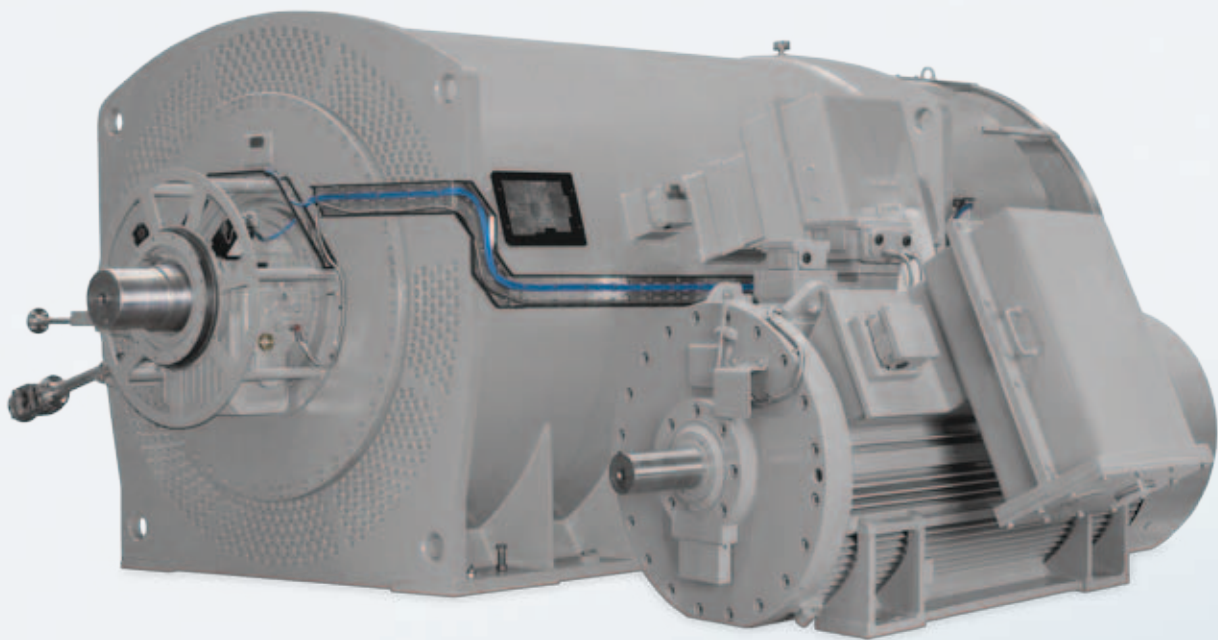


**SIEMENS**



# LOHER VARIO High Voltage Motors

Flameproof

Type Series 1PS4, 1PS5, 1MV4 and 1MV5










Frame Size 355 to 1000, Power Range 80 to 7100 kW

Motors

Catalog  
D 83.2

Edition  
2015

## Related catalogs

<p><b>Three-Phase Induction Motors</b>  <b>SIMOTICS HV, SIMOTICS TN</b>            Series H-compact            Series H-compact PLUS</p> <p>PDF (E86060-K5584-A111-A5-7600)</p>	<p>D 84.1</p> 
<p><b>SINAMICS GM150/SINAMICS SM150</b>            Medium-Voltage Converters</p> <p>E86060-K5512-A101-A3-7600</p>	<p>D 12</p> 
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# LOHER VARIO High Voltage Motors

## Flameproof, Type Series 1PS4, 1PS5, 1MV4 and 1MV5

## Motors



Catalog D 83.2 · 2015

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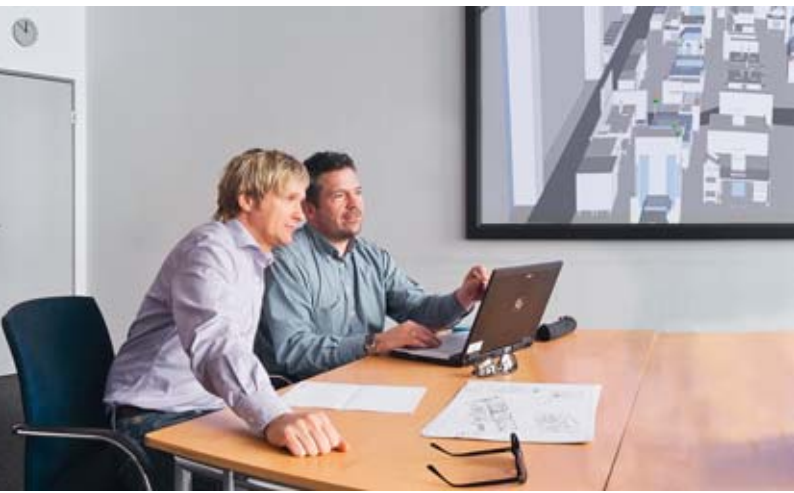


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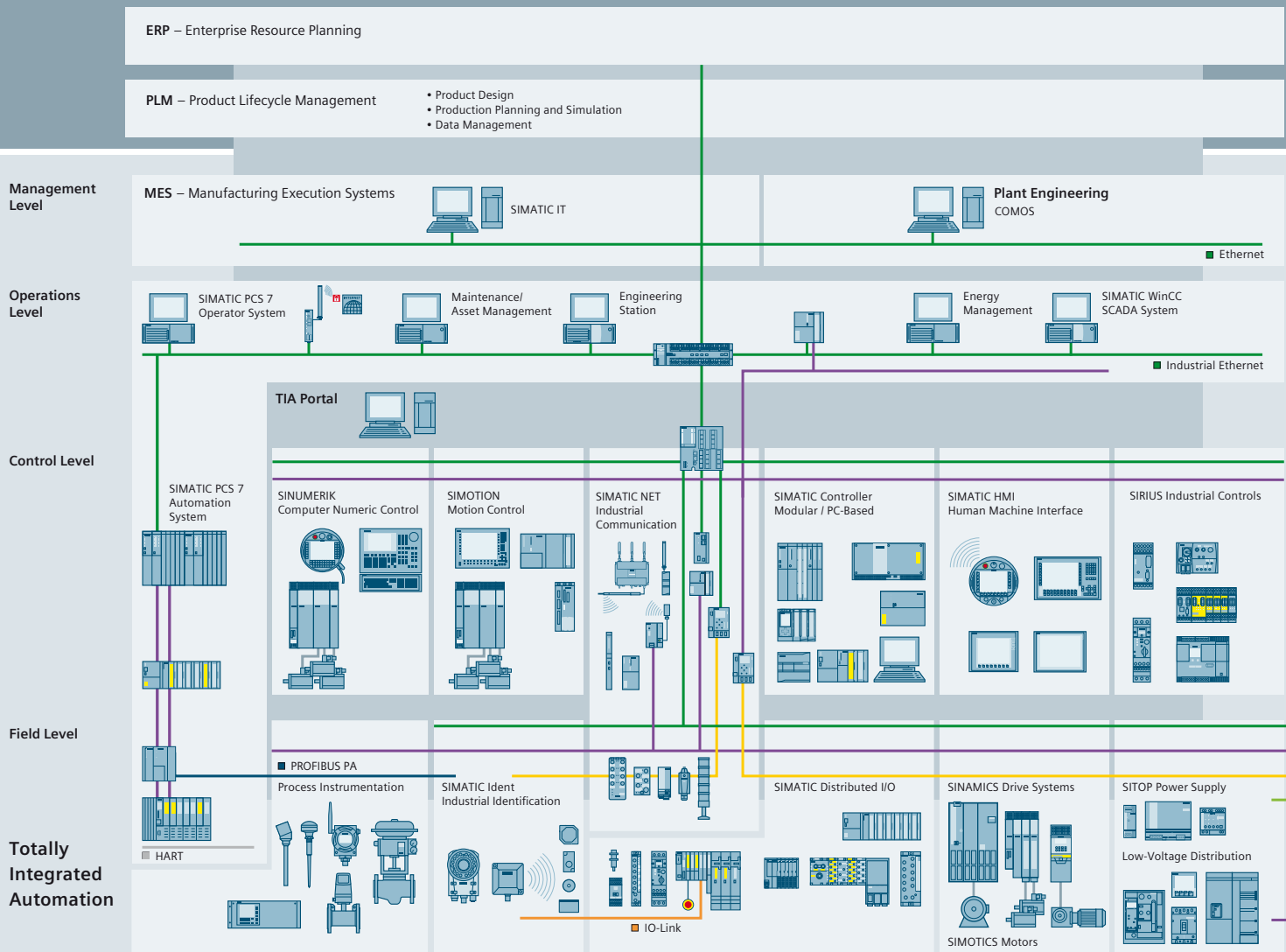
## Answers for industry.

Integrated technologies, vertical market expertise and services for greater productivity, energy efficiency, and flexibility.

Siemens is the world's leading supplier of innovative and environmentally friendly products and solutions for industrial companies. End-to-end automation technology and industrial software, solid market expertise, and technology-based services are the levers we use to increase our customers' productivity, efficiency and flexibility.

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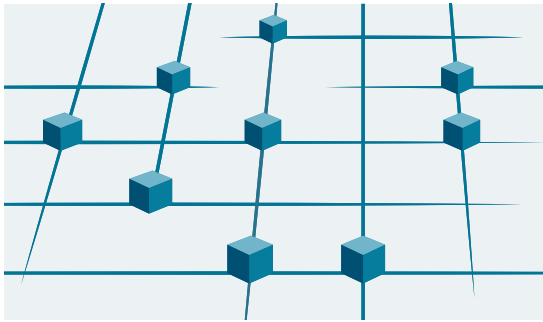
Market launch times can be reduced by up to 50% due to the combination of powerful automation technology and industrial software. At the same time, the costs for energy or waste water for a manufacturing company can be reduced significantly. In this way, we increase our customers' competitive strength and make an important contribution to environmental protection with our energy-efficient products and solutions.



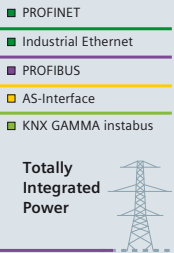
## Efficient automation starts with efficient engineering.

**Totally Integrated Automation: Efficiency driving productivity.**

Efficient engineering is the first step toward better production that is faster, more flexible, and more intelligent. With all components interacting efficiently, Totally Integrated Automation (TIA) delivers enormous time savings right from the engineering phase. The result is lower costs, faster time-to-market, and greater flexibility.



Totally Integrated Automation  
Efficient interoperability of all automation components



## A unique complete approach for all industries

As one of the world's leading automation suppliers, Siemens provides an integrated, comprehensive portfolio for all requirements in process and manufacturing industries. All components are mutually compatible and system-tested. This ensures that they reliably perform their tasks in industrial use and interact efficiently, and that each automation solution can be implemented with little time and effort based on standard products. The integration of many separate individual engineering tasks into a single engineering environment, for example, provides enormous time and cost savings.

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Totally Integrated Automation creates real value added in all automation tasks, especially for:

- **Integrated engineering**  
Consistent, comprehensive engineering throughout the entire product development and production process
- **Industrial data management**  
Access to all important data occurring in productive operation – along the entire value chain and across all levels
- **Industrial communication**  
Integrated communication based on international cross-vendor standards that are mutually compatible
- **Industrial security**  
Systematic minimization of the risk of an internal or external attack on plants and networks
- **Safety Integrated**  
Reliable protection of personnel, machinery, and the environment thanks to seamless integration of safety technologies into the standard automation

## Making things right with Totally Integrated Automation

Totally Integrated Automation, industrial automation from Siemens, stands for the efficient interoperability of all automation components. The open system architecture covers the entire production process and is based on end-to-end shared characteristics: consistent data management, global standards, and uniform hardware and software interfaces.

Totally Integrated Automation lays the foundation for comprehensive optimization of the production process:

- Time and cost savings due to efficient engineering
- Minimized downtime due to integrated diagnostic functions
- Simplified implementation of automation solutions due to global standards
- Better performance due to interoperability of system-tested components



## Totally Integrated Power We bring power to the point – safely and reliably.



Comprehensive answers for power distribution in complex energy systems – from Siemens

Efficient, reliable, safe: These are the demands placed on electrification and especially power distribution. And our answer – for all application areas of the energy system – is Totally Integrated Power (TIP). It's based on our comprehensive range of products, systems, and solutions for low and medium voltage, rounded out by our support throughout the entire lifecycle – from planning with our own software tools to installation, operation, and services.

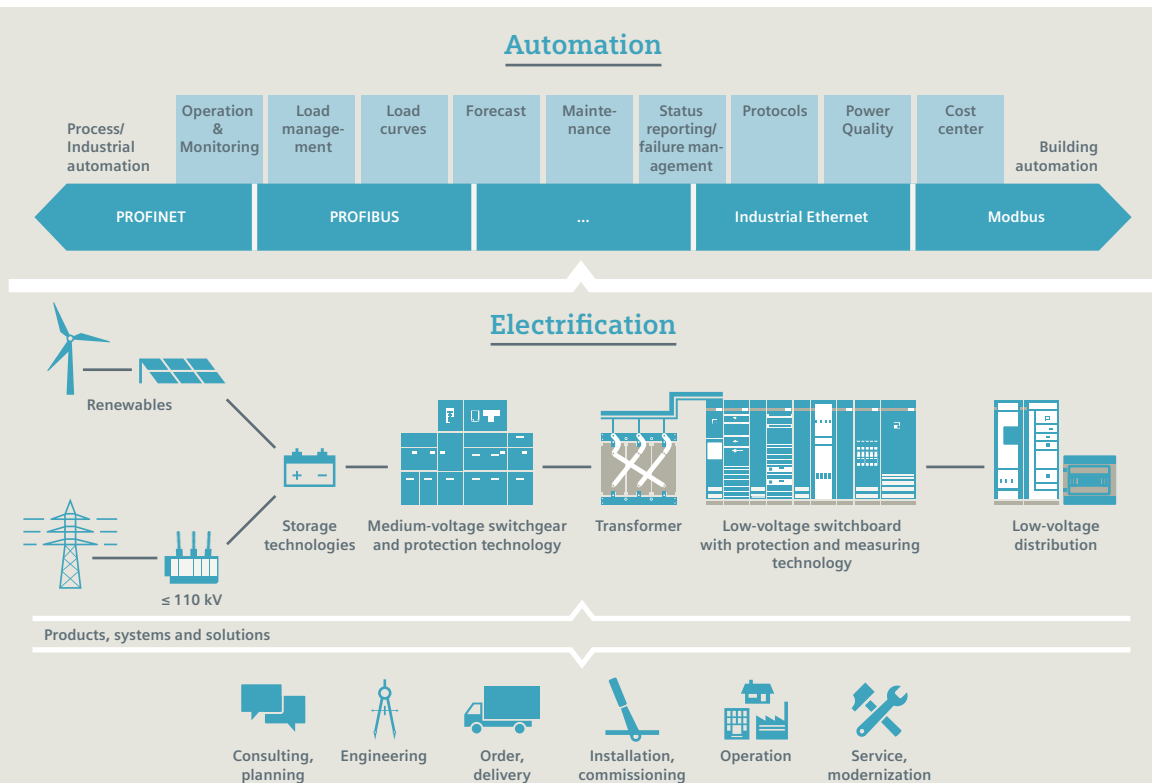
Smart interfaces allow linking to industrial or building automation, making it possible to fully exploit all the optimization potential of an integrated solution. This is how we provide our customers around the world with answers to their challenges. With highly efficient, reliable, and safe power distribution, we lay the foundation for sustainable infrastructure and cities, buildings, and industrial plants. We bring power to the point – wherever and whenever it is needed.

More information: [www.siemens.com/tip](http://www.siemens.com/tip)

# Totally Integrated Power offers more:

- **Consistency:**  
For simplified plant engineering and commissioning as well as smooth integration into automation solutions for building or production processes
- **One-stop-shop:**  
A reliable partner with a complete portfolio for the entire process and lifecycle – from the initial idea to after-sales service
- **Safety:**  
A comprehensive range of protection components for personnel safety and line and fire protection, safety by means of type testing
- **Reliability:**  
A reliable partner who works with customers to develop long-lasting solutions that meet the highest quality standards
- **Efficiency:**  
Bringing power to the point means greater plant availability and maximum energy efficiency in power distribution
- **Flexibility:**  
End-to-end consistency and modular design of Totally Integrated Power for any desired expansions and adaptation to future requirements
- **Advanced technology:**  
Reliable power distribution especially for applications in which supply is critical, continuous refinement of the technology

## Challenges are our speciality





# Integrated Drive Systems

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

Motors are an important element of a Siemens Integrated Drive System, contributing significantly to increased efficiency, productivity, and availability in industrial production processes.

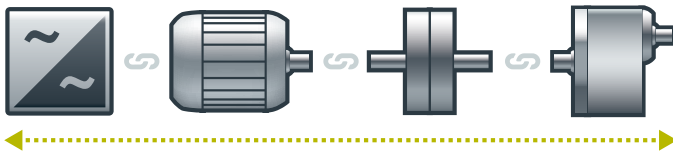
Integrated Drive Systems are Siemens' trendsetting answer to the high degree of complexity that characterizes drive and automation technology today. The world's only true one-stop solution for entire drive systems is characterized in particular by its threefold integration: Horizontal, vertical,

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.



