	1320	1340	2340	1600	600	180	240	630	2710	4920 <sup>3)</sup>
1RQ7634-2J..0-0CJ0	13100	1320	1340	2340	1800	600	180	240	630	2710	5120 <sup>3)</sup>
1RQ7636-2J..0-0CJ0	13700	1320	1340	2340	1800	600	180	240	630	2710	5120 <sup>3)</sup>
1RQ7710-2J..0-0CJ0	16900	1500	1800	2900	2000	560	200	280	710	3080	4630 <sup>3)</sup>
1RQ7712-2J..0-0CJ0	17500	1500	1800	2900	2000	560	200	280	710	3080	4630 <sup>3)</sup>
1RQ7714-2J..0-0CJ0	18700	1500	1800	2900	2240	560	200	280	710	3080	4870 <sup>3)</sup>
1RQ7716-2J..0-0CJ0	19600	1500	1800	2900	2240	560	200	280	710	3080	4870 <sup>3)</sup>

<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

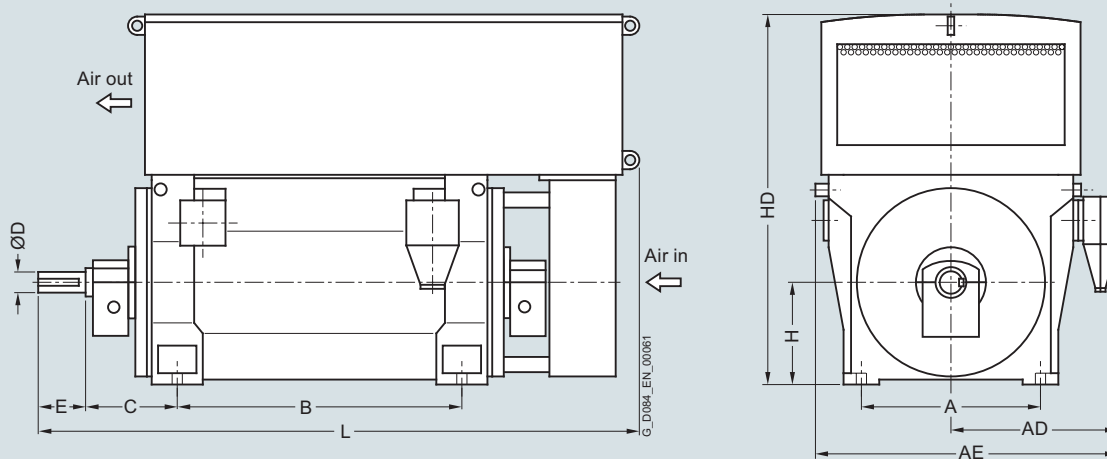
<sup>3)</sup> Including air inlet silencer.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings (continued)

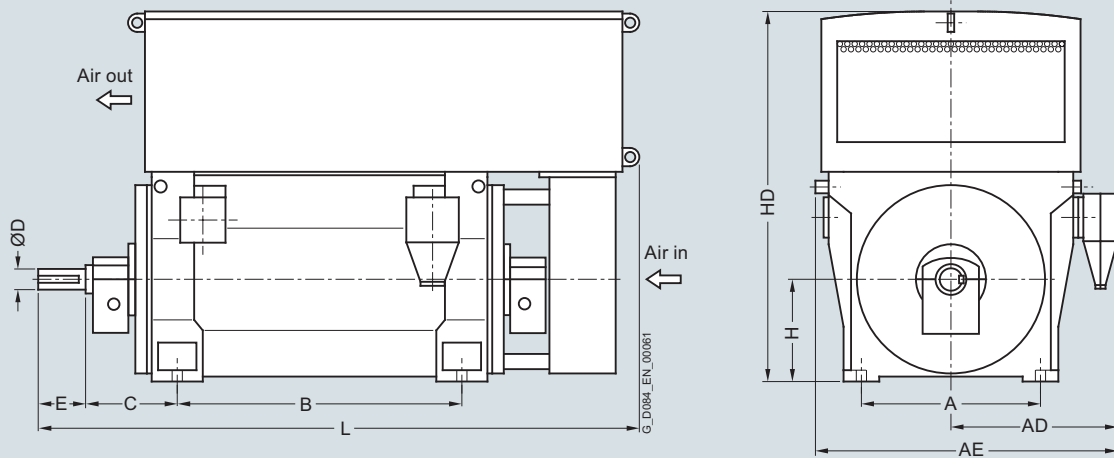


Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611</b>											
4-pole											
1RQ6450-4JJ.0-Z K96	4650	850	1070	1840	1180	500	130	200	450	1842	2705
1RQ6452-4JJ.0-Z K96	4850	850	1070	1840	1180	500	130	200	450	1842	2705
1RQ6454-4JJ.0-Z K96	5300	850	1070	1840	1400	500	130	200	450	1842	2915
1RQ6456-4JJ.0-Z K96	5550	850	1070	1840	1400	500	130	200	450	1842	2915
1RQ6500-4JJ.0-Z K96	6900	950	1270	1970	1320	560	150	200	500	2040	3150
1RQ6502-4JJ.0-Z K96	7100	950	1270	1970	1320	560	150	200	500	2040	3150
1RQ6504-4JJ.0-Z K96	7800	950	1270	1970	1500	560	150	200	500	2040	3350
1RQ6506-4JJ.0-Z K96	8100	950	1270	1970	1500	560	150	200	500	2040	3350
1RQ6560-4JJ.0-Z K96	8350	1060	1340	2110	1400	600	170	240	560	2300	3270
1RQ6562-4JJ.0-Z K96	8750	1060	1340	2110	1400	600	170	240	560	2300	3270
1RQ6564-4JJ.0-Z K96	9700	1060	1340	2110	1600	600	170	240	560	2300	3500
1RQ6566-4JJ.0-Z K96	10200	1060	1340	2110	1600	600	170	240	560	2300	3500
1RQ7630-4J..0-0CJ0	12100	1320	1340	2340	1600	630	200	280	630	2710	4210 <sup>2)</sup>
1RQ7632-4J..0-0CJ0	12600	1320	1340	2340	1600	630	200	280	630	2710	4210 <sup>2)</sup>
1RQ7634-4J..0-0CJ0	13500	1320	1340	2340	1800	630	200	280	630	2710	4410 <sup>2)</sup>
1RQ7636-4J..0-0CJ0	14200	1320	1340	2340	1800	630	200	280	630	2710	4410 <sup>2)</sup>
1RQ7710-4J..0-0CJ0	17900	1500	1800	2900	2000	710	220	350	710	3080	4840 <sup>2)</sup>
1RQ7712-4J..0-0CJ0	18700	1500	1800	2900	2000	710	220	350	710	3080	4840 <sup>2)</sup>
1RQ7714-4J..0-0CJ0	20100	1500	1800	2900	2240	710	220	350	710	3080	5080 <sup>2)</sup>
1RQ7716-4J..0-0CJ0	21300	1500	1800	2900	2240	710	220	350	710	3080	5080 <sup>2)</sup>

<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

<sup>2)</sup> Including air inlet silencer.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

**9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611**

## 6-pole

1RQ6450-6JJ.0-Z K96	4800	850	1070	1840	1180	500	140	200	450	1842	2705
1RQ6452-6JJ.0-Z K96	5050	850	1070	1840	1180	500	140	200	450	1842	2705
1RQ6454-6JJ.0-Z K96	5450	850	1070	1840	1400	500	140	200	450	1842	2915
1RQ6456-6JJ.0-Z K96	5800	850	1070	1840	1400	500	140	200	450	1842	2915
1RQ6500-6JJ.0-Z K96	6900	950	1270	1970	1320	560	170	240	500	1990	2850
1RQ6502-6JJ.0-Z K96	7200	950	1270	1970	1320	560	170	240	500	1990	2850
1RQ6504-6JJ.0-Z K96	7850	950	1270	1970	1500	560	170	240	500	1990	3300
1RQ6506-6JJ.0-Z K96	8200	950	1270	1970	1500	560	170	240	500	1990	3300
1RQ6560-6JJ.0-Z K96	9300	1060	1340	2110	1400	600	170	240	560	2240	3300
1RQ6562-6JJ.0-Z K96	9750	1060	1340	2110	1400	600	170	240	560	2240	3300
1RQ6564-6JJ.0-Z K96	10650	1060	1340	2110	1600	600	170	240	560	2240	3500
1RQ6566-6JJ.0-Z K96	11150	1060	1340	2110	1600	600	170	240	560	2240	3500
1RQ7630-6J..0-0CJ0	12600	1320	1340	2340	1600	630	200	280	630	2710	3670
1RQ7632-6J..0-0CJ0	13200	1320	1340	2340	1600	630	200	280	630	2710	3670
1RQ7634-6J..0-0CJ0	14100	1320	1340	2340	1800	630	200	280	630	2710	3870
1RQ7636-6J..0-0CJ0	14600	1320	1340	2340	1800	630	200	280	630	2710	3870
1RQ7710-6J..0-0CJ0	17800	1500	1800	2900	2000	670	220	350	710	3080	4250
1RQ7712-6J..0-0CJ0	18900	1500	1800	2900	2000	670	220	350	710	3080	4250
1RQ7714-6J..0-0CJ0	20400	1500	1800	2900	2240	670	220	350	710	3080	4490
1RQ7716-6J..0-0CJ0	21500	1500	1800	2900	2240	670	220	350	710	3080	4490

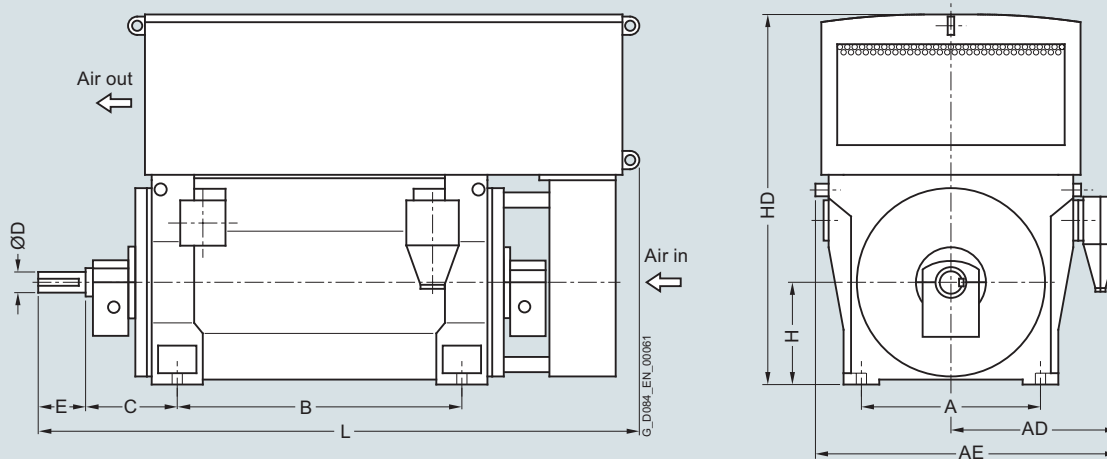
<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

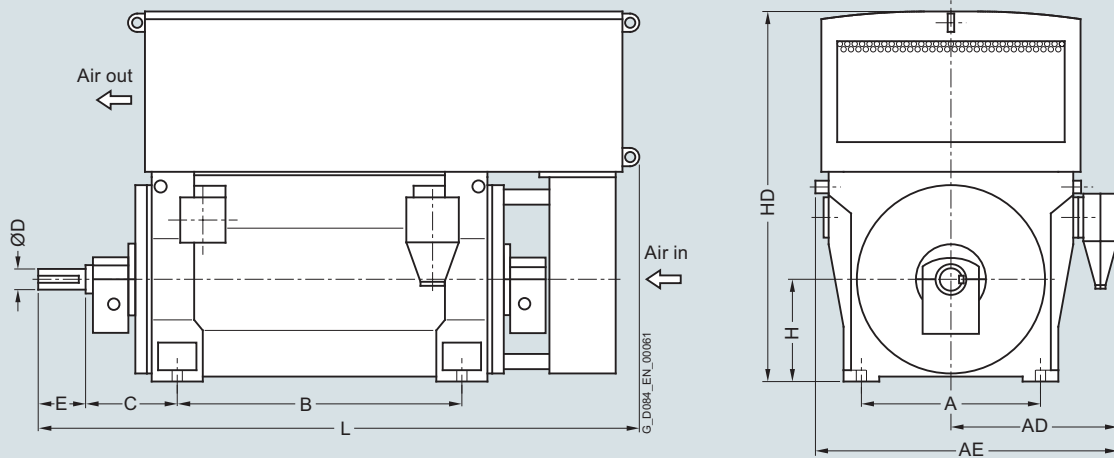
#### 9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611

##### 8-pole

1RQ6450-8JJ.0-Z K96	4800	850	1070	1840	1180	500	140	200	450	1842	2705
1RQ6452-8JJ.0-Z K96	5100	850	1070	1840	1180	500	140	200	450	1842	2705
1RQ6454-8JJ.0-Z K96	5500	850	1070	1840	1400	500	140	200	450	1842	2915
1RQ6456-8JJ.0-Z K96	5850	850	1070	1840	1400	500	140	200	450	1842	2915
1RQ6500-8JJ.0-Z K96	6900	950	1270	1970	1320	560	170	240	500	1990	2850
1RQ6502-8JJ.0-Z K96	7150	950	1270	1970	1320	560	170	240	500	1990	2850
1RQ6504-8JJ.0-Z K96	7800	950	1270	1970	1500	560	170	240	500	1990	3300
1RQ6506-8JJ.0-Z K96	8150	950	1270	1970	1500	560	170	240	500	1990	3300
1RQ6560-8JJ.0-Z K96	9250	1060	1340	2110	1400	600	170	240	560	2240	3300
1RQ6562-8JJ.0-Z K96	9650	1060	1340	2110	1400	600	170	240	560	2240	3300
1RQ6564-8JJ.0-Z K96	10550	1060	1340	2110	1600	600	170	240	560	2240	3500
1RQ6566-8JJ.0-Z K96	11100	1060	1340	2110	1600	600	170	240	560	2240	3500
1RQ7630-8J..0-0CJ0	12300	1320	1340	2340	1600	630	200	280	630	2570	3670
1RQ7632-8J..0-0CJ0	12900	1320	1340	2340	1600	630	200	280	630	2570	3670
1RQ7634-8J..0-0CJ0	13700	1320	1340	2340	1800	630	200	280	630	2570	3870
1RQ7636-8J..0-0CJ0	14300	1320	1340	2340	1800	630	200	280	630	2570	3870
1RQ7710-8J..0-0CJ0	16300	1500	1800	2900	2000	670	220	350	710	2710	4250
1RQ7712-8J..0-0CJ0	17300	1500	1800	2900	2000	670	220	350	710	2710	4250
1RQ7714-8J..0-0CJ0	19500	1500	1800	2900	2240	670	220	350	710	2710	4490
1RQ7716-8J..0-0CJ0	20400	1500	1800	2900	2240	670	220	350	710	2710	4490

<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611</b>											
10-pole											
1RQ6500-3JJ.0-Z K96	6100	950	1140	1980	1320	500	150	200	500	2000	2880
1RQ6502-3JJ.0-Z K96	6450	950	1140	1980	1320	500	150	200	500	2000	2880
1RQ6504-3JJ.0-Z K96	7050	950	1140	1980	1500	500	160	240	500	2000	3130
1RQ6506-3JJ.0-Z K96	7400	950	1140	1980	1500	500	160	240	500	2000	3130
1RQ6560-3JJ.0-Z K96	8400	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ6562-3JJ.0-Z K96	9400	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ6564-3JJ.0-Z K96	9900	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ6566-3JJ.0-Z K96	13000	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ7630-3J..0-0CJ0	12300	1320	1340	2340	1600	630	200	280	630	2570	3670
1RQ7632-3J..0-0CJ0	12800	1320	1340	2340	1600	630	200	280	630	2570	3670
1RQ7634-3J..0-0CJ0	13700	1320	1340	2340	1800	630	200	280	630	2570	3870
1RQ7636-3J..0-0CJ0	14200	1320	1340	2340	1800	630	200	280	630	2570	3870
1RQ7710-3J..0-0CJ0	16400	1500	1800	2900	2000	670	220	350	710	2710	4250
1RQ7712-3J..0-0CJ0	17400	1500	1800	2900	2000	670	220	350	710	2710	4250
1RQ7714-3J..0-0CJ0	19600	1500	1800	2900	2240	670	220	350	710	2710	4490
1RQ7716-3J..0-0CJ0	20500	1500	1800	2900	2240	670	220	350	710	2710	4490

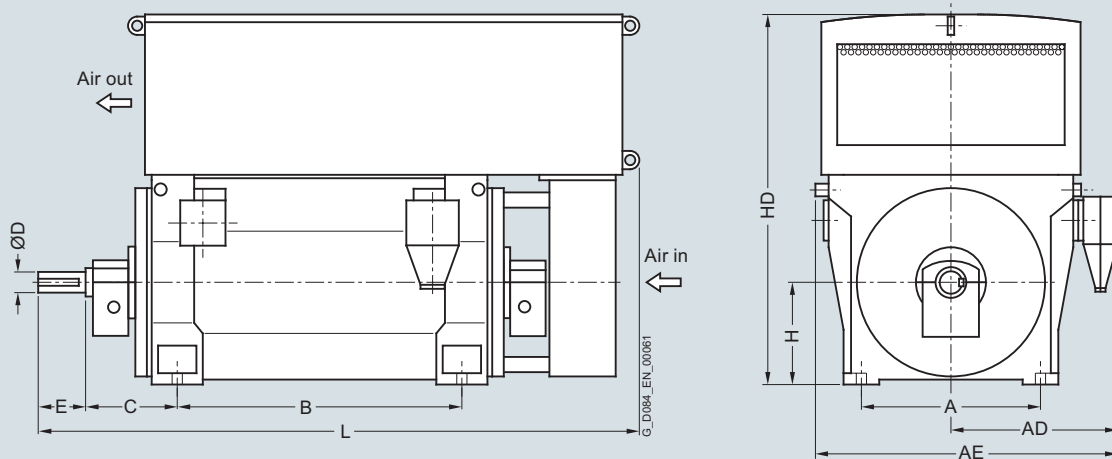
<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Motors for line operation

Air-cooled motors

SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611</b>											
<b>12-pole</b>											
1RQ6502-5JJ.0-Z K96	6500	950	1140	1980	1320	500	150	200	500	2000	2880
1RQ6504-5JJ.0-Z K96	7050	950	1140	1980	1500	500	160	240	500	2000	3130
1RQ6506-5JJ.0-Z K96	7400	950	1140	1980	1500	500	160	240	500	2000	3130
1RQ6560-5JJ.0-Z K96	8150	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ6562-5JJ.0-Z K96	8700	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ6564-5JJ.0-Z K96	9550	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ6566-5JJ.0-Z K96	10000	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ7630-5J..0-0CJ0	12200	1320	1340	2340	1600	630	200	280	630	2570	3670
1RQ7632-5J..0-0CJ0	12700	1320	1340	2340	1600	630	200	280	630	2570	3670
1RQ7634-5J..0-0CJ0	13600	1320	1340	2340	1800	630	200	280	630	2570	3870
1RQ7636-5J..0-0CJ0	14100	1320	1340	2340	1800	630	200	280	630	2570	3870

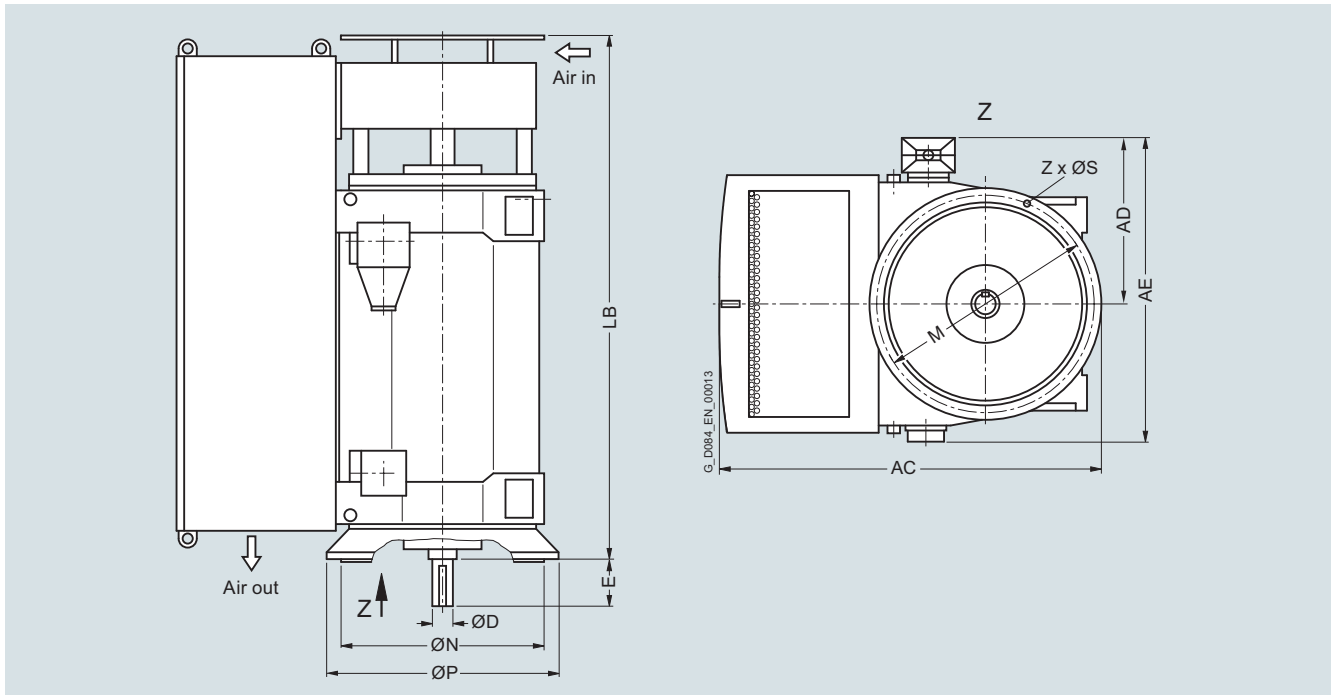
**Note:**

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.



## Dimension drawings



Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611</b>												
4-pole												
1RQ6450-4JJ.4	4750	1967	930	1620	130	200	2730	1150	1000	1080	26	8
1RQ6452-4JJ.4	5000	1967	930	1620	130	200	2730	1150	1000	1080	26	8
1RQ6454-4JJ.4	5400	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6456-4JJ.4	5700	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6500-4JJ.4	6050	2130	1000	1810	140	200	2560	1250	1120	1180	26	8
1RQ6502-4JJ.4	6250	2130	1000	1810	140	200	2560	1250	1120	1180	26	8
1RQ6504-4JJ.4	6950	2130	1000	1810	150	200	2770	1250	1120	1180	26	8
1RQ6506-4JJ.4	7300	2130	1000	1810	150	200	2770	1250	1120	1180	26	8
1RQ6560-4JJ.4	8200	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ6562-4JJ.4	8600	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ6564-4JE.4 <sup>3)</sup>	9500	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ6566-4JE.4 <sup>3)</sup>	9950	2400	1210	2100	180	240	3030	1400	1250	1320	26	8

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.

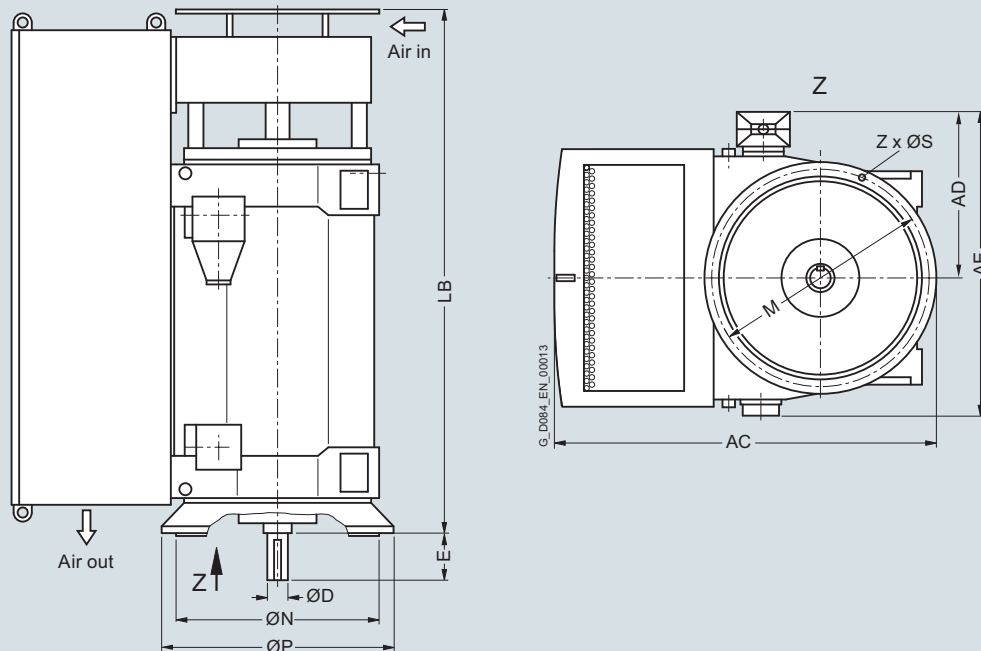
<sup>3)</sup> Vertical type of construction, only in the 50 Hz version.

## Motors for line operation

### Air-cooled motors

#### SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings (continued)

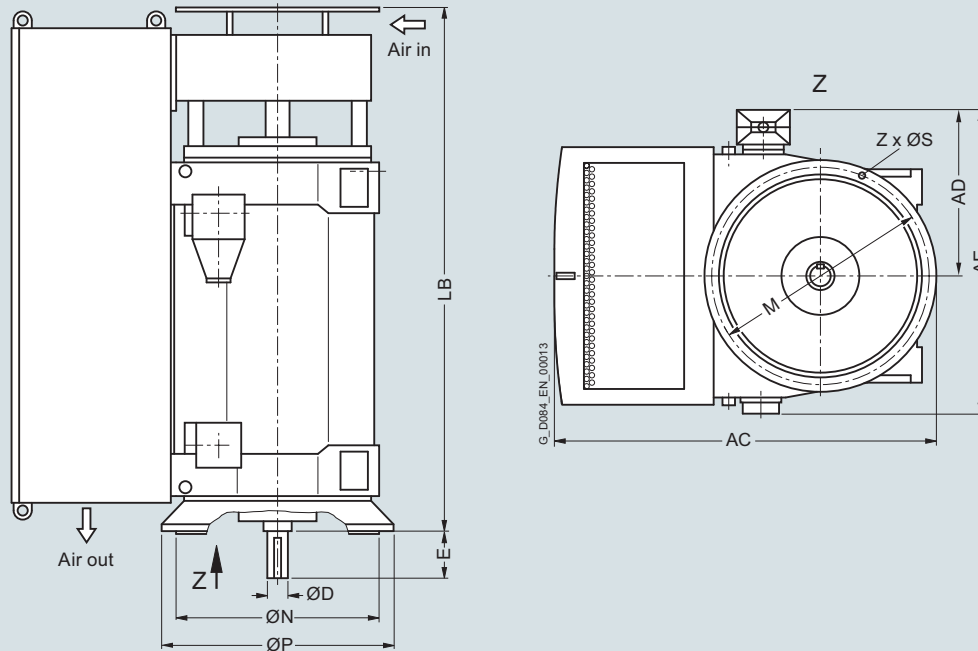


Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611</b>												
6-pole												
1RQ6450-6JJ.4	4850	1967	930	1620	130	200	2730	1150	1000	1080	26	8
1RQ6452-6JJ.4	5150	1967	930	1620	130	200	2730	1150	1000	1080	26	8
1RQ6454-6JJ.4	5500	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6456-6JJ.4	5850	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6500-6JJ.4	6200	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ6502-6JJ.4	6550	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ6504-6JJ.4	7100	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ6506-6JJ.4	7500	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ6560-6JJ.4	8300	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ6562-6JJ.4	8800	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ6564-6JJ.4	9750	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ6566-6JJ.4	10200	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ7630-6J..8-OCG0	13400	3020	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7632-6J..8-OCG0	14000	3020	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7634-6J..8-OCG0	14900	3020	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7636-6J..8-OCG0	15500	3020	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7710-6J..8-OCG0	18100	3420	1800	2900	220	350	4020	2000	1800	1900	35	24
1RQ7712-6J..8-OCG0	19200	3420	1800	2900	220	350	4020	2000	1800	1900	35	24
1RQ7714-6J..8-OCG0	20700	3420	1800	2900	220	350	4260	2000	1800	1900	35	24
1RQ7716-6J..8-OCG0	21700	3420	1800	2900	220	350	4260	2000	1800	1900	35	24

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611</b>												
8-pole												
1RQ6450-8JJ.4	4850	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6452-8JJ.4	5150	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6454-8JJ.4	5550	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6456-8JJ.4	5900	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6500-8JJ.4	6200	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ6502-8JJ.4	6600	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ6504-8JJ.4	7100	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ6506-8JJ.4	7500	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ6560-8JJ.4	8250	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ6562-8JJ.4	8800	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ6564-8JJ.4	9650	2400	1070	1960	180	240	3030	1400	1250	1320	26	8
1RQ6566-8JJ.4	10100	2400	1070	1960	180	240	3030	1400	1250	1320	26	8
1RQ7630-8J..8-OCG0	13000	2890	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7632-8J..8-OCG0	13600	2890	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7634-8J..8-OCG0	14500	2890	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7636-8J..8-OCG0	15100	2890	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7710-8J..8-OCG0	16900	3050	1800	2900	220	350	4020	2000	1800	1900	35	24
1RQ7712-8J..8-OCG0	17800	3050	1800	2900	220	350	4020	2000	1800	1900	35	24
1RQ7714-8J..8-OCG0	19400	3050	1800	2900	220	350	4260	2000	1800	1900	35	24
1RQ7716-8J..8-OCG0	20400	3050	1800	2900	220	350	4260	2000	1800	1900	35	24

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

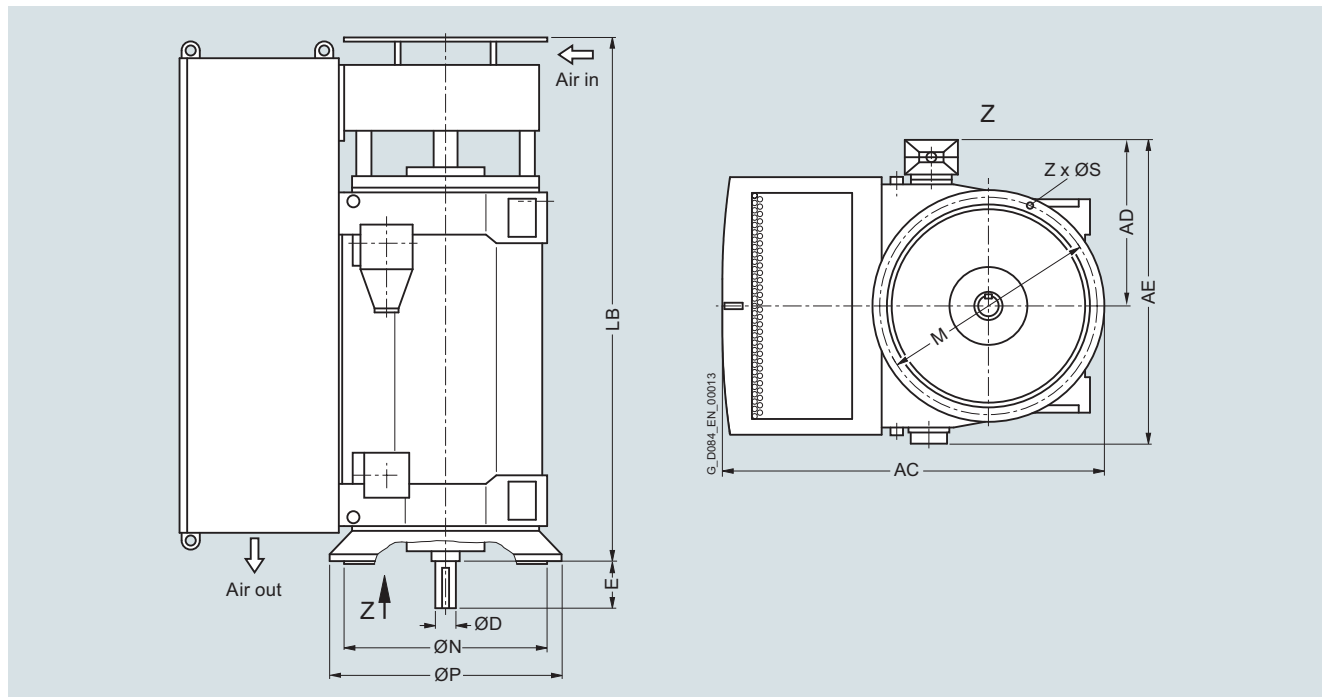
<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Motors for line operation

Air-cooled motors

SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings (continued)

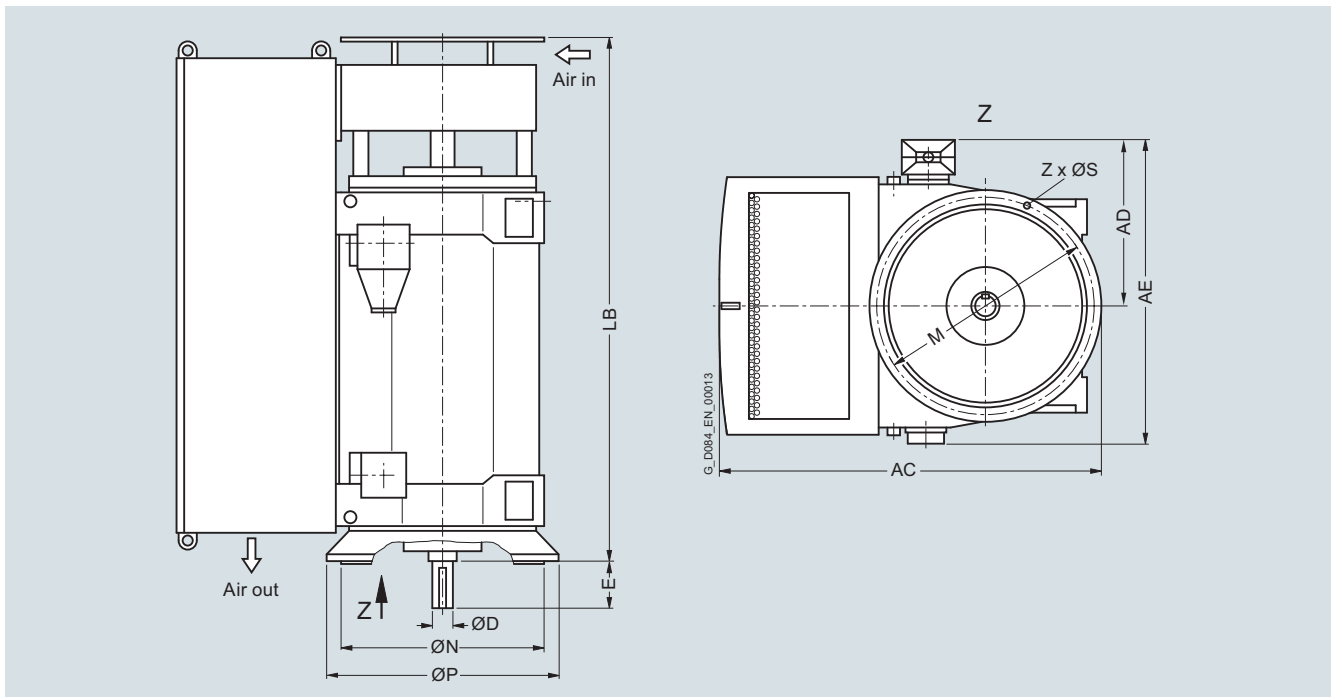


Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611</b>												
10-pole												
1RQ6450-3JJ.4	4850	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6452-3JJ.4	5150	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6454-3JJ.4	5550	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6456-3JJ.4	5900	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6500-3JJ.4	6150	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ6502-3JJ.4	6450	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ6504-3JJ.4	7050	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ6506-3JJ.4	7450	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ6560-3JJ.4	8200	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ6562-3JJ.4	8750	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ6564-3JJ.4	9600	2400	1070	1960	180	240	3030	1400	1250	1320	26	8
1RQ6566-3JJ.4	10050	2400	1070	1960	180	240	3030	1400	1250	1320	26	8
1RQ7630-3J..8-OCG0	13000	2890	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7632-3J..8-OCG0	13500	2890	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7634-3J..8-OCG0	14400	2890	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7636-3J..8-OCG0	14900	2890	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7710-3J..8-OCG0	16700	3050	1800	2900	220	350	4020	2000	1800	1900	35	24
1RQ7712-3J..8-OCG0	17700	3050	1800	2900	220	350	4020	2000	1800	1900	35	24
1RQ7714-3J..8-OCG0	19300	3050	1800	2900	220	350	4260	2000	1800	1900	35	24
1RQ7716-3J..8-OCG0	20400	3050	1800	2900	220	350	4260	2000	1800	1900	35	24

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RQ6<sup>2)</sup>, 1RQ7<sup>2)</sup> series – IC611</b>												
12-pole												
1RQ6450-5JJ.4	4850	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6452-5JJ.4	5150	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6454-5JJ.4	5550	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6456-5JJ.4	5900	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6500-5JJ.4	6150	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ6502-5JJ.4	6500	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ6504-5JJ.4	7050	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ6506-5JJ.4	7500	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ6560-5JJ.4	8200	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ6562-5JJ.4	8750	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ6564-5JJ.4	9550	2400	1070	1960	180	240	3030	1400	1250	1320	26	8
1RQ6566-5JJ.4	10050	2400	1070	1960	180	240	3030	1400	1250	1320	26	8
1RQ7630-5J..8-0CG0	12900	2890	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7632-5J..8-0CG0	13500	2890	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7634-5J..8-0CG0	14400	2890	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7636-5J..8-0CG0	14900	2890	1250	2130	200	280	3650	1800	1600	1700	28	24

Note:

Higher pole numbers are available on request.

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

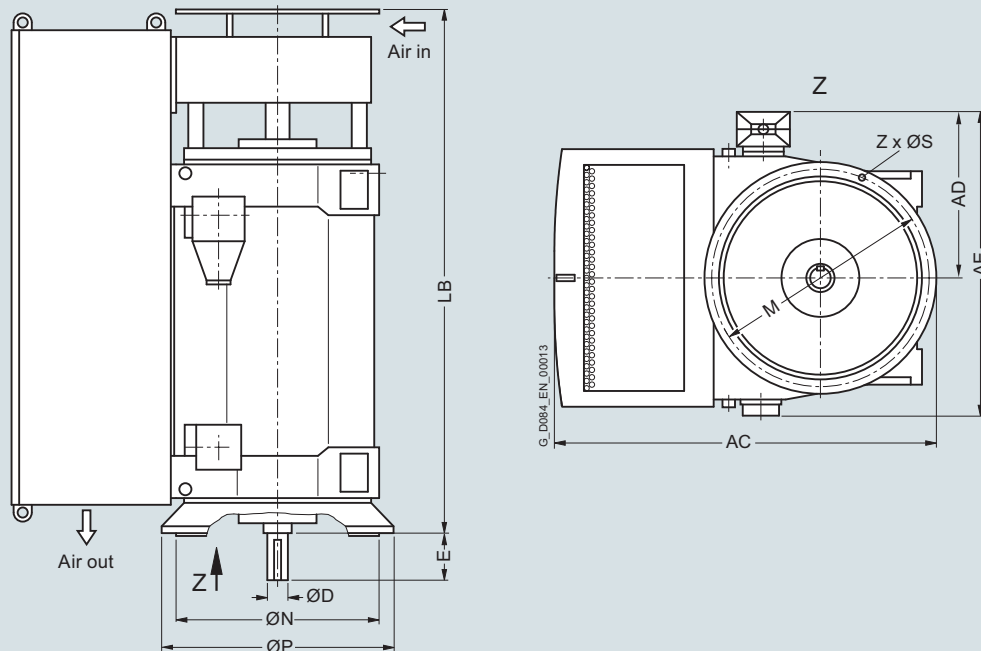
<sup>2)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Motors for line operation

Air-cooled motors

SIMOTICS HV M 1RQ6, 1RQ7

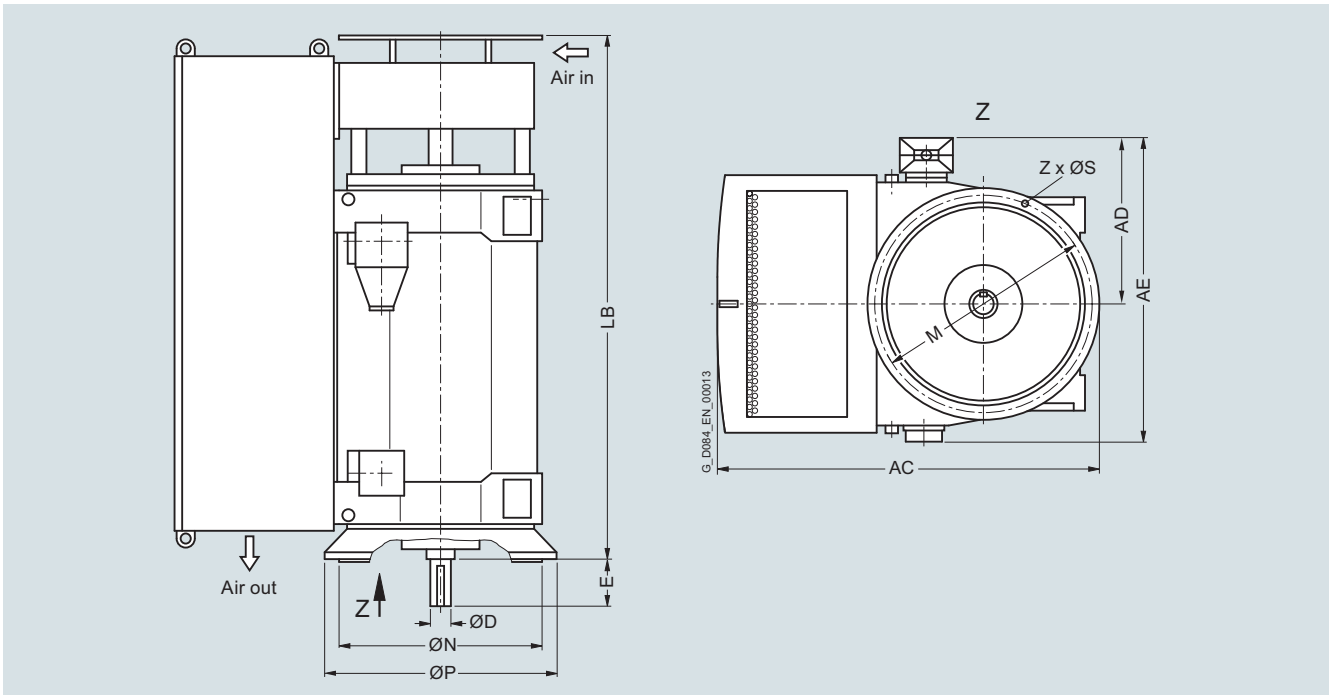
### Dimension drawings



Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611</b>												
4-pole												
1RQ6450-4JJ.4	4750	1967	1070	1840	130	200	2730	1150	1000	1080	26	8
1RQ6452-4JJ.4	5000	1967	1070	1840	130	200	2730	1150	1000	1080	26	8
1RQ6454-4JJ.4	5400	1967	1070	1840	130	200	2940	1150	1000	1080	26	8
1RQ6456-4JJ.4	5700	1967	1070	1840	130	200	2940	1150	1000	1080	26	8
1RQ6500-4JJ.4	6050	2130	1140	1950	140	200	2560	1250	1120	1180	26	8
1RQ6502-4JJ.4	6250	2130	1140	1950	140	200	2560	1250	1120	1180	26	8
1RQ6504-4JJ.4	6950	2130	1140	1950	150	200	2770	1250	1120	1180	26	8
1RQ6506-4JJ.4	7300	2130	1140	1950	150	200	2770	1250	1120	1180	26	8
1RQ6560-4JJ.4	8050	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ6562-4JJ.4	8500	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ6564-4JJ.4	9400	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ6566-4JJ.4	9800	2400	1210	2100	180	240	3030	1400	1250	1320	26	8

<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611</b>												
6-pole												
1RQ6450-6JJ.4	4850	1967	1070	1840	140	200	2730	1150	1000	1080	26	8
1RQ6452-6JJ.4	5150	1967	1070	1840	140	200	2730	1150	1000	1080	26	8
1RQ6454-6JJ.4	5500	1967	1070	1840	140	200	2940	1150	1000	1080	26	8
1RQ6456-6JJ.4	5850	1967	1070	1840	140	200	2940	1150	1000	1080	26	8
1RQ6500-6JJ.4	6150	2130	1140	1950	150	200	2560	1250	1120	1180	26	8
1RQ6502-6JJ.4	6550	2130	1140	1950	150	200	2560	1250	1120	1180	26	8
1RQ6504-6JJ.4	7100	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ6506-6JJ.4	7500	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ6560-6JJ.4	8250	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ6562-6JJ.4	8750	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ6564-6JJ.4	9600	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ6566-6JJ.4	10050	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ7630-6J..8-OCG0	13200	3020	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7632-6J..8-OCG0	13800	3020	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7634-6J..8-OCG0	14700	3020	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7636-6J..8-OCG0	15300	3020	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7710-6J..8-OCG0	17900	3420	1800	2900	220	350	4020	2000	1800	1900	35	24
1RQ7712-6J..8-OCG0	19000	3420	1800	2900	220	350	4020	2000	1800	1900	35	24
1RQ7714-6J..8-OCG0	20500	3420	1800	2900	220	350	4260	2000	1800	1900	35	24
1RQ7716-6J..8-OCG0	21600	3420	1800	2900	220	350	4260	2000	1800	1900	35	24

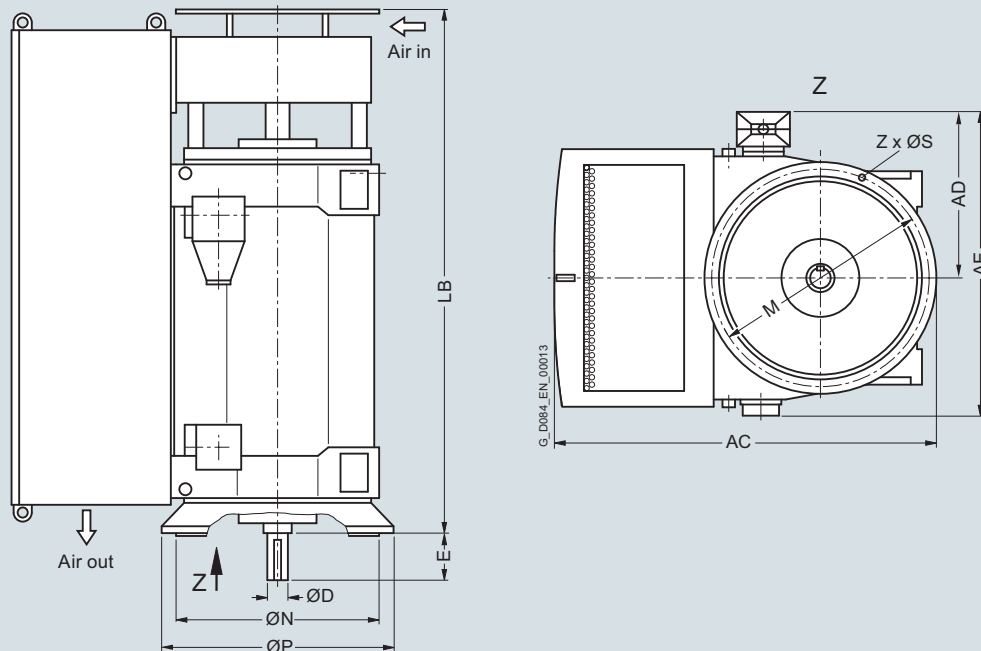
<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Motors for line operation

Air-cooled motors

SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings (continued)

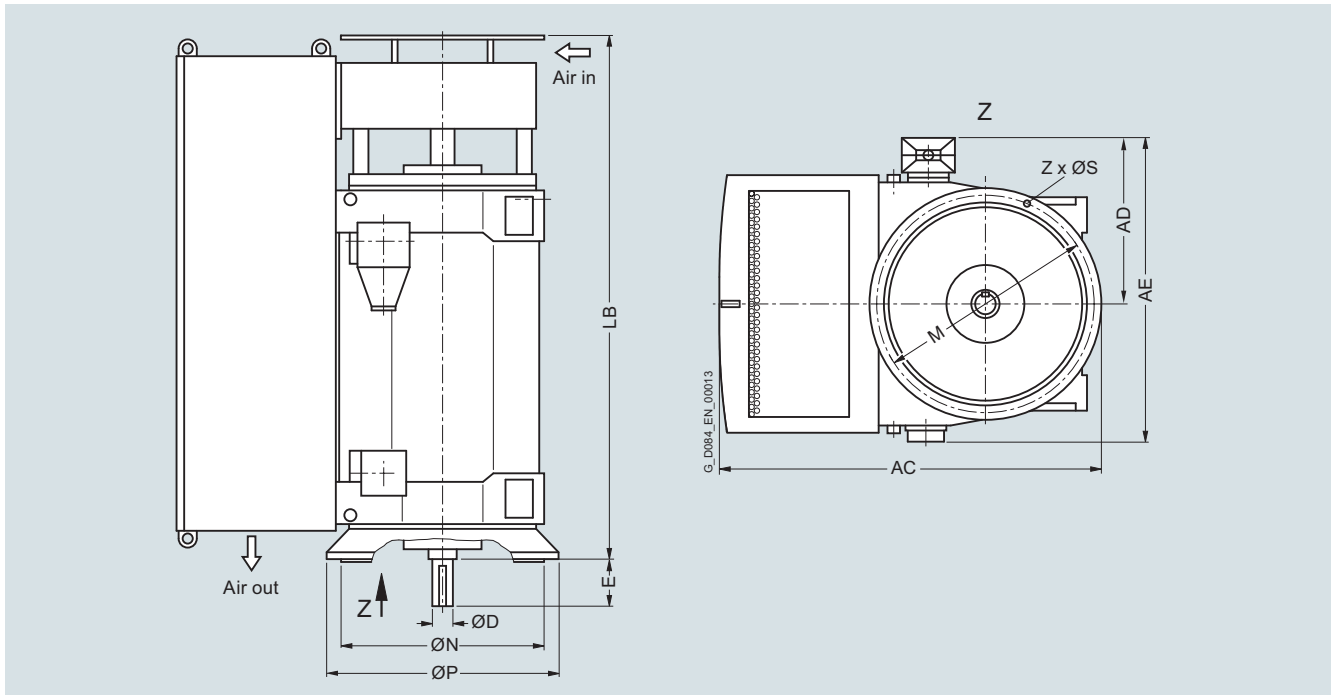


Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611</b>												
8-pole												
1RQ6450-8JJ.4	4850	1967	1070	1840	140	200	2730	1150	1000	1080	26	8
1RQ6452-8JJ.4	5150	1967	1070	1840	140	200	2730	1150	1000	1080	26	8
1RQ6454-8JJ.4	5550	1967	1070	1840	140	200	2940	1150	1000	1080	26	8
1RQ6456-8JJ.4	5900	1967	1070	1840	140	200	2940	1150	1000	1080	26	8
1RQ6500-8JJ.4	6200	2130	1140	1950	150	200	2560	1250	1120	1180	26	8
1RQ6502-8JJ.4	6550	2130	1140	1950	150	200	2560	1250	1120	1180	26	8
1RQ6504-8JJ.4	7100	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ6506-8JJ.4	7500	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ6560-8JJ.4	8200	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ6562-8JJ.4	8750	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ6564-8JJ.4	9600	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ6566-8JE.4	10000	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ7630-8J..8-OCG0	12900	2890	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7632-8J..8-OCG0	13500	2890	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7634-8J..8-OCG0	14400	2890	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7636-8J..8-OCG0	14900	2890	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7710-8J..8-OCG0	16600	3050	1800	2900	220	350	4020	2000	1800	1900	35	24
1RQ7712-8J..8-OCG0	17600	3050	1800	2900	220	350	4020	2000	1800	1900	35	24
1RQ7714-8J..8-OCG0	19100	3050	1800	2900	220	350	4260	2000	1800	1900	35	24
1RQ7716-8J..8-OCG0	20000	3050	1800	2900	220	350	4260	2000	1800	1900	35	24

<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.



## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611</b>												
10-pole												
1RQ6500-3JJ.4	6150	2130	1140	1950	150	200	2560	1250	1120	1180	26	8
1RQ6502-3JJ.4	6450	2130	1140	1950	150	200	2560	1250	1120	1180	26	8
1RQ6504-3JJ.4	7000	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ6506-3JJ.4	7450	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ6560-3JJ.4	8700	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ6562-3JJ.4	9350	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ6564-3JJ.4	10150	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ6566-3JJ.4	10600	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ7630-3J..8-OCG0	12900	2890	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7632-3J..8-OCG0	13400	2890	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7634-3J..8-OCG0	14300	2890	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7636-3J..8-OCG0	14800	2890	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7710-3J..8-OCG0	16800	3050	1800	2900	220	350	4020	2000	1800	1900	35	24
1RQ7712-3J..8-OCG0	17700	3050	1800	2900	220	350	4020	2000	1800	1900	35	24
1RQ7714-3J..8-OCG0	19200	3050	1800	2900	220	350	4260	2000	1800	1900	35	24
1RQ7716-3J..8-OCG0	20100	3050	1800	2900	220	350	4260	2000	1800	1900	35	24

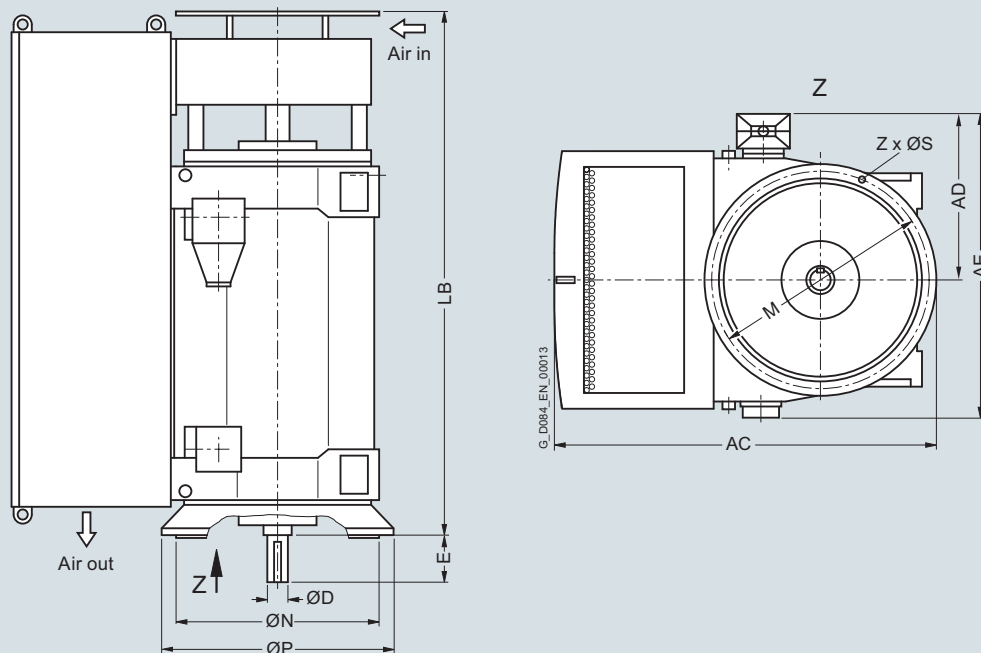
<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Motors for line operation

Air-cooled motors

SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings (continued)



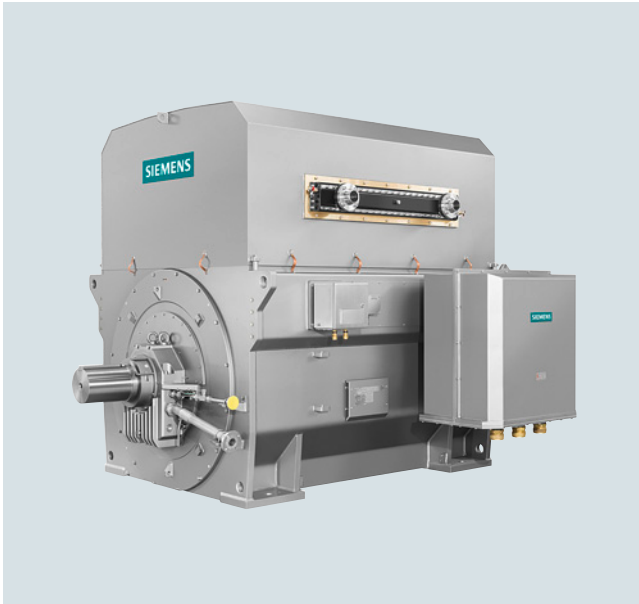
Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RQ6<sup>1)</sup>, 1RQ7<sup>1)</sup> series – IC611</b>												
12-pole												
1RQ6502-5JJ.4	6500	2130	1140	1950	150	200	2560	1250	1120	1180	26	8
1RQ6504-5JJ.4	7000	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ6506-5JJ.4	7450	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ6560-5JJ.4	8200	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ6562-5JJ.4	8700	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ6564-5JJ.4	9550	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ6566-5JJ.4	10000	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ7630-5J..8-0CG0	12800	2890	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7632-5J..8-0CG0	13300	2890	1250	2130	200	280	3450	1800	1600	1700	28	24
1RQ7634-5J..8-0CG0	14200	2890	1250	2130	200	280	3650	1800	1600	1700	28	24
1RQ7636-5J..8-0CG0	14800	2890	1250	2130	200	280	3650	1800	1600	1700	28	24

Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SG6 and 1SG7 series. For the 1SB6 and 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.

## Overview



## Technical data

## Overview of technical data

## SIMOTICS HV M 1RN6, 1RN7

Rated voltage	4 ... 11 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Cooling method	IC81W/IC86W
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height <sup>1)</sup>	450 ... 710 mm
Bearings	Anti-friction bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN (NEMA version on request)
Frame design for shaft heights 450 ... 560 mm	Housing: Cast iron Cooling enclosure: Steel
Frame design for shaft heights 630 ... 710 mm	Housing: Steel Cooling enclosure: Steel

## Power ranges for IEC motors for line operation

1RN6, 1SL6 (Ex ec), 1SQ6 (Ex pxb) series

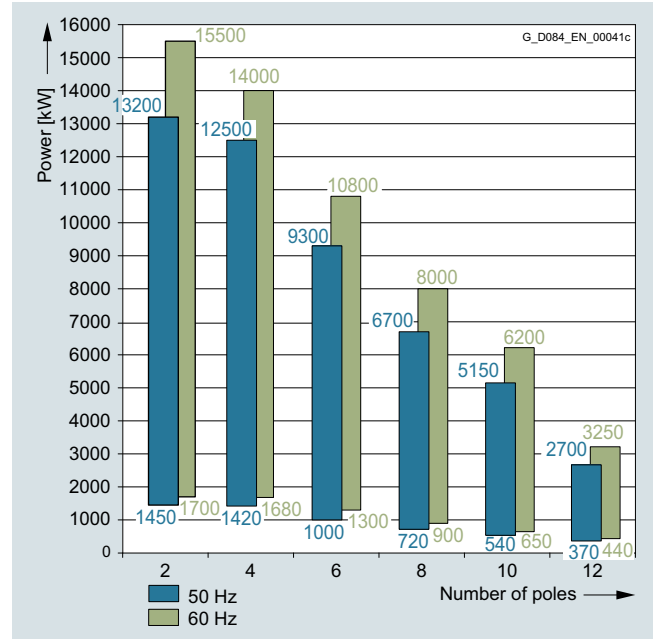
1RN7, 1SL7 (Ex ec), 1SQ7 (Ex pxb) series

Insulation system, thermal class 155 (F), utilized to 130 (B).

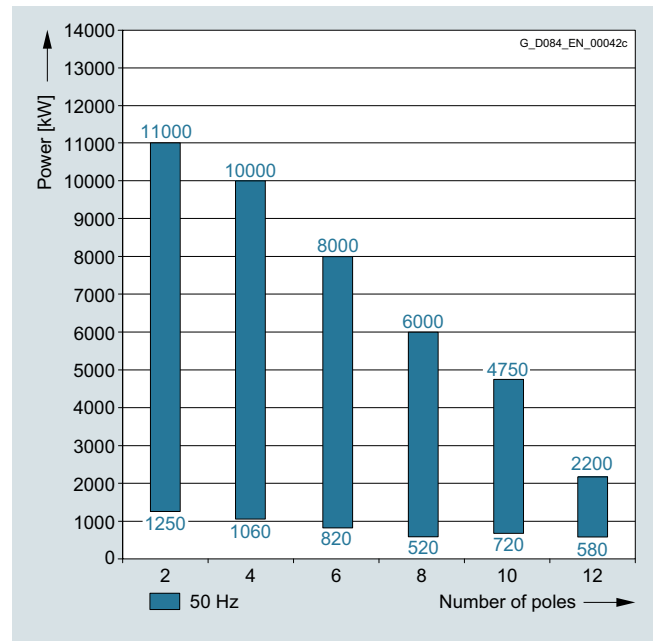
Coolant temperature up to 25 °C, installation altitude up to 1000 m.

4 to 6.6 kV; 50 Hz

4 to 6.6 kV; 60 Hz



9 to 11 kV; 50 Hz



<sup>1)</sup> For shaft height 800 motor data, refer to Chapter 3, section "Converter with non-sinusoidal output". The locked-rotor torque and locked-rotor current data are available on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data

##### IEC version

The following data also apply to explosion-protected motors 1SL6/1SL7 (Ex ec) and 1SQ6/1SQ7 (Ex pxb).

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 50 Hz</b>														
2-pole														
1450	<b>1RN6450-2HJ 0</b>	2970	166	95.6	96.0	0.88	0.87	4662	2.00	0.60	4.35	12	64	
1700	<b>1RN6452-2HJ 0</b>	2971	192	95.9	96.3	0.89	0.89	5464	2.05	0.60	4.50	14	70	
1900	<b>1RN6454-2HJ 0</b>	2974	210	96.2	96.5	0.90	0.89	6100	2.30	0.70	5.15	15	74	
2120	<b>1RN6456-2HJ 0</b>	2978	235	96.5	96.6	0.90	0.89	6798	2.45	0.70	5.50	17	81	
2500	<b>1RN6500-2HJ 0</b>	2972	280	96.4	96.8	0.89	0.88	8032	1.95	0.55	4.30	19	83	
2680	<b>1RN6502-2HJ 0</b>	2974	300	96.3	96.7	0.90	0.89	8605	2.05	0.50	4.45	21	93	
3150	<b>1RN6504-2HJ 0</b>	2978	345	96.8	97.1	0.91	0.90	10100	2.30	0.55	5.20	25	103	
3400	<b>1RN6506-2HJ 0</b>	2975	370	96.8	97.2	0.91	0.91	10913	2.15	0.55	4.85	26	115	
4000	<b>1RN6560-2HJ 0</b>	2974	450	96.5	96.8	0.89	0.90	12843	1.95	0.50	4.05	39	160	
4600	<b>1RN6562-2HJ 0</b>	2977	520	96.7	97.0	0.89	0.90	14755	2.00	0.50	4.30	44	180	
5140	<b>1RN6564-2HJ 0</b>	2978	560	97.0	97.2	0.91	0.91	16481	2.25	0.60	4.75	49	200	
5660	<b>1RN6566-2HJ 0</b>	2980	620	97.1	97.3	0.91	0.91	18137	2.40	0.60	5.25	55	220	
6300 <sup>2)</sup>	<b>1RN7630-2 A 0-0C 0</b>	2980	720	97.3	97.6	0.87	0.88	20188	1.95	0.65	4.20	74	206	
7000 <sup>2)</sup>	<b>1RN7632-2 A 0-0C 0</b>	2982	780	97.5	97.7	0.89	0.89	22416	2.20	0.75	4.70	82	225	
7800 <sup>2)</sup>	<b>1RN7634-2 A 0-0C 0</b>	2984	850	97.7	97.8	0.90	0.89	24961	2.45	0.75	5.30	91	243	
8600 <sup>2)</sup>	<b>1RN7636-2 A 0-0C 0</b>	2984	940	97.8	97.9	0.90	0.90	27521	2.50	0.85	5.40	100	246	
9500 <sup>2)</sup>	<b>1RN7710-2 A 0-0C 0</b>	2985	1040	97.4	97.4	0.91	0.91	30391	2.00	0.60	4.50	149	209	
10600 <sup>2)</sup>	<b>1RN7712-2 A 0-0C 0</b>	2986	1140	97.5	97.5	0.91	0.91	33899	2.10	0.60	4.70	160	200	
11800 <sup>2)</sup>	<b>1RN7714-2 A 0-0C 0</b>	2986	1260	97.7	97.6	0.92	0.92	37736	2.25	0.65	5.00	176	200	
13200 <sup>2)</sup>	<b>1RN7716-2 A 0-0C 0</b>	2987	1420	97.8	97.7	0.92	0.92	42199	2.25	0.75	5.30	189	192	

##### Position ■ of the Article No.:

##### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)

##### For shaft heights 630, 710 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- housing and bearing version (15th position)

##### Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> 1RN7 types with rated voltage below 4.16 kV on request.

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 50 Hz</b>														
4-pole														
1420	<b>1RN6450-4HJ</b>	1482	160	95.6	96.1	0.89	0.88	9149	2.35	0.65	4.65	21	340	
1560	<b>1RN6452-4HJ</b>	1483	176	95.9	96.3	0.89	0.88	10045	2.45	0.65	4.95	24	385	
1730	<b>1RN6454-4HJ</b>	1484	194	96.0	96.4	0.89	0.88	11132	2.50	0.65	5.05	27	440	
1950	<b>1RN6456-4HJ</b>	1486	220	96.2	96.5	0.89	0.87	12531	2.60	0.65	5.25	30	500	
2240 <sup>2)</sup>	<b>1RN6500-4HJ 0</b>	1485	250	96.2	96.9	0.89	0.88	14404	2.30	0.65	4.70	45	410	
2500 <sup>2)</sup>	<b>1RN6502-4HJ 0</b>	1485	280	96.3	96.9	0.89	0.88	16076	2.35	0.65	4.90	48	460	
2800 <sup>2)</sup>	<b>1RN6504-4HJ 0</b>	1486	315	96.4	97.0	0.89	0.88	17993	2.30	0.60	4.80	55	510	
3080 <sup>2)</sup>	<b>1RN6506-4HJ 0</b>	1485	345	96.4	97.1	0.89	0.87	19805	2.45	0.65	5.15	60	560	
3800 <sup>2)</sup>	<b>1RN6560-4HJ 0</b>	1489	420	96.9	97.3	0.90	0.90	24370	2.10	0.65	4.95	86	730	
4300 <sup>2)</sup>	<b>1RN6562-4HJ 0</b>	1489	470	97.1	97.5	0.91	0.91	27576	2.05	0.65	4.85	97	800	
4800 <sup>2)</sup>	<b>1RN6564-4HJ 0</b>	1490	520	97.2	97.6	0.91	0.91	30762	2.10	0.60	5.00	107	880	
5260 <sup>2)</sup>	<b>1RN6566-4HJ 0</b>	1490	580	97.3	97.6	0.90	0.90	33710	2.10	0.60	5.15	117	970	
5900 <sup>2) 3)</sup>	<b>1RN7630-4 A 0-0C 0</b>	1489	660	97.3	97.7	0.88	0.88	37838	2.15	0.70	4.60	145	928	
6600 <sup>2) 3)</sup>	<b>1RN7632-4 A 0-0C 0</b>	1489	740	97.4	97.7	0.88	0.88	42327	2.20	0.75	4.60	160	985	
7400 <sup>2) 3)</sup>	<b>1RN7634-4 A 0-0C 0</b>	1491	830	97.5	97.8	0.88	0.87	47394	2.35	0.70	5.00	178	1103	
8200 <sup>2) 3)</sup>	<b>1RN7636-4 A 0-0C 0</b>	1490	910	97.6	97.9	0.89	0.88	52553	2.40	0.75	5.00	195	1136	
9000 <sup>2) 3)</sup>	<b>1RN7710-4 A 0-0C 0</b>	1492	980	97.6	97.7	0.91	0.91	57602	2.35	0.65	4.90	262	786	
10000 <sup>2) 3)</sup>	<b>1RN7712-4 A 0-0C 0</b>	1492	1080	97.6	97.7	0.91	0.91	64003	2.35	0.65	5.00	288	837	
11200 <sup>2) 3)</sup>	<b>1RN7714-4 A 0-0C 0</b>	1492	1200	97.7	97.8	0.92	0.92	71683	2.40	0.70	5.10	323	959	
12500 <sup>2) 3)</sup>	<b>1RN7716-4 A 0-0C 0</b>	1493	1340	97.8	97.9	0.92	0.91	79950	2.45	0.65	5.30	362	1063	

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- housing and bearing version (15th position)

Note:

Efficiencies according to IEC 60034-2-1:2007;  
stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives.  
For ordering, please note the 10th and 11th position of the article number code.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> Data of vertical motors (IM V1) on request.

<sup>3)</sup> 1RN7 types with rated voltage below 4.16 kV on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 50 Hz</b>														
6-pole														
1000	1RN6450-6HJ	988	118	95.5	96.1	0.85	0.84	9665	2.25	0.95	4.65	28	660	
1120	1RN6452-6HJ	989	132	95.7	96.2	0.85	0.84	10814	2.35	0.85	4.80	32	770	
1250	1RN6454-6HJ	989	148	95.8	96.3	0.85	0.84	12069	2.40	0.95	4.95	35	870	
1400	1RN6456-6HJ	990	164	96.1	96.5	0.85	0.84	13504	2.45	0.90	5.05	41	1040	
1850	1RN6500-6HJ	988	215	95.8	96.5	0.86	0.85	17880	2.05	0.65	4.35	56	1280	
2090	1RN6502-6HJ	988	245	95.9	96.6	0.86	0.85	20200	2.00	0.65	4.15	61	1420	
2300	1RN6504-6HJ	989	270	96.0	96.7	0.86	0.85	22207	2.20	0.70	4.60	68	1560	
2500	1RN6506-6HJ	989	285	96.2	96.8	0.87	0.86	24138	2.20	0.75	4.65	76	1760	
2900	1RN6560-6HJ	990	330	96.4	96.9	0.87	0.87	27972	1.95	0.70	4.40	107	1640	
3250	1RN6562-6HJ	990	370	96.6	97.1	0.88	0.88	31348	1.95	0.70	4.40	118	1820	
3640	1RN6564-6HJ	990	410	96.6	97.1	0.88	0.88	35110	1.90	0.70	4.25	131	2000	
3930	1RN6566-6HJ	990	440	96.8	97.2	0.88	0.88	37907	1.95	0.70	4.45	145	2250	
4350 <sup>2)</sup>	1RN7630-6 A -0C	992	510	97.1	97.4	0.84	0.84	41874	2.35	0.75	5.00	208	2967	
4850 <sup>2)</sup>	1RN7632-6 A -0C	993	570	97.1	97.4	0.85	0.84	46641	2.35	0.75	5.00	230	3217	
5400 <sup>2)</sup>	1RN7634-6 A -0C	992	630	97.2	97.5	0.85	0.85	51982	2.30	0.75	5.00	251	3381	
6000 <sup>2)</sup>	1RN7636-6 A -0C	993	700	97.3	97.5	0.85	0.84	57700	2.35	0.75	5.00	272	3647	
6700 <sup>2)</sup>	1RN7710-6 A -0C	994	770	97.3	97.4	0.86	0.86	64366	2.10	0.65	4.50	352	2141	
7500 <sup>2)</sup>	1RN7712-6 A -0C	994	860	97.4	97.5	0.86	0.85	72052	2.20	0.65	4.60	398	2515	
8300 <sup>2)</sup>	1RN7714-6 A -0C	995	950	97.5	97.5	0.86	0.85	79657	2.25	0.65	4.80	450	3043	
9300 <sup>2)</sup>	1RN7716-6 A -0C	994	1060	97.6	97.6	0.86	0.86	89344	2.25	0.65	4.80	498	3277	

#### Position of the Article No.:

#### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

#### For shaft heights 630, 710 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

#### Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> 1RN7 types with rated voltage below 4.16 kV on request.

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 50 Hz</b>														
8-pole														
720	1RN6450-8HJ	741	88	95.0	95.7	0.83	0.82	9278	2.10	0.75	4.30	35	730	
780	1RN6452-8HJ	742	95	95.2	95.9	0.83	0.82	10038	2.15	0.75	4.40	39	890	
900	1RN6454-8HJ	743	110	95.6	96.0	0.82	0.79	11567	2.55	0.85	5.20	44	1040	
1030	1RN6456-8HJ	743	124	95.6	96.2	0.83	0.81	13237	2.40	0.80	4.90	51	1300	
1320	1RN6500-8HJ	742	160	95.6	96.2	0.83	0.81	16987	2.15	0.55	4.55	68	1420	
1480	1RN6502-8HJ	743	178	95.6	96.3	0.84	0.81	19021	2.15	0.60	4.50	75	1560	
1680	1RN6504-8HJ	743	200	95.9	96.4	0.84	0.81	21591	2.25	0.60	4.60	84	1740	
1850	1RN6506-8HJ	743	220	96.0	96.5	0.84	0.82	23776	2.25	0.65	4.75	93	1920	
2120	1RN6560-8HJ	743	250	96.3	96.9	0.85	0.83	27246	2.10	0.65	4.50	127	2700	
2400	1RN6562-8HJ	743	280	96.4	97.0	0.85	0.84	30845	2.05	0.65	4.50	140	2950	
2640	1RN6564-8HJ	743	310	96.5	97.1	0.85	0.83	33930	2.10	0.65	4.75	155	3300	
2850	1RN6566-8HJ	744	330	96.6	97.2	0.85	0.83	36579	2.15	0.60	4.75	171	3650	
3200 <sup>2)</sup>	1RN7630-8 A ■ ■ -0C ■ 0	744	390	96.5	96.7	0.82	0.80	41072	2.35	0.55	5.00	255	3256	
3550 <sup>2)</sup>	1RN7632-8 A ■ ■ -0C ■ 0	744	430	96.6	96.8	0.82	0.80	45565	2.35	0.55	5.10	281	4145	
4000 <sup>2)</sup>	1RN7634-8 A ■ ■ -0C ■ 0	744	480	96.7	96.9	0.83	0.81	51340	2.35	0.55	5.10	307	4428	
4450 <sup>2)</sup>	1RN7636-8 A ■ ■ -0C ■ 0	744	530	96.8	97.0	0.83	0.82	57116	2.35	0.55	5.10	334	3885	
5000 <sup>2)</sup>	1RN7710-8 A ■ ■ -0C ■ 0	744	580	96.8	97.1	0.85	0.84	64175	2.10	0.55	4.30	434	5826	
5600 <sup>2)</sup>	1RN7712-8 A ■ ■ -0C ■ 0	745	650	97.0	97.2	0.86	0.84	71779	2.25	0.70	4.60	494	7453	
6100 <sup>2)</sup>	1RN7714-8 A ■ ■ -0C ■ 0	745	710	97.1	97.3	0.85	0.84	78188	2.30	0.70	4.70	558	7863	
6700 <sup>2)</sup>	1RN7716-8 A ■ ■ -0C ■ 0	746	780	97.2	97.4	0.85	0.84	85764	2.35	0.65	4.80	617	9267	

**Position ■  
of the Article No.:****For shaft heights  
450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights  
630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) 1RN7 types with rated voltage below 4.16 kV on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 50 Hz</b>														
10-pole														
540	<b>1RN6450-3HJ</b>	590	70	93.4	93.7	0.80	0.76	8741	2.00	0.80	4.60	37	1150	
600	<b>1RN6452-3HJ</b>	590	76	93.7	93.9	0.81	0.76	9712	2.00	0.80	4.70	41	1350	
670	<b>1RN6454-3HJ</b>	591	86	93.9	94.1	0.80	0.75	10827	2.10	0.82	4.90	46	1450	
760	<b>1RN6456-3HJ</b>	591	97	94.1	94.2	0.80	0.75	12281	2.20	0.90	5.20	52	1800	
900	<b>1RN6500-3HJ</b>	591	112	94.4	94.7	0.82	0.80	14543	1.90	0.68	4.30	70	1400	
1000	<b>1RN6502-3HJ</b>	592	122	95.7	94.9	0.83	0.80	16132	1.90	0.70	4.50	80	1700	
1100	<b>1RN6504-3HJ</b>	592	134	94.8	95.0	0.83	0.80	17745	1.90	0.72	4.60	88	2200	
1250	<b>1RN6506-3HJ</b>	592	152	95.0	95.1	0.83	0.80	20165	1.90	0.75	4.70	99	2600	
1480	<b>1RN6560-3HJ</b>	593	184	95.1	95.4	0.81	0.77	23835	2.00	0.70	4.50	123	2700	
1700	<b>1RN6562-3HJ</b>	593	210	95.4	95.7	0.82	0.78	27378	2.00	0.70	4.50	141	4100	
1880	<b>1RN6564-3HJ</b>	593	230	95.6	95.7	0.82	0.78	30277	2.00	0.72	4.70	158	4400	
2050	<b>1RN6566-3HJ</b>	593	255	95.7	95.8	0.81	0.76	33014	2.10	0.78	5.00	173	5200	
2400 <sup>2)</sup>	<b>1RN7630-3 A -OC</b>	595	295	96.4	96.8	0.81	0.79	38518	2.20	0.55	4.50	257	5553	
2680 <sup>2)</sup>	<b>1RN7632-3 A -OC</b>	595	325	96.5	96.9	0.82	0.79	43012	2.25	0.55	4.60	283	6418	
3000 <sup>2)</sup>	<b>1RN7634-3 A -OC</b>	594	365	96.6	97.0	0.82	0.81	48229	2.20	0.55	4.60	310	7367	
3350 <sup>2)</sup>	<b>1RN7636-3 A -OC</b>	595	405	96.6	97.0	0.82	0.80	53765	2.20	0.55	4.50	336	6708	
3750 <sup>2)</sup>	<b>1RN7710-3 A -OC</b>	595	440	96.6	96.9	0.85	0.82	60184	2.50	0.60	4.40	432	11908	
4200 <sup>2)</sup>	<b>1RN7712-3 A -OC</b>	595	490	96.8	96.9	0.85	0.82	67406	2.60	0.60	4.60	491	13643	
4700 <sup>2)</sup>	<b>1RN7714-3 A -OC</b>	595	540	96.9	97.1	0.86	0.84	75431	2.50	0.65	4.50	558	15312	
5150 <sup>2)</sup>	<b>1RN7716-3 A -OC</b>	595	590	96.9	97.2	0.86	0.85	82653	2.45	0.60	4.50	618	15777	

#### Position of the Article No.:

#### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

#### For shaft heights 630, 710 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

#### Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> 1RN7 types with rated voltage below 4.16 kV on request.



## Selection and ordering data (continued)

Rated power  IEC  kW	High voltage motor SIMOTICS HV M  Article No.	Speed  rpm	Rated current  A	Efficiency		Power factor		Torque  Nm	Break-down torque  $T_B/T_{rated}$ [-]	Locked-rotor torque  $T_{LR}/T_{rated}$ [-]	Locked-rotor current  $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				$I_{rated}$ at 6 kV	4/4 load	3/4 load	4/4 load					3/4 load	Motor
<b>4 ... 6.6 kV, 50 Hz</b>													
12-pole													
370	1RN6450-5HJ	491	53	92.4	92.7	0.73	0.68	7197	1.80	0.60	4.00	37	1100
425	1RN6452-5HJ	492	60	92.8	93.0	0.73	0.67	8249	1.80	0.63	4.20	41	1400
475	1RN6454-5HJ	491	66	93.1	93.3	0.74	0.69	9239	1.80	0.60	4.00	46	1600
540	1RN6456-5HJ	492	77	93.5	93.5	0.72	0.65	10482	2.00	0.68	4.40	52	2000
680	1RN6500-5HJ	491	94	93.9	94.0	0.74	0.69	13226	1.90	0.62	4.10	70	2350
760	1RN6502-5HJ	491	102	94.1	94.2	0.76	0.71	14782	1.80	0.60	4.00	79	2600
840	1RN6504-5HJ	491	112	94.3	94.4	0.76	0.71	16338	1.90	0.62	4.10	87	3100
930	1RN6506-5HJ	492	128	94.5	94.6	0.74	0.69	18052	1.90	0.62	4.30	98	3700
1100	1RN6560-5HJ	493	150	94.5	94.8	0.75	0.71	21308	1.80	0.57	3.90	123	3600
1230	1RN6562-5HJ	493	168	94.9	95.0	0.74	0.68	23827	1.80	0.60	4.00	141	4100
1350	1RN6564-5HJ	494	184	95.0	95.1	0.74	0.68	26098	2.00	0.63	4.30	158	4700
1470	1RN6566-5HJ	494	198	95.1	95.2	0.75	0.69	28418	2.00	0.65	4.30	173	5200
2000 <sup>2)</sup>	1RN7630-5 A -OC	494	255	95.6	96.2	0.79	0.76	38661	1.95	0.55	3.90	264	5712
2250 <sup>2)</sup>	1RN7632-5 A -OC	494	290	95.8	96.3	0.78	0.75	43494	2.10	0.60	4.10	291	6888
2450 <sup>2)</sup>	1RN7634-5 A -OC	495	315	96.0	96.4	0.78	0.74	47264	2.25	0.60	4.30	318	9238
2700 <sup>2)</sup>	1RN7636-5 A -OC	494	345	96.1	96.5	0.78	0.74	52193	2.25	0.60	4.30	345	10053

**Position  
of the Article No.:****For shaft heights  
450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights  
630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

Note:

Efficiencies according to IEC 60034-2-1:2007;  
stray load losses determined by statistical evaluation of measurements.

Higher pole numbers are available on request.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives.  
For ordering, please note the 10th and 11th position of the article number code.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> 1RN7 types with rated voltage below 4.16 kV on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL6/1SL7 (Ex ec) and 1SQ6/1Q7 (Ex pxb).

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current $I_{rated}$ at 10 kV A	Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load $\cos \phi$	3/4 load $\cos \phi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>9 ... 11 kV, 50 Hz</b>													
2-pole													
1250	<b>1RN6450-2HJ 0</b>	2974	86	95.5	95.8	0.88	0.88	4013	2.15	0.70	4.80	12	31
1400	<b>1RN6452-2HJ 0</b>	2977	94	95.8	96.1	0.90	0.89	4490	2.40	0.75	5.40	14	33
1550	<b>1RN6454-2HJ 0</b>	2979	104	95.9	96.2	0.89	0.89	4968	2.40	0.70	5.50	15	36
1750	<b>1RN6456-2HJ 0</b>	2980	116	96.2	96.5	0.90	0.90	5607	2.45	0.70	5.50	17	39
2180	<b>1RN6500-2HJ 0</b>	2977	146	96.1	96.6	0.90	0.89	6992	2.15	0.55	4.80	19	37
2420	<b>1RN6502-2HJ 0</b>	2976	162	96.3	96.7	0.90	0.90	7765	2.10	0.65	4.60	21	41
2660	<b>1RN6504-2HJ 0</b>	2978	174	96.5	97.0	0.91	0.91	8529	2.25	0.55	4.90	25	45
2900	<b>1RN6506-2HJ 0</b>	2976	190	96.6	97.1	0.91	0.91	9305	2.10	0.70	4.90	26	51
3550	<b>1RN6560-2HJ 0</b>	2978	240	96.5	96.8	0.89	0.90	11383	2.00	0.50	4.05	39	115
4050	<b>1RN6562-2HJ 0</b>	2982	270	96.7	96.8	0.90	0.90	12969	2.30	0.60	4.95	44	130
4630	<b>1RN6564-2HJ 0</b>	2981	305	96.9	97.1	0.91	0.91	14831	2.25	0.60	4.80	49	145
5290	<b>1RN6566-2HJ 0</b>	2984	345	97.1	97.1	0.91	0.91	16928	2.50	0.60	5.40	54	160
5800	<b>1RN7630-2 A 0-0C 0</b>	2983	390	97.3	97.5	0.88	0.88	18567	2.20	0.70	4.70	74	243
6400	<b>1RN7632-2 A 0-0C 0</b>	2985	425	97.4	97.6	0.89	0.89	20474	2.40	0.80	5.20	82	258
7000	<b>1RN7634-2 A 0-0C 0</b>	2984	460	97.5	97.7	0.90	0.90	22401	2.40	0.75	5.20	91	259
7600	<b>1RN7636-2 A 0-0C 0</b>	2985	500	97.6	97.8	0.90	0.90	24313	2.40	0.75	5.30	99	259
8300	<b>1RN7710-2 A 0-0C 0</b>	2987	540	97.3	97.3	0.92	0.91	26534	2.15	0.60	4.90	149	266
9200	<b>1RN7712-2 A 0-0C 0</b>	2987	590	97.4	97.4	0.92	0.92	29411	2.20	0.65	5.10	160	266
10000	<b>1RN7714-2 A 0-0C 0</b>	2989	640	97.6	97.5	0.93	0.92	31948	2.35	0.70	5.50	174	291
11000	<b>1RN7716-2 A 0-0C 0</b>	2988	700	97.6	97.6	0.93	0.92	35154	2.40	0.60	5.40	190	285

#### Position of the Article No.:

##### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)

##### For shaft heights 630, 710 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- housing and bearing version (15th position)

#### Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
4-pole														
1060	<b>1RN6450-4HJ</b>	1485	72	95.4	95.9	0.89	0.89	6816	2.50	0.70	5.15	21	170	
1210	<b>1RN6452-4HJ</b>	1484	82	95.5	96.1	0.89	0.89	7786	2.45	0.65	5.00	24	194	
1360	<b>1RN6454-4HJ</b>	1486	91	95.8	96.2	0.90	0.89	8739	2.55	0.65	5.30	27	225	
1560	<b>1RN6456-4HJ</b>	1487	104	96.0	96.4	0.90	0.88	10018	2.60	0.65	5.35	30	260	
1980 <sup>2)</sup>	<b>1RN6500-4HJ 0</b>	1486	134	95.9	96.7	0.89	0.88	12723	2.45	0.75	5.15	45	200	
2180 <sup>2)</sup>	<b>1RN6502-4HJ 0</b>	1486	148	96.0	96.8	0.89	0.88	14009	2.40	0.70	5.20	48	220	
2420 <sup>2)</sup>	<b>1RN6504-4HJ 0</b>	1488	164	96.2	96.9	0.89	0.88	15530	2.50	0.65	5.20	55	250	
2610 <sup>2)</sup>	<b>1RN6506-4HJ 0</b>	1488	176	96.3	97.0	0.89	0.88	16749	2.55	0.70	5.40	60	280	
3250 <sup>2)</sup>	<b>1RN6560-4HJ 0</b>	1490	215	96.8	97.2	0.91	0.91	20829	2.15	0.60	5.00	86	420	
3600 <sup>2)</sup>	<b>1RN6562-4HJ 0</b>	1491	235	96.9	97.3	0.91	0.91	23056	2.15	0.65	5.05	97	460	
4100 <sup>2)</sup>	<b>1RN6564-4HJ 0</b>	1491	270	97.1	97.4	0.91	0.90	26258	2.15	0.55	5.10	107	510	
4450 <sup>2)</sup>	<b>1RN6566-4HJ 0</b>	1492	290	97.2	97.5	0.91	0.90	28481	2.25	0.55	5.20	116	560	
4850 <sup>2)</sup>	<b>1RN7630-4 A 0-0C 0</b>	1492	325	97.3	97.5	0.88	0.87	31042	2.45	0.70	5.30	145	771	
5300 <sup>2)</sup>	<b>1RN7632-4 A 0-0C 0</b>	1492	355	97.4	97.7	0.89	0.88	33922	2.50	0.70	5.40	159	902	
5800 <sup>2)</sup>	<b>1RN7634-4 A 0-0C 0</b>	1492	385	97.5	97.7	0.89	0.88	37122	2.50	0.75	5.40	177	730	
6400 <sup>2)</sup>	<b>1RN7636-4 A 0-0C 0</b>	1492	425	97.6	97.8	0.89	0.88	40962	2.45	0.65	5.20	193	1092	
7100 <sup>2)</sup>	<b>1RN7710-4 A 0-0C 0</b>	1493	460	97.5	97.5	0.91	0.91	45411	2.45	0.60	5.30	262	1102	
8000 <sup>2)</sup>	<b>1RN7712-4 A 0-0C 0</b>	1493	520	97.6	97.6	0.91	0.91	51168	2.45	0.65	5.30	288	1204	
9000 <sup>2)</sup>	<b>1RN7714-4 A 0-0C 0</b>	1493	580	97.6	97.7	0.92	0.92	57564	2.45	0.65	5.30	322	1344	
10000 <sup>2)</sup>	<b>1RN7716-4 A 0-0C 0</b>	1493	640	97.7	97.8	0.92	0.92	63960	2.45	0.65	5.30	362	1540	

**Position**  
**of the Article No.:****For shaft heights**  
**450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights**  
**630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- housing and bearing version (15th position)

Note:Efficiencies according to IEC 60034-2-1:2007;  
stray load losses determined by statistical evaluation of measurements.1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) Data of vertical motors (IM V1) on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
6-pole														
820	<b>1RN6450-6HJ</b>	990	59	95.2	95.7	0.85	0.83	7909	2.45	0.90	5.15	28	340	
920	<b>1RN6452-6HJ</b>	990	65	95.2	95.8	0.86	0.85	8874	2.40	0.95	5.10	32	400	
1000	<b>1RN6454-6HJ</b>	990	70	95.4	96.0	0.86	0.85	9645	2.40	0.95	5.10	35	460	
1150	<b>1RN6456-6HJ</b>	991	81	95.8	96.3	0.86	0.84	11081	2.45	0.85	5.15	41	560	
1450	<b>1RN6500-6HJ</b>	990	102	95.5	96.3	0.86	0.86	13986	2.15	0.70	4.55	56	830	
1650	<b>1RN6502-6HJ</b>	989	114	95.6	96.4	0.87	0.86	15931	2.10	0.70	4.50	61	910	
1850	<b>1RN6504-6HJ</b>	989	128	95.7	96.5	0.87	0.87	17862	2.10	0.70	4.65	68	1020	
2020	<b>1RN6506-6HJ</b>	990	140	95.9	96.6	0.87	0.86	19484	2.20	0.70	4.65	76	1140	
2500	<b>1RN6560-6HJ</b>	991	170	96.2	96.7	0.88	0.87	24090	2.05	0.70	4.85	107	1060	
2800	<b>1RN6562-6HJ</b>	992	190	96.5	96.9	0.88	0.87	26953	2.15	0.70	5.00	118	1160	
3150	<b>1RN6564-6HJ</b>	992	215	96.6	97.0	0.88	0.88	30322	2.10	0.70	4.75	131	1280	
3430	<b>1RN6566-6HJ</b>	992	230	96.7	97.1	0.89	0.88	33018	2.25	0.80	5.10	145	1420	
3800	<b>1RN7630-6 A -0C</b>	993	265	96.9	97.3	0.85	0.85	36543	2.30	0.70	5.10	208	1692	
4200	<b>1RN7632-6 A -0C</b>	993	295	97.1	97.4	0.85	0.85	40390	2.35	0.70	5.20	230	2278	
4650	<b>1RN7634-6 A -0C</b>	993	325	97.1	97.4	0.85	0.85	44717	2.40	0.75	5.20	250	2209	
5100	<b>1RN7636-6 A -0C</b>	993	350	97.2	97.4	0.86	0.85	49045	2.40	0.75	5.20	272	1995	
5600	<b>1RN7710-6 A -0C</b>	995	385	97.1	97.2	0.86	0.84	53744	2.45	0.75	5.20	350	2624	
6300	<b>1RN7712-6 A -0C</b>	995	435	97.3	97.3	0.86	0.85	60462	2.45	0.70	5.20	397	3227	
7100	<b>1RN7714-6 A -0C</b>	996	490	97.4	97.3	0.86	0.84	68072	2.50	0.70	5.20	448	3230	
8000	<b>1RN7716-6 A -0C</b>	995	550	97.4	97.5	0.87	0.85	76778	2.45	0.65	5.20	497	3951	

#### Position of the Article No.:

#### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

#### For shaft heights 630, 710 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

#### Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
8-pole														
520	1RN6450-8HJ	743	38.5	94.4	95.0	0.83	0.81	6683	2.35	0.80	4.95	35	215	
560	1RN6452-8HJ	743	41	94.4	95.2	0.84	0.83	7197	2.25	0.75	4.80	39	290	
590	1RN6454-8HJ	743	43	94.3	95.1	0.84	0.83	7582	2.20	0.70	4.70	44	365	
750	1RN6456-8HJ	744	54	95.0	95.6	0.84	0.82	9626	2.45	0.80	5.15	51	485	
1060	1RN6500-8HJ	743	77	95.1	95.8	0.84	0.82	13623	2.20	0.60	4.75	68	830	
1180	1RN6502-8HJ	744	85	95.5	96.1	0.84	0.81	15145	2.35	0.65	4.95	75	910	
1320	1RN6504-8HJ	744	95	95.6	96.2	0.84	0.82	16942	2.35	0.65	5.00	84	1020	
1490	1RN6506-8HJ	744	108	95.7	96.3	0.84	0.82	19124	2.25	0.60	4.90	93	1120	
1800	1RN6560-8HJ	743	128	95.9	96.6	0.85	0.84	23134	2.00	0.60	4.50	127	1540	
1980	1RN6562-8HJ	744	140	96.0	96.7	0.85	0.84	25413	2.10	0.65	4.75	140	1700	
2200	1RN6564-8HJ	744	154	96.2	96.8	0.86	0.84	28237	2.10	0.60	4.75	155	1880	
2380	1RN6566-8HJ	744	166	96.3	96.9	0.86	0.84	30547	2.15	0.65	5.00	172	2100	
2670	1RN7630-8 A -OC	745	192	96.4	96.6	0.83	0.81	34224	2.35	0.50	5.10	255	2937	
3000	1RN7632-8 A -OC	744	215	96.5	96.8	0.84	0.82	38505	2.30	0.55	5.00	281	3318	
3350	1RN7634-8 A -OC	744	240	96.6	96.9	0.84	0.83	42998	2.30	0.55	5.10	308	3564	
3750	1RN7636-8 A -OC	744	265	96.7	97.0	0.84	0.83	48132	2.30	0.55	5.00	334	3438	
4250	1RN7710-8 A -OC	746	300	96.6	96.9	0.85	0.83	54402	2.35	0.60	4.90	434	4957	
4750	1RN7712-8 A -OC	746	335	96.8	97.0	0.85	0.83	60803	2.35	0.60	4.80	492	5790	
5300	1RN7714-8 A -OC	746	365	97.0	97.2	0.86	0.84	67843	2.45	0.70	5.00	559	6953	
6000	1RN7716-8 A -OC	746	420	97.0	97.2	0.85	0.83	76803	2.50	0.65	5.10	616	7040	

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

##### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
10-pole														
720	<b>1RN6500-3HJ</b>	593	55	93.8	93.9	0.80	0.76	11595	2.20	0.82	5.20	70	900	
830	<b>1RN6502-3HJ</b>	594	64	94.2	94.2	0.79	0.74	13344	2.20	0.82	5.30	80	1100	
920	<b>1RN6504-3HJ</b>	594	71	94.3	94.3	0.79	0.74	14791	2.20	0.82	5.30	88	1200	
1020	<b>1RN6506-3HJ</b>	594	79	94.5	94.5	0.79	0.75	16399	2.20	0.80	5.30	99	1400	
1250	<b>1RN6560-3HJ</b>	593	94	94.8	94.9	0.81	0.77	20131	2.10	0.72	4.70	123	1650	
1420	<b>1RN6562-3HJ</b>	593	106	94.9	95.2	0.82	0.78	22868	2.00	0.70	4.70	141	2050	
1570	<b>1RN6564-3HJ</b>	593	116	95.1	95.4	0.82	0.78	25284	2.00	0.72	5.00	158	2500	
1700	<b>1RN6566-3HJ</b>	595	128	95.3	95.4	0.80	0.75	27286	2.40	0.85	5.50	173	2700	
2350	<b>1RN7630-3 A -0C</b>	595	174	96.3	96.6	0.81	0.78	37716	2.30	0.55	4.70	257	3067	
2600	<b>1RN7632-3 A -0C</b>	595	192	96.3	96.7	0.81	0.79	41728	2.30	0.55	4.70	283	3415	
2850	<b>1RN7634-3 A -0C</b>	595	210	96.4	96.8	0.82	0.79	45740	2.30	0.55	4.70	310	3895	
3150	<b>1RN7636-3 A -0C</b>	595	230	96.5	96.8	0.82	0.79	50555	2.30	0.60	4.80	336	3224	
3500	<b>1RN7710-3 A -0C</b>	595	245	96.6	96.7	0.85	0.82	56172	2.70	0.65	4.80	433	11007	
3900	<b>1RN7712-3 A -0C</b>	595	275	96.7	96.9	0.85	0.83	62592	2.65	0.65	4.70	493	12939	
4300	<b>1RN7714-3 A -0C</b>	595	300	96.8	97.0	0.85	0.83	69011	2.60	0.65	4.70	557	13823	
4750	<b>1RN7716-3 A -0C</b>	596	335	96.8	97.0	0.85	0.83	76105	2.65	0.65	4.80	615	10030	

##### Position of the Article No.:

##### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

##### For shaft heights 630, 710 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

##### Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current $I_{rated}$ at 10 kV A	Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>9 ... 11 kV, 50 Hz</b>													
12-pole													
580	<b>1RN6502-5HJ</b>	493	48.0	93.3	93.3	0.74	0.68	11235	2.00	0.70	4.70	79	1350
640	<b>1RN6504-5HJ</b>	493	53	93.5	93.6	0.74	0.68	12398	2.00	0.70	4.80	87	1500
700	<b>1RN6506-5HJ</b>	493	58	93.6	93.7	0.75	0.69	13560	2.10	0.70	4.80	98	1600
850	<b>1RN6560-5HJ</b>	494	69	93.8	94.1	0.76	0.71	16432	1.85	0.60	4.20	123	1750
1000	<b>1RN6562-5HJ</b>	494	82	94.4	94.6	0.75	0.69	19332	1.95	0.65	4.50	141	2200
1100	<b>1RN6564-5HJ</b>	494	88	94.5	94.7	0.76	0.71	21265	1.95	0.63	4.40	158	2500
1200	<b>1RN6566-5HJ</b>	494	96	94.8	94.8	0.76	0.71	23198	1.95	0.63	4.40	173	2900
1700	<b>1RN7630-5 A -0C</b>	495	132	95.4	95.9	0.78	0.75	32796	2.15	0.55	4.30	264	3991
1850	<b>1RN7632-5 A -0C</b>	495	142	95.5	95.9	0.79	0.76	35689	2.15	0.55	4.30	291	3901
2000	<b>1RN7634-5 A -0C</b>	495	152	95.6	96.0	0.79	0.76	38583	2.20	0.60	4.40	318	4371
2200	<b>1RN7636-5 A -0C</b>	495	168	95.7	96.1	0.79	0.75	42441	2.25	0.60	4.50	345	4806

**Position  
of the Article No.:****For shaft heights  
450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights  
630, 710, mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Higher pole numbers are available on request.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL6/1SL7 (Ex ec) and 1SQ6/1SQ7 (Ex pxb).