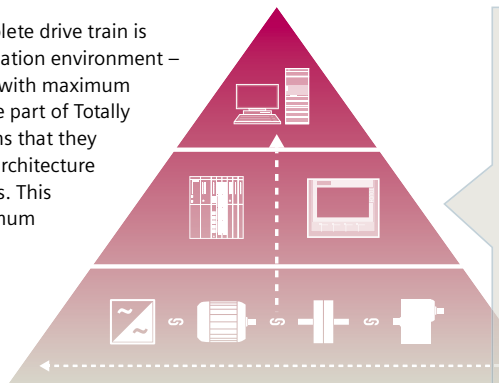
You can boost the availability of your application or plant to up to

**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.



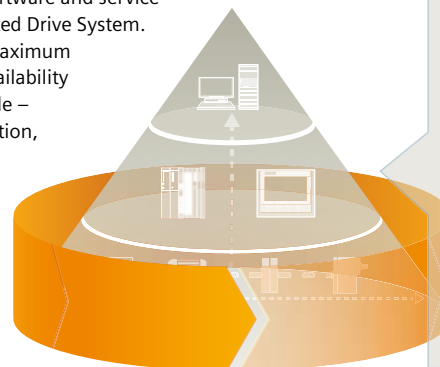
With TIA Portal you can cut your engineering time by up to

**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



<b>1/2</b>	<b>General</b>
<b>1/3</b>	<b>Regulations and standards</b>
<b>1/4</b>	<b>Article number code</b>
<b>1/8</b>	<b>Power ranges of 1PS./1MV. flameproof motors for line operation</b>
<b>1/10</b>	<b>Explosion protection</b>
<b>1/11</b>	<b>Shipping and packaging</b>

## Introduction

### General

1

#### Overview

The LOHER VARIO Rib-cooled flameproof/LOHER VARIO Tube-cooled flameproof series of motors is available in shaft heights from 355 mm up to 1000 mm, and covers a power range extending from 80 kW to 7100 kW.

This motor series covers the entire flameproof high voltage motor market.

- Rib-cooled, IP56, cooling IC411/416 (shaft height 355 up to 630 mm)
- Tube-cooled, IP56, cooling IC511/IC516 (shaft height 710 up to 1000 mm)

The LOHER VARIO Rib-cooled flameproof/LOHER VARIO Tube-cooled flameproof series is available for line and converter operation.

This means that in conjunction with the low-voltage SINAMICS G, SINAMICS S and Dynavert I converters and the medium-voltage SINAMICS PERFECT HARMONY GH150, SINAMICS PERFECT HARMONY GH180, SINAMICS GM150, SINAMICS SM150 converters and successor products, drive systems are available in a power range from approx. 140 kW up to 7100 kW (6 kV, 4-pole).

**Overview**

The motors are in compliance with the following standards and regulations:

Title	EN	IEC
Rotating electrical machines – Rating and performance	EN 60034-1	IEC 60034-1 IEC 60085
Rotating electrical machines – Standard methods for determining losses and efficiency from tests	EN 60034-2-1	IEC 60034-2-1
Tests for large machines	EN 60034-2-2	
Tests for inverter driven machines	EN 60034-2-3	
Rotating electrical machines – Degrees of protection provided by integral design of rotating electrical machines (IP code)	EN 60034-5	IEC 60034-5
Rotating electrical machines – Methods of cooling (IC code)	EN 60034-6	IEC 60034-6
Rotating electrical machines – Classification of types of construction, mounting arrangements and terminal box position (IM code)	EN 60034-7	IEC 60034-7
Rotating electrical machines – Terminal markings and direction of rotation	EN 60034-8	IEC 60034-8
Rotating electrical machines – Noise limits	EN 60034-9	IEC 60034-9
Acoustics: Test code for the measurement of airborne noise emitted by rotating electrical machines	EN ISO 1680	–
Thermal protection	EN 60034-11	IEC 60034-11
Starting performance of single-speed three-phase cage induction motors	EN 60034-12	IEC 60034-12
Mechanical vibration of certain machines with shaft heights 56 mm and higher – Measurement, evaluation and limits of vibrations severity	EN 60034-14	IEC 60034-14
Impulse voltage withstand levels	EN 60034-15	
Cage induction motors when fed from inverters	EN 60034-17	
Insulation systems	EN 60034-18	
Dimension and output series 355-1000	EN 60072-2	
Explosive atmospheres Part 0 – General requirements	EN 60079-0	
Applicable parts (i.e. Part 1 – Gas – Flameproof enclosure "d"…)	EN 60079-X	
CENELEC standard voltages	–	IEC 60038
General purpose three-phase induction motors having standard dimensions and outputs – Frame numbers 56 to 315 and flange numbers 65 to 740	EN 50347	IEC 60072-1 <sup>1)</sup>
Center holes with thread	EN 332	–
Drive type fastenings without taper action; parallel keys, keyways, deep pattern	EN 6885-1	–
<b>In addition, the following applies to Ex motors:</b>		
Explosive atmospheres – Electrical installations design, selection and erection	EN 60079-14	IEC 60079-14
Explosive atmospheres – Equipment protection by type of protection "n"	EN 60079-15	IEC 60079-15
Explosive atmospheres – Equipment protection by explosion-proof enclosures "d"	EN 60079-1	IEC 60079-1
Explosive atmospheres – Equipment dust ignition protection by enclosure "t"	EN 60079-31	IEC 60079-31
Explosive atmospheres – Equipment – General requirements	EN 60079-0	IEC 60079-0
Explosive atmospheres – Equipment protection by increased safety "e"	EN 60079-7	IEC 60079-7
Explosive atmospheres – Equipment protection by intrinsic safety "i"	EN 60079-11	IEC 60079-11

Equivalent IEC standards are also applicable.

Power stages in compliance with NEMA and CSA are also available.

Versions according to API are possible, including special API tests and factory hold points.

The motor dimensions are metric, which means that they can be used in a wide range of applications.

**Abbreviations**

API	American Petroleum Institute
CSA	Canadian Standards Association
IEC	International Electrotechnical Commission
NEMA	National Electrical Manufacturers Association

<sup>1)</sup> IEC 60072-1 specifies dimensions only, there is no assignment of outputs. More than one motor is possible per packing unit.

# Introduction

Article number code

1

## Overview

The following overview explains the meaning of the individual positions of the Article No.

Structure of the Article No.:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16	-	Z
1st to 3rd positions:																				
<b>Primary and main group</b>																				
• Induction motors	1	P	S																	
• Induction motors, Siemens MICALASTIC series	1	M	V																	
4th position:																				
<b>Ex protection "gas"</b>																				
• II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)				4																
• II 2 G Ex de IIC T4 Gb (flameproof, gas group IIC)				5																
5th to 6th positions:																				
<b>Shaft height</b>																				
• 355 mm					3	5														
• 400 mm					4	0														
• 450 mm					4	5														
• 500 mm					5	0														
• 560 mm					5	6														
• 630 mm					6	3														
• 710 mm					7	1														
• 800 mm					8	0														
• 1000 mm					9	1														
7th position:																				
<b>Code number for relative length of laminated core</b>																				
• Shortest							0													
							...													
• Mid-size							4													
							...													
• Longest							8													
• Special length							9													1)
8th position:																				
<b>Insulation</b>																				
• Medium voltage, direct on line, preformed-coil winding									6											
• Medium voltage, inverter operation, standard insulation, preformed coils									7											
• Medium voltage, inverter operation, special insulation, preformed coils									8											
9th position:																				
<b>Type of machine</b>																				
• Asynchronous motor, squirrel cage, totally enclosed (TE..)																				B
10th position:																				
<b>Stator housing/outside fan</b>																				
• Cast iron housing, surface cooled, with shaft driven outer fan (IC411)																				D
• Cast iron housing, surface cooled, with forced fan (IC416)																				F
• Steel-welded housing, surface cooled, with shaft driven outer fan, without inner fan (IC411)																				H
• Steel-welded housing, surface cooled, with shaft driven outer fan, with inner fan (IC411)																				J
• Steel-welded housing, surface cooled, with forced fan, without inner fan (IC416)																				K
• Steel-welded housing, surface cooled, with forced fan, with inner fan (IC416)																				L
• Steel-welded housing, pipe cooled, with shaft driven outer fan (IC511)																				S
• Steel-welded housing, pipe cooled, with forced fan (IC516)																				T

1) Plain text must be specified in the order.

2) Additional information as text and/or selection code is required.



## Overview (continued)

Structure of the Article No.:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16	-	Z	
11th position:																					
<b>Rated voltage/connection/frequency</b>																					
Medium voltage, direct on line, preformed-coil winding (Article No. 8th position = "6")																					
• 3 kV, 50 Hz												3									
• 3.3 kV, 50 Hz												0									
• 4.16 kV, 50 Hz												9									L6S
• 5.5 kV, 50 Hz												9									L6R
• 6 kV, 50 Hz												6									
• 6.3 kV, 50 Hz												9									L6Q
• 6.6 kV, 50 Hz												7									
• 10 kV, 50 Hz												8									
• 11 kV, 50 Hz												9									L6K
• 2.3 kV, 60 Hz												9									L6L
• 3.3 kV, 60 Hz												9									L6M
• 4 kV, 60 Hz												4									
• 4.16 kV, 60 Hz												9									L6N
• 6.6 kV, 60 Hz												1									
• 11 kV, 60 Hz												9									L6P
• Other voltages												9									L6Y <sup>2)</sup>
Medium voltage, inverter operation, standard insulation, preformed coils (Article No. 8th position = "7")																					
• 3 kV, 50 Hz												3									
• 3.3 kV, 50 Hz												0									
• 4.16 kV, 50 Hz												9									L6S
• 5.5 kV, 50 Hz												9									L6R
• 6 kV, 50 Hz												6									
• 6.3 kV, 50 Hz												9									L6Q
• 6.6 kV, 50 Hz												7									
• 10 kV, 50 Hz												8									
• 11 kV, 50 Hz												9									L6K
• 2.3 kV, 60 Hz												9									L6L
• 3.3 kV, 60 Hz												9									L6M
• 4 kV, 60 Hz												4									
• 4.16 kV, 60 Hz												9									L6N
• 6.6 kV, 60 Hz												1									
• 11 kV, 60 Hz												9									L6P
• Other voltages												9									L6Y <sup>2)</sup>
Medium voltage, inverter operation, special insulation, preformed coils (Article No. 8th position = "8")																					
• 3 kV, 50 Hz												3									
• 3.3 kV, 50 Hz												0									
• 4.16 kV, 50 Hz												9									L6S
• 5.5 kV, 50 Hz												9									L6R
• 6 kV, 50 Hz												6									
• 6.3 kV, 50 Hz												9									L6Q
• 6.6 kV, 50 Hz												7									
• 2.3 kV, 60 Hz												9									L6L
• 3.3 kV, 60 Hz												9									L6M
• 4 kV, 60 Hz												4									
• 4.16 kV, 60 Hz												9									L6N
• 6.6 kV, 60 Hz												1									
• Other voltages												9									L6Y <sup>2)</sup>

# Introduction

Article number code

1

## Overview (continued)

Structure of the Article No.:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16	-	Z	
12th position:																					
<b>Type of construction</b>																					
• IM B3													0								
• IM V1, with protective hood													4								
• IM B35													6								
• IM V10, with protective hood - on request													9								
13th position:																					
<b>Temperature class (for explosion protection)</b>																					
• Temperature class T3 (max. surface temperature 200 °C/392 °F) - on request																					3
• Temperature class T4 (max. surface temperature 135 °C/275 °F)																					4
14th position:																					
<b>Number of poles</b>																					
• 2-poles																					A
• 4-poles																					B
• 6-poles																					C
• 8-poles																					D
• 10-poles																					E
• 12-poles																					F
• 14-poles																					G
• 16-poles																					H
• 18-poles - on request																					J
• 20-poles - on request																					K
• 4/2-poles - on request																					N
• 6/4-poles - on request																					P
• 8/4-poles - on request																					Q
• 8/6-poles - on request																					R
• 8/6/4-poles - on request																					S
• 16/4-poles - on request																					T
15th position:																					
<b>Type of bearings/type of rotor</b>																					
• Antifriction bearings/standard rotor																					A
• Antifriction bearings/special rotor - on request																					B
• Antifriction bearings for extended speed range, rotor for inverter-fed operation - on request																					C
• Sleeve bearings/standard rotor																					D
• Sleeve bearings/special rotor - on request																					E
• Sleeve bearings for extended speed range, rotor for inverter-fed operation - on request																					F
16th position:																					
<b>Developmental stage</b>																					0

M2S

**Overview** (continued)**Example of the Article No.**

Selection criteria	Requirement	Structure of the Article No.
Motor type 1MV	Induction motors, Siemens MICALASTIC series	1MV■■■■■-■■■■■-■■■■■
Ex protection "gas"	II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)	1MV4■■■■■-■■■■■-■■■■■
Shaft height	400 mm	1MV440■■■■■-■■■■■
Code number for relative length of laminated core		1MV4402-■■■■■-■■■■■
Insulation	Medium voltage, direct on line, preformed-coil winding	1MV4402-6■■■■■-■■■■■
Type of machine	Asynchronous motor, squirrel cage, totally enclosed (TE..)	1MV4402-6B■■■■■-■■■■■
Stator housing/outside fan	Steel-welded housing, surface cooled, with shaft driven outer fan, with inner fan (IC411)	1MV4402-6BJ■■■■■-■■■■■
Rated voltage/connection/frequency	10 kV, 50 Hz	1MV4402-6BJ8■■■■■-■■■■■
Type of construction	IM B3	1MV4402-6BJ80■■■■■-■■■■■
Temperature class (for explosion protection)	Temperature class T4 (max. surface temperature 135 °C/275 °F)	1MV4402-6BJ80-4■■■■■
Number of poles	2-poles	1MV4402-6BJ80-4A■■■■■
Type of bearings/type of rotor	Sleeve bearings/standard rotor	1MV4402-6BJ80-4AD■■■■■
Developmental stage		1MV4402-6BJ80-4AD0

## Introduction

Power ranges of 1PS./1MV. flameproof motors for line operation

1

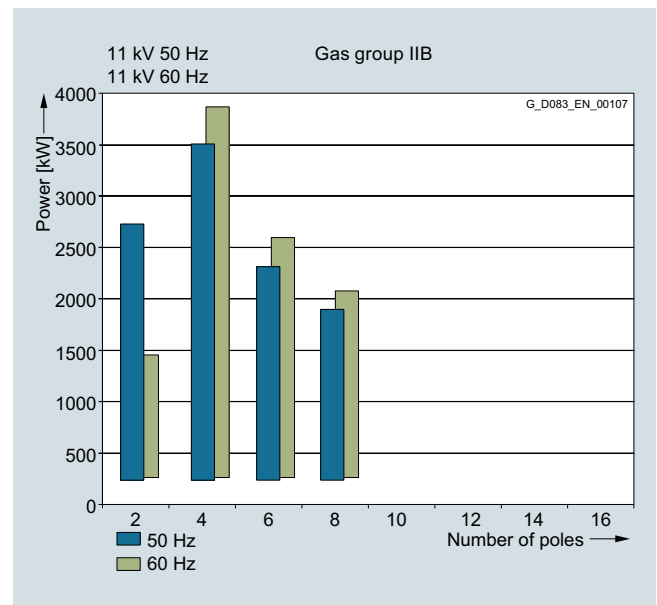
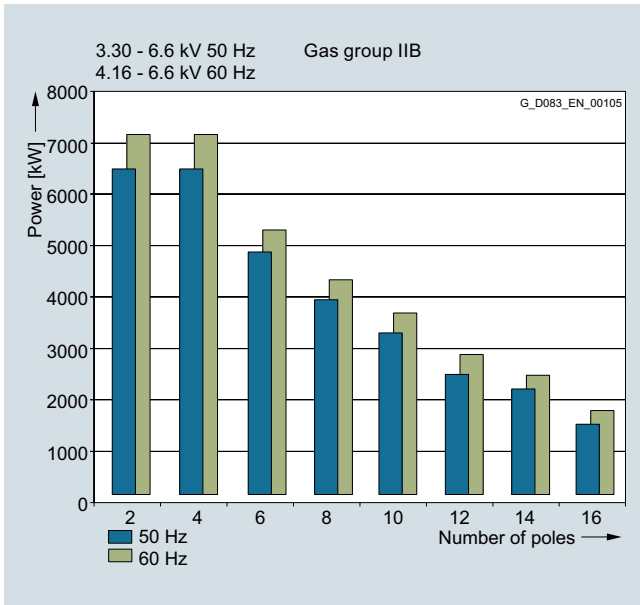
### Technical specification