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
2-pole														
1700	<b>1RN6450-2HJ 0</b>	3573	174	95.9	96.1	0.89	0.89	4543	2.05	0.60	4.60	13	34	
2000	<b>1RN6452-2HJ 0</b>	3573	200	96.1	96.4	0.90	0.90	5345	2.10	0.65	4.75	15	40	
2240	<b>1RN6454-2HJ 0</b>	3576	225	96.3	96.4	0.90	0.89	5981	2.25	0.65	5.10	16	45	
2500	<b>1RN6456-2HJ 0</b>	3580	250	96.5	96.6	0.90	0.89	6668	2.40	0.60	5.50	18	52	
3000	<b>1RN6500-2HJ 0</b>	3574	305	96.5	96.8	0.89	0.89	8015	1.95	0.45	4.15	20	64	
3300	<b>1RN6502-2HJ 0</b>	3575	330	96.6	96.9	0.90	0.89	8814	1.95	0.45	4.35	22	72	
3880	<b>1RN6504-2HJ 0</b>	3579	385	96.9	97.1	0.91	0.90	10352	2.30	0.55	5.05	26	80	
4250	<b>1RN6506-2HJ 0</b>	3578	420	97.1	97.3	0.91	0.91	11342	2.20	0.65	4.95	27	88	
4750	<b>1RN6560-2HJ 0</b>	3576	480	96.6	96.8	0.89	0.90	12684	1.90	0.50	4.15	39	145	
5400	<b>1RN6562-2HJ 0</b>	3578	540	96.8	96.9	0.90	0.91	14412	2.15	0.55	4.45	44	160	
6100	<b>1RN6564-2HJ 0</b>	3578	600	97.0	97.1	0.91	0.91	16280	2.15	0.55	4.70	49	180	
6900	<b>1RN6566-2HJ 0</b>	3581	680	97.2	97.2	0.91	0.91	18399	2.35	0.60	5.15	55	200	
7600 <sup>2)</sup>	<b>1RN7630-2 A 0-0C 0</b>	3580	780	97.4	97.5	0.87	0.87	20272	1.95	0.65	4.20	74	122	
8400 <sup>2)</sup>	<b>1RN7632-2 A 0-0C 0</b>	3583	850	97.6	97.6	0.89	0.89	22387	2.20	0.70	4.80	82	137	
9200 <sup>2)</sup>	<b>1RN7634-2 A 0-0C 0</b>	3585	920	97.7	97.7	0.90	0.89	24506	2.45	0.75	5.40	91	142	
10200 <sup>2)</sup>	<b>1RN7636-2 A 0-0C 0</b>	3585	1020	97.8	97.8	0.90	0.89	27170	2.45	0.75	5.40	99	148	
11200 <sup>2)</sup>	<b>1RN7710-2 A 0-0C 0</b>	3586	1100	97.3	97.2	0.91	0.91	29824	2.05	0.60	4.70	148	102	
12500 <sup>2)</sup>	<b>1RN7712-2 A 0-0C 0</b>	3586	1220	97.5	97.3	0.92	0.91	33286	2.05	0.55	4.70	159	91	
14000 <sup>2)</sup>	<b>1RN7714-2 A 0-0C 0</b>	3587	1340	97.6	97.4	0.93	0.92	37270	2.30	0.70	5.40	174	84	
15500 <sup>2)</sup>	<b>1RN7716-2 A 0-0C 0</b>	3587	1500	97.6	97.5	0.93	0.92	41264	2.30	0.70	5.40	188	72	

#### Position of the Article No.:

##### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

##### For shaft heights 630, 710, mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- housing and bearing version (15th position)

#### Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> 1RN7 types with rated voltage below 4.16 kV on request.



## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
4-pole														
1680	<b>1RN6450-4HJ</b>	1782	172	95.9	96.1	0.89	0.88	9002	2.40	0.65	4.90	21	178	
1820	<b>1RN6452-4HJ</b>	1784	186	96.0	96.2	0.89	0.88	9741	2.55	0.65	5.15	23	225	
2120	<b>1RN6454-4HJ</b>	1784	215	96.2	96.5	0.89	0.89	11347	2.55	0.65	5.20	27	285	
2400	<b>1RN6456-4HJ</b>	1785	245	96.4	96.6	0.89	0.87	12839	2.60	0.65	5.30	30	355	
2700 <sup>2)</sup>	<b>1RN6500-4HJ 0</b>	1785	275	96.4	97.0	0.89	0.88	14444	2.40	0.70	5.00	45	250	
3000 <sup>2)</sup>	<b>1RN6502-4HJ 0</b>	1786	305	96.5	97.0	0.89	0.88	16040	2.45	0.70	5.15	48	280	
3400 <sup>2)</sup>	<b>1RN6504-4HJ 0</b>	1786	345	96.5	97.1	0.89	0.88	18178	2.35	0.65	4.95	55	310	
3820 <sup>2)</sup>	<b>1RN6506-4HJ 0</b>	1786	390	96.7	97.2	0.89	0.88	20424	2.35	0.65	5.00	60	350	
4500 <sup>2)</sup>	<b>1RN6560-4HJ 0</b>	1790	450	97.2	97.4	0.91	0.90	24006	2.20	0.65	5.10	86	550	
5000 <sup>2)</sup>	<b>1RN6562-4HJ 0</b>	1790	490	97.3	97.5	0.91	0.91	26674	2.20	0.60	5.10	97	610	
5600 <sup>2)</sup>	<b>1RN6564-4HJ 0</b>	1791	550	97.4	97.6	0.91	0.90	29858	2.20	0.55	5.15	107	670	
6150 <sup>2)</sup>	<b>1RN6566-4HJ 0</b>	1790	610	97.4	97.6	0.91	0.91	32809	2.10	0.55	4.95	117	740	
6800 <sup>2) 3)</sup>	<b>1RN7630-4 A A 0-0C 0</b>	1790	690	97.5	97.7	0.88	0.88	36277	2.30	0.70	4.90	145	571	
7500 <sup>2) 3)</sup>	<b>1RN7632-4 A A 0-0C 0</b>	1791	760	97.6	97.7	0.88	0.88	39989	2.30	0.70	5.00	159	633	
8200 <sup>2) 3)</sup>	<b>1RN7634-4 A A 0-0C 0</b>	1791	820	97.7	97.9	0.89	0.88	43721	2.35	0.70	5.10	178	703	
9000 <sup>2) 3)</sup>	<b>1RN7636-4 A A 0-0C 0</b>	1791	900	97.8	97.9	0.89	0.88	47986	2.40	0.65	5.10	195	765	
10000 <sup>2) 3)</sup>	<b>1RN7710-4 A A 0-0C 0</b>	1793	980	97.6	97.5	0.91	0.90	53258	2.50	0.65	5.50	262	483	
11200 <sup>2) 3)</sup>	<b>1RN7712-4 A A 0-0C 0</b>	1793	1100	97.7	97.6	0.91	0.91	59649	2.50	0.65	5.40	288	513	
12500 <sup>2) 3)</sup>	<b>1RN7714-4 A A 0-0C 0</b>	1793	1220	97.8	97.7	0.91	0.91	66573	2.50	0.65	5.40	321	585	
14000 <sup>2) 3)</sup>	<b>1RN7716-4 A A 0-0C 0</b>	1793	1360	97.9	97.8	0.92	0.92	74562	2.50	0.60	5.40	363	672	

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- housing and bearing version (15th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) Data of vertical motors (IM V1) on request.

3) 1RN7 types with rated voltage below 4.16 kV on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
6-pole														
1300	<b>1RN6450-6HJ</b>	1186	140	95.8	96.3	0.85	0.84	10467	2.10	0.80	4.35	28	550	
1450	<b>1RN6452-6HJ</b>	1187	156	96.0	96.4	0.85	0.84	11665	2.15	0.75	4.50	32	610	
1600	<b>1RN6454-6HJ</b>	1188	172	96.1	96.5	0.85	0.85	12861	2.30	0.85	4.75	35	660	
1730	<b>1RN6456-6HJ</b>	1189	182	96.4	96.7	0.86	0.85	13894	2.45	0.95	5.10	41	730	
2240	<b>1RN6500-6HJ</b>	1188	240	96.2	96.8	0.85	0.85	18005	2.05	0.65	4.35	56	970	
2500	<b>1RN6502-6HJ</b>	1188	265	96.3	96.9	0.86	0.85	20095	2.05	0.65	4.45	61	1060	
2800	<b>1RN6504-6HJ</b>	1188	295	96.4	97.0	0.86	0.85	22506	2.05	0.60	4.55	68	1200	
3100	<b>1RN6506-6HJ</b>	1189	325	96.5	97.1	0.87	0.86	24897	2.10	0.70	4.45	76	1320	
3500	<b>1RN6560-6HJ</b>	1190	360	96.9	97.2	0.88	0.87	28086	1.95	0.65	4.50	107	1380	
4000	<b>1RN6562-6HJ</b>	1190	420	96.9	97.3	0.87	0.87	32098	1.95	0.65	4.40	118	1520	
4500	<b>1RN6564-6HJ</b>	1191	470	97.0	97.4	0.87	0.87	36080	2.00	0.65	4.65	131	1680	
4950	<b>1RN6566-6HJ</b>	1191	510	97.2	97.5	0.88	0.88	39688	2.05	0.70	4.65	145	1860	
5400 <sup>2)</sup>	<b>1RN7630-6 A ■ ■ -0C ■ ■ 0</b>	1192	580	97.2	97.4	0.84	0.83	43260	2.30	0.70	5.00	208	1697	
5900 <sup>2)</sup>	<b>1RN7632-6 A ■ ■ -0C ■ ■ 0</b>	1192	620	97.3	97.5	0.85	0.84	47266	2.30	0.70	5.00	230	1851	
6500 <sup>2)</sup>	<b>1RN7634-6 A ■ ■ -0C ■ ■ 0</b>	1193	690	97.4	97.5	0.85	0.84	52029	2.35	0.70	5.10	250	2035	
7200 <sup>2)</sup>	<b>1RN7636-6 A ■ ■ -0C ■ ■ 0</b>	1193	760	97.5	97.6	0.85	0.84	57632	2.35	0.65	5.10	272	2095	
7800 <sup>2)</sup>	<b>1RN7710-6 A ■ ■ -0C ■ ■ 0</b>	1194	820	97.3	97.3	0.86	0.84	62382	2.35	0.70	5.00	351	1277	
8700 <sup>2)</sup>	<b>1RN7712-6 A ■ ■ -0C ■ ■ 0</b>	1194	900	97.5	97.5	0.87	0.86	69580	2.30	0.65	4.90	399	1500	
9700 <sup>2)</sup>	<b>1RN7714-6 A ■ ■ -0C ■ ■ 0</b>	1195	1000	97.6	97.5	0.87	0.86	77513	2.35	0.70	5.00	451	1823	
10800 <sup>2)</sup>	<b>1RN7716-6 A ■ ■ -0C ■ ■ 0</b>	1195	1120	97.6	97.6	0.87	0.86	86303	2.30	0.60	4.90	498	1899	

#### Position ■ of the Article No.:

#### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

#### For shaft heights 630, 710, 800 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

#### Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> 1RN7 types with rated voltage below 4.16 kV on request.

## Selection and ordering data (continued)

Rated power  IEC  kW	High voltage motor SIMOTICS HV M  Article No.	Speed  rpm	Rated current		Efficiency		Power factor		Torque  Nm	Break-down torque  $T_B/T_{rated}$ [-]	Locked-rotor torque  $T_{LR}/T_{rated}$ [-]	Locked-rotor current  $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
8-pole														
900	1RN6450-8HJ	890	100	95.3	95.9	0.83	0.82	9656	1.90	0.55	3.90	35	475	
1000	1RN6452-8HJ	892	110	95.5	96.0	0.83	0.81	10705	2.20	0.65	4.50	39	570	
1120	1RN6454-8HJ	891	124	95.7	96.2	0.83	0.82	12003	2.10	0.65	4.35	44	670	
1220	1RN6456-8HJ	892	132	95.9	96.3	0.84	0.82	13060	2.30	0.70	4.80	51	820	
1600	1RN6500-8HJ	893	178	96.0	96.4	0.82	0.79	17109	2.20	0.55	4.80	68	1080	
1800	1RN6502-8HJ	892	196	96.1	96.6	0.84	0.82	19269	2.10	0.55	4.40	75	1200	
2000	1RN6504-8HJ	892	215	96.2	96.7	0.84	0.82	21410	2.10	0.55	4.40	84	1340	
2200	1RN6506-8HJ	893	240	96.3	96.7	0.84	0.82	23525	2.15	0.60	4.75	93	1480	
2500	1RN6560-8HJ	893	270	96.7	97.2	0.84	0.83	26733	2.00	0.50	4.60	127	1960	
2800	1RN6562-8HJ	893	300	96.8	97.3	0.85	0.83	29941	2.10	0.55	4.60	140	2150	
3150	1RN6564-8HJ	893	330	96.8	97.3	0.85	0.84	33684	2.10	0.55	4.65	155	2400	
3400	1RN6566-8HJ	893	360	96.8	97.3	0.85	0.84	36357	1.95	0.55	4.65	171	2650	
3750 <sup>2)</sup>	1RN7630-8 A ■ ■ -0C ■ 0	894	415	96.6	96.7	0.82	0.80	40056	2.30	0.50	5.10	255	2418	
4150 <sup>2)</sup>	1RN7632-8 A ■ ■ -0C ■ 0	894	450	96.8	96.9	0.83	0.82	44328	2.30	0.55	5.10	281	2942	
4600 <sup>2)</sup>	1RN7634-8 A ■ ■ -0C ■ 0	894	495	96.9	97.0	0.84	0.83	49135	2.30	0.55	5.10	308	3080	
5050 <sup>2)</sup>	1RN7636-8 A ■ ■ -0C ■ 0	894	540	96.9	97.0	0.84	0.83	53942	2.30	0.55	5.10	334	2905	
5600 <sup>2)</sup>	1RN7710-8 A ■ ■ -0C ■ 0	895	590	97.0	97.1	0.85	0.84	59749	2.25	0.60	4.70	434	4711	
6300 <sup>2)</sup>	1RN7712-8 A ■ ■ -0C ■ 0	895	670	97.1	97.2	0.85	0.84	67218	2.25	0.60	4.60	493	5371	
7100 <sup>2)</sup>	1RN7714-8 A ■ ■ -0C ■ 0	895	740	97.3	97.3	0.86	0.85	75754	2.35	0.65	4.90	559	6065	
8000 <sup>2)</sup>	1RN7716-8 A ■ ■ -0C ■ 0	896	850	97.3	97.4	0.85	0.84	85261	2.30	0.55	4.70	616	6690	

**Position ■  
of the Article No.:****For shaft heights  
450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights  
630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) 1RN7 types with rated voltage below 4.16 kV on request.

## Motors for line operation

## Water-cooled motors

## SIMOTICS HV M 1RN6, 1RN7

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
10-pole														
650	<b>1RN6450-3HJ</b>	710	74	93.7	94.0	0.82	0.78	8743	1.90	0.72	4.50	37	650	
720	<b>1RN6452-3HJ</b>	710	83	94.1	94.3	0.81	0.77	9685	2.00	0.75	4.70	41	850	
800	<b>1RN6454-3HJ</b>	711	92	94.3	94.4	0.81	0.76	10745	2.10	0.80	4.90	46	900	
910	<b>1RN6456-3HJ</b>	711	104	94.5	94.6	0.81	0.77	12223	2.10	0.80	5.00	52	1100	
1080	<b>1RN6500-3HJ</b>	711	122	94.8	95.0	0.82	0.80	14506	1.80	0.65	4.40	70	1200	
1200	<b>1RN6502-3HJ</b>	712	134	95.2	95.2	0.82	0.80	16096	1.90	0.68	4.70	80	1500	
1320	<b>1RN6504-3HJ</b>	712	146	95.1	95.2	0.83	0.80	17705	1.90	0.70	4.70	88	1450	
1500	<b>1RN6506-3HJ</b>	712	166	95.4	95.5	0.83	0.79	20119	2.00	0.72	4.90	99	1900	
1780	<b>1RN6560-3HJ</b>	713	205	95.5	95.6	0.80	0.76	23842	2.00	0.70	4.60	123	2100	
2040	<b>1RN6562-3HJ</b>	713	235	95.8	95.8	0.80	0.76	27324	2.00	0.70	4.80	141	2600	
2200	<b>1RN6564-3HJ</b>	713	245	95.9	95.8	0.82	0.79	29467	2.00	0.68	4.60	158	2800	
2400	<b>1RN6566-3HJ</b>	713	270	96.0	96.0	0.81	0.77	32146	2.10	0.75	5.00	173	3300	
3050 <sup>2)</sup>	<b>1RN7630-3 A ■ ■ -0C ■ ■ 0</b>	715	340	96.7	97.0	0.81	0.79	40735	2.35	0.50	4.80	258	5264	
3350 <sup>2)</sup>	<b>1RN7632-3 A ■ ■ -0C ■ ■ 0</b>	715	375	96.7	97.0	0.81	0.78	44741	2.35	0.55	4.80	284	4576	
3700 <sup>2)</sup>	<b>1RN7634-3 A ■ ■ -0C ■ ■ 0</b>	715	405	96.9	97.1	0.82	0.79	49416	2.40	0.55	4.90	310	6492	
4100 <sup>2)</sup>	<b>1RN7636-3 A ■ ■ -0C ■ ■ 0</b>	715	450	97.0	97.2	0.82	0.80	54758	2.35	0.55	4.80	337	6696	
4500 <sup>2)</sup>	<b>1RN7710-3 A ■ ■ -0C ■ ■ 0</b>	715	485	96.7	96.8	0.84	0.81	60100	2.70	0.65	4.80	433	7545	
5000 <sup>2)</sup>	<b>1RN7712-3 A ■ ■ -0C ■ ■ 0</b>	715	530	97.0	97.0	0.85	0.82	66778	2.70	0.60	4.80	493	8660	
5600 <sup>2)</sup>	<b>1RN7714-3 A ■ ■ -0C ■ ■ 0</b>	716	590	97.0	97.0	0.85	0.82	74687	2.75	0.65	4.90	557	10086	
6200 <sup>2)</sup>	<b>1RN7716-3 A ■ ■ -0C ■ ■ 0</b>	715	660	97.1	97.1	0.85	0.83	82805	2.75	0.70	5.00	618	10760	

**Position ■  
of the Article No.:****For shaft heights  
450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights  
630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

**Note:**

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

2) 1RN7 types with rated voltage below 4.16 kV on request.

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor SIMOTICS HV M Article No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
12-pole														
440	1RN6450-5HJ	591	56	92.9	93.1	0.74	0.71	7110	1.80	0.56	4.00	37	630	
510	1RN6452-5HJ	591	65	93.3	93.3	0.73	0.68	8241	1.80	0.60	4.20	41	850	
570	1RN6454-5HJ	592	73	93.9	93.9	0.73	0.68	9195	1.80	0.60	4.20	46	1150	
650	1RN6456-5HJ	592	82	94.0	93.9	0.74	0.68	10486	1.90	0.60	4.30	52	1300	
820	1RN6500-5HJ	592	102	94.4	94.3	0.74	0.68	13228	2.00	0.62	4.50	70	1650	
920	1RN6502-5HJ	592	114	94.6	94.6	0.75	0.70	14841	1.90	0.62	4.40	79	2000	
1020	1RN6504-5HJ	592	128	94.8	94.7	0.74	0.68	16454	2.00	0.65	4.70	87	2400	
1120	1RN6506-5HJ	592	136	94.8	94.8	0.76	0.71	18068	1.90	0.60	4.40	98	2200	
1300	1RN6560-5HJ	593	160	95.0	95.1	0.75	0.70	20936	1.80	0.53	3.90	123	2050	
1470	1RN6562-5HJ	593	182	95.2	95.3	0.74	0.69	23674	1.80	0.55	4.00	141	2500	
1620	1RN6564-5HJ	594	205	95.4	95.4	0.73	0.67	26045	2.00	0.63	4.30	158	3500	
1760	1RN6566-5HJ	594	220	95.5	95.5	0.73	0.68	28296	2.00	0.63	4.40	173	3900	
2400 <sup>2)</sup>	1RN7630-5 A -OC	595	285	96.1	96.4	0.77	0.73	38518	2.20	0.60	4.30	264	5485	
2700 <sup>2)</sup>	1RN7632-5 A -OC	595	320	96.3	96.5	0.77	0.73	43333	2.25	0.55	4.40	291	6860	
2950 <sup>2)</sup>	1RN7634-5 A -OC	595	350	96.4	96.6	0.77	0.74	47345	2.20	0.55	4.30	317	7561	
3250 <sup>2)</sup>	1RN7636-5 A -OC	594	380	96.4	96.6	0.78	0.74	52248	2.20	0.60	4.30	345	6521	

**Position of the Article No.:****For shaft heights 450, 500, 560 mm:**Refer to the article number structure on [Page 1/3](#) for:

- voltage code (11th position)
- type of construction (12th position)

**For shaft heights 630, 710 mm:**Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

Note:

Efficiencies according to IEC 60034-2-1:2007; stray load losses determined by statistical evaluation of measurements.

Higher pole numbers are available on request.

Electrical data is also valid for operation with SINAMICS PERFECT HARMONY drives. For ordering, please note the 10th and 11th position of the article number code.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

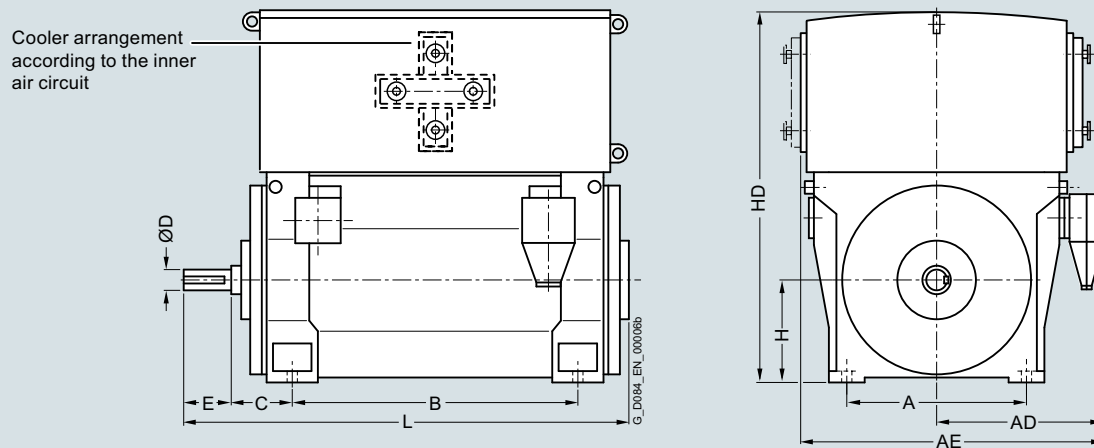
2) 1RN7 types with rated voltage below 4.16 kV on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings



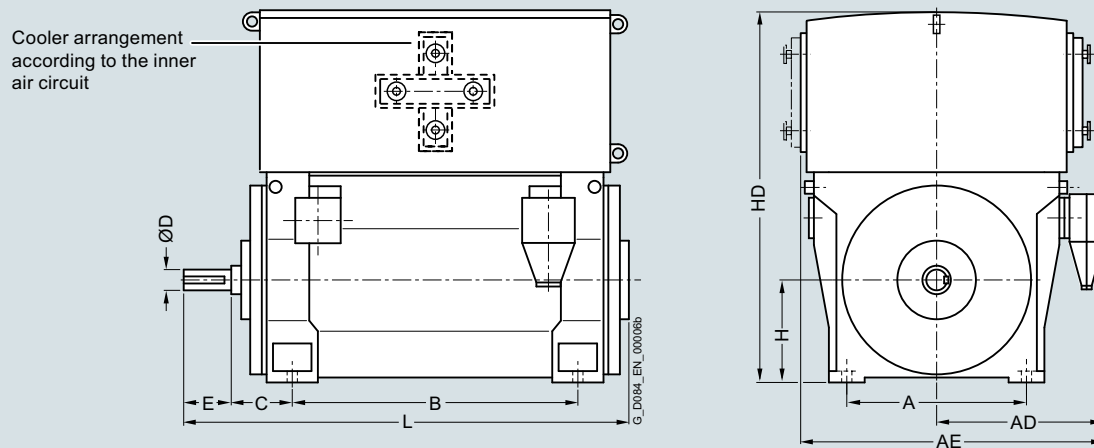
Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W</b>											
<b>2-pole</b>											
1RN6450-2HJ.0 <sup>3)</sup>	4050	850	930	1620	1180	280	95	130	450	1725	1843
1RN6452-2HJ.0 <sup>3)</sup>	4250	850	930	1620	1180	280	95	130	450	1725	1843
1RN6454-2HJ.0 <sup>3)</sup>	4550	850	930	1620	1400	280	95	130	450	1725	2053
1RN6456-2HJ.0 <sup>3)</sup>	4850	850	930	1620	1400	280	95	130	450	1725	2053
1RN6500-2HJ.0 <sup>3)</sup>	5850	950	1135	1835	1320	315	110	165	500	1980	2150
1RN6502-2HJ.0 <sup>3)</sup>	6000	950	1135	1835	1320	315	110	165	500	1980	2150
<b>4-pole</b>											
1RN6450-4HJ.0	4350	850	930	1620	1180	250	130	200	450	1715	1896
1RN6452-4HJ.0	4250	850	930	1620	1180	250	130	200	450	1715	1896
1RN6454-4HJ.0	4950	850	930	1620	1400	250	130	200	450	1715	2106
1RN6456-4HJ.0	5250	850	930	1620	1400	250	130	200	450	1715	2106
1RN6500-4HJ.0	6350	950	1135	1835	1320	280	150	200	500	1980	2150
1RN6502-4HJ.0	6550	950	1135	1835	1320	280	150	200	500	1980	2150
1RN6504-4HJ.0	7200	950	1135	1835	1500	280	150	200	500	1980	2300
1RN6506-4HJ.0	7500	950	1135	1835	1500	280	150	200	500	1980	2300
1RN6560-4HJ.0	7600	1060	1205	1975	1400	315	170	240	560	2150	2300
1RN6562-4HJ.0	8000	1060	1205	1975	1400	315	170	240	560	2150	2300
1RN6564-4HJ.0	8900	1060	1205	1975	1600	315	170	240	560	2150	2550
1RN6566-4HJ.0	9400	1060	1205	1975	1600	315	170	240	560	2150	2550
1RN7630-4N..0-OCG0	11000	1320	1490	2490	1600	375	200	280	630	2170	2610
1RN7632-4N..0-OCG0	11600	1320	1490	2490	1600	375	200	280	630	2170	2610
1RN7634-4N..0-OCG0	12500	1320	1490	2490	1800	375	200	280	630	2170	2810
1RN7636-4N..0-OCG0	13100	1320	1490	2490	1800	375	200	280	630	2170	2810
1RN7710-4N..0-OCG0	15700	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7712-4N..0-OCG0	16300	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7714-4N..0-OCG0	17700	1500	1800	2900	2240	375	220	350	710	2570	3310
1RN7716-4N..0-OCG0	18900	1500	1800	2900	2240	375	220	350	710	2570	3310

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

<sup>3)</sup> Anti-friction bearings only for 50 Hz version.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W</b>											
6-pole											
1RN6450-6HJ.0	4450	850	930	1620	1180	250	140	200	450	1715	1896
1RN6452-6HJ.0	4750	850	930	1620	1180	250	140	200	450	1715	1896
1RN6454-6HJ.0	5100	850	930	1620	1400	280	140	200	450	1715	2136
1RN6456-6HJ.0	5450	850	930	1620	1400	280	140	200	450	1715	2136
1RN6500-6HJ.0	6400	950	1135	1835	1320	315	160	240	500	1960	2150
1RN6502-6HJ.0	6650	950	1135	1835	1320	315	160	240	500	1960	2150
1RN6504-6HJ.0	7250	950	1135	1835	1500	315	160	240	500	1960	2360
1RN6506-6HJ.0	7650	950	1135	1835	1500	315	160	240	500	1960	2360
1RN6560-6HJ.0	8600	1060	1205	1975	1400	315	180	240	560	2180	2300
1RN6562-6HJ.0	9000	1060	1205	1975	1400	315	180	240	560	2180	2300
1RN6564-6HJ.0	9850	1060	1205	1975	1600	315	180	240	560	2180	2550
1RN6566-6HJ.0	10400	1060	1205	1975	1600	315	180	240	560	2180	2550
1RN7630-6N..0-OCG0	11500	1320	1340	2340	1600	375	200	280	630	2170	2610
1RN7632-6N..0-OCG0	12100	1320	1340	2340	1600	375	200	280	630	2170	2610
1RN7634-6N..0-OCG0	13000	1320	1340	2340	1800	375	200	280	630	2170	2810
1RN7636-6N..0-OCG0	13500	1320	1340	2340	1800	375	200	280	630	2170	2810
1RN7710-6N..0-OCG0	16000	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7712-6N..0-OCG0	17000	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7714-6N..0-OCG0	18500	1500	1800	2900	2240	375	220	350	710	2570	3310
1RN7716-6N..0-OCG0	19600	1500	1800	2900	2240	375	220	350	710	2570	3310

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

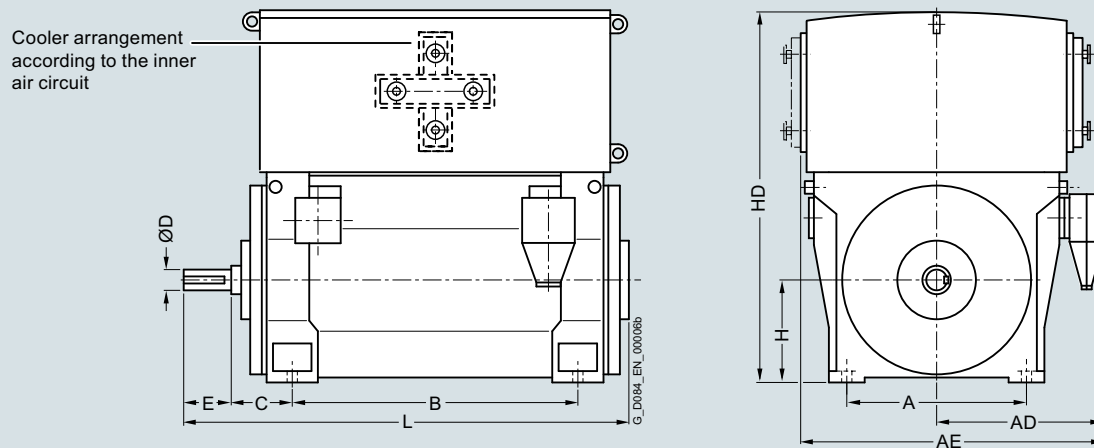
<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)



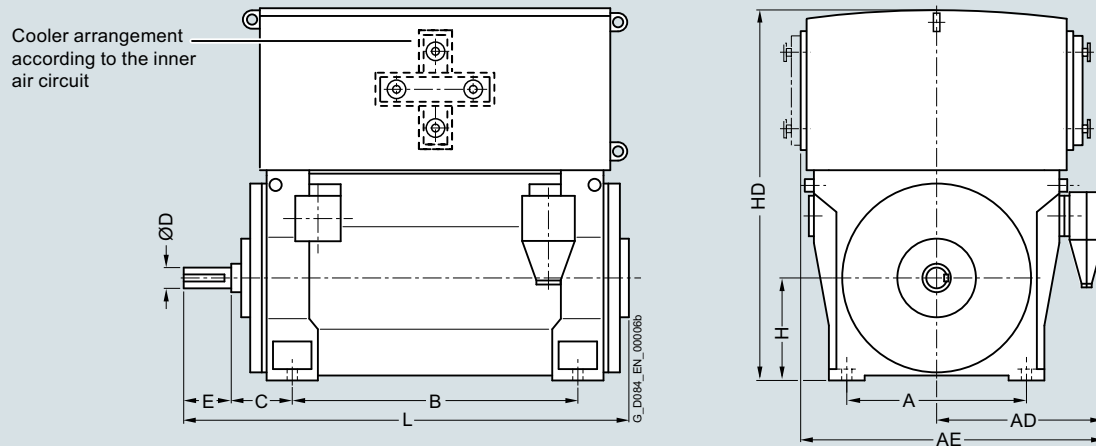
Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W</b>											
8-pole											
1RN6450-8HJ.0	4450	850	930	1620	1180	250	140	200	450	1715	1896
1RN6452-8HJ.0	4750	850	930	1620	1180	250	140	200	450	1715	1896
1RN6454-8HJ.0	5150	850	930	1620	1400	280	140	200	450	1715	2136
1RN6456-8HJ.0	5450	850	930	1620	1400	280	140	200	450	1715	2136
1RN6500-8HJ.0	6350	950	1135	1835	1320	315	160	240	500	1960	2150
1RN6502-8HJ.0	6600	950	1135	1835	1320	315	160	240	500	1960	2150
1RN6504-8HJ.0	7250	950	1135	1835	1500	315	160	240	500	1960	2360
1RN6506-8HJ.0	7600	950	1135	1835	1500	315	160	240	500	1960	2360
1RN6560-8HJ.0	8550	1060	1205	1975	1400	315	180	240	560	2180	2300
1RN6562-8HJ.0	9000	1060	1205	1975	1400	315	180	240	560	2180	2300
1RN6564-8HJ.0	9800	1060	1205	1975	1600	315	180	240	560	2180	2550
1RN6566-8HJ.0	10350	1060	1205	1975	1600	315	180	240	560	2180	2550
1RN7630-8N..0-OCG0	11200	1320	1340	2340	1600	375	200	280	630	2250	2610
1RN7632-8N..0-OCG0	11800	1320	1340	2340	1600	375	200	280	630	2250	2610
1RN7634-8N..0-OCG0	12700	1320	1340	2340	1800	375	200	280	630	2250	2810
1RN7636-8N..0-OCG0	13200	1320	1340	2340	1800	375	200	280	630	2250	2810
1RN7710-8N..0-OCG0	15600	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7712-8N..0-OCG0	16500	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7714-8N..0-OCG0	18000	1500	1800	2900	2240	375	220	350	710	2570	3310
1RN7716-8N..0-OCG0	19000	1500	1800	2900	2240	375	220	350	710	2570	3310

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.



## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W</b>											
10-pole											
1RN6450-3HJ.0	4450	850	930	1620	1180	250	140	200	450	1715	1896
1RN6452-3HJ.0	4750	850	930	1620	1180	250	140	200	450	1715	1896
1RN6454-3HJ.0	5150	850	930	1620	1400	280	140	200	450	1715	2136
1RN6456-3HJ.0	5450	850	930	1620	1400	280	140	200	450	1715	2136
1RN6500-3HJ.0	5500	950	1000	1790	1320	280	160	240	500	1830	2270
1RN6502-3HJ.0	5850	950	1000	1790	1320	280	160	240	500	1830	2270
1RN6504-3HJ.0	6450	950	1000	1790	1500	280	170	240	500	1830	2480
1RN6506-3HJ.0	6800	950	1000	1790	1500	280	170	240	500	1830	2480
1RN6560-3HJ.0	7450	1060	1070	1920	1400	315	180	240	560	2040	2300
1RN6562-3HJ.0	8000	1060	1070	1920	1400	315	180	240	560	2040	2300
1RN6564-3HJ.0	8800	1060	1070	1920	1600	315	190	280	560	2040	2570
1RN6566-3HJ.0	9300	1060	1070	1920	1600	315	190	280	560	2040	2570
1RN7630-3N..0-OCG0	11200	1320	1340	2340	1600	375	200	280	630	2250	2610
1RN7632-3N..0-OCG0	11700	1320	1340	2340	1600	375	200	280	630	2250	2610
1RN7634-3N..0-OCG0	12500	1320	1340	2340	1800	375	200	280	630	2250	2810
1RN7636-3N..0-OCG0	13100	1320	1340	2340	1800	375	200	280	630	2250	2810
1RN7710-3N..0-OCG0	15600	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7712-3N..0-OCG0	16500	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7714-3N..0-OCG0	18000	1500	1800	2900	2240	375	220	350	710	2570	3310
1RN7716-3N..0-OCG0	19000	1500	1800	2900	2240	375	220	350	710	2570	3310

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

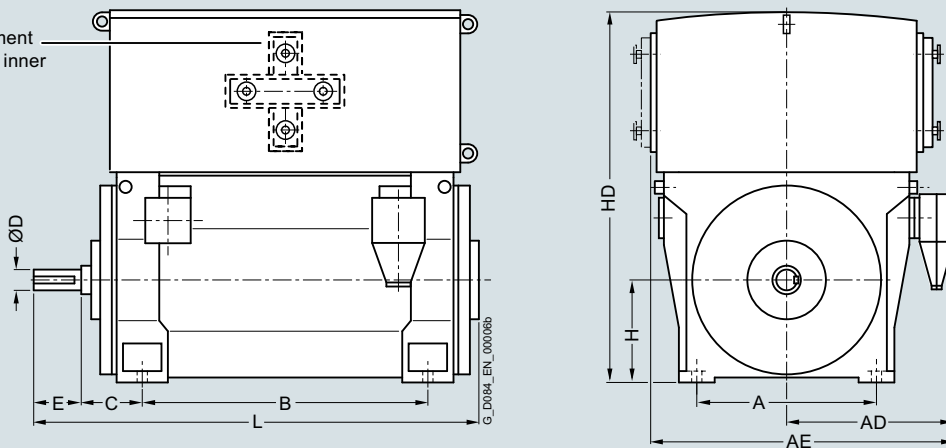
## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)

Cooler arrangement  
according to the inner  
air circuit



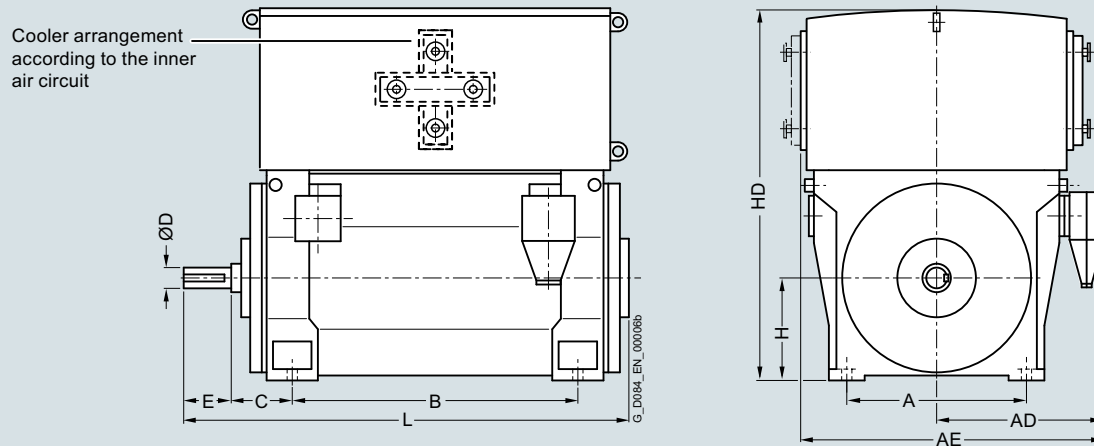
Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W</b>											
12-pole											
1RN6450-5HJ.0	4450	850	930	1620	1180	250	140	200	450	1715	1896
1RN6452-5HJ.0	4750	850	930	1620	1180	250	140	200	450	1715	1896
1RN6454-5HJ.0	5150	850	930	1620	1400	280	140	200	450	1715	2136
1RN6456-5HJ.0	5450	850	930	1620	1400	280	140	200	450	1715	2136
1RN6500-5HJ.0	5550	950	1000	1790	1320	280	160	240	500	1830	2270
1RN6502-5HJ.0	5900	950	1000	1790	1320	280	160	240	500	1830	2270
1RN6504-5HJ.0	6350	950	1000	1790	1500	280	170	240	500	1830	2480
1RN6506-5HJ.0	6800	950	1000	1790	1500	280	170	240	500	1830	2480
1RN6560-5HJ.0	7450	1060	1070	1920	1400	315	180	240	560	2040	2300
1RN6562-5HJ.0	8000	1060	1070	1920	1400	315	180	240	560	2040	2300
1RN6564-5HJ.0	8800	1060	1070	1920	1600	315	190	280	560	2040	2570
1RN6566-5HJ.0	9250	1060	1070	1920	1600	315	190	280	560	2040	2570
1RN7630-5N..0-OCG0	11100	1320	1340	2340	1600	375	200	280	630	2250	2610
1RN7632-5N..0-OCG0	11700	1320	1340	2340	1600	375	200	280	630	2250	2610
1RN7634-5N..0-OCG0	12500	1320	1340	2340	1800	375	200	280	630	2250	2810
1RN7636-5N..0-OCG0	13100	1320	1340	2340	1800	375	200	280	630	2250	2810

Note: Higher pole numbers are available on request.

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RN6<sup>1)</sup>, 1RN7<sup>1)</sup> series – IC81W</b>											
<b>2-pole</b>											
1RN6450-2HJ.0 <sup>2)</sup>	4050	850	1070	1840	1180	280	95	130	450	1725	1875
1RN6452-2HJ.0 <sup>2)</sup>	4250	850	1070	1840	1180	280	95	130	450	1725	1875
1RN6454-2HJ.0 <sup>2)</sup>	4550	850	1070	1840	1400	280	95	130	450	1725	2085
1RN6456-2HJ.0 <sup>2)</sup>	4850	850	1070	1840	1400	280	95	130	450	1725	2085
1RN6500-2HJ.0 <sup>2)</sup>	5850	950	1270	1970	1320	315	110	165	500	1980	2150
1RN6502-2HJ.0 <sup>2)</sup>	6000	950	1270	1970	1320	315	110	165	500	1980	2150
<b>4-pole</b>											
1RN6450-4HJ.0	4350	850	1070	1840	1180	250	130	200	450	1715	1896
1RN6452-4HJ.0	4250	850	1070	1840	1180	250	130	200	450	1715	1896
1RN6454-4HJ.0	4950	850	1070	1840	1400	250	130	200	450	1715	2106
1RN6456-4HJ.0	5250	850	1070	1840	1400	250	130	200	450	1715	2106
1RN6500-4HJ.0	6350	950	1270	1970	1320	280	150	200	500	1980	2150
1RN6502-4HJ.0	6550	950	1270	1970	1320	280	150	200	500	1980	2150
1RN6504-4HJ.0	7200	950	1270	1970	1500	280	150	200	500	1980	2300
1RN6506-4HJ.0	7500	950	1270	1970	1500	280	150	200	500	1980	2300
1RN6560-4HJ.0	7600	1060	1340	2110	1400	315	170	240	560	2150	2300
1RN6562-4HJ.0	8000	1060	1340	2110	1400	315	170	240	560	2150	2300
1RN6564-4HJ.0	8900	1060	1340	2110	1600	315	170	240	560	2150	2550
1RN6566-4HJ.0	9400	1060	1340	2110	1600	315	170	240	560	2150	2550
1RN7630-4N..0-OCG0	10900	1320	1490	2490	1600	375	200	280	630	2170	2610
1RN7632-4N..0-OCG0	11500	1320	1490	2490	1600	375	200	280	630	2170	2610
1RN7634-4N..0-OCG0	12300	1320	1490	2490	1800	375	200	280	630	2170	2810
1RN7636-4N..0-OCG0	12900	1320	1490	2490	1800	375	200	280	630	2170	2810
1RN7710-4N..0-OCG0	16200	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7712-4N..0-OCG0	16900	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7714-4N..0-OCG0	18200	1500	1800	2900	2240	375	220	350	710	2570	3310
1RN7716-4N..0-OCG0	19400	1500	1800	2900	2240	375	220	350	710	2570	3310

<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

<sup>2)</sup> Anti-friction bearings only for 50 Hz version.

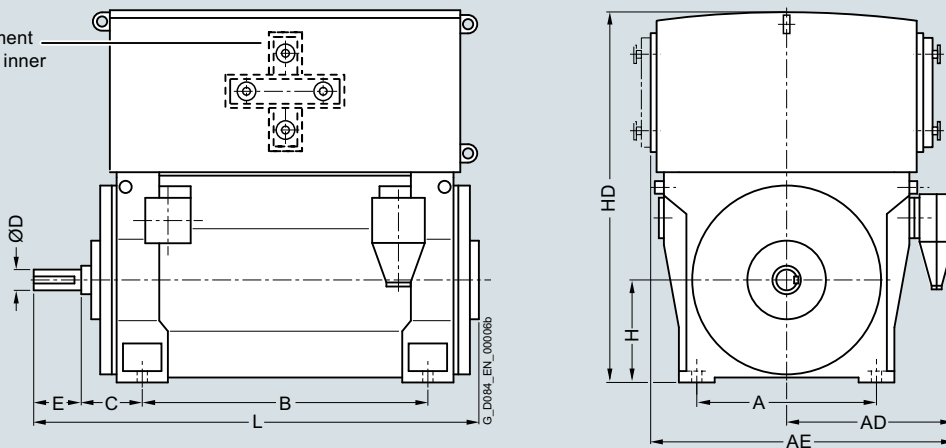
## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)

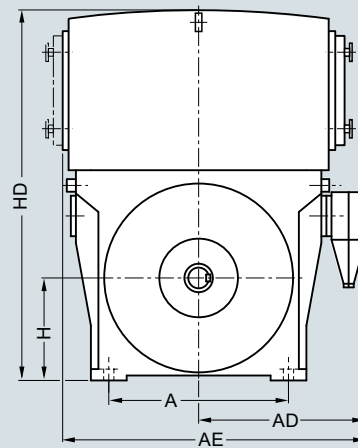
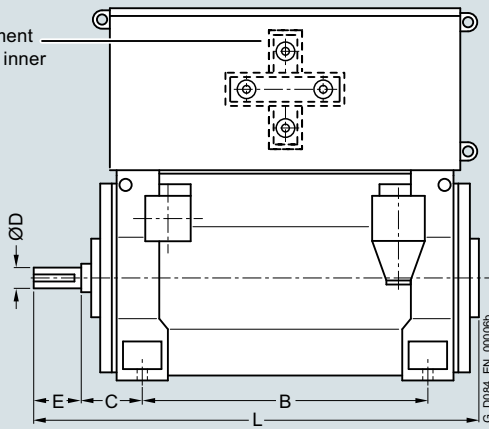
Cooler arrangement  
according to the inner  
air circuit



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RN6<sup>1)</sup>, 1RN7<sup>1)</sup> series – IC81W</b>											
6-pole											
1RN6450-6HJ.0	4450	850	1070	1840	1180	250	140	200	450	1715	1896
1RN6452-6HJ.0	4750	850	1070	1840	1180	250	140	200	450	1715	1896
1RN6454-6HJ.0	5100	850	1070	1840	1400	280	140	200	450	1715	2136
1RN6456-6HJ.0	5450	850	1070	1840	1400	280	140	200	450	1715	2136
1RN6500-6HJ.0	6400	950	1270	1970	1320	315	160	240	500	1960	2150
1RN6502-6HJ.0	6650	950	1270	1970	1320	315	160	240	500	1960	2150
1RN6504-6HJ.0	7250	950	1270	1970	1500	315	160	240	500	1960	2360
1RN6506-6HJ.0	7650	950	1270	1970	1500	315	160	240	500	1960	2360
1RN6560-6HJ.0	8600	1060	1340	2110	1400	315	180	240	560	2200	2300
1RN6562-6HJ.0	9000	1060	1340	2110	1400	315	180	240	560	2200	2300
1RN6564-6HJ.0	9850	1060	1340	2110	1600	315	180	240	560	2200	2550
1RN6566-6HJ.0	10400	1060	1340	2110	1600	315	180	240	560	2200	2550
1RN7630-6N..0-0CG0	11400	1320	1340	2340	1600	375	200	280	630	2170	2610
1RN7632-6N..0-0CG0	12000	1320	1340	2340	1600	375	200	280	630	2170	2610
1RN7634-6N..0-0CG0	12800	1320	1340	2340	1800	375	200	280	630	2170	2810
1RN7636-6N..0-0CG0	13400	1320	1340	2340	1800	375	200	280	630	2170	2810
1RN7710-6N..0-0CG0	16600	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7712-6N..0-0CG0	17600	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7714-6N..0-0CG0	19100	1500	1800	2900	2240	375	220	350	710	2570	3310
1RN7716-6N..0-0CG0	20200	1500	1800	2900	2240	375	220	350	710	2570	3310

<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Dimension drawings (continued)

Cooler arrangement  
according to the inner  
air circuit

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RN6<sup>1)</sup>, 1RN7<sup>1)</sup> series – IC81W</b>											
8-pole											
1RN6450-8HJ.0	4450	850	1070	1840	1180	250	140	200	450	1715	1896
1RN6452-8HJ.0	4750	850	1070	1840	1180	250	140	200	450	1715	1896
1RN6454-8HJ.0	5150	850	1070	1840	1400	280	140	200	450	1715	2136
1RN6456-8HJ.0	5450	850	1070	1840	1400	280	140	200	450	1715	2136
1RN6500-8HJ.0	6350	950	1270	1970	1320	315	160	240	500	1960	2150
1RN6502-8HJ.0	6600	950	1270	1970	1320	315	160	240	500	1960	2150
1RN6504-8HJ.0	7250	950	1270	1970	1500	315	160	240	500	1960	2360
1RN6506-8HJ.0	7600	950	1270	1970	1500	315	160	240	500	1960	2360
1RN6560-8HJ.0	8550	1060	1340	2110	1400	315	180	240	560	2200	2300
1RN6562-8HJ.0	9000	1060	1340	2110	1400	315	180	240	560	2200	2300
1RN6564-8HJ.0	9800	1060	1340	2110	1600	315	180	240	560	2200	2550
1RN6-566-8HJ.0	10350	1060	1340	2110	1600	315	180	240	560	2200	2550
1RN7630-8N..0-OCG0	11100	1320	1340	2340	1600	375	200	280	630	2250	2610
1RN7632-8N..0-OCG0	11700	1320	1340	2340	1600	375	200	280	630	2250	2610
1RN7634-8N..0-OCG0	12500	1320	1340	2340	1800	375	200	280	630	2250	2810
1RN7636-8N..0-OCG0	13100	1320	1340	2340	1800	375	200	280	630	2250	2810
1RN7710-8N..0-OCG0	16200	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7712-8N..0-OCG0	17100	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7714-8N..0-OCG0	18600	1500	1800	2900	2240	375	220	350	710	2570	3310
1RN7716-8N..0-OCG0	19600	1500	1800	2900	2240	375	220	350	710	2570	3310

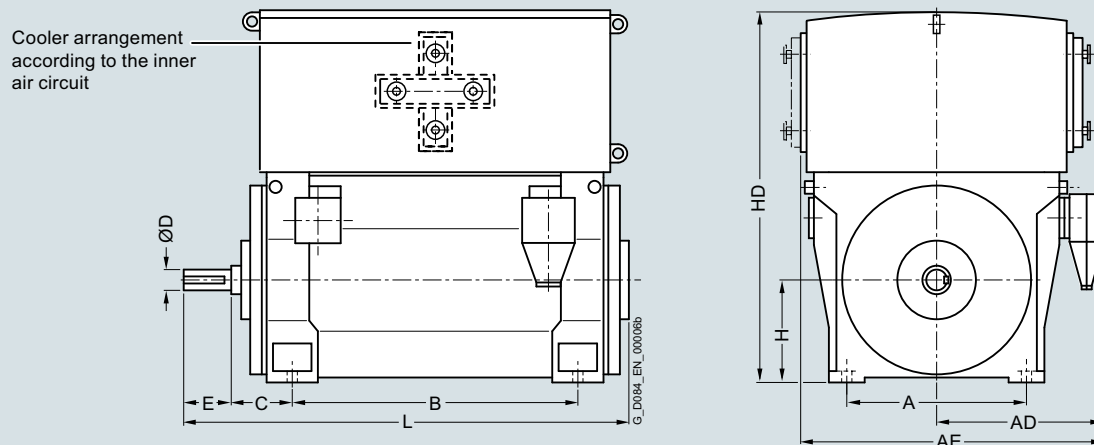
<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)

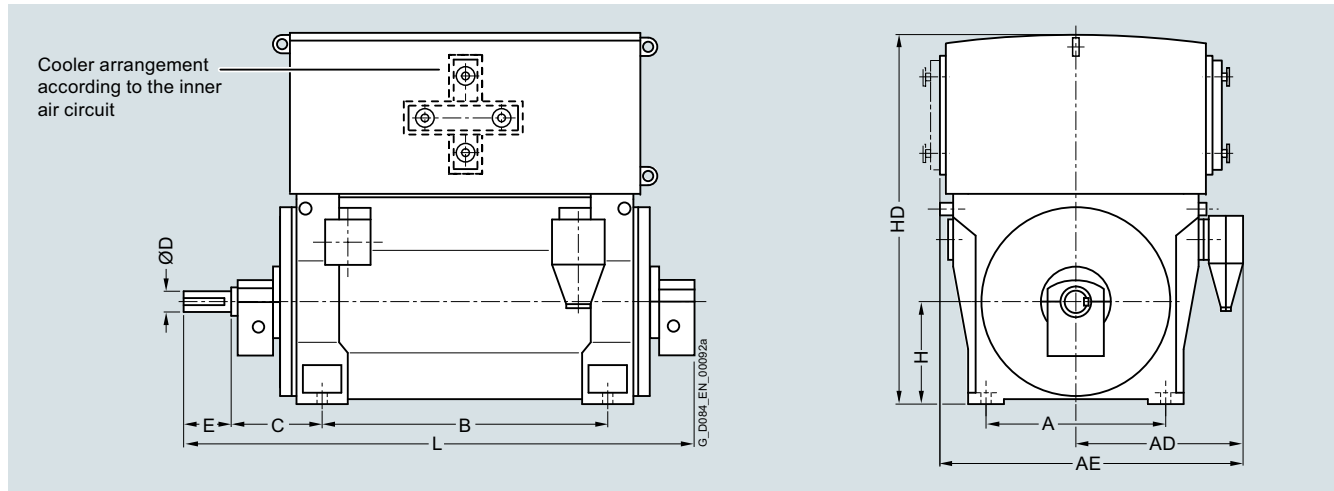


Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RN6<sup>1)</sup>, 1RN7<sup>1)</sup> series – IC81W</b>											
<b>10-pole</b>											
1RN6500-3HJ.0	5500	950	1220	2010	1320	280	160	240	500	1830	2270
1RN6502-3HJ.0	5850	950	1220	2010	1320	280	160	240	500	1830	2270
1RN6504-3HJ.0	6400	950	1220	2010	1500	280	170	240	500	1830	2480
1RN6506-3HJ.0	6750	950	1220	2010	1500	280	170	240	500	1830	2480
1RN6560-3HJ.0	7850	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN6562-3HJ.0	8350	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN6564-3HJ.0	8950	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN6566-3HJ.0	9350	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN7630-3N..0-OCG0	11100	1320	1340	2340	1600	375	200	280	630	2250	2610
1RN7632-3N..0-OCG0	11700	1320	1340	2340	1600	375	200	280	630	2250	2610
1RN7634-3N..0-OCG0	12400	1320	1340	2340	1800	375	200	280	630	2250	2810
1RN7636-3N..0-OCG0	13000	1320	1340	2340	1800	375	200	280	630	2250	2810
1RN7710-3N..0-OCG0	16300	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7712-3N..0-OCG0	17200	1500	1800	2900	2000	375	220	350	710	2570	3070
1RN7714-3N..0-OCG0	18700	1500	1800	2900	2240	375	220	350	710	2570	3310
1RN7716-3N..0-OCG0	19600	1500	1800	2900	2240	375	220	350	710	2570	3310
<b>12-pole</b>											
1RN6502-5HJ.0	5900	950	1220	2010	1320	280	160	240	500	1830	2270
1RN6504-5HJ.0	6350	950	1220	2010	1500	280	170	240	500	1830	2480
1RN6506-5HJ.0	6750	950	1220	2010	1500	280	170	240	500	1830	2480
1RN6560-5HJ.0	7450	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN6562-5HJ.0	7950	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN6564-5HJ.0	8800	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN6566-5HJ.0	9250	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN7630-5N..0-OCG0	11000	1320	1340	2340	1600	375	200	280	630	2250	2610
1RN7632-5N..0-OCG0	11600	1320	1340	2340	1600	375	200	280	630	2250	2610
1RN7634-5N..0-OCG0	12400	1320	1340	2340	1800	375	200	280	630	2250	2810
1RN7636-5N..0-OCG0	12900	1320	1340	2340	1800	375	200	280	630	2250	2810

Note: Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A	AD <sup>1)</sup>	AE <sup>1)</sup>	B	C	D	E	H	HD	L
Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RN6 <sup>2)</sup> , 1RN7 <sup>2)</sup> series – IC81W											

2-pole											
1RN6450-2HJ.0-Z K96 <sup>3)</sup>	4050	850	930	1620	1180	425	95	130	450	1725	2218
1RN6452-2HJ.0-Z K96 <sup>3)</sup>	4300	850	930	1620	1180	425	95	130	450	1725	2218
1RN6454-2HJ.0-Z K96 <sup>3)</sup>	4600	850	930	1620	1400	425	95	130	450	1725	2428
1RN6456-2HJ.0-Z K96 <sup>3)</sup>	4900	850	930	1620	1400	425	95	130	450	1725	2428
1RN6500-2HJ.0-Z K96 <sup>3)</sup>	5900	950	1135	1835	1320	450	110	165	500	1980	2500
1RN6502-2HJ.0-Z K96 <sup>3)</sup>	6050	950	1135	1835	1320	450	110	165	500	1980	2500
1RN6504-2HJ.0	6850	950	1135	1835	1500	450	110	165	500	1980	2650
1RN6506-2HJ.0	7100	950	1135	1835	1500	450	110	165	500	1980	2650
1RN6560-2HJ.0	7600	1060	1205	1975	1400	600	130	200	560	2150	2850
1RN6562-2HJ.0	8000	1060	1205	1975	1400	600	130	200	560	2150	2850
1RN6564-2HJ.0	8900	1060	1205	1975	1600	600	130	200	560	2150	3100
1RN6566-2HJ.0	9350	1060	1205	1975	1600	600	130	200	560	2150	3100
1RN7630-2N..0-OCG0	10500	1320	1490	2490	1600	600	180	240	630	2170	3020
1RN7632-2N..0-OCG0	11100	1320	1490	2490	1600	600	180	240	630	2170	3020
1RN7634-2N..0-OCG0	11900	1320	1490	2490	1800	600	180	240	630	2170	3220
1RN7636-2N..0-OCG0	12500	1320	1490	2490	1800	600	180	240	630	2170	3220
1RN7710-2N..0-OCG0	14900	1500	1800	2900	2000	560	200	280	710	2570	3320
1RN7712-2N..0-OCG0	15500	1500	1800	2900	2000	560	200	280	710	2570	3320
1RN7714-2N..0-OCG0	16700	1500	1800	2900	2240	560	200	280	710	2570	3560
1RN7716-2N..0-OCG0	17500	1500	1800	2900	2240	560	200	280	710	2570	3560

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

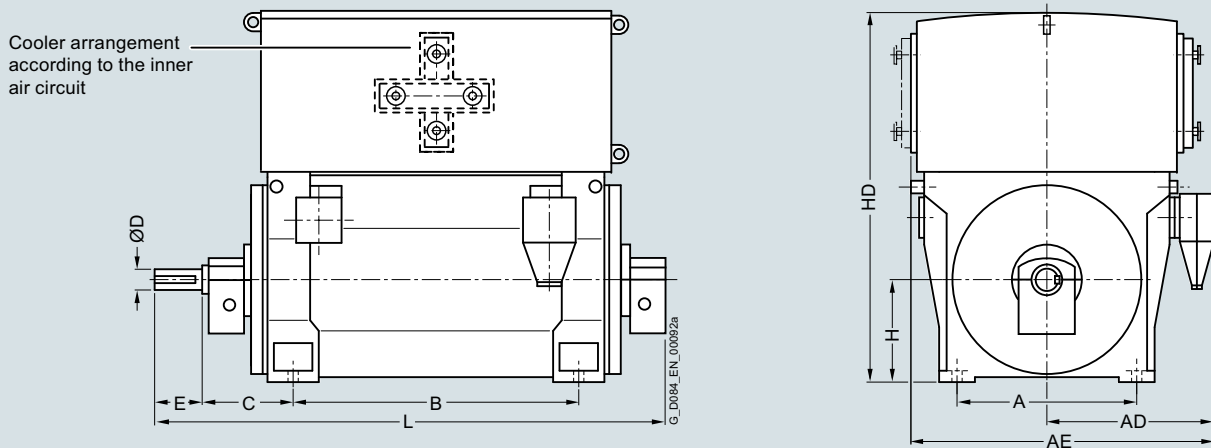
<sup>3)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W

4-pole

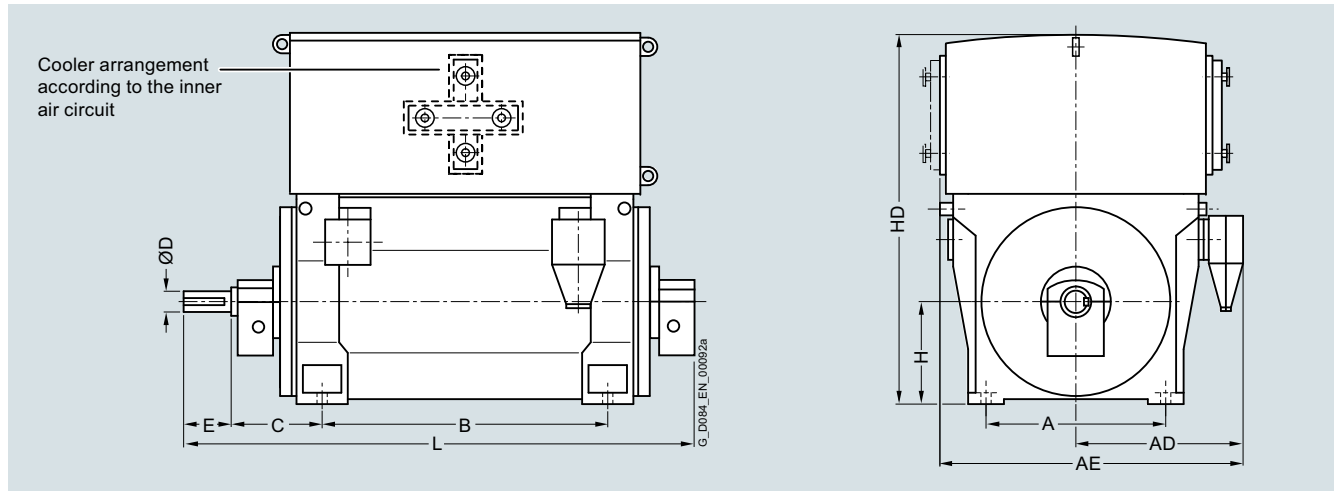
1RN6450-4HJ.0-Z K96	4400	850	930	1620	1180	500	130	200	450	1715	2438
1RN6452-4HJ.0-Z K96	4650	850	930	1620	1180	500	130	200	450	1715	2438
1RN6454-4HJ.0-Z K96	5050	850	930	1620	1400	500	130	200	450	1715	2648
1RN6456-4HJ.0-Z K96	5350	850	930	1620	1400	500	130	200	450	1715	2648
1RN6500-4HJ.0-Z K96	6650	950	1135	1835	1320	560	150	200	500	1980	2700
1RN6502-4HJ.0-Z K96	6850	950	1135	1835	1320	560	150	200	500	1980	2700
1RN6504-4HJ.0-Z K96	7550	950	1135	1835	1500	560	150	200	500	1980	2880
1RN6506-4HJ.0-Z K96	7850	950	1135	1835	1500	560	150	200	500	1980	2880
1RN6560-4HJ.0-Z K96	7800	1060	1205	1975	1400	600	170	240	560	2150	2900
1RN6562-4HJ.0-Z K96	8200	1060	1205	1975	1400	600	170	240	560	2150	2900
1RN6564-4HJ.0-Z K96	9050	1060	1205	1975	1600	600	170	240	560	2150	3100
1RN6566-4HJ.0-Z K96	9600	1060	1205	1975	1600	600	170	240	560	2150	3100
1RN7630-4N..0-0CJ0	11200	1320	1490	2490	1600	630	200	280	630	2170	3090
1RN7632-4N..0-0CJ0	11700	1320	1490	2490	1600	630	200	280	630	2170	3090
1RN7634-4N..0-0CJ0	12600	1320	1490	2490	1800	630	200	280	630	2170	3290
1RN7636-4N..0-0CJ0	13200	1320	1490	2490	1800	630	200	280	630	2170	3290
1RN7710-4N..0-0CJ0	16100	1500	1800	2900	2000	710	220	350	710	2570	3650
1RN7712-4N..0-0CJ0	16700	1500	1800	2900	2000	710	220	350	710	2570	3650
1RN7714-4N..0-0CJ0	18000	1500	1800	2900	2240	710	220	350	710	2570	3890
1RN7716-4N..0-0CJ0	19300	1500	1800	2900	2240	710	220	350	710	2570	3890

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.



## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W

6-pole

1RN6450-6HJ.0-Z K96	4550	850	930	1620	1180	500	140	200	450	1715	2438
1RN6452-6HJ.0-Z K96	4800	850	930	1620	1180	500	140	200	450	1715	2438
1RN6454-6HJ.0-Z K96	5150	850	930	1620	1400	500	140	200	450	1715	2648
1RN6456-6HJ.0-Z K96	5500	850	930	1620	1400	500	140	200	450	1715	2648
1RN6500-6HJ.0-Z K96	6550	950	1135	1835	1320	560	170	240	500	1960	2700
1RN6502-6HJ.0-Z K96	6850	950	1135	1835	1320	560	170	240	500	1960	2700
1RN6504-6HJ.0-Z K96	7450	950	1135	1835	1500	560	170	240	500	1960	2900
1RN6506-6HJ.0-Z K96	7850	950	1135	1835	1500	560	170	240	500	1960	2900
1RN6560-6HJ.0-Z K96	8850	1060	1205	1975	1400	600	170	240	560	2200	2950
1RN6562-6HJ.0-Z K96	9250	1060	1205	1975	1400	600	170	240	560	2200	2950
1RN6564-6HJ.0-Z K96	10100	1060	1205	1975	1600	600	170	240	560	2200	3150
1RN6566-6HJ.0-Z K96	10650	1060	1205	1975	1600	600	170	240	560	2200	3150
1RN7630-6N..0-0CJ0	11600	1320	1340	2340	1600	630	200	280	630	2170	3090
1RN7632-6N..0-0CJ0	12200	1320	1340	2340	1600	630	200	280	630	2170	3090
1RN7634-6N..0-0CJ0	13000	1320	1340	2340	1800	630	200	280	630	2170	3290
1RN7636-6N..0-0CJ0	13600	1320	1340	2340	1800	630	200	280	630	2170	3290
1RN7710-6N..0-0CJ0	16100	1500	1800	2900	2000	670	220	350	710	2570	3570
1RN7712-6N..0-0CJ0	17100	1500	1800	2900	2000	670	220	350	710	2570	3570
1RN7714-6N..0-0CJ0	18600	1500	1800	2900	2240	670	220	350	710	2570	3810
1RN7716-6N..0-0CJ0	19700	1500	1800	2900	2240	670	220	350	710	2570	3810

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

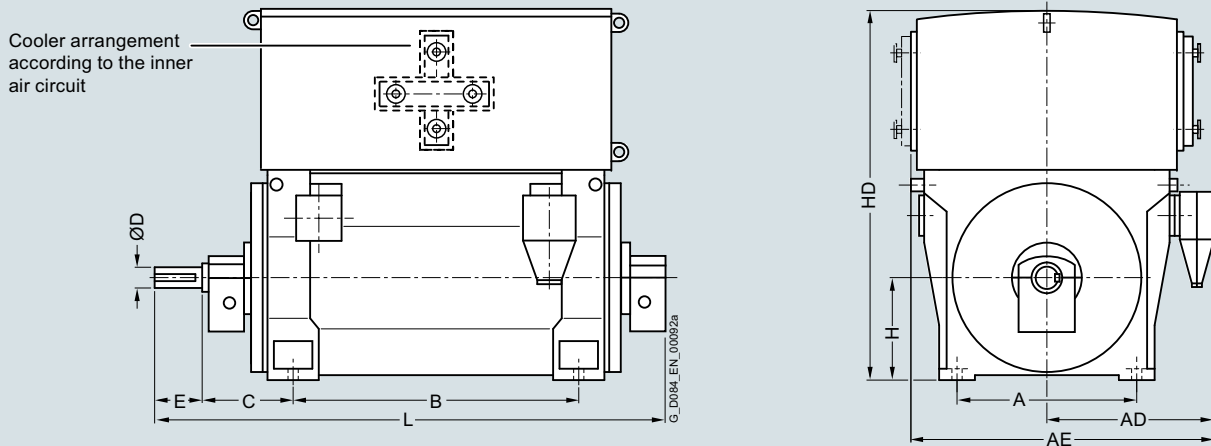
<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W

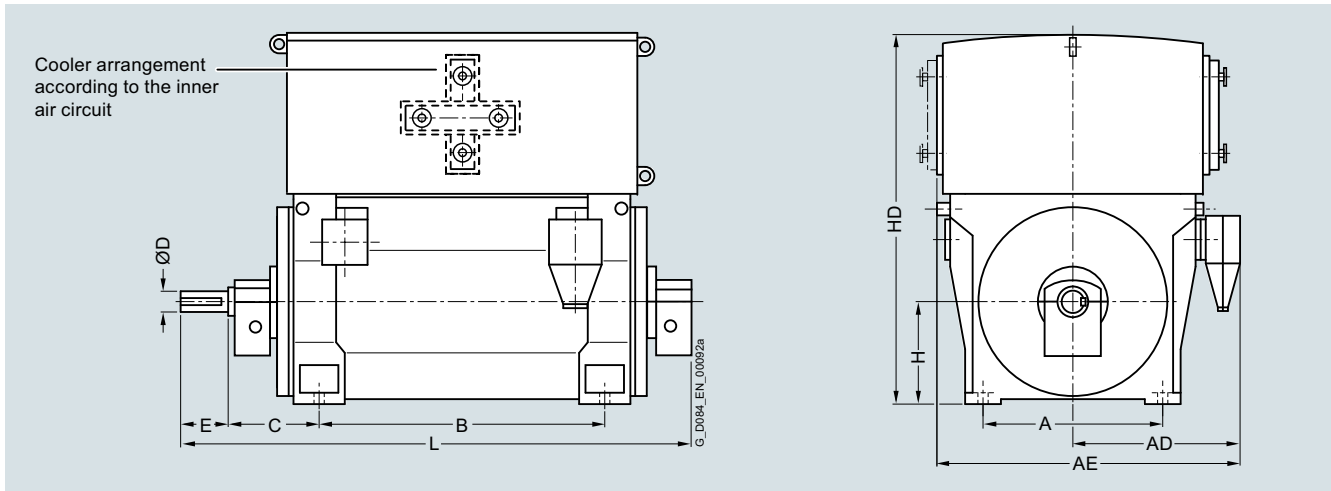
8-pole

1RN6450-8HJ.0-Z K96	4550	850	930	1620	1180	500	140	200	450	1715	2438
1RN6452-8HJ.0-Z K96	4850	850	930	1620	1180	500	140	200	450	1715	2438
1RN6454-8HJ.0-Z K96	5200	850	930	1620	1400	500	140	200	450	1715	2648
1RN6456-8HJ.0-Z K96	5550	850	930	1620	1400	500	140	200	450	1715	2648
1RN6500-8HJ.0-Z K96	6500	950	1135	1835	1320	560	170	240	500	1960	2700
1RN6502-8HJ.0-Z K96	6800	950	1135	1835	1320	560	170	240	500	1960	2700
1RN6504-8HJ.0-Z K96	7400	950	1135	1835	1500	560	170	240	500	1960	2900
1RN6506-8HJ.0-Z K96	7800	950	1135	1835	1500	560	170	240	500	1960	2900
1RN6560-8HJ.0-Z K96	8800	1060	1205	1975	1400	600	170	240	560	2200	2950
1RN6562-8HJ.0-Z K96	9250	1060	1205	1975	1400	600	170	240	560	2200	2950
1RN6564-8HJ.0-Z K96	10050	1060	1205	1975	1600	600	170	240	560	2200	3150
1RN6566-8HJ.0-Z K96	10600	1060	1205	1975	1600	600	170	240	560	2200	3150
1RN7630-8N..0-0CJ0	11300	1320	1340	2340	1600	630	200	280	630	2250	3090
1RN7632-8N..0-0CJ0	11900	1320	1340	2340	1600	630	200	280	630	2250	3090
1RN7634-8N..0-0CJ0	12700	1320	1340	2340	1800	630	200	280	630	2250	3290
1RN7636-8N..0-0CJ0	13300	1320	1340	2340	1800	630	200	280	630	2250	3290
1RN7710-8N..0-0CJ0	15700	1500	1800	2900	2000	670	220	350	710	2570	3570
1RN7712-8N..0-0CJ0	16600	1500	1800	2900	2000	670	220	350	710	2570	3570
1RN7714-8N..0-0CJ0	18000	1500	1800	2900	2240	670	220	350	710	2570	3810
1RN7716-8N..0-0CJ0	19000	1500	1800	2900	2240	670	220	350	710	2570	3810

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W</b>											
10-pole											
1RN6450-3HJ.0-Z K96	4550	850	930	1620	1180	500	140	200	450	1715	2438
1RN6452-3HJ.0-Z K96	4850	850	930	1620	1180	500	140	200	450	1715	2438
1RN6454-3HJ.0-Z K96	5200	850	930	1620	1400	500	140	200	450	1715	2648
1RN6456-3HJ.0-Z K96	5550	850	930	1620	1400	500	140	200	450	1715	2648
1RN6500-3HJ.0-Z K96	5700	950	1000	1790	1320	500	160	240	500	1830	2620
1RN6502-3HJ.0-Z K96	6050	950	1000	1790	1320	500	160	240	500	1830	2620
1RN6504-3HJ.0-Z K96	6600	950	1000	1790	1500	500	170	240	500	1830	2830
1RN6506-3HJ.0-Z K96	6950	950	1000	1790	1500	500	170	240	500	1830	2830
1RN6560-3HJ.0-Z K96	7650	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN6562-3HJ.0-Z K96	8200	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN6564-3HJ.0-Z K96	9050	1060	1070	1920	1600	530	190	280	560	2040	2940
1RN6566-3HJ.0-Z K96	9500	1060	1070	1920	1600	530	190	280	560	2040	2940
1RN7630-3N..0-0CJ0	11300	1320	1340	2340	1600	630	200	280	630	2250	3090
1RN7632-3N..0-0CJ0	11800	1320	1340	2340	1600	630	200	280	630	2250	3090
1RN7634-3N..0-0CJ0	12600	1320	1340	2340	1800	630	200	280	630	2250	3290
1RN7636-3N..0-0CJ0	13200	1320	1340	2340	1800	630	200	280	630	2250	3290
1RN7710-3N..0-0CJ0	15600	1500	1800	2900	2000	670	220	350	710	2570	3570
1RN7712-3N..0-0CJ0	16600	1500	1800	2900	2000	670	220	350	710	2570	3570
1RN7714-3N..0-0CJ0	18100	1500	1800	2900	2240	670	220	350	710	2570	3810
1RN7716-3N..0-0CJ0	19000	1500	1800	2900	2240	670	220	350	710	2570	3810

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

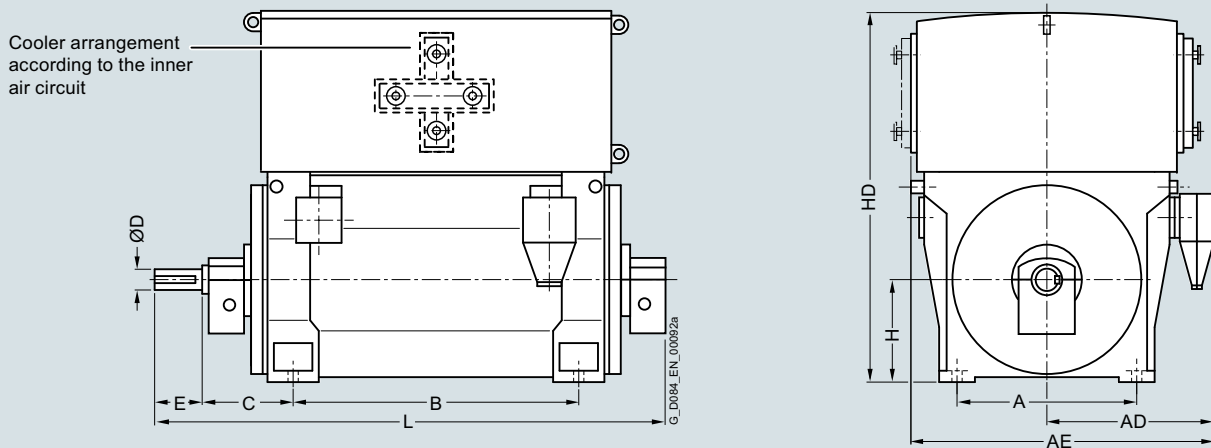
<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W

##### 12-pole

1RN6450-5HJ.0-Z K96	4550	850	930	1620	1180	500	140	200	450	1715	2438
1RN6452-5HJ.0-Z K96	4850	850	930	1620	1180	500	140	200	450	1715	2438
1RN6454-5HJ.0-Z K96	5200	850	930	1620	1400	500	140	200	450	1715	2648
1RN6456-5HJ.0-Z K96	5550	850	930	1620	1400	500	140	200	450	1715	2648
1RN6500-5HJ.0-Z K96	5700	950	1000	1790	1320	500	160	240	500	1830	2620
1RN6502-5HJ.0-Z K96	6050	950	1000	1790	1320	500	160	240	500	1830	2620
1RN6504-5HJ.0-Z K96	6550	950	1000	1790	1500	500	170	240	500	1830	2830
1RN6506-5HJ.0-Z K96	6950	950	1000	1790	1500	500	170	240	500	1830	2830
1RN6560-5HJ.0-Z K96	7650	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN6562-5HJ.0-Z K96	8250	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN6564-5HJ.0-Z K96	9000	1060	1070	1920	1600	530	190	280	560	2040	2940
1RN6566-5HJ.0-Z K96	9500	1060	1070	1920	1600	530	190	280	560	2040	2940
1RN7630-5N..0-0CJ0	11200	1320	1340	2340	1600	630	200	280	630	2250	3090
1RN7632-5N..0-0CJ0	11800	1320	1340	2340	1600	630	200	280	630	2250	3090
1RN7634-5N..0-0CJ0	12600	1320	1340	2340	1800	630	200	280	630	2250	3290
1RN7636-5N..0-0CJ0	13200	1320	1340	2340	1800	630	200	280	630	2250	3290

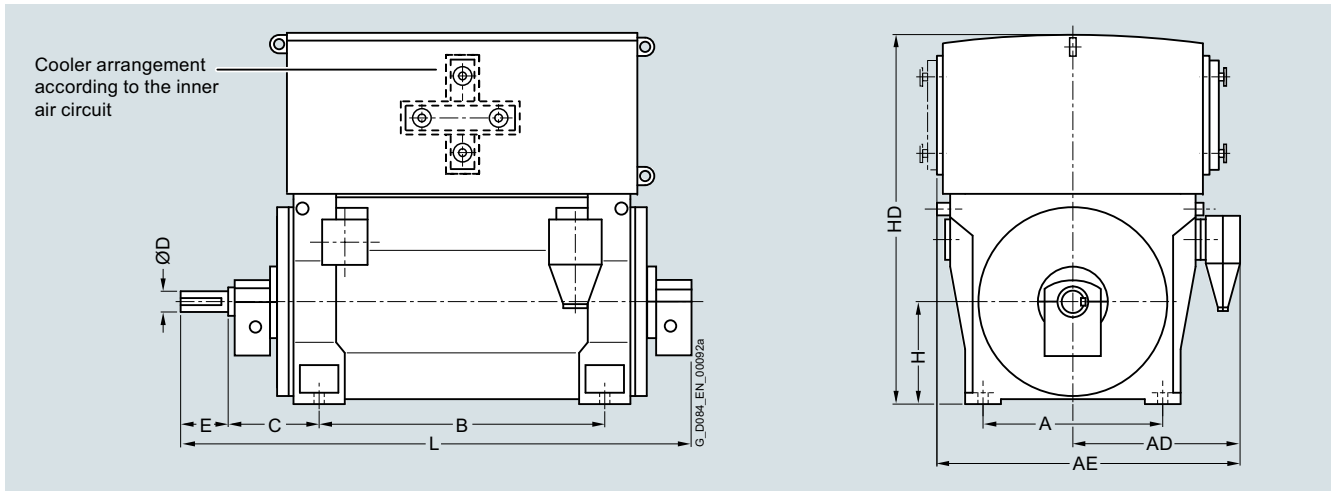
#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

**9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RN6<sup>1)</sup>, 1RN7<sup>1)</sup> series – IC81W**

2-pole

1RN6450-2HJ.0-Z K96 <sup>2)</sup>	4050	850	1070	1840	1180	425	95	130	450	1725	2218
1RN6452-2HJ.0-Z K96 <sup>2)</sup>	4300	850	1070	1840	1180	425	95	130	450	1725	2218
1RN6454-2HJ.0-Z K96 <sup>2)</sup>	4600	850	1070	1840	1400	425	95	130	450	1725	2428
1RN6456-2HJ.0-Z K96 <sup>2)</sup>	4900	850	1070	1840	1400	425	95	130	450	1725	2428
1RN6500-2HJ.0-Z K96 <sup>2)</sup>	5900	950	1270	1970	1320	450	110	165	500	1980	2500
1RN6502-2HJ.0-Z K96 <sup>2)</sup>	6050	950	1270	1970	1320	450	110	165	500	1980	2500
1RN6504-2HJ.0	6850	950	1270	1970	1500	450	110	165	500	1980	2650
1RN6506-2HJ.0	7100	950	1270	1970	1500	450	110	165	500	1980	2650
1RN6560-2HJ.0	7600	1060	1340	2110	1400	600	130	200	560	2150	2850
1RN6562-2HJ.0	8000	1060	1340	2110	1400	600	130	200	560	2150	2850
1RN6564-2HJ.0	8900	1060	1340	2110	1600	600	130	200	560	2150	3100
1RN6566-2HJ.0	9350	1060	1340	2110	1600	600	130	200	560	2150	3100
1RN7630-2N..0-0CJ0	10300	1320	1490	2490	1600	600	180	240	630	2170	3020
1RN7632-2N..0-0CJ0	10900	1320	1490	2490	1600	600	180	240	630	2170	3020
1RN7634-2N..0-0CJ0	11700	1320	1490	2490	1800	600	180	240	630	2170	3220
1RN7636-2N..0-0CJ0	12300	1320	1490	2490	1800	600	180	240	630	2170	3220
1RN7710-2N..0-0CJ0	15300	1500	1800	2900	2000	560	200	280	710	2570	3320
1RN7712-2N..0-0CJ0	16000	1500	1800	2900	2000	560	200	280	710	2570	3320
1RN7714-2N..0-0CJ0	17200	1500	1800	2900	2240	560	200	280	710	2570	3560
1RN7716-2N..0-0CJ0	17900	1500	1800	2900	2240	560	200	280	710	2570	3560