#### Gas group IIB

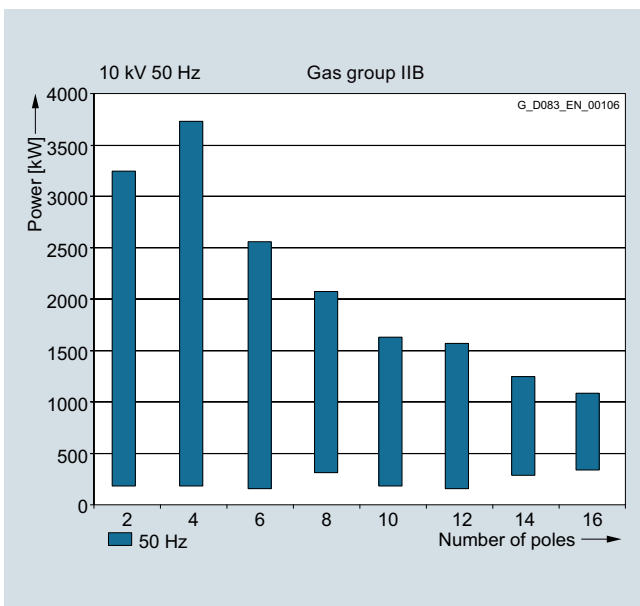
Power range for 3.3 to 6.6 kV, 50 Hz

Power range for 4.16 to 6.6 kV, 60 Hz

Power range for 11 kV, 50 Hz and 60 Hz



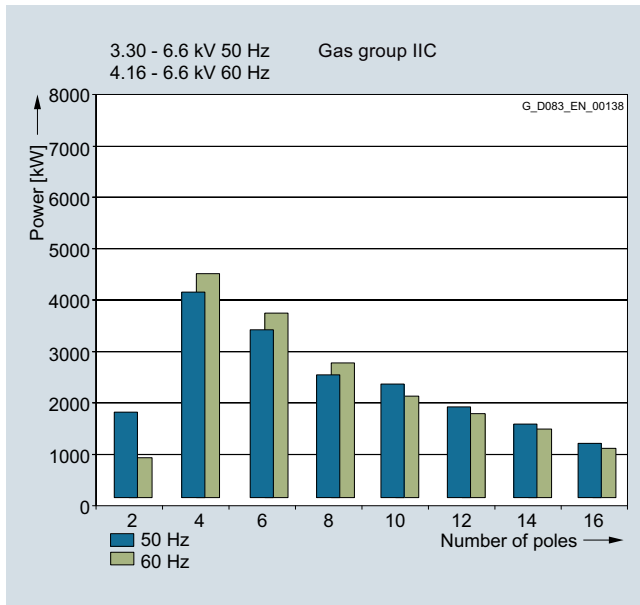
Power range for 10 kV, 50 Hz



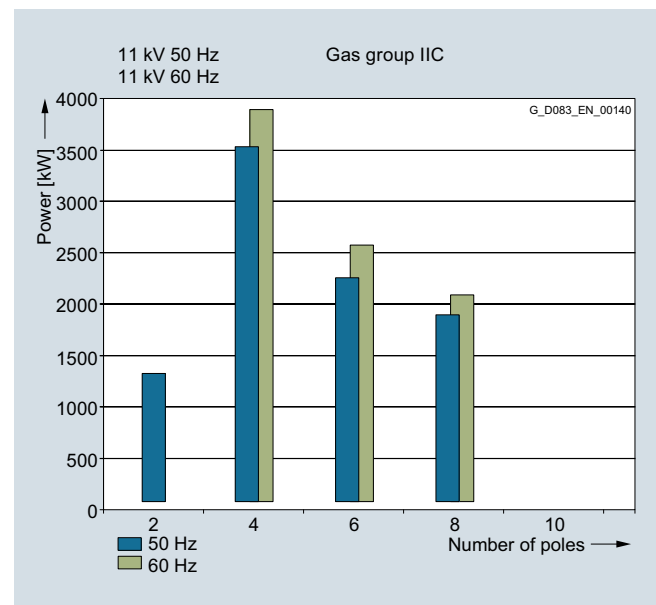
**Technical specification** (continued)**Gas group IIC**

Power range for 3.3 to 6.6 kV, 50 Hz

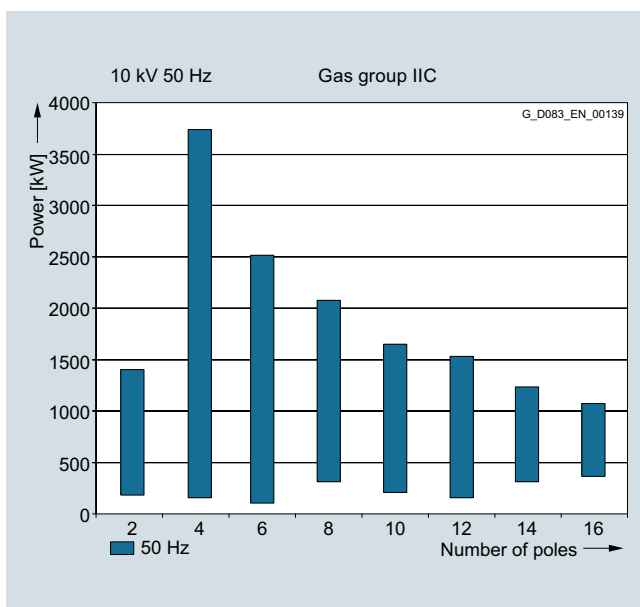
Power range for 4.16 to 6.6 kV, 60 Hz



Power range for 11 kV, 50 Hz and 60 Hz



Power range for 10 kV, 50 Hz





# Introduction

## Explosion protection

1

### Overview

#### General

Explosion-protected motor designs are available for applications where motors must operate in areas containing hazardous levels of explosive atmospheres.

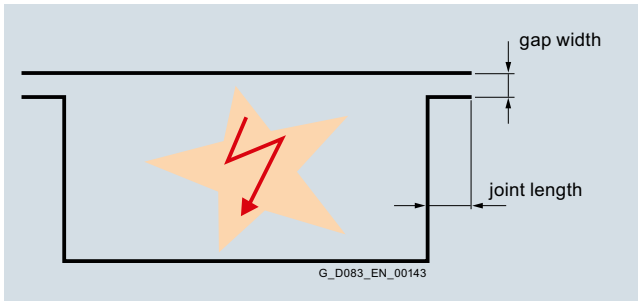
Hazardous areas are classified in different zones by the operating company, depending on how often and over what period of time a dangerous concentration of explosive atmosphere is likely to develop. The motor manufacturer is thus able to select suitable motors.

For further information, see brochure "Explosion protection Fundamentals" on the Internet: [http://w3app.siemens.com/salesmaterial-as/brochure/en/brochure\\_explosion\\_protection\\_en.pdf](http://w3app.siemens.com/salesmaterial-as/brochure/en/brochure_explosion_protection_en.pdf)

### Design

#### Flameproof enclosure

Explosion protection is essentially achieved through the flameproof enclosure itself and limited enclosure temperature.



Flameproof enclosure principle

If an explosion occurs inside the enclosure, the housing will withstand the pressure and the explosion will not be propagated outside the enclosure.

This is achieved by a flameproof joint; its gap width is depending on the gas group of the hazardous area.

Flameproof motors are considered as electrical equipment of Group II, category G (gas) and can therefore be used in zone 1 and 2.

Electrical equipment with approval for explosion group IIC can also be used in explosion groups IIA and IIB.

Overview of flameproof high voltage motors

Motor type	Cooling method	Type of protection	Explosion protection zone acc. to IEC/EN 60079-10, -1 or -2
1PS4...-6BJ..-4..0	IC411	II 2 G Ex de IIB T4 Gb	Zone 1 & 2
1MV4...-6BJ..-4..0			
1PS4...-6BS..-4..0	IC511		
1MV4...-6BS..-4..0			
1PS5...-6BJ..-4.A0	IC411	II 2 G Ex de IIC T4 Gb	Zone 1 & 2
1MV5...-6BJ..-4.A0			
1PS5...-6BS..-4.A0	IC511		
1MV5...-6BS..-4.A0			

### Design (continued)

All flameproof motors are provided with an EC declaration of conformity and a CE marking as defined by the Directive 94/9/EC ("ATEX").

For motor types for use in Zone 1, EC type-Examination Certificates from a certified body organization are available.

Flameproof motors are delivered in protection II 2 G Ex de IIB by default, motors with antifriction bearing design can be delivered in protection II 2 G Ex de IIC. [For availability of gas group IIC see page 1/9.](#)

Temperature class T4 is the standard design. Maximum surface temperature of the equipment is limited to 135 °C for temperature class T4.

Higher temperature classes can be offered on request after check.

Latest standards according to IEC/EN 60079 are basis of the motor design.

Standard terminal box design: II 2 G Ex e IIC Gb (increased safety)

Main terminal boxes can also be delivered in II 2 G Ex d IIC Gb (flameproof design). [For details see pages 2/13 to 2/21.](#)

Auxiliary and neutral point terminal boxes can also be delivered in II 2 G Ex d IIC Gb (flameproof design).

[For details about Terminal boxes for neutral point see pages 2/23 to 2/27.](#)

[For details about Auxiliary terminal boxes see pages 2/28 to 2/35.](#)

Motor accessories outside the flameproof enclosure, like sensors, monitoring devices etc. have to be explosion protected and certified according to the zone, the motor is installed.

### Benefits

The main advantages compared to other types of protection (Ex p, Ex e) are:

- No purging prior to motor starting
- No purging system
- No purging gas required (lifecycle costs)
- Motor starting without considering tE time limits
- No system test required for most standard converter operation applications
- No unique certification required
- Immediate starting after grid fault possible

### Overview

Motors with sleeve bearings or cylindrical-roller bearings are equipped with a rotor locking device to protect them against brinnelling damage while being transported.

Motors with sleeve bearings are shipped without bearing oil.

Type IM B3 motors are normally shipped:

- On battens for transport by road or rail
- In a crate for transport by sea (on request)

Typically the road/rail packaging dimensions for IM B3 motors exceed the maximum motor length L and the maximum width AE each by approximately 50 mm.

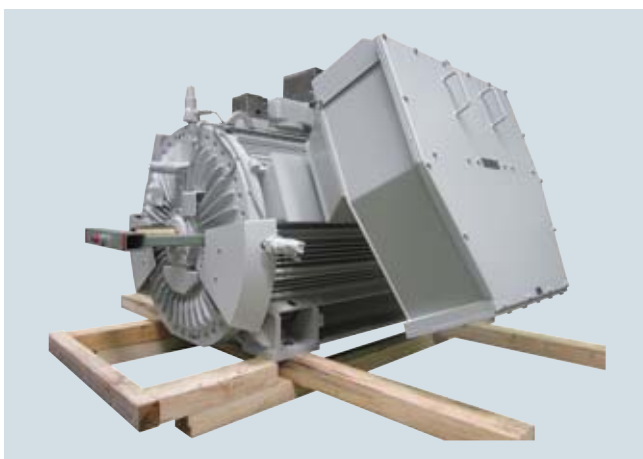
Guide values for other packaging dimensions are available on request.

On request Siemens can provide special packaging and wood treatment (i.e. USA, CDN, NZ...).

### Note:

On special packing for long term storage (both indoor and outdoor) can be provided.

For long term outdoor storage it is mandatory to connect and use the anti-condensation heating of the motor to prevent condensation.



Packing on battens for transport by road or rail



Seaworthy packing example

## Introduction

Notes

1

## Design



<b>2/2</b>	<b>Technical features</b>	<b>2/36</b>	<b>Bearing design</b>
<b>2/3</b>	<b>Types of construction</b>	2/36	General
<b>2/4</b>	<b>Resin Rich Insulation system</b>	2/37	Antifriction bearing design
<b>2/5</b>	<b>Siemens MICALASTIC insulation system</b>	2/38	Sleeve bearing design
<b>2/6</b>	<b>Enclosure and bearing shields of flameproof motors</b>	2/39	Sleeve bearing types and lubrication
<b>2/8</b>	<b>Stator</b>	<b>2/42</b>	<b>Paint finish</b>
<b>2/9</b>	<b>Rotor</b>	<b>2/44</b>	<b>Heating</b>
<b>2/10</b>	<b>Direction of rotation, fans and fan cover</b>	<b>2/45</b>	<b>Cable glands</b>
<b>2/11</b>	<b>Vibrational behavior</b>		
<b>2/12</b>	<b>Cooling</b>		
<b>2/13</b>	<b>Main terminal boxes</b>		
2/13	General		
2/14	Cable entry		
2/15	Standard terminal box 9-103 382.60		
2/16	Standard terminal box 9-103 472.60		
2/17	Terminal box 9-108 363.21A (option Q31)		
2/18	Terminal box 9-108 363.22A (option V37)		
2/19	Terminal box 9-108 493.01A (option V45)		
2/20	Terminal box 9-103A 602.60 (option V50)		
2/21	Terminal box 9-103A 912.60 (option V23)		
<b>2/22</b>	<b>Terminal boxes for neutral point</b>		
2/22	General		
2/23	Standard neutral point terminal box 9-103D 382.60 (option L55)		
2/24	Standard neutral point terminal box 9-103D 472.60 (option L56)		
2/25	Neutral point terminal box 9-108D 363.21A (option V38)		
2/26	Neutral point terminal box 9-108D 493.01A (option V39)		
2/27	Neutral point terminal box 9-108D 493.03A (option V40)		
<b>2/28</b>	<b>Auxiliary terminal boxes</b>		
2/28	General		
2/31	Cable entry		
2/32	Terminal box 9-106B 122.06 – cast iron Ex e design (option M52)		
2/33	Terminal box 9-106A 202.05 – cast iron Ex e design (option W72)		
2/34	Terminal box 9-108D 302.07 – stainless steel Ex e design (option M51)		
2/35	Terminal box 9-108B 182.18 – flameproof Ex d design (option V43)		

## Design

### Technical features

#### Design

##### **Special features:**

- Stator winding insulation:
  - impregnated by using the Resin Rich principle (vacuum-impregnation) for 1PS. series
  - impregnated by using VPI insulation MICALASTIC (VPI = "vacuum-pressure-impregnation") for 1PS. series (on request) and 1MV. series

Note: VPI insulation typically results in an increased power of the motor (especially for voltages 10 kV and 11 kV)
- Rib cooling system (IC411) for motor housings up to frame size 630 mm; tube cooling system for outer fan (IC511) for motors from frame size 710 up to 1000 mm. Both Versions possible with self-ventilation or forced ventilation.
- Consistent temperature of the active parts and bearings guaranteed by the internal cooling circuit
- Enclosure and end shields made of welded steel
- Motor feet made of welded steel, offering all opportunities for customization.
- Standard rotor version with copper cage (short-circuit ring is either Cu or CuCrZr) depending on the speed with or without retaining ring
- Low-noise rotor fan design
- Wide variety of terminal box positions and terminal box types
- Motor is available for either line or converter operation
- All flameproof motors are equipped with fixed lifting lugs
- IP56 degree of protection as standard
- Low temperature design -40 °C combined with gas group IIC



## Overview

The motors are supplied as standard in the following types of construction:

- IM B3 (IM 1001)
- IM V1 (IM 3011)

Other types of construction are available on request.

Construction types are designated according to IEC 60034-7 Code I (Code II).

Not all motors can be constructed as type IM V1.

Please send a factory inquiry for the following:

- 2-pole motors IM V1 of frame size 450 mm and above
- 60 Hz motors (2- or 4-pole, frame size 450 and above) IM V1
- Converter operated motors IM V1
- Sleeve bearing motors IM V1

For the article number code see pages 1/4 to 1/6.

### **Canopy for motors, type of construction IM V1**

As standard, motors are equipped with a canopy.

For low noise design "GG3" the canopy is replaced by an air inlet noise dampening plate

### **Mechanical degrees of protection**

- The motors in antifriction and sleeve bearing design are available in degrees of protection IP56 as standard design, marked according to IEC 60034-5.
- Higher degrees of protection are available on request.

### **Cooling methods**

- The self-ventilated rib-cooled motors use cooling method IC411, self-ventilated tube-cooled motors use cooling method IC511, marked according to IEC 60034-6.
- The force-ventilated rib-cooled motors use cooling method IC416, force-ventilated tube-cooled motors use cooling method IC516, marked according to IEC 60034-6.

## Design

### Resin Rich Insulation system

#### Overview

The Resin Rich insulation system, which has proven itself over many years in LOHER high-voltage motors, is used.

The insulation system corresponds to temperature class 155 (F).

#### Design

The following insulation materials are used:

- Mica insulating material
- Glass fibers or man-made fibers
- Plastic films
- Resins

The coils' basis is a flat copper wire. The bare copper wire is covered with a polyester foil containing mica and resin. The wires insulated this way are then formed to integral coils and pre-cured in heated presses.

The centre part of the coils embedded in the slots of the stator lamination is taped with resinous glass-silk fine-mica ribbon and then cured. This cured portion prevents voids or cavities from forming in the winding insulation, allows for individual checks of each coil prior to insertion into the stator coil and eliminates possible damage when inserting the coils into the lamination slots.

For a rated voltage  $\geq 1$  kV a conducting layer in the centre part of the coils is applied in order to balance the local variation of field intensity thus guaranteeing an even dielectric stress of the insulation.

The pressed coils are inserted in the open stator slots. The slots are closed using magnetic slot wedges (non-magnetic slot wedges available on special request).

Winding head design is short and therefore stiff on demolding, additionally equipped with reinforcement elements.

The winding head as well as the connecting leads are braided with absorbent material.

A complete vacuum impregnation with heat- and leakage-current resistant insulation resin which also has excellent mechanical characteristics follows.

During the impregnation process the absorbent material is filled with insulation resin.

The following drying with the stator permanently turning inside the impregnation oven even allows the use of these windings at maximum switching stresses, e.g. for mains change out-of-phase at 100 % residual voltage.

With this impregnation all cavities and pores are filled completely with the insulation resin and the winding head and the slot wedges are enforced.

This impregnation method ensures the following:

- Corona-free in operation thanks to cavity-free insulation
- Effective cooling by virtue of good thermal contact between the winding and laminated core
- High mechanical strength
- High service life expectancy
- Insensitivity to humidity, tropic-proof

The winding is insensitive to system transfers with 100 % residual field and switching operations up to 110 % with phase opposition.

The surge withstand capability of the insulation satisfies insulation coordination requirements. The insulation properties exceed the values ( $U_p = 4 \times U_{rated} + 5$  kV) stipulated in IEC/EN 60034-15/VDE 0530-15.

#### More information

For more information on operation with medium-voltage converters, see chapter 4 Special features for converter operation.

## Overview

The Siemens MICALASTIC insulation system, which has proven itself over many years in high-voltage motors, is used.

The Siemens MICALASTIC insulation system corresponds to temperature class 155(F).

An important element of the Siemens MICALASTIC insulation system is the VPI (Vacuum Pressure Impregnation) process, which is specially tailored to this insulation design.

## Design

The following insulation materials are used:

- Integrated-mica insulating material
- Glass fibers or man-made fibers
- Plastic films
- Resins

All coils are continuously wound in the slot and winding overhang area with several overlapping layers of absorbent mica tape. Depending on their rated voltage, coils have external and overhang corona shielding.

The pre-insulated coils are inserted in the open stator slots. The slots are closed using magnetic slot seals.

The short, and therefore rigid, winding overhangs have additional bracing elements. The winding inserted in the laminated core is dried in an impregnating tank by heating and evacuation and then vacuum-impregnated with epoxy resin. The resin gels after the pressure has been increased and is finally oven-cured.