<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

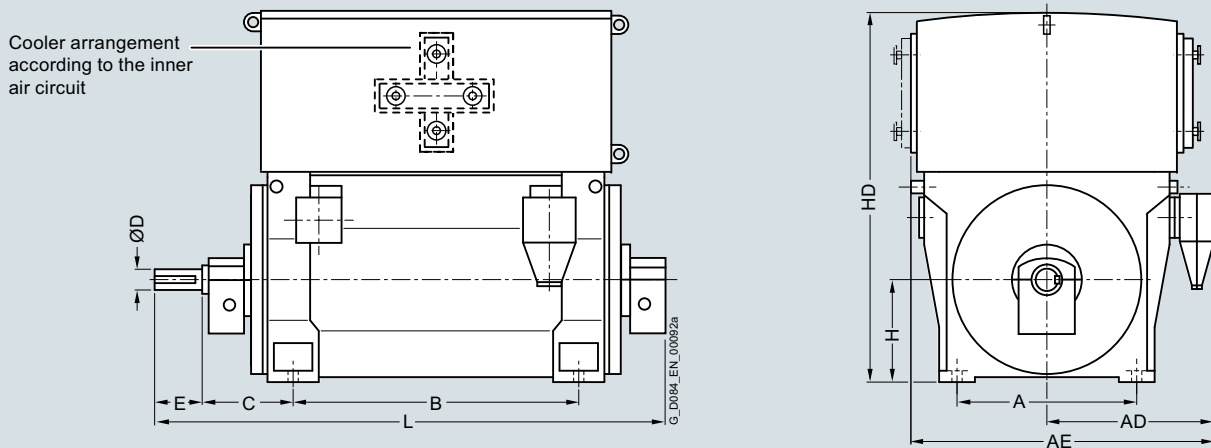
<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

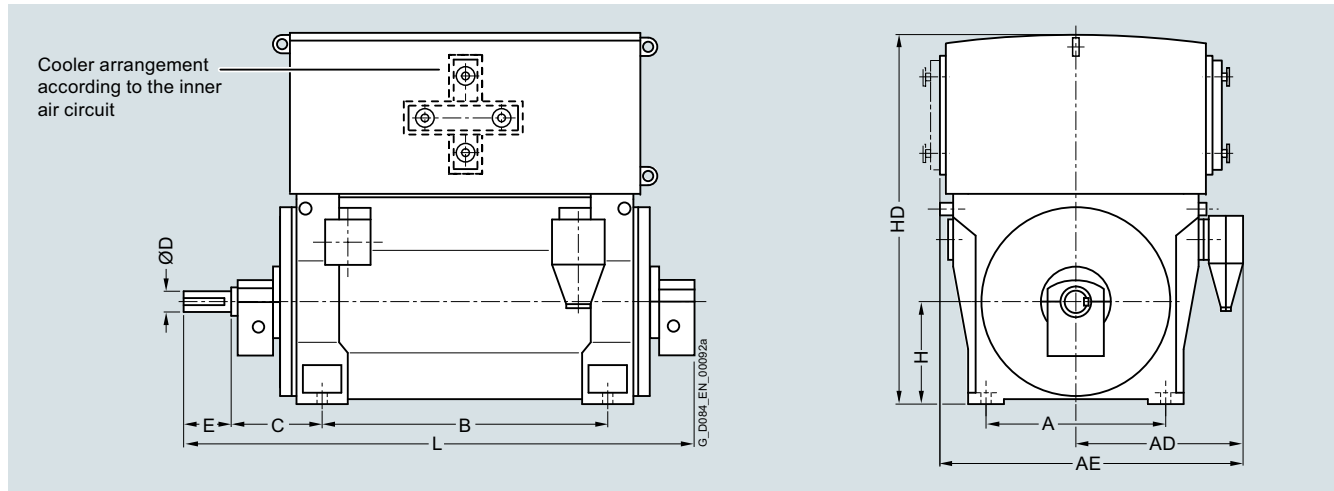
#### 9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RN6<sup>1)</sup>, 1RN7<sup>1)</sup> series – IC81W

4-pole

1RN6450-4HJ.0-Z K96	4400	850	1070	1840	1180	500	130	200	450	1715	2438
1RN6452-4HJ.0-Z K96	4650	850	1070	1840	1180	500	130	200	450	1715	2438
1RN6454-4HJ.0-Z K96	5050	850	1070	1840	1400	500	130	200	450	1715	2645
1RN6456-4HJ.0-Z K96	5350	850	1070	1840	1400	500	130	200	450	1715	2645
1RN6500-4HJ.0-Z K96	6650	950	1270	1970	1320	560	150	200	500	1980	2700
1RN6502-4HJ.0-Z K96	6850	950	1270	1970	1320	560	150	200	500	1980	2700
1RN6504-4HJ.0-Z K96	7550	950	1270	1970	1500	560	150	200	500	1980	2880
1RN6506-4HJ.0-Z K96	7850	950	1270	1970	1500	560	150	200	500	1980	2880
1RN6560-4HJ.0-Z K96	7800	1060	1340	2110	1400	600	170	240	560	2150	2900
1RN6562-4HJ.0-Z K96	8200	1060	1340	2110	1400	600	170	240	560	2150	2900
1RN6564-4HJ.0-Z K96	9050	1060	1340	2110	1600	600	170	240	560	2150	3100
1RN6566-4HJ.0-Z K96	9600	1060	1340	2110	1600	600	170	240	560	2150	3100
1RN7630-4N..0-0CJ0	11000	1320	1490	2490	1600	630	200	280	630	2170	3090
1RN7632-4N..0-0CJ0	11600	1320	1490	2490	1600	630	200	280	630	2170	3090
1RN7634-4N..0-0CJ0	12400	1320	1490	2490	1800	630	200	280	630	2170	3290
1RN7636-4N..0-0CJ0	13000	1320	1490	2490	1800	630	200	280	630	2170	3290
1RN7710-4N..0-0CJ0	16600	1500	1800	2900	2000	710	220	350	710	2570	3650
1RN7712-4N..0-0CJ0	17300	1500	1800	2900	2000	710	220	350	710	2570	3650
1RN7714-4N..0-0CJ0	18600	1500	1800	2900	2240	710	220	350	710	2570	3890
1RN7716-4N..0-0CJ0	19800	1500	1800	2900	2240	710	220	350	710	2570	3890

<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RN6<sup>1)</sup>, 1RN7<sup>1)</sup> series – IC81W</b>											
6-pole											
1RN6450-6HJ.0-Z K96	4550	850	1070	1840	1180	500	140	200	450	1715	2438
1RN6452-6HJ.0-Z K96	4800	850	1070	1840	1180	500	140	200	450	1715	2438
1RN6454-6HJ.0-Z K96	5150	850	1070	1840	1400	500	140	200	450	1715	2648
1RN6456-6HJ.0-Z K96	5500	850	1070	1840	1400	500	140	200	450	1715	2648
1RN6500-6HJ.0-Z K96	6550	950	1270	1970	1320	560	170	240	500	1960	2700
1RN6502-6HJ.0-Z K96	6850	950	1270	1970	1320	560	170	240	500	1960	2700
1RN6504-6HJ.0-Z K96	7450	950	1270	1970	1500	560	170	240	500	1960	2900
1RN6506-6HJ.0-Z K96	7850	950	1270	1970	1500	560	170	240	500	1960	2900
1RN6560-6HJ.0-Z K96	8850	1060	1340	2110	1400	600	170	240	560	2200	2950
1RN6562-6HJ.0-Z K96	9250	1060	1340	2110	1400	600	170	240	560	2200	2950
1RN6564-6HJ.0-Z K96	10100	1060	1340	2110	1600	600	170	240	560	2200	3150
1RN6566-6HJ.0-Z K96	10650	1060	1340	2110	1600	600	170	240	560	2200	3150
1RN7630-6N..0-0CJ0	11500	1320	1340	2340	1600	630	200	280	630	2170	3090
1RN7632-6N..0-0CJ0	12100	1320	1340	2340	1600	630	200	280	630	2170	3090
1RN7634-6N..0-0CJ0	12900	1320	1340	2340	1800	630	200	280	630	2170	3290
1RN7636-6N..0-0CJ0	13400	1320	1340	2340	1800	630	200	280	630	2170	3290
1RN7710-6N..0-0CJ0	16500	1500	1800	2900	2000	670	220	350	710	2570	3570
1RN7712-6N..0-0CJ0	17600	1500	1800	2900	2000	670	220	350	710	2570	3570
1RN7714-6N..0-0CJ0	19100	1500	1800	2900	2240	670	220	350	710	2570	3810
1RN7716-6N..0-0CJ0	20200	1500	1800	2900	2240	670	220	350	710	2570	3810

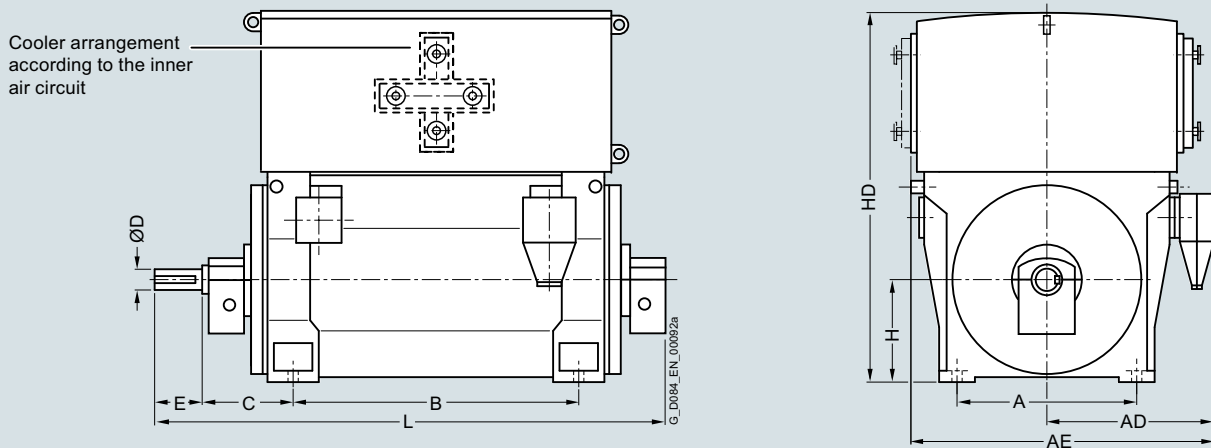
<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)

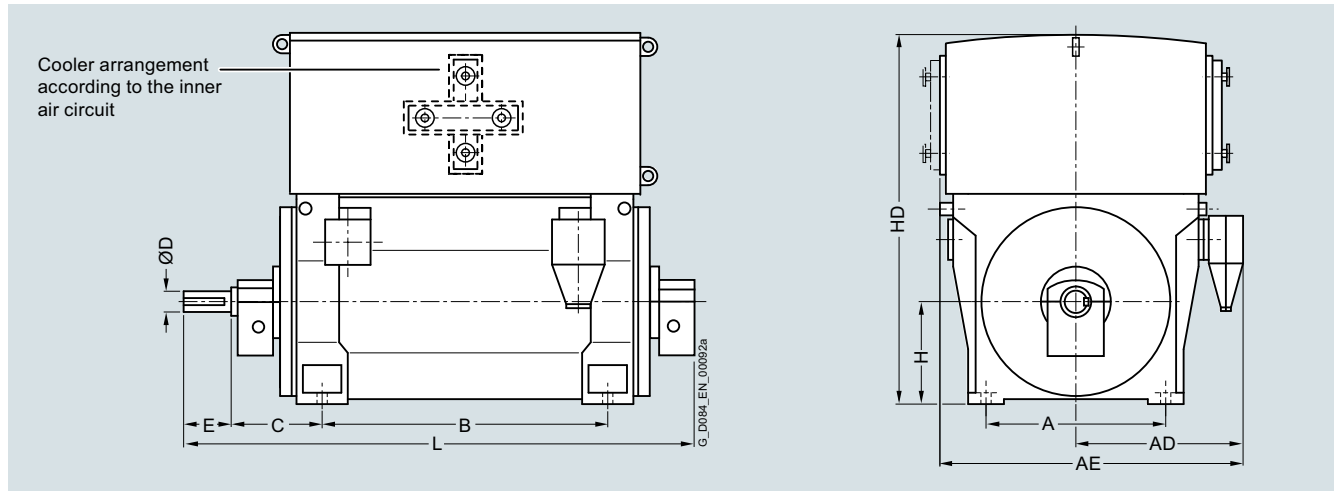


Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RN6<sup>1)</sup>, 1RN7<sup>1)</sup> series – IC81W</b>											
8-pole											
1RN6450-8HJ.0-Z K96	4550	850	1070	1840	1180	500	140	200	450	1715	2438
1RN6452-8HJ.0-Z K96	4850	850	1070	1840	1180	500	140	200	450	1715	2438
1RN6454-8HJ.0-Z K96	5200	850	1070	1840	1400	500	140	200	450	1715	2648
1RN6456-8HJ.0-Z K96	5550	850	1070	1840	1400	500	140	200	450	1715	2648
1RN6500-8HJ.0-Z K96	6500	950	1270	1970	1320	560	170	240	500	1960	2700
1RN6502-8HJ.0-Z K96	6800	950	1270	1970	1320	560	170	240	500	1960	2700
1RN6504-8HJ.0-Z K96	7400	950	1270	1970	1500	560	170	240	500	1960	2900
1RN6506-8HJ.0-Z K96	7800	950	1270	1970	1500	560	170	240	500	1960	2900
1RN6560-8HJ.0-Z K96	8800	1060	1340	2110	1400	600	170	240	560	2200	2950
1RN6562-8HJ.0-Z K96	9250	1060	1340	2110	1400	600	170	240	560	2200	2950
1RN6564-8HJ.0-Z K96	10050	1060	1340	2110	1600	600	170	240	560	2200	3150
1RN6566-8HJ.0-Z K96	10600	1060	1340	2110	1600	600	170	240	560	2200	3150
1RN7630-8N..0-OCJ0	11300	1320	1340	2340	1600	630	200	280	630	2250	3090
1RN7632-8N..0-OCJ0	11800	1320	1340	2340	1600	630	200	280	630	2250	3090
1RN7634-8N..0-OCJ0	12600	1320	1340	2340	1800	630	200	280	630	2250	3290
1RN7636-8N..0-OCJ0	13200	1320	1340	2340	1800	630	200	280	630	2250	3290
1RN7710-8N..0-OCJ0	16200	1500	1800	2900	2000	670	220	350	710	2570	3570
1RN7712-8N..0-OCJ0	17100	1500	1800	2900	2000	670	220	350	710	2570	3570
1RN7714-8N..0-OCJ0	18600	1500	1800	2900	2240	670	220	350	710	2570	3810
1RN7716-8N..0-OCJ0	19600	1500	1800	2900	2240	670	220	350	710	2570	3810

<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.



## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RN6<sup>1)</sup>, 1RN7<sup>1)</sup> series – IC81W</b>											
<b>10-pole</b>											
1RN6500-3HJ.0-Z K96	5700	950	1220	2010	1320	500	160	240	500	1830	2620
1RN6502-3HJ.0-Z K96	6050	950	1220	2010	1320	500	160	240	500	1830	2620
1RN6504-3HJ.0-Z K96	6550	950	1220	2010	1500	500	170	240	500	1830	2830
1RN6506-3HJ.0-Z K96	6900	950	1220	2010	1500	500	170	240	500	1830	2830
1RN6560-3HJ.0-Z K96	8050	1060	1210	2060	1400	530	180	240	560	2040	2670
1RN6562-3HJ.0-Z K96	8550	1060	1210	2060	1400	530	180	240	560	2040	2670
1RN6564-3HJ.0-Z K96	9150	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN6566-3HJ.0-Z K96	9550	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN7630-3N..0-OCJ0	11200	1320	1340	2340	1600	630	200	280	630	2250	3090
1RN7632-3N..0-OCJ0	11800	1320	1340	2340	1600	630	200	280	630	2250	3090
1RN7634-3N..0-OCJ0	12500	1320	1340	2340	1800	630	200	280	630	2250	3290
1RN7636-3N..0-OCJ0	13100	1320	1340	2340	1800	630	200	280	630	2250	3290
1RN7710-3N..0-OCJ0	16300	1500	1800	2900	2000	670	220	350	710	2570	3570
1RN7712-3N..0-OCJ0	17300	1500	1800	2900	2000	670	220	350	710	2570	3570
1RN7714-3N..0-OCJ0	18700	1500	1800	2900	2240	670	220	350	710	2570	3810
1RN7716-3N..0-OCJ0	19600	1500	1800	2900	2240	670	220	350	710	2570	3810
<b>12-pole</b>											
1RN6502-5HJ.0-Z K96	6050	950	1220	2010	1320	500	160	240	500	1830	2620
1RN6504-5HJ.0-Z K96	6500	950	1220	2010	1500	500	170	240	500	1830	2830
1RN6506-5HJ.0-Z K96	6900	950	1220	2010	1500	500	170	240	500	1830	2830
1RN6560-5HJ.0-Z K96	7650	1060	1210	2060	1400	530	180	240	560	2040	2670
1RN6562-5HJ.0-Z K96	8200	1060	1210	2060	1400	530	180	240	560	2040	2670
1RN6564-5HJ.0-Z K96	9000	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN6566-5HJ.0-Z K96	9450	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN7630-5N..0-OCJ0	11100	1320	1340	2340	1600	630	200	280	630	2250	3090
1RN7632-5N..0-OCJ0	11700	1320	1340	2340	1600	630	200	280	630	2250	3090
1RN7634-5N..0-OCJ0	12400	1320	1340	2340	1800	630	200	280	630	2250	3290
1RN7636-5N..0-OCJ0	13000	1320	1340	2340	1800	630	200	280	630	2250	3290

Note: Higher pole numbers are available on request.

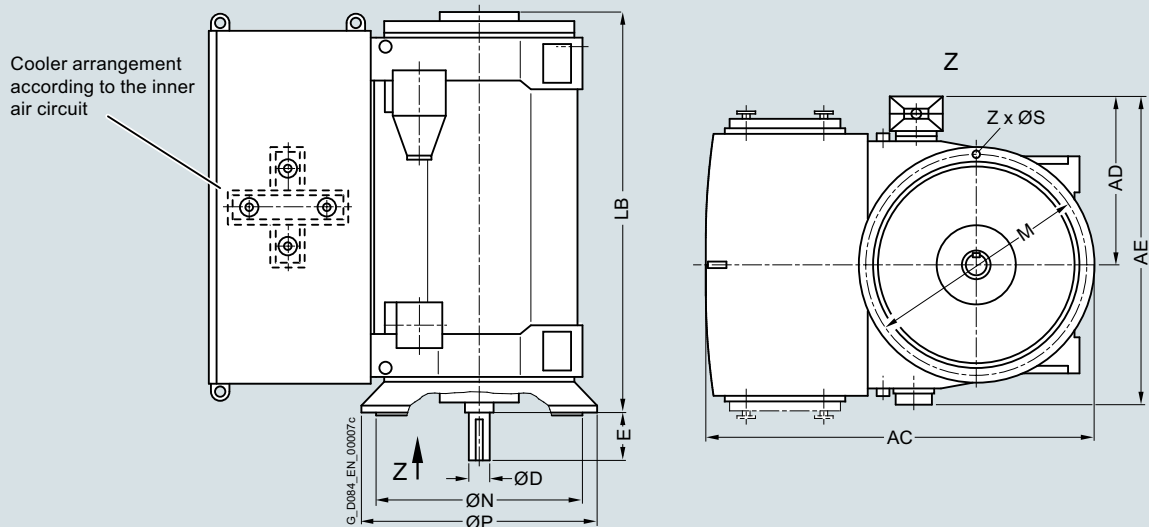
<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for line operation

Water-cooled motors

SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings



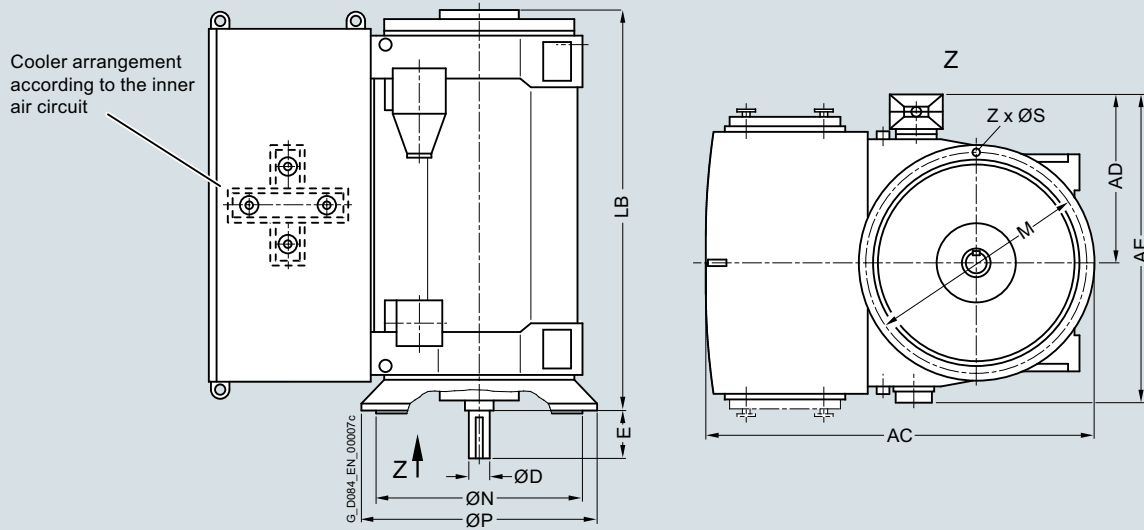
Motor type	Weight kg	Dimensions										
		AC	AD <sup>1)</sup>	AE <sup>1)</sup>	D	E	LB	P	N	M	S	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W</b>												
4-pole												
1RN6450-4HJ.8	4550	1840	930	1620	130	200	1720	1150	1000	1080	26	8
1RN6452-4HJ.8	4750	1840	930	1620	130	200	1720	1150	1000	1080	26	8
1RN6454-4HJ.8	5150	1840	930	1620	130	200	1930	1150	1000	1080	26	8
1RN6456-4HJ.8	5450	1840	930	1620	130	200	1930	1150	1000	1080	26	8
1RN6500-4HJ.8	5500	1960	1000	1810	150	200	1910	1250	1120	1180	26	8
1RN6502-4HJ.8	5700	1960	1000	1810	150	200	1910	1250	1120	1180	26	8
1RN6504-4HJ.8	6400	1960	1000	1810	160	240	2120	1250	1120	1180	26	8
1RN6506-4HJ.8	6800	1960	1000	1810	160	240	2120	1250	1120	1180	26	8
1RN6560-4HJ.8	7550	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6562-4HJ.8	8000	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6564-4HJ.8 <sup>3)</sup>	8900	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN6566-4HJ.8 <sup>3)</sup>	9350	2180	1210	2100	190	280	2320	1400	1250	1320	26	8

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 an 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

<sup>3)</sup> Vertical type of construction, only in the 50 Hz version.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC	AD <sup>1)</sup>	AE <sup>1)</sup>	D	E	LB	P	N	M	S	Z
<b>Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W</b>												
6-pole												
1RN6450-6HJ.8	4650	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6452-6HJ.8	4950	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6454-6HJ.8	5300	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6456-6HJ.8	5650	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6500-6HJ.8	5650	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN6502-6HJ.8	6050	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN6504-6HJ.8	6550	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN6506-6HJ.8	6950	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN6560-6HJ.8	7650	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6562-6HJ.8	8250	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6564-6HJ.8	9100	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN6566-6HJ.8	9550	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN7630-6N..8-OCG0	12300	2490	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7632-6N..8-OCG0	12900	2490	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7634-6N..8-OCG0	13700	2490	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7636-6N..8-OCG0	14300	2490	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7710-6N..8-OCG0	16700	2900	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7712-6N..8-OCG0	17700	2900	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7714-6N..8-OCG0	19200	2900	1800	2900	220	350	3380	2000	1800	1900	35	24
1RN7716-6N..8-OCG0	20300	2900	1800	2900	220	350	3380	2000	1800	1900	35	24

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

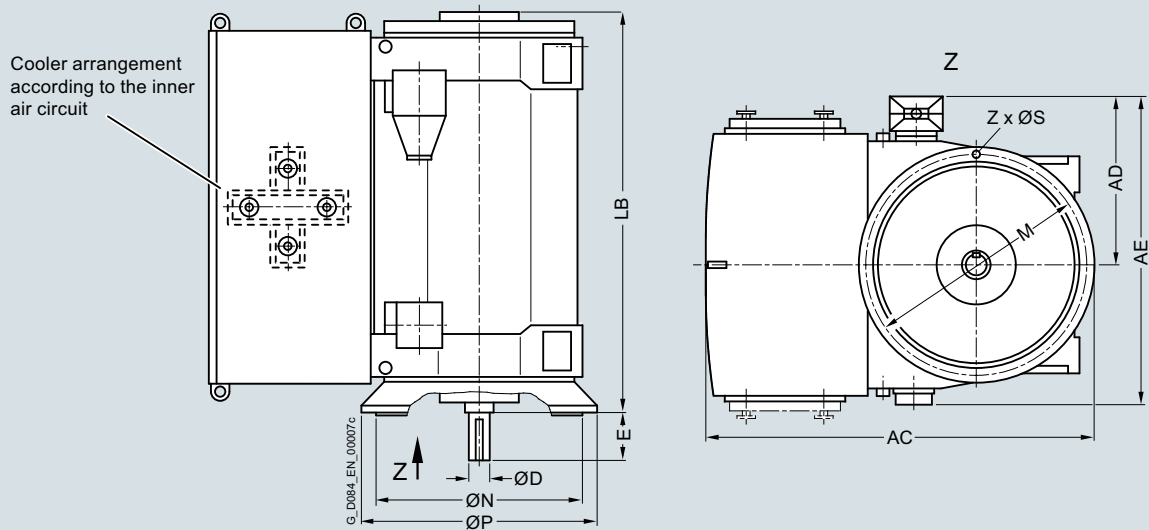
<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)

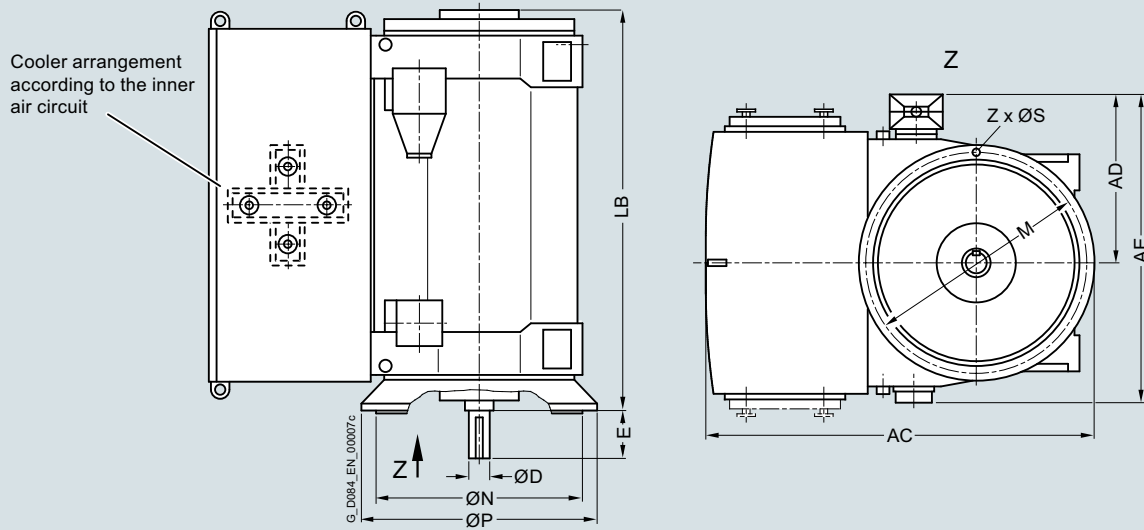


Motor type	Weight kg	Dimensions										
		AC	AD <sup>1)</sup>	AE <sup>1)</sup>	D	E	LB	P	N	M	S	Z
Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RN6 <sup>2)</sup> , 1RN7 <sup>2)</sup> series – IC81W												
8-pole												
1RN6450-8HJ.8	4650	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6452-8HJ.8	4950	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6454-8HJ.8	5350	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6456-8HJ.8	5650	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6500-8HJ.8	5700	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN6502-8HJ.8	6050	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN6504-8HJ.8	6550	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN6506-8HJ.8	6950	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN6560-8HJ.8	7650	2180	1070	1960	180	240	2090	1400	1250	1320	26	8
1RN6562-8HJ.8	8150	2180	1070	1960	180	240	2090	1400	1250	1320	26	8
1RN6564-8HJ.8	9000	2180	1070	1960	190	280	2320	1400	1250	1320	26	8
1RN6566-8HJ.8	9450	2180	1070	1960	190	280	2320	1400	1250	1320	26	8
1RN7630-8N..8-OCG0	11900	2570	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7632-8N..8-OCG0	12500	2570	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7634-8N..8-OCG0	13400	2570	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7636-8N..8-OCG0	13900	2570	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7710-8N..8-OCG0	16600	2900	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7712-8N..8-OCG0	17600	2900	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7714-8N..8-OCG0	19100	2900	1800	2900	220	350	3380	2000	1800	1900	35	24
1RN7716-8N..8-OCG0	20100	2900	1800	2900	220	350	3380	2000	1800	1900	35	24

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC	AD <sup>1)</sup>	AE <sup>1)</sup>	D	E	LB	P	N	M	S	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W</b>												
10-pole												
1RN6450-3HJ.8	4650	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6452-3HJ.8	4950	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6454-3HJ.8	5350	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6456-3HJ.8	5650	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6500-3HJ.8	5650	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN6502-3HJ.8	6000	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN6504-3HJ.8	6550	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN6506-3HJ.8	6900	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN6560-3HJ.8	7550	2180	1070	1960	180	240	2090	1400	1250	1320	26	8
1RN6562-3HJ.8	8150	2180	1070	1960	180	240	2090	1400	1250	1320	26	8
1RN6564-3HJ.8	8950	2180	1070	1960	190	280	2320	1400	1250	1320	26	8
1RN6566-3HJ.8	9400	2180	1070	1960	190	280	2320	1400	1250	1320	26	8
1RN7630-3N..8-OCG0	11900	2570	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7632-3N..8-OCG0	12400	2570	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7634-3N..8-OCG0	13200	2570	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7636-3N..8-OCG0	13800	2570	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7710-3N..8-OCG0	16400	2900	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7712-3N..8-OCG0	17300	2900	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7714-3N..8-OCG0	18900	2900	1800	2900	220	350	3380	2000	1800	1900	35	24
1RN7716-3N..8-OCG0	19800	2900	1800	2900	220	350	3380	2000	1800	1900	35	24

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

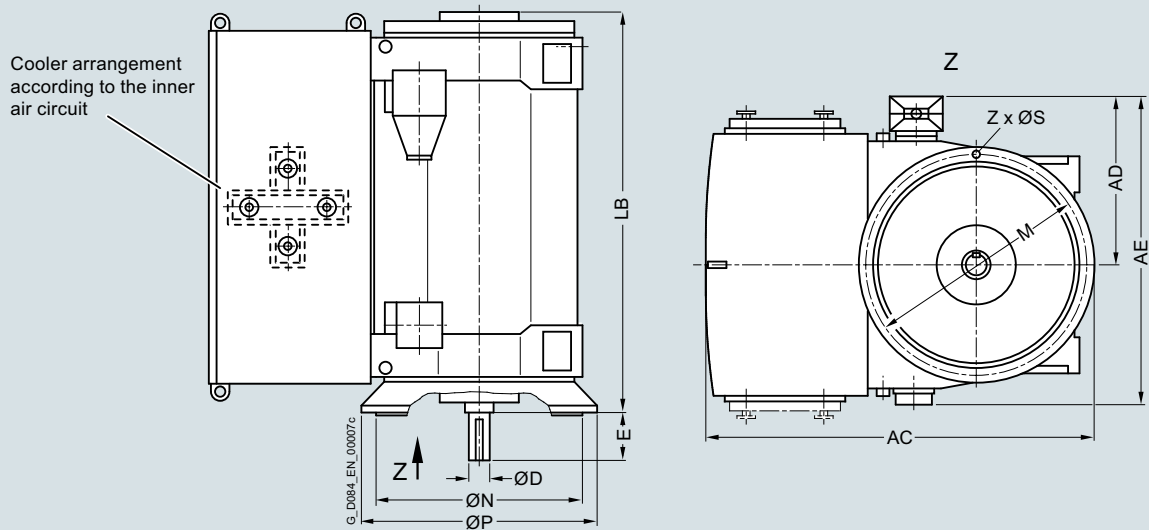
<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC	AD <sup>1)</sup>	AE <sup>1)</sup>	D	E	LB	P	N	M	S	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RN6<sup>2)</sup>, 1RN7<sup>2)</sup> series – IC81W</b>												
12-pole												
1RN6450-5HJ.8	4650	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6452-5HJ.8	4950	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6454-5HJ.8	5350	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6456-5HJ.8	5650	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6500-5HJ.8	5650	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN6502-5HJ.8	6000	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN6504-5HJ.8	6500	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN6506-5HJ.8	6950	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN6560-5HJ.8	7600	2180	1070	1960	180	240	2090	1400	1250	1320	26	8
1RN6562-5HJ.8	8150	2180	1070	1960	180	240	2090	1400	1250	1320	26	8
1RN6564-5HJ.8	8950	2180	1070	1960	190	280	2320	1400	1250	1320	26	8
1RN6566-5HJ.8	9400	2180	1070	1960	190	280	2320	1400	1250	1320	26	8
1RN7630-5N..8-OCG0	11800	2570	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7632-5N..8-OCG0	12400	2570	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7634-5N..8-OCG0	13200	2570	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7636-5N..8-OCG0	13800	2570	1250	2130	200	280	2610	1800	1600	1700	28	24

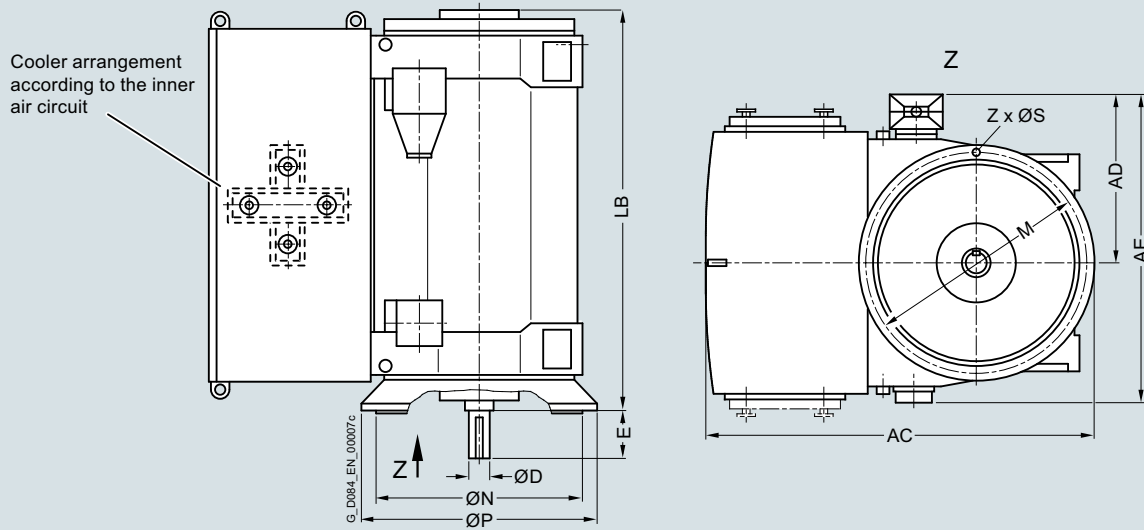
#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

## Dimension drawings



Motor type	Weight kg	Dimensions										
		AC	AD	AE	D	E	LB	P	N	M	S	Z
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Quantity
<b>9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RN6<sup>1)</sup>, 1RN7<sup>1)</sup> series– IC81W</b>												
4-pole												
1RN6450-4HJ.8	4550	1840	1070	1840	130	200	1720	1150	1000	1080	26	8
1RN6452-4HJ.8	4750	1840	1070	1840	130	200	1720	1150	1000	1080	26	8
1RN6454-4HJ.8	5150	1840	1070	1840	130	200	1930	1150	1000	1080	26	8
1RN6456-4HJ.8	5450	1840	1070	1840	130	200	1930	1150	1000	1080	26	8
1RN6500-4HJ.8	5550	1960	1140	1950	150	200	1910	1250	1120	1180	26	8
1RN6502-4HJ.8	5700	1960	1140	1950	150	200	1910	1250	1120	1180	26	8
1RN6504-4HJ.8	6350	1960	1140	1950	160	240	2120	1250	1120	1180	26	8
1RN6506-4HJ.8	6700	1960	1140	1950	160	240	2120	1250	1120	1180	26	8
1RN6560-4HJ.8	7400	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6562-4HJ.8	7900	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6564-4HJ.8	8750	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN6566-4HJ.8	9200	2180	1210	2100	190	280	2320	1400	1250	1320	26	8

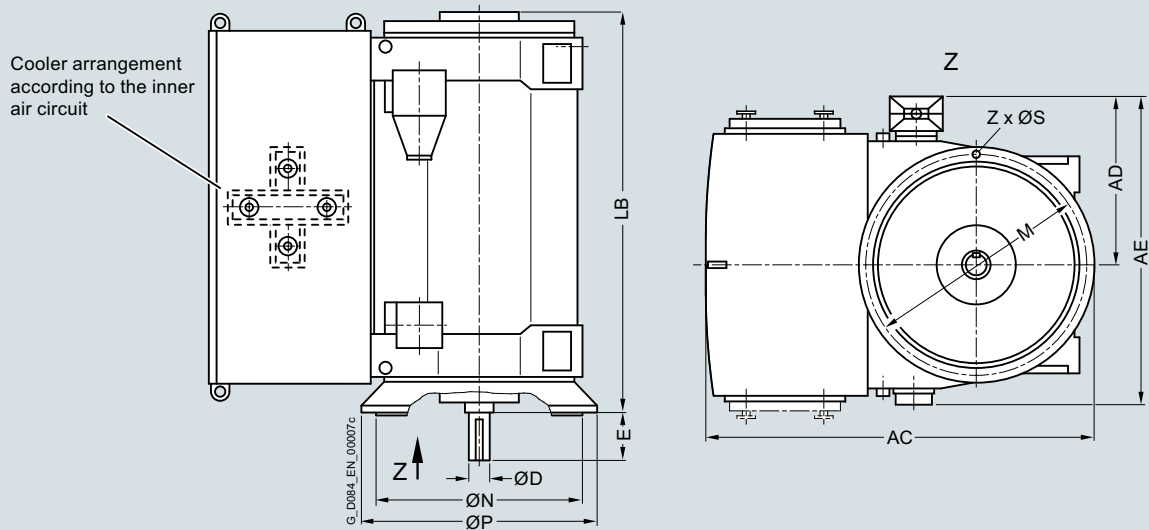
<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SL7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)

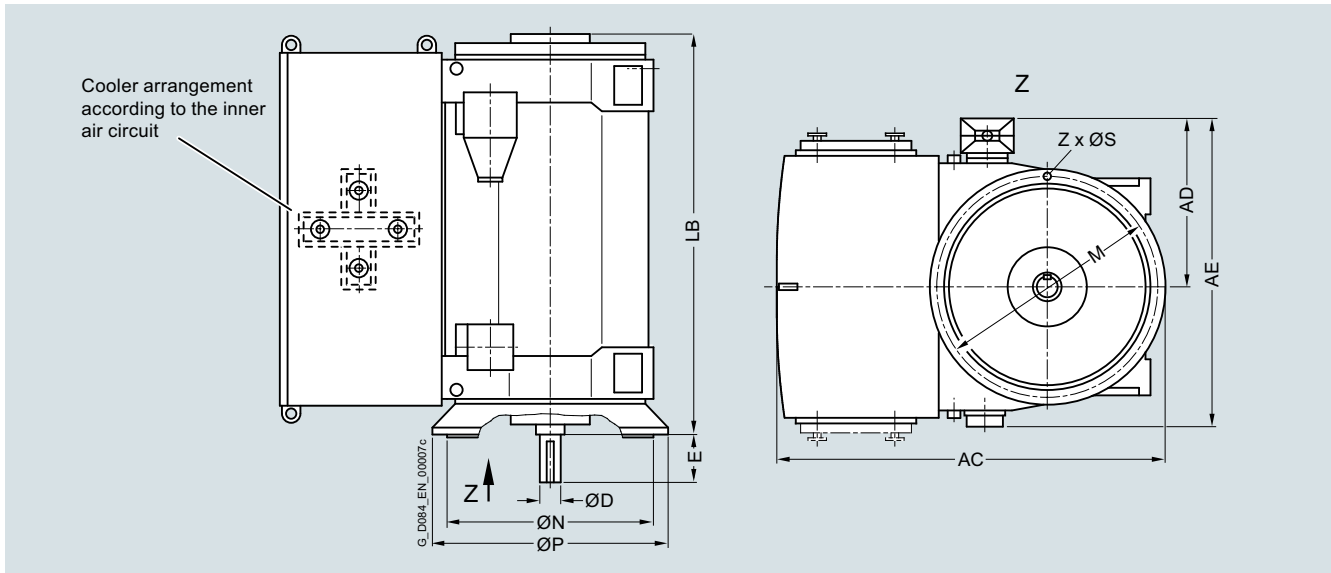


Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RN6<sup>1)</sup>, 1RN7<sup>1)</sup> series – IC81W</b>												
6-pole												
1RN6450-6HJ.8	4650	1840	1070	1840	140	200	1720	1150	1000	1080	26	8
1RN6452-6HJ.8	4950	1840	1070	1840	140	200	1720	1150	1000	1080	26	8
1RN6454-6HJ.8	5300	1840	1070	1840	140	200	1930	1150	1000	1080	26	8
1RN6456-6HJ.8	5650	1840	1070	1840	140	200	1930	1150	1000	1080	26	8
1RN6500-6HJ.8	5650	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN6502-6HJ.8	6050	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN6504-6HJ.8	6550	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN6506-6HJ.8	6950	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN6560-6HJ.8	7650	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6562-6HJ.8	8150	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6564-6HJ.8	8950	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN6566-6HJ.8	9400	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN7630-6N..8-OCG0	12100	2490	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7632-6N..8-OCG0	12700	2490	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7634-6N..8-OCG0	13600	2490	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7636-6N..8-OCG0	14100	2490	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7710-6N..8-OCG0	17000	2900	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7712-6N..8-OCG0	18100	2900	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7714-6N..8-OCG0	19600	2900	1800	2900	220	350	3380	2000	1800	1900	35	24
1RN7716-6N..8-OCG0	20700	2900	1800	2900	220	350	3380	2000	1800	1900	35	24

<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.



## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC	AD	AE	D	E	LB	P	N	M	S	Z
9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RN6 <sup>1)</sup> , 1RN7 <sup>1)</sup> series – IC81W												
8-pole												
1RN6450-8HJ.8	4650	1840	1070	1840	140	200	1720	1150	1000	1080	26	8
1RN6452-8HJ.8	4950	1840	1070	1840	140	200	1720	1150	1000	1080	26	8
1RN6454-8HJ.8	5350	1840	1070	1840	140	200	1930	1150	1000	1080	26	8
1RN6456-8HJ.8	5650	1840	1070	1840	140	200	1930	1150	1000	1080	26	8
1RN6500-8HJ.8	5700	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN6502-8HJ.8	6050	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN6504-8HJ.8	6550	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN6506-8HJ.8	6950	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN6560-8HJ.8	7600	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6562-8HJ.8	8150	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6564-8HJ.8	9000	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN6566-8HJ.8	9400	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN7630-8N..8-OCG0	11800	2570	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7632-8N..8-OCG0	12400	2570	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7634-8N..8-OCG0	13200	2570	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7636-8N..8-OCG0	13800	2570	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7710-8N..8-OCG0	16200	2900	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7712-8N..8-OCG0	17200	2900	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7714-8N..8-OCG0	18600	2900	1800	2900	220	350	3380	2000	1800	1900	35	24
1RN7716-8N..8-OCG0	19600	2900	1800	2900	220	350	3380	2000	1800	1900	35	24

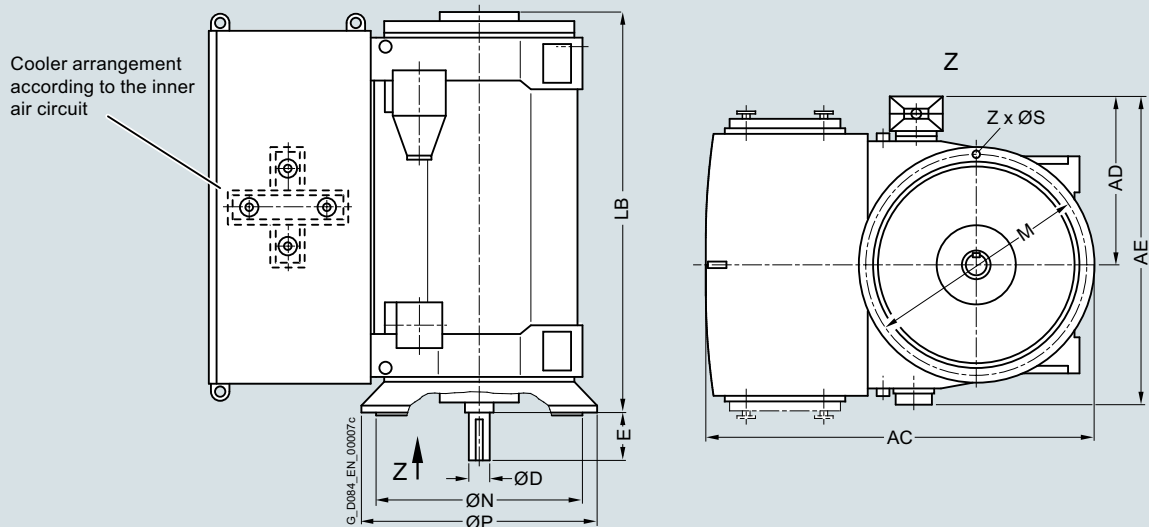
<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

## Motors for line operation

### Water-cooled motors

#### SIMOTICS HV M 1RN6, 1RN7

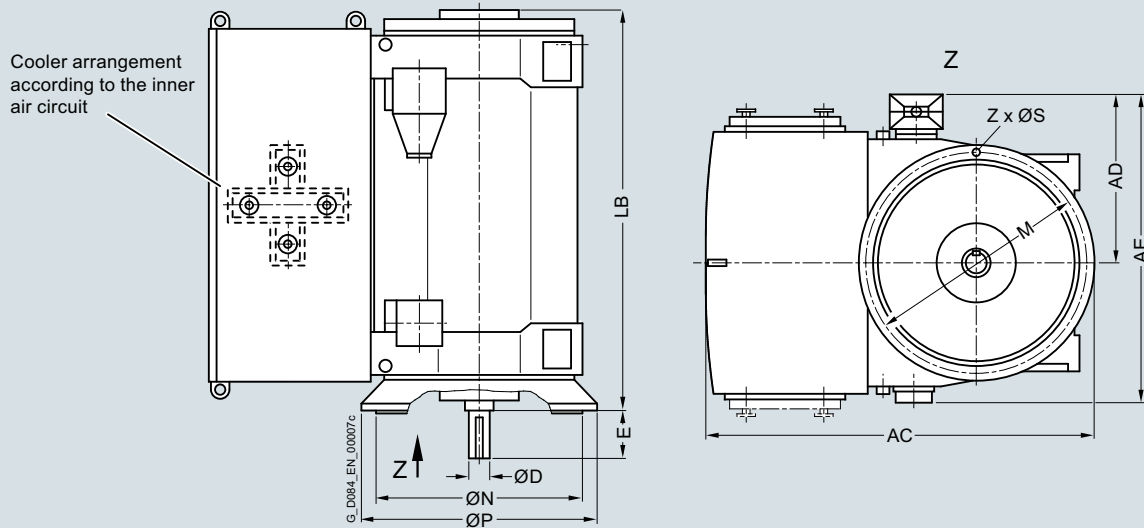
#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC	AD	AE	D	E	LB	P	N	M	S	Z
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Quantity
<b>9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RN6<sup>1)</sup>, 1RN7<sup>1)</sup> series – IC81W</b>												
10-pole												
1RN6500-3HJ.8	5650	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN6502-3HJ.8	6000	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN6504-3HJ.8	6500	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN6506-3HJ.8	6900	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN6560-3HJ.8	7900	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6562-3HJ.8	8550	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6564-3HJ.8	9400	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN6566-3HJ.8	10000	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN7630-3N..8-OCG0	11800	2570	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7632-3N..8-OCG0	12300	2570	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7634-3N..8-OCG0	13200	2570	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7636-3N..8-OCG0	13700	2570	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7710-3N..8-OCG0	16400	2900	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7712-3N..8-OCG0	17400	2900	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7714-3N..8-OCG0	18800	2900	1800	2900	220	350	3380	2000	1800	1900	35	24
1RN7716-3N..8-OCG0	19700	2900	1800	2900	220	350	3380	2000	1800	1900	35	24

<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC	AD	AE	D	E	LB	P	N	M	S	Z
9 ... 11 kV, IM V1 type of construction, anti-friction bearings – 1RN6 <sup>1)</sup> , 1RN7 <sup>1)</sup> series – IC81W												
12-pole												
1RN6502-5HJ.8	6050	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN6504-5HJ.8	6450	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN6506-5HJ.8	6900	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN6560-5HJ.8	7550	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6562-5HJ.8	8100	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN6564-5HJ.8	8900	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN6566-5HJ.8	9350	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN7630-5N..8-OCG0	11700	2570	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7632-5N..8-OCG0	12300	2570	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7634-5N..8-OCG0	13100	2570	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7636-5N..8-OCG0	13600	2570	1250	2130	200	280	2610	1800	1600	1700	28	24

Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SL6 and 1SL7 series. For the 1SQ6 and 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

## Motors for line operation

Water-cooled motors

Notes

2

## Motors for converter operation



3/2	<b>General</b>	3/82	<b>Water-cooled motors</b>
3/2	<u>Sinusoidal and non-sinusoidal converter output</u>	3/82	<u>SIMOTICS HV M 1RN6, 1RN7</u>
3/3	<b>Converter with non-sinusoidal output</b>	3/84	Selection and ordering data
3/3	<u>Air-cooled motors</u>	3/84	690 V, 50 Hz (square-law torque drive)
3/3	<u>SIMOTICS HV M 1RA6</u>	3/88	3.3 kV, 50 Hz (square-law torque drive)
3/4	Selection and ordering data	3/90	4.16 kV, 50 Hz (square-law torque drive)
3/4	690 V, 50 Hz (square-law torque drive)	3/100	Up to 6.6 kV, 50 Hz (square-law torque drive)
3/8	4.16 kV, 50 Hz (square-law torque drive)	3/102	9 to 11 kV, 50 Hz (square-law torque drive)
3/12	690 V, 60 Hz (square-law torque drive)	3/104	690 V, 60 Hz (square-law torque drive)
3/16	4.16 kV, 60 Hz (square-law torque drive)	3/108	4.16 kV, 60 Hz (square-law torque drive)
3/20	Dimension drawings	3/118	Up to 6.6 kV, 60 Hz (square-law torque drive)
3/21	<u>Air-cooled motors</u>	3/121	Dimension drawings
3/21	<u>SIMOTICS HV M 1RQ6, 1RQ7</u>	3/121	IM B3 type of construction, anti-friction bearings, sleeve bearings IC81W
3/24	Selection and ordering data	3/129	IM V1 type of construction, anti-friction bearings IC81W
3/24	690 V, 50 Hz (square-law torque drive)	3/130	IM B3 type of construction, anti-friction bearings, sleeve bearings IC86W
3/28	3.3 kV, 50 Hz (square-law torque drive)	3/143	IM V1 type of construction, anti-friction bearings, sleeve bearings IC86W
3/30	4.16 kV, 50 Hz (square-law torque drive)	3/147	<b>Converter with sinusoidal output</b>
3/40	Up to 6.6 kV, 50 Hz (square-law torque drive)	3/147	<u>Air-cooled motors</u>
3/42	9 to 11 kV, 50 Hz (square-law torque drive)	3/147	<u>SIMOTICS HV M 1RQ7</u>
3/44	690 V, 60 Hz (square-law torque drive)	3/147	<u>constant-torque drive</u>
3/48	4.16 kV, 60 Hz (square-law torque drive)	3/147	Selection and ordering data
3/58	Up to 6.6 kV, 60 Hz (square-law torque drive)	3/148	Up to 6.6 kV, 50 Hz (constant-torque drive)
3/61	Dimension drawings	3/150	Up to 6.6 kV, 60 Hz (constant-torque drive)
3/61	IM B3 type of construction, anti-friction bearings, sleeve bearings, IC611	3/152	Dimension drawings
3/67	IM B3 type of construction, anti-friction bearings, sleeve bearings, IC666	3/153	<b>Water-cooled motors</b>
3/78	IM V1 type of construction, anti-friction bearings, sleeve bearings IC666	3/153	<u>SIMOTICS HV M 1RN7</u>
		3/153	<u>constant-torque drive</u>
		3/153	Selection and ordering data
		3/154	Up to 6.6 kV, 50 Hz (constant-torque drive)
		3/156	Up to 6.6 kV, 60 Hz (constant-torque drive)
		3/158	Dimension drawings

## Motors for converter operation

### General

#### Sinusoidal and non-sinusoidal converter output

##### Overview

By using variable speed drives, cost savings can be achieved in many applications compared to fixed-speed operation.

The SIMOTICS HV M motors are designed for an optimized drive system with the appropriate SINAMICS converters, couplings and gear units to achieve a reliable drive train with high availability and long lifetime, which results in low lifecycle costs. The integrated drive system also features engineering tools that allow the configuration of the entire drive train and the automation environment with optimized parameters. A tailor-made service concept secures the effective operation of the whole drive train application over a long time.

##### **Sinusoidal output**

For operation with medium-voltage converters SINAMICS PERFECT HARMONY or SINAMICS GM150 and SINAMICS SM150 with sine-wave filter, as a result of the sinusoidal output, line motors for applications with square-law load characteristic are suitable. For converter operation, these motors must be equipped with electrically-isolated bearings at the NDE. The technical data can be taken from the tables in Chapter 2. For motors with shaft height 800, the technical data for constant torque load characteristic are shown in Chapter 3, section "Converter with sinusoidal output".

The insulation system of these motors corresponds to thermal class 155 (F) – and they are generally utilized to thermal class 130 (B).

##### **Non-sinusoidal output**

The SIMOTICS HV M motor series is also available in special design versions for operation with medium voltage converters or low-voltage SINAMICS G and SINAMICS S drive converters (without sine-wave filter).

These motors, as standard, have a reinforced stator winding insulation so that they can be fed from the specified drive converters without requiring a sine-wave filter. Further, for the medium-voltage version of the motors, both bearings are electrically insulated and the shaft is equipped with a grounding system.

The technical data can be taken from the tables in Chapter 3, section "Converter with non-sinusoidal output".

The insulation system of these motors corresponds to thermal class 155 (F). 1R.6 motors are generally utilized to thermal class 155 (F), 1R.7 motors to 130 (B).

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

#### Overview



#### Technical data

##### Overview of technical data

SIMOTICS HV M 1RA6	
<b>Rated voltage</b>	690 V ... 4.16 kV
<b>Rated frequency</b>	50/60 Hz
<b>Motor type</b>	Induction motor with squirrel-cage rotor
<b>Type of construction</b>	IM B3, IM V1
<b>Degree of protection</b>	IP23
<b>Cooling method</b>	IC01
<b>Stator winding insulation</b>	Insulation system, thermal class 155 (F)
<b>Shaft height</b>	450 ... 560 mm
<b>Bearings</b>	Anti-friction bearings, sleeve bearings
<b>Cage material</b>	Copper
<b>Standards</b>	IEC, EN (NEMA version on request)
<b>Frame design for shaft heights 450 ... 560 mm</b>	Housing: Cast iron Cooling enclosure: Steel
<b>Frame design for shaft heights 630 ... 710 mm</b>	Housing: Steel Cooling enclosure: Steel

The following versions can be offered on request:

- 2-pole up to 75 Hz
- 4-pole up to 100 Hz
- 6-pole up to 90 Hz

For individual motor types, it must be ensured that the motor does not run-through any critical speed in the required speed control range and that the maximum speed does not exceed the mechanical speed limit of the motor! Please contact your Siemens sales partner regarding this check. The motor types are marked with footnotes in the following data tables.

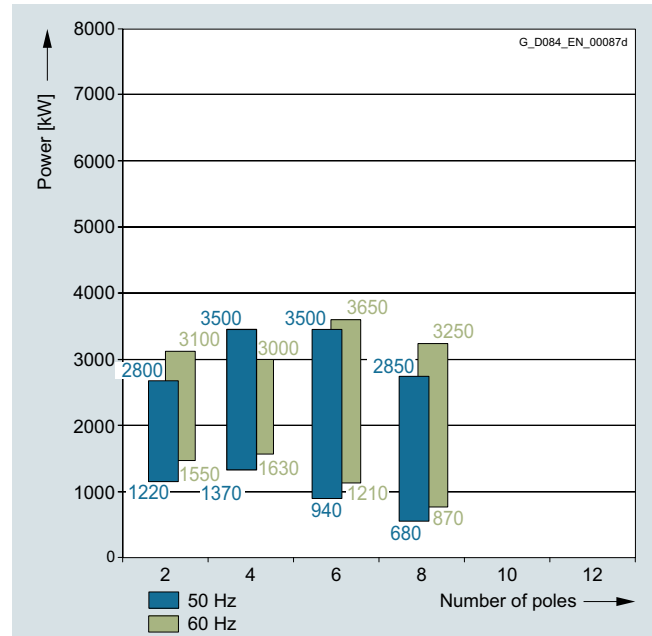
#### Technical data (continued)

##### Power ranges for IEC motors with reinforced insulation for operation with SINAMICS converters without sine-wave filter 1RA6 and 1RP6 series

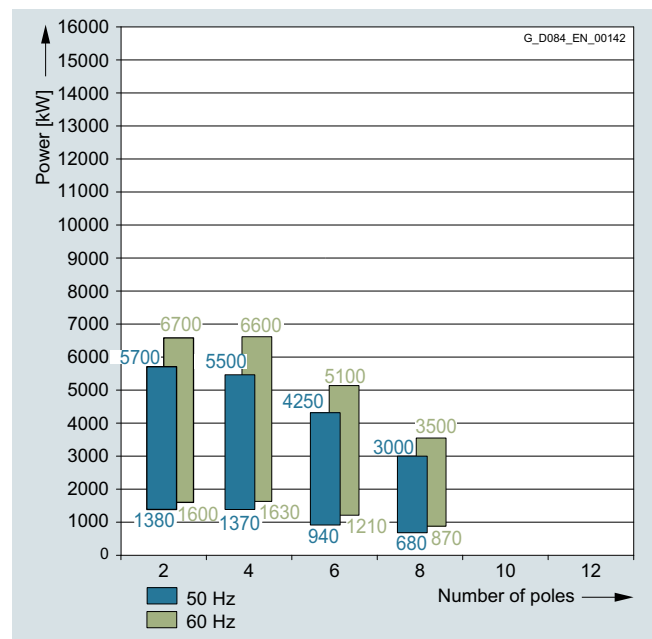
Insulation system, thermal class 155 (F)

The power data listed here apply for an ambient temperature of 40 °C and an installation altitude ≤ 1000 m.

690 V; 50 Hz and 60 Hz



4.16 kV; 50 Hz and 60 Hz



## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

### Selection and ordering data

Rated power	Low voltage motor SIMOTICS HV M	Operating data at rated output for utilization 155 (F)							
IEC		Rated speed	Efficiency	Power factor	Rated current 690 V	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{\text{rated}}$ 155 (F) kW		$n_{\text{rated}}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$I_{\text{rated}}$ A	$T_{\text{rated}}$ Nm	$T_B/T_{\text{rated}}$ [-]	J kgm <sup>2</sup>	$n_{\text{max}}$ rpm
<b>690 V, 50 Hz</b>									
2-pole									
1220	<b>1RA6450-2HP00</b>	2980	95.5	0.90	1180	3913	2.20	13	3000
1520	<b>1RA6452-2HP00</b>	2980	96.0	0.90	1480	4875	2.10	14	3000
1600	<b>1RA6454-2HP00</b>	2983	96.2	0.92	1520	5129	2.30	16	3000
1700	<b>1RA6456-2HP00</b>	2983	96.2	0.92	1600	5445	2.30	18	3000
2250	<b>1RA6500-2HP00</b>	2975	96.4	0.90	2160	7222	2.30	19	3000
2550	<b>1RA6502-2HP00</b>	2974	96.6	0.90	2440	8188	2.10	20	3000
2800	<b>1RA6504-2HP00</b>	2977	96.7	0.92	4x660 <sup>4)</sup>	8982	2.50	24	3000 <sup>3)</sup>
4-pole									
1370	<b>1RA6450-4HP00</b>	1484	95.6	0.89	1340	8833	2.40	20	1800
1500	<b>1RA6452-4HP00</b>	1484	95.6	0.90	1460	9671	2.40	22	1800
1640	<b>1RA6454-4HP00</b>	1484	96.0	0.90	1580	10568	2.40	25	1800
1860	<b>1RA6456-4HP00</b>	1485	96.2	0.90	1800	11977	2.30	29	1800
2300 <sup>2)</sup>	<b>1RA6500-4HP00</b>	1486	96.6	0.90	2200	14780	2.35	42	1800
2350 <sup>2)</sup>	<b>1RA6502-4HP00</b>	1486	96.6	0.92	2200	15102	2.50	46	1800
2800 <sup>2)</sup>	<b>1RA6504-4HP00</b>	1488	96.9	0.90	4x670 <sup>4)</sup>	17969	2.60	52	1800
3200 <sup>2)</sup>	<b>1RA6560-4HP00</b>	1486	96.8	0.92	4x750 <sup>4)</sup>	20564	2.15	82	1800
3500 <sup>2)</sup>	<b>1RA6562-4HP00</b>	1487	96.9	0.92	4x820 <sup>4)</sup>	22476	2.15	93	1800
<b>Position ■ of the Article No.:</b> <b>For shaft heights 450, 500, 560 mm:</b> Refer to the article number structure on <a href="#">Page 1/3</a> for: - type of construction (12th position)									

#### Note:

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

<sup>3)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

<sup>4)</sup> Different number of parallel winding systems possible



## Motors for converter operation

### Converter with non-sinusoidal output

#### Air-cooled motors · SIMOTICS HV M 1RA6

Motor type  
(repeated)

Partial load data for square-law torque drive

$P/P_{\text{rated}}$  155 (F) = 75 %

$P/P_{\text{rated}}$  155 (F) = 50 %

$P/P_{\text{rated}}$  155 (F) = 25 %

$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]

Square-law torque drive

2-pole

1RA6450-2...	916	2709	95.8	0.91	610	2371	96.0	0.90	305	1883	96.0	0.85
1RA6452-2...	1141	2708	96.4	0.91	760	2371	96.6	0.91	380	1883	96.5	0.87
1RA6454-2...	1201	2710	96.5	0.92	800	2372	96.6	0.91	400	1884	96.6	0.87
1RA6456-2...	1276	2711	96.5	0.92	850	2373	96.7	0.92	425	1884	96.6	0.88
1RA6500-2...	1688	2708	96.6	0.89	1125	2369	96.7	0.87	563	1883	96.7	0.79
1RA6502-2...	1913	2707	96.8	0.89	1275	2368	96.9	0.87	638	1882	96.9	0.81
1RA6504-2...	2101	2710	96.9	0.91	1400	2370	97.0	0.90	701	1883	97.0	0.84

4-pole

1RA6450-4...	1028	1350	95.9	0.88	685	1182	96.1	0.86	343	940	95.9	0.79
1RA6452-4...	1125	1350	96.0	0.90	750	1182	96.2	0.88	375	940	96.2	0.83
1RA6454-4...	1230	1350	96.3	0.90	820	1183	96.5	0.89	410	940	96.4	0.84
1RA6456-4...	1395	1351	96.5	0.89	930	1183	96.6	0.88	465	941	96.5	0.82
1RA6500-4...	1726	1353	96.7	0.89	1150	1183	96.9	0.86	575	941	96.8	0.77
1RA6502-4...	1763	1353	96.8	0.91	1175	1184	96.9	0.88	588	941	96.9	0.80
1RA6504-4...	2100	1354	97.0	0.89	1400	1184	97.1	0.86	700	941	96.9	0.74
1RA6560-4...	2401	1353	97.0	0.91	1600	1184	97.2	0.90	801	941	97.3	0.85
1RA6562-4...	2626	1354	97.1	0.91	1750	1184	97.3	0.90	876	941	97.3	0.85

3

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

### Selection and ordering data

Rated power  IEC  $P_{\text{rated}}$ 155 (F) kW	Low voltage motor SIMOTICS HV M  Article No.	Operating data at rated output for utilization 155 (F)							
		Rated speed  $n_{\text{rated}}$ rpm	Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current 690 V  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_B/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical speed limit <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>690 V, 50 Hz</b>									
6-pole									
940	<b>1RA6450-6HP0</b>	990	95.8	0.86	950	9079	2.30	26	1200
1040	<b>1RA6452-6HP0</b>	991	95.9	0.86	1060	10039	2.30	29	1200
1180	<b>1RA6454-6HP0</b>	991	96.0	0.86	1200	11394	2.30	32	1200
1330	<b>1RA6456-6HP0</b>	992	96.2	0.86	1340	12823	2.30	37	1200
1800	<b>1RA6500-6HP0</b>	988	96.0	0.85	1840	17399	1.75	56	1500
2000	<b>1RA6502-6HP0</b>	988	96.2	0.86	2040	19332	1.80	62	1500
2300	<b>1RA6504-6HP0</b>	989	96.4	0.85	2360	22209	1.95	69	1500
2400	<b>1RA6506-6HP0</b>	990	96.4	0.86	2440	23152	1.95	77	1500
2850	<b>1RA6560-6HP0</b>	990	96.6	0.87	3x950 <sup>4)</sup>	27492	2.25	108	1300
3200	<b>1RA6562-6HP0</b>	991	96.9	0.86	3x1080 <sup>4)</sup>	30838	2.45	119	1300
3500	<b>1RA6564-6HP0</b>	990	96.8	0.88	3x1140 <sup>4)</sup>	33763	2.20	132	1300
8-pole									
680	<b>1RA6450-8HP0</b>	743	94.9	0.83	720	8750	2.30	32	1200
750	<b>1RA6452-8HP0</b>	743	95.2	0.84	780	9651	2.40	36	1200
880	<b>1RA6454-8HP0</b>	743	95.2	0.84	920	11324	2.40	40	1200
970	<b>1RA6456-8HP0</b>	744	95.4	0.84	1020	12476	2.40	46	1200
1400	<b>1RA6500-8HP0</b>	741	95.8	0.83	1480	18043	1.85	69	1350
1560	<b>1RA6502-8HP0</b>	742	95.9	0.83	1640	20078	1.85	76	1350
1720	<b>1RA6504-8HP0</b>	742	96.0	0.83	1800	22137	1.95	85	1350
1900	<b>1RA6506-8HP0</b>	743	96.2	0.83	2000	24421	2.10	94	1350
1960	<b>1RA6560-8HP0</b>	743	96.6	0.84	2040	25192	2.15	128	1350
2300	<b>1RA6562-8HP0</b>	743	96.6	0.84	2360	29563	2.20	141	1350
2600	<b>1RA6564-8HP0</b>	743	96.7	0.84	4x670 <sup>4)</sup>	33419	2.45	156	1350
2850	<b>1RA6566-8HP0</b>	743	96.7	0.85	4x730 <sup>4)</sup>	36632	2.25	173	1350
<b>Position ■ of the Article No.:</b>  <b>For shaft heights 450, 500, 560 mm:</b> Refer to the article number structure on <a href="#">Page 1/3</a> for: - type of construction (12th position)									

#### Note:

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

<sup>3)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

<sup>4)</sup> Different number of parallel winding systems possible

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

Motor type  
(repeated)

Partial load data for square-law torque drive

 $P/P_{\text{rated}}$  155 (F) = 75 % $P/P_{\text{rated}}$  155 (F) = 50 % $P/P_{\text{rated}}$  155 (F) = 25 %

$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]

Square-law torque drive

6-pole

1RA6450-6...	705	900	96.1	0.85	470	789	96.3	0.82	235	627	96.2	0.73
1RA6452-6...	780	901	96.3	0.85	520	789	96.4	0.82	260	627	96.3	0.73
1RA6454-6...	885	901	96.3	0.85	590	789	96.4	0.83	295	627	96.4	0.74
1RA6456-6...	998	902	96.5	0.84	665	789	96.6	0.81	333	627	96.3	0.71
1RA6500-6...	1350	898	96.3	0.85	900	787	96.4	0.84	450	626	96.3	0.78
1RA6502-6...	1500	898	96.4	0.86	1000	787	96.6	0.84	500	626	96.4	0.78
1RA6504-6...	1725	899	96.5	0.85	1150	787	96.6	0.83	575	626	96.4	0.75
1RA6506-6...	1800	900	96.6	0.86	1200	788	96.7	0.84	600	626	96.5	0.77
1RA6560-6...	2138	900	96.7	0.87	1425	788	96.8	0.86	713	627	96.7	0.80
1RA6562-6...	2400	901	97.0	0.86	1600	789	97.0	0.84	800	627	96.7	0.76
1RA6564-6...	2625	900	97.0	0.88	1750	788	97.1	0.87	875	626	97.0	0.82

8-pole

1RA6450-8...	510	676	95.1	0.80	340	592	95.0	0.75	170	470	94.4	0.63
1RA6452-8...	563	676	95.4	0.81	375	592	95.4	0.77	188	470	94.9	0.65
1RA6454-8...	660	676	95.4	0.82	440	592	95.4	0.77	220	470	94.8	0.65
1RA6456-8...	728	676	95.6	0.82	485	592	95.6	0.77	243	470	95.1	0.65
1RA6500-8...	1050	674	95.9	0.82	700	590	95.9	0.80	350	469	95.5	0.70
1RA6502-8...	1170	674	96.0	0.82	780	591	96.1	0.80	390	469	95.6	0.70
1RA6504-8...	1290	675	96.1	0.82	860	591	96.1	0.79	430	470	95.7	0.70
1RA6506-8...	1425	675	96.3	0.82	950	591	96.2	0.78	475	470	95.6	0.67
1RA6560-8...	1470	675	96.7	0.84	980	591	96.8	0.82	490	470	96.6	0.73
1RA6562-8...	1725	675	96.7	0.84	1150	591	96.8	0.81	575	470	96.5	0.72
1RA6564-8...	1950	676	96.8	0.83	1300	592	96.8	0.79	650	470	96.4	0.69
1RA6566-8...	2138	675	96.8	0.84	1425	591	96.9	0.82	713	470	96.6	0.74

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## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

### Selection and ordering data

Rated power IEC		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 155 (F)							
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
kW	kW	Article No.	$n_{rated}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$I_{rated}$ A	$T_{rated}$ Nm	$T_B/T_{rated}$ [-]	J kgm <sup>2</sup>	$n_{max}$ rpm
<b>4.16 kV, 50 Hz</b>										
2-pole										
1380	— <sup>4)</sup>	<b>1RA6450-2HS40</b>	2973	95.9	0.90	220	4433	2.00	13	3000
1570	— <sup>4)</sup>	<b>1RA6452-2HS40</b>	2977	96.2	0.90	250	5040	2.20	14	3000
1750	— <sup>4)</sup>	<b>1RA6454-2HS40</b>	2978	96.4	0.91	275	5616	2.30	16	3000
1950	— <sup>4)</sup>	<b>1RA6456-2HS40</b>	2981	96.6	0.92	305	6252	2.30	18	3000
2550	2244	<b>1RA6500-2HS40</b>	2967	96.2	0.88	420	8207	1.85	19	3000
2700	2376	<b>1RA6502-2HS40</b>	2969	96.3	0.90	430	8684	2.05	20	3000
3200	2816	<b>1RA6504-2HS40</b>	2974	96.6	0.91	510	10275	2.35	24	3000 <sup>3)</sup>
3550	3124	<b>1RA6506-2HS40</b>	2975	96.9	0.92	550	11395	2.40	26	3000 <sup>3)</sup>
3700	3367	<b>1RA6560-2HS40</b>	2977	96.7	0.90	590	11868	1.90	39	3000 <sup>3)</sup>
4300	3913	<b>1RA6562-2HS40</b>	2979	97.0	0.91	680	13784	2.05	43	3000 <sup>3)</sup>
5000	4550	<b>1RA6564-2HS40</b>	2981	97.1	0.92	780	16017	2.25	49	3000 <sup>3)</sup>
5700	5187	<b>1RA6566-2HS40</b>	2982	97.3	0.93	2x435	18253	2.45	54	3000 <sup>3)</sup>
4-pole										
1370	— <sup>4)</sup>	<b>1RA6450-4HS40</b>	1484	95.6	0.88	225	8824	2.60	20	1800
1500	— <sup>4)</sup>	<b>1RA6452-4HS40</b>	1485	95.8	0.88	245	9649	2.50	22	1800
1640	— <sup>4)</sup>	<b>1RA6454-4HS40</b>	1485	96.0	0.89	265	10549	2.50	25	1800
1860	— <sup>4)</sup>	<b>1RA6456-4HS40</b>	1485	96.1	0.90	300	11966	2.50	29	1800
2500 <sup>2)</sup>	2200	<b>1RA6500-4HS40</b>	1485	96.4	0.90	400	16076	2.25	42	1800
2800 <sup>2)</sup>	2464	<b>1RA6502-4HS40</b>	1485	96.5	0.90	445	18005	2.25	46	1800
3150 <sup>2)</sup>	2772	<b>1RA6504-4HS40</b>	1485	96.6	0.91	495	20256	2.25	52	1800
3450 <sup>2)</sup>	3036	<b>1RA6506-4HS40</b>	1486	96.8	0.91	540	22170	2.35	56	1800
3900 <sup>2)</sup>	3549	<b>1RA6560-4HS40</b>	1489	97.0	0.89	630	25012	1.95	84	1800
4500 <sup>2)</sup>	4095	<b>1RA6562-4HS40</b>	1489	97.1	0.90	710	28860	2.00	94	1800
5000 <sup>2)</sup>	4550	<b>1RA6564-4HS40</b>	1490	97.2	0.91	780	32045	2.10	105	1800
5500 <sup>2)</sup>	5005	<b>1RA6566-4HS40</b>	1490	97.4	0.91	2x430	35249	2.20	115	1800

**Position ■  
of the Article No.:**

**For shaft heights  
450, 500, 560 mm:**

Refer to the article number  
structure on [Page 1/3](#) for:

- type of construction  
(12th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

<sup>3)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

<sup>4)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

#### Air-cooled motors · SIMOTICS HV M 1RA6

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
2-pole												
1RA6450-2...	1035	2704	96.1	0.91	690	2368	96.3	0.91	345	1882	96.4	0.87
1RA6452-2...	1178	2707	96.4	0.91	785	2370	96.5	0.90	393	1883	96.4	0.87
1RA6454-2...	1313	2707	96.6	0.92	875	2370	96.7	0.91	438	1883	96.6	0.88
1RA6456-2...	1464	2709	96.8	0.92	975	2371	96.9	0.91	488	1884	96.8	0.88
1RA6500-2...	1914	2704	96.5	0.88	1276	2366	96.6	0.87	638	1881	96.7	0.81
1RA6502-2...	2026	2705	96.5	0.90	1350	2367	96.7	0.88	675	1882	96.7	0.83
1RA6504-2...	2401	2708	96.8	0.90	1600	2369	96.9	0.89	801	1883	96.8	0.81
1RA6506-2...	2663	2708	97.0	0.91	1775	2369	97.1	0.90	888	1883	97.1	0.83
1RA6560-2...	2777	2709	96.9	0.90	1851	2370	97.0	0.89	925	1883	97.0	0.84
1RA6562-2...	3226	2711	97.1	0.90	2151	2371	97.2	0.89	1076	1884	97.2	0.84
1RA6564-2...	3751	2712	97.3	0.91	2500	2371	97.3	0.90	1251	1884	97.3	0.85
1RA6566-2...	4276	2713	97.4	0.92	2850	2372	97.5	0.91	1426	1885	97.4	0.85
4-pole												
1RA6450-4...	1028	1350	95.8	0.87	685	1183	96.0	0.85	343	940	95.8	0.78
1RA6452-4...	1125	1351	96.0	0.87	750	1183	96.1	0.85	375	941	95.9	0.77
1RA6454-4...	1230	1351	96.2	0.89	820	1183	96.3	0.87	410	941	96.2	0.80
1RA6456-4...	1395	1351	96.3	0.90	930	1183	96.5	0.88	465	941	96.4	0.83
1RA6500-4...	1876	1352	96.6	0.89	1250	1183	96.7	0.86	625	941	96.5	0.77
1RA6502-4...	2101	1352	96.7	0.89	1400	1183	96.8	0.86	700	941	96.6	0.77
1RA6504-4...	2363	1353	96.8	0.90	1575	1183	96.9	0.88	788	941	96.8	0.79
1RA6506-4...	2588	1353	96.9	0.90	1725	1184	97.0	0.88	863	941	96.9	0.79
1RA6560-4...	2927	1355	97.1	0.89	1950	1185	97.2	0.87	976	942	97.1	0.80
1RA6562-4...	3377	1355	97.2	0.90	2250	1185	97.4	0.88	1126	942	97.3	0.82
1RA6564-4...	3752	1356	97.4	0.90	2500	1185	97.5	0.89	1251	942	97.4	0.82
1RA6566-4...	4126	1356	97.5	0.90	2750	1186	97.6	0.88	1376	942	97.4	0.81

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

### Selection and ordering data

Rated power IEC		High voltage motor SIMOTICS HV M  Article No.	Operating data at rated output for utilization 155 (F)							
$P_{\text{rated}}$ 155 (F)	$P_{\text{rated}}$ 130 (B)		Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
kW	kW		$n_{\text{rated}}$	$\eta$	$\cos \varphi$	$I_{\text{rated}}$	$T_{\text{rated}}$	$T_{\text{B}}/T_{\text{rated}}$	J	$n_{\text{max}}$
4.16 kV, 50 Hz										
6-pole										
940	– <sup>2)</sup>	<b>1RA6450-6HS4</b>	990	95.7	0.85	160	9071	2.40	26	1200
1040	– <sup>2)</sup>	<b>1RA6452-6HS4</b>	991	95.9	0.85	178	10026	2.50	29	1200
1180	– <sup>2)</sup>	<b>1RA6454-6HS4</b>	991	96.1	0.86	198	11381	2.50	32	1200
1330	– <sup>2)</sup>	<b>1RA6456-6HS4</b>	992	96.2	0.85	225	12811	2.50	37	1200
2000	1800	<b>1RA6500-6HS4</b>	987	95.8	0.84	345	19352	1.75	56	1500
2200	2000	<b>1RA6502-6HS4</b>	986	95.8	0.85	375	21308	1.65	62	1500
2450	2200	<b>1RA6504-6HS4</b>	987	96.0	0.85	415	23706	1.70	69	1500
2650	2400	<b>1RA6506-6HS4</b>	988	96.2	0.86	445	25615	1.80	77	1500
3150	2750	<b>1RA6560-6HS4</b>	989	96.5	0.86	530	30417	2.05	108	1300
3500	3100	<b>1RA6562-6HS4</b>	989	96.5	0.87	580	33797	2.05	119	1300
3900	3450	<b>1RA6564-6HS4</b>	989	96.6	0.87	640	37659	2.10	132	1300
4250	3750	<b>1RA6566-6HS4</b>	989	96.7	0.87	700	41039	2.05	146	1300
8-pole										
680	– <sup>2)</sup>	<b>1RA6450-8HS4</b>	743	94.7	0.82	122	8743	2.50	32	1200
750	– <sup>2)</sup>	<b>1RA6452-8HS4</b>	744	95.0	0.82	134	9638	2.50	36	1200
880	– <sup>2)</sup>	<b>1RA6454-8HS4</b>	743	95.1	0.83	154	11318	2.50	40	1200
970	– <sup>2)</sup>	<b>1RA6456-8HS4</b>	743	95.3	0.85	166	12477	2.40	46	1200
1360	1220	<b>1RA6500-8HS4</b>	741	95.4	0.83	240	17528	1.75	69	1350
1540	1380	<b>1RA6502-8HS4</b>	741	95.6	0.83	270	19848	1.80	76	1350
1740	1560	<b>1RA6504-8HS4</b>	742	95.8	0.83	305	22395	1.90	85	1350
1880	1700	<b>1RA6506-8HS4</b>	743	95.8	0.84	325	24164	2.00	94	1350
2200	1940	<b>1RA6560-8HS4</b>	741	96.1	0.84	380	28354	1.90	128	1350
2500	2200	<b>1RA6562-8HS4</b>	741	96.2	0.84	430	32220	1.95	141	1350
2750	2400	<b>1RA6564-8HS4</b>	742	96.4	0.84	470	35394	2.05	156	1350
3000	2640	<b>1RA6566-8HS4</b>	742	96.5	0.85	510	38612	2.10	173	1350

**Position ■  
of the Article No.:**

**For shaft heights  
450, 500, 560 mm:**

Refer to the article number  
structure on [Page 1/3](#) for:

- type of construction  
(12th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

#### Air-cooled motors · SIMOTICS HV M 1RA6

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}} 155 (F) = 75 \%$				$P/P_{\text{rated}} 155 (F) = 50 \%$				$P/P_{\text{rated}} 155 (F) = 25 \%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
<b>6-pole</b>												
1RA6450-6...	705	901	96.0	0.84	470	789	96.1	0.81	235	627	96.0	0.71
1RA6452-6...	780	901	96.1	0.84	520	789	96.2	0.80	260	627	96.0	0.70
1RA6454-6...	885	901	96.3	0.85	590	789	96.4	0.82	295	627	96.3	0.73
1RA6456-6...	998	902	96.4	0.83	665	790	96.5	0.80	333	627	96.2	0.69
1RA6500-6...	1500	898	96.1	0.84	1000	786	96.2	0.83	500	625	96.1	0.75
1RA6502-6...	1650	897	96.1	0.85	1100	786	96.3	0.84	550	625	96.3	0.78
1RA6504-6...	1838	897	96.3	0.85	1225	786	96.5	0.85	613	625	96.4	0.79
1RA6506-6...	1988	898	96.4	0.86	1325	787	96.6	0.85	663	626	96.5	0.78
1RA6560-6...	2363	899	96.7	0.87	1575	788	96.8	0.86	788	626	96.8	0.81
1RA6562-6...	2625	899	96.7	0.87	1750	788	96.9	0.87	875	626	96.8	0.82
1RA6564-6...	2925	900	96.8	0.87	1950	788	97.0	0.86	975	626	96.9	0.81
1RA6566-6...	3188	899	96.9	0.88	2125	788	97.1	0.87	1063	626	97.0	0.82
<b>8-pole</b>												
1RA6450-8...	510	676	94.8	0.80	340	592	94.7	0.75	170	470	94.0	0.63
1RA6452-8...	563	676	95.1	0.80	375	592	95.1	0.75	188	470	94.4	0.62
1RA6454-8...	660	676	95.3	0.82	440	592	95.3	0.78	220	470	94.8	0.66
1RA6456-8...	728	676	95.5	0.83	485	592	95.5	0.80	243	470	95.1	0.69
1RA6500-8...	1020	674	95.7	0.83	680	590	95.8	0.81	340	469	95.4	0.72
1RA6502-8...	1155	674	95.8	0.83	770	590	95.9	0.81	385	469	95.5	0.72
1RA6504-8...	1305	674	96.0	0.83	870	591	96.0	0.80	435	470	95.6	0.71
1RA6506-8...	1410	675	95.9	0.82	940	591	95.9	0.79	470	470	95.4	0.69
1RA6560-8...	1650	674	96.3	0.84	1100	590	96.5	0.83	550	469	96.5	0.76
1RA6562-8...	1875	674	96.4	0.84	1250	590	96.6	0.83	625	469	96.5	0.76
1RA6564-8...	2063	674	96.6	0.84	1375	591	96.7	0.82	688	470	96.6	0.75
1RA6566-8...	2250	675	96.7	0.85	1500	591	96.8	0.83	750	470	96.7	0.75

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

### Selection and ordering data

Rated power  IEC  $P_{\text{rated}}$ 155 (F) kW	Low voltage motor SIMOTICS HV M  Article No.	Operating data at rated output for utilization 155 (F)							
		Rated speed	Efficiency	Power factor	Rated current 690 V	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
		$n_{\text{rated}}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$I_{\text{rated}}$ A	$T_{\text{rated}}$ Nm	$T_B/T_{\text{rated}}$ [-]	J kgm <sup>2</sup>	$n_{\text{max}}$ rpm
<b>690 V, 60 Hz</b>									
2-pole									
1550	<b>1RA6450-2HP10</b>	3578	95.9	0.90	1500	4140	1.90	13	3600 <sup>2)</sup>
1650	<b>1RA6452-2HP10</b>	3581	96.0	0.91	1580	4403	2.20	14	3600 <sup>2)</sup>
1720	<b>1RA6454-2HP10</b>	3584	96.1	0.91	1640	4586	2.40	16	3600 <sup>2)</sup>
2180	<b>1RA6456-2HP10</b>	3584	96.7	0.92	2040	5814	2.40	18	3600 <sup>2)</sup>
2500	<b>1RA6500-2HP10</b>	3579	96.7	0.90	2400	6670	2.55	20	3600 <sup>2)</sup>
2750	<b>1RA6502-2HP10</b>	3577	96.6	0.91	4x650 <sup>5)</sup>	7342	2.35	22	3600 <sup>2)</sup>
3100	<b>1RA6504-2HP10</b>	3581	97.0	0.92	4x730 <sup>5)</sup>	8267	2.55	25	3600 <sup>2)</sup>
4-pole									
1630	<b>1RA6450-4HP1</b> ■	1784	95.9	0.88	1620	8740	2.30	20	1800
1750	<b>1RA6452-4HP1</b> ■	1783	96.0	0.90	1700	9385	2.30	22	1800
2070	<b>1RA6454-4HP1</b> ■	1783	96.2	0.90	2000	11104	2.30	25	1800
2310	<b>1RA6456-4HP1</b> ■	1786	96.4	0.89	2240	12364	2.50	29	1800
2700 <sup>4)</sup>	<b>1RA6500-4HP10</b>	1788	96.9	0.90	4x650 <sup>5)</sup>	14420	2.80	42	1800 <sup>3)</sup>
2850 <sup>4)</sup>	<b>1RA6502-4HP10</b>	1786	96.9	0.91	4x680 <sup>5)</sup>	15238	2.50	46	1800 <sup>3)</sup>
3000 <sup>4)</sup>	<b>1RA6504-4HP10</b>	1786	97.0	0.92	4x700 <sup>5)</sup>	16040	2.40	52	1800 <sup>3)</sup>
<b>Position ■ of the Article No.:</b>  <b>For shaft heights 450, 500, 560 mm:</b> Refer to the article number structure on <a href="#">Page 1/3</a> for: - type of construction (12th position)									

#### Note:

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

<sup>3)</sup> Higher speed limit on request.

<sup>4)</sup> Data of vertical motors (IM V1) on request.

<sup>5)</sup> Different number of parallel winding systems possible.



## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

Motor type  
(repeated)

Partial load data for square-law torque drive

 $P/P_{\text{rated}}$  155 (F) = 75 % $P/P_{\text{rated}}$  155 (F) = 50 % $P/P_{\text{rated}}$  155 (F) = 25 %

$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]

Square-law torque drive

2-pole

1RA6450-2...	1164	3253	96.2	0.90	775	2844	96.3	0.90	388	2261	96.2	0.86
1RA6452-2...	1239	3255	96.3	0.92	825	2845	96.4	0.91	413	2262	96.3	0.87
1RA6454-2...	1291	3257	96.3	0.92	860	2847	96.4	0.91	430	2262	96.2	0.86
1RA6456-2...	1636	3258	96.9	0.92	1090	2847	96.9	0.91	545	2263	96.7	0.87
1RA6500-2...	1876	3256	96.8	0.89	1250	2846	96.8	0.87	626	2261	96.6	0.77
1RA6502-2...	2064	3254	96.8	0.90	1375	2846	96.9	0.89	688	2261	96.8	0.82
1RA6504-2...	2325	3257	97.1	0.91	1550	2847	97.1	0.89	776	2262	97.0	0.82

4-pole

1RA6450-4...	1223	1623	96.1	0.88	815	1420	96.2	0.86	408	1129	95.9	0.78
1RA6452-4...	1313	1623	96.3	0.90	875	1419	96.4	0.89	438	1129	96.3	0.84
1RA6454-4...	1553	1623	96.5	0.90	1035	1419	96.6	0.89	518	1129	96.5	0.85
1RA6456-4...	1733	1625	96.6	0.89	1155	1421	96.6	0.87	578	1130	96.3	0.79
1RA6500-4...	2025	1627	97.0	0.88	1351	1422	97.0	0.83	675	1130	96.6	0.70
1RA6502-4...	2138	1626	97.0	0.90	1425	1422	97.1	0.87	713	1130	96.9	0.78
1RA6504-4...	2251	1625	97.1	0.91	1500	1421	97.2	0.90	750	1130	97.2	0.83

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## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

### Selection and ordering data

Rated power  IEC  $P_{\text{rated}}$ 155 (F) kW	Low voltage motor SIMOTICS HV M  Article No.	Operating data at rated output for utilization 155 (F)							
		Rated speed	Efficiency	Power factor	Rated current 690 V	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
		$n_{\text{rated}}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$I_{\text{rated}}$ A	$T_{\text{rated}}$ Nm	$T_B/T_{\text{rated}}$ [-]	J kgm <sup>2</sup>	$n_{\text{max}}$ rpm
<b>690 V, 60 Hz</b>									
6-pole									
1210	<b>1RA6450-6HP1</b>	1191	96.1	0.85	1240	9718	2.40	26	1200
1350	<b>1RA6452-6HP1</b>	1191	96.3	0.84	1400	10837	2.40	29	1200
1480	<b>1RA6454-6HP1</b>	1191	96.3	0.86	1500	11883	2.30	32	1200
1620	<b>1RA6456-6HP1</b>	1192	96.6	0.86	1640	12995	2.40	37	1200
2150	<b>1RA6500-6HP1</b>	1190	96.5	0.84	2200	17254	2.10	56	1500
2400	<b>1RA6502-6HP1</b>	1188	96.5	0.85	2440	19293	1.85	62	1500
2700	<b>1RA6504-6HP1</b>	1190	96.7	0.84	3x930 <sup>2)</sup>	21668	2.15	69	1500
2950	<b>1RA6506-6HP1</b>	1189	96.7	0.86	3x990 <sup>2)</sup>	23694	1.90	77	1500
3300	<b>1RA6560-6HP1</b>	1191	96.9	0.87	3x1100 <sup>2)</sup>	26461	2.30	108	1300
3650	<b>1RA6562-6HP1</b>	1190	96.8	0.87	3x1200 <sup>2)</sup>	29292	2.10	119	1300
8-pole									
870	<b>1RA6450-8HP1</b>	893	95.3	0.84	910	9323	2.30	32	1200
960	<b>1RA6452-8HP1</b>	892	95.4	0.84	1000	10290	2.20	36	1200
1050	<b>1RA6454-8HP1</b>	893	95.5	0.84	1100	11239	2.40	40	1200
1180	<b>1RA6456-8HP1</b>	893	95.7	0.85	1220	12636	2.30	46	1200
1600	<b>1RA6500-8HP1</b>	892	96.0	0.83	1680	17130	1.85	69	1350
1800	<b>1RA6502-8HP1</b>	892	96.1	0.83	1880	19271	1.90	76	1350
2000	<b>1RA6504-8HP1</b>	893	96.3	0.83	2080	21389	2.05	85	1350
2200	<b>1RA6506-8HP1</b>	893	96.4	0.83	2320	23527	2.05	94	1350
2250	<b>1RA6560-8HP1</b>	893	96.7	0.84	2320	24062	2.30	128	1350
2600	<b>1RA6562-8HP1</b>	893	96.8	0.84	4x670 <sup>2)</sup>	27805	2.25	141	1350
2900	<b>1RA6564-8HP1</b>	894	96.9	0.83	4x750 <sup>2)</sup>	30979	2.65	156	1350
3250	<b>1RA6566-8HP1</b>	893	97.0	0.85	4x820 <sup>2)</sup>	34756	2.35	173	1350

**Position ■ of the Article No.:**

**For shaft heights 450, 500, 560 mm:**

Refer to the article number structure on [Page 1/3](#) for:

- type of construction (12th position)

#### Note:

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Different number of parallel winding systems possible.