This impregnation method ensures the following:

- Corona-free in operation thanks to cavity-free insulation
- Effective cooling by virtue of good thermal contact between the winding and laminated core
- High mechanical strength
- High service life expectancy

The winding is insensitive to system transfers with 100 % residual field and switching operations up to 110 % with phase opposition.

The surge withstand capability of the insulation satisfies insulation coordination requirements. The insulation properties exceed the values ( $U_p = 4 \times U_{rated} + 5 \text{ kV}$ ) stipulated in IEC/EN 60034-15/VDE 0530-15.

## More information

For more information on operation with medium-voltage converters, see chapter 4 Special features for converter operation.

## Design

### Enclosure and bearing shields of flameproof motors

#### Design

The stator enclosure is mechanically reinforced to meet the requirements of explosion protection regulations. This is achieved by an exceptionally stiff and vibration resistant steel welded housing.

Depending on the cooling type, this results in the following housing designs:

#### **Rib-cooled design**

##### Cast iron design (Article No. 10th position = D/F)

The stator housing on all motors is made of grey cast iron.

A single housing size is used for the shaft height 355 with 4 power rating options.

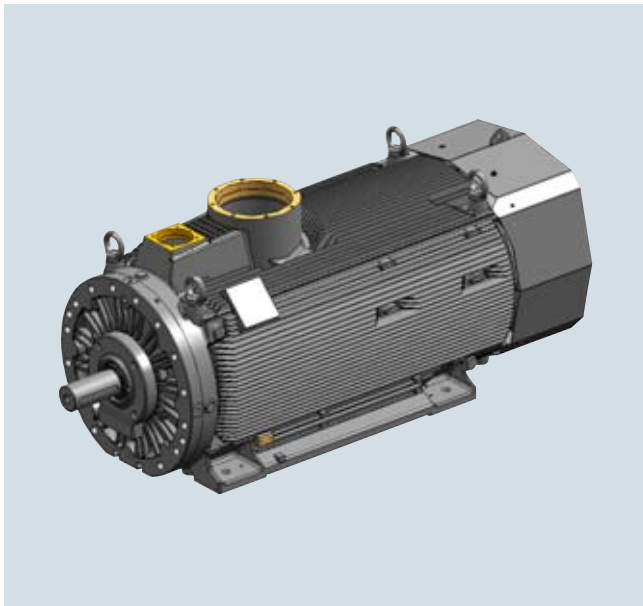
In the case of construction type IM B3, the housing is greatly strengthened and braced by the cast-on feet which are positioned close to the end shields, as well as by the thicker, reinforced housing wall in the foot area.

The housing contains four axial cooling air ducts equally spaced around the circumference.

The outer housing ribs are designed for optimum heat removal.

All motor housings are equipped with lifting lugs.

The main terminal box can be located on top of the motor (option K11).



Rib-cooled cast iron housing of a LOHER VARIO Rib-cooled motor

##### Steel welded design (Article No. 10th position = H/J/K/L)

The smaller motors of frame size 355 mm (Article No. 10th position = H/K) are built in flat rib design.

There are three housing lengths for the different performance levels.

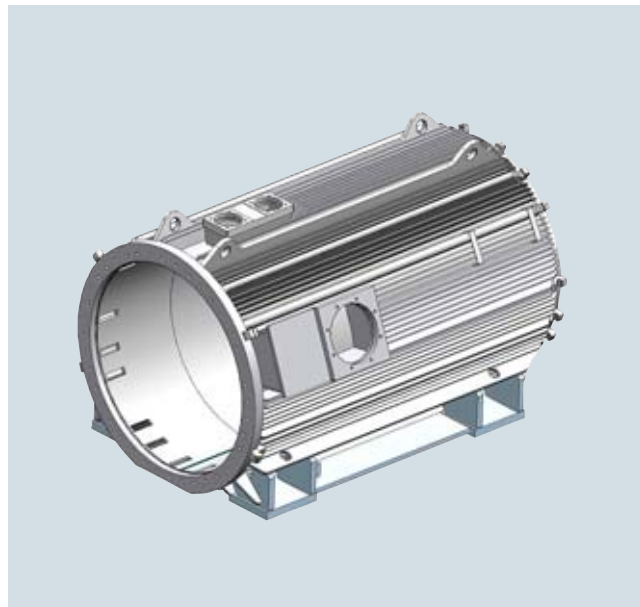
Motors of the LOHER VARIO Rib-cooled series (Article No. 10th position = J/L) of frame size 355 to 630 mm are designed with flat and hollow ribs, and an internal cooling circuit.

At each end a flange is reinforcing the housing.

There is one housing length each frame size for the different performance levels (exception: [motors with special design for sub-critical rotor operation](#), see page 5/2).

All motor housings are equipped with lifting lugs.

The main terminal box can be located on top of the motor (option K11).



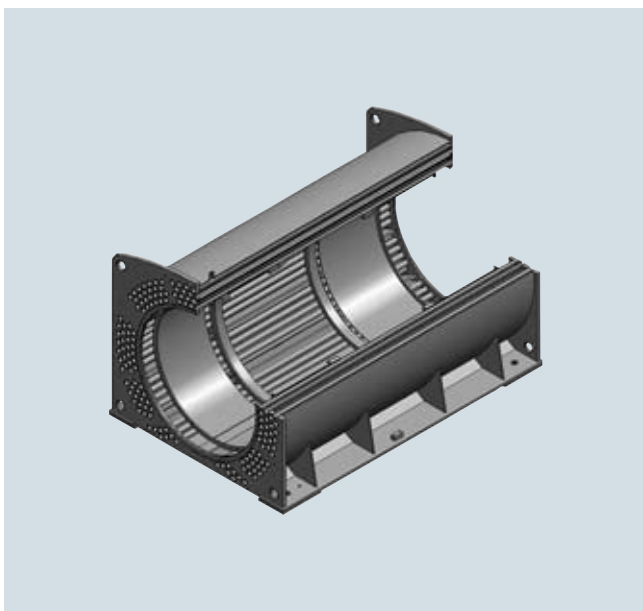
Rib-cooled welded steel housing of a LOHER VARIO Rib-cooled motor

**Design** (continued)**Tube-cooled design**

Motors of the LOHER VARIO Tube-cooled series (Article No. 10th position = S or T) of frame size 710 to 1000 mm are cooled by stainless steel pipes, rolled into the end walls of the housing.

Heat dissipation is improved by additional cooling pipe rows in the upper housing segment, without increasing the shaft height.

Depending on power and voltage up to three different housing lengths are available.



Welded steel housing of a LOHER VARIO Tube-cooled motor

It is possible to choose from several possible positions of the main terminal box:

- Right side of the motor (option K09)
- Left side of the motor (option K10)
- 2 main terminal boxes, one on each side of the motor (option K09 + K10)

Locating the main terminal box on top of the motor is only possible on request.

Motor feet positions and designs along with several possibilities can be widely adapted by auxiliary terminal box positions.

Customer requirements for retrofit and height adaption can be met by a simple modification of the steel welded housing.

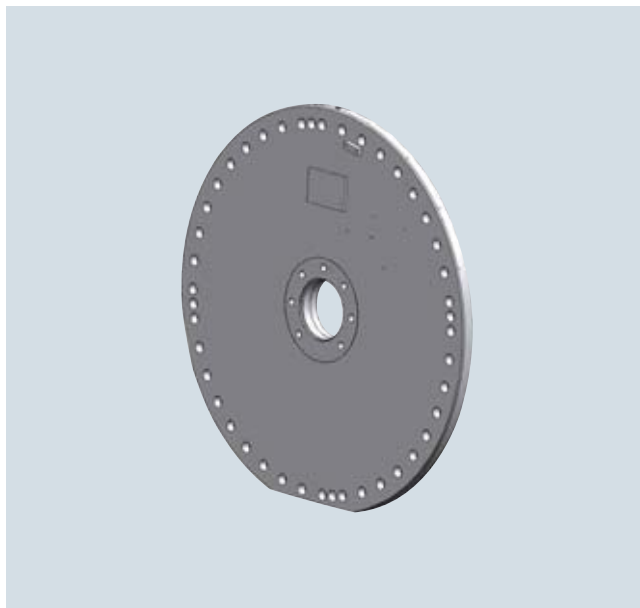
The laminated stator core mounting is optimized to achieve maximum torque transmission and the best possible cooling of the motor.

All motor housings are equipped with lifting lugs.

**Bearing shield**

The flameproof steel bearing shields are transmitting the rotor forces; the stiff design ensures low vibration levels and has to withstand testing pressures without deformation.

By the steel design, it's possible to have a wide variety of bearing sizes and to mount special bearing monitoring equipment.



Bearing shield, flameproof steel enclosure

## Design

### Stator

#### Design

##### **Stator winding**

The stator winding is based on preformed two-layer integral coils. Star point connection is considered with the neutral point at the winding head as a standard, not lead out by default.

In special cases also delta connections may apply.

The three winding ends are brought into the main terminal box. The position of the terminal box should be specified before order entry.

Upon request the winding-ends forming the neutral point can also be lead into a terminal box, i.e. the neutral point terminal box.

The line connection and star point can be brought out together into a special terminal box on request.

For two-winding or multiple-winding versions, the individual line or converter connections are each brought out to a separate terminal box.

##### **Laminated stator core**

The laminated stator core including winding is pressed into the motor enclosure.

The stator core is made of electrical sheet steel (sheet quality C5), insulated on both sides, which are punched and stacked on state-of-the-art, automated production machines.

LOHER VARIO Tube-cooled: The cores comprise spaced core sections (radial air guidance).

The winding is inserted in the stator slots and the winding and laminated core is then impregnated with resin ([for details see page 2/4](#)).

The slots are sealed by a proven and tested method using magnetic slot seals or wedges.

(Exception: 2 pole motors frame size 355 with Article No. 10th position = H or K)

The result is a motor with optimum electrical operating data and low noise levels.

## Design

### Rotor design

The laminated rotor core comprises a number of spaced core sections (LOHER VARIO Tube-cooled: with radial air guidance).

All of the rotors have copper bars (exception: cast iron housing motors with aluminum rotors).

The short-circuit ring is either manufactured out of Cu or CuCrZr, and is inductively soldered to the rotor bars. Depending on the speed, a retaining ring is required for several versions.

The limits set by ART (allowable run-up time) and LRT (locked rotor time) allow safe startup, even in case of high external moments of inertia; please note that the motor startup has to be checked nevertheless.

Furthermore the rotors are characterized by high thermic durability and exceptionally high efficiency.

The copper rotor bars are installed with positive locking in the chamfered rotor core, therefore also suitable for significantly fluctuating loads.

#### Note

- Significantly fluctuating loads:  
Additional measures are often required in the case of fluctuating loads where the motor engineering department must be contacted.
- Number of starts:  
[Observe the information on number of starts page 3/117.](#)  
Higher number of starts possible on request.

### Shaft

All motors have a shaft extension designed according to DIN 748 "long" with key steel feather key according to DIN 6880.

The rotors are balanced with half-key. The feather key is supplied with the motor.

A second shaft extension is available for all motor, as long as they are not force-ventilated.

The laminated rotor core with cage winding is pressed onto the solid shaft, the rotor core is installed with positive locking by a feather key (exception: special design). This ensures reliable transmission of all torques and forces.

Shaft end design for rotating piston compressor motors is available on request.

#### Note

General information on the type of load at the motor shaft extension

For the mechanical load at the motor shaft extension, a distinction must be made between an increasing load (torque = 0 ... X Nm) and a changing load (torque = -X ... +Y Nm), i.e. a torque is to be transmitted in both directions at the motor shaft extension. This is also known as alternating load or reversing operation.

If changing loads are not taken into account when dimensioning the motor, this can quickly result in damage to the shaft.

If a changing load is specified, which does not actually exist, this can result in a motor that is too large.

In this case, the torque direction at the shaft extension should be noted, not the motor direction of rotation!

The driven load must be specified when ordering.

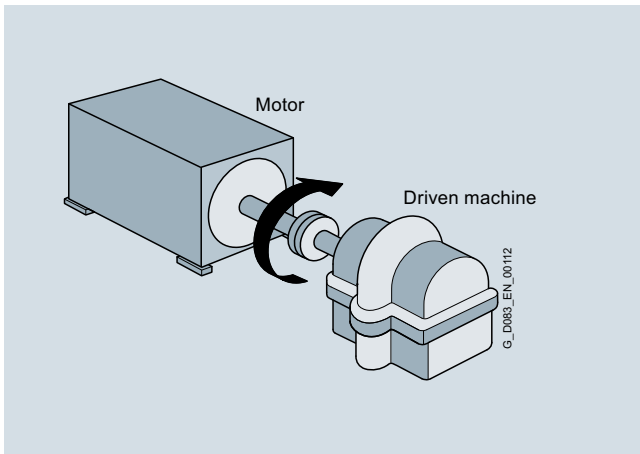
## Design

### Direction of rotation, fans and fan cover

#### Overview

##### The direction of rotation must be specified in every order!

As standard, the direction of rotation of the motor is clockwise (option K97) viewed from drive end. Of course the direction of rotation can be switched before ordering to counter-clockwise (option K98) with no additional costs.



Motor with clockwise direction of rotation (Option K97)

As standard, the outer fan is at the non-drive end (NDE) of the motor.

All fans are made of steel and covered with an air entry cover manufactured out of sheet steel.

#### Note

Two directions of rotation (K99) or reversing operation

The shafts of LOHER VARIO Rib-cooled and Tube-cooled motors in the basic version are only designed for load in one direction.

In this regard, option K99 just means that the motor is suitable for both directions of rotation (motor ventilation). However, it is assumed that the motor is either operating clockwise or counter-clockwise. Repeated change of the torque load at the shaft extension is not permissible.

An inquiry is required for all other applications (changing torque load, reversing operation), detailed information (inquiry data sheet) is needed for calculation.

#### More information

For fan material and design option codes see pages 6/7 to 6/8.



### Overview

#### Bearing housing vibrations

Motors comply with vibration grade A according to IEC 60034-14 as standard (option K01). Compliance with vibration grade B according to IEC 60034-14 is possible optionally (option K02).

The specified vibration severity grades apply to types of construction IM B3 and IM V1. Values for other mounting types are available on request.

The vibration severity measurement is carried out in the test field under the following conditions:

- Rated voltage
- In uncoupled state in no-load operation
- Mounting in accordance with the applicable standards

The vibration response of the system may cause variations in the following vibration values at the installation site. Vibration values are influenced by the following factors:

- Drive elements
- Alignment
- Mounting (foundation, especially its rigidity)
- Effects of external vibration

Vibration severity for rigid foundations permissible according to IEC/EN 60034-14:Sep2004

Vibration severity	$s_{\text{eff}}$ [ $\mu\text{m}$ ]	$v_{\text{eff}}$ [mm/s]	$a_{\text{eff}}$ [ $\text{m/s}^2$ ]
Grade A	37	2.3	3.6
Grade B	24	1.5	2.4

Grade A is applied for motors without any special vibration requirements, while grade B is mostly used for motors with special vibration requirements.

Electromagnetically created vibrations with double line frequency can occur for 2-pole motors. To determine them correctly, rigid mounting of the motor is mandatory.

In case of a motor type test showing electromagnetically created vibrations with double line frequency, the limit of permissible vibrations according grade A can be increased to 2.8 mm/s. Larger values are subject to agreement.

A vibration component with double line frequency is considered dominating, if the type test indicates it larger than 2.3 mm/s.

#### Shaft vibrations at sleeve bearing motors

The shaft vibration on machines with sleeve bearings complies with IEC/EN 60034-14 grade A (option V66). Grade B is available as an option (V67).

Permissible shaft vibration and run-out according to IEC/EN 60034-14:Sep2004

Vibration severity	Number of poles	Maximum relative run-out	Maximum permissible shaft vibration
		[ $\mu\text{m}$ ]	[ $\mu\text{m}$ ]
Grade A	2	65	16
	$\geq 4$	90	23
Grade B	2	50	12.5
	$\geq 4$	65	16

Lower run-out values (i.e. Shell or API) are possible on request. For vibration and run-out option codes see page 6/7.

#### Note

For variable speed motors, the vibration values above are only valid and measured at minimum and maximum speed of the agreed speed range.

#### Balance quality

The motor rotors are balanced dynamically with half feather key, but without shrink-fitted coupling half and outer fan.

The outer fan and fan hub is balanced separately, to make changing of the outer fan easier.

Balance quality levels for motors in subcritical operation (motors with antifriction bearing design) at least G 2.5 according to ISO 1940.

Better balance quality or balancing acc. to API requirements on request.

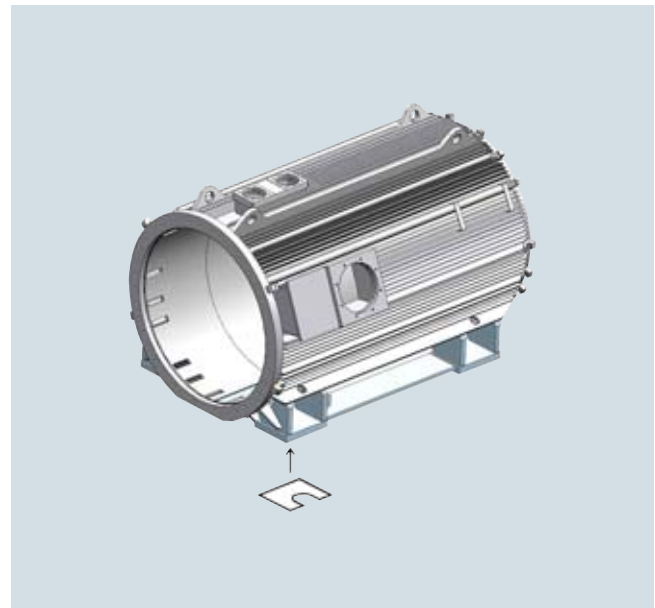
#### Mounting

To mount motors with optimized vibration levels, it is mandatory to align the motor feet exactly; this prevents tensions in the motor housing.