## Motors for converter operation

### Converter with non-sinusoidal output

#### Air-cooled motors · SIMOTICS HV M 1RA6

Motor type  
(repeated)

Partial load data for square-law torque drive

$P/P_{\text{rated}}$  155 (F) = 75 %

$P/P_{\text{rated}}$  155 (F) = 50 %

$P/P_{\text{rated}}$  155 (F) = 25 %

$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]

#### Square-law torque drive

6-pole

1RA6450-6...	908	1083	96.3	0.82	605	947	96.4	0.79	303	753	96.0	0.67
1RA6452-6...	1013	1083	96.5	0.82	675	947	96.5	0.78	338	753	96.2	0.67
1RA6454-6...	1110	1083	96.5	0.84	740	947	96.6	0.81	370	753	96.3	0.71
1RA6456-6...	1215	1084	96.8	0.84	810	947	96.8	0.81	405	753	96.5	0.71
1RA6500-6...	1613	1082	96.5	0.83	1075	946	96.5	0.79	538	752	96.0	0.69
1RA6502-6...	1800	1081	96.6	0.86	1200	945	96.7	0.84	600	752	96.5	0.78
1RA6504-6...	2025	1082	96.7	0.83	1350	946	96.7	0.80	675	752	96.2	0.69
1RA6506-6...	2213	1081	96.8	0.86	1475	946	96.9	0.85	738	752	96.7	0.78
1RA6560-6...	2475	1083	97.0	0.87	1650	947	97.0	0.86	825	753	96.7	0.79
1RA6562-6...	2738	1082	97.0	0.88	1825	946	97.1	0.87	913	752	97.0	0.83

8-pole

1RA6450-8...	653	812	95.5	0.81	435	710	95.4	0.77	218	565	94.9	0.66
1RA6452-8...	720	812	95.7	0.83	480	710	95.6	0.79	240	565	95.2	0.68
1RA6454-8...	788	812	95.6	0.81	525	710	95.6	0.77	263	565	95.0	0.65
1RA6456-8...	885	812	95.9	0.83	590	710	95.8	0.79	295	565	95.3	0.69
1RA6500-8...	1200	811	96.1	0.83	800	709	96.1	0.80	400	564	95.7	0.71
1RA6502-8...	1350	811	96.2	0.83	900	709	96.2	0.80	450	564	95.7	0.71
1RA6504-8...	1500	812	96.3	0.82	1000	710	96.3	0.79	500	564	95.7	0.69
1RA6506-8...	1650	812	96.4	0.82	1100	710	96.3	0.79	550	564	95.7	0.69
1RA6560-8...	1688	812	96.8	0.84	1125	710	96.8	0.81	563	564	96.5	0.72
1RA6562-8...	1950	812	96.9	0.84	1300	710	96.9	0.82	650	564	96.6	0.73
1RA6564-8...	2175	813	96.9	0.82	1450	710	96.8	0.78	725	565	96.3	0.67
1RA6566-8...	2438	812	97.1	0.84	1625	710	97.0	0.81	813	565	96.7	0.72

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## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

### Selection and ordering data

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 155 (F)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{155}^{\text{rated}}$ (F)	$P_{130}^{\text{rated}}$ (B)		$n_{\text{rated}}$	$\eta$	$\cos \varphi$	$I_{\text{rated}}$	$T_{\text{rated}}$	$T_B/T_{\text{rated}}$	J	$n_{\text{max}}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm

#### 4.16 kV, 60 Hz

##### 2-pole

1600	— <sup>4)</sup>	<b>1RA6450-2HS30</b>	3576	96.0	0.89	260	4274	2.10	13	3600 <sup>2)</sup>
1850	— <sup>4)</sup>	<b>1RA6452-2HS30</b>	3578	96.3	0.91	295	4941	2.30	14	3600 <sup>2)</sup>
2060	— <sup>4)</sup>	<b>1RA6454-2HS30</b>	3579	96.6	0.91	325	5500	2.30	16	3600 <sup>2)</sup>
2300	— <sup>4)</sup>	<b>1RA6456-2HS30</b>	3581	96.8	0.92	360	6137	2.40	18	3600 <sup>2)</sup>
3000	2640	<b>1RA6500-2HS30</b>	3572	96.5	0.89	485	8020	2.05	20	3600 <sup>2)</sup>
3250	2860	<b>1RA6502-2HS30</b>	3570	96.5	0.89	530	8693	1.95	22	3600 <sup>2)</sup>
3700	3256	<b>1RA6504-2HS30</b>	3576	96.8	0.91	580	9880	2.30	25	3600 <sup>2)</sup>
4200	3696	<b>1RA6506-2HS30</b>	3577	97.1	0.92	650	11212	2.45	27	3600 <sup>2)</sup>
4600	4186	<b>1RA6560-2HS30</b>	3577	96.8	0.90	730	12280	1.90	39	3600 <sup>2)</sup>
5100	4641	<b>1RA6562-2HS30</b>	3579	96.9	0.91	2x400	13608	2.05	43	3600 <sup>2)</sup>
5900	5369	<b>1RA6564-2HS30</b>	3580	97.1	0.92	2x460	15738	2.15	49	3600 <sup>2)</sup>
6700	6097	<b>1RA6566-2HS30</b>	3582	97.3	0.92	2x520	17862	2.45	54	3600 <sup>2)</sup>

##### 4-pole

1630	— <sup>4)</sup>	<b>1RA6450-4HS3</b> ■	1782	95.7	0.89	265	8742	2.30	20	1800
1750	— <sup>4)</sup>	<b>1RA6452-4HS3</b> ■	1783	95.9	0.89	285	9375	2.40	22	1800
2070	— <sup>4)</sup>	<b>1RA6454-4HS3</b> ■	1784	96.1	0.90	330	11088	2.50	25	1800
2310	— <sup>4)</sup>	<b>1RA6456-4HS3</b> ■	1786	96.3	0.89	375	12358	2.50	29	1800
3100 <sup>3)</sup>	2728	<b>1RA6500-4HS30</b>	1785	96.7	0.90	495	16584	2.30	42	1800
3450 <sup>3)</sup>	3036	<b>1RA6502-4HS30</b>	1785	96.8	0.90	550	18457	2.20	46	1800
3800 <sup>3)</sup>	3344	<b>1RA6504-4HS30</b>	1786	97.0	0.91	600	20318	2.35	52	1800
4100 <sup>3)</sup>	3608	<b>1RA6506-4HS30</b>	1787	97.0	0.91	640	21909	2.40	56	1800
4700 <sup>3)</sup>	4277	<b>1RA6560-4HS30</b>	1789	97.2	0.90	750	25088	1.95	84	1800
5400 <sup>3)</sup>	4914	<b>1RA6562-4HS30</b>	1789	97.3	0.90	2x430	28824	1.95	94	1800
6000 <sup>3)</sup>	5460	<b>1RA6564-4HS30</b>	1789	97.4	0.91	2x470	32027	2.05	105	1800
6600 <sup>3)</sup>	6006	<b>1RA6566-4HS30</b>	1790	97.5	0.91	2x520	35210	2.10	115	1800

**Position ■  
of the Article No.:**

**For shaft heights  
450, 500, 560 mm:**

Refer to the article number  
structure on [Page 1/3](#) for:

- type of construction  
(12th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>4)</sup> Utilization 130 (B) on request.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

<sup>3)</sup> Data of vertical motors (IM V1) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

Motor type  
(repeated)

Partial load data for square-law torque drive

 $P/P_{\text{rated}}$  155 (F) = 75 % $P/P_{\text{rated}}$  155 (F) = 50 % $P/P_{\text{rated}}$  155 (F) = 25 % $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$ 

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Square-law torque drive

2-pole

1RA6450-2...	1201	3251	96.1	0.90	800	2843	96.2	0.90	400	2260	96.1	0.85
1RA6452-2...	1389	3253	96.4	0.91	925	2844	96.5	0.91	463	2261	96.3	0.87
1RA6454-2...	1545	3254	96.7	0.91	1030	2845	96.7	0.90	515	2261	96.5	0.86
1RA6456-2...	1725	3256	96.9	0.92	1150	2846	96.9	0.91	575	2262	96.7	0.87
1RA6500-2...	2251	3251	96.7	0.89	1500	2844	96.8	0.87	750	2260	96.6	0.79
1RA6502-2...	2439	3250	96.7	0.89	1626	2843	96.8	0.88	813	2259	96.8	0.83
1RA6504-2...	2776	3254	97.0	0.91	1850	2845	97.0	0.89	926	2261	96.9	0.83
1RA6506-2...	3151	3254	97.2	0.91	2100	2846	97.2	0.89	1051	2261	97.1	0.83
1RA6560-2...	3452	3255	96.9	0.90	2301	2846	97.0	0.88	1150	2262	96.9	0.83
1RA6562-2...	3827	3256	97.0	0.90	2551	2847	97.1	0.89	1275	2262	97.0	0.84
1RA6564-2...	4427	3257	97.3	0.91	2951	2848	97.3	0.90	1476	2262	97.2	0.85
1RA6566-2...	5026	3258	97.4	0.92	3350	2849	97.4	0.90	1676	2263	97.2	0.83

4-pole

1RA6450-4...	1224	1622	96.0	0.89	815	1419	96.1	0.88	408	1129	96.0	0.83
1RA6452-4...	1313	1623	96.1	0.89	875	1420	96.2	0.88	438	1129	96.1	0.82
1RA6454-4...	1553	1623	96.3	0.90	1035	1420	96.4	0.89	518	1129	96.3	0.83
1RA6456-4...	1733	1624	96.5	0.89	1155	1421	96.5	0.87	578	1130	96.2	0.80
1RA6500-4...	2326	1625	96.8	0.89	1550	1421	96.8	0.86	775	1130	96.6	0.75
1RA6502-4...	2589	1625	96.9	0.89	1725	1421	96.9	0.86	863	1130	96.8	0.77
1RA6504-4...	2851	1626	97.1	0.90	1900	1422	97.1	0.87	950	1130	96.8	0.78
1RA6506-4...	3076	1626	97.1	0.90	2050	1422	97.1	0.87	1025	1130	96.8	0.77
1RA6560-4...	3527	1628	97.3	0.89	2350	1423	97.3	0.87	1176	1131	97.2	0.80
1RA6562-4...	4052	1628	97.4	0.90	2701	1423	97.5	0.89	1351	1131	97.4	0.83
1RA6564-4...	4502	1628	97.5	0.90	3000	1423	97.5	0.89	1501	1131	97.4	0.82
1RA6566-4...	4952	1628	97.6	0.91	3300	1423	97.7	0.90	1651	1131	97.5	0.84

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## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

### Selection and ordering data

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 155 (F)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm

#### 4.16 kV, 60 Hz

##### 6-pole

1210	.. <sup>2)</sup>	<b>1RA6450-6HS3</b>	1190	96.0	0.84	210	9715	2.40	26	1200
1350	.. <sup>2)</sup>	<b>1RA6452-6HS3</b>	1191	96.2	0.85	230	10833	2.40	29	1200
1480	.. <sup>2)</sup>	<b>1RA6454-6HS3</b>	1191	96.3	0.85	250	11875	2.50	32	1200
1620	.. <sup>2)</sup>	<b>1RA6456-6HS3</b>	1191	96.4	0.87	270	12995	2.50	37	1200
2350	2100	<b>1RA6500-6HS3</b>	1187	96.0	0.85	400	18907	1.65	56	1500
2600	2350	<b>1RA6502-6HS3</b>	1188	96.4	0.84	445	20901	1.85	62	1500
2900	2600	<b>1RA6504-6HS3</b>	1187	96.3	0.85	490	23332	1.70	69	1500
3100	2800	<b>1RA6506-6HS3</b>	1188	96.4	0.86	520	24920	1.75	77	1500
3750	3300	<b>1RA6560-6HS3</b>	1189	96.6	0.86	630	30120	2.00	108	1300
4250	3750	<b>1RA6562-6HS3</b>	1189	96.8	0.86	710	34136	2.05	119	1300
4700	4150	<b>1RA6564-6HS3</b>	1190	96.9	0.87	770	37718	2.15	132	1300
5100	4500	<b>1RA6566-6HS3</b>	1190	97.0	0.87	840	40929	2.20	146	1300

##### 8-pole

870	.. <sup>2)</sup>	<b>1RA6450-8HS3</b>	893	95.2	0.81	156	9308	2.50	32	1200
960	.. <sup>2)</sup>	<b>1RA6452-8HS3</b>	893	95.3	0.82	170	10269	2.50	36	1200
1050	.. <sup>2)</sup>	<b>1RA6454-8HS3</b>	893	95.4	0.84	182	11239	2.40	40	1200
1180	.. <sup>2)</sup>	<b>1RA6456-8HS3</b>	894	95.6	0.82	210	12613	2.50	46	1200
1640	1480	<b>1RA6500-8HS3</b>	891	95.7	0.83	285	17578	1.75	69	1350
1840	1660	<b>1RA6502-8HS3</b>	892	96.0	0.83	320	19700	1.90	76	1350
2050	1860	<b>1RA6504-8HS3</b>	892	96.0	0.84	355	21948	1.80	85	1350
2300	2050	<b>1RA6506-8HS3</b>	892	96.1	0.84	395	24624	1.95	94	1350
2650	2350	<b>1RA6560-8HS3</b>	892	96.4	0.84	455	28372	1.95	128	1350
3000	2650	<b>1RA6562-8HS3</b>	891	96.5	0.84	510	32155	1.90	141	1350
3300	2900	<b>1RA6564-8HS3</b>	891	96.6	0.84	560	35370	1.90	156	1350
3500	3100	<b>1RA6566-8HS3</b>	892	96.8	0.85	590	37472	2.05	173	1350

**Position ■  
of the Article No.:**

**For shaft heights  
450, 500, 560 mm:**

Refer to the article number  
structure on [Page 1/3](#) for:

- type of construction  
(12th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

Motor type  
(repeated)

Partial load data for square-law torque drive

 $P/P_{\text{rated}}$  155 (F) = 75 % $P/P_{\text{rated}}$  155 (F) = 50 % $P/P_{\text{rated}}$  155 (F) = 25 % $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$ 

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Square-law torque drive

6-pole

1RA6450-6...	908	1083	96.2	0.83	605	947	96.2	0.80	303	753	96.0	0.69
1RA6452-6...	1013	1083	96.3	0.84	675	947	96.4	0.80	338	753	96.1	0.70
1RA6454-6...	1110	1083	96.5	0.84	740	947	96.5	0.81	370	753	96.3	0.71
1RA6456-6...	1215	1083	96.6	0.86	810	947	96.7	0.83	405	753	96.5	0.74
1RA6500-6...	1763	1079	96.3	0.85	1175	944	96.4	0.84	588	751	96.3	0.78
1RA6502-6...	1950	1081	96.5	0.84	1300	945	96.6	0.82	650	752	96.3	0.74
1RA6504-6...	2175	1080	96.5	0.85	1450	945	96.6	0.85	725	751	96.5	0.79
1RA6506-6...	2325	1081	96.6	0.86	1550	945	96.7	0.85	775	752	96.6	0.79
1RA6560-6...	2813	1081	96.8	0.87	1875	946	96.9	0.87	938	752	96.8	0.82
1RA6562-6...	3188	1082	97.0	0.87	2125	946	97.0	0.86	1063	752	96.9	0.81
1RA6564-6...	3525	1082	97.0	0.87	2350	946	97.1	0.86	1175	752	96.9	0.80
1RA6566-6...	3825	1082	97.1	0.88	2550	946	97.2	0.87	1275	753	97.0	0.81

8-pole

1RA6450-8...	653	812	95.2	0.79	435	710	95.1	0.74	218	565	94.3	0.61
1RA6452-8...	720	812	95.4	0.80	480	710	95.3	0.75	240	565	94.5	0.62
1RA6454-8...	788	812	95.5	0.83	525	710	95.5	0.79	263	565	95.0	0.69
1RA6456-8...	885	813	95.6	0.79	590	711	95.5	0.75	295	565	94.8	0.62
1RA6500-8...	1230	810	95.9	0.83	820	709	95.9	0.81	410	564	95.5	0.72
1RA6502-8...	1380	811	96.0	0.82	920	709	96.0	0.79	460	564	95.5	0.70
1RA6504-8...	1538	811	96.1	0.83	1025	709	96.1	0.81	513	564	95.7	0.72
1RA6506-8...	1725	811	96.2	0.83	1150	709	96.1	0.80	575	564	95.6	0.71
1RA6560-8...	1988	811	96.6	0.84	1325	709	96.7	0.83	663	564	96.5	0.75
1RA6562-8...	2250	810	96.7	0.85	1500	709	96.8	0.83	750	564	96.7	0.77
1RA6564-8...	2475	811	96.8	0.85	1650	709	96.9	0.84	825	564	96.8	0.77
1RA6566-8...	2625	811	96.9	0.85	1750	709	97.0	0.83	875	564	96.8	0.76

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## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RA6

### Dimension drawings

Note:

For the converter driven motors, the same dimension drawings apply as for line operation motors. [Refer to chapter 2.](#)

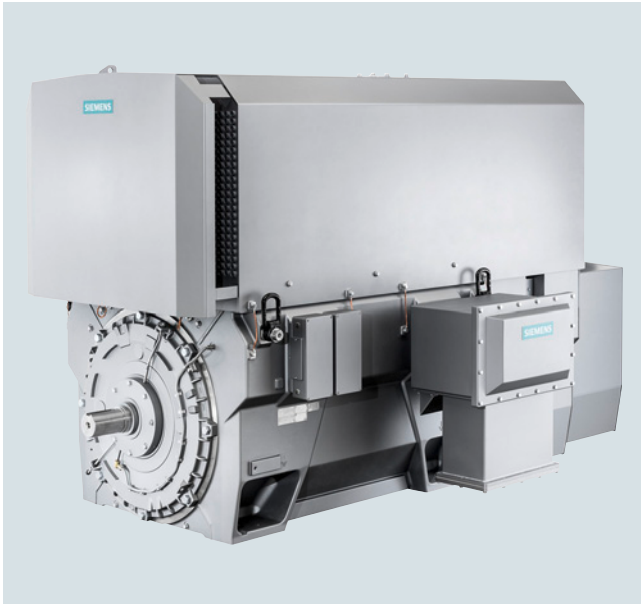


## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Overview



#### Technical data

##### Overview of technical data

SIMOTICS HV M 1RQ6, 1RQ7	
<b>Rated voltage</b>	690 V ... 10 kV
<b>Rated frequency</b>	50/60 Hz
<b>Motor type</b>	Induction motor with squirrel-cage rotor
<b>Type of construction</b>	IM B3, IM V1
<b>Degree of protection</b>	IP55
<b>Cooling method</b>	IC611/IC616/IC666
<b>Stator winding insulation</b>	Insulation system, thermal class 155 (F)
<b>Shaft height</b>	450 ... 800 mm
<b>Bearings</b>	Anti-friction bearings, sleeve bearings
<b>Cage material</b>	Copper
<b>Standards</b>	IEC, EN (NEMA version on request)
<b>Frame design for shaft heights 450 ... 560 mm</b>	Housing: Cast iron Cooling enclosure: Steel
<b>Frame design for shaft heights 630 ... 800 mm</b>	Housing: Steel Cooling enclosure: Steel

The following versions can be offered on request:

- 2-pole up to 75 Hz
- 4-pole up to 100 Hz
- 6-pole up to 90 Hz

For individual motor types, it must be ensured that the motor does not run-through any critical speed in the required speed control range and that the maximum speed does not exceed the mechanical speed limit of the motor! Please contact your Siemens sales partner regarding this check. The motor types are marked with footnotes in the following data tables.

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Technical data (continued)

**Power ranges for IEC motors with reinforced insulation for operation with SINAMICS converters without sine-wave filter**

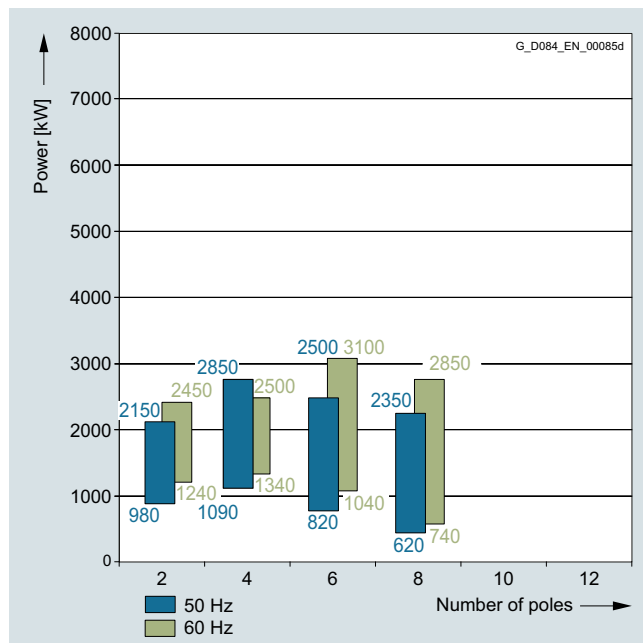
1RQ6, 1SG6 (Ex ec) and SB6 (Ex pxb) series

1RQ7, 1SG7 (Ex ec) and 1SB7 (Ex pxb) series

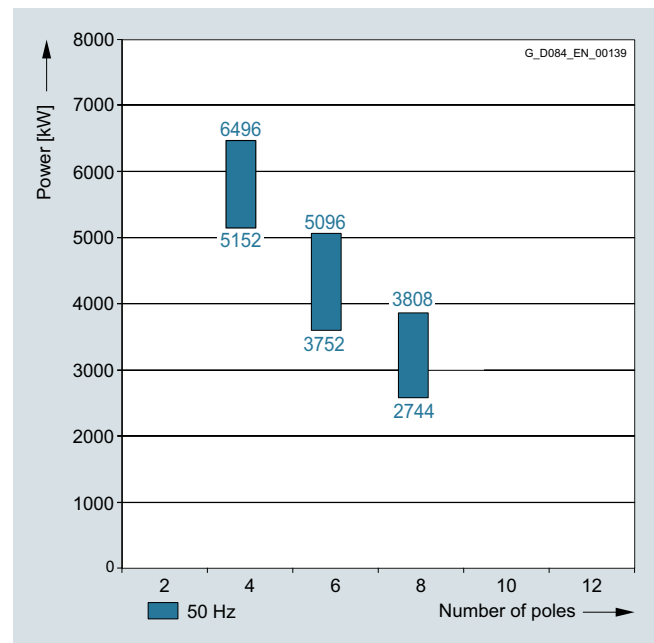
Insulation system, thermal class 155 (F)

The power data listed here apply for an ambient temperature of 40 °C and an installation altitude ≤ 1000 m.

690 V; 50 and 60 Hz



3.3 kV; 50 Hz

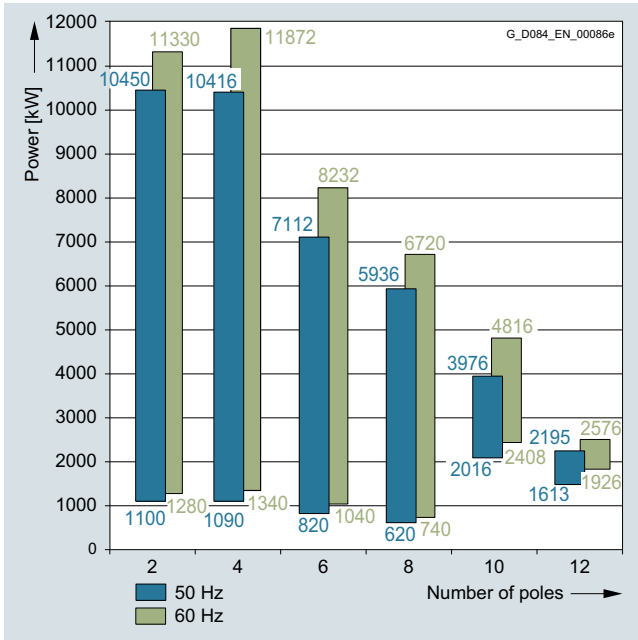


## Motors for converter operation Converter with non-sinusoidal output

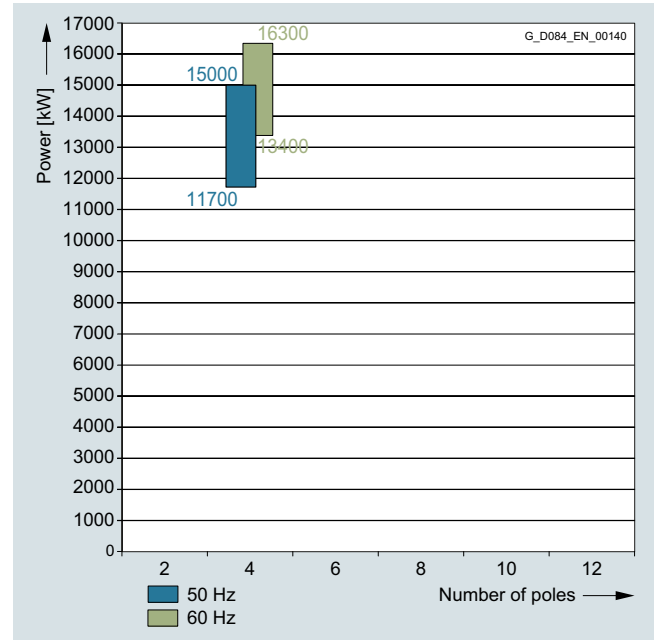
Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Technical data (continued)

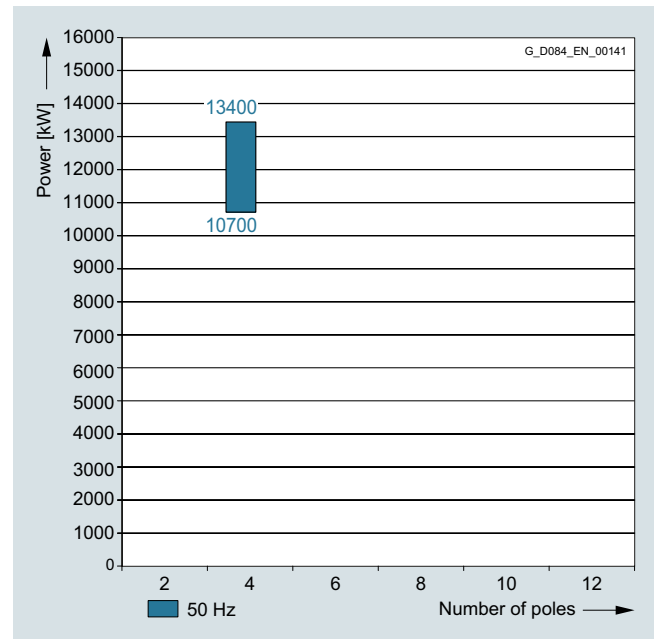
4.16 kV; 50 and 60 Hz



6 kV; 50 and 60 Hz



10 kV; 50 and 60 Hz



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## Motors for converter operation

Converter with non-sinusoidal output

### Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SB6 (Ex pxb) and 1SG6 (Ex ec).

Rated power  IEC  $P_{\text{rated}}$ 155 (F) kW	Low voltage motor SIMOTICS HV M  Article No.	Operating data at rated output for utilization 155 (F)							
		Rated speed	Efficiency	Power factor	Rated current 690 V	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
		$n_{\text{rated}}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$I_{\text{rated}}$ A	$T_{\text{rated}}$ Nm	$T_{\text{B}}/T_{\text{rated}}$ [-]	J kgm <sup>2</sup>	$n_{\text{max}}$ rpm
<b>690 V, 50 Hz</b>									
<b>2-pole</b>									
980	<b>1RQ6450-2JP00</b>	2983	95.1	0.91	950	3141	2.40	13	3000
1040	<b>1RQ6452-2JP00</b>	2984	95.2	0.91	1000	3331	2.40	14	3000
1320	<b>1RQ6454-2JP00</b>	2983	95.9	0.92	1260	4232	2.30	16	3000
1370	<b>1RQ6456-2JP00</b>	2982	95.9	0.93	1280	4394	2.40	18	3000
1740	<b>1RQ6500-2JP00</b>	2980	96.1	0.91	1660	5576	2.70	19	3000
1880	<b>1RQ6502-2JP00</b>	2978	96.2	0.91	1800	6028	2.60	20	3000
2150	<b>1RQ6504-2JP00</b>	2980	96.6	0.92	2040	6890	2.60	24	3000 <sup>3)</sup>
<b>4-pole</b>									
1090	<b>1RQ6450-4JP0</b> ■	1487	95.4	0.87	1100	7008	2.60	20	1800
1200	<b>1RQ6452-4JP0</b> ■	1486	95.5	0.90	1160	7724	2.50	22	1800
1290	<b>1RQ6454-4JP0</b> ■	1488	95.9	0.89	1260	8289	2.60	25	1800
1420	<b>1RQ6456-4JP0</b> ■	1490	96.1	0.89	1380	9113	2.90	29	1800
1950 <sup>2)</sup>	<b>1RQ6500-4JP00</b>	1487	96.1	0.91	1860	12523	2.55	42	1800
2000 <sup>2)</sup>	<b>1RQ6502-4JP00</b>	1487	96.2	0.91	1920	12844	2.55	46	1800
2100 <sup>2)</sup>	<b>1RQ6504-4JP00</b>	1486	96.2	0.92	1980	13495	2.45	52	1800
2400 <sup>2)</sup>	<b>1RQ6506-4JP00</b>	1489	96.6	0.91	2280	15392	2.70	56	1800
2700 <sup>2)</sup>	<b>1RQ6560-4JP00</b>	1486	96.5	0.91	4x640 <sup>4)</sup>	17351	2.10	82	1800
2850 <sup>2)</sup>	<b>1RQ6562-4JP00</b>	1490	96.7	0.92	4x670 <sup>4)</sup>	18265	2.65	93	1800
<b>Position ■ of the Article No.:</b> <b>For shaft heights 450, 500, 560 mm:</b> Refer to the article number structure on <a href="#">Page 1/3</a> for: - type of construction (12th position)									

#### Note:

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

<sup>3)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

<sup>4)</sup> Different number of parallel winding systems possible.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
<b>2-pole</b>												
1RQ6450-2...	735	2711	95.4	0.91	490	2372	95.5	0.90	245	1884	95.3	0.84
1RQ6452-2...	780	2712	95.5	0.91	520	2373	95.6	0.90	260	1885	95.4	0.85
1RQ6454-2...	991	2711	96.1	0.92	660	2372	96.2	0.91	330	1884	96.1	0.87
1RQ6456-2...	1028	2710	96.2	0.94	685	2372	96.3	0.93	343	1884	96.4	0.90
1RQ6500-2...	1305	2711	96.2	0.89	870	2371	96.3	0.86	435	1884	96.1	0.76
1RQ6502-2...	1411	2710	96.4	0.90	940	2370	96.4	0.88	470	1884	96.3	0.81
1RQ6504-2...	1613	2712	96.7	0.91	1075	2371	96.8	0.90	538	1884	96.7	0.83
<b>4-pole</b>												
1RQ6450-4...	818	1352	95.6	0.85	545	1184	95.6	0.82	273	941	95.1	0.72
1RQ6452-4...	900	1351	95.8	0.89	600	1184	95.9	0.87	300	941	95.7	0.81
1RQ6454-4...	968	1353	96.1	0.88	645	1185	96.1	0.86	323	941	95.8	0.78
1RQ6456-4...	1065	1354	96.2	0.88	711	1185	96.2	0.85	355	941	95.8	0.76
1RQ6500-4...	1463	1353	96.3	0.90	975	1184	96.3	0.87	488	941	96.2	0.77
1RQ6502-4...	1500	1354	96.3	0.90	1000	1184	96.4	0.88	500	941	96.3	0.79
1RQ6504-4...	1575	1353	96.4	0.92	1050	1184	96.5	0.90	526	941	96.5	0.84
1RQ6506-4...	1800	1355	96.7	0.90	1200	1185	96.7	0.87	600	942	96.5	0.76
1RQ6560-4...	2026	1353	96.7	0.91	1350	1184	96.8	0.90	675	941	96.9	0.85
1RQ6562-4...	2138	1355	96.8	0.91	1425	1185	96.9	0.89	713	942	96.8	0.81

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Selection and ordering data (continued)

Rated power IEC $P_{\text{rated}}$ 155 (F) kW	Low voltage motor SIMOTICS HV M Article No.	Operating data at rated output for utilization 155 (F)							
		Rated speed $n_{\text{rated}}$ rpm	Efficiency $\eta$ %	Power factor $\cos \varphi$ [-]	Rated current 690 V $I_{\text{rated}}$ A	Rated torque $T_{\text{rated}}$ Nm	Break-down torque $T_B/T_{\text{rated}}$ [-]	Moment of inertia J kgm <sup>2</sup>	Mechanical speed limit <sup>1)</sup> $n_{\text{max}}$ rpm
<b>690 V, 50 Hz</b>									
6-pole									
820	<b>1RQ6450-6JP0</b>	991	95.6	0.85	840	7915	2.30	26	1200
910	<b>1RQ6452-6JP0</b>	992	95.9	0.85	930	8775	2.40	29	1200
1020	<b>1RQ6454-6JP0</b>	992	95.9	0.85	1040	9835	2.40	32	1200
1130	<b>1RQ6456-6JP0</b>	991	95.8	0.87	1140	10906	2.30	37	1200
1560	<b>1RQ6500-6JP0</b>	988	96.0	0.86	1580	15079	1.85	56	1500
1700	<b>1RQ6502-6JP0</b>	989	96.2	0.86	1720	16416	2.00	62	1500
1820	<b>1RQ6504-6JP0</b>	989	96.2	0.87	1820	17574	1.95	69	1500
1960	<b>1RQ6506-6JP0</b>	991	96.5	0.87	1960	18888	2.20	77	1500
2250	<b>1RQ6560-6JP0</b>	991	96.5	0.87	2240	21683	2.40	108	1300
2500	<b>1RQ6562-6JP0</b>	991	96.5	0.88	3x820 <sup>2)</sup>	24092	2.30	119	1300
8-pole									
620	<b>1RQ6450-8JP0</b>	744	94.9	0.82	670	7967	2.70	32	1200
675	<b>1RQ6452-8JP0</b>	744	95.1	0.82	720	8679	2.40	36	1200
750	<b>1RQ6454-8JP0</b>	744	95.1	0.82	800	9635	2.50	40	1200
810	<b>1RQ6456-8JP0</b>	745	95.4	0.82	870	10398	2.70	46	1200
1160	<b>1RQ6500-8JP0</b>	741	95.6	0.84	1200	14950	1.80	69	1350
1280	<b>1RQ6502-8JP0</b>	741	95.7	0.84	1340	16497	1.85	76	1350
1440	<b>1RQ6504-8JP0</b>	741	95.8	0.84	1500	18559	1.85	85	1350
1600	<b>1RQ6506-8JP0</b>	742	96.0	0.84	1660	20593	1.90	94	1350
1700	<b>1RQ6560-8JP0</b>	742	96.3	0.85	1740	21880	2.20	128	1350
1960	<b>1RQ6562-8JP0</b>	742	96.5	0.85	2000	25226	2.20	141	1350
2150	<b>1RQ6564-8JP0</b>	743	96.6	0.85	2200	27635	2.35	156	1350
2350	<b>1RQ6566-8JP0</b>	743	96.7	0.85	2400	30205	2.45	173	1350

**Position ■  
of the Article No.:**

**For shaft heights  
450, 500, 560 mm:**

Refer to the article number  
structure on [Page 1/3](#) for:

- type of construction  
(12th position)

#### Note:

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Different number of parallel winding systems possible.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type  
(repeated)

Partial load data for square-law torque drive

 $P/P_{\text{rated}}$  155 (F) = 75 % $P/P_{\text{rated}}$  155 (F) = 50 % $P/P_{\text{rated}}$  155 (F) = 25 %

$P$        $n$        $\eta$        $\cos \varphi$

kW      rpm      %      [-]

$P$        $n$        $\eta$        $\cos \varphi$

kW      rpm      %      [-]

$P$        $n$        $\eta$        $\cos \varphi$

kW      rpm      %      [-]

Square-law torque drive

6-pole

1RQ6450-6...	615	901	96.0	0.84	410	789	96.0	0.81	205	627	95.8	0.71
1RQ6452-6...	683	902	96.1	0.83	455	789	96.1	0.80	228	627	95.8	0.69
1RQ6454-6...	765	902	96.2	0.84	510	789	96.2	0.80	255	627	95.9	0.70
1RQ6456-6...	848	901	96.2	0.87	565	789	96.3	0.84	283	627	96.2	0.76
1RQ6500-6...	1170	898	96.2	0.86	780	787	96.3	0.85	390	626	96.2	0.78
1RQ6502-6...	1275	899	96.3	0.85	850	788	96.4	0.84	425	626	96.2	0.76
1RQ6504-6...	1365	899	96.4	0.87	910	788	96.5	0.85	455	626	96.3	0.79
1RQ6506-6...	1470	901	96.6	0.86	980	788	96.6	0.84	490	627	96.3	0.76
1RQ6560-6...	1688	901	96.6	0.87	1125	789	96.7	0.86	563	627	96.4	0.79
1RQ6562-6...	1875	901	96.7	0.88	1250	789	96.7	0.87	625	627	96.6	0.82

8-pole

1RQ6450-8...	465	676	95.0	0.77	310	592	94.8	0.71	155	471	93.8	0.57
1RQ6452-8...	506	676	95.2	0.79	338	592	95.1	0.74	169	470	94.4	0.61
1RQ6454-8...	563	677	95.2	0.79	375	592	95.0	0.73	188	471	94.2	0.60
1RQ6456-8...	608	677	95.5	0.79	405	592	95.3	0.73	203	471	94.5	0.59
1RQ6500-8...	870	674	95.8	0.83	580	590	95.8	0.81	290	469	95.5	0.73
1RQ6502-8...	960	674	95.9	0.84	640	590	95.9	0.82	320	469	95.6	0.74
1RQ6504-8...	1080	674	96.0	0.84	720	590	96.1	0.82	360	469	95.8	0.74
1RQ6506-8...	1200	674	96.1	0.84	800	591	96.2	0.82	400	470	95.8	0.74
1RQ6560-8...	1275	675	96.5	0.84	850	591	96.6	0.82	425	470	96.4	0.75
1RQ6562-8...	1470	675	96.6	0.85	980	591	96.7	0.83	490	470	96.5	0.75
1RQ6564-8...	1613	676	96.7	0.84	1075	591	96.7	0.82	538	470	96.4	0.73
1RQ6566-8...	1763	676	96.8	0.84	1175	592	96.8	0.81	588	470	96.5	0.72

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## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Selection and ordering data

The following data also apply to explosion-protected motors 1SB7 (Ex pxb) and 1SG7 (Ex ec).

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 3.3 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{\text{rated}}$ 155 (F)	$P_{\text{rated}}$ 130 (B)		$n_{\text{rated}}$	$\eta$	$\cos \varphi$	$I_{\text{rated}}$	$T_{\text{rated}}$	$T_{\text{B}}/T_{\text{rated}}$	J	$n_{\text{max}}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>3.3 kV, 50 Hz</b>										
4-pole										
5152 <sup>2)</sup>	4600	<b>1RQ7630-4 ■ ■ 50-0C ■ 0</b>	1492	97.4	0.88	940	29442	2.55	145	1800
5600 <sup>2)</sup>	5000	<b>1RQ7632-4 ■ ■ 50-0C ■ 0</b>	1492	97.5	0.88	1020	32002	2.55	160	1800
6048 <sup>2)</sup>	5400	<b>1RQ7634-4 ■ ■ 50-0C ■ 0</b>	1493	97.6	0.89	1080	34539	2.80	178	1800
6496 <sup>2)</sup>	5800	<b>1RQ7636-4 ■ ■ 50-0C ■ 0</b>	1494	97.7	0.88	1180	37072	3.20	194	1800
6-pole										
3752	3350	<b>1RQ7630-6 ■ ■ 5 ■ -0C ■ 0</b>	994	96.9	0.84	720	32183	2.65	207	1600
4144	3700	<b>1RQ7632-6 ■ ■ 5 ■ -0C ■ 0</b>	994	97.0	0.84	790	35546	2.70	229	1600
4592	4100	<b>1RQ7634-6 ■ ■ 5 ■ -0C ■ 0</b>	994	97.0	0.84	880	39388	2.75	250	1600
5096	4550	<b>1RQ7636-6 ■ ■ 5 ■ -0C ■ 0</b>	994	97.1	0.84	980	43712	2.65	271	1600
8-pole										
2744	2450	<b>1RQ7630-8 ■ ■ 5 ■ -0C ■ 0</b>	745	96.2	0.83	540	31404	2.60	255	1350
3080	2750	<b>1RQ7632-8 ■ ■ 5 ■ -0C ■ 0</b>	745	96.5	0.83	600	35249	2.45	282	1350
3416	3050	<b>1RQ7634-8 ■ ■ 5 ■ -0C ■ 0</b>	745	96.8	0.84	660	39094	2.55	308	1350
3808	3400	<b>1RQ7636-8 ■ ■ 5 ■ -0C ■ 0</b>	745	96.9	0.84	730	43581	2.60	334	1350
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft heights 630, 710, 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/3</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								
		- type of construction (12th position)								
		- housing and bearing version (15th position)								

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.



## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
4-pole												
1RQ7630-4...	3451	1356	97.4	0.88	2300	1186	97.4	0.87	1151	942	97.3	0.81
1RQ7632-4...	3751	1357	97.5	0.88	2500	1186	97.5	0.87	1251	942	97.4	0.82
1RQ7634-4...	4051	1357	97.6	0.88	2702	1186	97.6	0.87	1351	942	97.4	0.81
1RQ7636-4...	4350	1358	97.6	0.88	2902	1187	97.6	0.86	1450	943	97.3	0.78
6-pole												
1RQ7630-6...	2515	904	96.8	0.83	1677	790	96.7	0.80	840	628	96.2	0.70
1RQ7632-6...	2775	904	96.9	0.83	1852	790	96.8	0.81	925	628	96.3	0.71
1RQ7634-6...	3075	904	97.0	0.83	2052	790	96.8	0.80	1025	628	96.3	0.70
1RQ7636-6...	3416	904	97.1	0.84	2277	790	96.9	0.81	1140	628	96.5	0.72
8-pole												
1RQ7630-8...	1840	677	96.1	0.82	1226	592	95.9	0.78	615	471	95.1	0.68
1RQ7632-8...	2065	677	96.4	0.83	1375	592	96.2	0.80	690	470	95.5	0.71
1RQ7634-8...	2290	677	96.8	0.82	1526	592	96.6	0.79	765	471	96.1	0.70
1RQ7636-8...	2550	677	96.9	0.82	1702	592	96.7	0.79	850	471	96.2	0.69

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Selection and ordering data

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RQ6 at rated output for utilization 155 (F), for 1RQ7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 50 Hz</b>										
2-pole										
1100	– <sup>3)</sup>	<b>1RQ6450-2JS40</b>	2979	95.4	0.90	178	3529	2.30	13	3000
1220	– <sup>3)</sup>	<b>1RQ6452-2JS40</b>	2981	95.8	0.91	194	3910	2.60	14	3000
1350	– <sup>3)</sup>	<b>1RQ6454-2JS40</b>	2982	96.0	0.91	215	4325	2.60	16	3000
1490	– <sup>3)</sup>	<b>1RQ6456-2JS40</b>	2984	96.3	0.92	235	4771	2.70	18	3000
2000	1760	<b>1RQ6500-2JS40</b>	2973	96.2	0.91	315	6424	2.30	19	3000
2100	1848	<b>1RQ6502-2JS40</b>	2972	96.2	0.91	335	6747	2.20	20	3000
2450	2156	<b>1RQ6504-2JS40</b>	2976	96.5	0.92	385	7861	2.45	24	3000 <sup>2)</sup>
2550	2244	<b>1RQ6506-2JS40</b>	2977	96.6	0.92	400	8180	2.55	26	3000 <sup>2)</sup>
3100	2790	<b>1RQ6560-2JS40</b>	2978	96.5	0.90	495	9941	1.95	39	3000 <sup>2)</sup>
3500	3150	<b>1RQ6562-2JS40</b>	2982	96.8	0.91	550	11208	2.30	43	3000 <sup>2)</sup>
4000	3600	<b>1RQ6564-2JS40</b>	2983	97.0	0.92	620	12805	2.40	49	3000 <sup>2)</sup>
4500	4050	<b>1RQ6566-2JS40</b>	2984	97.1	0.93	690	14401	2.65	54	3000 <sup>2)</sup>
4840	4400	<b>1RQ7630-2 ■ 40-0CJ0</b>	2984	96.9	0.89	710	14081	2.25	74	3000
5335	4850	<b>1RQ7632-2 ■ 40-0CJ0</b>	2986	97.1	0.90	770	15510	2.50	83	3000
5940	5400	<b>1RQ7634-2 ■ 40-0CJ0</b>	2987	97.3	0.91	850	17264	2.80	91	3000
6600	6000	<b>1RQ7636-2 ■ 40-0CJ0</b>	2988	97.4	0.91	940	19175	2.95	100	3000
7370	6700	<b>1RQ7710-2 ■ 40-0CJ0</b>	2988	96.7	0.92	1040	21412	2.30	148	3000
8250	7500	<b>1RQ7712-2 ■ 40-0CJ0</b>	2988	96.8	0.92	1160	23969	2.30	159	3000
9350	8500	<b>1RQ7714-2 ■ 40-0CJ0</b>	2988	97.1	0.93	1300	27165	2.45	176	3000
10450	9500	<b>1RQ7716-2 ■ 40-0CJ0</b>	2988	97.3	0.93	1460	30361	2.45	189	3000
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft heights 630, 710, 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/3</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>3)</sup> Utilization 130 (B) on request.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}} 155 (F) = 75 \%$				$P/P_{\text{rated}} 155 (F) = 50 \%$				$P/P_{\text{rated}} 155 (F) = 25 \%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
2-pole												
1RQ6450-2...	825	2708	95.6	0.90	550	2371	95.6	0.89	275	1883	95.4	0.84
1RQ6452-2...	915	2709	95.9	0.92	610	2372	96.0	0.91	305	1884	95.7	0.86
1RQ6454-2...	1013	2710	96.1	0.91	675	2372	96.2	0.90	338	1884	95.9	0.85
1RQ6456-2...	1118	2711	96.4	0.92	745	2373	96.4	0.91	373	1885	96.2	0.87
1RQ6500-2...	1500	2707	96.3	0.90	1000	2368	96.4	0.88	500	1883	96.3	0.81
1RQ6502-2...	1576	2707	96.3	0.90	1050	2368	96.4	0.89	525	1882	96.4	0.84
1RQ6504-2...	1838	2709	96.7	0.92	1225	2369	96.8	0.90	613	1883	96.7	0.85
1RQ6506-2...	1913	2710	96.7	0.92	1275	2370	96.8	0.90	638	1883	96.7	0.85
1RQ6560-2...	2326	2710	96.6	0.90	1550	2370	96.7	0.89	775	1884	96.7	0.85
1RQ6562-2...	2626	2713	96.8	0.90	1750	2372	96.9	0.89	875	1885	96.7	0.82
1RQ6564-2...	3001	2713	97.1	0.91	2000	2372	97.1	0.90	1001	1885	97.0	0.84
1RQ6566-2...	3375	2714	97.2	0.92	2250	2373	97.2	0.91	1126	1885	97.1	0.84
1RQ7630-2...	3302	2713	97.0	0.90	2200	2372	97.0	0.90	1100	1884	96.9	0.87
1RQ7632-2...	3641	2714	97.2	0.90	2425	2373	97.2	0.90	1215	1885	97.1	0.87
1RQ7634-2...	4051	2715	97.3	0.91	2700	2373	97.3	0.91	1351	1885	97.2	0.87
1RQ7636-2...	4501	2716	97.4	0.91	3000	2374	97.4	0.91	1501	1885	97.3	0.87
1RQ7710-2...	5027	2714	96.6	0.93	3351	2375	96.5	0.93	1675	1886	96.1	0.90
1RQ7712-2...	5624	2714	96.8	0.93	3750	2375	96.6	0.93	1874	1885	96.3	0.91
1RQ7714-2...	6375	2714	97.0	0.94	4251	2375	96.9	0.94	2125	1885	96.6	0.92
1RQ7716-2...	7125	2714	97.2	0.94	4750	2375	97.1	0.94	2375	1886	96.8	0.92

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RQ6 at rated output for utilization 155 (F), for 1RQ7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 50 Hz</b>										
4-pole										
1090	– <sup>3)</sup>	<b>1RQ6450-4JS4</b> ■	1486	95.3	0.88	180	7007	2.70	20	1800
1200	– <sup>3)</sup>	<b>1RQ6452-4JS4</b> ■	1486	95.5	0.89	196	7716	2.60	22	1800
1290	– <sup>3)</sup>	<b>1RQ6454-4JS4</b> ■	1488	95.8	0.89	210	8281	2.80	25	1800
1420	– <sup>3)</sup>	<b>1RQ6456-4JS4</b> ■	1489	96.0	0.89	230	9114	2.90	29	1800
2100 <sup>2)</sup>	1848	<b>1RQ6500-4JS40</b>	1486	96.0	0.91	335	13495	2.50	42	1800
2300 <sup>2)</sup>	2024	<b>1RQ6502-4JS40</b>	1487	96.2	0.90	370	14770	2.55	46	1800
2600 <sup>2)</sup>	2288	<b>1RQ6504-4JS40</b>	1487	96.4	0.91	410	16697	2.45	52	1800
2800 <sup>2)</sup>	2464	<b>1RQ6506-4JS40</b>	1487	96.5	0.91	445	17981	2.55	56	1800
3200 <sup>2)</sup>	2880	<b>1RQ6560-4JS40</b>	1491	96.8	0.90	510	20495	2.40	84	1800
3500 <sup>2)</sup>	3150	<b>1RQ6562-4JS40</b>	1492	96.9	0.91	550	22401	2.55	94	1800
4000 <sup>2)</sup>	3600	<b>1RQ6564-4JS40</b>	1491	97.1	0.91	630	25619	2.45	105	1800
4400 <sup>2)</sup>	3960	<b>1RQ6566-4JS40</b>	1492	97.2	0.91	690	28161	2.75	115	1800
5152 <sup>2)</sup>	4600	<b>1RQ7630-4 ■ ■ ■ 40-0C ■ 0</b>	1492	97.4	0.88	740	29442	2.55	145	1800
5600 <sup>2)</sup>	5000	<b>1RQ7632-4 ■ ■ ■ 40-0C ■ 0</b>	1493	97.5	0.88	810	31980	2.75	160	1800
6048 <sup>2)</sup>	5400	<b>1RQ7634-4 ■ ■ ■ 40-0C ■ 0</b>	1493	97.6	0.89	860	34539	2.85	178	1800
6496 <sup>2)</sup>	5800	<b>1RQ7636-4 ■ ■ ■ 40-0C ■ 0</b>	1494	97.6	0.89	930	37072	3.05	194	1800
7616 <sup>2)</sup>	6800	<b>1RQ7710-4 ■ ■ ■ 40-0C ■ 0</b>	1493	97.4	0.91	1060	43493	2.45	260	1800
8456 <sup>2)</sup>	7550	<b>1RQ7712-4 ■ ■ ■ 40-0C ■ 0</b>	1493	97.5	0.91	1180	48290	2.45	285	1800
9352 <sup>2)</sup>	8350	<b>1RQ7714-4 ■ ■ ■ 40-0C ■ 0</b>	1493	97.6	0.92	1300	53407	2.70	320	1800
10416 <sup>2)</sup>	9300	<b>1RQ7716-4 ■ ■ ■ 40-0C ■ 0</b>	1493	97.7	0.92	1440	59483	2.70	361	1800
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft heights 450, 500, 560 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/3</a> for:								
		- type of construction (12th position)								
		<b>For shaft heights 630, 710, 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/5</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								
		- housing and bearing version (15th position)								

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

<sup>3)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
4-pole												
1RQ6450-4...	818	1352	95.5	0.87	545	1184	95.6	0.85	273	941	95.3	0.76
1RQ6452-4...	900	1352	95.7	0.89	600	1184	95.8	0.87	300	941	95.6	0.80
1RQ6454-4...	968	1353	95.9	0.88	645	1185	96.0	0.85	323	941	95.6	0.77
1RQ6456-4...	1065	1353	96.1	0.89	711	1185	96.2	0.87	355	941	95.8	0.79
1RQ6500-4...	1575	1353	96.1	0.89	1050	1184	96.2	0.86	525	941	95.9	0.76
1RQ6502-4...	1725	1354	96.3	0.88	1150	1184	96.3	0.85	575	941	95.9	0.73
1RQ6504-4...	1951	1353	96.5	0.90	1300	1184	96.5	0.88	650	941	96.3	0.79
1RQ6506-4...	2100	1354	96.6	0.90	1400	1184	96.6	0.87	700	941	96.4	0.78
1RQ6560-4...	2401	1357	96.9	0.89	1600	1186	96.8	0.86	801	942	96.6	0.76
1RQ6562-4...	2626	1357	97.0	0.89	1750	1186	97.0	0.86	875	943	96.7	0.76
1RQ6564-4...	3001	1357	97.2	0.90	2000	1186	97.2	0.88	1001	942	96.9	0.80
1RQ6566-4...	3300	1357	97.3	0.90	2202	1187	97.2	0.86	1100	943	96.9	0.75
1RQ7630-4...	3451	1356	97.5	0.88	2300	1186	97.5	0.87	1151	942	97.3	0.82
1RQ7632-4...	3751	1357	97.5	0.88	2502	1186	97.5	0.86	1251	942	97.3	0.80
1RQ7634-4...	4051	1357	97.7	0.88	2702	1186	97.6	0.87	1350	942	97.4	0.81
1RQ7636-4...	4350	1358	97.7	0.88	2902	1187	97.6	0.86	1450	943	97.3	0.80
1RQ7710-4...	5102	1356	97.3	0.91	3407	1187	97.2	0.90	1704	942	96.8	0.86
1RQ7712-4...	5664	1356	97.4	0.91	3783	1187	97.3	0.90	1892	942	96.9	0.86
1RQ7714-4...	6263	1356	97.5	0.92	4183	1187	97.4	0.91	2092	942	97.1	0.87
1RQ7716-4...	6977	1357	97.7	0.92	4658	1187	97.5	0.91	2330	943	97.2	0.87

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RQ6 at rated output for utilization 155 (F), for 1RQ7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 50 Hz</b>										
6-pole										
820	— <sup>2)</sup>	<b>1RQ6450-6JS4</b>	991	95.5	0.85	140	7905	2.50	26	1200
910	— <sup>2)</sup>	<b>1RQ6452-6JS4</b>	990	95.6	0.87	152	8783	2.40	29	1200
1020	— <sup>2)</sup>	<b>1RQ6454-6JS4</b>	990	95.7	0.87	170	9845	2.40	32	1200
1130	— <sup>2)</sup>	<b>1RQ6456-6JS4</b>	992	96.0	0.86	190	10890	2.50	37	1200
1560	1400	<b>1RQ6500-6JS4</b>	989	95.8	0.86	265	15064	1.90	56	1500
1780	1600	<b>1RQ6502-6JS4</b>	990	96.1	0.85	300	17171	2.05	62	1500
1980	1780	<b>1RQ6504-6JS4</b>	990	96.2	0.85	335	19100	2.10	69	1500
2150	1940	<b>1RQ6506-6JS4</b>	991	96.4	0.86	360	20719	2.20	77	1500
2550	2250	<b>1RQ6560-6JS4</b>	988	96.2	0.87	425	24648	2.00	108	1300
2900	2550	<b>1RQ6562-6JS4</b>	990	96.4	0.87	480	27975	2.20	119	1300
3200	2800	<b>1RQ6564-6JS4</b>	991	96.6	0.88	520	30838	2.35	132	1300
3500	3100	<b>1RQ6566-6JS4</b>	992	96.8	0.88	570	33695	2.50	146	1300
3752	3350	<b>1RQ7630-6 ■ ■ ■ 4 -0C ■ ■ 0</b>	994	97.1	0.84	570	32183	2.70	207	1800
4144	3700	<b>1RQ7632-6 ■ ■ ■ 4 -0C ■ ■ 0</b>	994	97.2	0.84	630	35546	2.75	229	1800
4592	4100	<b>1RQ7634-6 ■ ■ ■ 4 -0C ■ ■ 0</b>	995	97.2	0.84	700	39349	2.80	250	1800
5096	4550	<b>1RQ7636-6 ■ ■ ■ 4 -0C ■ ■ 0</b>	995	97.3	0.84	770	43668	2.80	271	1800
5656	5050	<b>1RQ7710-6 ■ ■ ■ 4 -0C ■ ■ 0</b>	995	97.0	0.85	850	48466	2.65	350	1600
6104	5450	<b>1RQ7712-6 ■ ■ ■ 4 -0C ■ ■ 0</b>	996	97.1	0.86	910	52253	2.65	396	1600
6608	5900	<b>1RQ7714-6 ■ ■ ■ 4 -0C ■ ■ 0</b>	996	97.2	0.86	980	56567	2.85	448	1600
7112	6350	<b>1RQ7716-6 ■ ■ ■ 4 -0C ■ ■ 0</b>	996	97.3	0.86	1060	60882	2.85	496	1600

**Position ■  
of the Article No.:**

**For shaft heights  
450, 500, 560 mm:**

Refer to the article number structure on [Page 1/3](#) for:

- type of construction  
(12th position)

**For shaft heights  
630, 710, 800 mm:**

Refer to the article number structure on [Page 1/5](#) for:

- cooling method  
(9th position)  
- converter type  
(10th position)  
- type of construction  
(12th position)  
- housing and bearing  
version (15th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007. The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}} 155 (F) = 75 \%$				$P/P_{\text{rated}} 155 (F) = 50 \%$				$P/P_{\text{rated}} 155 (F) = 25 \%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
6-pole												
1RQ6450-6...	615	901	95.7	0.84	410	789	95.8	0.80	205	627	95.5	0.70
1RQ6452-6...	683	900	95.8	0.86	455	789	96.0	0.84	228	627	95.9	0.76
1RQ6454-6...	765	901	95.9	0.87	510	789	96.1	0.84	255	627	96.1	0.76
1RQ6456-6...	848	902	96.2	0.85	565	789	96.3	0.83	283	627	96.1	0.73
1RQ6500-6...	1170	899	96.0	0.86	780	787	96.1	0.84	390	626	95.9	0.77
1RQ6502-6...	1335	900	96.2	0.85	890	788	96.2	0.82	445	626	95.9	0.74
1RQ6504-6...	1485	900	96.3	0.85	990	788	96.4	0.83	495	626	96.1	0.74
1RQ6506-6...	1613	901	96.5	0.85	1075	788	96.5	0.82	538	627	96.1	0.73
1RQ6560-6...	1913	899	96.4	0.87	1275	787	96.6	0.87	638	626	96.6	0.83
1RQ6562-6...	2175	900	96.6	0.88	1450	788	96.7	0.87	725	626	96.7	0.82
1RQ6564-6...	2400	901	96.7	0.88	1600	789	96.8	0.87	800	627	96.6	0.81
1RQ6566-6...	2625	901	96.9	0.87	1750	789	96.9	0.86	875	627	96.7	0.79
1RQ7630-6...	2515	904	97.1	0.83	1676	790	97.0	0.80	840	628	96.6	0.70
1RQ7632-6...	2775	904	97.2	0.83	1852	790	97.1	0.80	925	628	96.7	0.70
1RQ7634-6...	3075	904	97.2	0.83	2051	790	97.1	0.80	1025	628	96.7	0.70
1RQ7636-6...	3415	904	97.3	0.83	2277	790	97.2	0.80	1140	628	96.8	0.70
1RQ7710-6...	3788	904	96.9	0.84	2529	791	96.7	0.81	1265	628	96.0	0.71
1RQ7712-6...	4088	904	97.0	0.85	2729	791	96.7	0.81	1365	628	96.0	0.72
1RQ7714-6...	4425	905	97.0	0.84	2954	792	96.7	0.81	1478	629	96.0	0.70
1RQ7716-6...	4762	905	97.2	0.85	3180	792	96.9	0.82	1590	628	96.2	0.72

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RQ6 at rated output for utilization 155 (F), for 1RQ7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 50 Hz</b>										
8-pole										
620	— <sup>2)</sup>	<b>1RQ6450-8JS4</b>	743	94.6	0.83	110	7976	2.40	32	1200
675	— <sup>2)</sup>	<b>1RQ6452-8JS4</b>	744	94.8	0.82	120	8674	2.50	36	1200
750	— <sup>2)</sup>	<b>1RQ6454-8JS4</b>	743	95.0	0.83	132	9640	2.50	40	1200
810	— <sup>2)</sup>	<b>1RQ6456-8JS4</b>	744	95.2	0.83	142	10399	2.70	46	1200
1160	1040	<b>1RQ6500-8JS4</b>	741	95.3	0.84	200	14950	1.80	69	1350
1280	1160	<b>1RQ6502-8JS4</b>	743	95.7	0.83	225	16452	2.15	76	1350
1400	1260	<b>1RQ6504-8JS4</b>	742	95.6	0.84	240	18019	1.95	85	1350
1540	1380	<b>1RQ6506-8JS4</b>	742	95.8	0.85	260	19821	1.90	94	1350
1880	1660	<b>1RQ6560-8JS4</b>	743	96.3	0.84	325	24164	2.20	128	1350
2100	1860	<b>1RQ6562-8JS4</b>	742	96.3	0.85	355	27028	2.10	141	1350
2250	2000	<b>1RQ6564-8JS4</b>	742	96.3	0.85	380	28959	2.10	156	1350
2500	2200	<b>1RQ6566-8JS4</b>	742	96.4	0.85	425	32177	2.05	173	1350
2744	2450	<b>1RQ7630-8 ■ ■ ■ 4 ■ -0C ■ ■ 0</b>	746	96.6	0.82	430	31362	2.80	255	1350
3080	2750	<b>1RQ7632-8 ■ ■ ■ 4 ■ -0C ■ ■ 0</b>	746	96.7	0.83	475	35202	2.75	282	1350
3416	3050	<b>1RQ7634-8 ■ ■ ■ 4 ■ -0C ■ ■ 0</b>	746	96.8	0.82	530	39042	2.75	307	1350
3808	3400	<b>1RQ7636-8 ■ ■ ■ 4 ■ -0C ■ ■ 0</b>	745	96.8	0.83	590	43581	2.70	334	1350
4200	3750	<b>1RQ7710-8 ■ ■ ■ 4 ■ -0C ■ ■ 0</b>	746	96.8	0.85	630	48002	2.30	433	1125
4760	4250	<b>1RQ7712-8 ■ ■ ■ 4 ■ -0C ■ ■ 0</b>	746	97.0	0.85	720	54403	2.50	493	1125
5320	4750	<b>1RQ7714-8 ■ ■ ■ 4 ■ -0C ■ ■ 0</b>	746	97.0	0.85	800	60803	2.60	558	1125
5936	5300	<b>1RQ7716-8 ■ ■ ■ 4 ■ -0C ■ ■ 0</b>	746	97.1	0.84	900	67844	2.60	602	1125

#### Position ■ of the Article No.:

#### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- type of construction (12th position)

#### For shaft heights 630, 710, 800 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- converter type (10th position)
- type of construction (12th position)
- housing and bearing version (15th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007. The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Utilization 130 (B) on request.



## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type  
(repeated)

Partial load data for square-law torque drive

 $P/P_{\text{rated}}$  155 (F) = 75 % $P/P_{\text{rated}}$  155 (F) = 50 % $P/P_{\text{rated}}$  155 (F) = 25 % $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$ 

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Square-law torque drive

8-pole

Motor type (repeated)	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
1RQ6450-8...	465	676	94.8	0.81	310	592	94.7	0.77	155	470	94.1	0.65
1RQ6452-8...	506	676	94.9	0.80	338	592	94.8	0.76	169	470	94.1	0.63
1RQ6454-8...	563	676	95.1	0.82	375	592	95.1	0.77	188	470	94.5	0.66
1RQ6456-8...	608	677	95.3	0.81	405	592	95.2	0.76	203	471	94.5	0.63
1RQ6500-8...	870	674	95.5	0.84	580	590	95.6	0.81	290	469	95.2	0.73
1RQ6502-8...	960	675	95.7	0.82	640	591	95.6	0.78	320	470	95.0	0.67
1RQ6504-8...	1050	675	95.8	0.84	700	591	95.8	0.81	350	470	95.4	0.72
1RQ6506-8...	1155	675	96.0	0.84	770	591	96.0	0.82	385	470	95.7	0.73
1RQ6560-8...	1410	675	96.4	0.84	940	591	96.5	0.81	470	470	96.2	0.73
1RQ6562-8...	1575	675	96.4	0.84	1050	591	96.6	0.83	525	470	96.4	0.75
1RQ6564-8...	1688	675	96.5	0.85	1125	591	96.6	0.83	563	470	96.5	0.76
1RQ6566-8...	1875	674	96.6	0.85	1250	591	96.7	0.84	625	470	96.6	0.77
1RQ7630-8...	1840	678	96.8	0.78	1226	593	96.6	0.73	615	471	96.1	0.60
1RQ7632-8...	2065	677	97.0	0.82	1375	592	97.0	0.79	690	471	96.7	0.70
1RQ7634-8...	2290	677	97.1	0.82	1526	592	97.1	0.79	765	471	96.7	0.69
1RQ7636-8...	2550	678	97.1	0.82	1701	592	97.0	0.78	850	471	96.6	0.67
1RQ7710-8...	2814	678	96.7	0.84	1879	593	96.5	0.81	940	471	95.8	0.72
1RQ7712-8...	3189	678	96.8	0.84	2129	593	96.5	0.81	1065	471	95.8	0.70
1RQ7714-8...	3563	678	96.8	0.84	2379	593	96.6	0.80	1190	471	95.8	0.70
1RQ7716-8...	3976	678	96.9	0.82	2655	593	96.7	0.78	1328	471	95.9	0.67

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 50 Hz</b>										
10-pole										
2016	1800	<b>1RQ7630-3 4 -0C 0</b>	595	96.6	0.83	310	28889	2.30	258	1080
2240	2000	<b>1RQ7632-3 4 -0C 0</b>	595	96.7	0.82	350	32098	2.35	284	1080
2464	2200	<b>1RQ7634-3 4 -0C 0</b>	595	96.7	0.83	380	35308	2.30	310	1080
2688	2400	<b>1RQ7636-3 4 -0C 0</b>	595	96.7	0.83	415	38518	2.30	336	1080
2968	2650	<b>1RQ7710-3 4 -0C 0</b>	595	96.5	0.85	450	42530	2.20	429	1125
3304	2950	<b>1RQ7712-3 4 -0C 0</b>	595	96.6	0.85	500	47345	2.20	486	1125
3640	3250	<b>1RQ7714-3 4 -0C 0</b>	595	96.6	0.86	540	52160	2.20	553	1125
3976	3550	<b>1RQ7716-3 4 -0C 0</b>	595	96.7	0.86	590	56975	2.20	610	1125
12-pole										
1613	1440	<b>1RQ7630-5 4 -0C 0</b>	495	96.0	0.78	265	27780	2.25	264	900
1792	1600	<b>1RQ7632-5 4 -0C 0</b>	495	96.0	0.79	295	30866	2.20	291	900
1994	1780	<b>1RQ7634-5 4 -0C 0</b>	495	96.1	0.79	325	34339	2.20	318	900
2195	1960	<b>1RQ7636-5 4 -0C 0</b>	495	95.9	0.78	365	37811	2.20	344	900

#### Position ■ of the Article No.:

#### For shaft heights 630, 710, 800 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- converter type (10th position)
- type of construction (12th position)
- housing and bearing version (15th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007. The ratings for converter operation depend on the converter and its settings and cannot be predetermined. Higher pole numbers are available on request.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}} 155 (F) = 75 \%$				$P/P_{\text{rated}} 155 (F) = 50 \%$				$P/P_{\text{rated}} 155 (F) = 25 \%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
10-pole												
1RQ7630-3...	1350	541	96.7	0.81	900	473	96.7	0.78	450	376	96.4	0.68
1RQ7632-3...	1500	541	96.7	0.81	1000	473	96.7	0.78	500	376	96.4	0.67
1RQ7634-3...	1650	541	96.8	0.82	1100	473	96.8	0.79	550	376	96.5	0.69
1RQ7636-3...	1800	541	96.8	0.82	1200	473	96.8	0.79	600	376	96.5	0.69
1RQ7710-3...	1989	541	96.4	0.84	1328	474	96.2	0.81	665	376	95.5	0.71
1RQ7712-3...	2214	541	96.4	0.84	1479	474	96.2	0.81	740	376	95.5	0.71
1RQ7714-3...	2439	541	96.5	0.85	1629	474	96.3	0.82	816	376	95.6	0.73
1RQ7716-3...	2664	541	96.6	0.85	1780	474	96.3	0.82	891	376	95.7	0.73
12-pole												
1RQ7630-5...	1080	450	96.1	0.76	720	394	96.0	0.71	360	313	95.4	0.58
1RQ7632-5...	1200	450	96.1	0.77	800	394	96.0	0.72	400	313	95.5	0.60
1RQ7634-5...	1335	450	96.2	0.77	890	394	96.1	0.72	445	313	95.6	0.60
1RQ7636-5...	1470	450	96.3	0.76	980	394	96.2	0.72	490	313	95.7	0.59

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Selection and ordering data

The following data also apply to explosion-protected motors 1SB7 (Ex pxb) and 1SG7 (Ex ec).

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)								
IEC			Rated speed	Efficiency	Power factor	Rated current at 6 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>	
$P_{\text{rated}}$ 155 (F)	$P_{\text{rated}}$ 130 (B)		$n_{\text{rated}}$	$\eta$	$\cos \varphi$	$I_{\text{rated}}$	$T_{\text{rated}}$	$T_{\text{B}}/T_{\text{rated}}$	J	$n_{\text{max}}$	
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm	
<b>Up to 6.6 kV, 50 Hz</b>											
4-pole											
11700 <sup>2)</sup>	10500	<b>1RQ7800-4-0-0C-0</b>	1494	97.5	0.92	1120	67118	2.80	520.0	1500	
12800 <sup>2)</sup>	11500	<b>1RQ7802-4-0-0C-0</b>	1494	97.6	0.91	1240	73511	2.90	575.0	1500	
14000 <sup>2)</sup>	12500	<b>1RQ7804-4-0-0C-0</b>	1495	97.6	0.91	1360	79849	2.90	625.0	1500	
15000 <sup>2)</sup>	13400	<b>1RQ7806-4-0-0C-0</b>	1495	97.7	0.92	1440	85599	3.00	685.0	1500	
		<b>Position ■ of the Article No.:</b>									
		<b>For shaft heights 630, 710, 800 mm:</b>									
		Refer to the article number structure on <a href="#">Page 1/5</a> for:									
		- cooling method (9th position)									
		- converter type (10th position)									
		- voltage code (11th position)									
		- housing and bearing version (15th position)									

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details see [Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
4-pole												
1RQ7800-4...	7800	1357	97.4	0.92	5200	1187	97.3	0.91	2600	943	96.6	0.86
1RQ7802-4...	8600	1357	97.5	0.91	5700	1188	97.3	0.90	2800	943	96.6	0.85
1RQ7804-4...	9300	1358	97.5	0.91	6200	1188	97.3	0.90	3100	943	96.6	0.84
1RQ7806-4...	10000	1358	97.6	0.91	6700	1188	97.5	0.90	3300	943	96.8	0.85

## Motors for converter operation

Converter with non-sinusoidal output

### Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SB7 (Ex pxb) and 1SG7 (Ex ec).

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)								
IEC			Rated speed	Efficiency	Power factor	Rated current at 10 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>	
$P_{\text{rated}}$ 155 (F)	$P_{\text{rated}}$ 130 (B)		$n_{\text{rated}}$	$\eta$	$\cos \varphi$	$I_{\text{rated}}$	$T_{\text{rated}}$	$T_{\text{B}}/T_{\text{rated}}$	J	$n_{\text{max}}$	
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm	
<b>9 ... 11 kV, 50 Hz</b>											
4-pole											
10700 <sup>2)</sup>	9600	<b>1RQ7800-4■■■■ 0-0C■ 0</b>	1494	97.3	0.91	630	61365	2.50	520.0	1500	
11600 <sup>2)</sup>	10400	<b>1RQ7802-4■■■■ 0-0C■ 0</b>	1495	97.5	0.91	680	66435	2.70	570.0	1500	
12500 <sup>2)</sup>	11200	<b>1RQ7804-4■■■■ 0-0C■ 0</b>	1495	97.5	0.92	720	71545	2.70	625.0	1500	
13400 <sup>2)</sup>	12000	<b>1RQ7806-4■■■■ 0-0C■ 0</b>	1495	97.6	0.92	770	76656	2.80	685.0	1500	
		<b>Position ■ of the Article No.:</b>									
		<b>For shaft heights 630, 710, 800 mm:</b>									
		Refer to the article number structure on <a href="#">Page 1/5</a> for:									
		- cooling method (9th position)									
		- converter type (10th position)									
		- voltage code (11th position)									
		- housing and bearing version (15th position)									

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}} 155 (F) = 75 \%$				$P/P_{\text{rated}} 155 (F) = 50 \%$				$P/P_{\text{rated}} 155 (F) = 25 \%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
4-pole												
1RQ7800-4...	7200	1357	97.3	0.92	4800	1187	97.2	0.91	2400	943	96.5	0.88
1RQ7802-4...	7800	1358	97.4	0.91	5200	1188	97.2	0.90	2600	943	96.5	0.86
1RQ7804-4...	8400	1358	97.5	0.92	5600	1188	97.3	0.91	2800	943	96.6	0.86
1RQ7806-4...	9000	1358	97.5	0.92	6000	1188	97.3	0.90	3000	943	96.7	0.86

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Selection and ordering data

The following data also apply to explosion-protected motors 1SB6 (Ex pxb) and 1SG6 (Ex ec).

Rated power  $P_{\text{rated}}$ 155 (F) kW	Low voltage motor SIMOTICS HV M  Article No.	Operating data at rated output for utilization 155 (F)							
		Rated speed	Efficiency	Power factor	Rated current 690 V	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
		$n_{\text{rated}}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$I_{\text{rated}}$ A	$T_{\text{rated}}$ Nm	$T_{\text{B}}/T_{\text{rated}}$ [-]	J kgm <sup>2</sup>	$n_{\text{max}}$ rpm
<b>690 V, 60 Hz</b>									
2-pole									
1240	<b>1RQ6450-2JP10</b>	3583	95.2	0.90	1220	3309	2.40	13	3600 <sup>2)</sup>
1300	<b>1RQ6452-2JP10</b>	3582	95.4	0.92	1240	3470	2.40	14	3600 <sup>2)</sup>
1400	<b>1RQ6454-2JP10</b>	3582	95.4	0.92	1340	3734	2.40	16	3600 <sup>2)</sup>
1700	<b>1RQ6456-2JP10</b>	3587	96.1	0.92	1600	4530	2.60	18	3600 <sup>2)</sup>
1940	<b>1RQ6500-2JP10</b>	3581	96.1	0.91	1860	5173	2.65	20	3600 <sup>2)</sup>
2050	<b>1RQ6502-2JP10</b>	3581	96.2	0.92	1940	5467	2.65	22	3600 <sup>2)</sup>
2450	<b>1RQ6504-2JP10</b>	3583	96.5	0.92	2320	6530	2.75	25	3600 <sup>2)</sup>
4-pole									
1340	<b>1RQ6450-4JP1</b> ■	1786	95.5	0.88	1340	7174	2.40	20	1800
1410	<b>1RQ6452-4JP1</b> ■	1785	95.6	0.89	1380	7553	2.30	22	1800
1590	<b>1RQ6454-4JP1</b> ■	1787	95.9	0.89	1560	8509	2.40	25	1800
1740	<b>1RQ6456-4JP1</b> ■	1784	95.9	0.90	1680	9329	2.10	29	1800
2000 <sup>3)</sup>	<b>1RQ6500-4JP10</b>	1787	95.9	0.92	1900	10688	2.60	42	1800
2100 <sup>3)</sup>	<b>1RQ6502-4JP10</b>	1785	95.9	0.92	2000	11234	2.30	46	1800
2500 <sup>3)</sup>	<b>1RQ6504-4JP10</b>	1787	96.3	0.92	2360	13359	2.55	52	1800
<b>Position ■ of the Article No.:</b>  <b>For shaft heights 450, 500, 560 mm:</b> Refer to the article number structure on <a href="#">Page 1/3</a> for: - type of construction (12th position)									

#### Note:

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

<sup>3)</sup> Data of vertical motors (IM V1) on request.



## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
<b>2-pole</b>												
1RQ6450-2...	930	3257	95.4	0.90	620	2846	95.3	0.89	310	2262	95.0	0.83
1RQ6452-2...	975	3256	95.6	0.92	650	2846	95.6	0.92	325	2262	95.4	0.88
1RQ6454-2...	1050	3257	95.7	0.92	700	2846	95.7	0.92	350	2262	95.5	0.88
1RQ6456-2...	1275	3260	96.2	0.91	850	2848	96.1	0.90	425	2263	95.8	0.83
1RQ6500-2...	1455	3257	96.1	0.89	970	2847	96.1	0.87	485	2262	95.8	0.77
1RQ6502-2...	1538	3257	96.2	0.91	1025	2847	96.2	0.89	513	2262	96.0	0.81
1RQ6504-2...	1838	3258	96.6	0.91	1225	2848	96.5	0.88	613	2262	96.3	0.80
<b>4-pole</b>												
1RQ6450-4...	1005	1624	95.6	0.86	670	1421	95.6	0.84	335	1130	95.2	0.75
1RQ6452-4...	1058	1624	95.9	0.89	705	1420	95.9	0.88	353	1129	95.6	0.82
1RQ6454-4...	1193	1625	96.1	0.89	795	1421	96.0	0.87	398	1130	95.7	0.81
1RQ6456-4...	1306	1624	96.2	0.90	870	1420	96.3	0.90	435	1129	96.2	0.86
1RQ6500-4...	1500	1626	96.0	0.91	1000	1422	96.1	0.89	500	1130	95.9	0.81
1RQ6502-4...	1576	1625	96.0	0.91	1050	1421	96.1	0.90	525	1129	96.1	0.84
1RQ6504-4...	1876	1626	96.4	0.91	1250	1422	96.5	0.89	625	1130	96.3	0.82

## Motors for converter operation

Converter with non-sinusoidal output

### Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SB6 (Ex pxb) and 1SG6 (Ex ec).

Rated power  IEC  $P_{\text{rated}}$ 155 (F) kW	Low voltage motor SIMOTICS HV M  Article No.	Operating data at rated output for utilization 155 (F)							
		Rated speed	Efficiency	Power factor	Rated current 690 V	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
		$n_{\text{rated}}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$I_{\text{rated}}$ A	$T_{\text{rated}}$ Nm	$T_{\text{B}}/T_{\text{rated}}$ [-]	J kgm <sup>2</sup>	$n_{\text{max}}$ rpm
<b>690 V, 60 Hz</b>									
<b>6-pole</b>									
1040	<b>1RQ6450-6JP1</b> ■	1190	95.7	0.86	1060	8350	2.30	26	1200
1130	<b>1RQ6452-6JP1</b> ■	1191	95.9	0.85	1160	9070	2.20	29	1200
1270	<b>1RQ6454-6JP1</b> ■	1191	96.1	0.86	1280	10192	2.30	32	1200
1360	<b>1RQ6456-6JP1</b> ■	1193	96.3	0.84	1400	10905	2.30	37	1200
1800	<b>1RQ6500-6JP1</b> ■	1188	96.1	0.86	1820	14470	1.85	56	1500
2000	<b>1RQ6502-6JP1</b> ■	1190	96.3	0.86	2040	16050	2.05	62	1500
2100	<b>1RQ6504-6JP1</b> ■	1190	96.4	0.87	2080	16853	2.05	69	1500
2350	<b>1RQ6506-6JP1</b> ■	1191	96.6	0.86	2360	18843	2.25	77	1500
2850	<b>1RQ6560-6JP1</b> ■	1192	96.6	0.87	3x950 <sup>2)</sup>	22833	2.50	108	1300
3100	<b>1RQ6562-6JP1</b> ■	1190	96.6	0.88	3x1020 <sup>2)</sup>	24878	2.25	119	1300
<b>8-pole</b>									
740	<b>1RQ6450-8JP1</b> ■	893	95.1	0.83	780	7922	2.30	32	1200
820	<b>1RQ6452-8JP1</b> ■	893	95.2	0.84	860	8783	2.30	36	1200
910	<b>1RQ6454-8JP1</b> ■	893	95.5	0.84	950	9739	2.40	40	1200
1000	<b>1RQ6456-8JP1</b> ■	893	95.6	0.85	1020	10704	2.30	46	1200
1300	<b>1RQ6500-8JP1</b> ■	892	95.7	0.84	1360	13918	1.80	69	1350
1440	<b>1RQ6502-8JP1</b> ■	892	95.9	0.84	1500	15417	1.85	76	1350
1600	<b>1RQ6504-8JP1</b> ■	892	96.0	0.84	1660	17130	1.90	85	1350
1800	<b>1RQ6506-8JP1</b> ■	893	96.2	0.85	1840	19250	2.05	94	1350
2000	<b>1RQ6560-8JP1</b> ■	893	96.6	0.84	2080	21389	2.30	128	1350
2350	<b>1RQ6562-8JP1</b> ■	893	96.7	0.84	2440	25132	2.45	141	1350
2600	<b>1RQ6564-8JP1</b> ■	893	96.7	0.85	4x660 <sup>2)</sup>	27805	2.25	156	1350
2850	<b>1RQ6566-8JP1</b> ■	893	96.8	0.85	4x720 <sup>2)</sup>	30479	2.45	173	1350

**Position ■  
of the Article No.:**

**For shaft heights  
450, 500, 560 mm:**

Refer to the article number  
structure on [Page 1/3](#) for:

- type of construction  
(12th position)

#### Note:

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Different number of parallel winding systems possible.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
6-pole												
1RQ6450-6...	780	1083	96.0	0.85	520	947	96.1	0.82	260	753	95.8	0.72
1RQ6452-6...	848	1083	96.1	0.84	565	947	96.1	0.80	283	753	95.8	0.70
1RQ6454-6...	953	1083	96.3	0.85	635	947	96.4	0.83	318	753	96.1	0.73
1RQ6456-6...	1020	1084	96.5	0.82	680	948	96.4	0.79	340	754	96.1	0.68
1RQ6500-6...	1350	1080	96.3	0.86	900	945	96.3	0.85	450	752	96.1	0.79
1RQ6502-6...	1500	1082	96.4	0.85	1000	946	96.4	0.83	500	752	96.1	0.76
1RQ6504-6...	1575	1082	96.5	0.86	1050	946	96.5	0.85	525	752	96.2	0.78
1RQ6506-6...	1763	1083	96.6	0.86	1175	947	96.6	0.83	588	753	96.2	0.75
1RQ6560-6...	2138	1083	96.7	0.87	1425	947	96.6	0.85	713	753	96.3	0.78
1RQ6562-6...	2325	1082	96.7	0.88	1550	946	96.8	0.87	775	753	96.6	0.82
8-pole												
1RQ6450-8...	555	812	95.2	0.80	370	710	95.1	0.76	185	565	94.4	0.63
1RQ6452-8...	615	812	95.4	0.82	410	710	95.4	0.79	205	565	94.8	0.67
1RQ6454-8...	683	813	95.5	0.81	455	710	95.5	0.77	228	565	94.8	0.65
1RQ6456-8...	750	813	95.8	0.83	500	710	95.7	0.79	250	565	95.1	0.68
1RQ6500-8...	975	811	95.9	0.84	650	709	95.9	0.82	325	564	95.5	0.74
1RQ6502-8...	1080	811	96.0	0.84	720	709	96.0	0.82	360	564	95.6	0.74
1RQ6504-8...	1200	811	96.1	0.84	800	709	96.1	0.82	400	564	95.7	0.74
1RQ6506-8...	1350	812	96.3	0.84	900	710	96.2	0.81	450	564	95.7	0.72
1RQ6560-8...	1500	812	96.6	0.84	1000	710	96.6	0.81	500	564	96.3	0.72
1RQ6562-8...	1763	812	96.8	0.83	1175	710	96.7	0.80	588	565	96.3	0.70
1RQ6564-8...	1950	812	96.8	0.85	1300	710	96.8	0.83	650	564	96.5	0.75
1RQ6566-8...	2138	812	96.9	0.84	1425	710	96.9	0.81	713	565	96.5	0.72

## Motors for converter operation

Converter with non-sinusoidal output

### Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SB6/1SB7 (Ex pxb) and 1SG6/1SB7 (Ex ec).

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RQ6 at rated output for utilization 155 (F), for 1RQ7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{\text{rated}}$ 155 (F)	$P_{\text{rated}}$ 130 (B)		$n_{\text{rated}}$	$\eta$	$\cos \varphi$	$I_{\text{rated}}$	$T_{\text{rated}}$	$T_{\text{B}}/T_{\text{rated}}$	J	$n_{\text{max}}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 60 Hz</b>										
2-pole										
1280	- <sup>4)</sup>	<b>1RQ6450-2JS30</b>	3579	95.1	0.90	210	3418	2.50	13	3600 <sup>2)</sup>
1420	- <sup>4)</sup>	<b>1RQ6452-2JS30</b>	3581	95.6	0.91	225	3788	2.60	14	3600 <sup>2)</sup>
1580	- <sup>4)</sup>	<b>1RQ6454-2JS30</b>	3580	95.8	0.93	245	4217	2.60	16	3600 <sup>2)</sup>
1740	- <sup>4)</sup>	<b>1RQ6456-2JS30</b>	3586	96.0	0.92	275	4634	3.50	18	3600 <sup>2)</sup>
2250	1980	<b>1RQ6500-2JS30</b>	3578	96.1	0.90	360	6005	2.50	20	3600 <sup>2)</sup>
2400	2112	<b>1RQ6502-2JS30</b>	3578	96.2	0.91	380	6405	2.45	22	3600 <sup>2)</sup>
2800	2464	<b>1RQ6504-2JS30</b>	3577	96.5	0.92	440	7475	2.40	25	3600 <sup>2)</sup>
2950	2596	<b>1RQ6506-2JS30</b>	3578	96.6	0.92	460	7873	2.50	27	3600 <sup>2)</sup>
3500	3150	<b>1RQ6560-2JS30</b>	3579	96.3	0.90	560	9339	1.95	39	3600 <sup>2)</sup>
3900	3510	<b>1RQ6562-2JS30</b>	3581	96.5	0.91	620	10400	2.15	43	3600 <sup>2)</sup>
4400	3960	<b>1RQ6564-2JS30</b>	3583	96.7	0.92	690	11727	2.35	49	3600 <sup>2)</sup>
4900	4410	<b>1RQ6566-2JS30</b>	3585	96.9	0.93	750	13052	2.75	54	3600 <sup>2)</sup>
5610	5100	<b>1RQ7630-2 ■ ■ 30-0CJ0</b>	3585	96.6	0.89	820	13585	2.30	74	3600
6160	5600	<b>1RQ7632-2 ■ ■ 30-0CJ0</b>	3586	96.7	0.90	890	14912	2.40	83	3600
6765	6150	<b>1RQ7634-2 ■ ■ 30-0CJ0</b>	3588	97.0	0.91	970	16368	2.90	91	3600
7480	6800	<b>1RQ7636-2 ■ ■ 30-0CJ0</b>	3588	97.1	0.92	1060	18098	3.10	100	3600
8360	7600	<b>1RQ7710-2 ■ ■ 30-0CJ0</b>	3589	96.1	0.92	1200	20221	2.35	147	3600
9350	8500	<b>1RQ7712-2 ■ ■ 30-0CJ0</b>	3588	96.3	0.92	1340	22622	2.35	158	3600
10340	9400	<b>1RQ7714-2 ■ ■ 30-0CJ0</b>	3588	96.6	0.93	1460	25018	2.45	174	3600
11330	10300	<b>1RQ7716-2 ■ ■ 30-0CJ0</b>	3588	96.8	0.94	1580	27413	2.45	189	3600

**Position ■  
of the Article No.:**

**For shaft heights  
630, 710, 800 mm:**

Refer to the article number  
structure on [Page 1/5](#) for:

- cooling method  
(9th position)
- converter type  
(10th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

<sup>3)</sup> Data of vertical motors (IM V1) on request.