It can be helpful to reduce the motor foot contact area depending on the foundation being used.

The corresponding mounting shims can be used (refer to the sketch). These shims can also be ordered with option "L31".

It is possible to deliver those shims in brass (option V31) or stainless steel (option Q92). Laminated stainless steel shims are available only on special request with price impact.



Shims for exact motor feet alignment

## Design

### Cooling

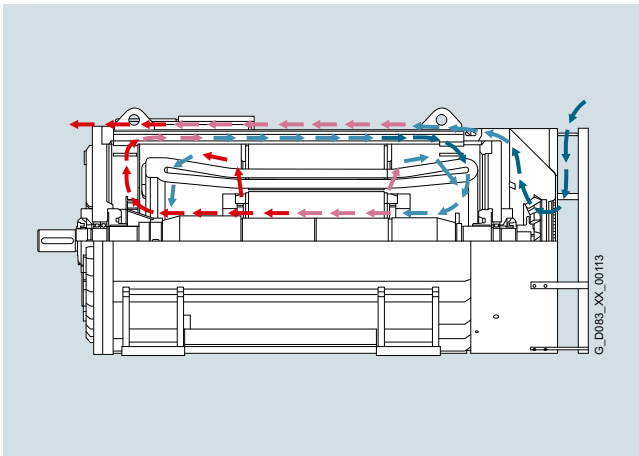
#### Overview

##### **Rib-cooled motors**

The largest portion of motor heat losses is dissipated by heat conduction from the stator core to the ribbed motor housing. The outer fan blows cooling air over the ribbed housing and dissipates the heat.

For LOHER VARIO Rib-cooled motors (Article No. 10th position = J or L) the inner cooling air circuit creates an inner cooling air flow, which transports the heat from rotor core and stator winding heads into hollow ribs inside the motor housing. The heat from flat and hollow ribs is dissipated by the cooling air flow of the outer fan. The outer cooling air is accelerated by the outer fan and blown over the motor housing ribs from non-drive end (NDE) in direction drive end (DE).

By the counter flow heat exchanger principle of inner and outer cooling circuit and by the optimized combination of flat and hollow ribs optimum heat dissipation is achieved.



LOHER VARIO Rib-cooled motor: cooling principle

##### **Tube-cooled motors**

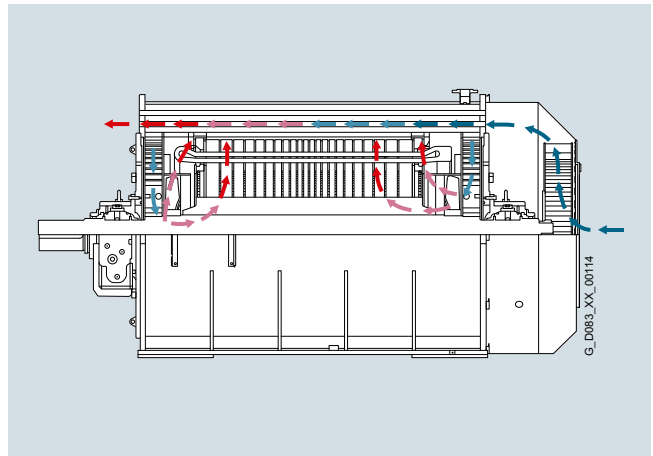
The cooling pipe rows are positioned around the stator core of the motor and act as an air-air heat exchanger.

Heat losses of stator and rotor are blown by two closed inner cooling circuits to the cooling pipes.

The outer cooling air is accelerated by the outer fan and blown through the cooling pipes from NDE in direction DE.

Balanced temperature levels inside the motor are achieved by the double-sided circular inner cooling air circuit using axial cooling channels and radial air ducts in the stator core.

Cooling air support of stator winding heads is provided by the two internal fans.



LOHER VARIO Tube-cooled motor: cooling principle

**Design**
**Standard placement**

Main terminal boxes are mounted on the right side of the motor (looking towards the DE shaft extension) by default (option K09).

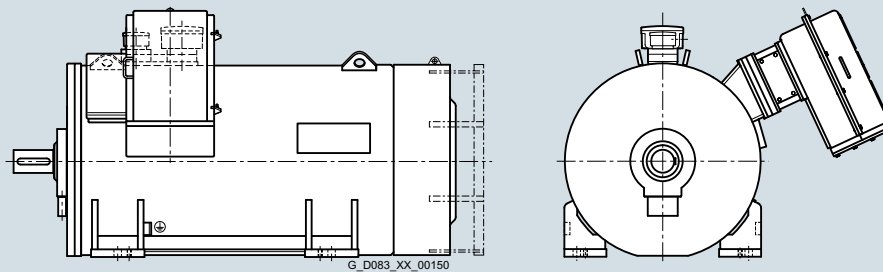
Alternatively it's possible to switch the main terminal box to the left side (option K10).

For all rib-cooled motors it's also possible to locate the main terminal box on top of the motor (option K11), for tube-cooled motors on request.

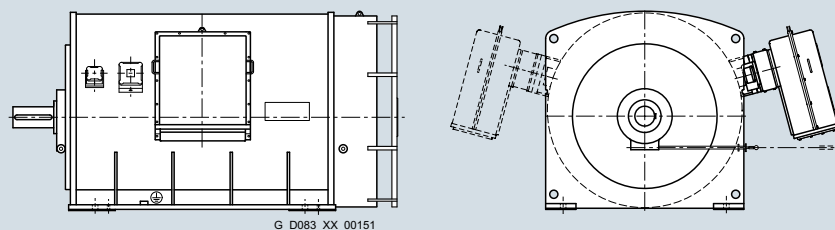
When two main terminal boxes are used, they are mounted on the right and left side of the motor. However, for tube-cooled motors it's possible to have two terminal boxes on the same side.

The terminal boxes can be subsequently rotated through 90°. In case of collisions with auxiliary terminal boxes, headquarter has to be consulted for a solution

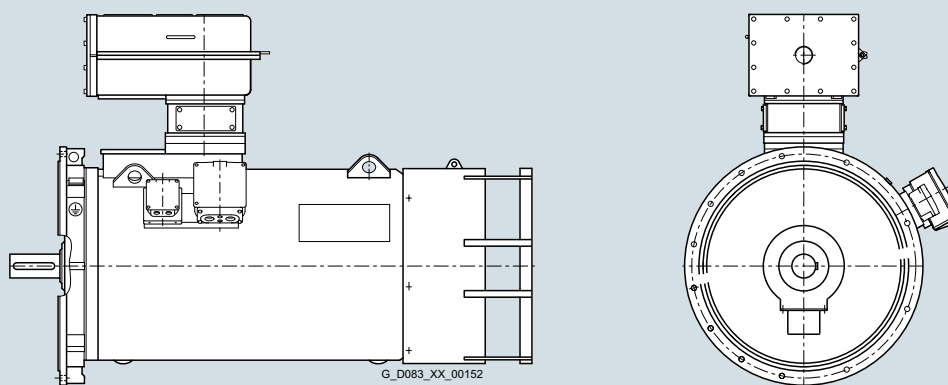
A neutral point terminal box can be mounted on request. The standard position of the neutral point terminal box is opposite the main terminal box.



Standard terminal box mounting, rib-cooled motor, IM B3



Standard terminal box mounting, tube-cooled motor, IM B3, location of neutral point terminal box indicated with dashed lines



Standard terminal box mounting, rib-cooled motor, IM V1

In case of special customer requirements about withstanding impulse short-circuit current, we need detailed information to offer a solution.

The main terminal's screws are secured using retaining rings.

**Note**

- Drains and breathers for terminal boxes are available on request.
- Electrical equipment without certified explosion protection can be used in hazardous areas inside a flameproof enclosure (terminal box).

## Design

### Main terminal boxes

#### Cable entry

##### Overview

Information about cables or the thread size for cable glands must be provided prior to an order!

If this information is not available, terminal boxes will be delivered with undrilled cable entry plates (not permitted for flameproof terminal boxes!).

Main terminal box with cable glands can be delivered ([see page 2/45](#)). For anything special, all necessary data (manufacturer, type, thread size, cable diameter(s), etc...) must be provided for an offer.

If cable glands are not included in our scope, cable entries are closed by certified threaded closing plugs.

On request, increased safety (II 2 G Ex e IIC Gb) terminal boxes can be delivered with undrilled cable entry plates.

This is not possible for flameproof (II 2 G Ex d IIC Gb) design!

Main cable entry plates for single cables have to be of nonmagnetic material (brass, stainless steel, aluminum...) to prevent local heating.

### Overview

- Standard main terminal box up to 6.6 kV rated voltage, up to 400 A (standard conditions)
- Welded steel design  $\geq 3$  mm wall thickness
- Mechanical enclosure IP66
- Ex protection II 2 G Ex e IIC Gb
- Low temperature design down to  $-40$  °C
- Synthetic stud insulator
- Three M16 terminals for line connection
- Connection using round terminals M16-60 according to DIN 46223 up to  $300$  mm<sup>2</sup>
- Alternative connection using cable lugs
- Nominal short-circuit current 43.8 kA for 0.2 s duration, only if connected with cable lugs
- Terminals approved for short-circuit power of 500 MVA at 6 kV, only if connected with cable lugs
- Internal grounding terminal  $2 \times 16 - 150$  mm<sup>2</sup>  
External grounding connection on request

### Design

The terminal boxes can be rotated in  $90^\circ$  steps.

The thread size of cable entries has to be defined; the maximum possible dimension is M100x2.

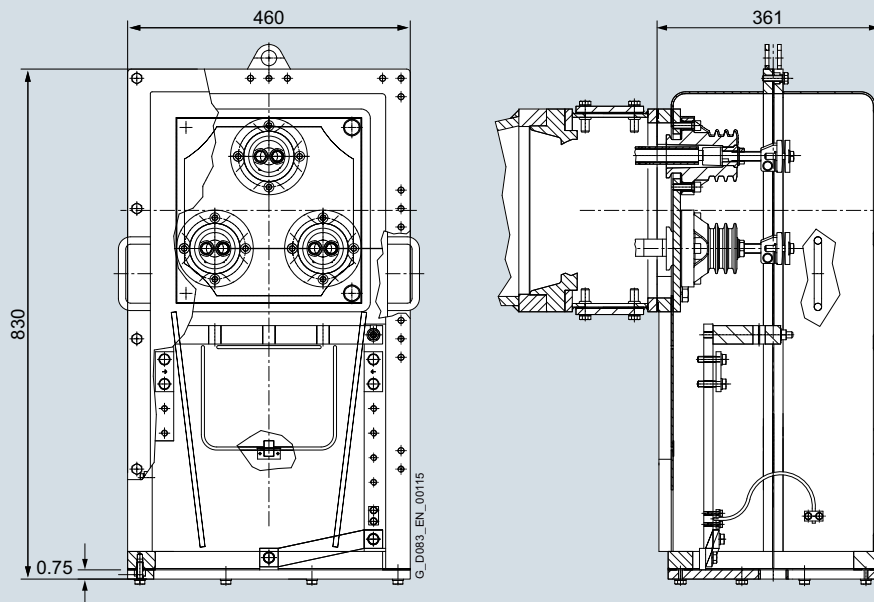
If this information is not available, terminal boxes will be delivered with undrilled cable entry plates.

Main terminal box with cable glands can be delivered (see page 2/45). For anything special, all necessary data (manufacturer, type, thread size, cable diameter(s), etc...) must be provided for an offer.

All screws of the main terminal box are made of galvanized steel and coated by the motor's coating system if outside.

On request the screws of the main terminal box can be made of stainless steel V4A (option P45).

### Dimensional drawings



Standard terminal box 9-103 382.60

## Design

### Main terminal boxes

#### Standard terminal box 9-103 472.60

##### Overview

- Standard main terminal box up to 11 kV rated voltage, up to 400 A (standard conditions)
- Welded steel design  $\geq 3$  mm wall thickness
- Mechanical enclosure IP66
- Ex protection II 2 G Ex e IIC Gb
- Low temperature design down to  $-40$  °C
- Synthetic stud insulator
- Three M16 terminals for line connection
- Connection using round terminals M16-60 according to DIN 46223 up to  $300$  mm<sup>2</sup>
- Alternative connection using cable lugs
- Nominal short-circuit current  $46.2$  kA for  $0.2$  s duration, only if connected with cable lugs
- Terminals approved for short-circuit power of  $880$  MVA at  $11$  kV, only if connected with cable lugs
- Internal grounding terminal  $2 \times 16 - 150$  mm<sup>2</sup>  
External grounding connection on request

##### Design

The terminal boxes can be rotated in  $90^\circ$  steps.

The thread size of cable entries has to be defined; the maximum possible dimension is M100x2.

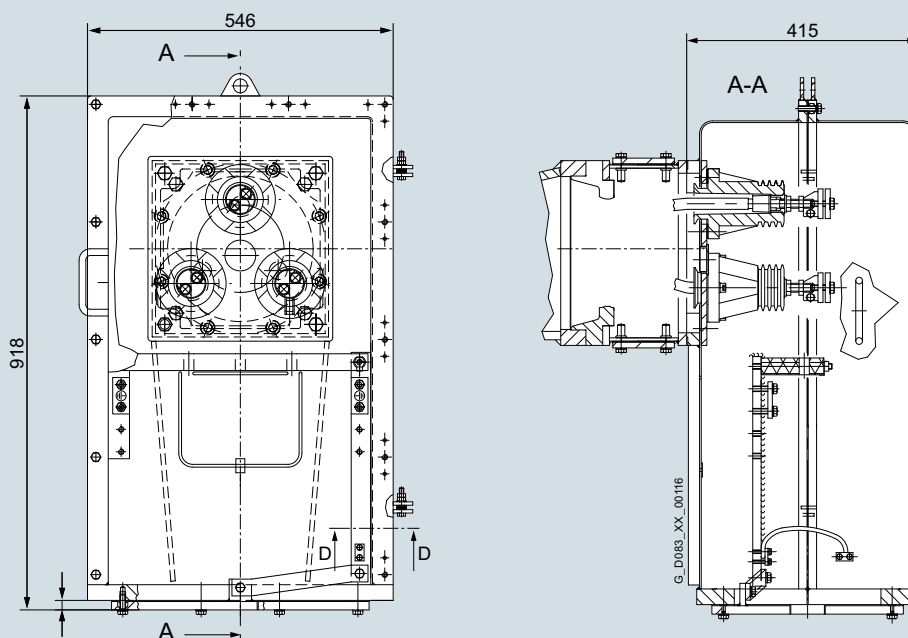
If this information is not available, terminal boxes will be delivered with undrilled cable entry plates.

Main terminal box with cable glands can be delivered (see page 2/45). For anything special, all necessary data (manufacturer, type, thread size, cable diameter(s), etc...) must be provided for an offer.

All screws of the main terminal box are made of galvanized steel and coated by the motor's coating system if outside.

On request the screws of the main terminal box can be made of stainless steel V4A (option P45).

##### Dimensional drawings



Standard terminal box 9-103 472.60

### Overview

- Flameproof main terminal box up to 6.6 kV rated voltage, up to 250 A (standard conditions)
- Welded steel design, approx. 200 kg, cold resistant steel
- Mechanical enclosure IP66
- Ex protection II 2 G Ex d IIC Gb
- Low temperature design down to -55 °C
- Ceramic stud insulator
- Three M12 terminals for line connection
- Connection using round terminals M12-52 according to DIN 46223 up to 150 mm<sup>2</sup>
- Alternative connection using cable lugs
- Terminals approved for short-circuit power of 250 MVA at 6.6 kV, only if connected with cable lugs
- Internal grounding terminal 2 x 2.5 – 150 mm<sup>2</sup>
- External grounding connection on request

### Design

The terminal boxes can be rotated in 90° steps.

The thread size of cable entries has to be defined; the maximum possible dimension is M100x2.

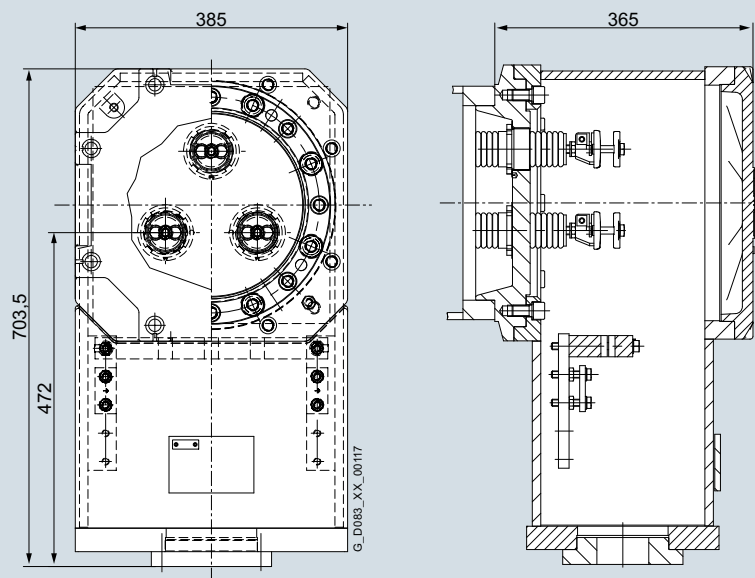
Main terminal box with cable glands can be delivered ([see page 2/45](#)). For anything special, all necessary data (manufacturer, type, thread size, cable diameter(s), etc...) must be provided for an offer.

If cable glands are not included in our scope, cable entries are closed by certified closing plugs.

All screws of the main terminal box are made of galvanized steel and coated by the motor's coating system if outside.

On request the screws of the main terminal box can be made of stainless steel V4A (option P45).

### Dimensional drawings



Terminal box 9-108 363.21A (option Q31)

## Design

### Main terminal boxes

#### Terminal box 9-108 363.22A (option V37)

##### Overview

- Flameproof main terminal box up to 6.6 kV rated voltage, up to 315 A (standard conditions)
- Welded steel design,  $\geq 12$  mm, cold resistant steel
- Mechanical enclosure IP66
- Ex protection II 2 G Ex d IIC Gb
- Low temperature design down to  $-55$  °C
- Synthetic stud insulator
- Three M16 terminals for line connection
- Connection using round terminals M16-60 according to DIN 46223 up to  $300$  mm<sup>2</sup>
- Alternative connection using cable lugs
- Terminals approved for short-circuit power of 400 MVA for 0.2 s at 6.6 kV, only if connected with cable lugs
- Internal grounding terminal  $2 \times 2.5 - 150$  mm<sup>2</sup>
- External grounding connection on request

##### Design

The terminal boxes can be rotated in  $90^\circ$  steps.

The thread size of cable entries has to be defined; the maximum possible dimension is M100x2.

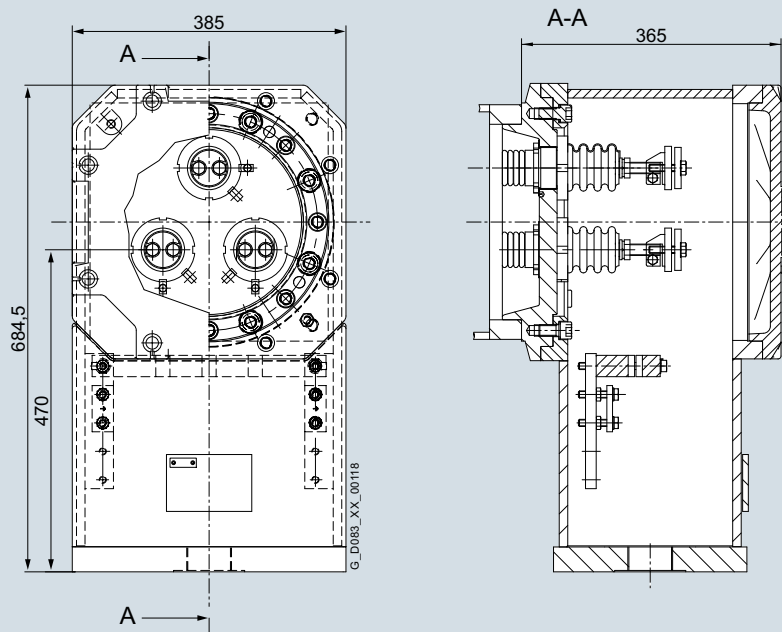
Main terminal box with cable glands can be delivered ([see page 2/45](#)). For anything special, all necessary data (manufacturer, type, thread size, cable diameter(s), etc...) must be provided for an offer.

If cable glands are not included in our scope, cable entries are closed by certified closing plugs.

All screws of the main terminal box are made of galvanized steel and coated by the motor's coating system if outside.

On request the screws of the main terminal box can be made of stainless steel V4A (option P45).

##### Dimensional drawings



Terminal box 9-108 363.22A (option V37)



### Overview

- Flameproof main terminal box up to 11 kV rated voltage, up to 400 A (standard conditions)
- Welded steel design, approx. 550 kg,  $\geq 20$  mm, cold resistant steel
- Mechanical enclosure IP66
- Ex protection II 2 G Ex d IIC Gb
- Low temperature design down to  $-55$  °C
- Synthetic stud insulator
- Three M16 terminals for line connection
- Connection using round terminals M16-60 according to DIN 46223 up to  $300 \text{ mm}^2$
- Alternative connection using cable lugs
- Terminals approved for short-circuit power of 700 MVA for 0.2 s at 10 kV, only if connected with cable lugs
- Internal grounding terminal  $2 \times 2.5 - 150 \text{ mm}^2$
- External grounding connection on request

### Design

The terminal boxes can be rotated in  $90^\circ$  steps.

The thread size of cable entries has to be defined; the maximum possible dimension is M100x2.

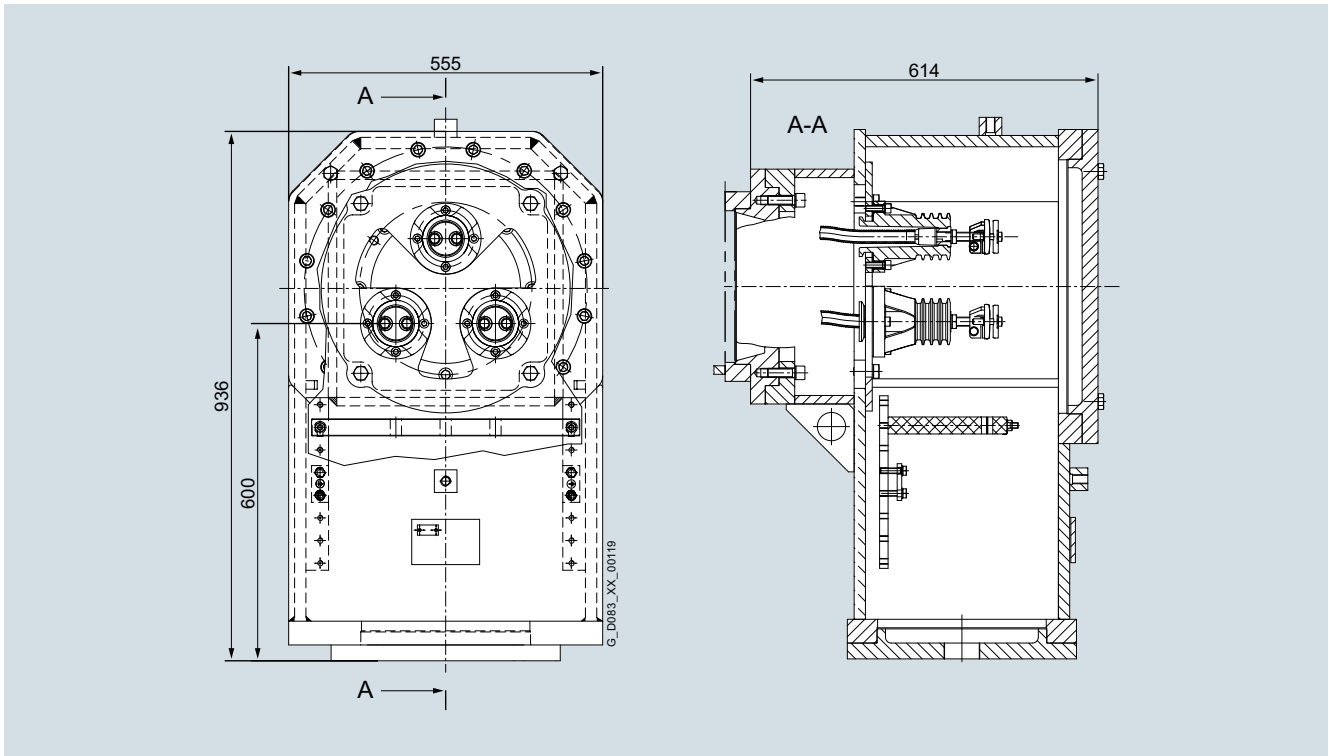
Main terminal box with cable glands can be delivered (see page 2/45). For anything special, all necessary data (manufacturer, type, thread size, cable diameter(s), etc...) must be provided for an offer.

If cable glands are not included in our scope, cable entries are closed by certified closing plugs.

All screws of the main terminal box are made of galvanized steel and coated by the motor's coating system if outside.

On request the screws of the main terminal box can be made of stainless steel V4A (option P45).

### Dimensional drawings



Terminal box 9-108 493.01A (option V45)

## Design

### Main terminal boxes

#### Terminal box 9-103A 602.60 (option V50)

##### Overview

- Phase segregated design
- Main terminal box up to 6.6 kV rated voltage, up to 400 A (standard conditions)
- Welded steel design  $\geq 3$  mm wall thickness
- Mechanical enclosure IP66
- Ex protection II 2 G Ex e IIC Gb
- Low temperature design down to  $-40$  °C
- Synthetic stud insulator
- Three M16 terminals for line connection
- Connection using round terminals M16-60 according to DIN 46223 up to  $300$  mm<sup>2</sup>
- Alternative connection using cable lugs
- Nominal short-circuit current 43.7 kA for 0.25 s duration
- Terminal box approved for short-circuit power of 500 MVA at 6.6 kV
- Internal grounding terminal  $3 \times 16 - 150$  mm<sup>2</sup>  
External grounding connection on request

##### Design

The terminal boxes can be rotated in  $90^\circ$  steps.

The thread size of cable entries has to be defined; the maximum possible dimension is M100x2.

If this information is not available, terminal boxes will be delivered with undrilled cable entry plates.

Main terminal box with cable glands can be delivered (see page 2/45). For anything special, all necessary data (manufacturer, type, thread size, cable diameter(s), etc....) must be provided for an offer.

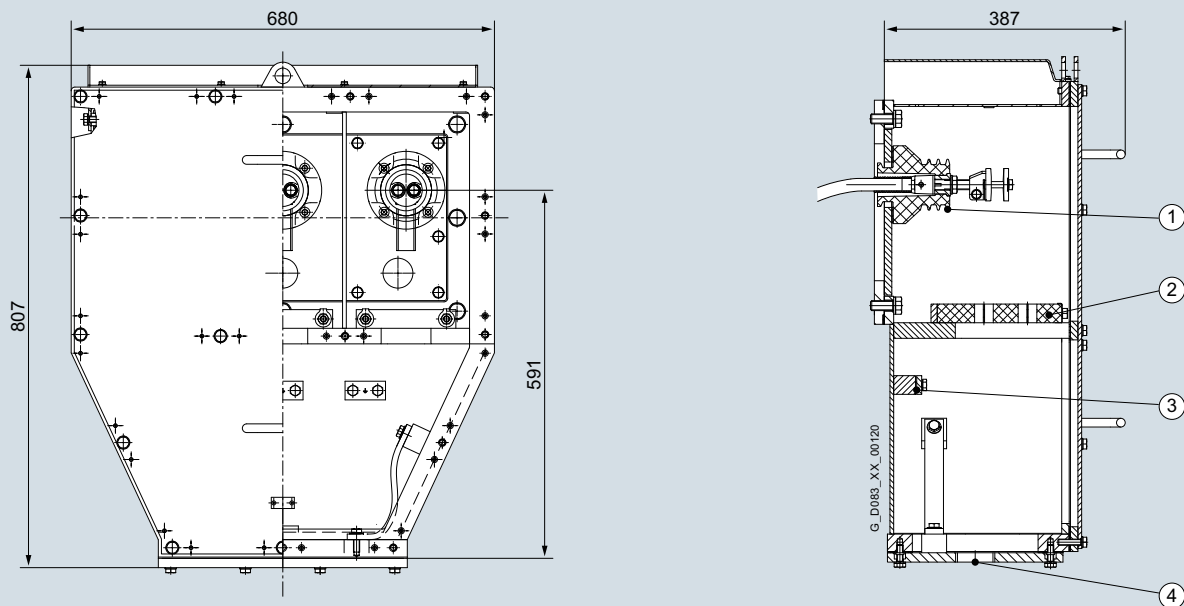
All screws of the main terminal box are made of galvanized steel and coated by the motor's coating system if outside.

On request the screws of the main terminal box can be made of stainless steel V4A (option P45).

##### More information

See option V51 for a six terminal version of this main terminal box!

#### Dimensional drawings



Phase segregated terminal box 9-103A 602.60 (option V50)

### Overview

- Phase segregated design
- Main terminal box up to 11 kV rated voltage, up to 400 A (standard conditions)
- Welded steel design  $\geq 3$  mm wall thickness
- Mechanical enclosure IP66
- Ex protection II 2 G Ex e IIC Gb
- Low temperature design down to  $-40$  °C
- Synthetic stud insulator
- Three M16 terminals for line connection
- Connection using round terminals M16-60 according to DIN 46223 up to  $300$  mm<sup>2</sup>
- Alternative connection using cable lugs
- Nominal short-circuit current 46.2 kA for 0.25 s duration, 31.5 kA for 1 s duration
- Terminal box approved for short-circuit power of 880 MVA at 11 kV
- Internal grounding terminal  $3 \times 16 - 150$  mm<sup>2</sup>  
External grounding connection on request

### Design

The terminal boxes can be rotated in  $90^\circ$  steps.

The thread size of cable entries has to be defined; the maximum possible dimension is M100x2.

If this information is not available, terminal boxes will be delivered with undrilled cable entry plates.

Main terminal box with cable glands can be delivered (see page 2/45). For anything special, all necessary data (manufacturer, type, thread size, cable diameter(s), etc...) must be provided for an offer.

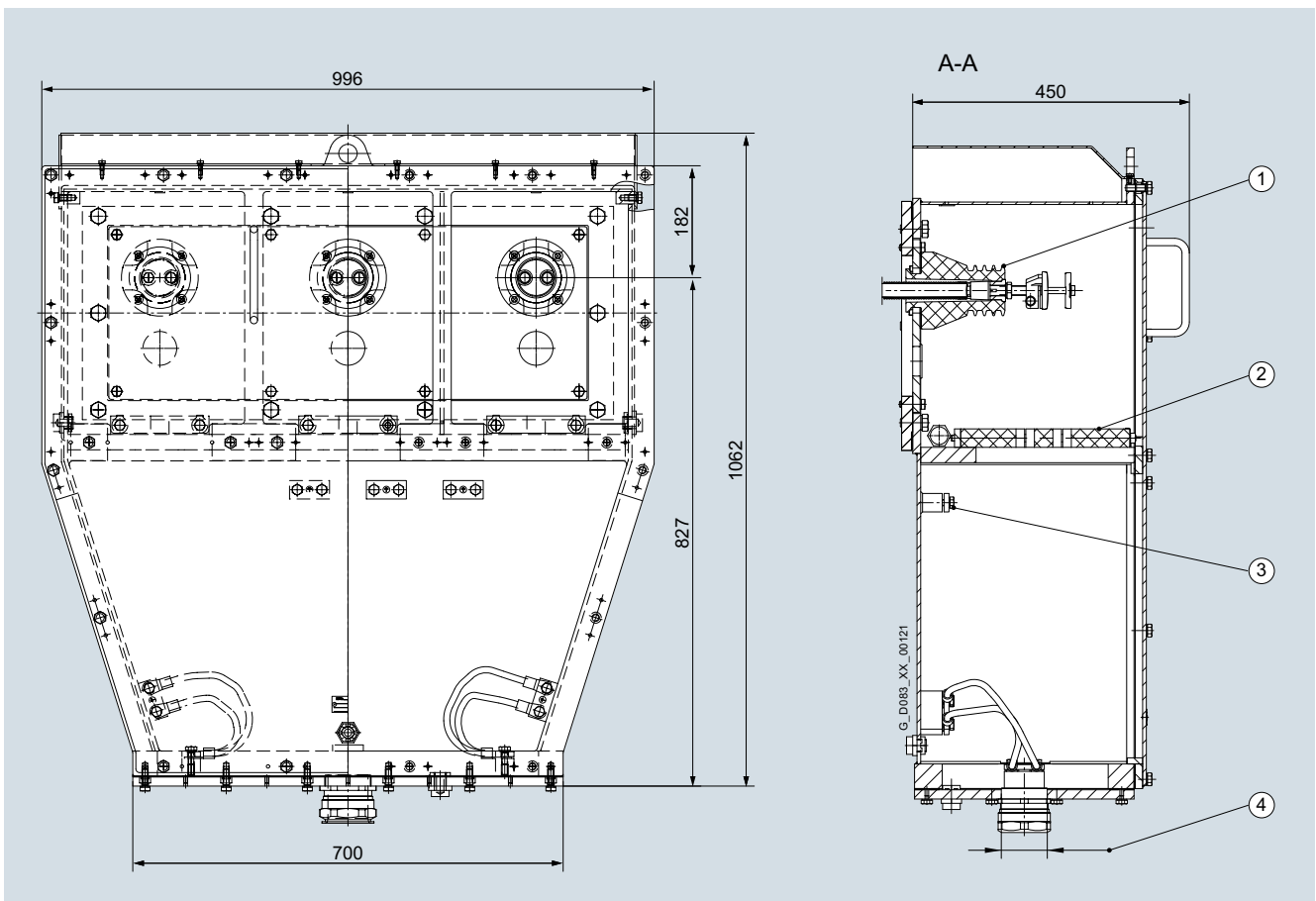
All screws of the main terminal box are made of galvanized steel and coated by the motor's coating system if outside.

On request the screws of the main terminal box can be made of stainless steel V4A (option P45).

### More information

See option V24 for a six terminal version of this main terminal box!

### Dimensional drawings



Phase segregated terminal box 9-103A 912.60 (option V23)

## Design

### Terminal boxes for neutral point

#### General

#### Overview

A neutral point terminal box can be mounted on request. The standard position of the neutral point terminal box is opposite the main terminal box.

[For standard positions of main terminal boxes see page 2/13.](#)

It is possible to use most 6 terminal versions of main terminal boxes for putting the neutral point inside the main terminal box.