<sup>4)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
2-pole												
1RQ6450-2...	960	3254	95.2	0.90	640	2845	95.1	0.89	320	2261	94.8	0.83
1RQ6452-2...	1065	3256	95.6	0.91	710	2846	95.6	0.90	355	2262	95.2	0.85
1RQ6454-2...	1185	3255	95.9	0.93	790	2845	95.9	0.92	395	2261	95.7	0.89
1RQ6456-2...	1305	3259	96.0	0.91	871	2848	95.8	0.89	435	2263	95.3	0.81
1RQ6500-2...	1688	3255	96.1	0.89	1125	2846	96.1	0.87	563	2261	95.8	0.78
1RQ6502-2...	1801	3255	96.3	0.90	1200	2846	96.3	0.88	600	2261	96.0	0.81
1RQ6504-2...	2101	3254	96.6	0.91	1400	2846	96.6	0.91	700	2261	96.5	0.86
1RQ6506-2...	2213	3255	96.7	0.92	1475	2846	96.7	0.91	738	2261	96.5	0.85
1RQ6560-2...	2627	3256	96.4	0.90	1751	2847	96.4	0.89	875	2262	96.2	0.84
1RQ6562-2...	2926	3258	96.6	0.91	1951	2848	96.6	0.90	975	2263	96.4	0.85
1RQ6564-2...	3301	3259	96.8	0.92	2200	2849	96.8	0.91	1100	2263	96.6	0.86
1RQ6566-2...	3676	3260	97.0	0.92	2450	2850	96.9	0.91	1226	2263	96.7	0.84
1RQ7630-2...	3827	3258	96.6	0.90	2551	2848	96.6	0.90	1275	2262	96.4	0.87
1RQ7632-2...	4202	3259	96.8	0.90	2801	2849	96.8	0.90	1400	2263	96.6	0.88
1RQ7634-2...	4616	3261	97.0	0.91	3075	2850	96.9	0.91	1540	2263	96.7	0.87
1RQ7636-2...	5101	3261	97.1	0.92	3400	2850	97.1	0.91	1700	2264	96.9	0.87
1RQ7710-2...	5702	3261	96.0	0.92	3801	2849	95.8	0.92	1900	2264	95.2	0.89
1RQ7712-2...	6375	3260	96.2	0.93	4250	2849	96.0	0.93	2125	2263	95.6	0.91
1RQ7714-2...	7052	3260	96.5	0.94	4701	2849	96.4	0.94	2351	2264	95.9	0.92
1RQ7716-2...	7728	3260	96.7	0.94	5152	2849	96.5	0.94	2576	2264	96.1	0.92

## Motors for converter operation

### Converter with non-sinusoidal output

#### Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

##### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RQ6 at rated output for utilization 155 (F), for 1RQ7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{\text{rated}}$ 155 (F)	$P_{\text{rated}}$ 130 (B)		$n_{\text{rated}}$	$\eta$	$\cos \varphi$	$I_{\text{rated}}$	$T_{\text{rated}}$	$T_B/T_{\text{rated}}$	J	$n_{\text{max}}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 60 Hz</b>										
4-pole										
1340	- <sup>4)</sup>	<b>1RQ6450-4JS3</b>	1784	95.4	0.88	220	7177	2.40	20	1800
1410	- <sup>4)</sup>	<b>1RQ6452-4JS3</b>	1785	95.6	0.89	230	7546	2.40	22	1800
1590	- <sup>4)</sup>	<b>1RQ6454-4JS3</b>	1785	95.8	0.90	255	8509	2.50	25	1800
1740	- <sup>4)</sup>	<b>1RQ6456-4JS3</b>	1785	95.9	0.91	275	9313	2.70	29	1800
2600 <sup>3)</sup>	2288	<b>1RQ6500-4JS30</b>	1786	96.1	0.90	415	13902	2.40	42	1800
2700 <sup>3)</sup>	2376	<b>1RQ6502-4JS30</b>	1786	96.2	0.91	430	14436	2.45	46	1800
3000 <sup>3)</sup>	2640	<b>1RQ6504-4JS30</b>	1788	96.4	0.91	475	16022	2.60	52	1800
3200 <sup>3)</sup>	2816	<b>1RQ6506-4JS30</b>	1787	96.4	0.92	500	17100	2.40	56	1800
3700 <sup>3)</sup>	3330	<b>1RQ6560-4JS30</b>	1791	96.7	0.91	580	19728	2.50	84	1800
4100 <sup>3)</sup>	3690	<b>1RQ6562-4JS30</b>	1792	96.9	0.91	650	21848	2.50	94	1800
4600 <sup>3)</sup>	4140	<b>1RQ6564-4JS30</b>	1791	97.0	0.91	720	24526	2.35	105	1800
5100 <sup>3)</sup>	4590	<b>1RQ6566-4JS30</b>	1791	97.2	0.92	790	27192	2.40	115	1800
5824 <sup>3)</sup>	5200	<b>1RQ7630-4 ■ ■ ■ 30-0C ■ ■ 0</b>	1792	97.4	0.88	840	27710	2.60	145	1800
6440 <sup>3)</sup>	5750	<b>1RQ7632-4 ■ ■ ■ 30-0C ■ ■ 0</b>	1793	97.5	0.89	920	30624	2.85	160	1800
7112 <sup>3)</sup>	6350	<b>1RQ7634-4 ■ ■ ■ 30-0C ■ ■ 0</b>	1793	97.6	0.89	1020	33819	2.95	178	1800
7840 <sup>3)</sup>	7000	<b>1RQ7636-4 ■ ■ ■ 30-0C ■ ■ 0</b>	1792	97.7	0.89	1120	37302	2.65	194	1800
8680 <sup>3)</sup>	7750	<b>1RQ7710-4 ■ ■ ■ 30-0C ■ ■ 0</b>	1793	97.3	0.90	1220	41276	2.45	261	1800
9632 <sup>3)</sup>	8600	<b>1RQ7712-4 ■ ■ ■ 30-0C ■ ■ 0</b>	1793	97.4	0.91	1340	45803	2.45	286	1800
10696 <sup>3)</sup>	9550	<b>1RQ7714-4 ■ ■ ■ 30-0C ■ ■ 0</b>	1793	97.5	0.92	1480	50862	2.70	321	1800
11872 <sup>3)</sup>	10600	<b>1RQ7716-4 ■ ■ ■ 30-0C ■ ■ 0</b>	1793	97.6	0.92	1640	56454	2.70	362	1800
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft heights 450, 500, 560 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/3</a> for:								
		- type of construction (12th position)								
		<b>For shaft heights 630, 710, 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/5</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								
		- housing and bearing version (15th position)								

##### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

<sup>3)</sup> Data of vertical motors (IM V1) on request.

<sup>4)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type  
(repeated)

Partial load data for square-law torque drive

 $P/P_{\text{rated}}$  155 (F) = 75 % $P/P_{\text{rated}}$  155 (F) = 50 % $P/P_{\text{rated}}$  155 (F) = 25 % $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$ 

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Square-law torque drive

4-pole

1RQ6450-4...	1005	1623	95.6	0.88	670	1420	95.6	0.87	335	1129	95.4	0.80
1RQ6452-4...	1058	1624	95.7	0.88	705	1420	95.8	0.87	353	1130	95.5	0.81
1RQ6454-4...	1193	1624	96.0	0.90	795	1420	96.0	0.89	398	1130	95.8	0.83
1RQ6456-4...	1305	1624	96.1	0.91	870	1420	96.2	0.91	435	1130	96.1	0.86
1RQ6500-4...	1951	1626	96.1	0.89	1300	1422	96.1	0.86	650	1130	95.8	0.75
1RQ6502-4...	2025	1626	96.2	0.90	1350	1422	96.2	0.87	676	1130	95.9	0.78
1RQ6504-4...	2250	1627	96.4	0.90	1500	1423	96.4	0.86	751	1130	96.0	0.76
1RQ6506-4...	2401	1626	96.5	0.91	1600	1422	96.5	0.89	801	1130	96.3	0.82
1RQ6560-4...	2776	1629	96.7	0.89	1850	1424	96.7	0.87	926	1131	96.3	0.77
1RQ6562-4...	3076	1629	96.9	0.90	2050	1424	96.9	0.87	1026	1131	96.5	0.78
1RQ6564-4...	3451	1629	97.1	0.91	2300	1424	97.1	0.89	1151	1131	96.8	0.81
1RQ6566-4...	3826	1629	97.2	0.91	2550	1424	97.2	0.89	1276	1131	97.0	0.82
1RQ7630-4...	3901	1629	97.4	0.88	2600	1424	97.4	0.87	1301	1131	97.2	0.82
1RQ7632-4...	4316	1630	97.5	0.89	2877	1424	97.4	0.87	1441	1131	97.2	0.81
1RQ7634-4...	4765	1630	97.6	0.89	3177	1424	97.5	0.87	1591	1131	97.2	0.82
1RQ7636-4...	5251	1629	97.6	0.89	3500	1424	97.6	0.88	1751	1131	97.4	0.84
1RQ7710-4...	5818	1629	97.2	0.91	3880	1424	97.0	0.90	1942	1131	96.6	0.86
1RQ7712-4...	6455	1629	97.3	0.92	4305	1424	97.2	0.92	2155	1131	96.8	0.88
1RQ7714-4...	7167	1629	97.4	0.92	4779	1424	97.3	0.92	2393	1131	96.9	0.88
1RQ7716-4...	7955	1629	97.6	0.92	5305	1424	97.4	0.92	2656	1131	97.1	0.89

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## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RQ6 at rated output for utilization 155 (F), for 1RQ7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 60 Hz</b>										
6-pole										
1040	– <sup>2)</sup>	<b>1RQ6450-6JS3</b>	1190	95.7	0.86	176	8354	2.40	26	1200
1130	– <sup>2)</sup>	<b>1RQ6452-6JS3</b>	1191	95.9	0.86	190	9071	2.40	29	1200
1270	– <sup>2)</sup>	<b>1RQ6454-6JS3</b>	1191	96.1	0.86	215	10187	2.50	32	1200
1360	– <sup>2)</sup>	<b>1RQ6456-6JS3</b>	1192	96.2	0.85	230	10902	2.50	37	1200
1780	1600	<b>1RQ6500-6JS3</b>	1190	96.1	0.86	300	14285	2.00	56	1500
2000	1800	<b>1RQ6502-6JS3</b>	1190	96.2	0.86	335	16050	2.05	62	1500
2200	2000	<b>1RQ6504-6JS3</b>	1190	96.4	0.86	370	17655	2.10	69	1500
2450	2200	<b>1RQ6506-6JS3</b>	1191	96.4	0.86	410	19645	2.25	77	1500
3050	2700	<b>1RQ6560-6JS3</b>	1189	96.3	0.87	510	24497	2.00	108	1300
3450	3050	<b>1RQ6562-6JS3</b>	1190	96.6	0.87	570	27687	2.15	119	1300
3800	3350	<b>1RQ6564-6JS3</b>	1190	96.7	0.88	620	30496	2.25	132	1300
4100	3600	<b>1RQ6566-6JS3</b>	1192	96.9	0.88	670	32848	2.55	146	1300
4368	3900	<b>1RQ7630-6■3■-0C■0</b>	1194	97.0	0.84	660	31191	2.70	207	1600
4816	4300	<b>1RQ7632-6■3■-0C■0</b>	1195	97.1	0.83	740	34361	2.85	229	1600
5376	4800	<b>1RQ7634-6■3■-0C■0</b>	1195	97.2	0.84	820	38357	2.90	250	1600
5936	5300	<b>1RQ7636-6■3■-0C■0</b>	1195	97.3	0.85	890	42353	2.80	271	1600
6496	5800	<b>1RQ7710-6■3■-0C■0</b>	1196	96.9	0.85	980	46309	2.65	348	1600
7056	6300	<b>1RQ7712-6■3■-0C■0</b>	1196	97.0	0.85	1060	50301	2.65	395	1600
7616	6800	<b>1RQ7714-6■3■-0C■0</b>	1196	97.1	0.86	1140	54294	2.85	449	1600
8232	7350	<b>1RQ7716-6■3■-0C■0</b>	1196	97.2	0.87	1200	58685	2.85	496	1600
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft heights 450, 500, 560 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/3</a> for:								
		- type of construction (12th position)								
		<b>For shaft heights 630, 710, 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/5</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								
		- type of construction (12th position)								
		- housing and bearing version (15th position)								

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#)

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Utilization 130 (B) on request.



## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
6-pole												
1RQ6450-6...	780	1082	95.9	0.85	520	947	96.0	0.83	260	753	95.8	0.74
1RQ6452-6...	848	1083	96.1	0.85	565	947	96.2	0.82	283	753	96.0	0.73
1RQ6454-6...	953	1083	96.2	0.85	635	947	96.3	0.82	318	753	96.0	0.72
1RQ6456-6...	1020	1084	96.4	0.84	680	948	96.4	0.81	340	753	96.1	0.71
1RQ6500-6...	1335	1082	96.2	0.85	890	946	96.2	0.84	445	752	95.9	0.76
1RQ6502-6...	1500	1082	96.3	0.86	1000	946	96.3	0.84	500	752	96.0	0.77
1RQ6504-6...	1650	1082	96.4	0.86	1100	946	96.4	0.84	550	752	96.1	0.76
1RQ6506-6...	1838	1083	96.5	0.85	1225	947	96.4	0.83	613	753	96.0	0.74
1RQ6560-6...	2288	1081	96.5	0.87	1525	945	96.6	0.87	763	752	96.5	0.83
1RQ6562-6...	2588	1082	96.7	0.87	1725	946	96.8	0.87	863	752	96.6	0.82
1RQ6564-6...	2850	1082	96.8	0.88	1900	946	96.9	0.87	950	753	96.7	0.82
1RQ6566-6...	3075	1084	97.0	0.87	2050	947	96.9	0.86	1025	753	96.6	0.78
1RQ7630-6...	2925	1086	96.9	0.83	1952	949	96.8	0.79	976	754	96.3	0.70
1RQ7632-6...	3225	1086	97.0	0.82	2152	949	96.9	0.79	1075	754	96.4	0.68
1RQ7634-6...	3600	1086	97.1	0.83	2402	949	96.9	0.79	1200	754	96.5	0.69
1RQ7636-6...	3975	1086	97.2	0.83	2652	949	97.1	0.80	1325	754	96.6	0.71
1RQ7710-6...	4352	1086	96.8	0.84	2902	949	96.5	0.80	1453	754	95.7	0.70
1RQ7712-6...	4726	1087	96.9	0.84	3152	949	96.6	0.81	1577	754	95.8	0.71
1RQ7714-6...	5102	1087	96.9	0.85	3402	950	96.6	0.82	1703	754	95.9	0.72
1RQ7716-6...	5513	1087	96.9	0.85	3676	950	96.6	0.82	1840	755	95.9	0.73

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RQ6 at rated output for utilization 155 (F), for 1RQ7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm

#### 4.16 kV, 60 Hz

8-pole

740	– <sup>2)</sup>	<b>1RQ6450-8JS3</b>	892	94.9	0.84	128	7927	2.30	32	1200
820	– <sup>2)</sup>	<b>1RQ6452-8JS3</b>	893	95.2	0.84	142	8778	2.40	36	1200
910	– <sup>2)</sup>	<b>1RQ6454-8JS3</b>	893	95.3	0.84	158	9739	2.40	40	1200
1000	– <sup>2)</sup>	<b>1RQ6456-8JS3</b>	893	95.5	0.84	174	10702	2.30	46	1200
1380	1240	<b>1RQ6500-8JS3</b>	892	95.6	0.84	240	14775	1.80	69	1350
1540	1380	<b>1RQ6502-8JS3</b>	892	95.6	0.84	265	16488	1.85	76	1350
1720	1540	<b>1RQ6504-8JS3</b>	892	95.8	0.84	295	18415	1.85	85	1350
1820	1640	<b>1RQ6506-8JS3</b>	893	95.9	0.84	315	19464	2.05	94	1350
2250	2000	<b>1RQ6560-8JS3</b>	891	96.3	0.84	385	24116	1.95	128	1350
2500	2200	<b>1RQ6562-8JS3</b>	892	96.5	0.84	430	26766	2.05	141	1350
2750	2400	<b>1RQ6564-8JS3</b>	893	96.6	0.85	465	29409	2.30	156	1350
3000	2650	<b>1RQ6566-8JS3</b>	892	96.7	0.85	510	32119	2.15	173	1350
3248	2900	<b>1RQ7630-8 JS3-0C 0</b>	895	96.4	0.83	500	30942	2.65	255	1350
3584	3200	<b>1RQ7632-8 JS3-0C 0</b>	896	96.5	0.82	560	34105	2.65	281	1350
3920	3500	<b>1RQ7634-8 JS3-0C 0</b>	895	96.6	0.84	600	37344	2.60	308	1350
4312	3850	<b>1RQ7636-8 JS3-0C 0</b>	895	96.7	0.84	660	41078	2.60	334	1350
4760	4250	<b>1RQ7710-8 JS3-0C 0</b>	896	96.8	0.85	720	45295	2.15	433	1125
5320	4750	<b>1RQ7712-8 JS3-0C 0</b>	896	97.0	0.86	790	50624	2.20	493	1125
5936	5300	<b>1RQ7714-8 JS3-0C 0</b>	896	97.1	0.86	880	56486	2.35	558	1125
6720	6000	<b>1RQ7716-8 JS3-0C 0</b>	896	97.1	0.85	1000	63946	2.65	616	1125

**Position ■  
of the Article No.:**

**For shaft heights  
450, 500, 560 mm:**

Refer to the article number  
structure on [Page 1/3](#) for:

- type of construction  
(12th position)

**For shaft heights  
630, 710, 800 mm:**

Refer to the article number  
structure on [Page 1/5](#) for:

- cooling method  
(9th position)

- converter type  
(10th position)

- type of construction  
(12th position)

- housing and bearing  
version (15th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type  
(repeated)

Partial load data for square-law torque drive

 $P/P_{\text{rated}}$  155 (F) = 75 % $P/P_{\text{rated}}$  155 (F) = 50 % $P/P_{\text{rated}}$  155 (F) = 25 % $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$ 

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Square-law torque drive

8-pole

1RQ6450-8...	555	812	95.0	0.83	370	710	95.1	0.80	185	565	94.6	0.69
1RQ6452-8...	615	812	95.3	0.82	410	710	95.3	0.79	205	565	94.7	0.68
1RQ6454-8...	683	812	95.4	0.83	455	710	95.4	0.79	228	565	94.9	0.68
1RQ6456-8...	750	812	95.6	0.83	500	710	95.6	0.80	250	565	95.2	0.70
1RQ6500-8...	1035	811	95.7	0.83	690	709	95.8	0.81	345	564	95.3	0.73
1RQ6502-8...	1155	811	95.7	0.84	770	709	95.7	0.81	385	564	95.3	0.73
1RQ6504-8...	1290	811	96.0	0.84	860	709	96.0	0.82	430	564	95.6	0.74
1RQ6506-8...	1365	812	96.0	0.84	910	710	96.0	0.81	455	564	95.4	0.72
1RQ6560-8...	1688	811	96.5	0.85	1125	709	96.6	0.83	563	564	96.4	0.77
1RQ6562-8...	1875	811	96.6	0.85	1250	709	96.7	0.83	625	564	96.5	0.76
1RQ6564-8...	2063	812	96.7	0.84	1375	710	96.7	0.82	688	564	96.4	0.73
1RQ6566-8...	2250	811	96.8	0.85	1500	709	96.9	0.83	750	564	96.7	0.76
1RQ7630-8...	2175	814	96.6	0.81	1451	711	96.4	0.78	725	565	95.8	0.67
1RQ7632-8...	2401	813	96.8	0.83	1600	711	96.8	0.82	801	565	96.5	0.74
1RQ7634-8...	2626	813	96.9	0.83	1750	711	96.8	0.81	876	565	96.4	0.73
1RQ7636-8...	2890	814	96.9	0.83	1927	711	96.8	0.79	965	565	96.3	0.70
1RQ7710-8...	3191	814	96.7	0.85	2128	711	96.5	0.83	1066	565	95.8	0.75
1RQ7712-8...	3566	814	96.8	0.86	2378	711	96.6	0.84	1191	565	96.0	0.76
1RQ7714-8...	3978	814	96.9	0.86	2653	712	96.7	0.83	1328	566	96.1	0.75
1RQ7716-8...	4505	814	97.0	0.86	3005	711	96.8	0.85	1504	565	96.2	0.78

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## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)								
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>	
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$	
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm	
<b>4.16 kV, 60 Hz</b>											
10-pole											
2408	2150	<b>1RQ7630-3 ■ ■ ■ 3 ■ -0C ■ 0</b>	715	96.7	0.82	375	28715	2.30	257	1080	
2688	2400	<b>1RQ7632-3 ■ ■ ■ 3 ■ -0C ■ 0</b>	715	96.7	0.83	415	32054	2.25	284	1080	
2968	2650	<b>1RQ7634-3 ■ ■ ■ 3 ■ -0C ■ 0</b>	715	96.9	0.82	465	35392	2.35	309	1080	
3248	2900	<b>1RQ7636-3 ■ ■ ■ 3 ■ -0C ■ 0</b>	715	96.9	0.83	500	38731	2.30	336	1080	
3640	3250	<b>1RQ7710-3 ■ ■ ■ 3 ■ -0C ■ 0</b>	715	96.6	0.86	540	43406	2.20	430	1125	
4032	3600	<b>1RQ7712-3 ■ ■ ■ 3 ■ -0C ■ 0</b>	715	96.6	0.86	600	48080	2.20	489	1125	
4424	3950	<b>1RQ7714-3 ■ ■ ■ 3 ■ -0C ■ 0</b>	715	96.8	0.86	660	52755	2.20	553	1125	
4816	4300	<b>1RQ7716-3 ■ ■ ■ 3 ■ -0C ■ 0</b>	715	96.8	0.86	720	57429	2.20	610	1125	
12-pole											
1926	1720	<b>1RQ7630-5 ■ ■ ■ 3 ■ -0C ■ 0</b>	595	96.2	0.78	320	27605	2.25	263	900	
2128	1900	<b>1RQ7632-5 ■ ■ ■ 3 ■ -0C ■ 0</b>	595	96.3	0.77	355	30494	2.20	290	900	
2352	2100	<b>1RQ7634-5 ■ ■ ■ 3 ■ -0C ■ 0</b>	595	96.3	0.78	390	33703	2.20	317	900	
2576	2300	<b>1RQ7636-5 ■ ■ ■ 3 ■ -0C ■ 0</b>	595	96.1	0.78	425	36913	2.25	344	900	

#### Position ■ of the Article No.:

#### For shaft heights 630, 710, 800 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- converter type (10th position)
- type of construction (12th position)
- housing and bearing version (15th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type  
(repeated)

Partial load data for square-law torque drive

 $P/P_{\text{rated}}$  155 (F) = 75 % $P/P_{\text{rated}}$  155 (F) = 50 % $P/P_{\text{rated}}$  155 (F) = 25 % $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$ 

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Square-law torque drive

10-pole

1RQ7630-3...	1615	650	96.7	0.81	1075	569	96.7	0.78	540	452	96.3	0.68
1RQ7632-3...	1800	650	96.8	0.82	1200	568	96.8	0.79	600	452	96.4	0.70
1RQ7634-3...	1990	650	96.9	0.80	1326	569	96.9	0.77	665	452	96.5	0.66
1RQ7636-3...	2175	650	96.9	0.82	1450	568	96.9	0.79	725	452	96.6	0.70
1RQ7710-3...	2440	650	96.4	0.85	1628	568	96.2	0.82	815	452	95.4	0.72
1RQ7712-3...	2703	650	96.5	0.85	1803	568	96.3	0.83	903	452	95.6	0.74
1RQ7714-3...	2966	650	96.6	0.85	1978	568	96.4	0.83	991	452	95.7	0.74
1RQ7716-3...	3228	650	96.7	0.85	2153	568	96.4	0.82	1078	452	95.7	0.73

12-pole

1RQ7630-5...	1290	541	96.2	0.76	860	473	96.1	0.71	430	376	95.5	0.58
1RQ7632-5...	1425	541	96.3	0.75	950	473	96.1	0.70	475	376	95.5	0.58
1RQ7634-5...	1575	541	96.4	0.77	1050	473	96.3	0.72	525	376	95.7	0.60
1RQ7636-5...	1725	541	96.4	0.77	1150	473	96.3	0.72	575	376	95.8	0.60

3

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Selection and ordering data

The following data also apply to explosion-protected motors 1SB7 (Ex pxb) and 1SG7 (Ex ec).

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)								
IEC			Rated speed	Efficiency	Power factor	Rated current at 6 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>	
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$	
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm	
<b>Up to 6.6 kV, 60 Hz</b>											
4-pole											
13400 <sup>2)</sup>	12000	<b>1RQ7800-4■■■■0-0C■0</b>	1794	97.3	0.91	1300	63880	2.70	520	1500	
14500 <sup>2)</sup>	13000	<b>1RQ7802-4■■■■0-0C■0</b>	1794	97.4	0.91	1420	69203	2.70	570	1500	
15600 <sup>2)</sup>	14000	<b>1RQ7804-4■■■■0-0C■0</b>	1794	97.4	0.92	1500	74526	2.70	625	1500	
16300 <sup>2)</sup>	14600	<b>1RQ7806-4■■■■0-0C■0</b>	1795	97.5	0.92	1560	77677	2.90	685	1500	
		<b>Position ■ of the Article No.:</b>									
		<b>For shaft heights 630, 710, 800 mm:</b>									
		Refer to the article number structure on <a href="#">Page 1/5</a> for:									
		- cooling method (9th position)									
		- converter type (10th position)									
		- voltage code (11th position)									
		- housing and bearing version (15th position)									

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
4-pole												
1RQ7800-4...	9000	1630	97.2	0.91	6000	1425	97.0	0.90	3000	1132	96.1	0.85
1RQ7802-4...	9700	1630	97.3	0.91	6500	1425	97.1	0.90	3200	1132	96.3	0.86
1RQ7804-4...	10500	1630	97.4	0.92	7000	1425	97.2	0.91	3500	1132	96.4	0.86
1RQ7806-4...	10900	1631	97.4	0.92	7300	1425	97.2	0.91	3600	1132	96.3	0.85

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings

Note:

For the converter driven motors with shaft heights 450 to 710 mm and cooling method IC611, the same dimension drawings apply as for line operation motors. [Refer to chapter 2.](#)

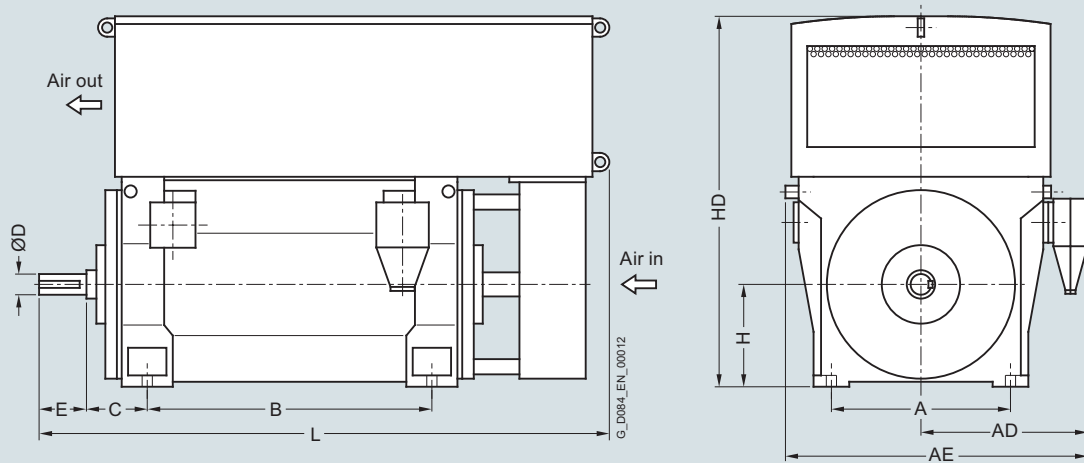


## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RQ7<sup>2)</sup> – IC611

4-pole

1RQ7800-4J..0-0CG0	25000	1700	1900	3110	2240	375	250	330	800	3620	4530 <sup>3)</sup>
1RQ7802-4J..0-0CG0	26200	1700	1900	3110	2240	375	250	330	800	3620	4530 <sup>3)</sup>
1RQ7804-4J..0-0CG0	28100	1700	1900	3110	2500	375	250	330	800	3620	4790 <sup>3)</sup>
1RQ7806-4J..0-0CG0	29400	1700	1900	3110	2500	375	250	330	800	3620	4790 <sup>3)</sup>

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

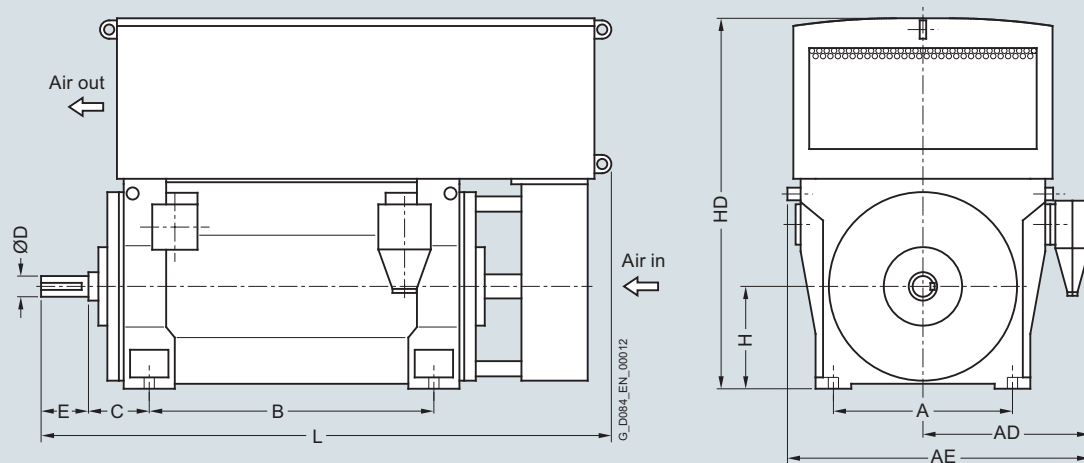
<sup>3)</sup> Including air inlet silencer.

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RQ7<sup>2)</sup> – IC611

6-pole

1RQ7800-6J..0-0CG0	25800	1700	1900	3110	2240	375	250	330	800	3620	4530 <sup>3)</sup>
1RQ7802-6J..0-0CG0	27300	1700	1900	3110	2240	375	250	330	800	3620	4530 <sup>3)</sup>
1RQ7804-6J..0-0CG0	29300	1700	1900	3110	2500	375	250	330	800	3620	4790 <sup>3)</sup>
1RQ7806-6J..0-0CG0	30800	1700	1900	3110	2500	375	250	330	800	3620	4790 <sup>3)</sup>

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

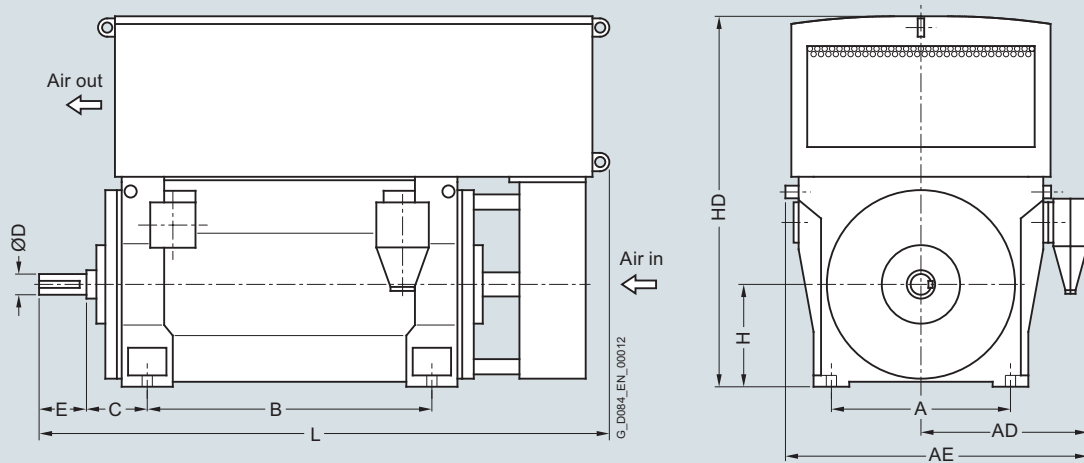
<sup>3)</sup> Including air inlet silencer.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, anti-friction bearings– 1RQ7<sup>1)</sup> – IC611</b>											
4-pole											
1RQ7800-4J..0-0CG0	25000	1700	1900	3110	2240	375	250	330	800	3620	4530 <sup>2)</sup>
1RQ7802-4J..0-0CG0	26200	1700	1900	3110	2240	375	250	330	800	3620	4530 <sup>2)</sup>
1RQ7804-4J..0-0CG0	28100	1700	1900	3110	2500	375	250	330	800	3620	4790 <sup>2)</sup>
1RQ7806-4J..0-0CG0	29400	1700	1900	3110	2500	375	250	330	800	3620	4790 <sup>2)</sup>

Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

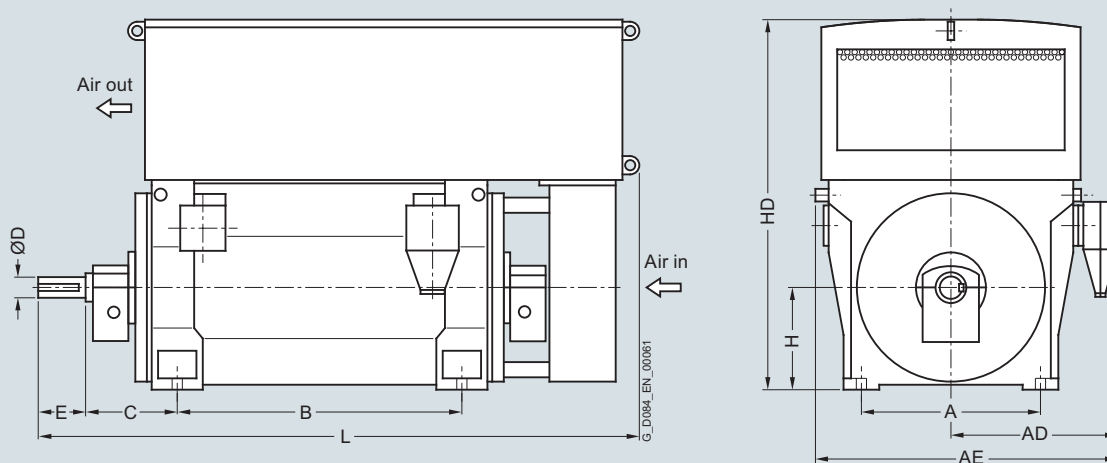
<sup>2)</sup> Including air inlet silencer.

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ7<sup>2)</sup> – IC611

4-pole

1RQ7800-4J..0-0CJ0	25400	1700	1900	3110	2240	600	250	330	800	3620	4750 <sup>3)</sup>
1RQ7802-4J..0-0CJ0	26600	1700	1900	3110	2240	600	250	330	800	3620	4750 <sup>3)</sup>
1RQ7804-4J..0-0CJ0	28500	1700	1900	3110	2500	600	250	330	800	3620	5010 <sup>3)</sup>
1RQ7806-4J..0-0CJ0	29900	1700	1900	3110	2500	600	250	330	800	3620	5010 <sup>3)</sup>

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

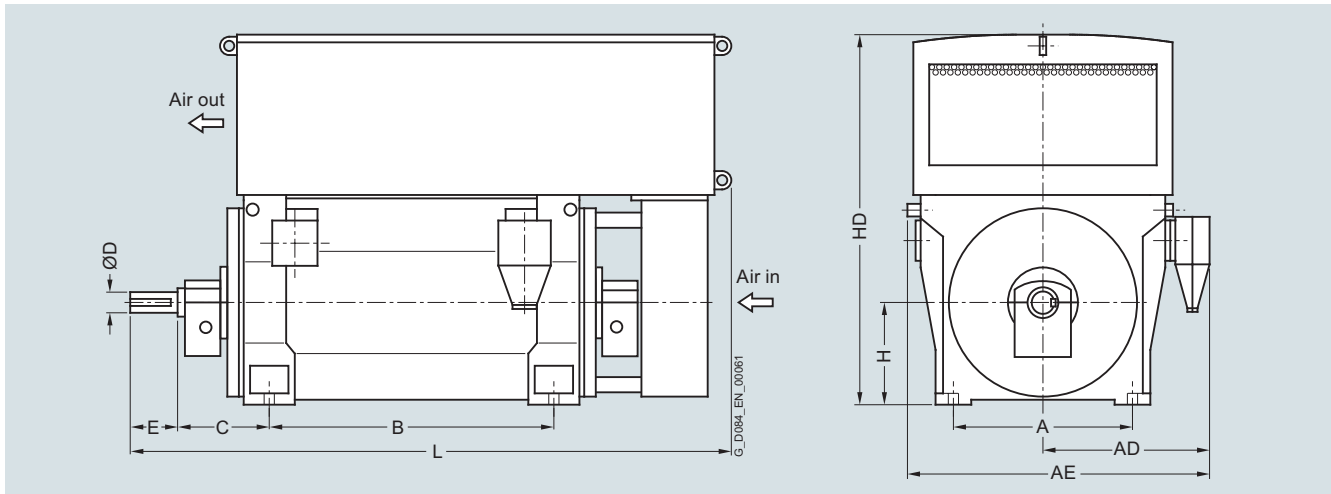
<sup>3)</sup> Including air inlet silencer.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ7<sup>2)</sup> – IC611</b>											
6-pole											
1RQ7800-6J..0-0CJ0	26200	1700	1900	3110	2240	600	250	330	800	3620	4750 <sup>3)</sup>
1RQ7802-6J..0-0CJ0	27700	1700	1900	3110	2240	600	250	330	800	3620	4750 <sup>3)</sup>
1RQ7804-6J..0-0CJ0	29700	1700	1900	3110	2500	600	250	330	800	3620	5010 <sup>3)</sup>
1RQ7806-6J..0-0CJ0	31200	1700	1900	3110	2500	600	250	330	800	3620	5010 <sup>3)</sup>

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

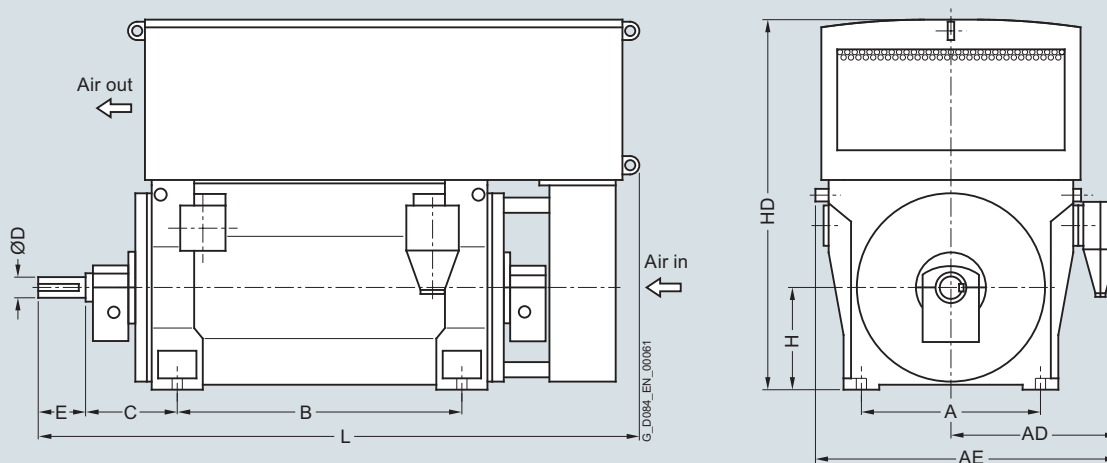
<sup>3)</sup> Including air inlet silencer.

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### 9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RQ7<sup>1)</sup>– IC611

4-pole

1RQ7800-4J..0-0CJ0	25400	1700	1900	3110	2240	600	250	330	800	3620	4750 <sup>2)</sup>
1RQ7802-4J..0-0CJ0	26600	1700	1900	3110	2240	600	250	330	800	3620	4750 <sup>2)</sup>
1RQ7804-4J..0-0CJ0	28500	1700	1900	3110	2500	600	250	330	800	3620	5010 <sup>2)</sup>
1RQ7806-4J..0-0CJ0	29900	1700	1900	3110	2500	600	250	330	800	3620	5010 <sup>2)</sup>

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

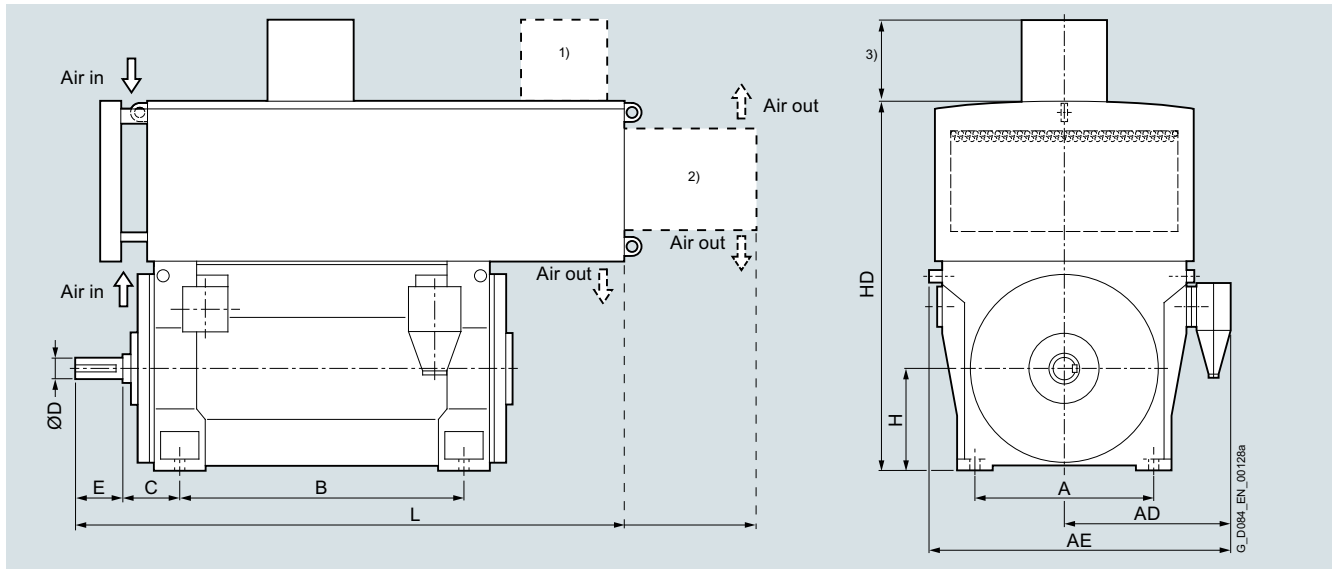
<sup>2)</sup> Including air inlet silencer.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>5)</sup> mm	AE <sup>5)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RQ7<sup>4)</sup> series – IC666</b>											
4-pole											
1RQ7630-4M..0-0CG0	12200	1320	1340	2340	1600	375	200	280	630	3210	3910
1RQ7632-4M..0-0CG0	12800	1320	1340	2340	1600	375	200	280	630	3210	3910
1RQ7634-4M..0-0CG0	13800	1320	1340	2340	1800	375	200	280	630	3210	4110
1RQ7636-4M..0-0CG0	14300	1320	1340	2340	1800	375	200	280	630	3210	4110
1RQ7710-4M..0-0CG0	16900	1500	1800	2900	2000	375	220	350	710	3640	4330
1RQ7712-4M..0-0CG0	17600	1500	1800	2900	2000	375	220	350	710	3640	4330
1RQ7714-4M..0-0CG0	19000	1500	1800	2900	2240	375	220	350	710	3640	4570
1RQ7716-4M..0-0CG0	20300	1500	1800	2900	2240	375	220	350	710	3640	4570
1RQ7800-4M..0-0CG0	25600	1700	1900	3110	2240	375	250	330	800	3880	4590
1RQ7802-4M..0-0CG0	26800	1700	1900	3110	2240	375	250	330	800	3880	4590
1RQ7804-4M..0-0CG0	28700	1700	1900	3110	2500	375	250	330	800	3880	4850
1RQ7806-4M..0-0CG0	30000	1700	1900	3110	2500	375	250	330	800	3880	4850

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

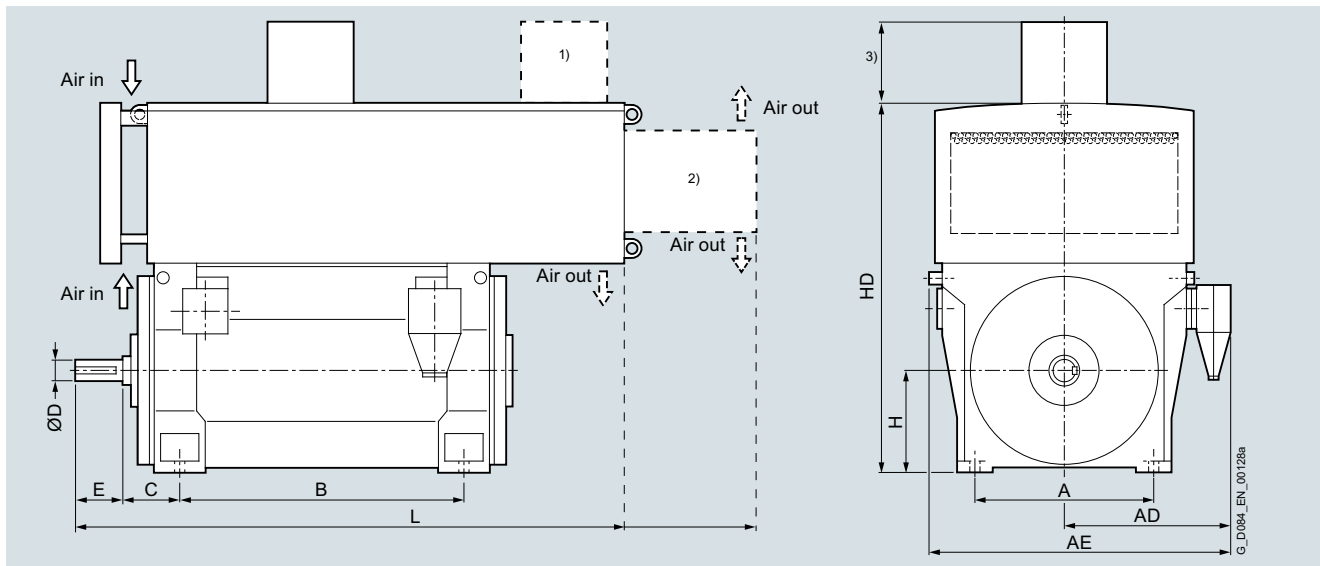
5) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents &gt; 400 A, the dimension increases by 140 mm.

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>5)</sup> mm	AE <sup>5)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RQ7<sup>4)</sup> series – IC666</b>											
6-pole											
1RQ7630-6M..0-0CG0	12700	1320	1340	2340	1600	375	200	280	630	3210	3910
1RQ7632-6M..0-0CG0	13300	1320	1340	2340	1600	375	200	280	630	3210	3910
1RQ7634-6M..0-0CG0	14200	1320	1340	2340	1800	375	200	280	630	3210	4110
1RQ7636-6M..0-0CG0	14800	1320	1340	2340	1800	375	200	280	630	3210	4110
1RQ7710-6M..0-0CG0	17300	1500	1800	2900	2000	375	220	350	710	3640	4330
1RQ7712-6M..0-0CG0	18400	1500	1800	2900	2000	375	220	350	710	3640	4330
1RQ7714-6M..0-0CG0	19800	1500	1800	2900	2240	375	220	350	710	3640	4570
1RQ7716-6M..0-0CG0	20900	1500	1800	2900	2240	375	220	350	710	3640	4570
1RQ7800-6M..0-0CG0	26400	1700	1900	3110	2240	375	250	330	800	3880	4590
1RQ7802-6M..0-0CG0	27900	1700	1900	3110	2240	375	250	330	800	3880	4590
1RQ7804-6M..0-0CG0	29900	1700	1900	3110	2500	375	250	330	800	3880	4850
1RQ7806-6M..0-0CG0	31400	1700	1900	3110	2500	375	250	330	800	3880	4850

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

5) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

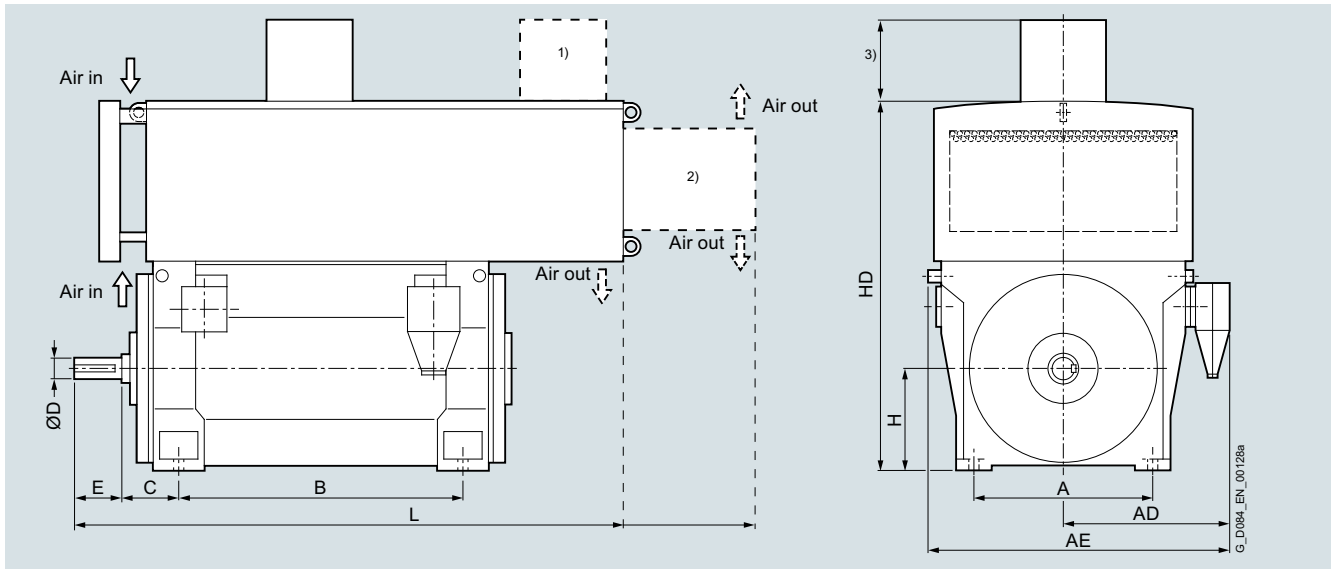


## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>5)</sup> mm	AE <sup>5)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RQ7<sup>4)</sup> series – IC666</b>											
8-pole											
1RQ7630-8M..0-0CG0	12400	1320	1340	2340	1600	375	200	280	630	3210	3910
1RQ7632-8M..0-0CG0	12900	1320	1340	2340	1600	375	200	280	630	3210	3910
1RQ7634-8M..0-0CG0	13800	1320	1340	2340	1800	375	200	280	630	3210	4110
1RQ7636-8M..0-0CG0	14400	1320	1340	2340	1800	375	200	280	630	3210	4110
1RQ7710-8M..0-0CG0	16800	1500	1800	2900	2000	375	220	350	710	3640	4330
1RQ7712-8M..0-0CG0	17600	1500	1800	2900	2000	375	220	350	710	3640	4330
1RQ7714-8M..0-0CG0	19200	1500	1800	2900	2240	375	220	350	710	3640	4570
1RQ7716-8M..0-0CG0	20200	1500	1800	2900	2240	375	220	350	710	3640	4570

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

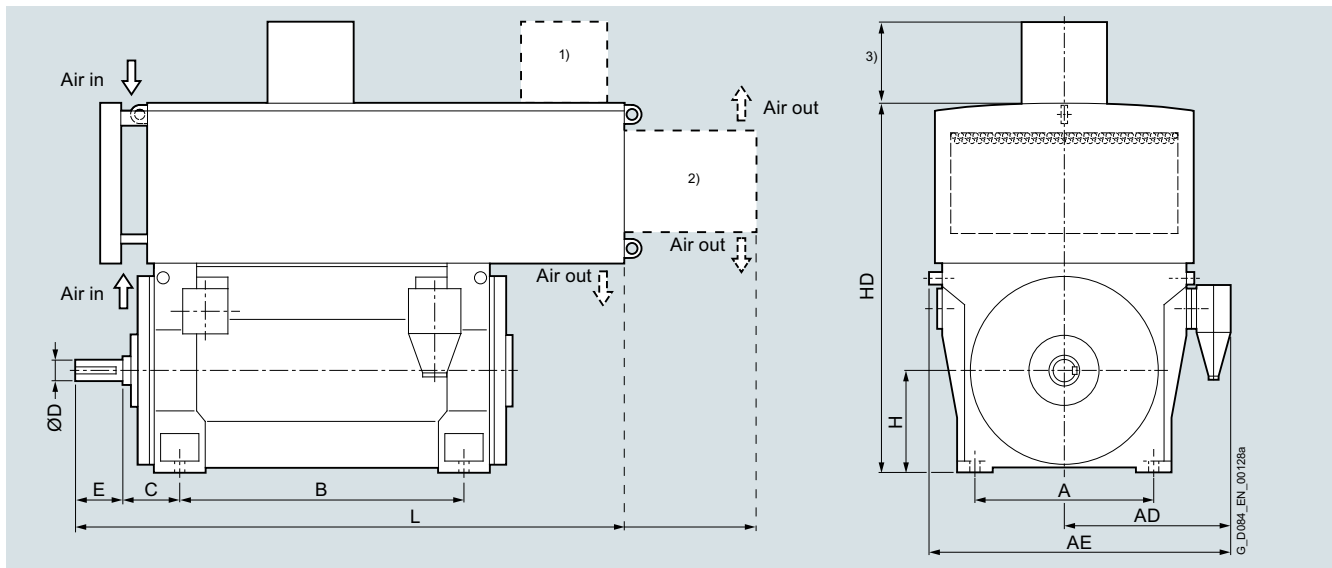
5) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents &gt; 400 A, the dimension increases by 140 mm.

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>5)</sup> mm	AE <sup>5)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RQ7<sup>4)</sup> series – IC666</b>											
<b>10-pole</b>											
1RQ7630-3M..0-0CG0	12300	1320	1340	2340	1600	375	200	280	630	3210	3910
1RQ7632-3M..0-0CG0	12900	1320	1340	2340	1600	375	200	280	630	3210	3910
1RQ7634-3M..0-0CG0	13700	1320	1340	2340	1800	375	200	280	630	3210	4110
1RQ7636-3M..0-0CG0	14300	1320	1340	2340	1800	375	200	280	630	3210	4110
1RQ7710-3M..0-0CG0	16600	1500	1800	2900	2000	375	220	350	710	3640	4330
1RQ7712-3M..0-0CG0	17600	1500	1800	2900	2000	375	220	350	710	3640	4330
1RQ7714-3M..0-0CG0	19200	1500	1800	2900	2240	375	220	350	710	3640	4570
1RQ7716-3M..0-0CG0	20200	1500	1800	2900	2240	375	220	350	710	3640	4570
<b>12-pole</b>											
1RQ7630-5M..0-0CG0	12300	1320	1340	2340	1600	375	200	280	630	3210	3910
1RQ7632-5M..0-0CG0	12800	1320	1340	2340	1600	375	200	280	630	3210	3910
1RQ7634-5M..0-0CG0	13700	1320	1340	2340	1800	375	200	280	630	3210	4110
1RQ7636-5M..0-0CG0	14200	1320	1340	2340	1800	375	200	280	630	3210	4110

Note: Higher pole numbers are available on request.

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

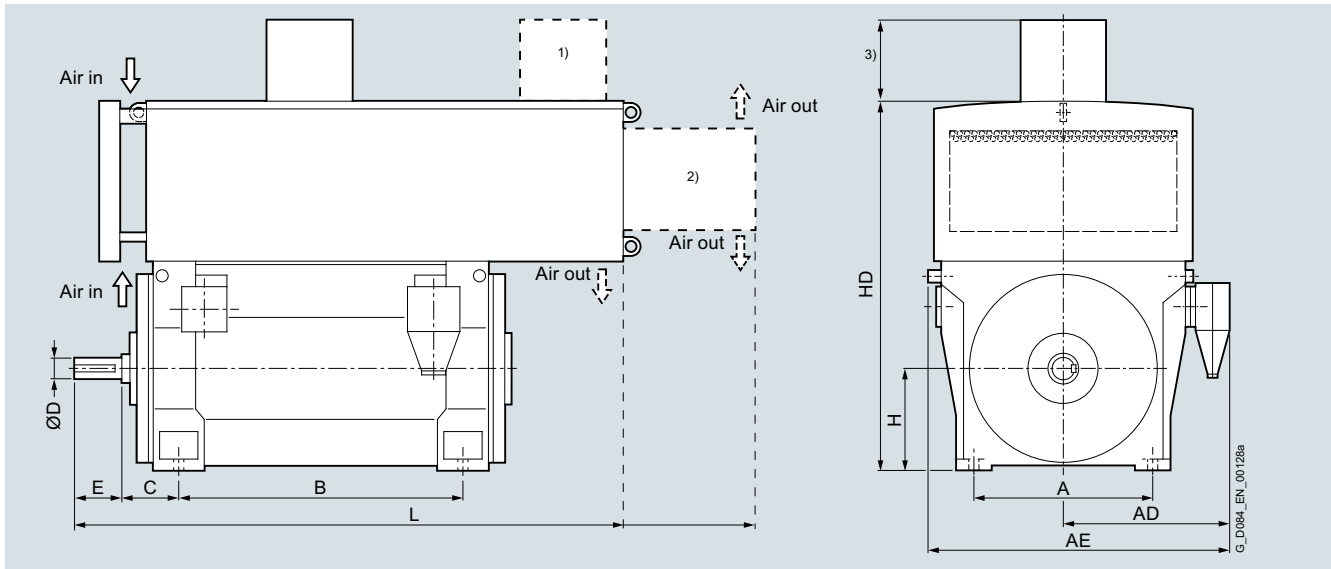
5) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RQ7<sup>4)</sup> series – IC666</b>											
4-pole											
1RQ7800-4M..0-0CG0	25600	1700	1900	3110	2240	375	250	330	800	3880	4590
1RQ7802-4M..0-0CG0	26800	1700	1900	3110	2240	375	250	330	800	3880	4590
1RQ7804-4M..0-0CG0	28700	1700	1900	3110	2500	375	250	330	800	3880	4850
1RQ7806-4M..0-0CG0	30000	1700	1900	3110	2500	375	250	330	800	3880	4850

#### Note:

Higher pole numbers are available on request.

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

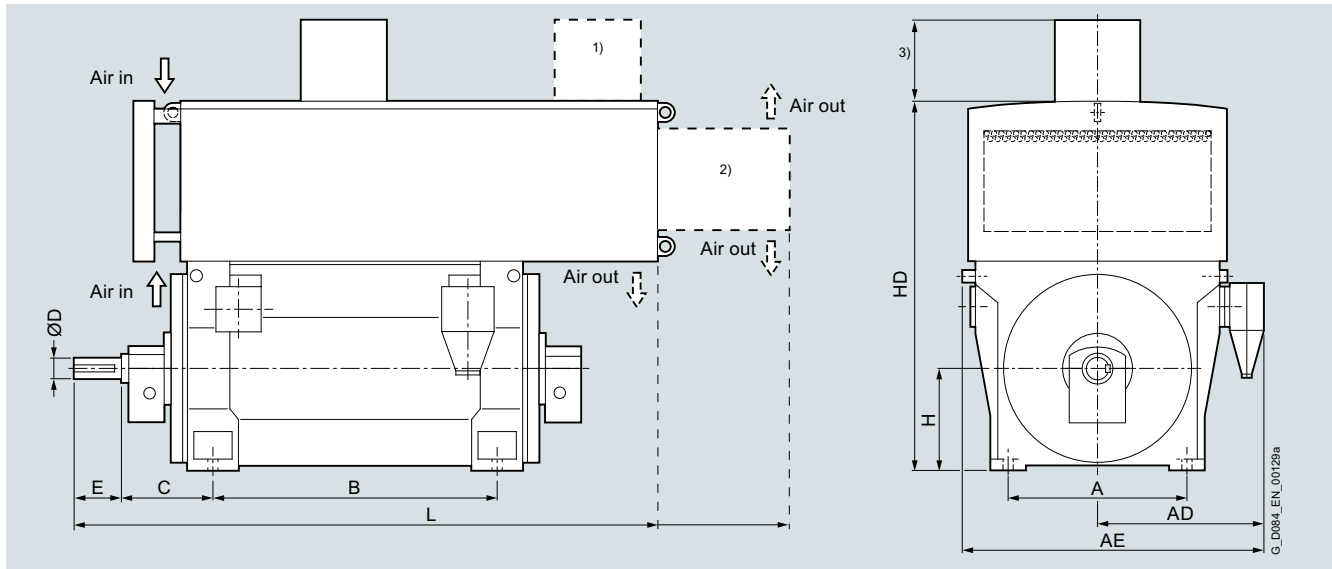
Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>5)</sup> mm	AE <sup>5)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ7<sup>4)</sup> series – IC666</b>											
2-pole											
1RQ7630-2M..0-0CJ0	11700	1320	1340	2340	1600	600	180	240	630	3210	4100
1RQ7632-2M..0-0CJ0	12200	1320	1340	2340	1600	600	180	240	630	3210	4100
1RQ7634-2M..0-0CJ0	13200	1320	1340	2340	1800	600	180	240	630	3210	4300
1RQ7636-2M..0-0CJ0	13800	1320	1340	2340	1800	600	180	240	630	3210	4300
1RQ7710-2M..0-0CJ0	16200	1500	1800	2900	2000	560	200	710	280	3640	4450
1RQ7712-2M..0-0CJ0	16700	1500	1800	2900	2000	560	200	710	280	3640	4450
1RQ7714-2M..0-0CJ0	18000	1500	1800	2900	2240	560	200	710	280	3640	4690
1RQ7716-2M..0-0CJ0	18700	1500	1800	2900	2240	560	200	710	280	3640	4690

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

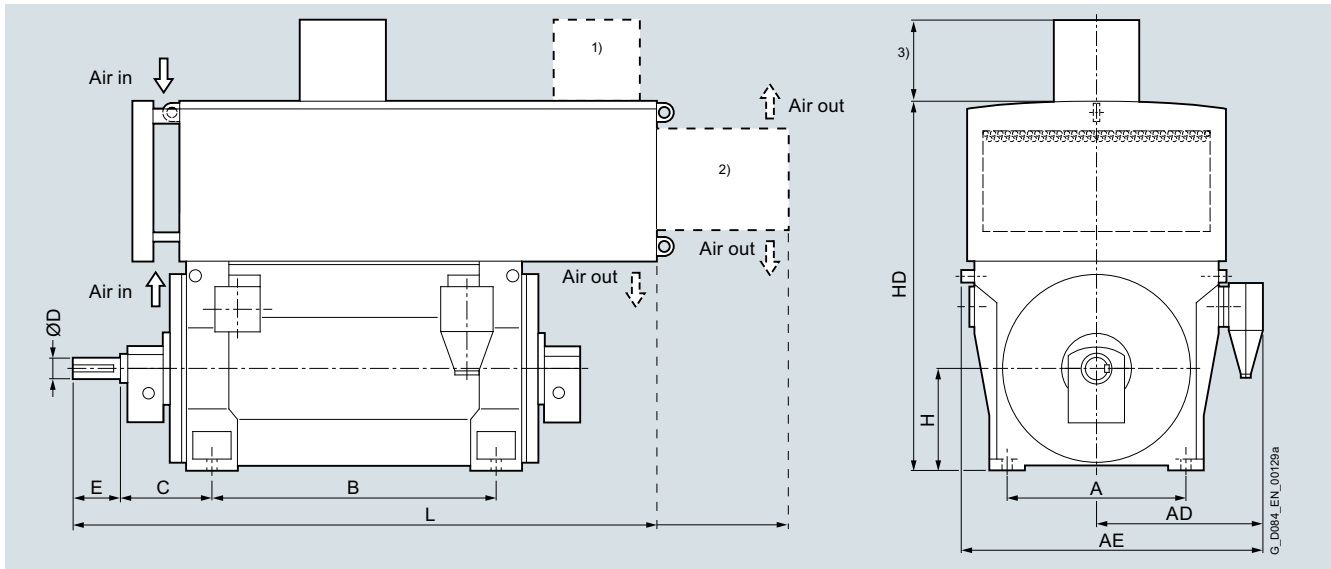
5) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>5)</sup> mm	AE <sup>5)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ7<sup>4)</sup> series – IC666</b>											
4-pole											
1RQ7630-4M..0-0CJ0	12300	1320	1340	2340	1600	630	200	280	630	3210	4170
1RQ7632-4M..0-0CJ0	12900	1320	1340	2340	1600	630	200	280	630	3210	4170
1RQ7634-4M..0-0CJ0	13900	1320	1340	2340	1800	630	200	280	630	3210	4370
1RQ7636-4M..0-0CJ0	14400	1320	1340	2340	1800	630	200	280	630	3210	4370
1RQ7710-4M..0-0CJ0	17200	1500	1800	2900	2000	710	220	710	350	3640	4670
1RQ7712-4M..0-0CJ0	17900	1500	1800	2900	2000	710	220	710	350	3640	4670
1RQ7714-4M..0-0CJ0	19300	1500	1800	2900	2240	710	220	710	350	3640	4910
1RQ7716-4M..0-0CJ0	20600	1500	1800	2900	2240	710	220	710	350	3640	4910
1RQ7800-4M..0-0CJ0	26000	1700	1900	3110	2240	600	250	330	800	3880	4890
1RQ7802-4M..0-0CJ0	27200	1700	1900	3110	2240	600	250	330	800	3880	4890
1RQ7804-4M..0-0CJ0	29100	1700	1900	3110	2500	600	250	330	800	3880	5150
1RQ7806-4M..0-0CJ0	30500	1700	1900	3110	2500	600	250	330	800	3880	5150

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

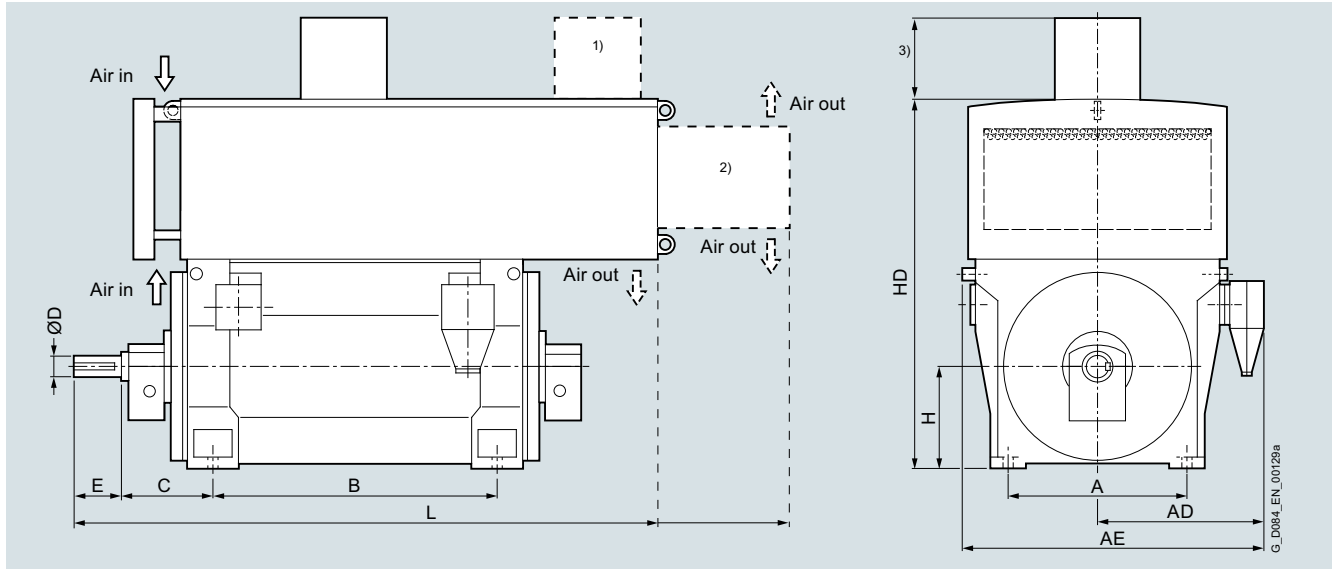
5) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents &gt; 400 A, the dimension increases by 140 mm.

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>5)</sup> mm	AE <sup>5)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ7<sup>4)</sup> series – IC666</b>											
6-pole											
1RQ7630-6M..0-0CJ0	12800	1320	1340	2340	1600	630	200	280	630	3210	4170
1RQ7632-6M..0-0CJ0	13400	1320	1340	2340	1600	630	200	280	630	3210	4170
1RQ7634-6M..0-0CJ0	14200	1320	1340	2340	1800	630	200	280	630	3210	4370
1RQ7636-6M..0-0CJ0	14900	1320	1340	2340	1800	630	200	280	630	3210	4370
1RQ7710-6M..0-0CJ0	17300	1500	1800	2900	2000	670	220	710	350	3640	4630
1RQ7712-6M..0-0CJ0	18500	1500	1800	2900	2000	670	220	710	350	3640	4630
1RQ7714-6M..0-0CJ0	19900	1500	1800	2900	2240	670	220	710	350	3640	4870
1RQ7716-6M..0-0CJ0	20900	1500	1800	2900	2240	670	220	710	350	3640	4870
1RQ7800-6M..0-0CJ0	26800	1700	1900	3110	2240	600	250	330	800	3880	4890
1RQ7802-6M..0-0CJ0	28300	1700	1900	3110	2240	600	250	330	800	3880	4890
1RQ7804-6M..0-0CJ0	30300	1700	1900	3110	2500	600	250	330	800	3880	5150
1RQ7806-6M..0-0CJ0	31800	1700	1900	3110	2500	600	250	330	800	3880	5150

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

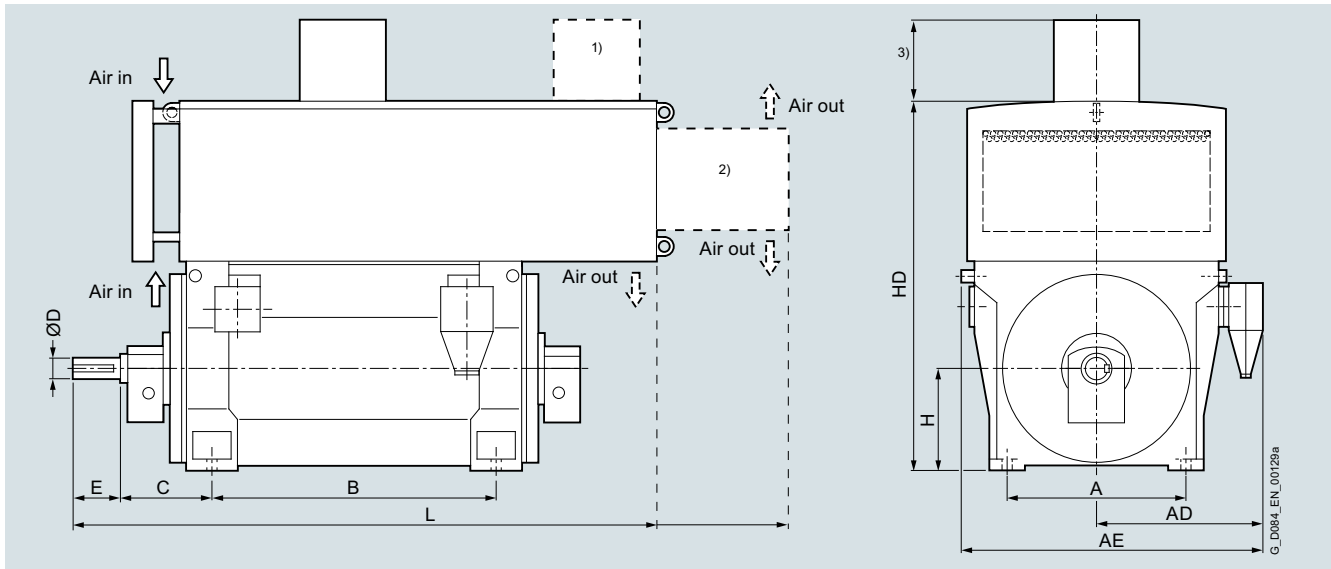
5) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>5)</sup> mm	AE <sup>5)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ7<sup>4)</sup> series – IC666</b>											
8-pole											
1RQ7630-8M..0-0CJ0	12400	1320	1340	2340	1600	630	200	280	630	3210	4170
1RQ7632-8M..0-0CJ0	13000	1320	1340	2340	1600	630	200	280	630	3210	4170
1RQ7634-8M..0-0CJ0	13900	1320	1340	2340	1800	630	200	280	630	3210	4370
1RQ7636-8M..0-0CJ0	14400	1320	1340	2340	1800	630	200	280	630	3210	4370
1RQ7710-8M..0-0CJ0	17000	1500	1800	2900	2000	670	220	710	350	3640	4630
1RQ7712-8M..0-0CJ0	17900	1500	1800	2900	2000	670	220	710	350	3640	4630
1RQ7714-8M..0-0CJ0	19200	1500	1800	2900	2240	670	220	710	350	3640	4870
1RQ7716-8M..0-0CJ0	20200	1500	1800	2900	2240	670	220	710	350	3640	4870

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

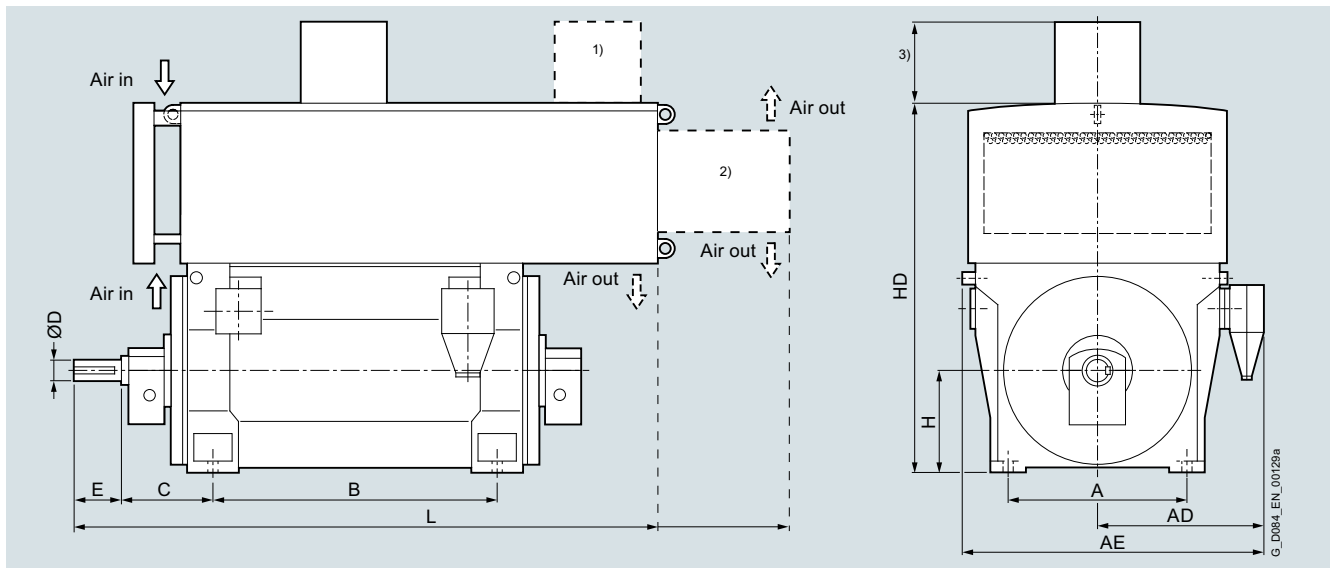
5) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents &gt; 400 A, the dimension increases by 140 mm.

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>5)</sup> mm	AE <sup>5)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ7<sup>4)</sup> series – IC666</b>											
<b>10-pole</b>											
1RQ7630-3M..0-0CJ0	12400	1320	1340	2340	1600	630	200	280	630	3210	4170
1RQ7632-3M..0-0CJ0	12900	1320	1340	2340	1600	630	200	280	630	3210	4170
1RQ7634-3M..0-0CJ0	13700	1320	1340	2340	1800	630	200	280	630	3210	4370
1RQ7636-3M..0-0CJ0	14300	1320	1340	2340	1800	630	200	280	630	3210	4370
1RQ7710-3M..0-0CJ0	16900	1500	1800	2900	2000	670	220	710	350	3640	4630
1RQ7712-3M..0-0CJ0	17900	1500	1800	2900	2000	670	220	710	350	3640	4630
1RQ7714-3M..0-0CJ0	19200	1500	1800	2900	2240	670	220	710	350	3640	4870
1RQ7716-3M..0-0CJ0	20200	1500	1800	2900	2240	670	220	710	350	3640	4870
<b>12-pole</b>											
1RQ7630-5M..0-0CJ0	12300	1320	1340	2340	1600	630	200	280	630	3210	4170
1RQ7632-5M..0-0CJ0	12900	1320	1340	2340	1600	630	200	280	630	3210	4170
1RQ7634-5M..0-0CJ0	13700	1320	1340	2340	1800	630	200	280	630	3210	4370
1RQ7636-5M..0-0CJ0	14300	1320	1340	2340	1800	630	200	280	630	3210	4370

Note: Higher pole numbers are available on request.

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

5) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

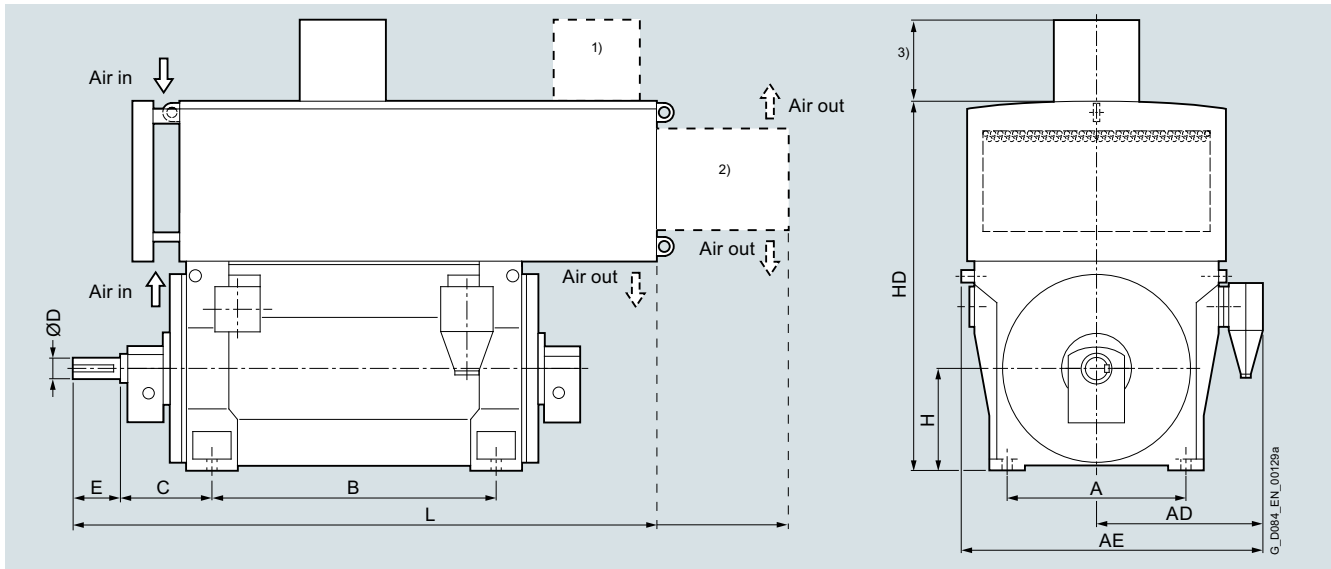


## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RQ7<sup>4)</sup> series – IC666</b>											
4-pole											
1RQ7800-4M..0-0CJ0	26000	1700	1900	3110	2240	600	250	330	800	3880	4890
1RQ7802-4M..0-0CJ0	27200	1700	1900	3110	2240	600	250	330	800	3880	4890
1RQ7804-4M..0-0CJ0	29100	1700	1900	3110	2500	600	250	330	800	3880	5150
1RQ7806-4M..0-0CJ0	30500	1700	1900	3110	2500	600	250	330	800	3880	5150

#### Note:

Higher pole numbers are available on request.

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm, AE + 300 mm. Detailed drawings are available on request.

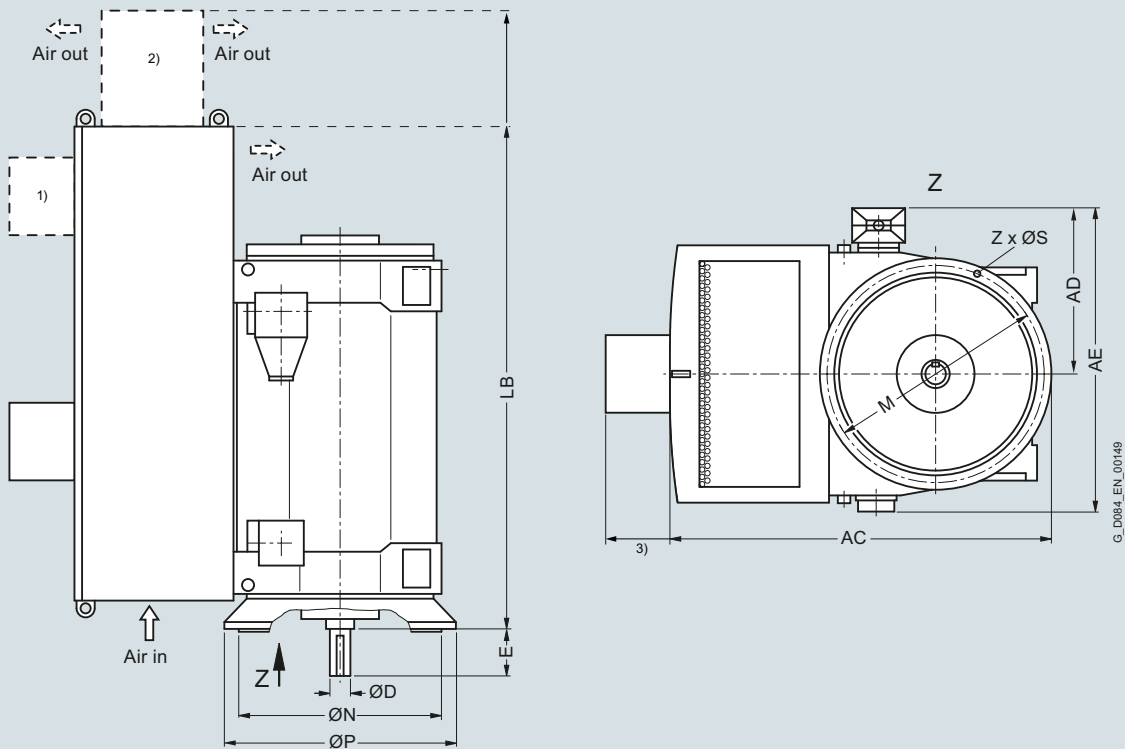
Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings



Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>5)</sup> mm	AE <sup>5)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RQ7<sup>4)</sup> – IC666</b>												
6-pole												
1RQ7630-6M..8-0CG0	13400	3520	1250	2130	200	280	3700	1800	1600	1700	28	24
1RQ7632-6M..8-0CG0	14000	3520	1250	2130	200	280	3700	1800	1600	1700	28	24
1RQ7634-6M..8-0CG0	14900	3520	1250	2130	200	280	3900	1800	1600	1700	28	24
1RQ7636-6M..8-0CG0	15500	3520	1250	2130	200	280	3900	1800	1600	1700	28	24
1RQ7710-6M..8-0CG0	18900	3980	1800	2900	220	350	4040	2000	1800	1900	35	24
1RQ7712-6M..8-0CG0	20000	3980	1800	2900	220	350	4040	2000	1800	1900	35	24
1RQ7714-6M..8-0CG0	21500	3980	1800	2900	220	350	4280	2000	1800	1900	35	24
1RQ7716-6M..8-0CG0	22500	3980	1800	2900	220	350	4280	2000	1800	1900	35	24

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.

5) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

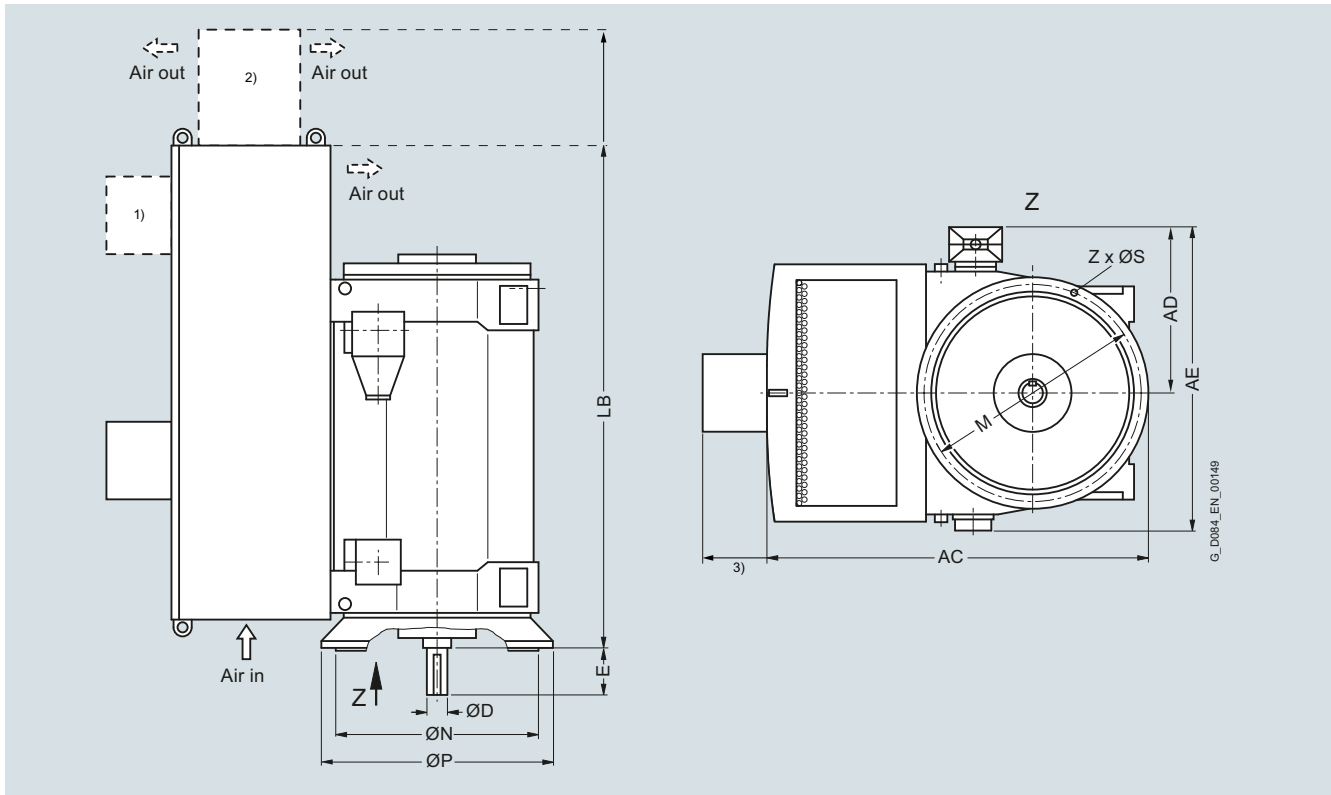
Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC	AD <sup>5)</sup>	AE <sup>5)</sup>	D	E	LB	P	N	M	S	Z
Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RQ7 <sup>4)</sup> – IC666												
8-pole												
1RQ7630-8M..8-OCG0	13000	3520	1250	2130	200	280	3700	1800	1600	1700	28	24
1RQ7632-8M..8-OCG0	13600	3520	1250	2130	200	280	3700	1800	1600	1700	28	24
1RQ7634-8M..8-OCG0	14500	3520	1250	2130	200	280	3900	1800	1600	1700	28	24
1RQ7636-8M..8-OCG0	15100	3520	1250	2130	200	280	3900	1800	1600	1700	28	24
1RQ7710-8M..8-OCG0	17700	3980	1800	2900	220	350	4040	2000	1800	1900	35	24
1RQ7712-8M..8-OCG0	18600	3980	1800	2900	220	350	4040	2000	1800	1900	35	24
1RQ7714-8M..8-OCG0	20200	3980	1800	2900	220	350	4280	2000	1800	1900	35	24
1RQ7716-8M..8-OCG0	21200	3980	1800	2900	220	350	4280	2000	1800	1900	35	24

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.

5) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents &gt; 400 A, the dimension increases by 140 mm.

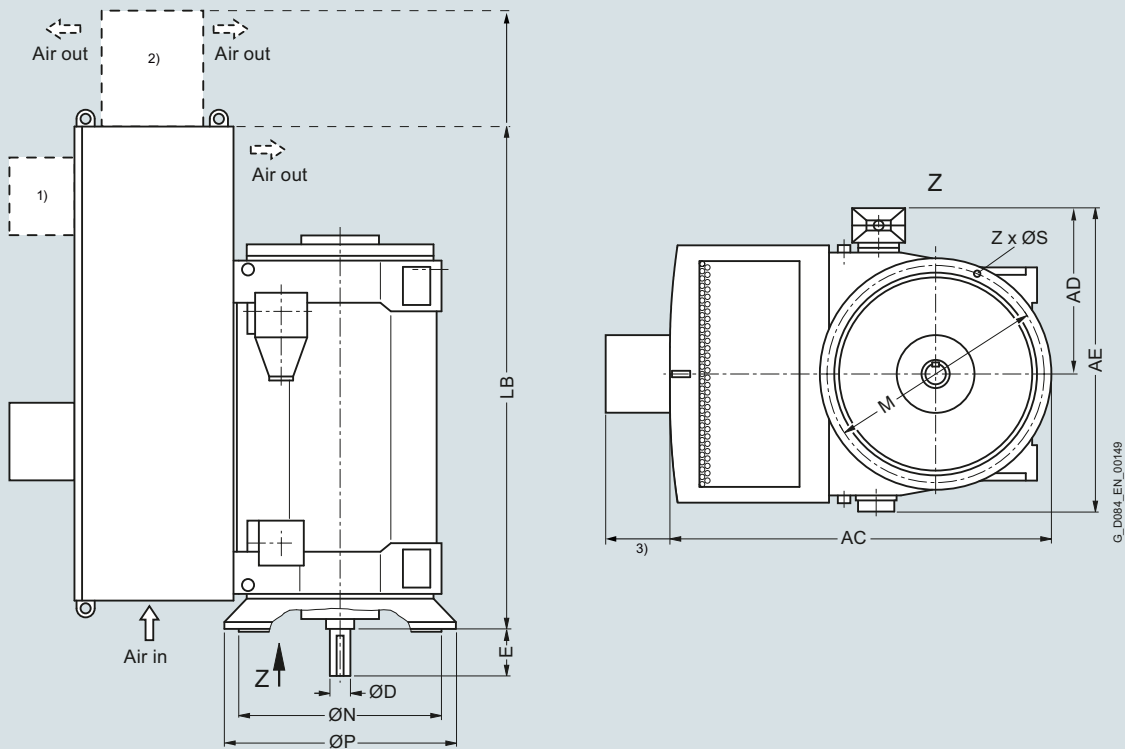
Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

## Motors for converter operation

Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC	AD <sup>5)</sup>	AE <sup>5)</sup>	D	E	LB	P	N	M	S	Z
Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RQ7 <sup>4)</sup> – IC666												
10-pole												
1RQ7630-3M..8-0CG0	13000	3520	1250	2130	200	280	3700	1800	1600	1700	28	24
1RQ7632-3M..8-0CG0	13500	3520	1250	2130	200	280	3700	1800	1600	1700	28	24
1RQ7634-3M..8-0CG0	14400	3520	1250	2130	200	280	3900	1800	1600	1700	28	24
1RQ7636-3M..8-0CG0	14900	3520	1250	2130	200	280	3900	1800	1600	1700	28	24
1RQ7710-3M..8-0CG0	17500	3980	1800	2900	220	350	4040	2000	1800	1900	35	24
1RQ7712-3M..8-0CG0	18500	3980	1800	2900	220	350	4040	2000	1800	1900	35	24
1RQ7714-3M..8-0CG0	20100	3980	1800	2900	220	350	4280	2000	1800	1900	35	24
1RQ7716-3M..8-0CG0	21200	3980	1800	2900	220	350	4280	2000	1800	1900	35	24

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.

5) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

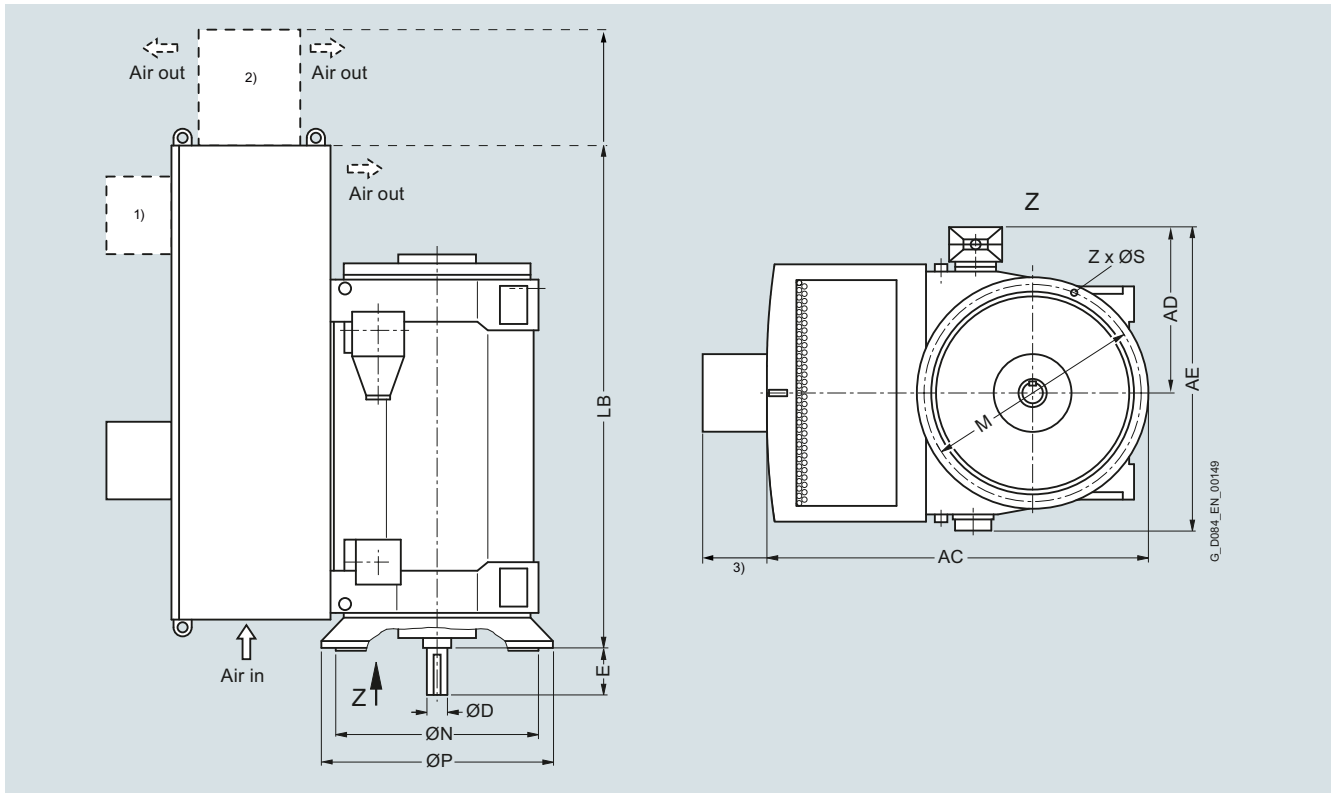
Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

## Motors for converter operation

### Converter with non-sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ6, 1RQ7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC	AD <sup>5)</sup>	AE <sup>5)</sup>	D	E	LB	P	N	M	S	Z
Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RQ7 <sup>4)</sup> – IC666												
12-pole												
1RQ7630-5M..8-0CG0	12900	3520	1250	2130	200	280	3700	1800	1600	1700	28	24
1RQ7632-5M..8-0CG0	13500	3520	1250	2130	200	280	3700	1800	1600	1700	28	24
1RQ7634-5M..8-0CG0	14300	3520	1250	2130	200	280	3900	1800	1600	1700	28	24
1RQ7636-5M..8-0CG0	14900	3520	1250	2130	200	280	3900	1800	1600	1700	28	24

#### Note:

Higher pole numbers are available on request.

1) External fan for shaft height 630.

2) External fan for shaft heights 710, 800.

3)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

4) The dimensions are also valid for the 1SG7 series. For the 1SB7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm, AE + 300 mm. Detailed drawings are available on request.

5) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Overview



### Power ranges for IEC motors with reinforced insulation for operation with SINAMICS converters without sine-wave filter

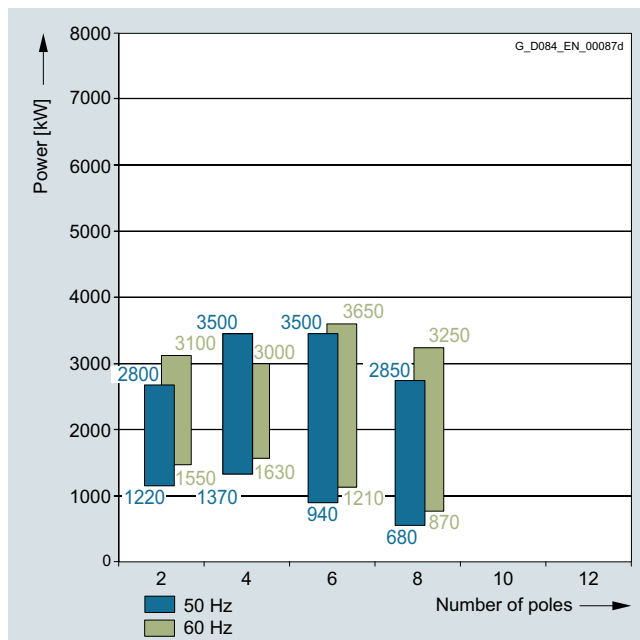
1RN6, 1SL6 (Ex ec) and 1SQ6 (Ex pxb) series

1RN7, 1SL7 (Ex ec) and 1SQ7 (Ex pxb) series

Insulation system, thermal class 155 (F)

The power data listed here apply for a water inlet temperature of 25 °C and an installation altitude ≤ 1000 m.

690 V; 50 Hz and 60 Hz



### Technical data

#### Overview of technical data

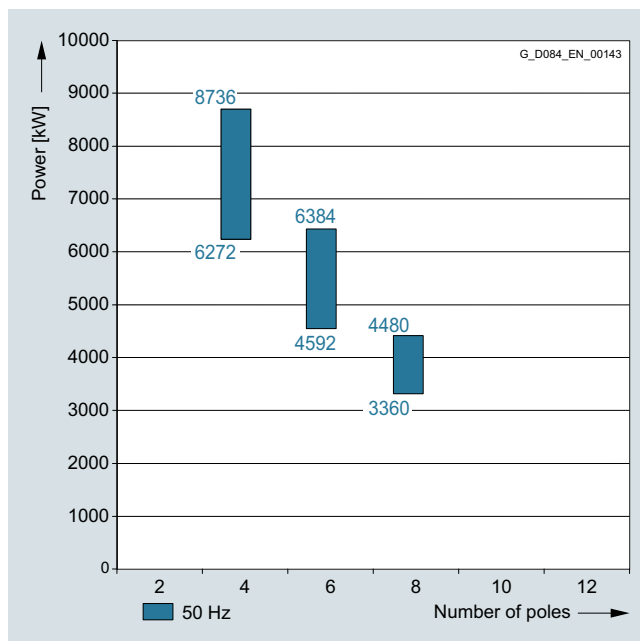
SIMOTICS HV M 1RN6, 1RN7	
Rated voltage	690 V ... 10 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Cooling method	IC81W/IC86W
Stator winding insulation	Insulation system, thermal class 155 (F)
Shaft height	450 ... 800 mm
Bearings	Anti-friction bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN (NEMA version on request)
Frame design for shaft heights 450 ... 560 mm	Housing: Cast iron Cooling enclosure: Steel
Frame design for shaft heights 630 ... 800 mm	Housing: Steel Cooling enclosure: Steel

The following versions can be offered on request:

- 2-pole up to 75 Hz
- 4-pole up to 100 Hz
- 6-pole up to 90 Hz

For individual motor types, it must be ensured that the motor does not run-through any critical speed in the required speed control range and that the maximum speed does not exceed the mechanical speed limit of the motor! Please contact your Siemens sales partner regarding this check. The motor types are marked with footnotes in the following data tables.

3.3 kV; 50 Hz

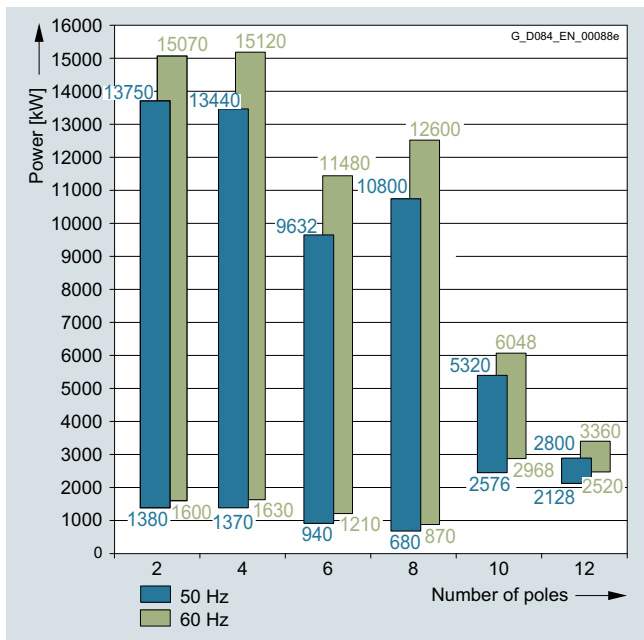


## Motors for converter operation Converter with non-sinusoidal output

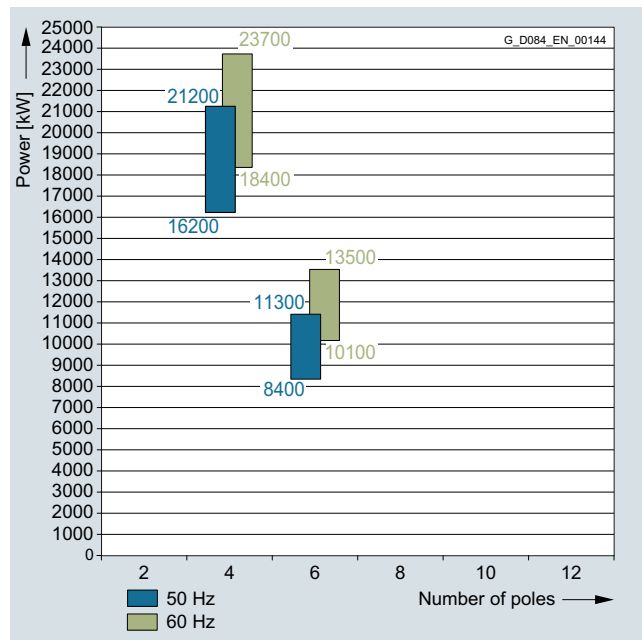
Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Technical data (continued)

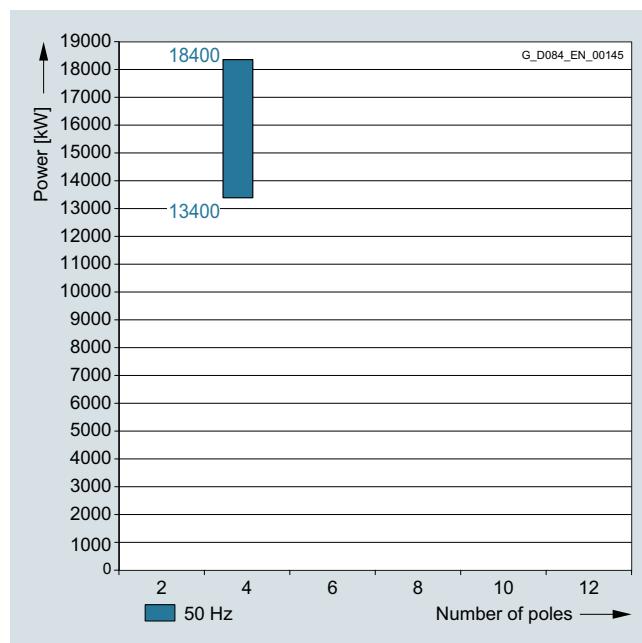
4.16 kV; 50 Hz and 60 Hz



6 kV; 50 and 60 Hz



10 kV; 50 Hz



3

## Motors for converter operation

Converter with non-sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL6 (Ex ec) and 1SQ6 (Ex pxb).

Rated power  IEC  $P_{\text{rated}}$ 155 (F) kW	Low voltage motor SIMOTICS HV M  Article No.	Operating data at rated output for utilization 155 (F)							
		Rated speed	Efficiency	Power factor	Rated current 690 V	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
		$n_{\text{rated}}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$I_{\text{rated}}$ A	$T_{\text{rated}}$ Nm	$T_{\text{B}}/T_{\text{rated}}$ [-]	J kgm <sup>2</sup>	$n_{\text{max}}$ rpm
<b>690 V, 50 Hz</b>									
2-pole									
1220	<b>1RN6450-2HP00</b>	2980	95.5	0.90	1180	3913	2.20	13	3000
1520	<b>1RN6452-2HP00</b>	2980	96.0	0.90	1480	4875	2.10	14	3000
1600	<b>1RN6454-2HP00</b>	2983	96.2	0.92	1520	5129	2.30	16	3000
1700	<b>1RN6456-2HP00</b>	2983	96.2	0.92	1600	5445	2.30	18	3000
2250	<b>1RN6500-2HP00</b>	2975	96.4	0.90	2160	7222	2.30	19	3000
2550	<b>1RN6502-2HP00</b>	2974	96.6	0.90	2440	8188	2.10	20	3000
2800	<b>1RN6504-2HP00</b>	2977	96.7	0.92	4x660 <sup>4)</sup>	8982	2.50	24	3000 <sup>3)</sup>
4-pole									
1370	<b>1RN6450-4HP00</b>	1484	95.6	0.89	1340	8833	2.40	20	1800
1500	<b>1RN6452-4HP00</b>	1484	95.6	0.90	1460	9671	2.40	22	1800
1640	<b>1RN6454-4HP00</b>	1484	96.0	0.90	1580	10568	2.40	25	1800
1860	<b>1RN6456-4HP00</b>	1485	96.2	0.90	1800	11977	2.30	29	1800
2300 <sup>2)</sup>	<b>1RN6500-4HP00</b>	1486	96.6	0.90	2200	14780	2.35	42	1800
2350 <sup>2)</sup>	<b>1RN6502-4HP00</b>	1486	96.6	0.92	2200	15102	2.50	46	1800
2800 <sup>2)</sup>	<b>1RN6504-4HP00</b>	1488	96.9	0.90	4x670 <sup>4)</sup>	17969	2.60	52	1800
3200 <sup>2)</sup>	<b>1RN6560-4HP00</b>	1486	96.8	0.92	4x750 <sup>4)</sup>	20564	2.15	82	1800
3500 <sup>2)</sup>	<b>1RN6562-4HP00</b>	1487	96.9	0.92	4x820 <sup>4)</sup>	22476	2.15	93	1800
<b>Position ■ of the Article No.:</b>  <b>For shaft heights 450, 500, 560 mm:</b> Refer to the article number structure on <a href="#">Page 1/3</a> for: - type of construction (12th position)									

#### Note:

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

<sup>3)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

<sup>4)</sup> Different number of parallel winding systems possible.



## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type  
(repeated)

Partial load data for square-law torque drive

 $P/P_{\text{rated}}$  155 (F) = 75 % $P/P_{\text{rated}}$  155 (F) = 50 % $P/P_{\text{rated}}$  155 (F) = 25 % $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$ 

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

## Square-law torque drive

## 2-pole

1RN6450-2...	916	2709	95.8	0.91	610	2371	96.0	0.90	305	1883	96.0	0.85
1RN6452-2...	1141	2708	96.4	0.91	760	2371	96.6	0.91	380	1883	96.5	0.87
1RN6454-2...	1201	2710	96.5	0.92	800	2372	96.6	0.91	400	1884	96.6	0.87
1RN6456-2...	1276	2711	96.5	0.92	850	2373	96.7	0.92	425	1884	96.6	0.88
1RN6500-2...	1688	2708	96.6	0.89	1125	2369	96.7	0.87	563	1883	96.7	0.79
1RN6502-2...	1913	2707	96.8	0.89	1275	2368	96.9	0.87	638	1882	96.9	0.81
1RN6504-2...	2101	2710	96.9	0.91	1400	2370	97.0	0.90	701	1883	97.0	0.84

## 4-pole

1RN6450-4...	1028	1350	95.9	0.88	685	1182	96.1	0.86	343	940	95.9	0.79
1RN6452-4...	1125	1350	96.0	0.90	750	1182	96.2	0.88	375	940	96.2	0.83
1RN6454-4...	1230	1350	96.3	0.90	820	1183	96.5	0.89	410	940	96.4	0.84
1RN6456-4...	1395	1351	96.5	0.89	930	1183	96.6	0.88	465	941	96.5	0.82
1RN6500-4..	1726	1353	96.7	0.89	1150	1183	96.9	0.86	575	941	96.8	0.77
1RN6502-4..	1763	1353	96.8	0.91	1175	1184	96.9	0.88	588	941	96.9	0.80
1RN6504-4..	2100	1354	97.0	0.89	1400	1184	97.1	0.86	700	941	96.9	0.74
1RN6560-4..	2401	1353	97.0	0.91	1600	1184	97.2	0.90	801	941	97.3	0.85
1RN6562-4..	2626	1354	97.1	0.91	1750	1184	97.3	0.90	876	941	97.3	0.85

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## Motors for converter operation

Converter with non-sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data (continued)

Rated power  IEC  $P_{\text{rated}}$ 155 (F) kW	Low voltage motor SIMOTICS HV M  Article No.	Operating data at rated output for utilization 155 (F)							
		Rated speed  $n_{\text{rated}}$ rpm	Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current 690 V  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_B/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical speed limit <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>690 V, 50 Hz</b>									
6-pole									
940	<b>1RN6450-6HP0</b>	990	95.8	0.86	950	9079	2.30	26	1200
1040	<b>1RN6452-6HP0</b>	991	95.9	0.86	1060	10039	2.30	29	1200
1180	<b>1RN6454-6HP0</b>	991	96.0	0.86	1200	11394	2.30	32	1200
1330	<b>1RN6456-6HP0</b>	992	96.2	0.86	1340	12823	2.30	37	1200
1800	<b>1RN6500-6HP0</b>	988	96.0	0.85	1840	17399	1.75	56	1500
2000	<b>1RN6502-6HP0</b>	988	96.2	0.86	2040	19332	1.80	62	1500
2300	<b>1RN6504-6HP0</b>	989	96.4	0.85	2360	22209	1.95	69	1500
2400	<b>1RN6506-6HP0</b>	990	96.4	0.86	2440	23152	1.95	77	1500
2850	<b>1RN6560-6HP0</b>	990	96.6	0.87	3x950 <sup>2)</sup>	27492	2.25	108	1300
3200	<b>1RN6562-6HP0</b>	991	96.9	0.86	3x1080 <sup>2)</sup>	30838	2.45	119	1300
3500	<b>1RN6564-6HP0</b>	990	96.8	0.88	3x1140 <sup>2)</sup>	33763	2.20	132	1300
8-pole									
680	<b>1RN6450-8HP0</b>	743	94.9	0.83	720	8750	2.30	32	1200
750	<b>1RN6452-8HP0</b>	743	95.2	0.84	780	9651	2.40	36	1200
880	<b>1RN6454-8HP0</b>	743	95.2	0.84	920	11324	2.40	40	1200
970	<b>1RN6456-8HP0</b>	744	95.4	0.84	1020	12476	2.40	46	1200
1400	<b>1RN6500-8HP0</b>	741	95.8	0.83	1480	18043	1.85	69	1350
1560	<b>1RN6502-8HP0</b>	742	95.9	0.83	1640	20078	1.85	76	1350
1720	<b>1RN6504-8HP0</b>	742	96.0	0.83	1800	22137	1.95	85	1350
1900	<b>1RN6506-8HP0</b>	743	96.2	0.83	2000	24421	2.10	94	1350
1960	<b>1RN6560-8HP0</b>	743	96.6	0.84	2040	25192	2.15	128	1350
2300	<b>1RN6562-8HP0</b>	743	96.6	0.84	2360	29563	2.20	141	1350
2600	<b>1RN6564-8HP0</b>	743	96.7	0.84	4x670 <sup>2)</sup>	33419	2.45	156	1350
2850	<b>1RN6566-8HP0</b>	743	96.7	0.85	4x730 <sup>2)</sup>	36632	2.25	173	1350
<b>Position ■ of the Article No.:</b>  <b>For shaft heights 450, 500, 560 mm:</b> Refer to the article number structure on <a href="#">Page 1/3</a> for: - type of construction (12th position)									

#### Note:

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Different number of parallel winding systems possible.

## Motors for converter operation

### Converter with non-sinusoidal output

#### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type  
(repeated)

Partial load data for square-law torque drive

$P/P_{\text{rated}}$  155 (F) = 75 %

$P/P_{\text{rated}}$  155 (F) = 50 %

$P/P_{\text{rated}}$  155 (F) = 25 %

$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]

Square-law torque drive

6-pole

1RN6450-6...	705	900	96.1	0.85	470	789	96.3	0.82	235	627	96.2	0.73
1RN6452-6...	780	901	96.3	0.85	520	789	96.4	0.82	260	627	96.3	0.73
1RN6454-6...	885	901	96.3	0.85	590	789	96.4	0.83	295	627	96.4	0.74
1RN6456-6...	998	902	96.5	0.84	665	789	96.6	0.81	333	627	96.3	0.71
1RN6500-6...	1350	898	96.3	0.85	900	787	96.4	0.84	450	626	96.3	0.78
1RN6502-6...	1500	898	96.4	0.86	1000	787	96.6	0.84	500	626	96.4	0.78
1RN6504-6...	1725	899	96.5	0.85	1150	787	96.6	0.83	575	626	96.4	0.75
1RN6506-6...	1800	900	96.6	0.86	1200	788	96.7	0.84	600	626	96.5	0.77
1RN6560-6...	2138	900	96.7	0.87	1425	788	96.8	0.86	713	627	96.7	0.80
1RN6562-6...	2400	901	97.0	0.86	1600	789	97.0	0.84	800	627	96.7	0.76
1RN6564-6...	2625	900	97.0	0.88	1750	788	97.1	0.87	875	626	97.0	0.82

8-pole

1RN6450-8...	510	676	95.1	0.80	340	592	95.0	0.75	170	470	94.4	0.63
1RN6452-8...	563	676	95.4	0.81	375	592	95.4	0.77	188	470	94.9	0.65
1RN6454-8...	660	676	95.4	0.82	440	592	95.4	0.77	220	470	94.8	0.65
1RN6456-8...	728	676	95.6	0.82	485	592	95.6	0.77	243	470	95.1	0.65
1RN6500-8...	1050	674	95.9	0.82	700	590	95.9	0.80	350	469	95.5	0.70
1RN6502-8...	1170	674	96.0	0.82	780	591	96.1	0.80	390	469	95.6	0.70
1RN6504-8...	1290	675	96.1	0.82	860	591	96.1	0.79	430	470	95.7	0.70
1RN6506-8...	1425	675	96.3	0.82	950	591	96.2	0.78	475	470	95.6	0.67
1RN6560-8...	1470	675	96.7	0.84	980	591	96.8	0.82	490	470	96.6	0.73
1RN6562-8...	1725	675	96.7	0.84	1150	591	96.8	0.81	575	470	96.5	0.72
1RN6564-8...	1950	676	96.8	0.83	1300	592	96.8	0.79	650	470	96.4	0.69
1RN6566-8...	2138	675	96.8	0.84	1425	591	96.9	0.82	713	470	96.6	0.74

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## Motors for converter operation

Converter with non-sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL7 (Ex ec) and 1SQ7 (Ex pxb).

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 3.3 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>3.3 kV, 50 Hz</b>										
4-pole										
6272 <sup>2)</sup>	5600	<b>1RN7630-4 ■ ■ 50-0C ■ 0</b>	1490	97.4	0.87	1160	35890	2.10	145	1800
7056 <sup>2)</sup>	6300	<b>1RN7632-4 ■ ■ 50-0C ■ 0</b>	1490	97.4	0.88	1280	40376	2.15	160	1800
7840 <sup>2)</sup>	7000	<b>1RN7634-4 ■ ■ 50-0C ■ 0</b>	1491	97.6	0.88	1420	44832	2.25	178	1800
8736 <sup>2)</sup>	7800	<b>1RN7636-4 ■ ■ 50-0C ■ 0</b>	1491	97.6	0.88	1580	49956	2.35	194	1800
6-pole										
4592	4100	<b>1RN7630-6 ■ ■ 5 ■ -0C ■ 0</b>	993	97.3	0.84	880	39428	2.20	207	1800
5152	4600	<b>1RN7632-6 ■ ■ 5 ■ -0C ■ 0</b>	993	97.3	0.84	980	44236	2.15	229	1800
5712	5100	<b>1RN7634-6 ■ ■ 5 ■ -0C ■ 0</b>	993	97.4	0.84	1100	49045	2.20	250	1800
6384	5700	<b>1RN7636-6 ■ ■ 5 ■ -0C ■ 0</b>	993	97.4	0.85	1200	54815	2.15	271	1800
8-pole										
3360	3000	<b>1RN7630-8 ■ ■ 5 ■ -0C ■ 0</b>	745	96.8	0.82	660	38454	2.45	255	1350
3752	3350	<b>1RN7632-8 ■ ■ 5 ■ -0C ■ 0</b>	745	96.7	0.82	740	42940	2.50	282	1350
4200	3750	<b>1RN7634-8 ■ ■ 5 ■ -0C ■ 0</b>	745	96.8	0.82	830	48067	2.50	308	1350
4480	4000	<b>1RN7636-8 ■ ■ 5 ■ -0C ■ 0</b>	745	96.9	0.83	870	51271	2.60	334	1350
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft heights 630, 710, 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/5</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								
		- type of construction (12th position)								
		- housing and bearing version (15th position)								

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
4-pole												
1RN7630-4...	4202	1355	97.5	0.88	2801	1185	97.5	0.88	1401	941	97.5	0.84
1RN7632-4...	4727	1355	97.5	0.88	3150	1185	97.6	0.88	1576	941	97.6	0.85
1RN7634-4...	5252	1355	97.7	0.89	3500	1185	97.7	0.88	1751	942	97.6	0.85
1RN7636-4...	5852	1356	97.7	0.89	3900	1185	97.7	0.88	1951	942	97.6	0.83
6-pole												
1RN7630-6...	3076	903	97.3	0.84	2050	789	97.4	0.82	1025	627	97.1	0.75
1RN7632-6...	3451	903	97.4	0.84	2300	789	97.4	0.83	1151	627	97.2	0.76
1RN7634-6...	3826	903	97.5	0.84	2550	789	97.5	0.83	1276	627	97.3	0.76
1RN7636-6...	4277	903	97.5	0.85	2850	789	97.5	0.83	1426	627	97.3	0.77
8-pole												
1RN7630-8...	2250	677	96.7	0.81	1501	592	96.5	0.77	750	471	95.9	0.67
1RN7632-8...	2515	677	96.7	0.81	1676	592	96.5	0.77	840	471	95.8	0.66
1RN7634-8...	2815	677	96.8	0.81	1877	592	96.6	0.77	940	471	96.0	0.67
1RN7636-8...	3000	677	96.8	0.81	2002	592	96.7	0.77	1000	471	96.0	0.66

## Motors for converter operation

Converter with non-sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL6/1SL7 (Ex ec) and 1SQ6/1SQ7 (Ex pxb).

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RN6 at rated output for utilization 155 (F), for 1RN7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 50 Hz</b>										
2-pole										
1380	– <sup>3)</sup>	<b>1RN6450-2HS40</b>	2973	95.9	0.90	220	4433	2.00	13	3000
1570	– <sup>3)</sup>	<b>1RN6452-2HS40</b>	2977	96.2	0.90	250	5040	2.20	14	3000
1750	– <sup>3)</sup>	<b>1RN6454-2HS40</b>	2978	96.4	0.91	275	5616	2.30	16	3000
1950	– <sup>3)</sup>	<b>1RN6456-2HS40</b>	2981	96.6	0.92	305	6252	2.30	18	3000
2550	2244	<b>1RN6500-2HS40</b>	2967	96.2	0.88	420	8207	1.85	19	3000
2700	2376	<b>1RN6502-2HS40</b>	2969	96.3	0.90	430	8684	2.05	20	3000
3200	2816	<b>1RN6504-2HS40</b>	2974	96.6	0.91	510	10275	2.35	24	3000 <sup>2)</sup>
3550	3124	<b>1RN6506-2HS40</b>	2975	96.9	0.92	550	11395	2.40	26	3000 <sup>2)</sup>
3700	3367	<b>1RN6560-2HS40</b>	2977	96.7	0.90	590	11868	1.90	39	3000 <sup>2)</sup>
4300	3913	<b>1RN6562-2HS40</b>	2979	97.0	0.91	680	13784	2.05	43	3000 <sup>2)</sup>
5000	4550	<b>1RN6564-2HS40</b>	2981	97.1	0.92	780	16017	2.25	49	3000 <sup>2)</sup>
5700	5187	<b>1RN6566-2HS40</b>	2982	97.3	0.93	2x435	18253	2.45	54	3000 <sup>2)</sup>
6490	5900	<b>1RN7630-2 ■ 40-0CJ0</b>	2981	97.4	0.88	960	18900	1.95	74	3000
7260	6600	<b>1RN7632-2 ■ 40-0CJ0</b>	2983	97.5	0.89	1060	21128	2.15	83	3000
8030	7300	<b>1RN7634-2 ■ 40-0CJ0</b>	2985	97.7	0.90	1160	23353	2.50	91	3000
8910	8100	<b>1RN7636-2 ■ 40-0CJ0</b>	2985	97.8	0.91	1260	25913	2.60	100	3000
9900	9000	<b>1RN7710-2 ■ 40-0CJ0</b>	2986	97.4	0.91	1400	28782	2.00	148	3000
11000	10000	<b>1RN7712-2 ■ 40-0CJ0</b>	2985	97.5	0.91	1560	31991	2.00	160	3000
12320	11200	<b>1RN7714-2 ■ 40-0CJ0</b>	2987	97.6	0.92	1740	35806	2.25	175	3000
13750	12500	<b>1RN7716-2 ■ 40-0CJ0</b>	2986	97.7	0.92	1940	39975	2.25	190	3000
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft heights 630, 710, 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/5</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>3)</sup> Utilization 130 (B) on request.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
2-pole												
1RN6450-2...	1035	2704	96.1	0.91	690	2368	96.3	0.91	345	1882	96.4	0.87
1RN6452-2...	1178	2707	96.4	0.91	785	2370	96.5	0.90	393	1883	96.4	0.87
1RN6454-2...	1313	2707	96.6	0.92	875	2370	96.7	0.91	438	1883	96.6	0.88
1RN6456-2...	1464	2709	96.8	0.92	975	2371	96.9	0.91	488	1884	96.8	0.88
1RN6500-2...	1914	2704	96.5	0.88	1276	2366	96.6	0.87	638	1881	96.7	0.81
1RN6502-2...	2026	2705	96.5	0.90	1350	2367	96.7	0.88	675	1882	96.7	0.83
1RN6504-2...	2401	2708	96.8	0.90	1600	2369	96.9	0.89	801	1883	96.8	0.81
1RN6506-2...	2663	2708	97.0	0.91	1775	2369	97.1	0.90	888	1883	97.1	0.83
1RN6560-2...	2777	2709	96.9	0.90	1851	2370	97.0	0.89	925	1883	97.0	0.84
1RN6562-2...	3226	2711	97.1	0.90	2151	2371	97.2	0.89	1076	1884	97.2	0.84
1RN6564-2...	3751	2712	97.3	0.91	2500	2371	97.3	0.90	1251	1884	97.3	0.85
1RN6566-2...	4276	2713	97.4	0.92	2850	2372	97.5	0.91	1426	1885	97.4	0.85
1RN7630-2...	4428	2710	97.5	0.89	2951	2370	97.6	0.89	1475	1883	97.7	0.87
1RN7632-2...	4952	2712	97.6	0.90	3300	2371	97.7	0.90	1650	1884	97.7	0.87
1RN7634-2...	5476	2714	97.8	0.91	3650	2372	97.8	0.90	1826	1884	97.8	0.87
1RN7636-2...	6076	2714	97.9	0.91	4050	2372	97.9	0.91	2026	1884	97.9	0.88
1RN7710-2...	6749	2713	97.4	0.92	4499	2374	97.3	0.92	2249	1885	97.0	0.89
1RN7712-2...	7500	2712	97.5	0.92	5000	2373	97.4	0.93	2499	1885	97.2	0.91
1RN7714-2...	8404	2713	97.6	0.93	5603	2374	97.5	0.93	2802	1885	97.2	0.90
1RN7716-2...	9375	2713	97.7	0.93	6250	2374	97.6	0.93	3124	1885	97.3	0.91

## Motors for converter operation

### Converter with non-sinusoidal output

#### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

##### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RN6 at rated output for utilization 155 (F), for 1RN7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 50 Hz</b>										
4-pole										
1370	– <sup>3)</sup>	<b>1RN6450-4HS4</b>	1484	95.6	0.88	225	8824	2.60	20	1800
1500	– <sup>3)</sup>	<b>1RN6452-4HS4</b>	1485	95.8	0.88	245	9649	2.50	22	1800
1640	– <sup>3)</sup>	<b>1RN6454-4HS4</b>	1485	96.0	0.89	265	10549	2.50	25	1800
1860	– <sup>3)</sup>	<b>1RN6456-4HS4</b>	1485	96.1	0.90	300	11966	2.50	29	1800
2500 <sup>2)</sup>	2200	<b>1RN6500-4HS40</b>	1485	96.4	0.90	400	16076	2.25	42	1800
2800 <sup>2)</sup>	2464	<b>1RN6502-4HS40</b>	1485	96.5	0.90	445	18005	2.25	46	1800
3150 <sup>2)</sup>	2772	<b>1RN6504-4HS40</b>	1485	96.6	0.91	495	20256	2.25	52	1800
3450 <sup>2)</sup>	3036	<b>1RN6506-4HS40</b>	1486	96.8	0.91	540	22170	2.35	56	1800
3900 <sup>2)</sup>	3549	<b>1RN6560-4HS40</b>	1489	97.0	0.89	630	25012	1.95	84	1800
4500 <sup>2)</sup>	4095	<b>1RN6562-4HS40</b>	1489	97.1	0.90	710	28860	2.00	94	1800
5000 <sup>2)</sup>	4550	<b>1RN6564-4HS40</b>	1490	97.2	0.91	780	32045	2.10	105	1800
5500 <sup>2)</sup>	5005	<b>1RN6566-4HS40</b>	1490	97.4	0.91	2x430	35249	2.20	115	1800
6272 <sup>2)</sup>	5600	<b>1RN7630-4-40-0C</b>	1490	97.5	0.88	910	35890	2.25	145	1800
7056 <sup>2)</sup>	6300	<b>1RN7632-4-40-0C</b>	1490	97.5	0.88	1020	40376	2.20	160	1800
7840 <sup>2)</sup>	7000	<b>1RN7634-4-40-0C</b>	1491	97.7	0.88	1120	44832	2.20	178	1800
8736 <sup>2)</sup>	7800	<b>1RN7636-4-40-0C</b>	1491	97.7	0.88	1260	49956	2.25	194	1800
9744 <sup>2)</sup>	8700	<b>1RN7710-4-40-0C</b>	1491	97.5	0.90	1380	55720	2.15	262	1800
10864 <sup>2)</sup>	9700	<b>1RN7712-4-40-0C</b>	1491	97.6	0.90	1540	62125	2.15	286	1800
12096 <sup>2)</sup>	10800	<b>1RN7714-4-40-0C</b>	1492	97.7	0.91	1680	69124	2.35	321	1800
13440 <sup>2)</sup>	12000	<b>1RN7716-4-40-0C</b>	1492	97.8	0.91	1880	76804	2.35	361	1800
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft heights 450, 500, 560 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/3</a> for:								
		- type of construction (12th position)								
		<b>For shaft heights 630, 710, 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/5</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								
		- housing and bearing version (15th position)								

##### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

<sup>3)</sup> Utilization 130 (B) on request.



## Motors for converter operation

### Converter with non-sinusoidal output

#### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type  
(repeated)

Partial load data for square-law torque drive

$P/P_{\text{rated}}$  155 (F) = 75 %

$P/P_{\text{rated}}$  155 (F) = 50 %

$P/P_{\text{rated}}$  155 (F) = 25 %

$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]

Square-law torque drive

4-pole

1RN6450-4...	1028	1350	95.8	0.87	685	1183	96.0	0.85	343	940	95.8	0.78
1RN6452-4...	1125	1351	96.0	0.87	750	1183	96.1	0.85	375	941	95.9	0.77
1RN6454-4...	1230	1351	96.2	0.89	820	1183	96.3	0.87	410	941	96.2	0.80
1RN6456-4...	1395	1351	96.3	0.90	930	1183	96.5	0.88	465	941	96.4	0.83
1RN6500-4...	1876	1352	96.6	0.89	1250	1183	96.7	0.86	625	941	96.5	0.77
1RN6502-4...	2101	1352	96.7	0.89	1400	1183	96.8	0.86	700	941	96.6	0.77
1RN6504-4...	2363	1353	96.8	0.90	1575	1183	96.9	0.88	788	941	96.8	0.79
1RN6506-4...	2588	1353	96.9	0.90	1725	1184	97.0	0.88	863	941	96.9	0.79
1RN6560-4...	2927	1355	97.1	0.89	1950	1185	97.2	0.87	976	942	97.1	0.80
1RN6562-4...	3377	1355	97.2	0.90	2250	1185	97.4	0.88	1126	942	97.3	0.82
1RN6564-4...	3752	1356	97.4	0.90	2500	1185	97.5	0.89	1251	942	97.4	0.82
1RN6566-4...	4126	1356	97.5	0.90	2750	1186	97.6	0.88	1376	942	97.4	0.81
1RN7630-4...	4202	1355	97.6	0.88	2800	1185	97.6	0.88	1401	941	97.5	0.84
1RN7632-4...	4727	1355	97.6	0.89	3150	1185	97.7	0.89	1576	941	97.6	0.85
1RN7634-4...	5252	1355	97.8	0.88	3500	1185	97.8	0.88	1751	942	97.7	0.85
1RN7636-4...	5852	1356	97.8	0.89	3900	1185	97.8	0.88	1951	942	97.7	0.85
1RN7710-4...	6527	1355	97.5	0.91	4359	1186	97.5	0.91	2181	942	97.2	0.89
1RN7712-4...	7277	1355	97.6	0.91	4860	1186	97.6	0.91	2431	942	97.3	0.88
1RN7714-4...	8105	1356	97.7	0.91	5412	1186	97.6	0.91	2708	942	97.3	0.88
1RN7716-4...	9006	1356	97.8	0.92	6014	1186	97.7	0.92	3009	942	97.5	0.89

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## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RN6 at rated output for utilization 155 (F), for 1RN7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 50 Hz</b>										
6-pole										
940	– <sup>2)</sup>	<b>1RN6450-6HS4</b>	990	95.7	0.85	160	9071	2.40	26	1200
1040	– <sup>2)</sup>	<b>1RN6452-6HS4</b>	991	95.9	0.85	178	10026	2.50	29	1200
1180	– <sup>2)</sup>	<b>1RN6454-6HS4</b>	991	96.1	0.86	198	11381	2.50	32	1200
1330	– <sup>2)</sup>	<b>1RN6456-6HS4</b>	992	96.2	0.85	225	12811	2.50	37	1200
2000	1800	<b>1RN6500-6HS4</b>	987	95.8	0.84	345	19352	1.75	56	1500
2200	2000	<b>1RN6502-6HS4</b>	986	95.8	0.85	375	21308	1.65	62	1500
2450	2200	<b>1RN6504-6HS4</b>	987	96.0	0.85	415	23706	1.70	69	1500
2650	2400	<b>1RN6506-6HS4</b>	988	96.2	0.86	445	25615	1.80	77	1500
3150	2750	<b>1RN6560-6HS4</b>	989	96.5	0.86	530	30417	2.05	108	1300
3500	3100	<b>1RN6562-6HS4</b>	989	96.5	0.87	580	33797	2.05	119	1300
3900	3450	<b>1RN6564-6HS4</b>	989	96.6	0.87	640	37659	2.10	132	1300
4250	3750	<b>1RN6566-6HS4</b>	989	96.7	0.87	700	41039	2.05	146	1300
4592	4100	<b>1RN7630-6-4-OC</b>	993	97.3	0.84	700	39428	2.20	207	1800
5152	4600	<b>1RN7632-6-4-OC</b>	993	97.4	0.84	780	44236	2.20	229	1800
5712	5100	<b>1RN7634-6-4-OC</b>	993	97.3	0.84	870	49045	2.25	250	1800
6384	5700	<b>1RN7636-6-4-OC</b>	993	97.4	0.84	970	54815	2.25	271	1800
7056	6300	<b>1RN7710-6-4-OC</b>	994	97.2	0.86	1040	60524	2.10	350	1600
7840	7000	<b>1RN7712-6-4-OC</b>	994	97.3	0.86	1160	67249	2.15	398	1600
8624	7700	<b>1RN7714-6-4-OC</b>	995	97.5	0.87	1260	73899	2.30	450	1600
9632	8600	<b>1RN7716-6-4-OC</b>	995	97.5	0.86	1420	82537	2.30	496	1600

**Position ■  
of the Article No.:**

**For shaft heights  
450, 500, 560 mm:**

Refer to the article number structure on [Page 1/3](#) for:

- type of construction  
(12th position)

**For shaft heights  
630, 710, 800 mm:**

Refer to the article number structure on [Page 1/5](#) for:

- cooling method  
(9th position)  
- converter type  
(10th position)  
- type of construction  
(12th position)  
- housing and bearing  
version (15th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type  
(repeated)

Partial load data for square-law torque drive

 $P/P_{\text{rated}}$  155 (F) = 75 % $P/P_{\text{rated}}$  155 (F) = 50 % $P/P_{\text{rated}}$  155 (F) = 25 % $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$  $P$  $n$  $\eta$  $\cos \varphi$ 

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Square-law torque drive

6-pole

Motor type	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
1RN6450-6...	705	901	96.0	0.84	470	789	96.1	0.81	235	627	96.0	0.71
1RN6452-6...	780	901	96.1	0.84	520	789	96.2	0.80	260	627	96.0	0.70
1RN6454-6...	885	901	96.3	0.85	590	789	96.4	0.82	295	627	96.3	0.73
1RN6456-6...	998	902	96.4	0.83	665	790	96.5	0.80	333	627	96.2	0.69
1RN6500-6...	1500	898	96.1	0.84	1000	786	96.2	0.83	500	625	96.1	0.75
1RN6502-6...	1650	897	96.1	0.85	1100	786	96.3	0.84	550	625	96.3	0.78
1RN6504-6...	1838	897	96.3	0.85	1225	786	96.5	0.85	613	625	96.4	0.79
1RN6506-6...	1988	898	96.4	0.86	1325	787	96.6	0.85	663	626	96.5	0.78
1RN6560-6...	2363	899	96.7	0.87	1575	788	96.8	0.86	788	626	96.8	0.81
1RN6562-6...	2625	899	96.7	0.87	1750	788	96.9	0.87	875	626	96.8	0.82
1RN6564-6...	2925	900	96.8	0.87	1950	788	97.0	0.86	975	626	96.9	0.81
1RN6566-6...	3188	899	96.9	0.88	2125	788	97.1	0.87	1063	626	97.0	0.82
1RN7630-6...	3076	903	97.4	0.84	2050	789	97.4	0.82	1025	627	97.1	0.75
1RN7632-6...	3451	903	97.4	0.84	2300	789	97.4	0.83	1151	627	97.2	0.76
1RN7634-6...	3826	903	97.4	0.84	2550	790	97.4	0.82	1276	627	97.2	0.75
1RN7636-6...	4276	903	97.5	0.84	2850	789	97.5	0.82	1426	627	97.3	0.75
1RN7710-6...	4728	903	97.2	0.85	3157	790	97.0	0.84	1580	628	96.5	0.77
1RN7712-6...	5254	903	97.3	0.86	3508	791	97.1	0.85	1756	628	96.7	0.78
1RN7714-6...	5778	904	97.4	0.86	3859	791	97.2	0.84	1930	628	96.7	0.77
1RN7716-6...	6453	904	97.4	0.86	4309	791	97.2	0.83	2155	628	96.7	0.75

## Motors for converter operation

Converter with non-sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RN6 at rated output for utilization 155 (F), for 1RN7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{\text{rated}}^{155 (F)}$ kW	$P_{\text{rated}}^{130 (B)}$ kW		$n_{\text{rated}}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$I_{\text{rated}}$ A	$T_{\text{rated}}$ Nm	$T_B/T_{\text{rated}}$ [-]	J kgm <sup>2</sup>	$n_{\text{max}}$ rpm
<b>4.16 kV, 50 Hz</b>										
8-pole										
680	— <sup>2)</sup>	<b>1RN6450-8HS4</b>	743	94.7	0.82	122	8743	2.50	32	1200
750	— <sup>2)</sup>	<b>1RN6452-8HS4</b>	744	95.0	0.82	134	9638	2.50	36	1200
880	— <sup>2)</sup>	<b>1RN6454-8HS4</b>	743	95.1	0.83	154	11318	2.50	40	1200
970	— <sup>2)</sup>	<b>1RN6456-8HS4</b>	743	95.3	0.85	166	12477	2.40	46	1200
1360	1220	<b>1RN6500-8HS4</b>	741	95.4	0.83	240	17528	1.75	69	1350
1540	1380	<b>1RN6502-8HS4</b>	741	95.6	0.83	270	19848	1.80	76	1350
1740	1560	<b>1RN6504-8HS4</b>	742	95.8	0.83	305	22395	1.90	85	1350
1880	1700	<b>1RN6506-8HS4</b>	743	95.8	0.84	325	24164	2.00	94	1350
2200	1940	<b>1RN6560-8HS4</b>	741	96.1	0.84	380	28354	1.90	128	1350
2500	2200	<b>1RN6562-8HS4</b>	741	96.2	0.84	430	32220	1.95	141	1350
2750	2400	<b>1RN6564-8HS4</b>	742	96.4	0.84	470	35394	2.05	156	1350
3000	2640	<b>1RN6566-8HS4</b>	742	96.5	0.85	510	38612	2.10	173	1350
3360	3000	<b>1RN7630-8 ■ ■ ■ 4 ■ -0C ■ 0</b>	744	96.5	0.83	520	38505	2.25	255	1350
3752	3350	<b>1RN7632-8 ■ ■ ■ 4 ■ -0C ■ 0</b>	744	96.6	0.83	580	42998	2.25	282	1350
4200	3750	<b>1RN7634-8 ■ ■ ■ 4 ■ -0C ■ 0</b>	744	96.7	0.83	650	48132	2.30	308	1350
4480	4000	<b>1RN7636-8 ■ ■ ■ 4 ■ -0C ■ 0</b>	744	96.7	0.84	680	51340	2.30	334	1350
5040	4500	<b>1RN7710-8 ■ ■ ■ 4 ■ -0C ■ 0</b>	745	96.9	0.85	760	57680	1.90	433	1125
5600	5000	<b>1RN7712-8 ■ ■ ■ 4 ■ -0C ■ 0</b>	745	97.0	0.85	840	64089	1.95	493	1125
6272	5600	<b>1RN7714-8 ■ ■ ■ 4 ■ -0C ■ 0</b>	745	97.1	0.86	930	71780	2.00	558	1125
7056	6300	<b>1RN7716-8 ■ ■ ■ 4 ■ -0C ■ 0</b>	745	97.2	0.86	1040	80752	2.15	617	1125
8000	7200	<b>1RN7800-8 ■ ■ ■ 4 ■ -0C ■ 0</b>	746	97.3	0.86	1200	92172	2.60	865	1125
8800	8000	<b>1RN7802-8 ■ ■ ■ 4 ■ -0C ■ 0</b>	746	97.4	0.86	1320	102413	2.50	955	1125
9800	8800	<b>1RN7804-8 ■ ■ ■ 4 ■ -0C ■ 0</b>	746	97.5	0.85	1480	112654	2.50	1055	1125
10800	9800	<b>1RN7806-8 ■ ■ ■ 4 ■ -0C ■ 0</b>	746	97.5	0.86	1620	125456	2.50	1165	1125

**Position ■ of the Article No.:**

**For shaft heights 450, 500, 560 mm:**  
Refer to the article number structure on [Page 1/3](#) for:  
- type of construction (12th position)

**For shaft heights 630, 710, 800 mm:**  
Refer to the article number structure on [Page 1/5](#) for:  
- cooling method (9th position)  
- converter type (10th position)  
- type of construction (12th position)  
- housing and bearing version (15th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}} 155 (F) = 75 \%$				$P/P_{\text{rated}} 155 (F) = 50 \%$				$P/P_{\text{rated}} 155 (F) = 25 \%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
8-pole												
1RN6450-8...	510	676	94.8	0.80	340	592	94.7	0.75	170	470	94.0	0.63
1RN6452-8...	563	676	95.1	0.80	375	592	95.1	0.75	188	470	94.4	0.62
1RN6454-8...	660	676	95.3	0.82	440	592	95.3	0.78	220	470	94.8	0.66
1RN6456-8...	728	676	95.5	0.83	485	592	95.5	0.80	243	470	95.1	0.69
1RN6500-8...	1020	674	95.7	0.83	680	590	95.8	0.81	340	469	95.4	0.72
1RN6502-8...	1155	674	95.8	0.83	770	590	95.9	0.81	385	469	95.5	0.72
1RN6504-8...	1305	674	96.0	0.83	870	591	96.0	0.80	435	470	95.6	0.71
1RN6506-8...	1410	675	95.9	0.82	940	591	95.9	0.79	470	470	95.4	0.69
1RN6560-8...	1650	674	96.3	0.84	1100	590	96.5	0.83	550	469	96.5	0.76
1RN6562-8...	1875	674	96.4	0.84	1250	590	96.6	0.83	625	469	96.5	0.76
1RN6564-8...	2063	674	96.6	0.84	1375	591	96.7	0.82	688	470	96.6	0.75
1RN6566-8...	2250	675	96.7	0.85	1500	591	96.8	0.83	750	470	96.7	0.75
1RN7630-8...	2250	677	96.8	0.81	1501	592	96.7	0.77	750	471	96.2	0.66
1RN7632-8...	2515	677	96.9	0.81	1676	592	96.7	0.77	840	471	96.3	0.66
1RN7634-8...	2816	676	97.0	0.83	1875	592	97.0	0.82	941	470	96.8	0.75
1RN7636-8...	3001	677	97.0	0.83	2000	592	96.9	0.80	1000	470	96.6	0.72
1RN7710-8...	3379	677	96.8	0.85	2257	592	96.7	0.84	1130	471	96.2	0.77
1RN7712-8...	3754	677	97.0	0.85	2507	593	96.8	0.84	1255	471	96.3	0.77
1RN7714-8...	4204	677	97.1	0.86	2808	593	96.9	0.84	1405	471	96.4	0.78
1RN7716-8...	4729	677	97.1	0.85	3158	593	96.9	0.83	1580	471	96.4	0.76
1RN7800-8...	5390	680	97.1	0.85	3600	594	96.9	0.82	1800	471	96.3	0.71
1RN7802-8...	5990	680	97.3	0.86	4000	594	97.0	0.83	2000	471	96.4	0.73
1RN7804-8...	6590	680	97.3	0.84	4400	594	97.0	0.81	2200	472	96.4	0.70
1RN7806-8...	7340	680	97.3	0.85	4900	594	97.1	0.82	2450	472	96.5	0.72

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 50 Hz</b>										
10-pole										
2576	2300	<b>1RN7630-3 ■ ■ 4 ■ -0C ■ 0</b>	595	96.7	0.81	410	36913	2.30	258	1080
2856	2550	<b>1RN7632-3 ■ ■ 4 ■ -0C ■ 0</b>	595	96.8	0.81	450	40926	2.30	284	1080
3192	2850	<b>1RN7634-3 ■ ■ 4 ■ -0C ■ 0</b>	595	96.9	0.82	500	45740	2.30	310	1080
3528	3150	<b>1RN7636-3 ■ ■ 4 ■ -0C ■ 0</b>	595	97.0	0.81	560	50555	2.30	336	1080
3920	3500	<b>1RN7710-3 ■ ■ 4 ■ -0C ■ 0</b>	595	96.6	0.84	600	56172	2.20	429	1125
4312	3850	<b>1RN7712-3 ■ ■ 4 ■ -0C ■ 0</b>	595	96.7	0.85	650	61790	2.20	489	1125
4816	4300	<b>1RN7714-3 ■ ■ 4 ■ -0C ■ 0</b>	595	96.8	0.84	730	69012	2.20	551	1125
5320	4750	<b>1RN7716-3 ■ ■ 4 ■ -0C ■ 0</b>	595	96.9	0.85	800	76234	2.20	613	1125
12-pole										
2128	1900	<b>1RN7630-5 ■ ■ 4 ■ -0C ■ 0</b>	495	96.2	0.76	360	36654	2.25	264	900
2352	2100	<b>1RN7632-5 ■ ■ 4 ■ -0C ■ 0</b>	495	96.3	0.76	400	40512	2.30	290	900
2576	2300	<b>1RN7634-5 ■ ■ 4 ■ -0C ■ 0</b>	495	96.2	0.76	435	44370	2.30	318	900
2800	2500	<b>1RN7636-5 ■ ■ 4 ■ -0C ■ 0</b>	495	96.3	0.77	470	48229	2.30	344	900

**Position ■  
of the Article No.:**

**For shaft heights  
630, 710, 800 mm:**

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- converter type (10th position)
- type of construction (12th position)
- housing and bearing version (15th position)

Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

## Motors for converter operation

### Converter with non-sinusoidal output

#### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type  
(repeated)

Partial load data for square-law torque drive

$P/P_{\text{rated}}$  155 (F) = 75 %

$P/P_{\text{rated}}$  155 (F) = 50 %

$P/P_{\text{rated}}$  155 (F) = 25 %

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

**Square-law torque drive**

10-pole

1RN7630-3...	1725	541	96.8	0.80	1150	473	96.8	0.76	575	376	96.5	0.65
1RN7632-3...	1915	541	96.9	0.80	1276	473	96.9	0.76	640	376	96.6	0.65
1RN7634-3...	2140	541	97.0	0.80	1425	473	97.0	0.77	715	376	96.7	0.66
1RN7636-3...	2365	541	97.0	0.80	1577	473	97.0	0.77	790	376	96.8	0.66
1RN7710-3...	2627	541	96.5	0.83	1755	473	96.3	0.79	878	376	95.7	0.68
1RN7712-3...	2890	541	96.7	0.84	1930	473	96.5	0.81	966	376	95.9	0.71
1RN7714-3...	3227	541	96.7	0.83	2156	474	96.5	0.80	1079	376	95.8	0.69
1RN7716-3...	3565	541	96.8	0.84	2381	473	96.6	0.81	1192	376	96.0	0.71

12pole

1RN7630-5...	1425	450	96.2	0.73	951	394	96.1	0.68	475	313	95.5	0.54
1RN7632-5...	1575	450	96.3	0.73	1051	394	96.2	0.68	525	313	95.6	0.54
1RN7634-5...	1725	450	96.3	0.74	1150	394	96.2	0.68	575	313	95.6	0.55
1RN7636-5...	1875	450	96.4	0.74	1250	394	96.3	0.69	625	313	95.7	0.55

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## Motors for converter operation

Converter with non-sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL7 (Ex ec) and 1SQ7 (Ex pxb).

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 6 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{\text{rated}}$ 155 (F)	$P_{\text{rated}}$ 130 (B)		$n_{\text{rated}}$	$\eta$	$\cos \varphi$	$I_{\text{rated}}$	$T_{\text{rated}}$	$T_{\text{B}}/T_{\text{rated}}$	J	$n_{\text{max}}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>Up to 6.6 kV, 50 Hz</b>										
4-pole										
16200 <sup>2)</sup>	14500	<b>1RN7800-4-0-0-0-0C-0</b>	1492	97.6	0.91	1580	92812	2.10	520.0	1500
17800 <sup>2)</sup>	15900	<b>1RN7802-4-0-0-0-0C-0</b>	1492	97.7	0.91	1720	101773	2.20	575.0	1500
19600 <sup>2)</sup>	17500	<b>1RN7804-4-0-0-0-0C-0</b>	1493	97.8	0.91	1900	111939	2.30	630.0	1500
21200 <sup>2)</sup>	19000	<b>1RN7806-4-0-0-0-0C-0</b>	1493	97.8	0.91	2050	121534	2.30	685.0	1500
8-pole										
8400	7500	<b>1RN7800-8-0-0-0-0C-0</b>	746	97.4	0.86	860	96012	2.40	860.0	1125
9300	8400	<b>1RN7802-8-0-0-0-0C-0</b>	746	97.4	0.87	950	107534	2.30	955.0	1125
10300	9300	<b>1RN7804-8-0-0-0-0C-0</b>	746	97.5	0.86	1060	119055	2.40	1055.0	1125
11300	10300	<b>1RN7806-8-0-0-0-0C-0</b>	746	97.5	0.86	1180	131857	2.40	1160.0	1125
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft heights 630, 710, 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/5</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								
		- voltage code (11th position)								
		- type of construction (12th position)								
		- housing and bearing version (15th position)								

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.



## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
4-pole												
1RN7800-4...	10800	1355	97.7	0.91	7200	1186	97.6	0.91	3600	942	97.2	0.89
1RN7802-4...	11900	1356	97.7	0.92	7900	1186	97.7	0.92	3900	942	97.3	0.89
1RN7804-4...	13100	1356	97.8	0.91	8700	1187	97.8	0.91	4300	942	97.3	0.88
1RN7806-4...	14200	1356	97.9	0.92	9500	1187	97.8	0.91	4700	942	97.4	0.88
8-pole												
1RN7800-8...	5620	679	97.2	0.85	3750	593	96.8	0.82	1870	471	96.3	0.72
1RN7802-8...	6290	679	97.4	0.86	4200	593	97.1	0.84	2100	471	96.6	0.76
1RN7804-8...	6970	679	97.4	0.85	4650	593	97.0	0.82	2320	471	96.5	0.72
1RN7806-8...	7720	679	97.4	0.85	5150	593	97.1	0.82	2570	471	96.6	0.72

## Motors for converter operation

Converter with non-sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL7 (Ex ec) and 1SQ7 (Ex pxb).

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 10 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)	Article No.	$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW		rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>9 ... 11 kV, 50 Hz</b>										
4-pole										
13400 <sup>2)</sup>	12000	<b>1RN7800-4 ■■■ 0-0C ■ 0</b>	1493	97.6	0.91	780	76758	2.40	520.0	1500
15100 <sup>2)</sup>	13500	<b>1RN7802-4 ■■■ 0-0C ■ 0</b>	1494	97.7	0.91	880	86295	2.50	570.0	1500
16800 <sup>2)</sup>	15000	<b>1RN7804-4 ■■■ 0-0C ■ 0</b>	1494	97.7	0.91	970	95884	2.50	625.0	1500
18400 <sup>2)</sup>	16500	<b>1RN7806-4 ■■■ 0-0C ■ 0</b>	1494	97.7	0.92	1060	105472	2.50	690.0	1500
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft heights 630, 710, 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/5</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								
		- voltage code (11th position)								
		- housing and bearing version (15th position)								

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
4-pole												
1RN7800-4...	9000	1357	97.6	0.92	6000	1187	97.5	0.91	3000	943	97.0	0.88
1RN7802-4...	10100	1357	97.7	0.91	6700	1187	97.5	0.90	3300	943	97.0	0.85
1RN7804-4...	11200	1357	97.7	0.91	7500	1187	97.6	0.90	3700	943	97.1	0.86
1RN7806-4...	12300	1357	97.8	0.92	8200	1187	97.7	0.91	4100	943	97.2	0.88

## Motors for converter operation

Converter with non-sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL6 (Ex ec) and 1SQ6 (Ex pxb).

Rated power  IEC  $P_{\text{rated}}$ 155 (F) kW	Low voltage motor SIMOTICS HV M  Article No.	Operating data at rated output for utilization 155 (F)							
		Rated speed	Efficiency	Power factor	Rated current 690 V	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
		$n_{\text{rated}}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$I_{\text{rated}}$ A	$T_{\text{rated}}$ Nm	$T_{\text{B}}/T_{\text{rated}}$ [-]	J kgm <sup>2</sup>	$n_{\text{max}}$ rpm
<b>690 V, 60 Hz</b>									
2-pole									
1550	<b>1RN6450-2HP10</b>	3578	95.9	0.90	1500	4140	1.90	13	3600 <sup>2)</sup>
1650	<b>1RN6452-2HP10</b>	3581	96.0	0.91	1580	4403	2.20	14	3600 <sup>2)</sup>
1720	<b>1RN6454-2HP10</b>	3584	96.1	0.91	1640	4586	2.40	16	3600 <sup>2)</sup>
2180	<b>1RN6456-2HP10</b>	3584	96.7	0.92	2040	5814	2.40	18	3600 <sup>2)</sup>
2500	<b>1RN6500-2HP10</b>	3579	96.7	0.90	2400	6670	2.55	20	3600 <sup>2)</sup>
2750	<b>1RN6502-2HP10</b>	3577	96.6	0.91	4x650 <sup>5)</sup>	7342	2.35	22	3600 <sup>2)</sup>
3100	<b>1RN6504-2HP10</b>	3581	97.0	0.92	4x730 <sup>5)</sup>	8267	2.55	25	3600 <sup>2)</sup>
4-pole									
1630	<b>1RN6450-4HP1</b> ■	1784	95.9	0.88	1620	8740	2.30	20	1800
1750	<b>1RN6452-4HP1</b> ■	1783	96.0	0.90	1700	9385	2.30	22	1800
2070	<b>1RN6454-4HP1</b> ■	1783	96.2	0.90	2000	11104	2.30	25	1800
2310	<b>1RN6456-4HP1</b> ■	1786	96.4	0.89	2240	12364	2.50	29	1800
2700 <sup>4)</sup>	<b>1RN6500-4HP10</b>	1788	96.9	0.90	4x650 <sup>5)</sup>	14420	2.80	42	1800 <sup>3)</sup>
2850 <sup>4)</sup>	<b>1RN6502-4HP10</b>	1786	96.9	0.91	4x680 <sup>5)</sup>	15238	2.50	46	1800 <sup>3)</sup>
3000 <sup>4)</sup>	<b>1RN6504-4HP10</b>	1786	97.0	0.92	4x700 <sup>5)</sup>	16040	2.40	52	1800 <sup>3)</sup>
<b>Position ■ of the Article No.:</b>  <b>For shaft heights 450, 500, 560 mm:</b> Refer to the article number structure on <a href="#">Page 1/3</a> for: - type of construction (12th position)									

#### Note:

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

<sup>3)</sup> Higher speed limit on request.

<sup>4)</sup> Data of vertical motors (IM V1) on request.

<sup>5)</sup> Different number of parallel winding systems possible.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
2-pole												
1RN6450-2...	1164	3253	96.2	0.90	775	2844	96.3	0.90	388	2261	96.2	0.86
1RN6452-2...	1239	3255	96.3	0.92	825	2845	96.4	0.91	413	2262	96.3	0.87
1RN6454-2...	1291	3257	96.3	0.92	860	2847	96.4	0.91	430	2262	96.2	0.86
1RN6456-2...	1636	3258	96.9	0.92	1090	2847	96.9	0.91	545	2263	96.7	0.87
1RN6500-2...	1876	3256	96.8	0.89	1250	2846	96.8	0.87	626	2261	96.6	0.77
1RN6502-2...	2064	3254	96.8	0.90	1375	2846	96.9	0.89	688	2261	96.8	0.82
1RN6504-2...	2325	3257	97.1	0.91	1550	2847	97.1	0.89	776	2262	97.0	0.82
4-pole												
1RN6450-4...	1223	1623	96.1	0.88	815	1420	96.2	0.86	408	1129	95.9	0.78
1RN6452-4...	1313	1623	96.3	0.90	875	1419	96.4	0.89	438	1129	96.3	0.84
1RN6454-4...	1553	1623	96.5	0.90	1035	1419	96.6	0.89	518	1129	96.5	0.85
1RN6456-4...	1733	1625	96.6	0.89	1155	1421	96.6	0.87	578	1130	96.3	0.79
1RN6500-4...	2025	1627	97.0	0.88	1351	1422	97.0	0.83	675	1130	96.6	0.70
1RN6502-4...	2138	1626	97.0	0.90	1425	1422	97.1	0.87	713	1130	96.9	0.78
1RN6504-4...	2251	1625	97.1	0.91	1500	1421	97.2	0.90	750	1130	97.2	0.83

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Selection and ordering data (continued)

Rated power  IEC  $P_{\text{rated}}$ 155 (F) kW	Low voltage motor SIMOTICS HV M  Article No.	Operating data at rated output for utilization 155 (F)							
		Rated speed  $n_{\text{rated}}$ rpm	Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current 690 V  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_B/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical speed limit <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>690 V, 60 Hz</b>									
6-pole									
1210	<b>1RN6450-6HP1</b>	1191	96.1	0.85	1240	9718	2.40	26	1200
1350	<b>1RN6452-6HP1</b>	1191	96.3	0.84	1400	10837	2.40	29	1200
1480	<b>1RN6454-6HP1</b>	1191	96.3	0.86	1500	11883	2.30	32	1200
1620	<b>1RN6456-6HP1</b>	1192	96.6	0.86	1640	12995	2.40	37	1200
2150	<b>1RN6500-6HP1</b>	1190	96.5	0.84	2200	17254	2.10	56	1500
2400	<b>1RN6502-6HP1</b>	1188	96.5	0.85	2440	19293	1.85	62	1500
2700	<b>1RN6504-6HP1</b>	1190	96.7	0.84	3x930 <sup>2)</sup>	21668	2.15	69	1500
2950	<b>1RN6506-6HP1</b>	1189	96.7	0.86	3x990 <sup>2)</sup>	23694	1.90	77	1500
3300	<b>1RN6560-6HP1</b>	1191	96.9	0.87	3x1100 <sup>2)</sup>	26461	2.30	108	1300
3650	<b>1RN6562-6HP1</b>	1190	96.8	0.87	3x1200 <sup>2)</sup>	29292	2.10	119	1300
8-pole									
870	<b>1RN6450-8HP1</b>	893	95.3	0.84	910	9323	2.30	32	1200
960	<b>1RN6452-8HP1</b>	892	95.4	0.84	1000	10290	2.20	36	1200
1050	<b>1RN6454-8HP1</b>	893	95.5	0.84	1100	11239	2.40	40	1200
1180	<b>1RN6456-8HP1</b>	893	95.7	0.85	1220	12636	2.30	46	1200
1600	<b>1RN6500-8HP1</b>	892	96.0	0.83	1680	17130	1.85	69	1350
1800	<b>1RN6502-8HP1</b>	892	96.1	0.83	1880	19271	1.90	76	1350
2000	<b>1RN6504-8HP1</b>	893	96.3	0.83	2080	21389	2.05	85	1350
2200	<b>1RN6506-8HP1</b>	893	96.4	0.83	2320	23527	2.05	94	1350
2250	<b>1RN6560-8HP1</b>	893	96.7	0.84	2320	24062	2.30	128	1350
2600	<b>1RN6562-8HP1</b>	893	96.8	0.84	4x670 <sup>2)</sup>	27805	2.25	141	1350
2900	<b>1RN6564-8HP1</b>	894	96.9	0.83	4x750 <sup>2)</sup>	30979	2.65	156	1350
3250	<b>1RN6566-8HP1</b>	893	97.0	0.85	4x820 <sup>2)</sup>	34756	2.35	173	1350

**Position ■  
of the Article No.:**

**For shaft heights  
450, 500, 560 mm:**

Refer to the article number  
structure on [Page 1/3](#) for:

- type of construction  
(12th position)

#### Note:

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Different number of parallel winding systems possible.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type  
(repeated)

Partial load data for square-law torque drive

 $P/P_{\text{rated}}$  155 (F) = 75 % $P/P_{\text{rated}}$  155 (F) = 50 % $P/P_{\text{rated}}$  155 (F) = 25 %
 $P$        $n$        $\eta$        $\cos \varphi$   
 kW      rpm      %      [-]

 $P$        $n$        $\eta$        $\cos \varphi$   
 kW      rpm      %      [-]

 $P$        $n$        $\eta$        $\cos \varphi$   
 kW      rpm      %      [-]

Square-law torque drive

6-pole

1RN6450-6...	908	1083	96.3	0.82	605	947	96.4	0.79	303	753	96.0	0.67
1RN6452-6...	1013	1083	96.5	0.82	675	947	96.5	0.78	338	753	96.2	0.67
1RN6454-6...	1110	1083	96.5	0.84	740	947	96.6	0.81	370	753	96.3	0.71
1RN6456-6...	1215	1084	96.8	0.84	810	947	96.8	0.81	405	753	96.5	0.71
1RN6500-6...	1613	1082	96.5	0.83	1075	946	96.5	0.79	538	752	96.0	0.69
1RN6502-6...	1800	1081	96.6	0.86	1200	945	96.7	0.84	600	752	96.5	0.78
1RN6504-6...	2025	1082	96.7	0.83	1350	946	96.7	0.80	675	752	96.2	0.69
1RN6506-6...	2213	1081	96.8	0.86	1475	946	96.9	0.85	738	752	96.7	0.78
1RN6560-6...	2475	1083	97.0	0.87	1650	947	97.0	0.86	825	753	96.7	0.79
1RN6562-6...	2738	1082	97.0	0.88	1825	946	97.1	0.87	913	752	97.0	0.83

8-pole

1RN6450-8...	653	812	95.5	0.81	435	710	95.4	0.77	218	565	94.9	0.66
1RN6452-8...	720	812	95.7	0.83	480	710	95.6	0.79	240	565	95.2	0.68
1RN6454-8...	788	812	95.6	0.81	525	710	95.6	0.77	263	565	95.0	0.65
1RN6456-8...	885	812	95.9	0.83	590	710	95.8	0.79	295	565	95.3	0.69
1RN6500-8...	1200	811	96.1	0.83	800	709	96.1	0.80	400	564	95.7	0.71
1RN6502-8...	1350	811	96.2	0.83	900	709	96.2	0.80	450	564	95.7	0.71
1RN6504-8...	1500	812	96.3	0.82	1000	710	96.3	0.79	500	564	95.7	0.69
1RN6506-8...	1650	812	96.4	0.82	1100	710	96.3	0.79	550	564	95.7	0.69
1RN6560-8...	1688	812	96.8	0.84	1125	710	96.8	0.81	563	564	96.5	0.72
1RN6562-8...	1950	812	96.9	0.84	1300	710	96.9	0.82	650	564	96.6	0.73
1RN6564-8...	2175	813	96.9	0.82	1450	710	96.8	0.78	725	565	96.3	0.67
1RN6566-8...	2438	812	97.1	0.84	1625	710	97.0	0.81	813	565	96.7	0.72

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## Motors for converter operation

Converter with non-sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL6/1SL7 (Ex ec) and 1SQ6/1SQ7 (Ex pxb).

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RN6 at rated output for utilization 155 (F), for 1RN7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 60 Hz</b>										
2-pole										
1600	- <sup>4)</sup>	<b>1RN6450-2HS30</b>	3576	96.0	0.89	260	4274	2.10	13	3600 <sup>2)</sup>
1850	- <sup>4)</sup>	<b>1RN6452-2HS30</b>	3578	96.3	0.91	295	4941	2.30	14	3600 <sup>2)</sup>
2060	- <sup>4)</sup>	<b>1RN6454-2HS30</b>	3579	96.6	0.91	325	5500	2.30	16	3600 <sup>2)</sup>
2300	- <sup>4)</sup>	<b>1RN6456-2HS30</b>	3581	96.8	0.92	360	6137	2.40	18	3600 <sup>2)</sup>
3000	2640	<b>1RN6500-2HS30</b>	3572	96.5	0.89	485	8020	2.05	20	3600 <sup>2)</sup>
3250	2860	<b>1RN6502-2HS30</b>	3570	96.5	0.89	530	8693	1.95	22	3600 <sup>2)</sup>
3700	3256	<b>1RN6504-2HS30</b>	3576	96.8	0.91	580	9880	2.30	25	3600 <sup>2)</sup>
4200	3696	<b>1RN6506-2HS30</b>	3577	97.1	0.92	650	11212	2.45	27	3600 <sup>2)</sup>
4600	4186	<b>1RN6560-2HS30</b>	3577	96.8	0.90	730	12280	1.90	39	3600 <sup>2)</sup>
5100	4641	<b>1RN6562-2HS30</b>	3579	96.9	0.91	2x400	13608	2.05	43	3600 <sup>2)</sup>
5900	5369	<b>1RN6564-2HS30</b>	3580	97.1	0.92	2x460	15738	2.15	49	3600 <sup>2)</sup>
6700	6097	<b>1RN6566-2HS30</b>	3582	97.3	0.92	2x520	17862	2.45	54	3600 <sup>2)</sup>
7810	7100	<b>1RN7630-2 ■ ■ 30-0CJ0</b>	3580	97.3	0.88	1160	18939	1.95	74	3600
8690	7900	<b>1RN7632-2 ■ ■ 30-0CJ0</b>	3583	97.6	0.89	1260	21055	2.20	83	3600
9570	8700	<b>1RN7634-2 ■ ■ 30-0CJ0</b>	3585	97.7	0.90	1380	23174	2.35	91	3600
10560	9600	<b>1RN7636-2 ■ ■ 30-0CJ0</b>	3586	97.8	0.90	1520	25564	2.60	100	3600
11660	10600	<b>1RN7710-2 ■ ■ 30-0CJ0</b>	3585	97.3	0.91	1660	28235	2.05	148	3600
12980	11800	<b>1RN7712-2 ■ ■ 30-0CJ0</b>	3586	97.4	0.91	1840	31423	2.05	158	3600
14300	13000	<b>1RN7714-2 ■ ■ 30-0CJ0</b>	3586	97.5	0.93	1980	34618	2.25	175	3600
15070	13700	<b>1RN7716-2 ■ ■ 30-0CJ0</b>	3586	97.5	0.93	2100	36482	2.25	189	3600
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft heights 630, 710, 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/5</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>4)</sup> Utilization 130 (B) on request.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

<sup>3)</sup> Data of vertical motors (IM V1) on request.



## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
2-pole												
1RN6450-2...	1201	3251	96.1	0.90	800	2843	96.2	0.90	400	2260	96.1	0.85
1RN6452-2...	1389	3253	96.4	0.91	925	2844	96.5	0.91	463	2261	96.3	0.87
1RN6454-2...	1545	3254	96.7	0.91	1030	2845	96.7	0.90	515	2261	96.5	0.86
1RN6456-2...	1725	3256	96.9	0.92	1150	2846	96.9	0.91	575	2262	96.7	0.87
1RN6500-2...	2251	3251	96.7	0.89	1500	2844	96.8	0.87	750	2260	96.6	0.79
1RN6502-2...	2439	3250	96.7	0.89	1626	2843	96.8	0.88	813	2259	96.8	0.83
1RN6504-2...	2776	3254	97.0	0.91	1850	2845	97.0	0.89	926	2261	96.9	0.83
1RN6506-2...	3151	3254	97.2	0.91	2100	2846	97.2	0.89	1051	2261	97.1	0.83
1RN6560-2...	3452	3255	96.9	0.90	2301	2846	97.0	0.88	1150	2262	96.9	0.83
1RN6562-2...	3827	3256	97.0	0.90	2551	2847	97.1	0.89	1275	2262	97.0	0.84
1RN6564-2...	4427	3257	97.3	0.91	2951	2848	97.3	0.90	1476	2262	97.2	0.85
1RN6566-2...	5026	3258	97.4	0.92	3350	2849	97.4	0.90	1676	2263	97.2	0.83
1RN7630-2...	5329	3255	97.4	0.89	3551	2846	97.5	0.89	1775	2261	97.5	0.87
1RN7632-2...	5927	3257	97.6	0.90	3951	2847	97.7	0.90	1975	2262	97.6	0.86
1RN7634-2...	6528	3258	97.8	0.90	4351	2848	97.8	0.90	2177	2262	97.7	0.87
1RN7636-2...	7202	3259	97.9	0.91	4800	2849	97.9	0.90	2401	2263	97.8	0.87
1RN7710-2...	7947	3258	97.2	0.92	5298	2847	97.1	0.92	2649	2263	96.8	0.90
1RN7712-2...	8850	3258	97.4	0.92	5900	2847	97.3	0.92	2949	2263	96.9	0.90
1RN7714-2...	9755	3259	97.5	0.93	6503	2848	97.3	0.93	3251	2263	97.0	0.91
1RN7716-2...	10275	3259	97.5	0.94	6850	2848	97.4	0.94	3425	2263	97.1	0.92

## Motors for converter operation

Converter with non-sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RN6 at rated output for utilization 155 (F), for 1RN7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm

#### 4.16 kV, 60 Hz

4-pole

1630	– <sup>3)</sup>	<b>1RN6450-4HS3</b>	1782	95.7	0.89	265	8742	2.30	20	1800
1750	– <sup>3)</sup>	<b>1RN6452-4HS3</b>	1783	95.9	0.89	285	9375	2.40	22	1800
2070	– <sup>3)</sup>	<b>1RN6454-4HS3</b>	1784	96.1	0.90	330	11088	2.50	25	1800
2310	– <sup>3)</sup>	<b>1RN6456-4HS3</b>	1786	96.3	0.89	375	12358	2.50	29	1800
3100 <sup>2)</sup>	2728	<b>1RN6500-4HS30</b>	1785	96.7	0.90	495	16584	2.30	42	1800
3450 <sup>2)</sup>	3036	<b>1RN6502-4HS30</b>	1785	96.8	0.90	550	18457	2.20	46	1800
3800 <sup>2)</sup>	3344	<b>1RN6504-4HS30</b>	1786	97.0	0.91	600	20318	2.35	52	1800
4100 <sup>2)</sup>	3608	<b>1RN6506-4HS30</b>	1787	97.0	0.91	640	21909	2.40	56	1800
4700 <sup>2)</sup>	4277	<b>1RN6560-4HS30</b>	1789	97.2	0.90	750	25088	1.95	84	1800
5400 <sup>2)</sup>	4914	<b>1RN6562-4HS30</b>	1789	97.3	0.90	2x430	28824	1.95	94	1800
6000 <sup>2)</sup>	5460	<b>1RN6564-4HS30</b>	1789	97.4	0.91	2x470	32027	2.05	105	1800
6600 <sup>2)</sup>	6006	<b>1RN6566-4HS30</b>	1790	97.5	0.91	2x520	35210	2.10	115	1800
7056 <sup>2)</sup>	6300	<b>1RN7630-4 ■ ■ 30-0C ■ 0</b>	1791	97.6	0.88	1020	33590	2.30	145	1800
7952 <sup>2)</sup>	7100	<b>1RN7632-4 ■ ■ 30-0C ■ 0</b>	1791	97.7	0.88	1140	37856	2.30	160	1800
8848 <sup>2)</sup>	7900	<b>1RN7634-4 ■ ■ 30-0C ■ 0</b>	1791	97.7	0.89	1260	42121	2.35	178	1800
9856 <sup>2)</sup>	8800	<b>1RN7636-4 ■ ■ 30-0C ■ 0</b>	1792	97.8	0.89	1400	46894	2.50	194	1800
10976 <sup>2)</sup>	9800	<b>1RN7710-4 ■ ■ 30-0C ■ 0</b>	1791	97.6	0.90	1540	52252	2.15	262	1800
12208 <sup>2)</sup>	10900	<b>1RN7712-4 ■ ■ 30-0C ■ 0</b>	1792	97.6	0.90	1720	58084	2.15	286	1800
13552 <sup>2)</sup>	12100	<b>1RN7714-4 ■ ■ 30-0C ■ 0</b>	1792	97.7	0.91	1880	64479	2.35	321	1800
15120 <sup>2)</sup>	13500	<b>1RN7716-4 ■ ■ 30-0C ■ 0</b>	1792	97.8	0.91	2100	71939	2.35	362	1800

**Position ■  
of the Article No.:**

**For shaft heights  
450, 500, 560 mm:**

Refer to the article number  
structure on [Page 1/3](#) for:

- type of construction  
(12th position)

**For shaft heights  
630, 710, 800 mm:**

Refer to the article number  
structure on [Page 1/5](#) for:

- cooling method  
(9th position)

- converter type  
(10th position)

- housing and bearing  
version (15th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

<sup>3)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

#### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
4-pole												
1RN6450-4...	1224	1622	96.0	0.89	815	1419	96.1	0.88	408	1129	96.0	0.83
1RN6452-4...	1313	1623	96.1	0.89	875	1420	96.2	0.88	438	1129	96.1	0.82
1RN6454-4...	1553	1623	96.3	0.90	1035	1420	96.4	0.89	518	1129	96.3	0.83
1RN6456-4...	1733	1624	96.5	0.89	1155	1421	96.5	0.87	578	1130	96.2	0.80
1RN6500-4...	2326	1625	96.8	0.89	1550	1421	96.8	0.86	775	1130	96.6	0.75
1RN6502-4...	2589	1625	96.9	0.89	1725	1421	96.9	0.86	863	1130	96.8	0.77
1RN6504-4...	2851	1626	97.1	0.90	1900	1422	97.1	0.87	950	1130	96.8	0.78
1RN6506-4...	3076	1626	97.1	0.90	2050	1422	97.1	0.87	1025	1130	96.8	0.77
1RN6560-4...	3527	1628	97.3	0.89	2350	1423	97.3	0.87	1176	1131	97.2	0.80
1RN6562-4...	4052	1628	97.4	0.90	2701	1423	97.5	0.89	1351	1131	97.4	0.83
1RN6564-4...	4502	1628	97.5	0.90	3000	1423	97.5	0.89	1501	1131	97.4	0.82
1RN6566-4...	4952	1628	97.6	0.91	3300	1423	97.7	0.90	1651	1131	97.5	0.84
1RN7630-4...	4726	1628	97.7	0.88	3150	1423	97.7	0.88	1576	1131	97.5	0.83
1RN7632-4...	5326	1628	97.8	0.89	3550	1423	97.8	0.88	1776	1131	97.6	0.84
1RN7634-4...	5926	1628	97.8	0.89	3950	1423	97.8	0.89	1976	1131	97.7	0.85
1RN7636-4...	6601	1629	97.9	0.89	4400	1424	97.9	0.88	2201	1131	97.7	0.84
1RN7710-4...	7353	1628	97.6	0.91	4904	1423	97.5	0.91	2455	1131	97.2	0.88
1RN7712-4...	8179	1628	97.6	0.91	5454	1423	97.5	0.91	2731	1131	97.2	0.89
1RN7714-4...	9083	1629	97.7	0.91	6058	1423	97.6	0.91	3033	1131	97.2	0.88
1RN7716-4...	10135	1629	97.8	0.92	6758	1423	97.7	0.92	3384	1131	97.3	0.89

## Motors for converter operation

Converter with non-sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 155 (F)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 60 Hz</b>										
6-pole										
1210	- <sup>2)</sup>	<b>1RN6450-6HS3</b>	1190	96.0	0.84	210	9715	2.40	26	1200
1350	- <sup>2)</sup>	<b>1RN6452-6HS3</b>	1191	96.2	0.85	230	10833	2.40	29	1200
1480	- <sup>2)</sup>	<b>1RN6454-6HS3</b>	1191	96.3	0.85	250	11875	2.50	32	1200
1620	- <sup>2)</sup>	<b>1RN6456-6HS3</b>	1191	96.4	0.87	270	12995	2.50	37	1200
2350	2100	<b>1RN6500-6HS3</b>	1187	96.0	0.85	400	18907	1.65	56	1500
2600	2350	<b>1RN6502-6HS3</b>	1188	96.4	0.84	445	20901	1.85	62	1500
2900	2600	<b>1RN6504-6HS3</b>	1187	96.3	0.85	490	23332	1.70	69	1500
3100	2800	<b>1RN6506-6HS3</b>	1188	96.4	0.86	520	24920	1.75	77	1500
3750	3300	<b>1RN6560-6HS3</b>	1189	96.6	0.86	630	30120	2.00	108	1300
4250	3750	<b>1RN6562-6HS3</b>	1189	96.8	0.86	710	34136	2.05	119	1300
4700	4150	<b>1RN6564-6HS3</b>	1190	96.9	0.87	770	37718	2.15	132	1300
5100	4500	<b>1RN6566-6HS3</b>	1190	97.0	0.87	840	40929	2.20	146	1300
5488	4900	<b>1RN7630-6-3-0C-0</b>	1193	97.4	0.84	830	39222	2.15	207	1800
6160	5500	<b>1RN7632-6-3-0C-0</b>	1193	97.5	0.84	930	44024	2.25	229	1800
6832	6100	<b>1RN7634-6-3-0C-0</b>	1193	97.5	0.84	1040	48827	2.25	250	1800
7616	6800	<b>1RN7636-6-3-0C-0</b>	1193	97.5	0.85	1140	54430	2.15	271	1800
8400	7500	<b>1RN7710-6-3-0C-0</b>	1194	97.4	0.86	1240	59983	2.15	350	1600
9296	8300	<b>1RN7712-6-3-0C-0</b>	1195	97.4	0.86	1380	66326	2.20	396	1600
10304	9200	<b>1RN7714-6-3-0C-0</b>	1195	97.5	0.85	1540	73518	2.35	448	1600
11480	10250	<b>1RN7716-6-3-0C-0</b>	1195	97.6	0.86	1700	81908	2.35	496	1600
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft heights 450, 500, 560 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/3</a> for:								
		- type of construction (12th position)								
		<b>For shaft heights 630, 710, 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/5</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								
		- type of construction (12th position)								
		- housing and bearing version (15th position)								

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

#### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
6-pole												
1RN6450-6...	908	1083	96.2	0.83	605	947	96.2	0.80	303	753	96.0	0.69
1RN6452-6...	1013	1083	96.3	0.84	675	947	96.4	0.80	338	753	96.1	0.70
1RN6454-6...	1110	1083	96.5	0.84	740	947	96.5	0.81	370	753	96.3	0.71
1RN6456-6...	1215	1083	96.6	0.86	810	947	96.7	0.83	405	753	96.5	0.74
1RN6500-6...	1763	1079	96.3	0.85	1175	944	96.4	0.84	588	751	96.3	0.78
1RN6502-6...	1950	1081	96.5	0.84	1300	945	96.6	0.82	650	752	96.3	0.74
1RN6504-6...	2175	1080	96.5	0.85	1450	945	96.6	0.85	725	751	96.5	0.79
1RN6506-6...	2325	1081	96.6	0.86	1550	945	96.7	0.85	775	752	96.6	0.79
1RN6560-6...	2813	1081	96.8	0.87	1875	946	96.9	0.87	938	752	96.8	0.82
1RN6562-6...	3188	1082	97.0	0.87	2125	946	97.0	0.86	1063	752	96.9	0.81
1RN6564-6...	3525	1082	97.0	0.87	2350	946	97.1	0.86	1175	752	96.9	0.80
1RN6566-6...	3825	1082	97.1	0.88	2550	946	97.2	0.87	1275	753	97.0	0.81
1RN7630-6...	3676	1084	97.4	0.84	2450	948	97.4	0.82	1226	753	97.1	0.75
1RN7632-6...	4126	1085	97.5	0.84	2750	948	97.5	0.82	1376	753	97.2	0.74
1RN7634-6...	4576	1085	97.5	0.84	3050	948	97.5	0.82	1526	753	97.2	0.75
1RN7636-6...	5102	1084	97.6	0.85	3400	948	97.6	0.83	1701	753	97.3	0.77
1RN7710-6...	5631	1085	97.3	0.85	3756	948	97.1	0.84	1880	754	96.6	0.77
1RN7712-6...	6229	1086	97.3	0.85	4154	949	97.1	0.83	2080	754	96.5	0.75
1RN7714-6...	6904	1086	97.4	0.85	4604	949	97.1	0.82	2305	754	96.5	0.74
1RN7716-6...	7693	1086	97.5	0.85	5130	949	97.2	0.83	2568	754	96.7	0.75

## Motors for converter operation

Converter with non-sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RN6 at rated output for utilization 155 (F), for 1RN7 at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>4.16 kV, 60 Hz</b>										
8-pole										
870	— <sup>2)</sup>	<b>1RN6450-8HS3</b>	893	95.2	0.81	156	9308	2.50	32	1200
960	— <sup>2)</sup>	<b>1RN6452-8HS3</b>	893	95.3	0.82	170	10269	2.50	36	1200
1050	— <sup>2)</sup>	<b>1RN6454-8HS3</b>	893	95.4	0.84	182	11239	2.40	40	1200
1180	— <sup>2)</sup>	<b>1RN6456-8HS3</b>	894	95.6	0.82	210	12613	2.50	46	1200
1640	1480	<b>1RN6500-8HS3</b>	891	95.7	0.83	285	17578	1.75	69	1350
1840	1660	<b>1RN6502-8HS3</b>	892	96.0	0.83	320	19700	1.90	76	1350
2050	1860	<b>1RN6504-8HS3</b>	892	96.0	0.84	355	21948	1.80	85	1350
2300	2050	<b>1RN6506-8HS3</b>	892	96.1	0.84	395	24624	1.95	94	1350
2650	2350	<b>1RN6560-8HS3</b>	892	96.4	0.84	455	28372	1.95	128	1350
3000	2650	<b>1RN6562-8HS3</b>	891	96.5	0.84	510	32155	1.90	141	1350
3300	2900	<b>1RN6564-8HS3</b>	891	96.6	0.84	560	35370	1.90	156	1350
3500	3100	<b>1RN6566-8HS3</b>	892	96.8	0.85	590	37472	2.05	173	1350
3976	3550	<b>1RN7630-8 ■ ■ ■ 3 ■ -0C ■ 0</b>	894	96.7	0.83	610	37919	2.10	255	1350
4424	3950	<b>1RN7632-8 ■ ■ ■ 3 ■ -0C ■ 0</b>	894	96.8	0.82	690	42192	2.10	280	1350
4872	4350	<b>1RN7634-8 ■ ■ ■ 3 ■ -0C ■ 0</b>	894	96.8	0.84	740	46465	2.05	307	1350
5488	4900	<b>1RN7636-8 ■ ■ ■ 3 ■ -0C ■ 0</b>	894	96.9	0.84	840	52340	2.05	334	1350
5936	5300	<b>1RN7710-8 ■ ■ ■ 3 ■ -0C ■ 0</b>	895	97.0	0.84	900	56549	2.05	433	1125
6720	6000	<b>1RN7712-8 ■ ■ ■ 3 ■ -0C ■ 0</b>	895	97.1	0.85	1000	64018	2.10	493	1125
7504	6700	<b>1RN7714-8 ■ ■ ■ 3 ■ -0C ■ 0</b>	895	97.3	0.86	1120	71486	2.10	558	1125
8400	7500	<b>1RN7716-8 ■ ■ ■ 3 ■ -0C ■ 0</b>	896	97.3	0.86	1240	79933	2.10	616	1125
9600	8600	<b>1RN7800-8 ■ ■ ■ 3 ■ -0C ■ 0</b>	896	97.4	0.86	1420	91663	2.50	865	1125
10600	9600	<b>1RN7802-8 ■ ■ ■ 3 ■ -0C ■ 0</b>	896	97.4	0.85	1600	102321	2.50	950	1125
11600	10600	<b>1RN7804-8 ■ ■ ■ 3 ■ -0C ■ 0</b>	896	97.5	0.85	1780	112980	2.50	1055	1125
12600	11600	<b>1RN7806-8 ■ ■ ■ 3 ■ -0C ■ 0</b>	896	97.5	0.85	1940	123638	2.50	1155	1125

#### Position ■ of the Article No.:

#### For shaft heights 450, 500, 560 mm:

Refer to the article number structure on [Page 1/3](#) for:

- type of construction (12th position)

#### For shaft heights 630, 710, 800 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- converter type (10th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details see [Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Utilization 130 (B) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

#### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type  
(repeated)

Partial load data for square-law torque drive

$P/P_{rated}$  155 (F) = 75 %

$P/P_{rated}$  155 (F) = 50 %

$P/P_{rated}$  155 (F) = 25 %

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Square-law torque drive

8-pole

1RN6450-8...	653	812	95.2	0.79	435	710	95.1	0.74	218	565	94.3	0.61
1RN6452-8...	720	812	95.4	0.80	480	710	95.3	0.75	240	565	94.5	0.62
1RN6454-8...	788	812	95.5	0.83	525	710	95.5	0.79	263	565	95.0	0.69
1RN6456-8...	885	813	95.6	0.79	590	711	95.5	0.75	295	565	94.8	0.62
1RN6500-8...	1230	810	95.9	0.83	820	709	95.9	0.81	410	564	95.5	0.72
1RN6502-8...	1380	811	96.0	0.82	920	709	96.0	0.79	460	564	95.5	0.70
1RN6504-8...	1538	811	96.1	0.83	1025	709	96.1	0.81	513	564	95.7	0.72
1RN6506-8...	1725	811	96.2	0.83	1150	709	96.1	0.80	575	564	95.6	0.71
1RN6560-8...	1988	811	96.6	0.84	1325	709	96.7	0.83	663	564	96.5	0.75
1RN6562-8...	2250	810	96.7	0.85	1500	709	96.8	0.83	750	564	96.7	0.77
1RN6564-8...	2475	811	96.8	0.85	1650	709	96.9	0.84	825	564	96.8	0.77
1RN6566-8...	2625	811	96.9	0.85	1750	709	97.0	0.83	875	564	96.8	0.76
1RN7630-6...	2666	813	96.9	0.83	1775	711	96.8	0.81	891	565	96.5	0.72
1RN7632-6...	2966	813	96.9	0.83	1975	711	96.9	0.80	990	565	96.5	0.71
1RN7634-6...	3265	814	97.0	0.82	2177	711	96.8	0.78	1090	565	96.3	0.68
1RN7636-6...	3677	813	97.1	0.84	2450	711	97.1	0.82	1226	565	96.9	0.76
1RN7710-8...	3980	814	96.9	0.84	2654	711	96.7	0.82	1329	565	96.0	0.74
1RN7712-8...	4505	814	97.0	0.85	3005	711	96.8	0.83	1504	565	96.2	0.75
1RN7714-8...	5031	814	97.1	0.85	3356	711	97.0	0.84	1680	565	96.4	0.76
1RN7716-8...	5631	814	97.2	0.85	3756	711	97.0	0.83	1880	565	96.4	0.76
1RN7800-8...	6440	815	97.2	0.86	4300	712	97.0	0.83	2150	566	96.3	0.73
1RN7802-8...	7190	815	97.2	0.84	4800	712	96.9	0.80	2400	566	96.2	0.70
1RN7804-8...	7940	815	97.3	0.84	5300	712	97.0	0.81	2650	566	96.3	0.71
1RN7806-8...	8690	815	97.3	0.84	5800	712	97.0	0.80	2900	566	96.3	0.69

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Selection and ordering data (continued)

Rated power		High voltage motor SIMOTICS HV M	Operating data for 1RN6 at rated output for utilization 155 (F), for 1RN7 at rated output for utilization 130 (B)								
IEC			Rated speed	Efficiency	Power factor	Rated current at 4.16 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>	
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$	
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm	
<b>4.16 kV, 60 Hz</b>											
10-pole											
2968	2650	<b>1RN7630-3 ■ ■ 3 ■ -0C ■ 0</b>	715	97.0	0.81	470	35392	2.50	258	1080	
3304	2950	<b>1RN7632-3 ■ ■ 3 ■ -0C ■ 0</b>	715	97.1	0.81	520	39399	2.35	283	1080	
3696	3300	<b>1RN7634-3 ■ ■ 3 ■ -0C ■ 0</b>	715	97.1	0.80	590	44074	2.35	309	1080	
4088	3650	<b>1RN7636-3 ■ ■ 3 ■ -0C ■ 0</b>	715	97.1	0.82	640	48748	2.30	336	1080	
4536	4050	<b>1RN7710-3 ■ ■ 3 ■ -0C ■ 0</b>	715	96.8	0.85	680	54090	2.20	430	1125	
4984	4450	<b>1RN7712-3 ■ ■ 3 ■ -0C ■ 0</b>	715	96.9	0.85	750	59433	2.20	488	1125	
5488	4900	<b>1RN7714-3 ■ ■ 3 ■ -0C ■ 0</b>	715	96.9	0.85	830	65443	2.20	552	1125	
6048	5400	<b>1RN7716-3 ■ ■ 3 ■ -0C ■ 0</b>	715	97.0	0.86	900	72121	2.20	613	1125	
12-pole											
2520	2250	<b>1RN7630-5 ■ ■ 3 ■ -0C ■ 0</b>	595	96.4	0.77	420	36111	2.20	264	900	
2800	2500	<b>1RN7632-5 ■ ■ 3 ■ -0C ■ 0</b>	595	96.4	0.76	475	40123	2.15	290	900	
3080	2750	<b>1RN7634-5 ■ ■ 3 ■ -0C ■ 0</b>	595	96.5	0.76	520	44135	2.20	317	900	
3360	3000	<b>1RN7636-5 ■ ■ 3 ■ -0C ■ 0</b>	595	96.5	0.76	570	48148	2.20	343	900	

#### Position ■ of the Article No.:

#### For shaft heights 630, 710, 800 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- converter type (10th position)
- type of construction (12th position)
- housing and bearing version (15th position)

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.