### Standard neutral point terminal box 9-103D 382.60 (option L55)

#### Overview

- Standard neutral point terminal box up to 6.6 kV rated voltage, up to 400 A (standard conditions)
- Welded steel design  $\geq 3$  mm wall thickness
- Mechanical enclosure IP66
- Ex protection II 2 G Ex e IIC Gb
- Low temperature design down to  $-40$  °C
- Synthetic stud insulator, three M16 terminals
- Internal grounding terminal  $2 \times 16 - 150$  mm<sup>2</sup>  
External grounding connection on request

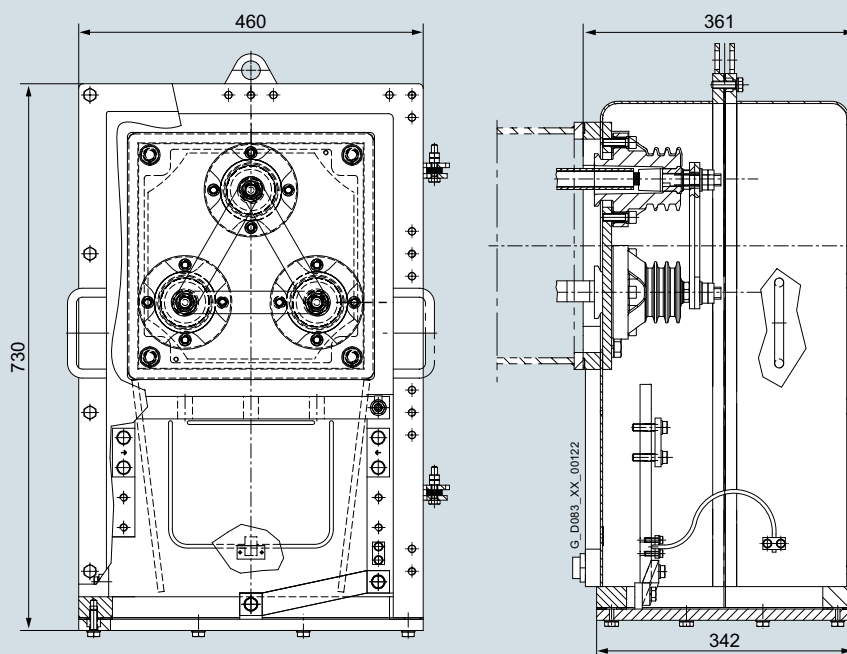
#### Design

The terminal boxes can be rotated in  $90^\circ$  steps.

All screws of the neutral point terminal box are made of galvanized steel and coated by the motor's coating system if outside.

On request the screws of the neutral point terminal box can be made of stainless steel V4A (option P45).

#### Dimensional drawings



Standard neutral point terminal box 9-103D 382.60 (option L55)

## Design

### Terminal boxes for neutral point

#### Standard neutral point terminal box 9-103D 472.60 (option L56)

##### Overview

- Standard neutral point terminal box 11 kV rated voltage up to 400 A (standard conditions)
- Welded steel design  $\geq 3$  mm wall thickness
- Mechanical enclosure IP66
- Ex protection II 2 G Ex e IIC Gb
- Low temperature design down to  $-40$  °C
- Synthetic stud insulator, three M16 terminals
- Internal grounding terminal  $2 \times 16 - 150$  mm<sup>2</sup>  
External grounding connection on request

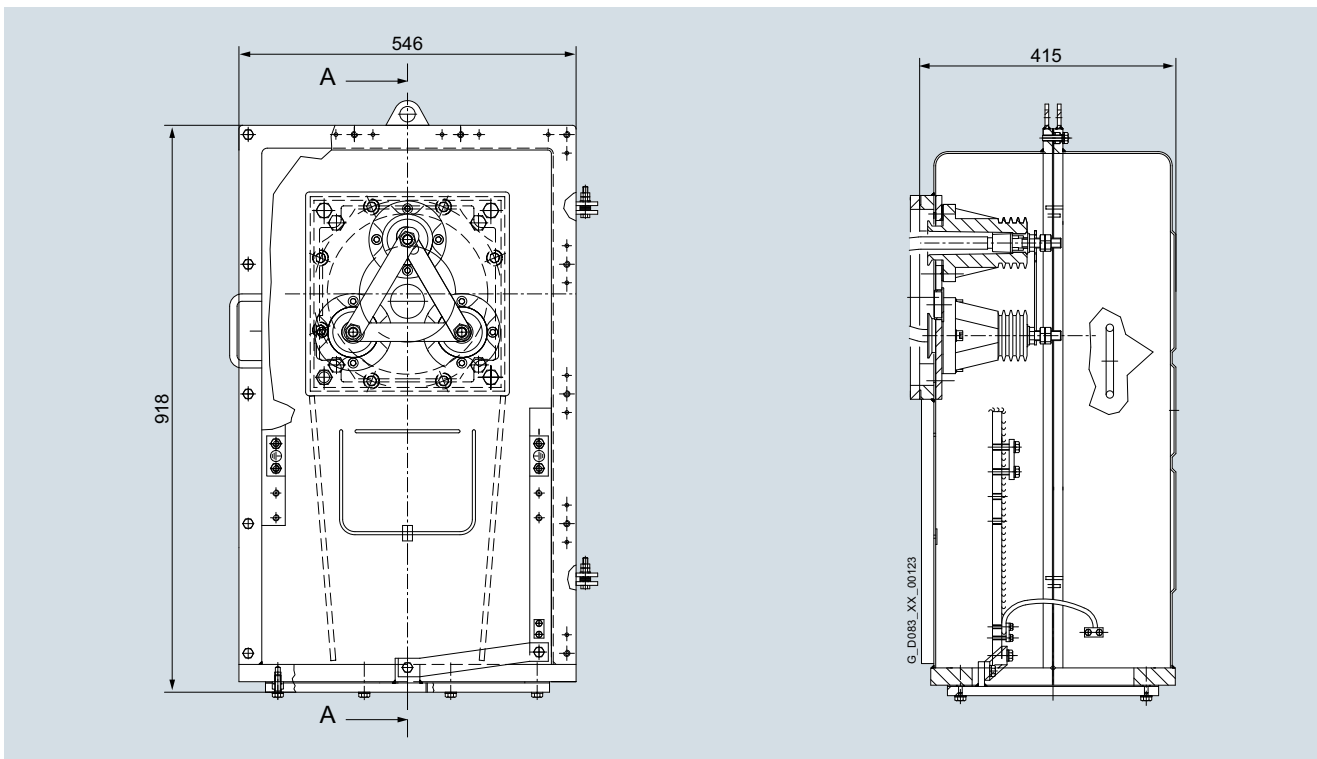
##### Design

The terminal boxes can be rotated in 90° steps.

All screws of the neutral point terminal box are made of galvanized steel and coated by the motor's coating system if outside.

On request the screws of the neutral point terminal box can be made of stainless steel V4A (option P45).

##### Dimensional drawings



Standard neutral point terminal box 9-103D 472.60 (option L56)

### Neutral point terminal box 9-108D 363.21A (option V38)

#### Overview

- Flameproof neutral point terminal box up to 6.6 kV rated voltage up to 250 A (standard conditions)
- Welded steel design, approx. 190 kg, cold resistant steel
- Mechanical enclosure IP66
- Ex protection II 2 G Ex d IIC Gb
- Low temperature design down to -55 °C
- Ceramic stud insulator, three M12 terminals
- Internal grounding terminal 2 x 2.5 – 150 mm<sup>2</sup>  
External grounding connection on request

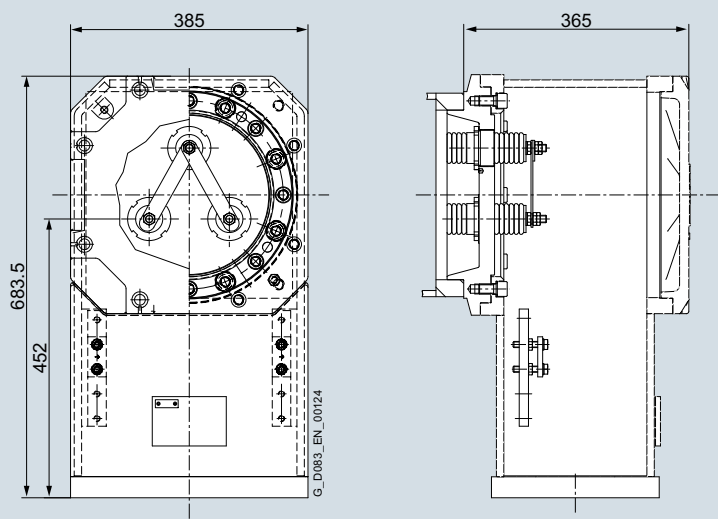
#### Design

The terminal boxes can be rotated in 90° steps.

All screws of the neutral point terminal box are made of galvanized steel and coated by the motor's coating system if outside.

On request the screws of the neutral point terminal box can be made of stainless steel V4A (option P45).

#### Dimensional drawings



Neutral point terminal box 9-108A 363.21A (option V38)

## Design

### Terminal boxes for neutral point

#### Neutral point terminal box 9-108D 493.01A (option V39)

##### Overview

- Flameproof neutral point terminal box up to 11 kV rated voltage up to 400 A (standard conditions)
- Welded steel design, approx. 500 kg, cold resistant steel
- Mechanical enclosure IP66
- Ex protection II 2 G Ex d IIC Gb
- Low temperature design down to -55 °C
- Synthetic stud insulator, three M16 terminals
- Internal grounding terminal 2 x 2.5 – 150 mm<sup>2</sup>  
External grounding connection on request

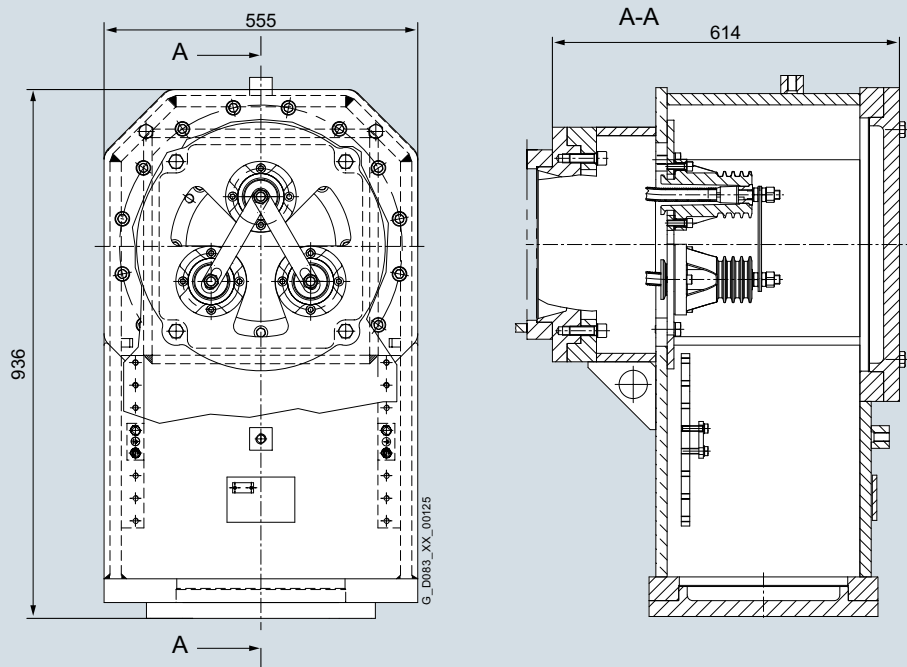
##### Design

The terminal boxes can be rotated in 90° steps.

All screws of the neutral point terminal box are made of galvanized steel and coated by the motor's coating system if outside.

On request the screws of the neutral point terminal box can be made of stainless steel V4A (option P45).

##### Dimensional drawings



Neutral point terminal box 9-108D 493.01A (option V39)



**Neutral point terminal box 9-108D 493.03A (option V40)****Overview**

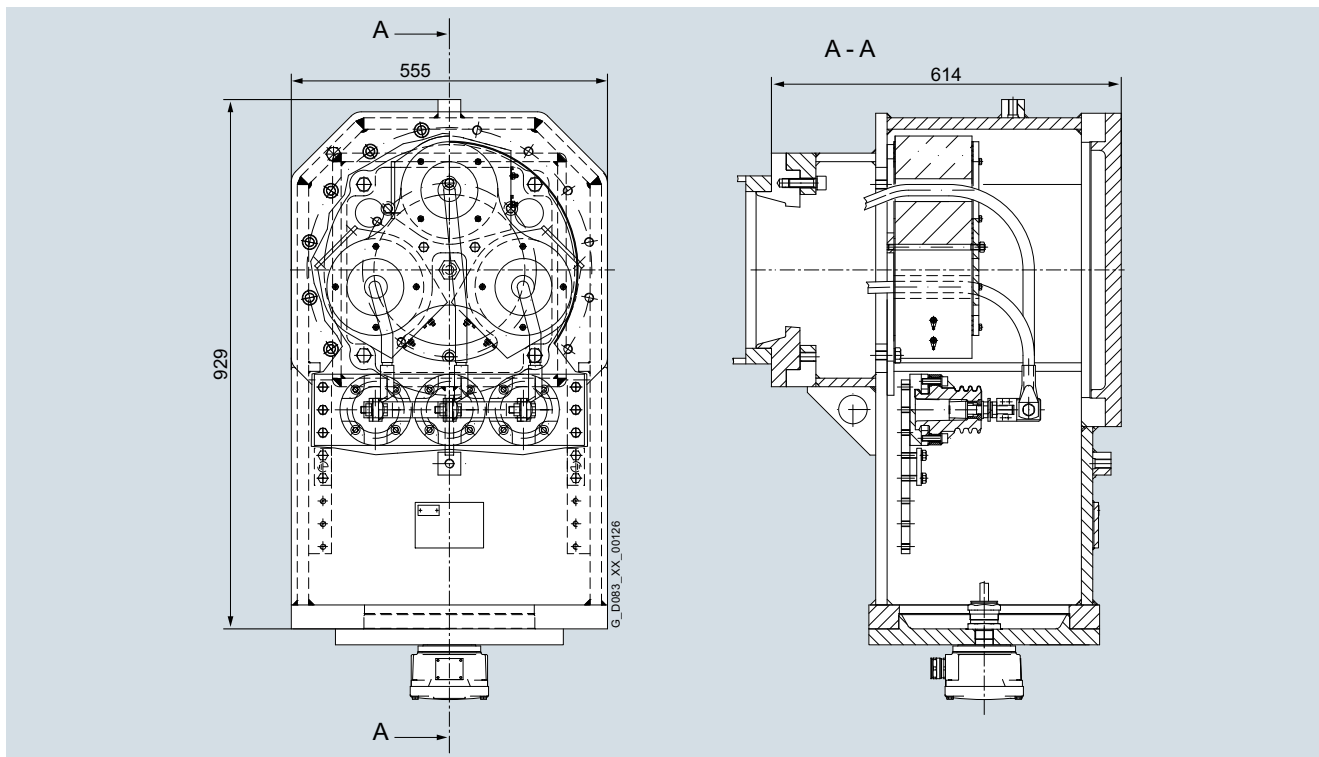
- Flameproof neutral point terminal box up to 11 kV rated voltage, up to 400 A (standard conditions) provisioned for 3 window type current transformers
- Welded steel design, 15/20 mm
- Mechanical enclosure IP66
- Ex protection II 2 G Ex d IIC Gb
- Low temperature design down to -40 °C
- Ceramic stud insulator, three M16 terminals
- Internal grounding terminal 2 x 2.5 – 150 mm<sup>2</sup>  
External grounding connection on request

**Design**

The terminal boxes can be rotated in 90° steps.

All screws of the neutral point terminal box are made of galvanized steel and coated by the motor's coating system if outside.

On request the screws of the neutral point terminal box can be made of stainless steel V4A (option P45).

**Dimensional drawings**

Neutral point terminal box 9-108D 493.03A (option V40), provisioned for 3 window type current transformers

## Design

### Auxiliary terminal boxes

#### General

#### Overview

The purpose of the auxiliary terminal box is to house terminals for connecting monitoring elements, heaters, etc. and to accommodate transmitters.

For the sake of standardization, the scope of supply is restricted to the general types of auxiliary terminal box and terminal versions listed below.

Cast iron (W72) and stainless steel (M51) auxiliary terminal boxes are available as standard options in increased safety (II 2 G Ex e IIC Gb) design.

Cast iron (V43) auxiliary terminal boxes are available as standard option in flameproof (II 2 G Ex d IIC Gb) design.

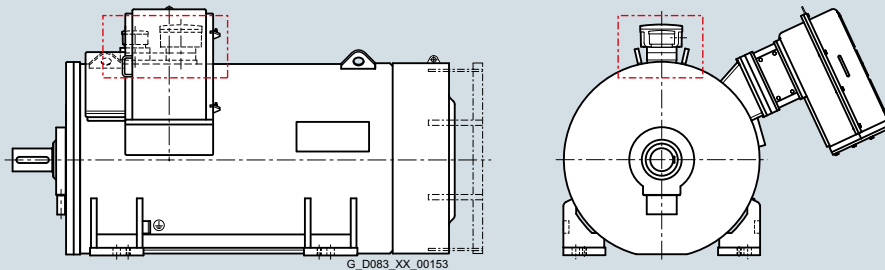
#### Note

Customer specific alternatives have to be specified and agreed in advance.

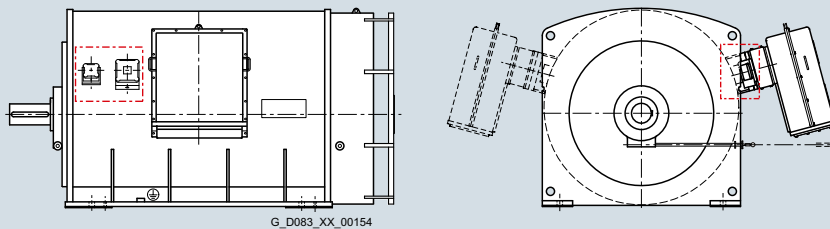
**Overview** (continued)

The auxiliary terminal box houses the terminals used to connect the anti-condensation heater and monitoring elements such as Pt100s, PTCs, etc.