## Motors for converter operation

### Converter with non-sinusoidal output

#### Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}} 155 (F) = 75 \%$				$P/P_{\text{rated}} 155 (F) = 50 \%$				$P/P_{\text{rated}} 155 (F) = 25 \%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
10-pole												
1RN7630-3...	1990	650	97.0	0.79	1326	569	97.0	0.75	665	452	96.6	0.63
1RN7632-3...	2215	650	97.1	0.79	1476	569	97.0	0.75	740	452	96.7	0.64
1RN7634-3...	2475	650	97.2	0.79	1651	569	97.1	0.75	825	452	96.7	0.63
1RN7636-3...	2741	650	97.1	0.81	1827	568	97.1	0.78	915	452	96.8	0.67
1RN7710-3...	3040	650	96.6	0.83	2028	568	96.4	0.80	1016	452	95.7	0.69
1RN7712-3...	3341	650	96.8	0.84	2228	568	96.5	0.80	1116	452	95.9	0.70
1RN7714-3...	3678	650	96.8	0.84	2454	568	96.6	0.81	1229	452	95.9	0.71
1RN7716-3...	4054	650	96.9	0.85	2704	568	96.7	0.82	1355	452	96.1	0.73
12-pole												
1RN7630-5...	1690	541	96.4	0.75	1125	473	96.3	0.70	565	376	95.7	0.57
1RN7632-5...	1875	541	96.4	0.74	1250	473	96.3	0.68	625	376	95.7	0.55
1RN7634-5...	2065	541	96.5	0.74	1375	473	96.4	0.69	690	376	95.8	0.56
1RN7636-5...	2250	541	96.5	0.74	1500	473	96.4	0.68	750	376	95.8	0.55

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Selection and ordering data

The following data also apply to explosion-protected motors 1SL7 (Ex ec) and 1SQ7 (Ex pxb).

Rated power		High voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 6 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>Up to 6.6 kV, 60 Hz</b>										
4-pole										
18400 <sup>2)</sup>	16500	<b>1RN7800-4-0-0C-0</b>	1793	97.7	0.91	1780	87883	2.20	520	1500
20100 <sup>2)</sup>	18000	<b>1RN7802-4-0-0C-0</b>	1793	97.7	0.91	1940	95873	2.20	570	1500
22400 <sup>2)</sup>	20000	<b>1RN7804-4-0-0C-0</b>	1793	97.8	0.91	2150	106525	2.20	625	1500
23700 <sup>2)</sup>	21200	<b>1RN7806-4-0-0C-0</b>	1794	97.8	0.91	2300	112854	2.30	685	1500
8-pole										
10100	9000	<b>1RN7800-8-0-0C-0</b>	896	97.4	0.86	1040	95926	2.30	860	1125
11200	10100	<b>1RN7802-8-0-0C-0</b>	896	97.5	0.86	1160	107651	2.40	955	1125
12300	11200	<b>1RN7804-8-0-0C-0</b>	896	97.5	0.87	1280	119375	2.40	1060	1125
13500	12300	<b>1RN7806-8-0-0C-0</b>	896	97.5	0.86	1420	131099	2.50	1165	1125
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft heights 630, 710, 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/5</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								
		- voltage code (11th position)								
		- type of construction (12th position)								
		- housing and bearing version (15th position)								

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

<sup>2)</sup> Data of vertical motors (IM V1) on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

Motor type (repeated)	Partial load data for square-law torque drive											
	$P/P_{\text{rated}}$ 155 (F) = 75 %				$P/P_{\text{rated}}$ 155 (F) = 50 %				$P/P_{\text{rated}}$ 155 (F) = 25 %			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Square-law torque drive</b>											
4-pole												
1RN7800-4...	12300	1629	97.7	0.91	8200	1424	97.6	0.91	4100	1131	97.0	0.88
1RN7802-4...	13500	1629	97.7	0.92	9000	1424	97.7	0.91	4500	1131	97.1	0.89
1RN7804-4...	15000	1629	97.8	0.91	10000	1424	97.7	0.91	5000	1131	97.1	0.87
1RN7806-4...	15900	1630	97.8	0.91	10600	1424	97.7	0.91	5300	1132	97.2	0.87
8-pole												
1RN7800-8...	6740	814	97.3	0.85	4500	711	96.9	0.82	2250	565	96.4	0.73
1RN7802-8...	7570	814	97.3	0.85	5050	712	96.9	0.82	2520	566	96.4	0.72
1RN7804-8...	8390	814	97.4	0.86	5600	712	97.0	0.83	2800	566	96.5	0.73
1RN7806-8...	9220	814	97.5	0.85	6150	712	97.1	0.82	3070	566	96.5	0.73

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings

Note:

For the converter driven motors with shaft heights 450 to 710 mm and cooling method IC81W, the same dimension drawings apply as for line operation motors. [Refer to chapter 2.](#)

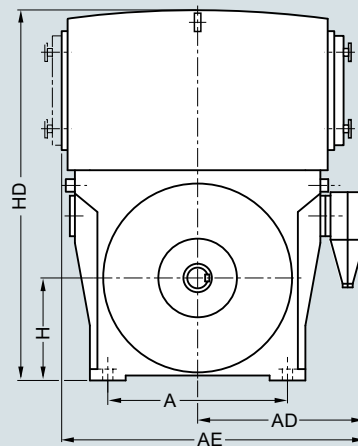
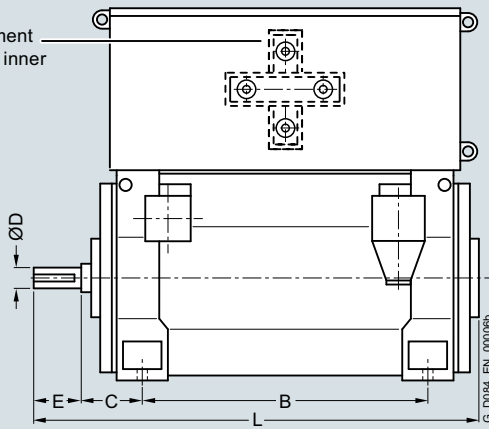
## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings

Cooler arrangement  
according to the inner  
air circuit



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RN7<sup>2)</sup> – IC81W</b>											
4-pole											
1RN7800-4N..0-0CG0	22700	1700	1900	3110	2240	375	250	330	800	2770	3470
1RN7802-4N..0-0CG0	23900	1700	1900	3110	2240	375	250	330	800	2770	3470
1RN7804-4N..0-0CG0	25600	1700	1900	3110	2500	375	250	330	800	2770	3730
1RN7806-4N..0-0CG0	27000	1700	1900	3110	2500	375	250	330	800	2770	3730

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

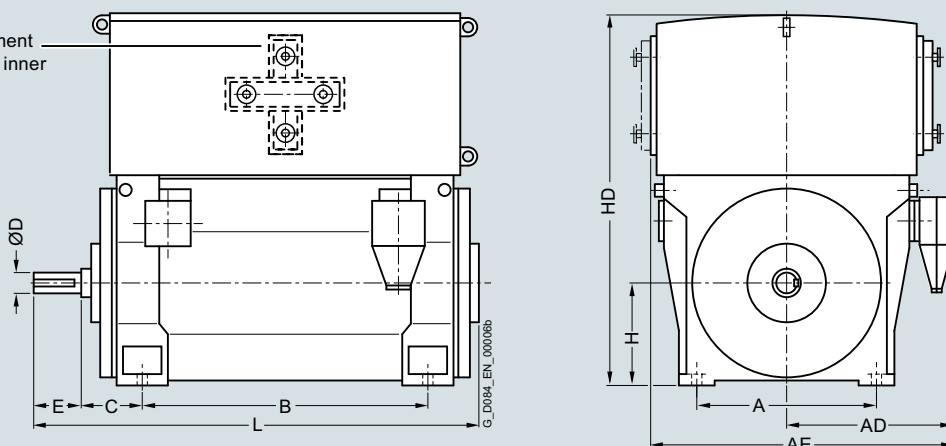
## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings (continued)

Cooler arrangement  
according to the inner  
air circuit



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RN7<sup>2)</sup> – IC81W</b>											
6-pole											
1RN7800-6N..0-OCG0	23500	1700	1900	3110	2240	375	250	330	800	2770	3470
1RN7802-6N..0-OCG0	25000	1700	1900	3110	2240	375	250	330	800	2770	3470
1RN7804-6N..0-OCG0	26900	1700	1900	3110	2500	375	250	330	800	2770	3730
1RN7806-6N..0-OCG0	28400	1700	1900	3110	2500	375	250	330	800	2770	3730

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

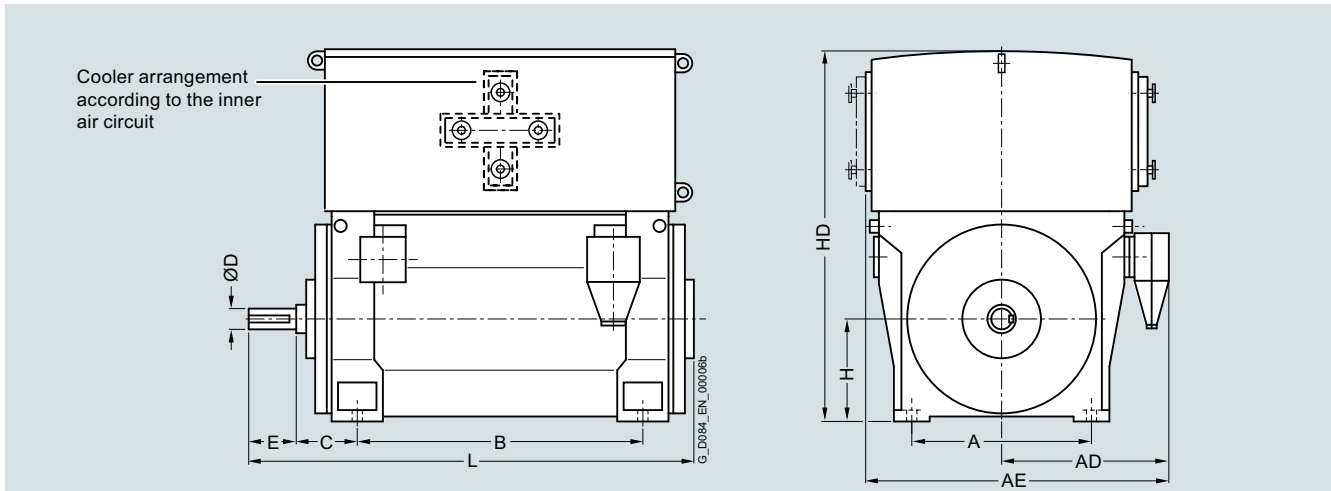
<sup>2)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RN7<sup>2)</sup> – IC81W</b>											
8-pole											
1RN7800-8N..0-OCG0	22400	1700	1900	3110	2240	375	280	470	800	2770	3620
1RN7802-8N..0-OCG0	23600	1700	1900	3110	2240	375	280	470	800	2770	3620
1RN7804-8N..0-OCG0	25400	1700	1900	3110	2500	375	280	470	800	2770	3880
1RN7806-8N..0-OCG0	26700	1700	1900	3110	2500	375	280	470	800	2770	3880

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

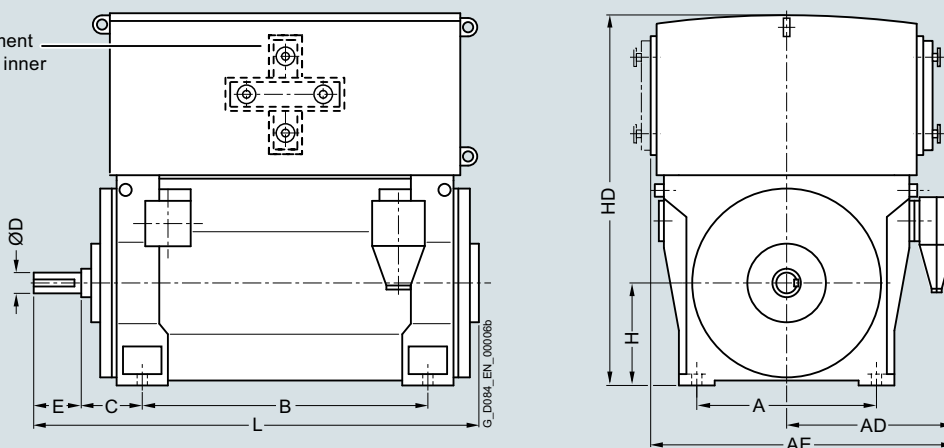
## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings

Cooler arrangement  
according to the inner  
air circuit



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RN7<sup>1)</sup> – IC81W</b>											
4-pole											
1RN7800-4N..0-OCG0	22700	1700	1900	3110	2240	375	250	330	800	2770	3470
1RN7802-4N..0-OCG0	23900	1700	1900	3110	2240	375	250	330	800	2770	3470
1RN7804-4N..0-OCG0	25600	1700	1900	3110	2500	375	250	330	800	2770	3730
1RN7806-4N..0-OCG0	27000	1700	1900	3110	2500	375	250	330	800	2770	3730

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

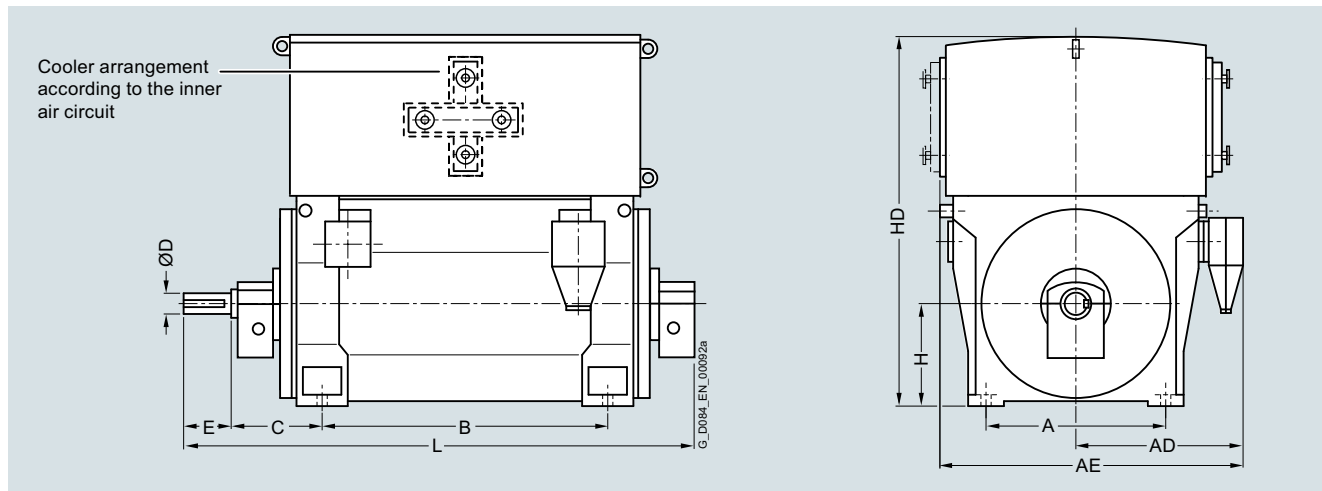


## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ7<sup>2)</sup> – IC81W</b>											
4-pole											
1RN7800-4N..0-0CJ0	23100	1700	1900	3110	2240	600	250	330	800	2770	3660
1RN7802-4N..0-0CJ0	24200	1700	1900	3110	2240	600	250	330	800	2770	3660
1RN7804-4N..0-0CJ0	26100	1700	1900	3110	2500	600	250	330	800	2770	3920
1RN7806-4N..0-0CJ0	27400	1700	1900	3110	2500	600	250	330	800	2770	3920

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

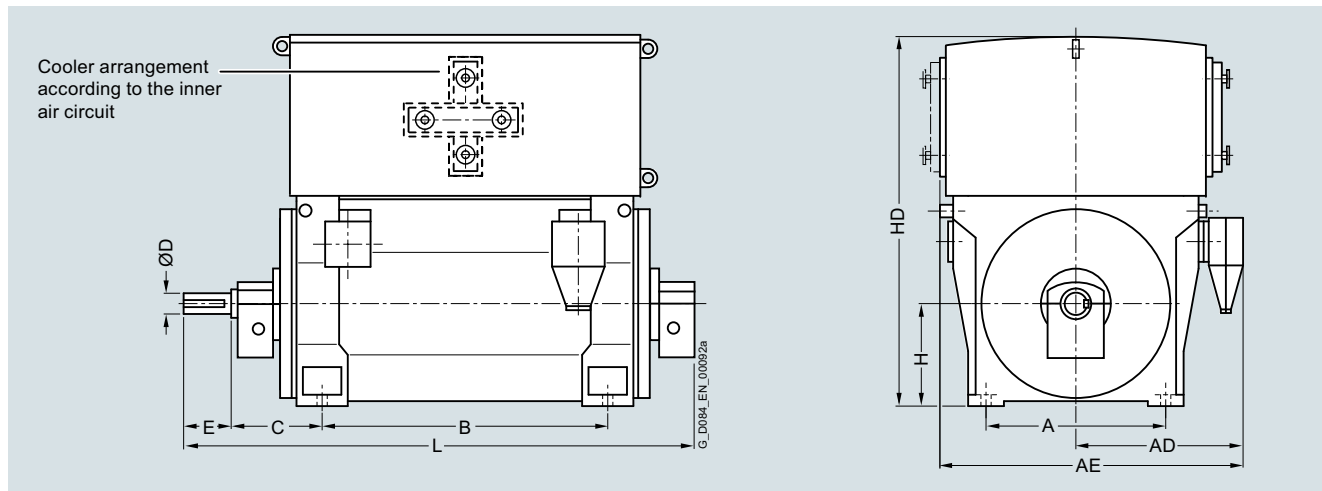
<sup>2)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ7<sup>2)</sup> – IC81W

6-pole

1RN7800-6N..0-0CJ0	23900	1700	1900	3110	2240	600	250	330	800	2770	3660
1RN7802-6N..0-0CJ0	25400	1700	1900	3110	2240	600	250	330	800	2770	3660
1RN7804-6N..0-0CJ0	27300	1700	1900	3110	2500	600	250	330	800	2770	3920
1RN7806-6N..0-0CJ0	28800	1700	1900	3110	2500	600	250	330	800	2770	3920

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

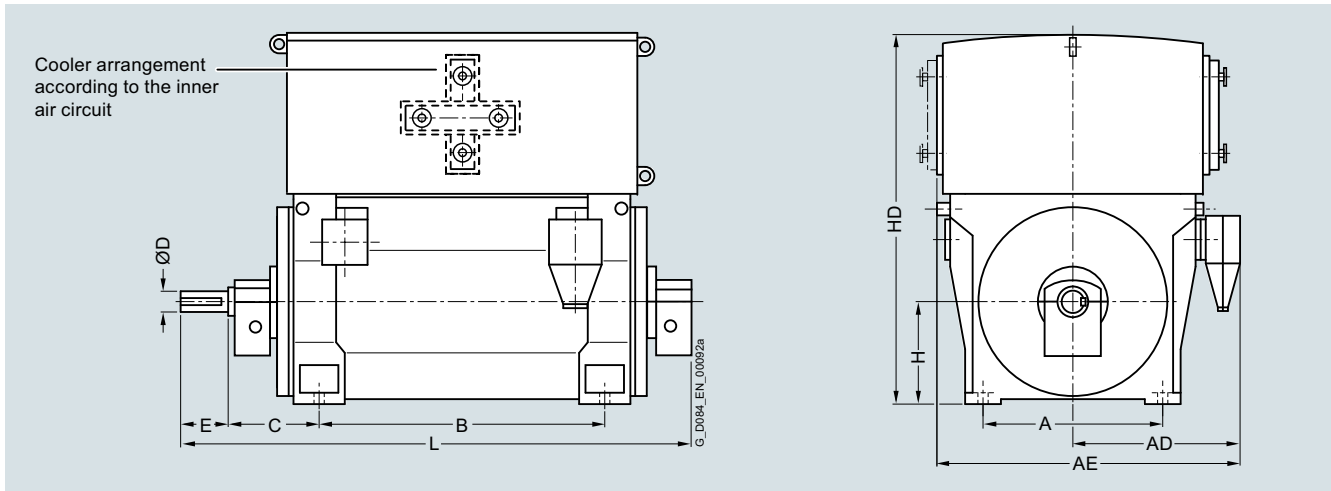
<sup>2)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ7<sup>2)</sup> – IC81W</b>											
8-pole											
1RN7800-8N..0-0CJ0	22900	1700	1900	3110	2240	600	280	470	800	2770	3800
1RN7802-8N..0-0CJ0	24100	1700	1900	3110	2240	600	280	470	800	2770	3800
1RN7804-8N..0-0CJ0	25800	1700	1900	3110	2500	600	280	470	800	2770	4060
1RN7806-8N..0-0CJ0	27100	1700	1900	3110	2500	600	280	470	800	2770	4060

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

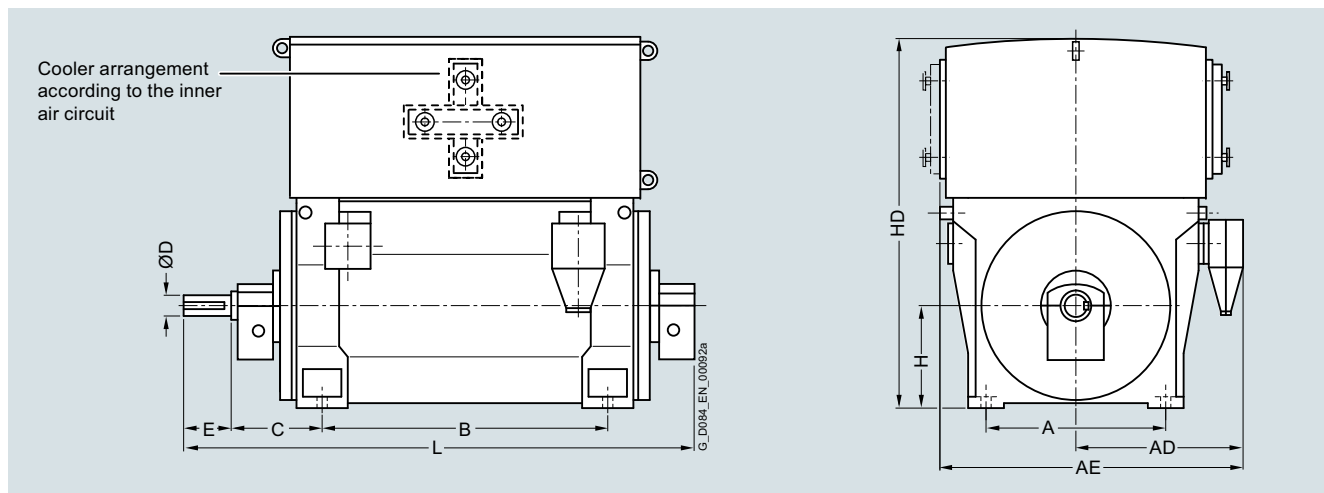
<sup>2)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RN7<sup>1)</sup> – IC81W</b>											
4-pole											
1RN7800-4N..0-0CJ0	23100	1700	1900	3110	2240	600	250	330	800	2770	3660
1RN7802-4N..0-0CJ0	24200	1700	1900	3110	2240	600	250	330	800	2770	3660
1RN7804-4N..0-0CJ0	26100	1700	1900	3110	2500	600	250	330	800	2770	3920
1RN7806-4N..0-0CJ0	27400	1700	1900	3110	2500	600	250	330	800	2770	3920

Note:

Higher pole numbers are available on request.

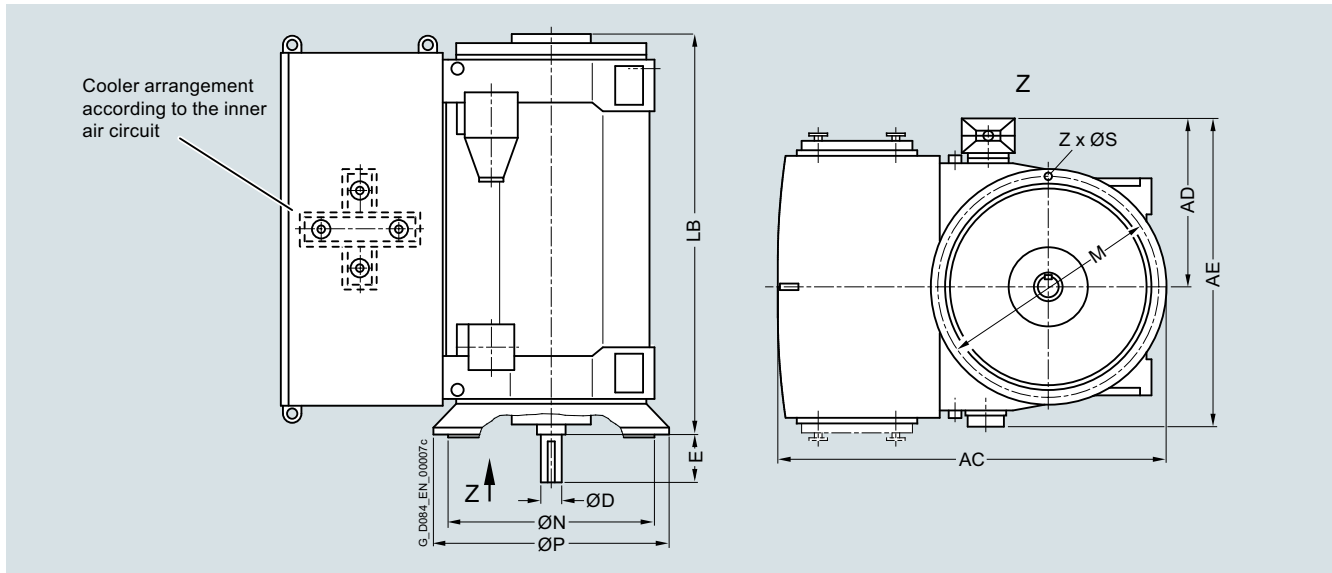
<sup>1)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC	AD <sup>1)</sup>	AE <sup>1)</sup>	D	E	LB	P	N	M	S	Z
Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RN7 <sup>3)</sup> – IC81W												
8-pole												
1RN7800-8N..8-0CG0	22400	O. R. <sup>2)</sup>	1810	3000	280	470	3280	2240	2000	2120	42	22
1RN7802-8N..8-0CG0	23600	O. R. <sup>2)</sup>	1810	3000	280	470	3280	2240	2000	2120	42	22
1RN7804-8N..8-0CG0	25500	O. R. <sup>2)</sup>	1810	3000	280	470	3540	2240	2000	2120	42	22
1RN7806-8N..8-0CG0	26800	O. R. <sup>2)</sup>	1810	3000	280	470	3540	2240	2000	2120	42	22

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>2)</sup> On request.

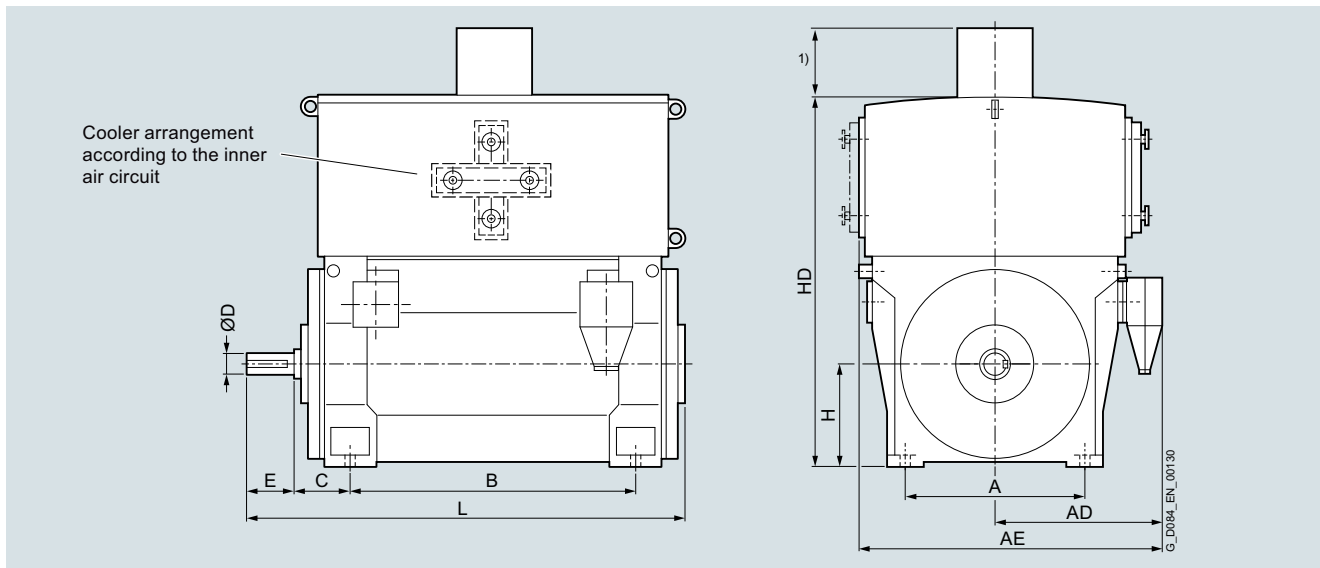
<sup>3)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>2)</sup> mm	AE <sup>2)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RN7<sup>3)</sup> series – IC86W</b>											
4-pole											
1RN7630-4P..0-0CG0	11300	1320	1490	2490	1600	375	200	280	630	2610	2610
1RN7632-4P..0-0CG0	11800	1320	1490	2490	1600	375	200	280	630	2610	2610
1RN7634-4P..0-0CG0	12700	1320	1490	2490	1800	375	200	280	630	2610	2810
1RN7636-4P..0-0CG0	13300	1320	1490	2490	1800	375	200	280	630	2610	2810
1RN7710-4P..0-0CG0	15400	1500	1800	2900	2000	375	220	350	710	2800	3070
1RN7712-4P..0-0CG0	16000	1500	1800	2900	2000	375	220	350	710	2800	3070
1RN7714-4P..0-0CG0	17400	1500	1800	2900	2240	375	220	350	710	2800	3310
1RN7716-4P..0-0CG0	18600	1500	1800	2900	2240	375	220	350	710	2800	3310
1RN7800-4P..0-0CG0	23200	1700	1900	3110	2240	375	250	330	800	3080	3470
1RN7802-4P..0-0CG0	24400	1700	1900	3110	2240	375	250	330	800	3080	3470
1RN7804-4P..0-0CG0	26100	1700	1900	3110	2500	375	250	330	800	3080	3730
1RN7806-4P..0-0CG0	27500	1700	1900	3110	2500	375	250	330	800	3080	3730

1)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

2) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

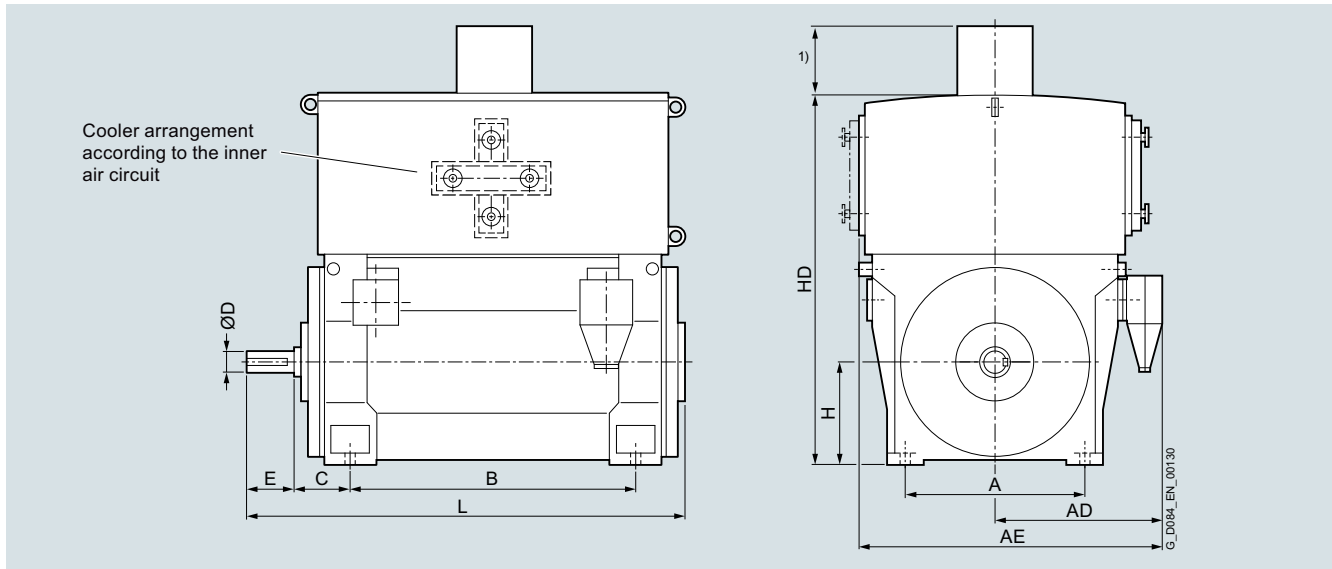
3) The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>2)</sup> mm	AE <sup>2)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RN7<sup>3)</sup> series – IC86W</b>											
6-pole											
1RN7630-6P..0-OCG0	11700	1320	1340	2340	1600	375	200	280	630	2610	2610
1RN7632-6P..0-OCG0	12300	1320	1340	2340	1600	375	200	280	630	2610	2610
1RN7634-6P..0-OCG0	13200	1320	1340	2340	1800	375	200	280	630	2610	2810
1RN7636-6P..0-OCG0	13800	1320	1340	2340	1800	375	200	280	630	2610	2810
1RN7710-6P..0-OCG0	15700	1500	1800	2900	2000	375	220	350	710	2800	3070
1RN7712-6P..0-OCG0	16800	1500	1800	2900	2000	375	220	350	710	2800	3070
1RN7714-6P..0-OCG0	18300	1500	1800	2900	2240	375	220	350	710	2800	3310
1RN7716-6P..0-OCG0	19400	1500	1800	2900	2240	375	220	350	710	2800	3310
1RN7800-6P..0-OCG0	24000	1700	1900	3110	2240	375	250	330	800	3080	3470
1RN7802-6P..0-OCG0	25500	1700	1900	3110	2240	375	250	330	800	3080	3470
1RN7804-6P..0-OCG0	27400	1700	1900	3110	2500	375	250	330	800	3080	3730
1RN7806-6P..0-OCG0	28900	1700	1900	3110	2500	375	250	330	800	3080	3730

1)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

2) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

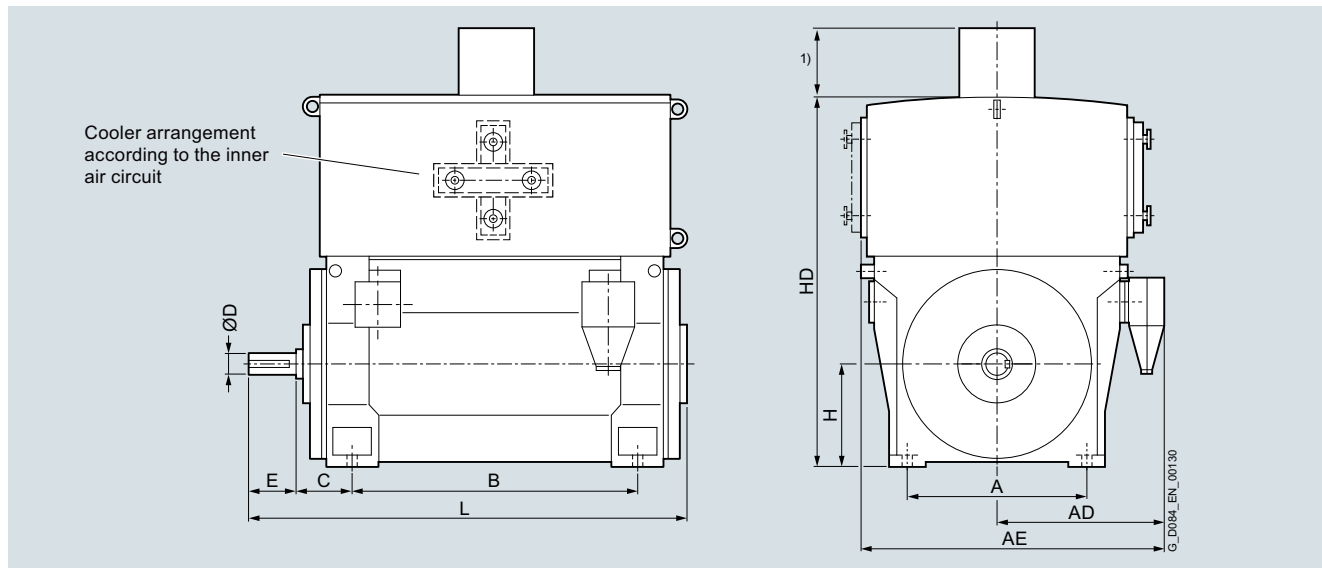
3) The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>2)</sup> mm	AE <sup>2)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RN7<sup>3)</sup> series – IC86W</b>											
8-pole											
1RN7630-8P..0-OCG0	11400	1320	1340	2340	1600	375	200	280	630	2610	2610
1RN7632-8P..0-OCG0	12000	1320	1340	2340	1600	375	200	280	630	2610	2610
1RN7634-8P..0-OCG0	12800	1320	1340	2340	1800	375	200	280	630	2610	2810
1RN7636-8P..0-OCG0	13300	1320	1340	2340	1800	375	200	280	630	2610	2810
1RN7710-8P..0-OCG0	15200	1500	1800	2900	2000	375	220	350	710	2800	3070
1RN7712-8P..0-OCG0	16100	1500	1800	2900	2000	375	220	350	710	2800	3070
1RN7714-8P..0-OCG0	17600	1500	1800	2900	2240	375	220	350	710	2800	3310
1RN7716-8P..0-OCG0	18600	1500	1800	2900	2240	375	220	350	710	2800	3310
1RN7800-8P..0-OCG0	22900	1700	1900	3110	2240	375	280	470	800	3080	3620
1RN7802-8P..0-OCG0	24100	1700	1900	3110	2240	375	280	470	800	3080	3620
1RN7804-8P..0-OCG0	25900	1700	1900	3110	2500	375	280	470	800	3080	3880
1RN7806-8P..0-OCG0	27200	1700	1900	3110	2500	375	280	470	800	3080	3880

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

<sup>2)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

<sup>3)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

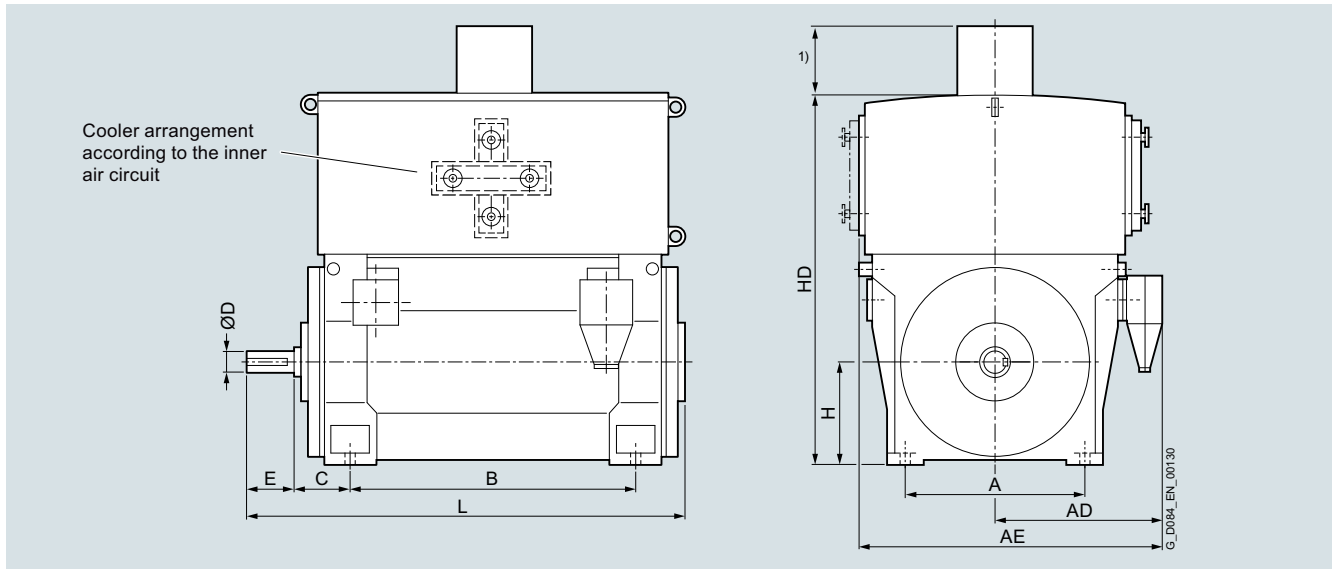


## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>2)</sup> mm	AE <sup>2)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RN7<sup>3)</sup> series – IC86W</b>											
10-pole											
1RN7630-3P..0-OCG0	11300	1320	1340	2340	1600	375	200	280	630	2610	2610
1RN7632-3P..0-OCG0	11900	1320	1340	2340	1600	375	200	280	630	2610	2610
1RN7634-3P..0-OCG0	12700	1320	1340	2340	1800	375	200	280	630	2610	2810
1RN7636-3P..0-OCG0	13200	1320	1340	2340	1800	375	200	280	630	2610	2810
1RN7710-3P..0-OCG0	15200	1500	1800	2900	2000	375	220	350	710	2800	3070
1RN7712-3P..0-OCG0	16100	1500	1800	2900	2000	375	220	350	710	2800	3070
1RN7714-3P..0-OCG0	17600	1500	1800	2900	2240	375	220	350	710	2800	3310
1RN7716-3P..0-OCG0	18600	1500	1800	2900	2240	375	220	350	710	2800	3310

1)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

2) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

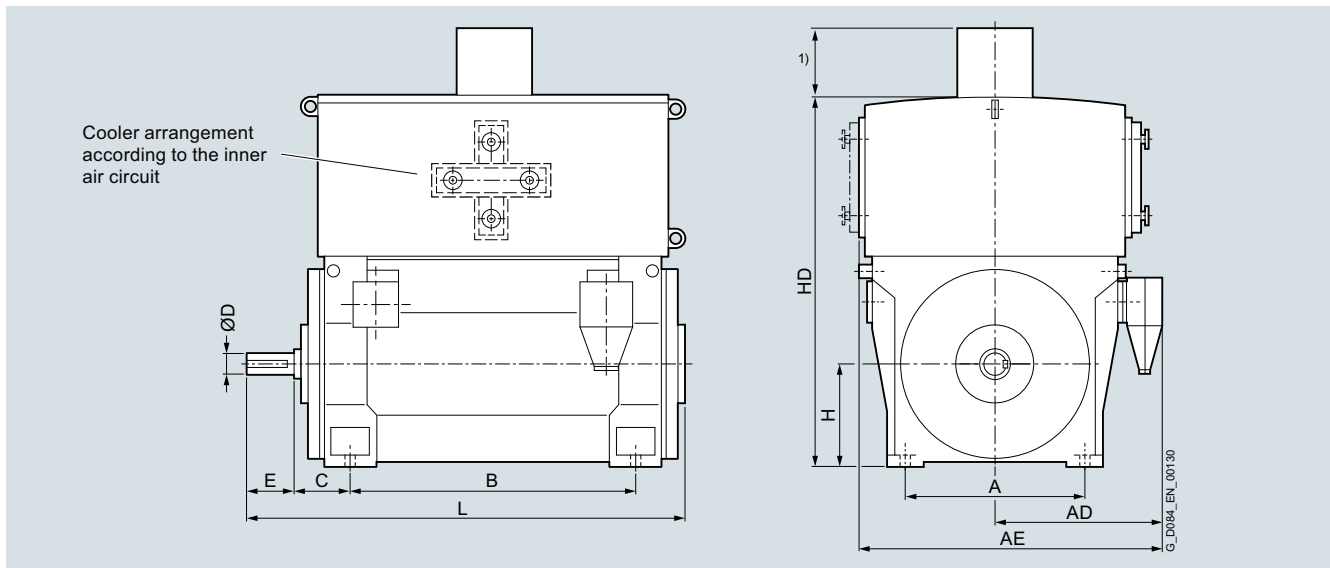
3) The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>2)</sup> mm	AE <sup>2)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, anti-friction bearings – 1RN7<sup>3)</sup> series – IC86W</b>											
12-pole											
1RN7630-5P..0-OCG0	11300	1320	1340	2340	1600	375	200	280	630	2610	2610
1RN7632-5P..0-OCG0	11900	1320	1340	2340	1600	375	200	280	630	2610	2610
1RN7634-5P..0-OCG0	12700	1320	1340	2340	1800	375	200	280	630	2610	2810
1RN7636-5P..0-OCG0	13200	1320	1340	2340	1800	375	200	280	630	2610	2810

#### Note:

Higher pole numbers are available on request.

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

<sup>1)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

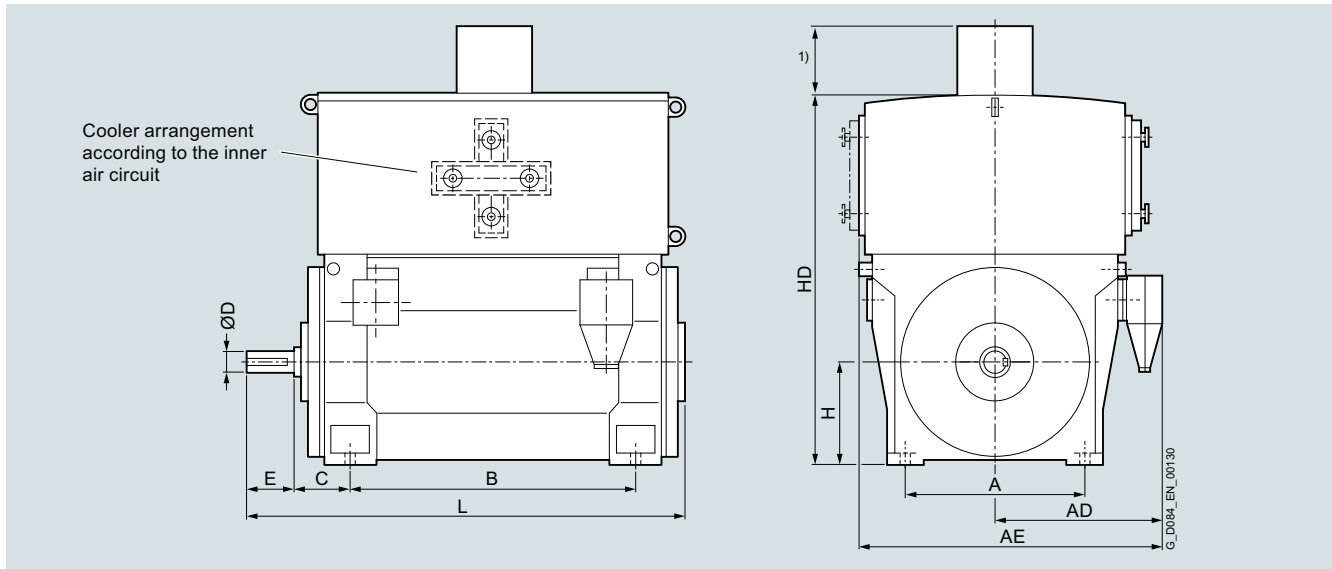
<sup>2)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, anti-friction bearings – 1RN7<sup>2)</sup> series – IC86W</b>											
8-pole											
1RN7800-4P..0-OCG0	23200	1700	1900	3110	2240	375	250	330	800	3080	3470
1RN7802-4P..0-OCG0	24400	1700	1900	3110	2240	375	250	330	800	3080	3470
1RN7804-4P..0-OCG0	26100	1700	1900	3110	2500	375	250	330	800	3080	3730
1RN7806-4P..0-OCG0	27500	1700	1900	3110	2500	375	250	330	800	3080	3730

#### Note:

Higher pole numbers are available on request.

1)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

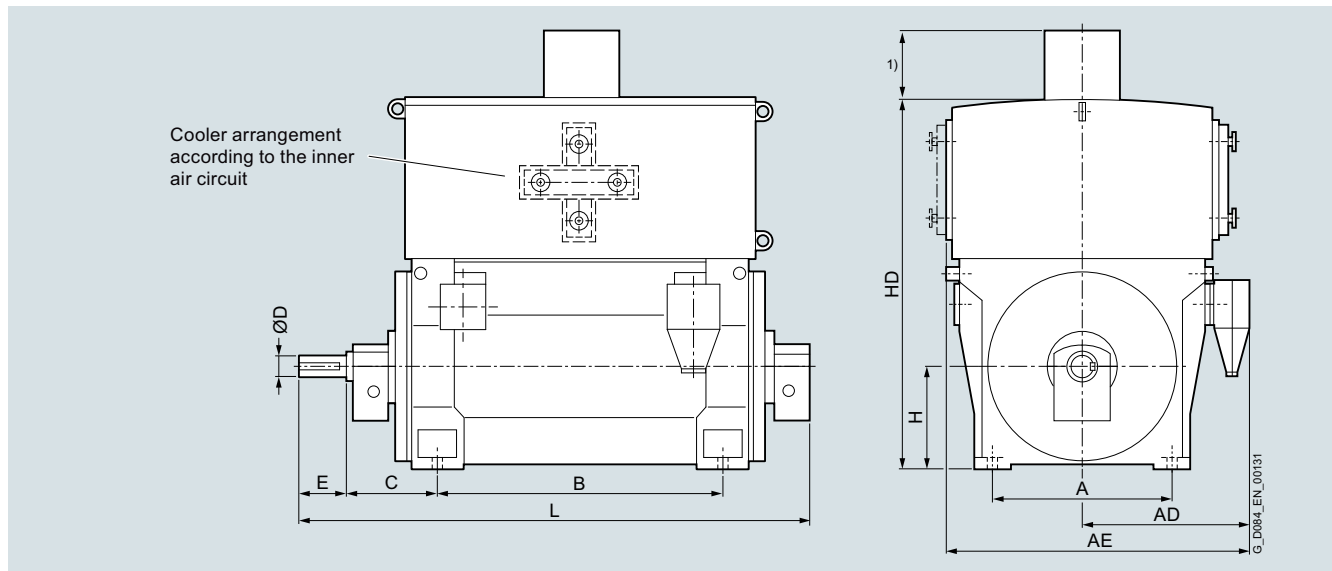
2) The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>2)</sup> mm	AE <sup>2)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RN7<sup>3)</sup> series – IC86W</b>											
2-pole											
1RN7630-2P..0-0CJ0	10700	1320	1490	2490	1600	600	180	240	630	2610	3020
1RN7632-2P..0-0CJ0	11300	1320	1490	2490	1600	600	180	240	630	2610	3020
1RN7634-2P..0-0CJ0	12200	1320	1490	2490	1800	600	180	240	630	2610	3220
1RN7636-2P..0-0CJ0	12700	1320	1490	2490	1800	600	180	240	630	2610	3220
1RN7710-2P..0-0CJ0	14600	1500	1800	2900	2000	560	200	280	710	2800	3320
1RN7712-2P..0-0CJ0	15200	1500	1800	2900	2000	560	200	280	710	2800	3320
1RN7714-2P..0-0CJ0	16400	1500	1800	2900	2240	560	200	280	710	2800	3560
1RN7716-2P..0-0CJ0	17200	1500	1800	2900	2240	560	200	280	710	2800	3560

1)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

2) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

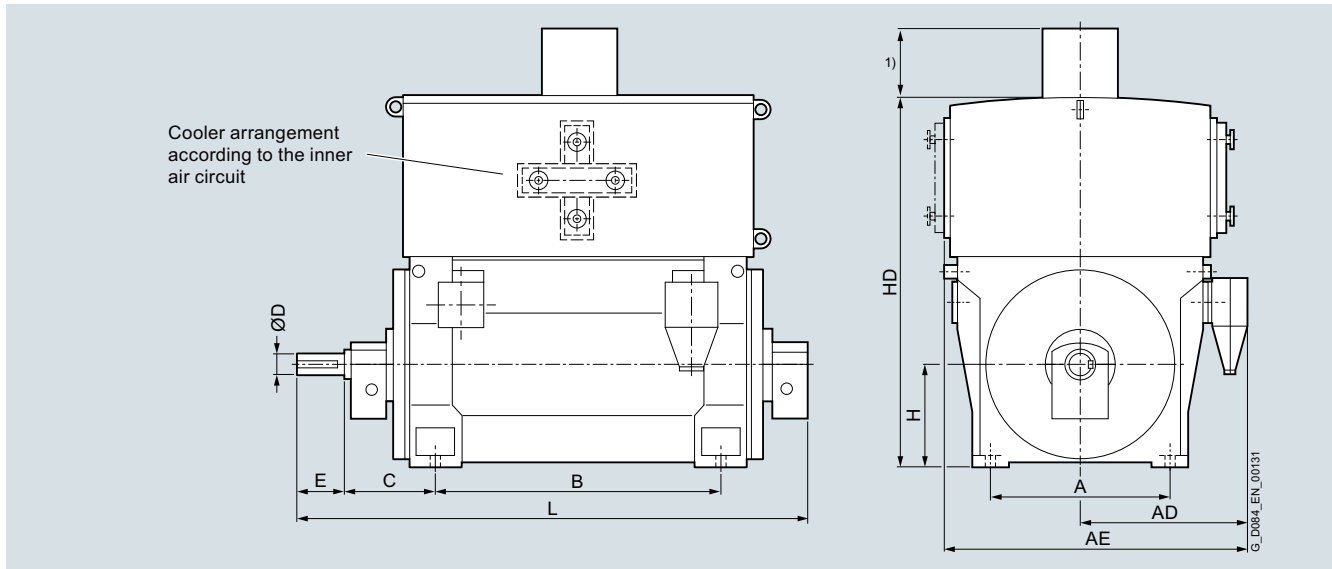
3) The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>2)</sup> mm	AE <sup>2)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RN7<sup>3)</sup> series – IC86W</b>											
4-pole											
1RN7630-4P..0-0CJ0	11400	1320	1490	2490	1600	630	200	280	630	2610	3090
1RN7632-4P..0-0CJ0	11900	1320	1490	2490	1600	630	200	280	630	2610	3090
1RN7634-4P..0-0CJ0	12900	1320	1490	2490	1800	630	200	280	630	2610	3290
1RN7636-4P..0-0CJ0	13400	1320	1490	2490	1800	630	200	280	630	2610	3290
1RN7710-4P..0-0CJ0	15800	1500	1800	2900	2000	710	220	350	710	2800	3650
1RN7712-4P..0-0CJ0	16400	1500	1800	2900	2000	710	220	350	710	2800	3650
1RN7714-4P..0-0CJ0	17700	1500	1800	2900	2240	710	220	350	710	2800	3890
1RN7716-4P..0-0CJ0	19000	1500	1800	2900	2240	710	220	350	710	2800	3890
1RN7800-4P..0-0CJ0	23600	1700	1900	3110	2240	600	250	330	800	3080	3660
1RN7802-4P..0-0CJ0	24700	1700	1900	3110	2240	600	250	330	800	3080	3660
1RN7804-4P..0-0CJ0	26600	1700	1900	3110	2500	600	250	330	800	3080	3920
1RN7806-4P..0-0CJ0	27900	1700	1900	3110	2500	600	250	330	800	3080	3920

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

<sup>2)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

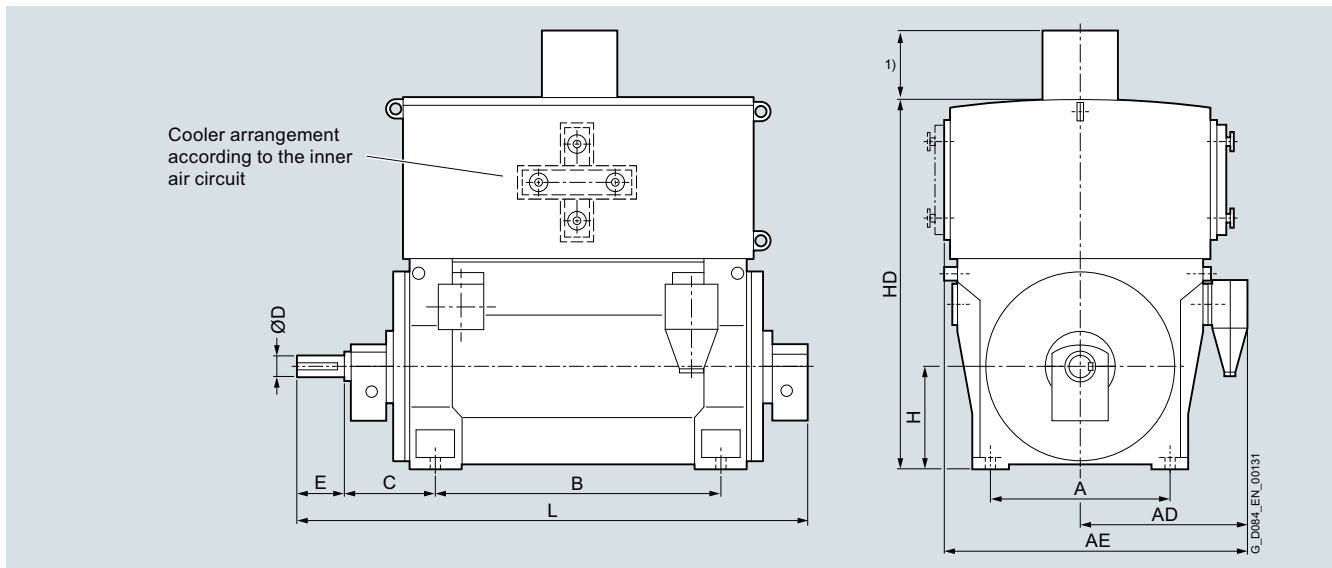
<sup>3)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>2)</sup> mm	AE <sup>2)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RN7<sup>3)</sup> series – IC86W</b>											
6-pole											
1RN7630-6P..0-0CJ0	11800	1320	1340	2340	1600	630	200	280	630	2610	3090
1RN7632-6P..0-0CJ0	12400	1320	1340	2340	1600	630	200	280	630	2610	3090
1RN7634-6P..0-0CJ0	13300	1320	1340	2340	1800	630	200	280	630	2610	3290
1RN7636-6P..0-0CJ0	13800	1320	1340	2340	1800	630	200	280	630	2610	3290
1RN7710-6P..0-0CJ0	15800	1500	1800	2900	2000	670	220	350	710	2800	3570
1RN7712-6P..0-0CJ0	16800	1500	1800	2900	2000	670	220	350	710	2800	3570
1RN7714-6P..0-0CJ0	18300	1500	1800	2900	2240	670	220	350	710	2800	3810
1RN7716-6P..0-0CJ0	19400	1500	1800	2900	2240	670	220	350	710	2800	3810
1RN7800-6P..0-0CJ0	24400	1700	1900	3110	2240	600	250	330	800	3080	3660
1RN7802-6P..0-0CJ0	25900	1700	1900	3110	2240	600	250	330	800	3080	3660
1RN7804-6P..0-0CJ0	27800	1700	1900	3110	2500	600	250	330	800	3080	3920
1RN7806-6P..0-0CJ0	29300	1700	1900	3110	2500	600	250	330	800	3080	3920

1)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

2) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

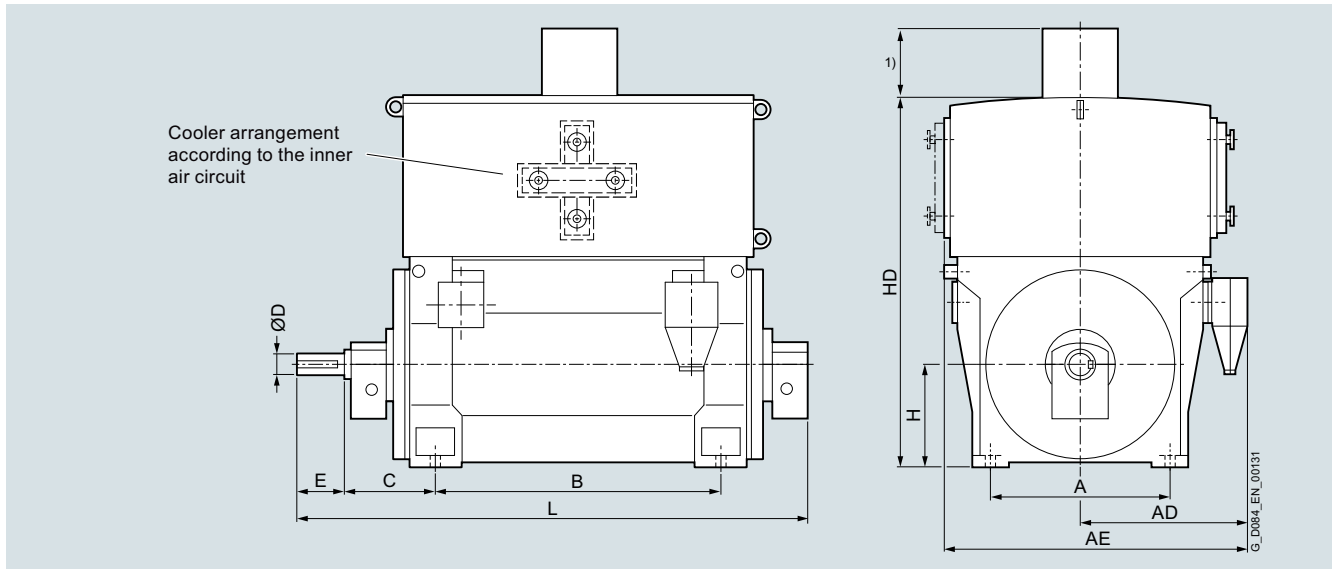
3) The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>2)</sup> mm	AE <sup>2)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RN7<sup>3)</sup> series – IC86W</b>											
8-pole											
1RN7630-8P..0-0CJ0	11500	1320	1340	2340	1600	630	200	280	630	2610	3090
1RN7632-8P..0-0CJ0	12100	1320	1340	2340	1600	630	200	280	630	2610	3090
1RN7634-8P..0-0CJ0	12900	1320	1340	2340	1800	630	200	280	630	2610	3290
1RN7636-8P..0-0CJ0	13400	1320	1340	2340	1800	630	200	280	630	2610	3290
1RN7710-8P..0-0CJ0	15200	1500	1800	2900	2000	670	220	350	710	2800	3570
1RN7712-8P..0-0CJ0	16200	1500	1800	2900	2000	670	220	350	710	2800	3570
1RN7714-8P..0-0CJ0	17600	1500	1800	2900	2240	670	220	350	710	2800	3810
1RN7716-8P..0-0CJ0	18600	1500	1800	2900	2240	670	220	350	710	2800	3810
1RN7800-8P..0-0CJ0	23400	1700	1900	3110	2240	600	280	470	800	3080	3800
1RN7802-8P..0-0CJ0	24600	1700	1900	3110	2240	600	280	470	800	3080	3800
1RN7804-8P..0-0CJ0	26300	1700	1900	3110	2500	600	280	470	800	3080	4060
1RN7806-8P..0-0CJ0	27600	1700	1900	3110	2500	600	280	470	800	3080	4060

1)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

2) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

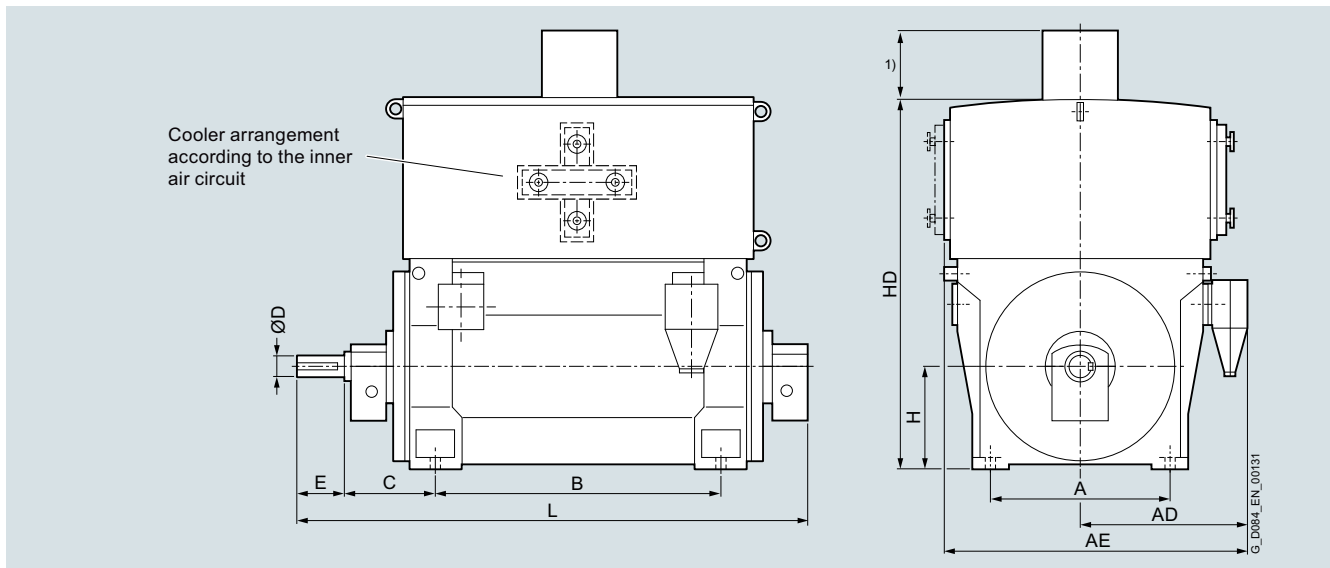
3) The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>2)</sup> mm	AE <sup>2)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RN7<sup>3)</sup> series – IC86W</b>											
10-pole											
1RN7630-3P..0-0CJ0	11400	1320	1340	2340	1600	630	200	280	630	2610	3090
1RN7632-3P..0-0CJ0	12000	1320	1340	2340	1600	630	200	280	630	2610	3090
1RN7634-3P..0-0CJ0	12800	1320	1340	2340	1800	630	200	280	630	2610	3290
1RN7636-3P..0-0CJ0	13300	1320	1340	2340	1800	630	200	280	630	2610	3290
1RN7710-3P..0-0CJ0	15200	1500	1800	2900	2000	670	220	350	710	2800	3570
1RN7712-3P..0-0CJ0	16200	1500	1800	2900	2000	670	220	350	710	2800	3570
1RN7714-3P..0-0CJ0	17700	1500	1800	2900	2240	670	220	350	710	2800	3810
1RN7716-3P..0-0CJ0	18600	1500	1800	2900	2240	670	220	350	710	2800	3810

1)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

2) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

3) The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

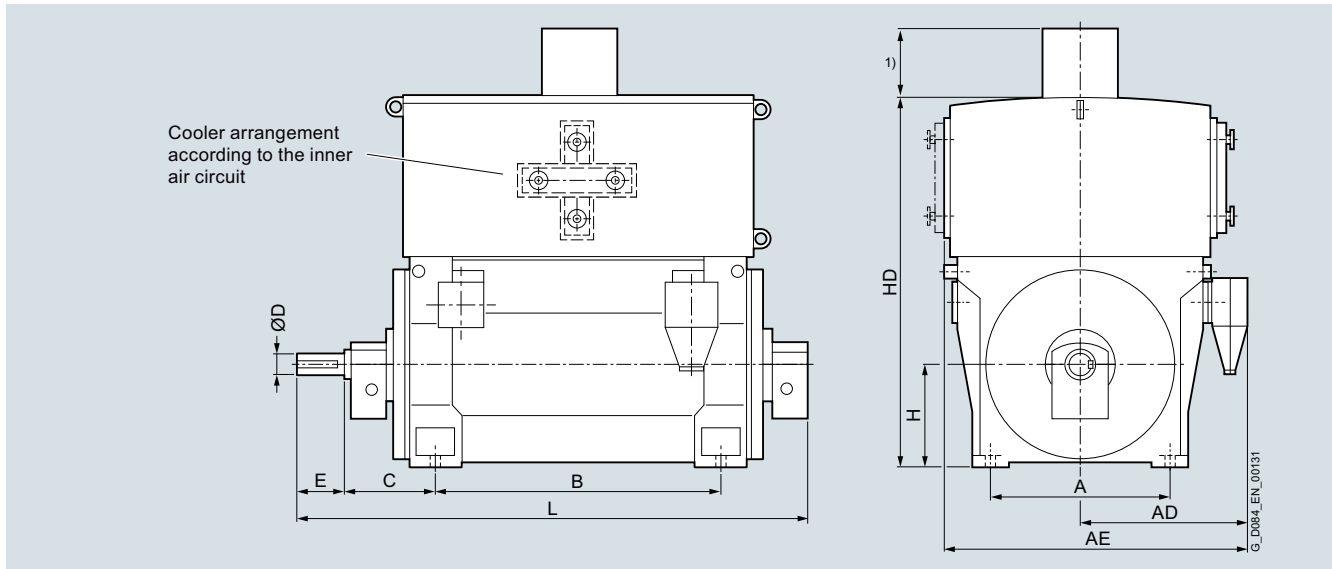


## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>2)</sup> mm	AE <sup>2)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RN7<sup>3)</sup> series – IC86W</b>											
12-pole											
1RN7630-5P..0-0CJ0	11400	1320	1340	2340	1600	630	200	280	630	2610	3090
1RN7632-5P..0-0CJ0	12000	1320	1340	2340	1600	630	200	280	630	2610	3090
1RN7634-5P..0-0CJ0	12800	1320	1340	2340	1800	630	200	280	630	2610	3290
1RN7636-5P..0-0CJ0	13300	1320	1340	2340	1800	630	200	280	630	2610	3290

#### Note:

Higher pole numbers are available on request.

1)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

2) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

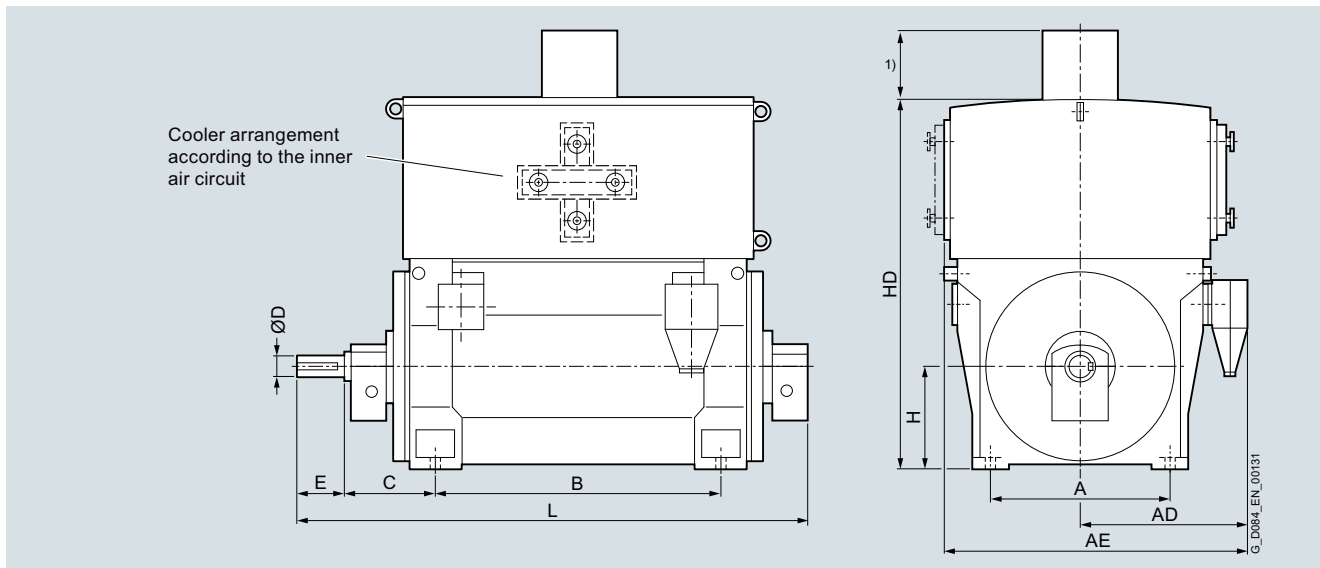
1) The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RN7<sup>2)</sup> series – IC86W</b>											
4-pole											
1RN7800-4P..0-0CJ0	23600	1700	1900	3110	2240	600	250	330	800	3080	3660
1RN7802-4P..0-0CJ0	24700	1700	1900	3110	2240	600	250	330	800	3080	3660
1RN7804-4P..0-0CJ0	26600	1700	1900	3110	2500	600	250	330	800	3080	3920
1RN7806-4P..0-0CJ0	27900	1700	1900	3110	2500	600	250	330	800	3080	3920

Note:

Higher pole numbers are available on request.

<sup>1)</sup>

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

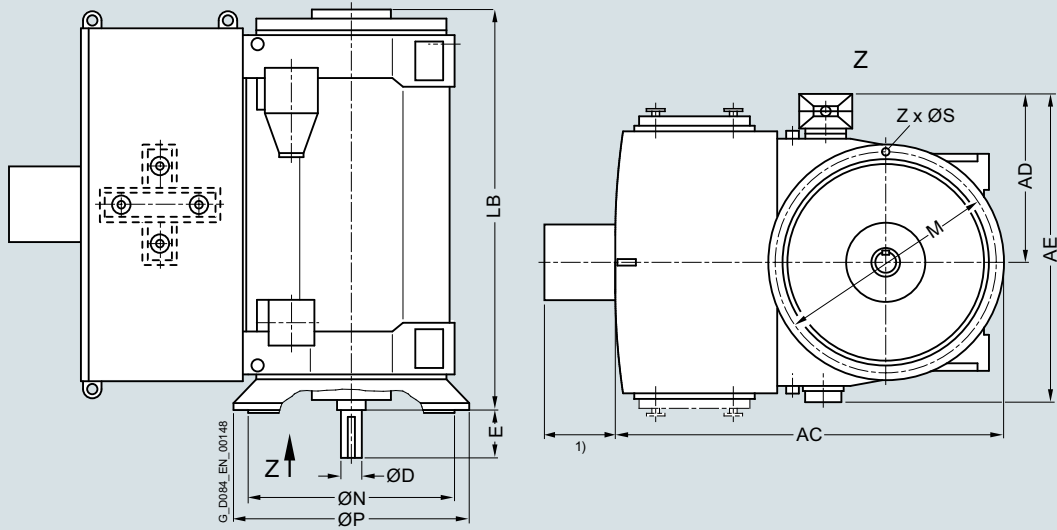
<sup>2)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: HD + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings



Motor type	Weight kg	Dimensions										
		AC	AD <sup>2)</sup>	AE <sup>2)</sup>	D	E	LB	P	N	M	S	Z
Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RN7 <sup>3)</sup> – IC86W												
6-pole												
1RN7630-6P..8-OCG0	12500	2920	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7632-6P..8-OCG0	13100	2920	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7634-6P..8-OCG0	13900	2920	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7636-6P..8-OCG0	14500	2920	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7710-6P..8-OCG0	17300	3130	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7712-6P..8-OCG0	18300	3130	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7714-6P..8-OCG0	19800	3130	1800	2900	220	350	3380	2000	1800	1900	35	24
1RN7716-6P..8-OCG0	20900	3130	1800	2900	220	350	3380	2000	1800	1900	35	24

1)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

2) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

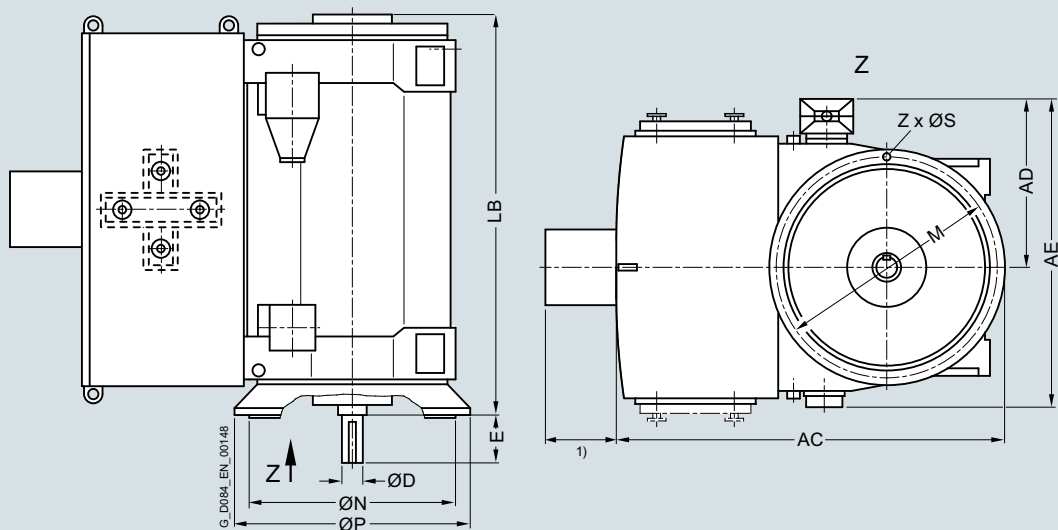
3) The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings



Motor type	Weight kg	Dimensions										
		AC	AD <sup>2)</sup>	AE <sup>2)</sup>	D	E	LB	P	N	M	S	Z

#### Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RN7<sup>3)</sup> – IC86W

8-pole												
1RN7630-8P..8-OCG0	12100	2920	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7632-8P..8-OCG0	12700	2920	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7634-8P..8-OCG0	13500	2920	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7636-8P..8-OCG0	14100	2920	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7710-8P..8-OCG0	16900	3130	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7712-8P..8-OCG0	18200	3130	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7714-8P..8-OCG0	19700	3130	1800	2900	220	350	3380	2000	1800	1900	35	24
1RN7716-8P..8-OCG0	20700	3130	1800	2900	220	350	3380	2000	1800	1900	35	24
1RN7800-8P..8-OCG0	22900	3350	1810	3000	280	470	3280	2240	2000	2120	42	22
1RN7802-8P..8-OCG0	24100	3350	1810	3000	280	470	3280	2240	2000	2120	42	22
1RN7804-8P..8-OCG0	26000	3350	1810	3000	280	470	3540	2240	2000	2120	42	22
1RN7806-8P..8-OCG0	27300	3350	1810	3000	280	470	3540	2240	2000	2120	42	22

1)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

2) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

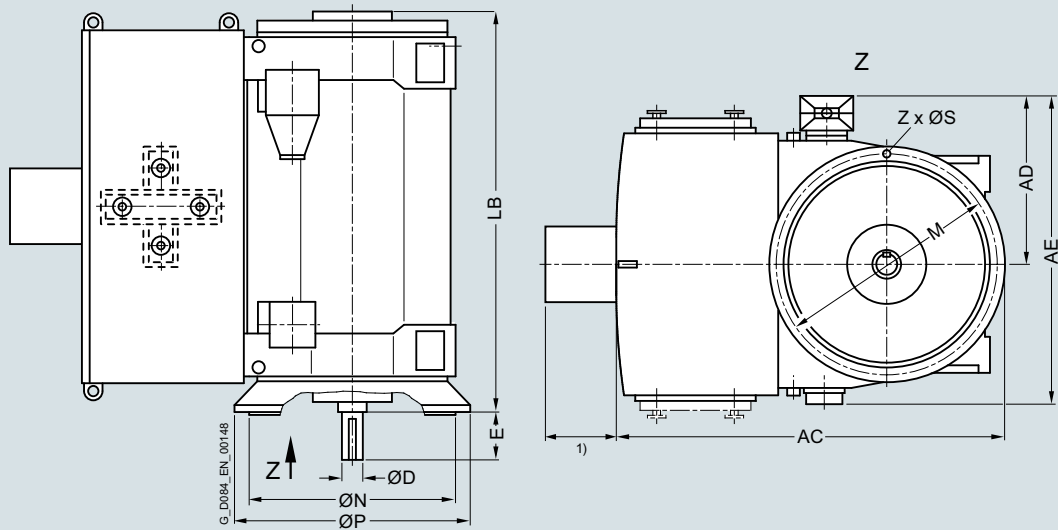
3) The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

### Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

#### Dimension drawings



Motor type	Weight kg	Dimensions										
		AC	AD <sup>2)</sup>	AE <sup>2)</sup>	D	E	LB	P	N	M	S	Z
Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RN7 <sup>3)</sup> – IC86W												
10-pole												
1RN7630-3P..8-OCG0	12000	2920	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7632-3P..8-OCG0	12600	2920	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7634-3P..8-OCG0	13400	2920	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7636-3P..8-OCG0	14000	2920	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7710-3P..8-OCG0	17000	3130	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7712-3P..8-OCG0	17900	3130	1800	2900	220	350	3140	2000	1800	1900	35	24
1RN7714-3P..8-OCG0	19500	3130	1800	2900	220	350	3380	2000	1800	1900	35	24
1RN7716-3P..8-OCG0	20400	3130	1800	2900	220	350	3380	2000	1800	1900	35	24

1)

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

2) The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

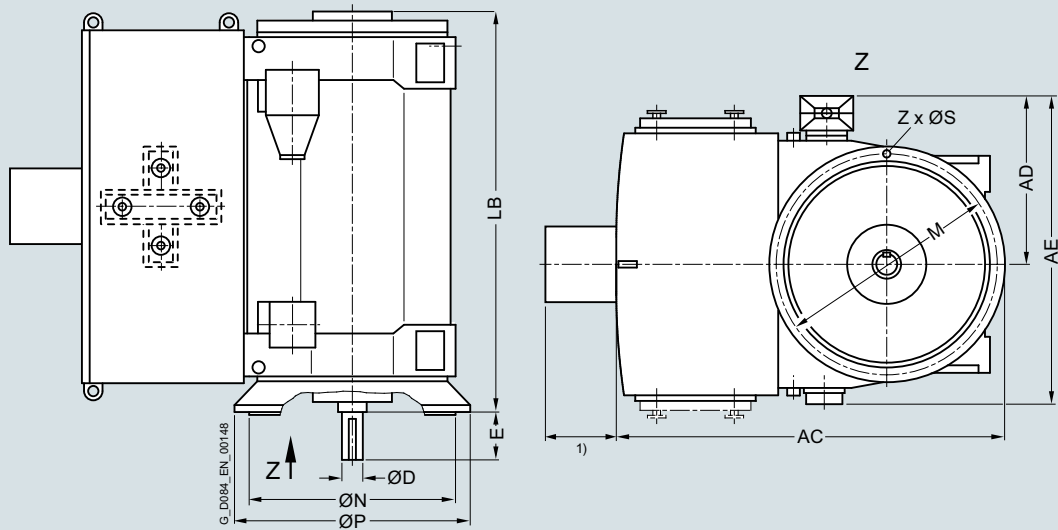
3) The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

Converter with non-sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN6, 1RN7

### Dimension drawings



Motor type	Weight kg	Dimensions										
		AC	AD <sup>2)</sup>	AE <sup>2)</sup>	D	E	LB	P	N	M	S	Z
<b>Up to 6.6 kV, IM V1 type of construction, anti-friction bearings – 1RN7<sup>3)</sup> – IC86W</b>												
12-pole												
1RN7630-5P.8-OCG0	12000	2920	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7632-5P.8-OCG0	12600	2920	1250	2130	200	280	2410	1800	1600	1700	28	24
1RN7634-5P.8-OCG0	13400	2920	1250	2130	200	280	2610	1800	1600	1700	28	24
1RN7636-5P.8-OCG0	14000	2920	1250	2130	200	280	2610	1800	1600	1700	28	24

#### Note:

Higher pole numbers are available on request.

Shaft height	Frequency	Number of poles	Fan dimension
630	50 Hz	2, 4, 8, 10, 12	570 mm
		6	500 mm
	60 Hz	2, 4	620 mm
		6, 8, 10, 12	570 mm
710	50 Hz	2, 4, 6	570 mm
		8, 10	500 mm
	60 Hz	2, 4, 6	620 mm
		8, 10	570 mm
800	50 Hz	4	570 mm
		6, 8	500 mm
	60 Hz	4	620 mm
		6, 8	570 mm

<sup>2)</sup> The values apply to 6 kV. When a lower voltage is selected, the rated current increases. For rated voltages from 2.0 kV to 6.6 kV and rated currents > 400 A, the dimension increases by 140 mm.

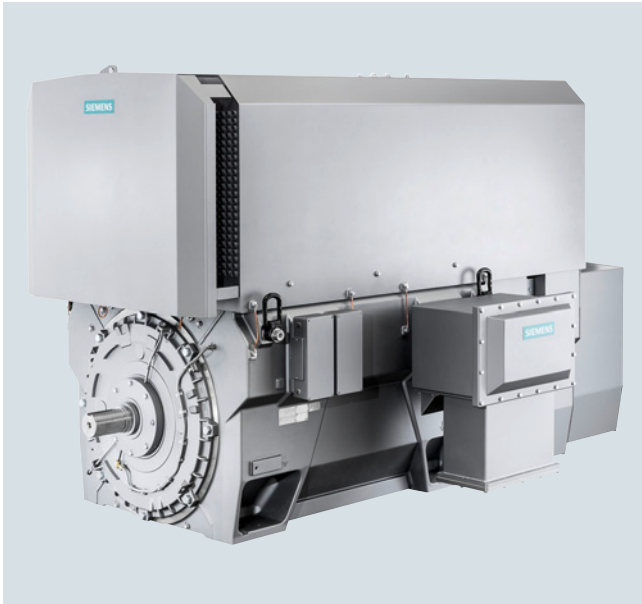
<sup>3)</sup> The dimensions are also valid for the 1SL7 series. For the 1SQ7 series, the dimensions might change as follows due to the required purging system: AC + 400 mm. Detailed drawings are available on request.

## Motors for converter operation

### Converter with sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ7 constant-torque drive

#### Overview



#### Technical data

##### Overview of technical data

SIMOTICS HV M 1RQ7 constant-torque drive	
Rated voltage	6 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Cooling method	IC611/IC616/IC666
Stator winding insulation	Insulation system, thermal class 155 (F)
Shaft height	800 mm
Bearings	Anti-friction bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN (NEMA version on request)
Frame design for shaft heights 800 mm	Housing: Steel Cooling enclosure: Steel

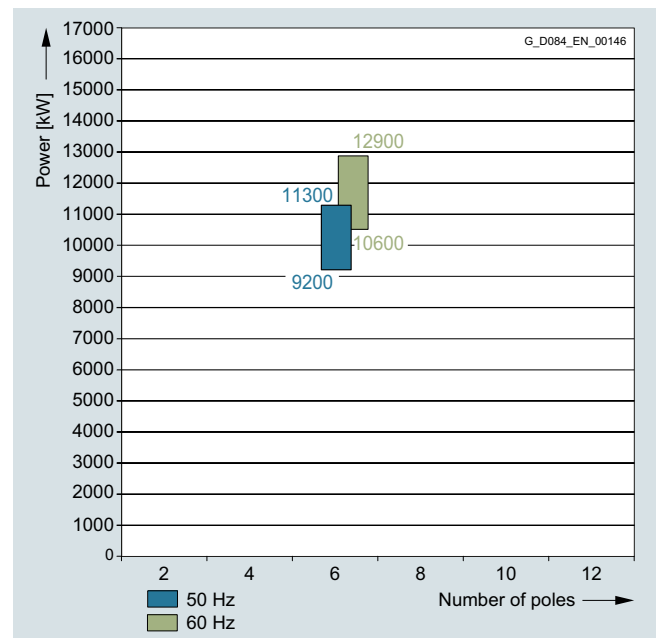
##### Power ranges for IEC motors for operation with SINAMICS converters with sinusoidal output

1RQ7, 1SG7 (Ex ec) and 1SB7 (Ex pxb) series

Insulation system, thermal class 155 (F)

The power data listed here apply for an ambient temperature of 40 °C and an installation altitude 1000 m.

Up to 6.6 kV; 50 and 60 Hz



## Motors for converter operation

Converter with sinusoidal output

### Air-cooled motors · SIMOTICS HV M 1RQ7 constant-torque drive

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SB7 (Ex pxb) and 1SG7 (Ex ec).

Rated power		High-voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)								
IEC			Rated speed	Efficiency	Power factor	Rated current at 6 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>	
$P_{\text{rated}}$ 155 (F)	$P_{\text{rated}}$ 130 (B)		$n_{\text{rated}}$	$\eta$	$\cos \varphi$	$I_{\text{rated}}$	$T_{\text{rated}}$	$T_{\text{B}}/T_{\text{rated}}$	J	$n_{\text{max}}$	
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm	
<b>Up to 6.6 kV, 50 Hz</b>											
6-pole											
9200	8300	<b>1RQ7800-6■■■■-0C■0</b>	995	97.5	0.87	940	79663	2.20	685	1500	
9900	8900	<b>1RQ7802-6■■■■-0C■0</b>	996	97.5	0.88	1000	85336	2.40	765	1500	
10600	9500	<b>1RQ7804-6■■■■-0C■0</b>	996	97.6	0.88	1060	91089	2.35	840	1500	
11300	10100	<b>1RQ7806-6■■■■-0C■0</b>	996	97.6	0.88	1140	96842	2.15	925	1500	

#### Position ■ of the Article No.:

#### For shaft height 800 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- converter type (10th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

#### Note:

For details on converter operation with sinusoidal output, [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.



## Motors for converter operation

### Converter with sinusoidal output

#### Air-cooled motors · SIMOTICS HV M 1RQ7 constant-torque drive

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:3				1:5			
	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant-torque drive</b>											
6-pole												
1RQ7800-6...	4100	79663	96.8	0.87	2700	79663	96.0	0.88	1600	79663	94.3	0.88
1RQ7802-6...	4400	85336	96.9	0.88	2900	85336	96.1	0.88	1700	85336	94.6	0.88
1RQ7804-6...	4700	91089	97.0	0.88	3100	91089	96.4	0.88	1900	91089	94.8	0.88
1RQ7806-6...	5000	96842	97.0	0.88	3300	96842	96.2	0.88	2000	96842	94.6	0.88

## Motors for converter operation

Converter with sinusoidal output

### Air-cooled motors · SIMOTICS HV M 1RQ7 constant-torque drive

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SB7 (Ex pxb) and 1SG7 (Ex ec).

Rated power		High-voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)								
IEC			Rated speed	Efficiency	Power factor	Rated current at 6 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>	
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$	
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm	
<b>Up to 6.6 kV, 60 Hz</b>											
6-pole											
10600	9500	<b>1RQ7800-6-0000-0C0</b>	1195	97.5	0.88	1060	75920	2.20	685	1500	
11400	10200	<b>1RQ7802-6-0000-0C0</b>	1196	97.5	0.88	1140	81446	2.25	760	1500	
12200	10900	<b>1RQ7804-6-0000-0C0</b>	1196	97.5	0.87	1240	87035	2.50	840	1500	
12900	11600	<b>1RQ7806-6-0000-0C0</b>	1196	97.5	0.88	1300	92625	2.50	925	1500	

#### Position ■ of the Article No.:

#### For shaft height 800 mm:

Refer to the article number structure on [Page 1/5](#) for:

- cooling method (9th position)
- converter type (10th position)
- voltage code (11th position)
- type of construction (12th position)
- housing and bearing version (15th position)

#### Note:

For details on converter operation with sinusoidal output, [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

## Motors for converter operation

### Converter with sinusoidal output

#### Air-cooled motors · SIMOTICS HV M 1RQ7 constant-torque drive

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:3				1:5			
	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant-torque drive</b>											
6-pole												
1RQ7800-6...	4700	75920	97.0	0.88	3100	75920	96.4	0.88	1900	75920	94.9	0.88
1RQ7802-6...	5100	81446	97.1	0.88	3400	81446	96.4	0.88	2000	81446	95.1	0.88
1RQ7804-6...	5400	87035	97.2	0.87	3600	87035	96.7	0.87	2100	87035	95.6	0.87
1RQ7806-6...	5800	92625	97.2	0.88	3800	92625	96.7	0.88	2300	92625	95.5	0.88

## Motors for converter operation

Converter with sinusoidal output

Air-cooled motors · SIMOTICS HV M 1RQ7 constant-torque drive

### Dimension drawings

Note:

For dimension drawings, refer to section  
"Converter with non-sinusoidal output".

## Motors for converter operation

### Converter with sinusoidal output

#### Water-cooled motors · SIMOTICS HV M 1RN7 constant-torque drive

#### Overview



#### Technical data

##### Overview of technical data

SIMOTICS HV M 1RN7 constant-torque	
Rated voltage	6 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Cooling method	IC86W
Stator winding insulation	Insulation system, thermal class 155 (F)
Shaft height	800 mm
Bearings	Anti-friction bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN (NEMA version on request)
Frame design for shaft heights 800 mm	Housing: Steel Cooling enclosure: Steel

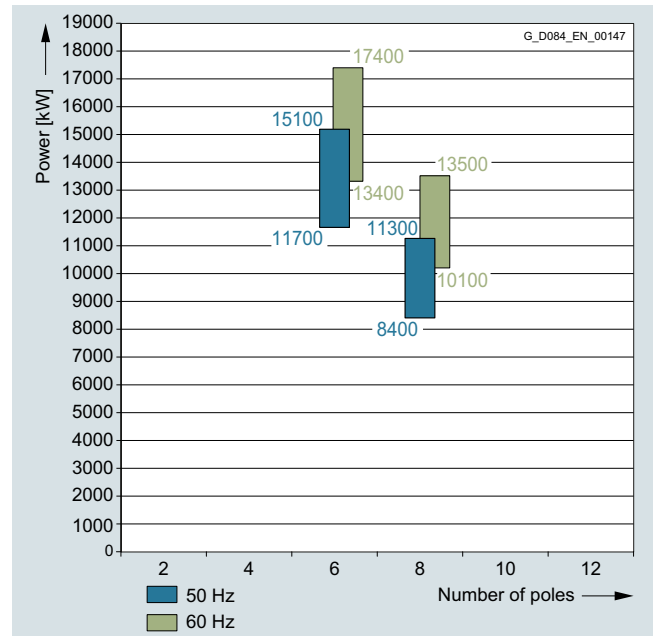
##### Power ranges for IEC motors for operation with SINAMICS converters with sinusoidal output

1RN7, 1SL7 (Ex ec) and 1SQ7 (Ex pxb) series

Insulation system, thermal class 155 (F)

The power data listed here apply for a water inlet temperature of 25 °C and an installation altitude ≤ 1000 m.

Up to 6.6 kV; 50 Hz and 60 Hz



## Motors for converter operation

Converter with sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN7 constant-torque drive

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL7 (Ex ec) and 1SQ7 (Ex pxb).

Rated power		High-voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)							
IEC			Rated speed	Efficiency	Power factor	Rated current at 6 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>
$P_{\text{rated}}$ 155 (F)	$P_{\text{rated}}$ 130 (B)		$n_{\text{rated}}$	$\eta$	$\cos \varphi$	$I_{\text{rated}}$	$T_{\text{rated}}$	$T_{\text{B}}/T_{\text{rated}}$	J	$n_{\text{max}}$
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm
<b>Up to 6.6 kV, 50 Hz</b>										
6-pole										
11700	10500	<b>1RN7800-6-0C0</b>	995	97.5	0.87	1200	100778	1.85	685	1500
12800	11500	<b>1RN7802-6-0C0</b>	995	97.5	0.88	1280	110376	1.95	760	1500
14000	12500	<b>1RN7804-6-0C0</b>	995	97.6	0.88	1400	119974	2.05	845	1500
15100	13500	<b>1RN7806-6-0C0</b>	995	97.6	0.88	1520	129572	2.00	930	1500
8-pole										
8400	7500	<b>1RN7800-8-0C0</b>	746	97.3	0.87	850	96012	2.40	860	1125
9300	8400	<b>1RN7802-8-0C0</b>	746	97.4	0.88	940	107534	2.30	955	1125
10300	9300	<b>1RN7804-8-0C0</b>	746	97.4	0.87	1060	119055	2.40	1055	1125
11300	10300	<b>1RN7806-8-0C0</b>	746	97.5	0.87	1160	131857	2.40	1160	1125
		<b>Position ■ of the Article No.:</b>								
		<b>For shaft height 800 mm:</b>								
		Refer to the article number structure on <a href="#">Page 1/5</a> for:								
		- cooling method (9th position)								
		- converter type (10th position)								
		- voltage code (11th position)								
		- type of construction (12th position)								
		- housing and bearing version (15th position)								

#### Note:

For details on converter operation with sinusoidal output, [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.

## Motors for converter operation

### Converter with sinusoidal output

#### Water-cooled motors · SIMOTICS HV M 1RN7 constant-torque drive

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:3				1:5			
	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant-torque drive</b>											
6-pole												
1RN7800-6...	5200	100778	96.6	0.87	3500	100778	95.6	0.87	2100	100778	93.5	0.88
1RN7802-6...	5700	110376	96.7	0.88	3800	110376	95.7	0.88	2300	110376	93.6	0.88
1RN7804-6...	6200	119974	96.8	0.88	4100	119974	96.0	0.88	2500	119974	94.0	0.88
1RN7806-6...	6700	129572	96.9	0.88	4500	129572	96.0	0.88	2700	129572	94.1	0.88
8-pole												
1RN7800-8...	3750	96012	96.5	0.87	2500	96012	95.4	0.87	1460	96012	93.4	0.87
1RN7802-8...	4200	107534	96.4	0.87	2800	107534	95.3	0.88	1620	107534	93.1	0.88
1RN7804-8...	4650	119055	96.6	0.87	3100	119055	95.6	0.87	1800	119055	93.7	0.87
1RN7806-8...	5150	131857	96.6	0.87	3400	131857	95.7	0.87	2000	131857	93.7	0.87

## Motors for converter operation

Converter with sinusoidal output

### Water-cooled motors · SIMOTICS HV M 1RN7 constant-torque drive

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL7 (Ex ec) and 1SQ7 (Ex pxb).

Rated power		High-voltage motor SIMOTICS HV M	Operating data at rated output for utilization 130 (B)								
IEC			Rated speed	Efficiency	Power factor	Rated current at 6 kV	Rated torque	Break-down torque	Moment of inertia	Mechanical speed limit <sup>1)</sup>	
$P_{rated}$ 155 (F)	$P_{rated}$ 130 (B)		$n_{rated}$	$\eta$	$\cos \varphi$	$I_{rated}$	$T_{rated}$	$T_B/T_{rated}$	J	$n_{max}$	
kW	kW	Article No.	rpm	%	[-]	A	Nm	[-]	kgm <sup>2</sup>	rpm	
<b>Up to 6.6 kV, 60 Hz</b>											
6-pole											
13400	12000	<b>1RN7800-6-0C0</b>	1194	97.5	0.87	1360	95979	1.80	685	1500	
14700	13200	<b>1RN7802-6-0C0</b>	1195	97.6	0.87	1500	105489	1.90	760	1500	
16100	14400	<b>1RN7804-6-0C0</b>	1195	97.6	0.87	1640	115079	2.00	845	1500	
17400	15600	<b>1RN7806-6-0C0</b>	1195	97.6	0.88	1740	124669	2.00	930	1500	
8-pole											
10100	9000	<b>1RN7800-8-0C0</b>	896	97.4	0.86	1040	95926	2.25	860	1125	
11200	10100	<b>1RN7802-8-0C0</b>	896	97.4	0.86	1160	107651	2.40	955	1125	
12300	11200	<b>1RN7804-8-0C0</b>	896	97.5	0.87	1280	119375	2.40	1060	1125	
13500	12300	<b>1RN7806-8-0C0</b>	896	97.5	0.87	1400	131099	2.45	1165	1125	
		<b>Position ■ of the Article No.:</b>									
		<b>For shaft height 800 mm:</b>									
		Refer to the article number structure on <a href="#">Page 1/5</a> for:									
		- cooling method (9th position)									
		- converter type (10th position)									
		- voltage code (11th position)									
		- type of construction (12th position)									
		- housing and bearing version (15th position)									

#### Note:

For details on converter operation with sinusoidal output, [see Page 3/2](#).

Ratings are defined for sinusoidal supply, based on IEC 60034-2-1:2007.

The ratings for converter operation depend on the converter and its settings and cannot be predetermined.

Higher pole numbers are available on request.

<sup>1)</sup> Standard values; higher speed limits on request.



## Motors for converter operation

### Converter with sinusoidal output

#### Water-cooled motors · SIMOTICS HV M 1RN7 constant-torque drive

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:3				1:5			
	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
<b>Constant-torque drive</b>												
<b>6-pole</b>												
1RN7800-6PU...-0C.0	6000	95979	96.8	0.87	4000	95979	95.9	0.87	2400	95979	94.0	0.88
1RN7802-6PU...-0C.0	6600	105489	97.0	0.87	4400	105489	96.3	0.87	2600	105489	94.7	0.87
1RN7804-6PU...-0C.0	7200	115079	97.1	0.87	4800	115079	96.4	0.88	2800	115079	94.9	0.88
1RN7806-6PU...-0C.0	7800	124669	97.2	0.88	5200	124669	96.5	0.88	3100	124669	95.0	0.88
<b>8-pole</b>												
1RN7800-8PU...-0C.0	4500	95926	96.7	0.87	3000	95926	95.8	0.87	1740	95926	94.1	0.87
1RN7802-8PU...-0C.0	5050	107651	96.8	0.87	3350	107651	96.0	0.87	1960	107651	94.3	0.87
1RN7804-8PU...-0C.0	5600	119375	96.9	0.87	3700	119375	96.1	0.87	2180	119375	94.4	0.87
1RN7806-8PU...-0C.0	6150	131099	96.9	0.87	4100	131099	96.1	0.87	2400	131099	94.5	0.87

## Motors for converter operation

Converter with sinusoidal output

Water-cooled motors · SIMOTICS HV M 1RN7 constant-torque drive

### Dimension drawings

Note:

For dimension drawings, refer to section  
"Converter with non-sinusoidal output".

## Explosion-protected motors



<b>4/2</b>	<b>Overview</b>
4/2	Classification of zones
4/3	Types of protection
4/4	Certification
<b>4/5</b>	<b>Type of protection Ex ec/Ex tc</b>
4/5	Air-cooled motors SIMOTICS HV M 1SG6/1SG7
4/6	Water-cooled motors SIMOTICS HV M 1SL6/1SL7
<b>4/7</b>	<b>Type of protection Ex pxb</b>
4/7	Air-cooled motors SIMOTICS HV M 1SB6/1SB7
4/8	Water-cooled motors SIMOTICS HV M 1SQ6/1SQ7

## Explosion-protected motors

### Overview

#### Classification of zones

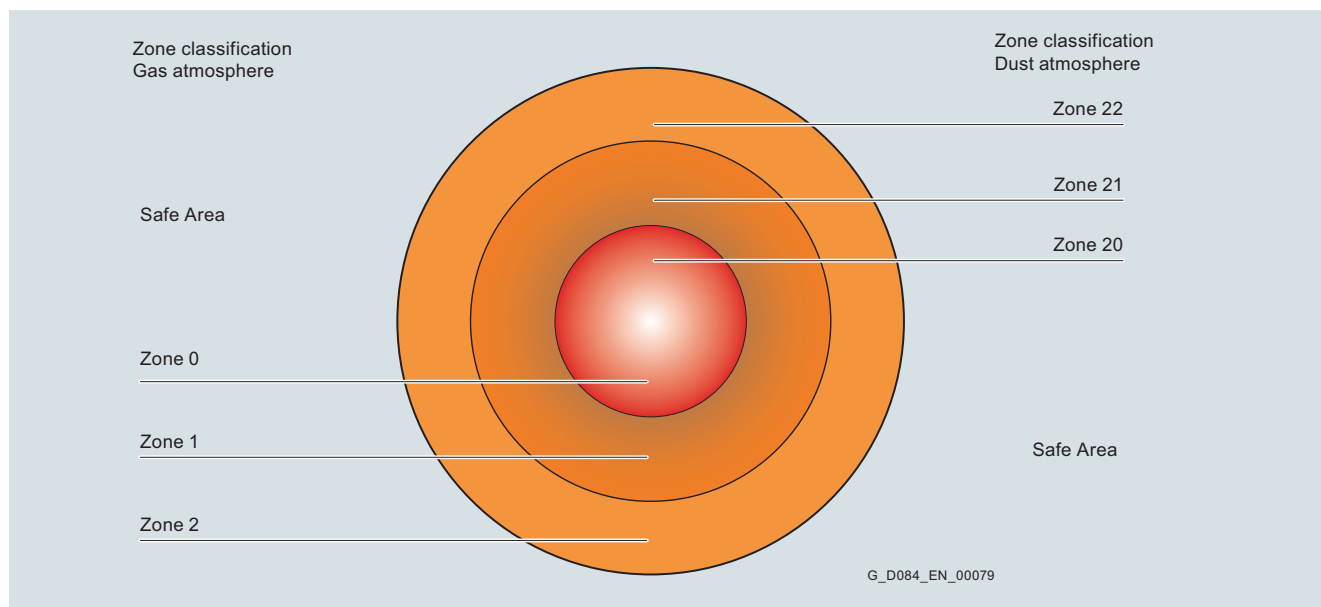
#### Overview

In many industries, manufacturing, processing, transportation or storing of combustible materials result in creation or release of gas, vapor or mist into the environment. Combustible dusts are created in other processes.

Explosive atmospheres result from contact of gases, vapors, mist or dust with oxygen in the air. If ignited, this can result in an explosion. In the chemical and petrochemical industries in particular, when crude oil and natural gas are transported, or in mining, milling (e.g. grain and granular solids), this can result in serious injury to personnel and damage to equipment.

To ensure maximum safety in these areas, legislators in most countries have implemented appropriate stipulations in the form of laws and regulations based on national and international standards.

Hazardous areas are classified in zones. Classification in zones depends on the probability of the presence of an explosive atmosphere, the duration and the location. Information and specifications regarding classification in zones are provided in IEC/EN 60079-10-1 for gas atmospheres and in IEC/EN 60079-10-2 for potentially explosive atmospheres as a result of dust. Further, a distinction is made between various explosion groups as well as temperature classes and these are included in the hazard assessment.



Depending on the particular zone and therefore the associated hazard, operating equipment must comply with defined minimum requirements regarding the type of protection. The different

types of protection require corresponding measures to prevent ignition that should be implemented at the motor in order to prevent that a surrounding explosive atmosphere is ignited.

Zone Dust <sup>2)</sup>	Gas <sup>1)2)</sup>	Zone definition acc. to		Assigned types of protection	Category according to 94/9/EC
		IEC/EN 60079-10-1 for Gas atmospheres	IEC/EN 60079-10-2 for dust atmospheres		
22	–	An area in which in normal operation it is not expected that an explosive atmosphere in the form of a cloud of combustible dust in the air occurs, and if it does occur then only briefly.		Ex tc	3D
–	2	An area in which in normal operation it is not expected that an explosive gas atmosphere occurs and if so, only infrequently and only briefly.		Ex ec	3G
–	1	An area in which it is expected that an explosive gas atmosphere occurs during normal operation.		Ex eb Ex pxb Ex db	2G
–	0	An area in which it is expected that a gas atmosphere is constantly present or for long periods of time		Motors are not permitted	

#### Note:

Referring to the 60079 IEC/EN standards, the following should be observed:

- The previous Ex e and Ex nA markings have been changed to Ex eb and Ex ec respectively. For both, the associated standard is IEC/EN 60079-7:2015. Expiration date of old marking: 2018-07-31
- The previous Ex px marking has been changed to Ex pxb. The associated standard is IEC/EN 60079-2:2014. Expiration date of old marking: 2017-08-25

<sup>1)</sup> Motors for Zone 1 may also be used in Zone 2.

<sup>2)</sup> Motors, which are marked for gas or dust protection, must not be used in hybrid mixtures! Hybrid mixtures: When explosive gas and dust atmospheres occur simultaneously.

## Overview

### **Type of protection, pressurized enclosure *Ex pxb* acc. to IEC/EN 60079-2**

In the motor, protective gas is kept under pressure in relation to the surrounding atmosphere to prevent the penetration of explosive atmospheres. The inside of the motor must be flushed with a protective gas before it is switched on.

The terminal box is included in the pressurized enclosure or has increased safety (type of protection *Ex eb*).

For motors > 11 kV, the terminal box is always included in the pressurized enclosure.

SIMOTICS HV M motors (air-cooled, type series 1SB6/1SB7 and water-cooled, type series 1SQ6/1SQ7) fulfill this type of protection.

### **Type of protection, *Ex ec* acc. to IEC/EN 60079-7**

The type of protection ***Ex ec*** ensures that a motor in normal operation as well as when operated under deviating conditions as specified in the standard is not in a position to ignite a surrounding explosive gas atmosphere.

The series of SIMOTICS HV M motors (air-cooled, type series 1SG6/1SG7 and water-cooled, type series 1SL6/1SL7) are available in ***Ex ec***.

### **Type of protection *Ex t* acc. to IEC/EN 60079-31**

This type of protection applies for electrical equipment protected using an enclosure and with limited surface temperature for use in areas in which combustible dust can occur in concentration levels that could cause a fire or an explosion.

The series of SIMOTICS HV M motors (air-cooled, type series 1SG6/1SG7 and water-cooled, type series 1SL6/1SL7) are available in ***Ex tc***.

### **Explosion-protected motors for converter operation**

Principally, explosion-protected motors can be fed from drive converters. As a result of the different design, system analyses, system tests etc. for the various types of protection, an inquiry is required to check whether these motors can be actually implemented.

## Explosion-protected motors


### Overview

#### Certification

#### Overview (continued)

##### Certification

Motors for use in hazardous areas are certified according to the EC Directive 94/9/EC (ATEX) or other regional certification schemes and are marked according to the following schematic.

Example, pressurized enclosure:	Acc. to Directive 94/9/EC (ATEX)						Acc. to Standards (IEC/EN)				
	CE	XXXX		II	2	G	Ex	pxb	II	T3	X
CE marking											
Number of the certifying "notified body"											
Ex symbol for explosion protected equipment											
Groups:											
• I = mining											
• II = other than mining											
Category:											
• 2 (Zone 1/21)											
• 3 (Zone 2/22)											
Explosive atmosphere											
• G = gas											
• D = dust											
Explosion protected equipment											
Type of protection db, eb, ec, pxb, tc											
Note: Additional types of protection for accessories are alphabetically listed											
Explosion group, where relevant, restricted (Gas: IIA, IIB, IIC; Dust: IIIA, IIIB, IIIC)											
Temperature class with max. surface temperature											
• T1 ≤ 450 °C											
• T2 ≤ 300 °C											
• T3 ≤ 200 °C (standard for motors from Siemens I DT LD P)											
• T4 ≤ 135 °C											
Alternatively the maximum surface temperature may be marked: e.g. T125 °C (possible for gas, necessary for dust explosion protected machines)											
Special conditions according to the operating instructions or type examination certificate											

# Explosion-protected motors

## Type of protection Ex ec/Ex tc

Air-cooled motors · SIMOTICS HV M 1SG6/1SG7

### Overview



### Technical data

#### Overview of technical data

SIMOTICS HV M 1SG6/SG7	
Rated voltage	3.3 ... 11 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Type of protection	Ex ec/Ex tc
Operation in hazardous areas	Zone 2/Zone 22
Cooling method	IC611/IC616/IC666
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	450 ... 800 mm
Bearings	Anti-friction bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN (NEMA version on request)
Frame design for shaft heights 450 ... 560 mm	Housing: Cast iron Cooling enclosure: Steel
Frame design for shaft heights 630 ... 800 mm	Housing: Steel Cooling enclosure: Steel

SIMOTICS HV M motors (type series 1SG6 and 1SG7) developed for Zone 2 in type of protection **Ex ec** or for Zone 22 in type of protection **Ex tc** are available as modular motors with air/air heat exchanger. The Article No. schematic is shown in Chapter 1.

These **Ex ec** or **Ex tc** measures do not affect the performance data or main dimensions with respect to SIMOTICS HV M motors. This is the reason that the values of the 1RQ6 or 1RQ7 type series from Chapter 2 can be used for 1SG6 and 1SG7 motors.

An extensive range of options and tests are available for SIMOTICS HV M motors, type of protection **Ex ec** or **Ex tc** (--> Options and tests).

## Explosion-protected motors

Type of protection Ex ec/Ex tc

Water-cooled motors · SIMOTICS HV M 1SL6/1SL7

### Overview



### Technical data

#### Overview of technical data

SIMOTICS HV M 1SL6/1SL7	
Rated voltage	3.3 ... 11 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Type of protection	Ex ec/Ex tc
Operation in hazardous areas	Zone 2/Zone 22
Cooling method	IC81W/IC86W
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	450 ... 800 mm
Bearings	Anti-friction bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN (NEMA version on request)
Frame design for shaft heights 450 ... 560 mm	Housing: Cast iron Cooling enclosure: Steel
Frame design for shaft heights 630 ... 800 mm	Housing: Steel Cooling enclosure: Steel

SIMOTICS HV M motors (type series 1SL6 and 1SL7) developed for Zone 2 in type of protection **Ex ec** or for Zone 22 in type of protection **Ex tc** are available as modular motors with air/water heat exchanger (cooling type IC81W/IC86W). The Article No. schematic is shown in Chapter 1.

These **Ex ec** or **Ex tc** measures do not affect the performance data or main dimensions with respect to SIMOTICS HV M motors. This is the reason that the values of the 1RN6 or 1RN7 type series from Chapter 2 can be used for 1SL6 and 1SL7 motors.

An extensive range of options and tests are available for SIMOTICS HV M motors, type of protection **Ex ec** or **Ex tc** (--> Options and tests).



# Explosion-protected motors

## Type of protection Ex pxb

Air-cooled motors · SIMOTICS HV M 1SB6/1SB7

### Overview



### Technical data

#### Overview of technical data

SIMOTICS HV M 1SB6/1SB7	
Rated voltage	3.3 ... 11 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Type of protection	Ex pxb
Operation in hazardous areas	Zone 1 (may also be used in Zone 2)
Cooling method	IC611/IC616/IC666
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	450 ... 800 mm
Bearings	Anti-friction bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN (NEMA version on request)
Frame design for shaft heights 450 ... 560 mm	Housing: Cast iron Cooling enclosure: Steel
Frame design for shaft heights 630 ... 800 mm	Housing: Steel Cooling enclosure: Steel

This series of SIMOTICS HV M motors, developed for Zone 1 (type series 1SB6 and 1SB7) in type of protection **Ex pxb** are available as modular motors with air/air heat exchanger (IC611/IC616/IC666 cooling type). The Article No. schematic is shown in Chapter 1.

The motors are shipped with a control unit to maintain the internal pressure and to carry out the purging process required each time before the motor is started.

These **Ex pxb** measures have no effect on the performance data when compared to SIMOTICS HV M motors. This is the reason that the values of 1RQ6 or 1RQ7 motors from Chapter 2 can be used for 1SB6 and 1SB7 motors. Main dimensions on request.

A wide range of options and tests is available for SIMOTICS HV M motors, type of protection **Ex pxb**.

## Explosion-protected motors

Type of protection Ex pxb

Water-cooled motors · SIMOTICS HV M 1SQ6/1SQ7

### Overview



### Technical data

#### Overview of technical data

SIMOTICS HV M 1SQ6/1SQ7	
<b>Rated voltage</b>	3.3 ... 11 kV
<b>Rated frequency</b>	50/60 Hz
<b>Motor type</b>	Induction motor with squirrel-cage rotor
<b>Type of construction</b>	IM B3, IM V1
<b>Degree of protection</b>	IP55
<b>Type of protection</b>	Ex pxb
<b>Operation in hazardous areas</b>	Zone 1 (may also be used in Zone 2)
<b>Cooling method</b>	IC81W/IC86W
<b>Stator winding insulation</b>	Thermal class 155 (F), utilized to 130 (B)
<b>Shaft height</b>	450 ... 800 mm
<b>Bearings</b>	Anti-friction bearings, sleeve bearings
<b>Cage material</b>	Copper
<b>Standards</b>	IEC, EN (NEMA version on request)
<b>Frame design for shaft heights 450 ... 560 mm</b>	Housing: Cast iron Cooling enclosure: Steel
<b>Frame design for shaft heights 630 ... 800 mm</b>	Housing: Steel Cooling enclosure: Steel

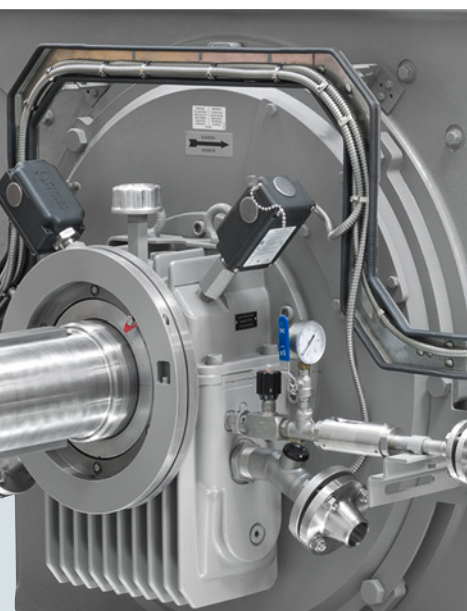
This series of SIMOTICS HV M motors, developed for Zone 1 (type series 1SQ6 and 1SQ7) in type of protection **Ex pxb** is available as modular motors with air/water heat exchanger (IC81W/IC86W cooling type). The Article No. schematic is shown in Chapter 1.

The motors are shipped with a control unit to maintain the internal pressure and to carry out the purging process required each time before the motor is started.

These **Ex pxb** measures have no effect on the performance data when compared to SIMOTICS HV M motors. This is the reason that the values of 1RN6 or 1RN7 type series from Chapter 2 can be used for 1SQ6 and 1SQ7 motors. Main dimensions on request.

A wide range of options and tests is available for SIMOTICS HV M motors, type of protection **Ex pxb**.

## Options and tests



5/2

### Description of options

## Options and tests

### Description of options

#### Overview

Using the following options, SIMOTICS HV M can be adapted to order-specific requirements. The Article No. is supplemented with a "-Z" and with either one or several order codes.

Example: **1RN7710-2NA60-0CJ0-Z H05 + K16 + L20**

As standard, 6 x Pt100 slot resistance thermometers without surge arrester for 3-wire or 4-wire circuit from the terminal box are integrated in the stator winding.

The motors are prepared as standard with SPM nipples to monitor the anti-friction bearings.

Order code	Option description	Line operation	Converter operation	Explosion-protected	Remark
	<b>Paint finish</b>				
<b>K73</b>	Special paint finish according to corrosivity category C3 (180 µm)	Yes	Yes	Yes	
<b>K74</b>	Special paint finish according to corrosivity category C4 (240 µm)	Yes	Yes	Yes	
<b>K75</b>	Special paint finish according to corrosivity category C5-I (300 µm)	Yes	Yes	Yes	
<b>K76</b>	Special paint finish according to corrosivity category C5-M (320 µm)	Yes	Yes	Yes	
<b>Y53</b>	Standard paint finish in a color different from RAL 7030	Yes	Yes	Yes	Plain text required
<b>Y54</b>	Special paint finish in a color different from RAL 7030	Yes	Yes	Yes	Plain text required
	<b>Documentation</b>				
<b>B21</b>	Documentation on CD-ROM instead of paper printout	Yes	Yes	Yes	
<b>B22</b>	Documentation as e-mail instead of paper	Yes	Yes	Yes	
<b>B23</b>	Motor manual printed on paper, 3x	Yes	Yes	Yes	
<b>B27</b>	Run out protocol	Yes	Yes	Yes	
<b>B28</b>	Protocol air gap calculation	Yes	Yes	Yes	
<b>B34</b>	Document standard inspection and test plan	Yes	Yes	Yes	
<b>B35</b>	Document balancing report	Yes	Yes	Yes	
<b>B36</b>	Document test and inspection description	Yes	Yes	Yes	
<b>B37</b>	Document load characteristics	Yes	Yes	Yes	
<b>B38</b>	Document recommended spare parts	Yes	Yes	Yes	
<b>B41</b>	Document instrumentation list	Yes	Yes	Yes	
<b>B43</b>	Document production schedule: Generated once	Yes	Yes	Yes	
<b>B44</b>	Document production schedule: Updated biweekly	Yes	Yes	Yes	
<b>B45</b>	Document production schedule: Updated monthly	Yes	Yes	Yes	
<b>B48</b>	Document order-specific inspection and test plan	Yes	Yes	Yes	
	<b>Document language</b>				
<b>D00</b>	Documentation in German	Yes	Yes	Yes	
<b>D54</b>	Documentation in Czech	Yes	Yes	Yes	
<b>D55</b>	Documentation in Polish	Yes	Yes	Yes	
<b>D56</b>	Documentation in Russian	Yes	Yes	Yes	
<b>D72</b>	Documentation in Italian	Yes	Yes	Yes	
<b>D73</b>	Documentation in Finnish	Yes	Yes	Yes	
<b>D74</b>	Documentation in Dutch	Yes	Yes	Yes	
<b>D75</b>	Documentation in Turkish	Yes	Yes	Yes	
<b>D76</b>	Documentation in English	Yes	Yes	Yes	Standard
<b>D77</b>	Documentation in French	Yes	Yes	Yes	
<b>D78</b>	Documentation in Spanish	Yes	Yes	Yes	
<b>D79</b>	Documentation in Portuguese	Yes	Yes	Yes	
<b>D80</b>	Documentation in Bulgarian	Yes	Yes	Yes	
<b>D81</b>	Documentation in Norwegian	Yes	Yes	Yes	
<b>D82</b>	Documentation in Hungarian	Yes	Yes	Yes	
<b>D83</b>	Documentation in Swedish	Yes	Yes	Yes	
<b>D84</b>	Documentation in Chinese	Yes	Yes	Yes	

## Overview (continued)

Order code	Option description	Line operation	Converter operation	Explosion-protected	Remark
	<b>Speed monitoring</b>				
A03	Speed monitoring using an inductive proximity switch, Pepperl + Fuchs, incl. terminal box, without evaluation unit	Yes	Yes	Yes	
H70	Rotary pulse encoder LL 861 900 220 (Leine+Linde)	Yes	Yes	No	
H73	Rotary pulse encoder HOG 10 D1024 I (16 mm)	Yes	Yes	No	
H76	Rotary pulse encoder HOG 10 D1024 I with integrated shaft grounding	Yes	Yes	No	
H88	Rotary pulse encoder HOG 11 DN 1024 I (16 mm) with special anti-corrosion protection	Yes	Yes	No	For marine applications
H89	Rotary pulse encoder HOG 11 DN 1024 I (16 mm) with integrated shaft grounding and special anti-corrosion protection	Yes	Yes	No	For marine applications
	<b>Direction of rotation</b>				
K97	Rotation clockwise (CW)	Yes	Yes	Yes	
K98	Rotation counter-clockwise (CCW)	Yes	Yes	Yes	Standard
	<b>Noise reduction</b>				
L20	Silencer for air inlet	Yes	Yes	Yes	
L21	Noise reduction: Silencer for air outlet	Yes	Yes	Yes	
L22	Noise reduction: Lining of interior space	Yes	Yes	Yes	
	<b>Terminal box mounting position</b>				
K09	Terminal box on right-hand side, view from DE	Yes	Yes	Yes	Standard
K10	Terminal box on left-hand side, view from DE	Yes	Yes	Yes	
K83	Terminal box rotated through 90°, cable entry from DE	Yes	Yes	Yes	
K84	Terminal box rotated through 90°, cable entry from NDE	Yes	Yes	Yes	
K85	Terminal box rotated through 180°	Yes	Yes	Yes	
	<b>Terminal box, main and auxiliary terminal box</b>				
L54	Terminal box, 6 terminals with 2 cable entries for connection to power supply, rated current > 315 A	Yes	Yes	Yes	
L55	Star-point terminal box, up to 6.6 kV, 3 terminals	Yes	Yes	Yes	
L56	Star-point terminal box, up to 11 kV, 3 terminals	Yes	Yes	No	
L57	Star-point terminal box, up to 6.6 kV, 6 terminals	Yes	Yes	No	
L58	Star-point terminal box, for installing current transformer (without current transformer)	Yes	Yes	No	
L59	Terminal box with sealing chamber for 1 cable entry	Yes	Yes	Yes	
M50	Auxiliary terminal box in cast iron	Yes	Yes	No	
M51	Auxiliary terminal box material: Stainless steel	Yes	Yes	Yes	
M52	Separate auxiliary terminal box for anti-condensation heater	Yes	Yes	Yes	Standard
	<b>Terminal box – accessories/equipping</b>				
K59	Cable plug connection, rated voltage 2 to 6.6 kV	Yes	Yes	No	
L79	Gland plate for 3 winding ends to connect to the line supply via separately mounted terminal box, 3 m free cable length from the frame	Yes	Yes	No	
L80	Gland plate for 6 winding ends to connect to the line supply via separately mounted terminal box, 3 m free cable length from the frame	Yes	Yes	No	
L83	Cable plug connection, rated voltage 9 to 11 kV	Yes	Yes	No	

## Options and tests

### Description of options

#### Overview (continued)

Order code	Option description	Line operation	Converter operation	Explosion-protected	Remark
<b>Cooling air monitoring</b>					
A44	1 resistance thermometer Pt100 for 2-, 3- or 4-wire connection from terminal box for cold air temperature	Yes	Yes	Yes	
A45	1 resistance thermometer Pt100 for 2-, 3- or 4-wire connection from terminal box for hot air temperature	Yes	Yes	Yes	
A46	1 double resistance thermometer Pt100 for 2-, 3- or 4-wire connection from terminal box, for cold air temperature	Yes	Yes	Yes	
A47	1 double resistance thermometer Pt100 for 2-, 3- or 4-wire connection from terminal box, for hot air temperature	Yes	Yes	Yes	
A86	1 dial-type thermometer with 2 NO-Contacts for cold air temperature incl. terminal box	Yes	Yes	Yes	
A87	1 dial-type thermometer with 2 NO-Contacts for hot air temperature incl. terminal box	Yes	Yes	Yes	
<b>Bearing version/instrumentation</b>					
H09 + H11	DIN flange type for forced oil lubrication for oil inlet with flow-meter, manometer and throttle valve (incl. counter flange) + DIN flange type forced oil lubrication for oil outlet with sight glass (incl. counter flange)	Yes	Yes	Yes	
H10 + H12	ANSI flange type for forced oil lubrication for oil inlet with flow-meter, manometer and throttle valve (incl. counter flange) + ANSI flange type for forced oil lubrication for oil outlet with sight glass (incl. counter flange)	Yes	Yes	Yes	
H43	DIN flange type for forced oil lubrication for in- and outlet without instruments (with counter flanges)	Yes	Yes	Yes	
H44	ANSI flange type for forced oil lubrication for in- and outlet without instruments (with counter flanges)	Yes	Yes	Yes	
K96	Sleeve bearing instead of anti-friction bearing	Yes	Yes	Yes	Only for motors with IM B3 type of construction up to shaft height 560
L18	DE insulation	Yes	Yes	Yes	
L27	Insulated bearing on NDE	Yes	Yes	Yes	Standard
L60	Forced-circulation oil lubrication (with oil cooling) instead of oil-ring lubrication	Yes	Yes	Yes	
L66	Air cooling, but prepared for future conversion to forced-circulation oil lubrication	Yes	Yes	Yes	
P44	Oil manifold; connections with counter flange; flange flush with the axial shaft face	Yes	Yes	Yes	
<b>Bearing monitoring – sleeve bearings</b>					
A02	Shaft vibration monitoring for sleeve bearings, Bently Nevada system	Yes	Yes	Yes	
A39	Prepared for shaft vibration monitoring for sleeve bearings (without monitoring system)	Yes	Yes	Yes	
A41	2 resistance thermometers Pt100 for 2-, 3- or 4-wire connection from terminals for sleeve bearing	Yes	Yes	Yes	
A43	2 double resistance thermometers Pt100 for 2-, 3- or 4-wire connection from terminals for sleeve bearing	Yes	Yes	Yes	
A70	2 dial-type thermometers without contacts	Yes	Yes	Yes	
A71	2 dial-type thermometers with contacts	Yes	Yes	Yes	

## Overview (continued)

Order code	Option description	Line operation	Converter operation	Explosion-protected	Remark
	<b>Bearing monitoring – anti-friction bearings</b>				
A40	2 resistance thermometers Pt100 for 2-, 3- or 4-wire connection from terminal box for anti-friction bearings	Yes	Yes	Yes	
A42	2 double resistance thermometers Pt100 for 2-, 3- or 4-wire connection from terminals for anti-friction bearings	Yes	Yes	Yes	
G50	Shock pulse measuring nipple (SPM) at DE and NDE	Yes	Yes	Yes	Standard
H05	Shock pulse measurement (SPM), fixed sensors and distributor box	Yes	Yes	No	
H07	Shock pulse measurement (SPM), complete alarm box	Yes	Yes	No	
	<b>Mechanical versions</b>				
K16	Second shaft extension up to 50 % rated torque	Yes	Yes	Yes	
L81	Vibration severity grade B according to IEC/ EN 60034-14	Yes	Yes	Yes	Not available for 2-pole motors in shaft height 500 with anti-friction bearings.
Y55	Non-standard cylindrical shaft extension (an inquiry must be sent to the factory)	Yes	Yes	Yes	
Y85	Oil shrink fit for cylindrical, single-stage shaft extension instead of a key connection	Yes	Yes	Yes	
	<b>Certified for pump drives</b>				
E88	Construction supervision for motors for seawater desalination plants where Siemens AG commissions the acceptance authority	Yes	Yes	No	
E89	Construction supervision for motors for seawater desalination plants where a third party commissions the acceptance authority	Yes	Yes	No	
E90	Pump drive for seawater desalination plants certified according to Lloyds Register	Yes	Yes	No	
	<b>Marine applications</b>				Options and tests for marine and offshore applications: see Chapter 6.
	<b>Anti-condensation heating</b>				
L08	Anti-condensation heater, rated voltage 400 V	Yes	Yes	No	
L09	Anti-condensation heater, rated voltage 500 V	Yes	Yes	No	
M12	Anti-condensation heater for 110 to 120 V	Yes	Yes	No	
M13	Anti-condensation heater for 220 to 240 V	Yes	Yes	No	Standard for safe area motors
M14	Anti-condensation heater Ex eb II T3, rated voltage range 110 to 120 V	No	No	Yes	
M15	Anti-condensation heater Ex eb II T3, rated voltage range 220 to 240 V	No	No	Yes	Standard for explosion-protected motors
Y83	Anti-condensation heater with other rated voltages, V = additional text required	Yes	Yes	No	
	<b>Ambient conditions</b>				
D02	Operation at ambient temperatures up to –50 °C, transport up to –50 °C	Yes	Yes	Yes	
D03	Operation at ambient temperatures up to –40 °C, transport up to –40 °C	Yes	Yes	Yes	
D04	Operation at ambient temperatures up to –30 °C, transport up to –40 °C	Yes	Yes	Yes	
E71	Sheltered installation with high salinity or areas with almost continuous condensation (corrosivity grade C5-M / C5-I)	Yes	Yes	Yes	
E72	Sheltered installation with moderate salinity (corrosivity grade C4)	Yes	Yes	Yes	
E73	Sheltered installation with low salinity (corrosivity grade C3)	Yes	Yes	Yes	
E81	Outdoor installation with high salinity or offshore applications (corrosivity grade C5-M/ C5-I)	Yes	Yes	Yes	
E82	Outdoor installation with moderate salinity (corrosivity grade C4)	Yes	Yes	Yes	
E83	Outdoor installation with low salinity (corrosivity grade C3)	Yes	Yes	Yes	
M06	For use in sulfurous or hydrogenous atmosphere	Yes	Yes	No	

## Options and tests

### Description of options

#### Overview (continued)

Order code	Option description	Line operation	Converter operation	Explosion-protected	Remark
	<b>Winding and motor protection</b>				
A12	6 PTC thermistors without lightning arresters	Yes	Yes	Yes	
A23	1 temperature sensor KTY 84-130	Yes	Yes	Yes	
A65	6 embedded resistance thermometers Pt100 for 2-, 3- or 4-wire connection from terminal box without lightning arresters	Yes	Yes	Yes	Standard
A66	6 embedded resistance thermometers Pt100 for 2-, 3- or 4-wire connection from terminal box with lightning arresters	Yes	Yes	No	
A67	6 embedded screened resistance thermometers Pt100 for 3- or 4-wire connection from terminal box without lightning arresters	No	No	Yes	
	<b>Tests with acceptance</b>				
F01	All standard tests (routine test), with acceptance	Yes	Yes	Yes	
F15	Recording of no-load characteristic and determination of core and friction losses, with acceptance	Yes	Yes	Yes	
F17	Recording of short-circuit characteristic and determination of short-circuit losses, with acceptance	Yes	Yes	Yes	
F19	Recording of load characteristic, with acceptance	Yes	Yes	Yes	
F23	Dissipation factor test (tan delta) on 2 (test) coils, with acceptance	Yes	Yes	Yes	
F29	No-load noise measurement, without noise analysis, with acceptance	No	Yes	No	
F31	Cooling air flow and pressure drop measurement, with acceptance	Yes	Yes	Yes	
F35	Recording of current and torque characteristics during acceleration, with acceptance	Yes	Yes	Yes	
F37	Determination of moment of inertia by retardation method, with acceptance	Yes	Yes	Yes	
F39	Overspeed test, with acceptance	Yes	Yes	Yes	
F41	Recording of residual voltage curve, with acceptance	Yes	Yes	Yes	
F53	Locked-rotor torque and current measurement, with acceptance	Yes	Yes	Yes	
F55	Polarization index measurement, with acceptance	Yes	Yes	Yes	
F61	Impulse or AC voltage test on 2 (test) coils, with acceptance	Yes	Yes	Yes	In addition, specify order code F90
F63	Noise analysis, with acceptance	No	Yes	No	
F83	Type test for horizontal motors with temperature rise test, with acceptance	Yes	Yes	Yes	
F90	2 test coils	Yes	Yes	Yes	
F93	Type test for vertical motors with temperature rise test, with acceptance	Yes	Yes	Yes	
	<b>Tests without acceptance</b>				
F14	Recording of no-load characteristic and determination of core and friction losses, without acceptance	Yes	Yes	Yes	
F16	Recording of short-circuit characteristic and determination of short-circuit losses, without acceptance	Yes	Yes	Yes	
F18	Recording of load characteristic, without acceptance	Yes	Yes	Yes	
F22	Dissipation factor test (tan delta) on 2 (test) coils, without acceptance	Yes	Yes	Yes	In addition, specify order code F90
F28	No-load noise measurement, without noise analysis, without acceptance	No	Yes	No	
F30	Cooling air flow and pressure drop measurement, without acceptance	Yes	Yes	Yes	
F34	Recording of current and torque characteristics during acceleration, without acceptance	Yes	Yes	Yes	
F36	Determination of moment of inertia by retardation method, without acceptance	Yes	Yes	Yes	
F38	Overspeed test, without acceptance	Yes	Yes	Yes	



## Overview (continued)

Order code	Option description	Line operation	Converter operation	Explosion-protected	Remark
	<b>Tests without acceptance</b> (continued)				
F42	"Conformance Test (Wet Test)" to NEMA Standard, without acceptance	Yes	Yes	Yes	
F52	Locked-rotor torque and current measurement, without acceptance	Yes	Yes	Yes	
F54	Polarization index measurement, without acceptance	Yes	Yes	Yes	
F60	Impulse or AC voltage test on 2 (test) coils, without acceptance	Yes	Yes	Yes	In addition, specify order code F90
F62	Noise analysis, without acceptance	No	Yes	No	
F82	Type test for horizontal motors with temperature rise test, without acceptance	Yes	Yes	Yes	
F90	2 test coils	Yes	Yes	Yes	
F92	Type test for vertical motors with temperature rise test, without acceptance	Yes	Yes	Yes	
	<b>Extension of liability for defects</b>				
Q80	Extension of liability for defects, by 12 months to a total of 24 months (2 years) from delivery	Yes	Yes	Yes	
Q81	Extension of liability for defects, by 18 months to a total of 30 months (2.5 years) from delivery	Yes	Yes	Yes	
Q82	Extension of liability for defects, by 24 months to a total of 36 months (3 years) from delivery	Yes	Yes	Yes	
Q83	Extension of liability for defects, by 30 months to a total of 42 months (3.5 years) from delivery	Yes	Yes	Yes	
Q84	Extension of liability for defects, by 36 months to a total of 48 months (4 years) from delivery	Yes	Yes	Yes	
Q85	Extension of liability for defects, by 48 months to a total of 60 months (5 years) from delivery	Yes	Yes	Yes	
	<b>Others/additional options</b>				
H08	Leakage water detection	Yes	Yes	Yes	
K52	Degree of protection IP56 non-heavy-sea	Yes	Yes	Yes	
L15	Supporting ring for coupling guard	Yes	Yes	Yes	
L17	Mounting a coupling provided (finish machined and balanced)	Yes	Yes	Yes	
L31	Motor mounting materials for mounting on a steel foundation: Bolts, shims and taper dowels	Yes	Yes	Yes	
L32	Motor mounting materials for mounting on a concrete foundation or concrete base: Threaded bolts, armature plates, sole plates, shims and taper dowels	Yes	Yes	Yes	
L33	Motor mounting materials to mount on a concrete foundation or concrete base: T-head bolts, foundation bolt sleeves, sole plates, shims and taper dowels	Yes	Yes	Yes	
L91	Higher number of starts, > 1000 ... 10000 starts per year, for Cu rotors	Yes	Yes	Yes	
L92	Higher number of starts, > 5000 ... 10000 starts per year, for Al rotors	Yes	Yes	Yes	
P45	External screws made of stainless steel	Yes	Yes	Yes	
	<b>Certificates</b>				
D32	Ex certification for China (CQST)	Yes	Yes	Yes	
D35	Ex certification for Russia (RosTechNadzor)	Yes	Yes	Yes	
D36	Conformity declaration acc. to 94/9/EG (ATEX) of an independent test body for Zone 2 motors (Ex ec)	Yes	Yes	Yes	
D37	IECEX certification	Yes	Yes	Yes	
D47	Certificate for import into Eurasian customs union (EAC)	Yes	Yes	Yes	
D48	POVERKA certificate for Russia	Yes	Yes	Yes	

## Options and tests

Description of options

Notes

## Options for marine and offshore applications



6/2	Orientation
6/7	Ordering examples
6/8	Options

## Options for marine and offshore applications

### Orientation

#### Overview



The SIMOTICS HV series in a marine design have been designed for below-deck operation on ships. If the motors are intended for on deck operation or for offshore applications, then these must be explicitly ordered using an additional order code. The reason for this is that in these cases special measures are required.

The thermal utilization of the motors is adapted to the generally higher ambient temperatures onboard ships. If the application demands compliance with additional regulations, such as explosion protection, the appropriate motor series must be chosen.

The motors onboard ships are subdivided into three importance categories by the marine classification societies in collaboration with customers, depending on the field of application:

- **Essential Service for Propulsion** or also Primary Essential Service
- **Essential Service** or also Secondary Essential Service or Important Service
- **Non-Essential Service** or also Non-Important Service

As the assignment of a drive to one of the importance categories has a direct impact on the scope of the marine options, this must be known when ordering the motor.

The following services of the motor manufacturer are associated with the categories:

	Importance category		
	<b>Essential Service for Propulsion</b>	<b>Essential Service</b>	<b>Non-Essential Service</b>
Typical applications	Propeller drive, thruster (if used as main drive/declared as propulsion)	Thrusters, lateral thrust units, anchor winches, bilge and ballast pumps, fire-fighting pumps	Pumps for service water
Version	In accordance with the regulations of the classification society		In accordance with ambient conditions of the classification society
Acceptance test certificate	Acceptance test certificate 3.2 according to EN10204		Acceptance test certificate 3.1 according to EN 10204 <sup>1)</sup>
Individual acceptance by classification society	Will be performed. Motor is assigned an individual certificate of the classification society.		Not necessary
Ordering several identical motors	Differentiation between the first motor and additional ones must be realized when ordering using an order code.		No distinction
Rating plate data	Information about ambient conditions of the classification society		
Stamp of the classification society	Stamp on the shaft <sup>2)</sup> and enclosure		No stamp

#### Classification authorities

Society	Abbreviation	Location
American Bureau Of Shipping	ABS	USA
Bureau Veritas	BV	France
China Classification Society	CCS	China
Det Norske Veritas Germanischer Lloyd	DNV GL	Germany
Korean Register	KR	Korea
Lloyds Register	LR	UK

<sup>1)</sup> Certificate is not stipulated by the classification society but it is issued according to the internal quality standards within the scope of a routine test.

<sup>2)</sup> Provided that it is specified that the classification society supervises construction.

### Benefits

The marine motors offer the user a number of advantages and benefits:

- Cast iron and steel versions can be supplied for corrosive atmospheres especially for high humidity levels and salt laden air
- Increased corrosion protection using specially designed paint finishes is available
- Certified marine motors can be supplied for use in areas to be protected against explosion
- In depth know-how regarding customer requirements
- Worldwide service network with 24-hour service hotline for motors and converters

### Application

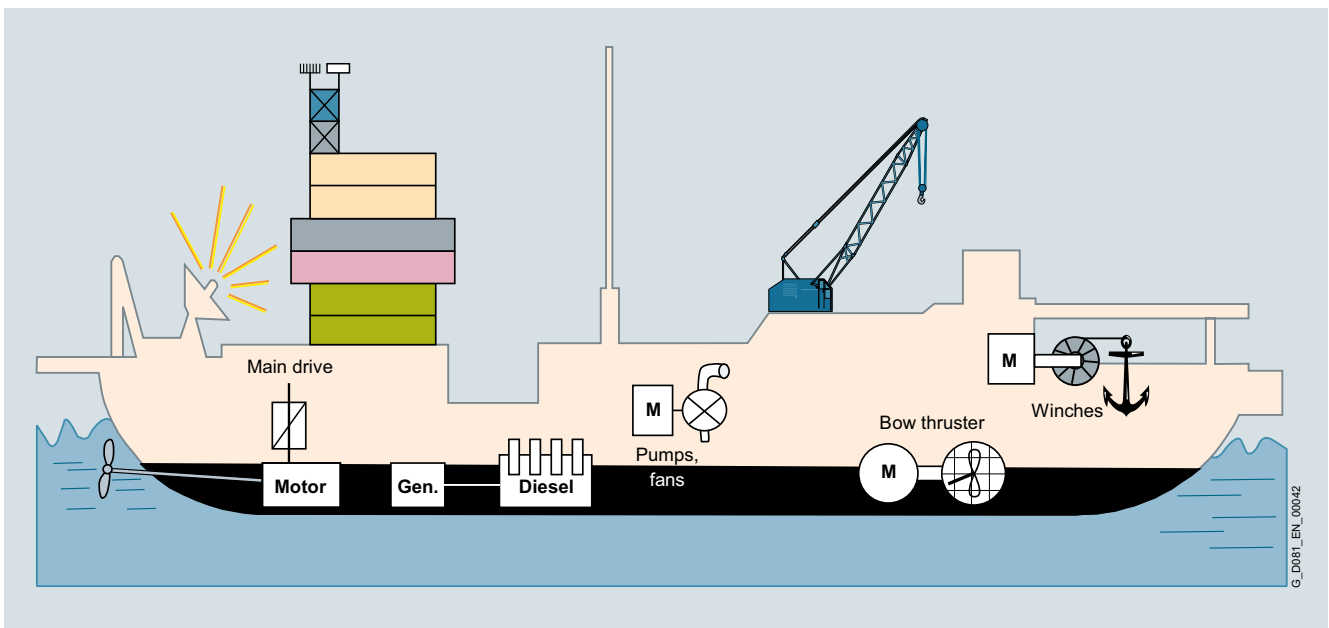
Our marine motors are designed for use onboard ships (installed below deck or on deck under a protective canopy):

- Applications onboard ships as main and auxiliary drives below deck, e.g.:
  - Fans (air conditioning, refrigeration plants)
  - Pumps (for fire-extinguishing water, fuels, oils)
  - Winches (anchor winches, warping winches, lifting gear)
  - Compressors
  - Bow thruster drives
  - Main propulsion drives
  - Ex motors for hazardous zones

If marine motors are to be used on deck in especially corrosive atmospheres or in offshore applications, then they must be additionally upgraded to meet these more stringent conditions. For this purpose, one of the options E81, E82 or E83 should be selected.

- Typical applications are:
  - Coastal areas, e.g. oil rigs, drilling ships
  - Dynamic positioning drives for platforms
  - Pumps

Offshore versions must be specifically ordered, as they require special measures.



Typical areas of application

## Options for marine and offshore applications

### Orientation

#### Technical data

##### Enclosure version

Depending on the motor series, motors are available in a corrosion-resistant steel enclosure or in a rugged low-vibration cast-iron version.

##### Motor connection

Cable glands are not included in the scope of delivery.

All marine motors generally have an external grounding terminal.

Regulations of the individual classifications societies for motors:

Classification society	Coolant temperature CT		Admissible temperature rise limit according to the classification society			Rated power limit for individual acceptance test kW	Construction supervision mandatory
	Water cooling °C	Air cooling °C	Temperature class 130 (B) K	155 (F), $P_{\text{rated}} < 5000 \text{ kW}$ K	155 (F), $P_{\text{rated}} \geq 5000 \text{ kW}$ K		
<b>LR</b>	32	45	70	95	90	≥ 100	≥ 100 kW
<b>BV</b>	32	45	75	100	95	≥ 100	≥ 500 kW
<b>DNV GL</b>	32	45	75	100	100	≥ 300	–
<b>ABS</b>	32	50	70	95	90	≥ 100	–
<b>KR</b>	32	45	75	100	95	≥ 7.5	–
<b>CCS</b>	32	45	75	100	95	All power ratings	All power ratings

**Technical data** (continued)

Regulations of the individual classification societies with order codes when ordering SIMOTICS HV M motors in a marine design

**SIMOTICS HV M in a marine design**

Cooling method	SIMOTICS HV M motor series
Water-cooled motors for line and converter operation	1RN6, 1RN7
Air-cooled motors for line and converter operation (self-ventilated)	1RQ6, 1RQ7
Air-cooled motors with externally mounted fan for converter operation	1RQ6, 1RQ7
Motors with the cooling types listed above with type of protection "ec" or "tc" (Zone 2 or Zone 22)	1SL6, 1SL7 1SG6, 1SG7
Motors with the cooling types listed above with type of protection "pxb" (Zone 1)	1SQ6, 1SQ7 1SB6, 1SB7

SIMOTICS HV M motors for marine applications must be ordered with the classification-specific options. This ensures that both the mechanical design of the motor, and the tests are performed exactly in accordance with the instructions provided by the respective classification society.

There are four categories of classification-specific options:

- 1) *Design options* define the marine-compatible technical design in accordance with the definitions of the classification society
- 2) *Certification options* define the scope of the test certificates
- 3) *Test options* define the scope of the individual tests
- 4) *Additional options* for deviations and special conditions: specify the customer's request for participation in the tests at the factory, or define coolant temperatures that differ from the requirements of the classification society (additional plain text required)

The options of the importance categories listed above are combined with each other depending on the class of importance, classification society and other conditions.

If motors are to be designed according to the specifications of several classification societies, a special inquiry is necessary.

**Motors for Non-Essential Services**

The technical design is in accordance with the ambient operating conditions specified by the classification society. One of the marine design options X00, X01, X12<sup>1)</sup>, X03, X05 or X06 must be specified depending on the classification society. Acceptance inspections are not required. There is no distinction between ordering an individual motor or several ones.

Non-Essential Service	Options according to the classification society					
	ABS	BV	CCS	DNV GL	KR	LR
Technical version	X00	X01	<sup>1)</sup>	X03	X05	X06

**Motors for Essential Services**

The technical design is in accordance with regulations of the classification society: Options X10 to X16. An acceptance test certificate 3.2 according to EN 10204 and a product certificate of the classification society is provided with each motor. Depending on the classification society, the test steps are defined by options X30 to X42 for the first motor (even numbers) and X31 to X43 for the additional motors (uneven numbers). Options J70 to J82 or J71 to J83 define the expenditure for certifying the motor.

Essential Service	Options according to the classification society					
	ABS	BV	CCS	DNV GL	KR	LR
Technical version	X10	X11	X12	X13	X15	X16
Certification						
• First motor	J70	J72	J74	J76	J80	J82
• Additional motors	J71	J73	J75	J77	J81	J83
Scope of the tests and presence of representatives of the classification society						
• First motor	X30	X32	X34	X36	X40	X42
• Additional motors	X31	X33	X35	X37	X41	X43
Tests in presence of representatives of the customer (in addition to the inspector of the classification society)	X99					
Conditions deviating from classification requirements must be fulfilled	E80					

**Motors for Essential Services for Propulsion**

The technical design is in accordance with regulations of the classification society: Options X20 to X26. An acceptance test certificate 3.2 according to EN 10204 and a product certificate of the classification society is provided with each motor. Depending on the classification society, the test steps are defined by options X60 to X72 for the first motor (even numbers) and X61 to X73 for the additional motors (uneven numbers). Options N40 to N52, or N41 to N53 define the expenditure for certifying the motor.

Essential Service for Propulsion	Options according to the classification society					
	ABS	BV	CCS	DNV GL	KR	LR
Technical version	X20	X21	X22	X23	X25	X26
Certification						
• First motor	N40	N42	N44	N46	N50	N52
• Additional motors	N41	N43	N45	N47	N51	N53
Scope of the tests and presence of representatives of the classification society						
• First motor	X60	X62	X64	X66	X70	X72
• Additional motors	X61	X63	X65	X67	X71	X73
Tests in presence of representatives of the customer (in addition to the inspector of the classification society)	X99					
Conditions deviating from classification requirements must be fulfilled	E80					

**Option E80 is used if a different coolant temperature CT is required. The CT must also be specified in plain text, e.g. CT55.**

<sup>1)</sup> Non-Essential Service must be handled by CCS just like an Essential Service.

## Options for marine and offshore applications

### Orientation

#### Technical data (continued)

##### Scope of design options X00 to X26

All classification-specific technical measures are contained in the design options.

##### Temperature class and coolant temperature

Standard motors and explosion-protected motors up to shaft height 710 mm

In general, marine motors are designed for a coolant temperature CT 45 °C in temperature class 155 (F), used according to 155 (F). Motors according to the ABS classification that specify CT 50 °C are an exception. When motors are used according to temperature class 130 (B) derating is required.

Coolant temperatures that exceed CT 45 °C require derating in accordance with the following table:

	Coolant temperature CT			
	45 °C	50 °C	55 °C	60 °C
<b>Temperature class 155 (F) according to 155 (F)</b>				
Derating factor for line operation	1.00	0.95	0.90	0.85

More detailed information is available on request.

##### Rating plate and acceptance test certificate

The metal rating plate includes the data of the relevant classification society (exception: Non-Essential Services) and the associated coolant temperature.

SIEMENS											
3~ MOT. 1RN6 560-6HJ90-Z NoN- JO1519785010001/2017 IMB3 Th.Cl.155(F)											
V	Hz		A	kW	cosφ	1/min	I <sub>a</sub> /I <sub>N</sub>	T <sub>e</sub> s	Certif.No.	IP	
690 Δ/Δ	60		2x1350	2700	0.86	1193				55	
										←	
										VUW	
Rotor SQU.CAGE KL IEC/EN 60034-1										Gew/Wt 8.95 t	
MARINE EQUIPMENT / CLASSIFICATION SOCIETY: ABS											
KÜHLW./COOL.WATER 270L/MIN, 36°C											
Ta: -20...+50°C											
MADE IN GERMANY D-90441 Nürnberg											

##### Degree of protection

The degrees of protection as specified in this catalog apply. For IP56 (non-heavy sea, order code K52) the formation of ice must be avoided.

##### Winding and motor protection

To monitor the winding – and if specified by the classification society – to monitor the bearings, the motors are equipped with PTC thermistors, temperature sensors and resistance thermometers. Marine motors are equipped with anti-condensation heating in order to prevent possible condensation forming on the windings.

##### Paint finish

A paint finish according to DIN EN ISO 12944-5 C5-M is used for unprotected installation on deck, especially aggressive atmospheres or offshore applications. This is part of order code E81, which upgrades a standard marine motor for these special ambient conditions.

Special paint colors and increased layer thicknesses are available on request.

##### Recommended special versions:

- Installation of 2 screw-in PT100 resistance thermometers in basic circuit for anti-friction bearings – Order code A40
- IP56 degree of protection (non-heavy-sea) for protection against harmful dust deposits, protection against water jets from any direction – Order code K52
- Degree of protection IP65 on request.
- External screws and bolts manufactured out of stainless steel – Order code P45
- Upgrading a marine motor for unprotected installation on deck, use in especially aggressive atmospheres or offshore applications – Order code E81

#### Additional information

##### Order information

The fees of the classification societies for individual acceptance inspections are included in the order code.



## Selection and ordering data

Ordering examples:

Selection criteria	Requirement	Structure of the Article No.
<b>1st ordering example: 7 motors for Essential Service according to BV (Bureau Veritas), France</b>		
Motor type	Water-cooled high voltage H-compact PLUS motor, cooling type IC81W, degree of protection IP55, type of protection Ex pxb	<b>1SQ6</b> ■■■■-■■■■■
Shaft height	630 mm	<b>1SQ6632-4</b> ■■■■■
No. of poles/synchronous speed	4-pole/1500 rpm	
Type rating	6000 kW	
Ventilation	Shaft-mounted fan (basic version)	<b>1SQ6632-4H</b> ■■■■■
Rotor version and operating mode	Copper (standard), line operation	<b>1SQ6632-4HJ</b> ■■■
Voltage and frequency	6 kV, 50 Hz	<b>1SQ6632-4HJ6</b> ■
Type of construction	IM V10 with protective hood	<b>1SQ6632-4HJ64</b>
Special versions		
<b>1st motor</b>	Technical design in accordance with BV (Bureau Veritas), France	<b>1SQ6632-4HJ64-Z X11</b>
	Necessary certification for first motor ordered in accordance with BV (Bureau Veritas), France	<b>1SQ6632-4HJ64-Z X11+J72</b>
	Necessary tests for first motor ordered in accordance with BV (Bureau Veritas), France	<b>1SQ6632-4HJ64-Z X11+J72+X32</b>
	Article No. for 1st motor	<b>1SQ6632-4HJ64-Z X11+J72+X32</b>
<b>Additional 6 motors</b> (additional motors)	Technical design in accordance with BV (Bureau Veritas), France	<b>1SQ6632-4HJ64-Z X11</b>
	Necessary certification for additional motors ordered in accordance with BV (Bureau Veritas), France	<b>1SQ6632-4HJ64-Z X11+J73</b>
	Necessary tests for additional motors ordered in accordance with BV (Bureau Veritas), France	<b>1SQ6632-2HE64-Z X11+J73+X33</b>
	Article No. for the additional 6 motors	<b>1SQ6632-2HE64-Z X11+J73+X33</b>
<b>2nd ordering example: 3 motors for Essential Service Propulsion according to ABS (American Bureau of Shipping), USA</b>		
Motor type	The same as for the 2nd ordering example	<b>1SQ6632-4HJ64</b>
Special versions		
<b>1st motor</b>	Technical design in accordance with ABS (American Bureau of Shipping), USA	<b>1SQ6632-4HJ64-Z X20</b>
	Necessary certification for first motor ordered according to ABS (American Bureau of Shipping), USA	<b>1SQ6632-4HJ64-Z X20+N40</b>
	Necessary tests for first motor ordered according to ABS (American Bureau of Shipping), USA	<b>1SQ6632-4HJ64-Z X20+N40+X60</b>
	Article No. for 1st motor	<b>1SQ6632-4HJ64-Z X20+N40+X60</b>
<b>Additional 2 motors</b> (additional motors)	Technical design in accordance with ABS (American Bureau of Shipping), USA	<b>1SQ6632-4HJ64-Z X20</b>
	Necessary certification for additional motors ordered according to ABS (American Bureau of Shipping), USA	<b>1SQ6632-4HJ64-Z X20+N41</b>
	Necessary tests for additional motors ordered according to ABS (American Bureau of Shipping), USA	<b>1SQ6632-4HJ64-Z X20+N41+X61</b>
	Article No. for the additional 2 motors	<b>1SQ6632-4HJ64-Z X20+N41+X61</b>

## Options for marine and offshore applications

### Options

#### Options

##### Options for marine motors

Order code	Option description
<b>Non-Essential Service</b>	
<i>Technical version</i>	
X00	Version according to ABS for Non-Essential Service
X01	Version according to BV for Non-Essential Service
X12 <sup>1)</sup>	Version according to CCS for Essential Service
X03	Version according to DNV GL for Non-Essential Service
X05	Version according to KR for Non-Essential Service
X06	Version according to LR for Non-Essential Service
<b>Essential Service</b>	
<i>Technical version</i>	
X10	Version according to ABS for Essential Service
X11	Version according to BV for Essential Service
X12	Version according to CCS for Essential Service
X13	Version according to DNV GL for Essential Service
X15	Version according to KR for Essential Service
X16	Version according to LR for Essential Service
<i>Certification</i>	
<b>for the first motor ordered</b>	
J70	Certification for the first motor ordered according to ABS for Essential Service
J72	Certification for the first motor ordered according to BV for Essential Service
J74	Certification for the first motor ordered according to CCS for Essential Service
J76	Certification for the first motor ordered according to DNV GL for Essential Service
J80	Certification for the first motor ordered according to KR for Essential Service
J82	Certification for the first motor ordered according to LR for Essential Service
<b>for the second and additional motors ordered</b>	
J71	Certification for the second and additional motors ordered according to ABS for Essential Service
J73	Certification for the second and additional motors ordered according to BV for Essential Service
J75	Certification for the second and additional motors ordered according to CCS for Essential Service
J77	Certification for the second and additional motors ordered according to DNV GL for Essential Service
J81	Certification for the second and additional motors ordered according to KR for Essential Service
J83	Certification for the second and additional motors ordered according to LR for Essential Service
<i>Tests</i>	
<b>for the first motor ordered</b>	
X30	Tests for the first motor ordered according to ABS for Essential Service
X32	Tests for the first motor ordered according to BV for Essential Service
X34	Tests for the first motor ordered according to CCS for Essential Service
X36	Tests for the first motor ordered according to DNV GL for Essential Service
X40	Tests for the first motor ordered according to KR for Essential Service
X42	Tests for the first motor ordered according to LR for Essential Service
<b>for the second and additional motors ordered</b>	
X31	Tests for the second and additional motors ordered according to ABS for Essential Service
X33	Tests for the second and additional motors ordered according to BV for Essential Service
X35	Tests for the second and additional motors ordered according to CCS for Essential Service
X37	Tests for the second and additional motors ordered according to DNV GL for Essential Service
X41	Tests for the second and additional motors ordered according to KR for Essential Service
X43	Tests for the second and additional motors ordered according to LR for Essential Service

<sup>1)</sup> CCS handles Non-Essential Service just the same as Essential Service

## Options (continued)

Order code	Option description
	<b>Essential Service Propulsion</b>
	<i>Technical version</i>
X20	Version according to ABS for Essential Service Propulsion
X21	Version according to BV for Essential Service Propulsion
X22	Version according to CCS for Essential Service Propulsion
X23	Version according to DNV GL for Essential Service Propulsion
X25	Version according to KR for Essential Service Propulsion
X26	Version according to LR for Essential Service Propulsion
	<i>Certification</i>
	<b>for the first motor ordered for essential service propulsion</b>
N40	Certification for the first motor ordered according to ABS for Essential Service Propulsion
N42	Certification for the first motor ordered according to BV for Essential Service Propulsion
N44	Certification for the first motor ordered according to CCS for Essential Service Propulsion
N46	Certification for the first motor ordered according to DNV GL for Essential Service Propulsion
N50	Certification for the first motor ordered according to KR for Essential Service Propulsion
N52	Certification for the first motor ordered according to LR for Essential Service Propulsion
	<i>Certification</i>
	<b>for the second and additional motors ordered</b>
N41	Certification for the second and additional motors ordered according to ABS for Essential Service Propulsion
N43	Certification for the second and additional motors ordered according to BV for Essential Service Propulsion
N45	Certification for the second and additional motors ordered according to CCS for Essential Service Propulsion
N47	Certification for the second and additional motors ordered according to DNV GL for Essential Service Propulsion
N51	Certification for the second and additional motors ordered according to KR for Essential Service Propulsion
N53	Certification for the second and additional motors ordered according to LR for Essential Service Propulsion
	<i>Tests</i>
	<b>for the first motor ordered</b>
X60	Tests for the first motor ordered according to ABS for Essential Service Propulsion
X62	Tests for the first motor ordered according to BV for Essential Service Propulsion
X64	Tests for the first motor ordered according to CCS for Essential Service Propulsion
X66	Tests for the first motor ordered according to DNV GL for Essential Service Propulsion
X70	Tests for the first motor ordered according to KR for Essential Service Propulsion
X72	Tests for the first motor ordered according to LR for Essential Service Propulsion
	<b>for the second and additional motors ordered</b>
X61	Tests for the second and additional motors ordered according to ABS for Essential Service Propulsion
X63	Tests for the second and additional motors ordered according to BV for Essential Service Propulsion
X65	Tests for the second and additional motors ordered according to CCS for Essential Service Propulsion
X67	Tests for the second and additional motors ordered according to DNV GL for Essential Service Propulsion
X71	Tests for the second and additional motors ordered according to KR for Essential Service Propulsion
X73	Tests for the second and additional motors ordered according to LR for Essential Service Propulsion

**Supplementary options**

Order code	Option description
X99 <sup>1)</sup>	Tests in the presence of representatives of the customer (together with the inspector of the classification society)

1) Only for Essential Service and Essential Service Propulsion.

## Options for marine and offshore applications

Options

Notes

6

## Service & Support



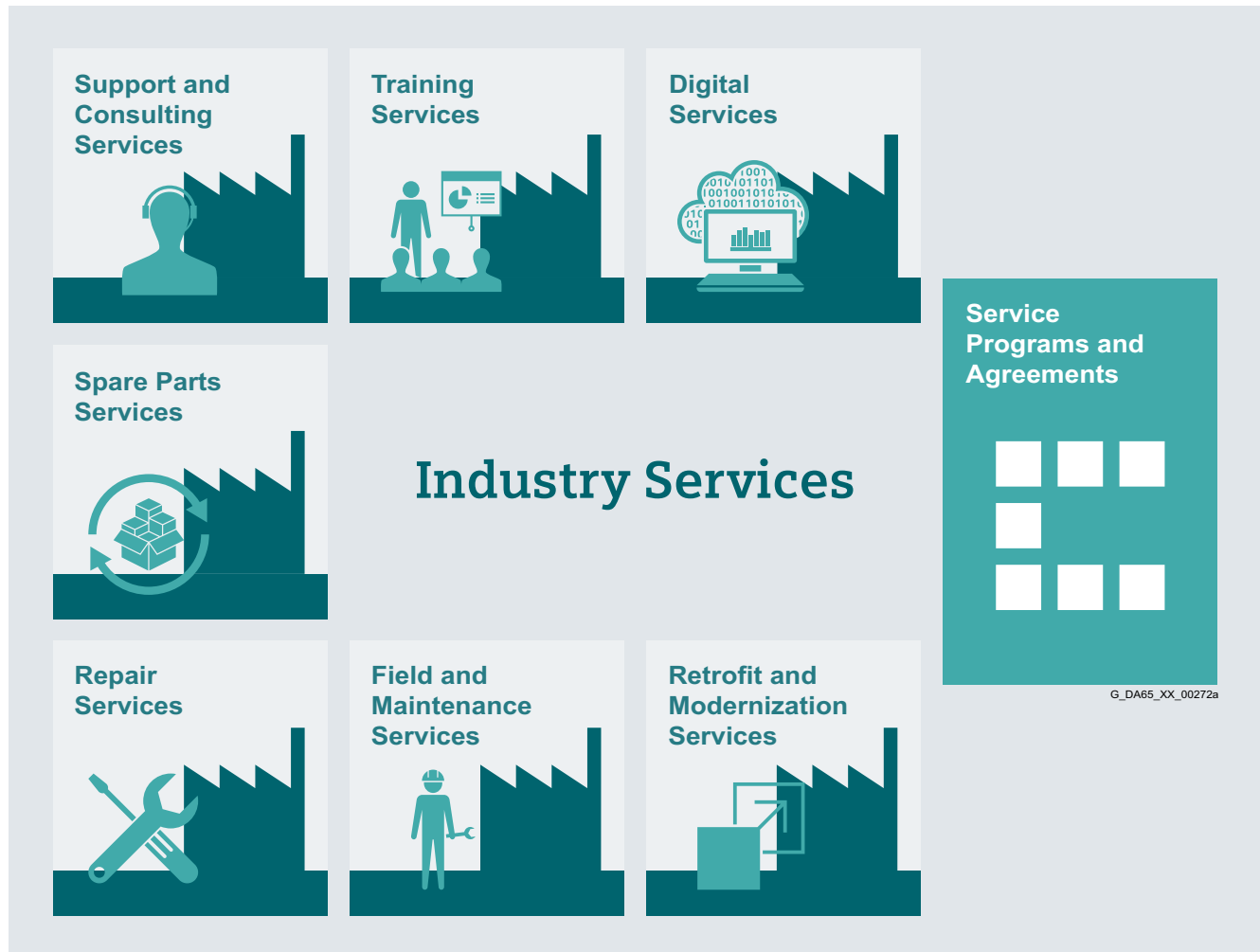
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Industry Services

## Service & Support

### Industry Services

#### Overview



#### **Keep your business running and shaping your digital future – with Industry Services**

Optimizing the productivity of your equipment and operations can be a challenge, especially with constantly changing market conditions. Working with our service experts makes it easier. We understand your industry's unique processes and provide the services needed so that you can better achieve your business goals.

You can count on us to maximize your uptime and minimize your downtime, increasing your operations' productivity and reliability. When your operations have to be changed quickly to meet a new demand or business opportunity, our services give you the flexibility to adapt. Of course, we take care that your production is protected against cyber threats. We assist in keeping your operations as energy and resource efficient as possible and reducing your total cost of ownership. As a trendsetter, we ensure that you can capitalize on the opportunities of digitalization and by applying data analytics to enhance decision making: You can be sure that your plant reaches its full potential and retains this over the longer lifespan.

You can rely on our highly dedicated team of engineers, technicians and specialists to deliver the services you need – safely, professionally and in compliance with all regulations. We are there for you, where you need us, when you need us.

<https://www.siemens.com/global/en/home/products/services/industry.html>

#### Overview



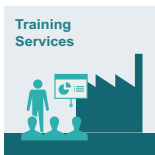
#### Digital Services

Digital Services make your industrial processes transparent to gain improvements in productivity, asset availability, and energy efficiency.

Production data is generated, filtered and translated with intelligent analytics to enhance decision-making.

This is done whilst taking data security into consideration and with continuous protection against cyber-attack threats.

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#### Training Services

From the basics and advanced to specialist skills, SITRAIN courses provide expertise right from the manufacturer – and encompass the entire spectrum of Siemens products and systems for the industry.

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#### Support and Consulting Services

**Industry Online Support** site for comprehensive information, application examples, FAQs and support requests.

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**Information & Consulting Services**, e.g. SIMATIC System Audit; clarity about the state and service capability of your automation system or Lifecycle Information Services; transparency on the lifecycle of the products in your plants.

<https://support.industry.siemens.com/cs/ww/en/sc/2235>



#### Spare Parts

Spare Parts Services are available worldwide for smooth and fast supply of spare parts – and thus optimal plant availability. Genuine spare parts are available for up to ten years. Logistic experts take care of procurement, transport, custom clearance, storage and order management.

Reliable logistics processes ensure that components reach their destination as needed.

Since not all spare parts can be kept in stock at all times, Siemens offers a preventive measure for spare parts provisioning on the customer's premises with optimized **Spare Parts Packages** for individual products, custom-assembled drive components and entire integrated drive trains – including risk consulting.

**Asset Optimization Services** help you design a strategy for parts supply where your investment and carrying costs are reduced and the risk of obsolescence is avoided.

<https://support.industry.siemens.com/cs/ww/en/sc/2110>



#### Repair Services

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Also available are extended repair services, which include additional diagnostic and repair measures, as well as emergency services.

<https://support.industry.siemens.com/cs/ww/en/sc/2154>



#### Field and Maintenance Services

Siemens specialists are available globally to provide expert field and maintenance services, including commissioning, functional testing, preventive maintenance and fault clearance.

All services can be included in customized service agreements with defined reaction times or fixed maintenance intervals.

<https://support.industry.siemens.com/cs/ww/en/sc/2265>



#### Retrofit and Modernization Services

Provide a cost-effective solution for the expansion of entire plants, optimization of systems or upgrading existing products to the latest technology and software, e.g. migration services for automation systems.

Service experts support projects from planning through commissioning and, if desired over the entire extended lifespan, e.g. Retrofit for Integrated Drive Systems for an extended lifetime of your machines and plants.

<https://support.industry.siemens.com/cs/ww/de/sc/2286>



#### Service Programs and Agreements

A technical Service Program or Agreement enables you to easily bundle a wide range of services into a single annual or multi-year agreement.

You pick the services you need to match your unique requirements or fill gaps in your organization's maintenance capabilities.

Programs and agreements can be customized as KPI-based and/or performance-based contracts.

<https://support.industry.siemens.com/cs/ww/de/sc/2275>

# Service & Support

## Industry Services

### Online Support

#### Overview

Online Support – fast, intuitive, whenever you want, wherever you need

**Web**

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**App**

Scan the QR code for information on our Online Support app.

- FAQ / Application examples**  
Information about industrial products, programming and configuration as well as application examples
- Technical Information**  
Videos, documentation, manuals, updates, product notes, compatibility tool, certificates, planning data such as dimensional drawings, product data, 3D models
- Forum**  
Exchange information and experience with other users and experts

## Online Support for Siemens Products for Industry

Siemens Industry and Online Support with some 1.7 million visitors per month is one of the most popular web services provided by Siemens. It is the central access point for comprehensive technical know-how about products, systems and services for automation and drives applications as well as for process industries.

In connection with the challenges and opportunities related to digitalization you can look forward to continued support with innovative offerings.



## Appendix

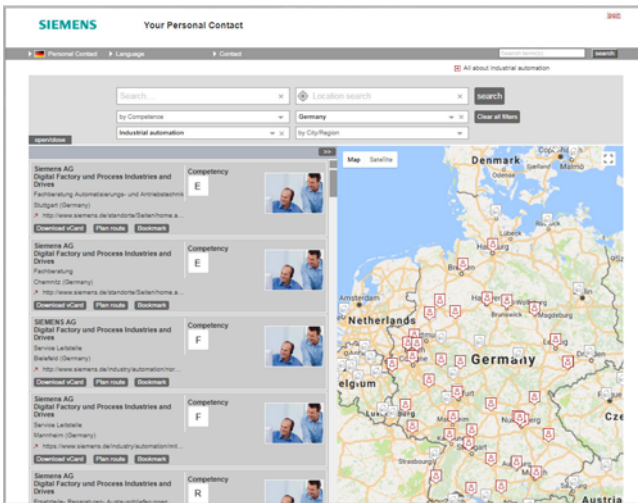


8/2	Partner Industry Mall and Interactive Catalog CA 01 Information and Download Center
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8/4	<b>Indexes</b>
8/4	Subject index
8/5	<b>Conditions of sale and delivery</b>

## Appendix

### Partner · Industry Mall and Interactive Catalog CA 01

#### Partner at Siemens



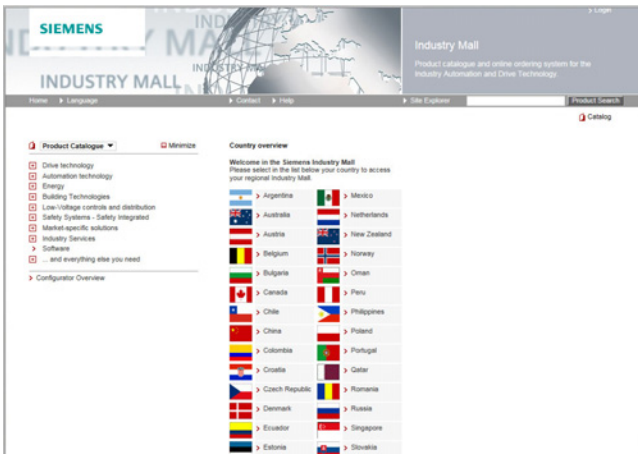
At your service locally, around the globe for consulting, sales, training, service, support, spare parts on the entire portfolio of Digital Factory and Process Industries and Drives.

Your partner can be found in our Personal Contacts Database at: [www.siemens.com/automation-contact](http://www.siemens.com/automation-contact)

You start by selecting

- the required competence,
  - products and branches,
  - a country and a city
- or by a
- location search or free text search.

#### Easy product selection and ordering in the Industry Mall and with the Interactive Catalog CA 01



#### Industry Mall

The Industry Mall is a Siemens Internet ordering platform. Here you have a clear and informative online access to a huge range of products.

Powerful search functions make it easy to select the required products. Configurators enable you to configure complex product and system components quickly and easily. CAx data types are also provided here.

Data transfer allows the whole procedure, from selection through ordering to tracking and tracing, to be carried out online. Availability checks, customer-specific discounts and bid creation are also possible.

[www.siemens.com/industrymall](http://www.siemens.com/industrymall)



#### Interactive Catalog CA 01 - Products for Automation and Drives

The Interactive Catalog CA 01 combined with the Siemens Industry Mall unites the benefits of offline and online media in one application – the performance of an offline catalog with the availability of manifold and up-to-date information on the Internet.

Select products and assemble orders with the CA 01, determine the availability of the selected products and track & trace via the Industry Mall.

More information and download: [www.siemens.com/automation/ca01](http://www.siemens.com/automation/ca01)

## Downloading catalogs

The screenshot displays the Siemens Information and Download Center interface. At the top, there is a navigation bar with the Siemens logo and links for Home, Language, and Contact. Below this, the main content area is titled "Information and Download Center" and features a search bar and a "Text Size" adjustment option. The page is organized into several sections:

- Navigation and Search:** Includes a search bar, a "Share this Page" button, and a "Text Size" adjustment option.
- Product Categories:** A horizontal menu with tabs for "Catalogs (362)", "Brochures (810)", "Customer Magazines (8)", and "Demo Software (15)". Below this, there is a "Promotion packages (12)" section.
- Filtering and Results:** A "Filter" input field is set to "10", and a dropdown menu is set to "English". Below this, a list of items is shown, including "Catalog D 11 - 2016 (13 MB)" and "Catalog D 12 - 2017 with dimension drawings". Each item includes an order number and a list of related products.
- Product & Service Filter:** A sidebar on the right contains a "Products & Services" section with checkboxes for various categories: Building Technologies (2), Drive technology (294), Energy (11), Industrial automation (922), Low-voltage controls and distribution (32), Safety systems - Safety Integrated (31), Services (8), and Software (1).
- All about Products & Services:** A section at the bottom right with checkboxes for "Presses info", "Catalog and ordering system online", "Technical info", "Support", and "Service offer".

In the Information and Download Center you can download catalogs and brochures in PDF format without having to register. The filter dialog makes it possible to carry out targeted searches.

[www.siemens.com/industry/infocenter](http://www.siemens.com/industry/infocenter)

## Appendix

### Indexes

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## Appendix

### Conditions of sale and delivery

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