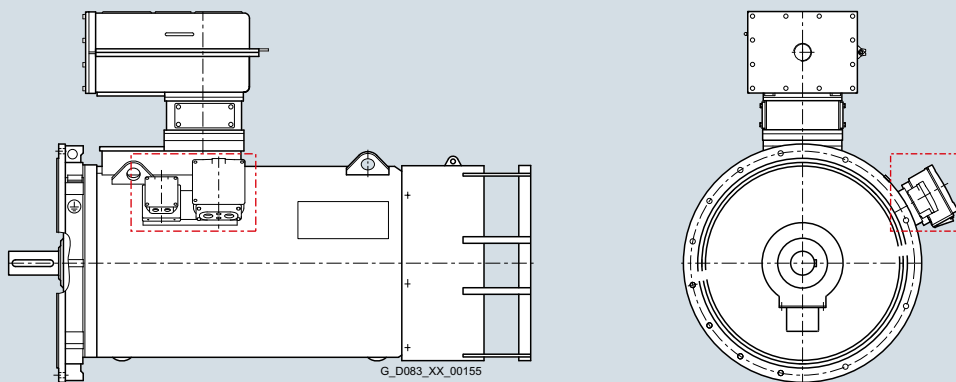
See the sketch below for standard positions of auxiliary terminal boxes; however other positions are also possible. If necessary, a large number of auxiliary terminal boxes can be mounted on LOHER VARIO Rib-cooled and LOHER VARIO Tube-cooled motors.



LOHER VARIO Rib-cooled IM B3 standard positions of auxiliary terminal boxes



LOHER VARIO Tube-cooled IM B3 standard positions of auxiliary terminal boxes



LOHER VARIO Rib-cooled IM V1 standard positions of auxiliary terminal boxes

## Design

### Auxiliary terminal boxes

#### General

#### Overview (continued)

##### Earthing

The earthing of auxiliary terminal boxes is established by surface of contact between the auxiliary terminal boxes and the motor housing.

There is no separate earthing connection apart from that by default; however it might be there on a case to case basis due to practical reasons (i.e. if externally purchased terminal boxes from sensors are placed on the motor).

If a separate earthing connection between auxiliary terminal boxes and motor housing is required, feasibility and cost impact have to be clarified in advance.

##### **Standard for LOHER VARIO Rib-cooled and LOHER VARIO Tube-cooled motors**

- Connection of monitoring elements and anti-condensation heating in separate auxiliary terminal boxes
- The following terminal box options are available:
  - Mounting transmitters, plus additional cost for transmitters. See option P20 and V83 for standard transmitter designs.
  - Terminal box design (cast iron only) with removable gland plates. See options Q75 and Q76.
- For motors with a large number of built-on components, Siemens must be consulted about the desired or required number of auxiliary terminal boxes before the order is placed, e.g.:
  - Neutral point terminal box equipment (current transformers, partial discharge monitoring etc...)
  - Antifriction bearing monitoring equipment (SPM, housing vibration monitoring, speed monitoring etc...)
  - Sleeve bearing monitoring equipment (vibration detection, keyphasor etc...)

##### Note

For more information about available options, see page 6/9 (Temperature gauges and transmitters) and page 6/10 (Auxiliary terminal boxes).

**Overview**

Auxiliary terminal boxes are delivered with thread M25x1.5, if no information is given.

On request, special thread sizes can be realized, if detailed information and all necessary data (manufacturer, type, thread size, cable diameter(s), etc...) is available prior to the order.

If cable glands are not included in our scope, cable entries are closed by certified threaded closing plugs.

On request, increased safety (II 2 G Ex e IIC Gb) terminal boxes can be delivered with undrilled cable entry plates.

This is not possible for flameproof (II 2 G Ex d IIC Gb) design!

## Design

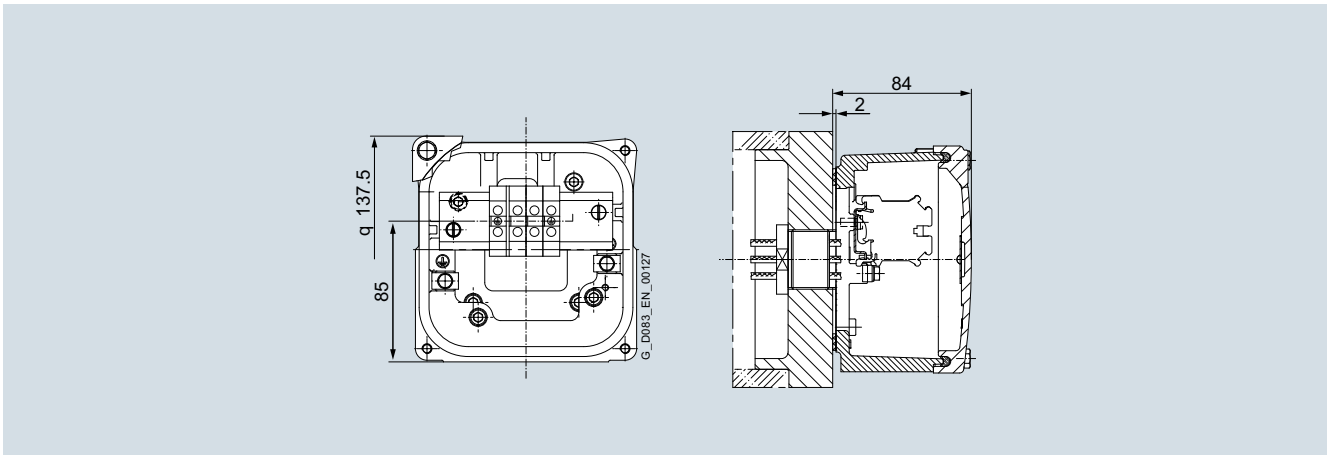
### Auxiliary terminal boxes

#### Terminal box 9-106B 122.06 – cast iron Ex e design (option M52)

##### Overview

- For connection of space heaters
- Auxiliary terminal box 630 V rated voltage
- Cast iron design
- Mechanical enclosure IP66
- Ex protection II 2 G Ex e IIC Gb
- Low temperature design down to -55 °C
- Maximum no. of terminals: 10
- No removable gland plate

##### Dimensional drawings



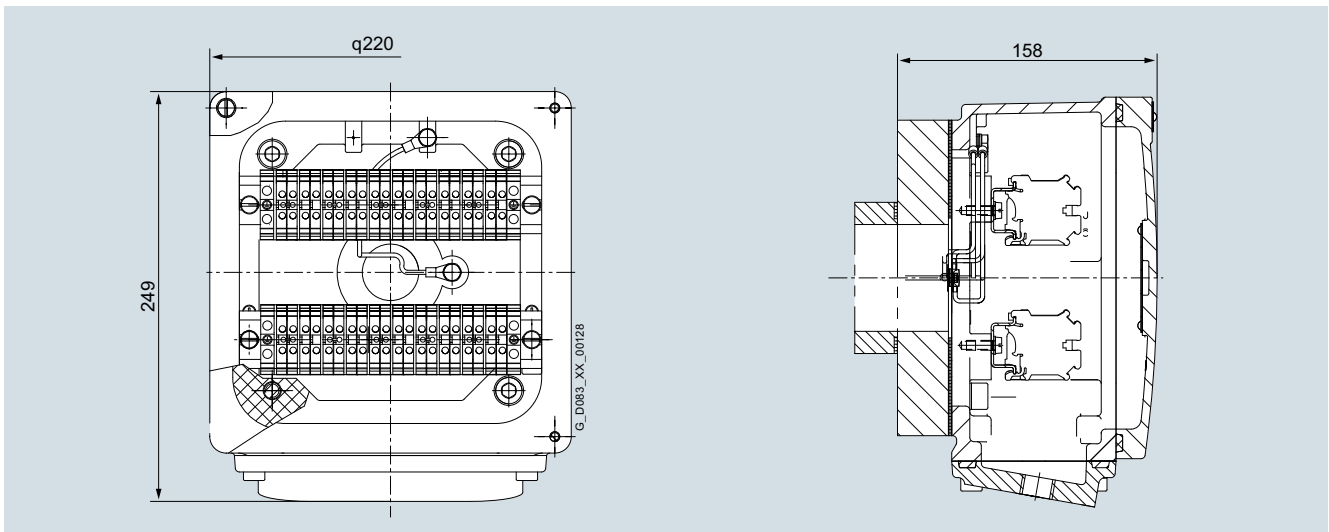
Auxiliary terminal box 9-106B 122.06 – cast iron Ex e design (option M52)

### Terminal box 9-106A 202.05 – cast iron Ex e design (option W72)

#### Overview

- For connection of monitoring elements, sensors etc.
- Auxiliary terminal box 630 V rated voltage
- Used for winding and bearing Pt100
- Cast iron design
- Mechanical enclosure IP66
- Ex protection II 2 G Ex e IIC Gb
- Low temperature design down to -55 °C
- Maximum no. of terminals: 40

#### Dimensional drawings



Auxiliary terminal box 9-106A 202.05 – cast iron Ex e design (option W72)

## Design

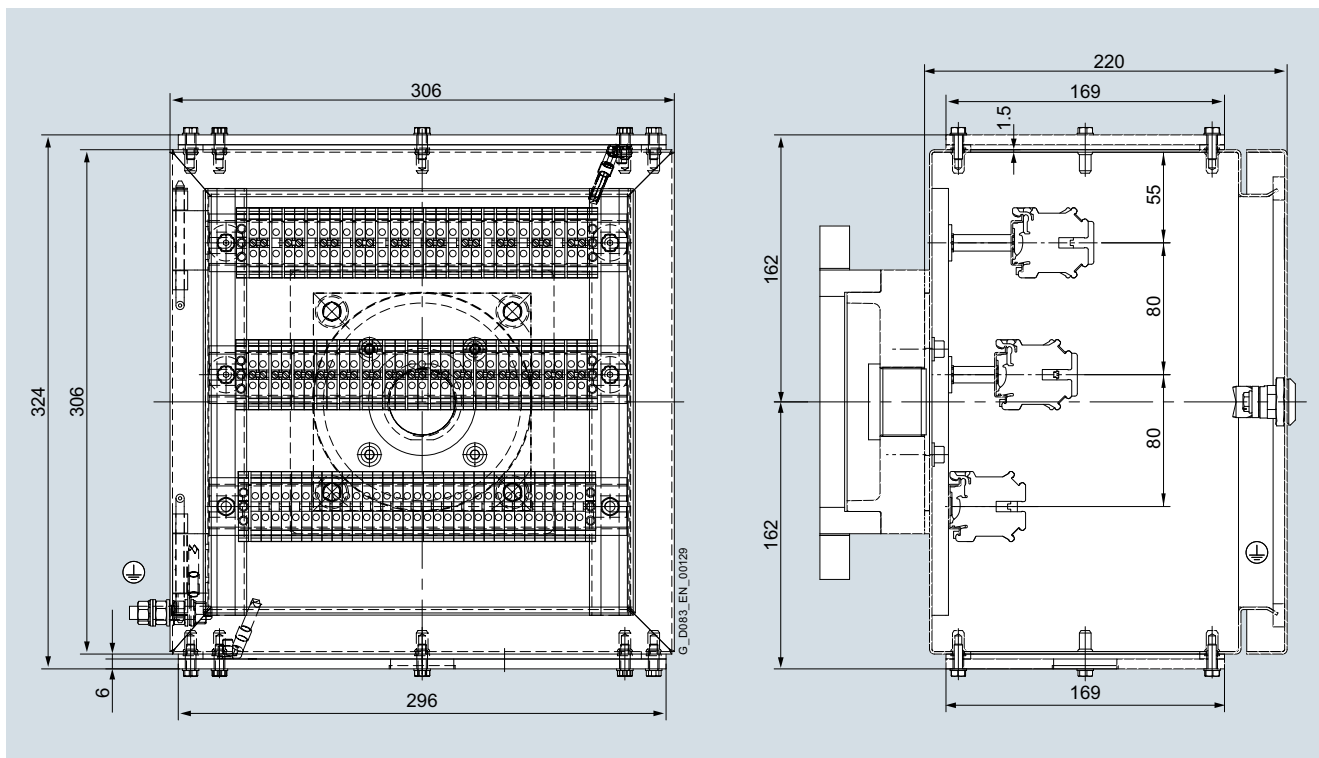
### Auxiliary terminal boxes

#### Terminal box 9-108D 302.07 – stainless steel Ex e design (option M51)

##### Overview

- For connection of monitoring elements, sensors, transmitters etc.
- Available in a wide variety of sizes and designs
- Auxiliary terminal box 630 V rated voltage
- Stainless steel design (1.4404/V4A/316L)
- Mechanical enclosure IP66
- Ex protection II 2 G Ex e IIC Gb
- Low temperature design down to -55 °C
- Maximum no. of terminals: up to 96

##### Dimensional drawings



Auxiliary terminal box 9-108D 302.07 – stainless steel Ex e design (option M51); maximum configuration with 96 terminals

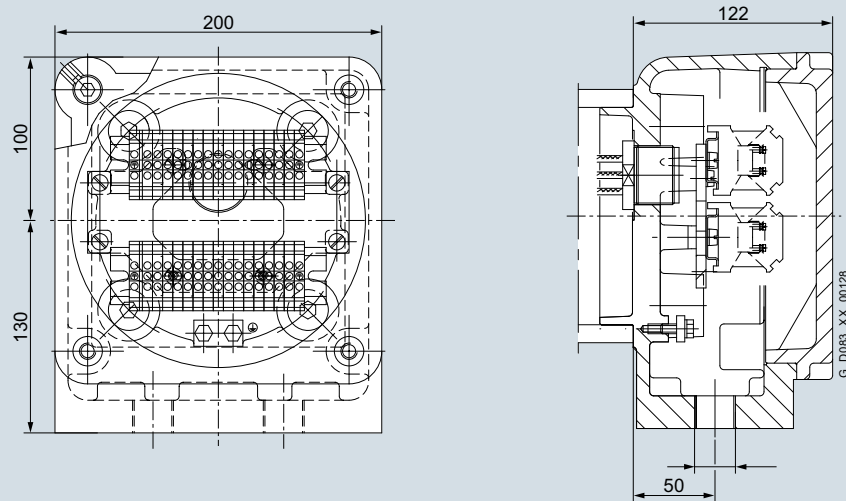


### Terminal box 9-108B 182.18 – flameproof Ex d design (option V43)

#### Overview

- For connection of monitoring elements, sensors etc.
- Auxiliary terminal box 630 V rated voltage
- Cast iron flameproof design
- Mechanical enclosure IP66
- Ex protection II 2 G Ex d IIC Gb
- Low temperature design down to -55 °C
- Maximum no. of terminals: 30

#### Dimensional drawings



Auxiliary terminal box 9-108B 182.18 – flameproof Ex d design (option V43)

## Design

### Bearing design

#### General

#### Overview

All flameproof motors can be equipped with antifriction bearings.

Exception: 2-pole motors of frame size 630, 800 and 1000 mm.

Starting with frame size 400 mm all flameproof motors of gas group IIB can be made with sleeve bearings.

2-pole vertical flameproof motors of frame size 450 mm and higher and all vertical flameproof motors driven by a converter have to be inquired.

Bearings are generally outside the flameproof enclosure, therefore it's highly advised to monitor the bearing temperature i.e. using bearing Pt100s.

## Overview

Motors equipped with antifriction bearings have as standard deep-groove ball bearings according to DIN 625, with angular-contact ball bearings to DIN 628 and/or cylindrical roller bearings to DIN 5412.

The outer bearing sealing is designed as a maintenance-free labyrinth seal, resulting in a mechanical protection IP56 of LOHER VARIO Rib-cooled and LOHER VARIO Tube-cooled motors.

The antifriction bearings are lubricated with mineral-oil-based lithium soap grease. The bearings have a relubrication device with flat grease nipple M10 x 1 to DIN 3404 and space for spent grease. This is large enough to cover the calculated bearing life when the relubrication intervals and quantities are observed (lubrication data can be found on lubrication plate or in order documentation).

The bearings must be relubricated at appropriate intervals to ensure that they achieve their nominal service life.

A version with spent grease removal is possible at an additional price on request (frame size 450 and higher).

Note: Antifriction bearings of LOHER VARIO Rib-cooled and LOHER VARIO Tube-cooled motors are designed for a bearing lifetime LH10 = 40000 hours (standard conditions)

**Increased lateral forces**

Bearings for increased lateral forces (e.g. belt drives, fans) will be designed according to actual forces.

At least the following parameters are needed for calculation in the early offer stage:

- Maximum axial force on the motor shaft
- Maximum radial force on the motor shaft
- Distance between load application point and the shaft shoulder
- Required shaft end dimensions

**Overview of antifriction bearing types for line operation, standard conditions:**

Motor type	Number of poles	Gas group	Mounting type IM 1001 (B3)		Mounting type IM 3001 (V1) <sup>1)</sup>	
			DE <sup>2)</sup>	NDE	DE <sup>2)</sup>	NDE
1PS.35.-6BH...-AA0	2	IIB+IIC	6316.C3	6316.C3	6316.C4	6316.C3
1PS.35.-6BH...-A0	≥ 4	IIB+IIC	6320.C3	6320.C3	6320.C3	6320.C3
1MV.35.-6BD...-AA0	2	IIB+IIC	6316.C3	6316.C3	6320.C3	6316.C3
1MV.35.-6BD...-A0	≥ 4	IIB+IIC	6322.C3	6316.C3	6322.C3	6316.C3
1PS.35.-6BJ...-AA0	2	IIB+IIC	6316.C4	6316.C4	6318.C4	6316.C4
1PS.35.-6BJ...-A0	≥ 4	IIB+IIC	6320.C3	6320.C3	6320.C3	6320.C3
1PS.40.-6BJ...-AA0	2	IIB+IIC	6317.C4	6317.C4	6320.C4	6317.C4
1PS.40.-6BJ...-A0	≥ 4	IIB+IIC	6322.C3	6322.C3	6322.C3	6322.C3
1MV.40.-6BJ...-AA0	2	IIB+IIC	6317.C4	6317.C4	6320.C4	6317.C4
1MV.40.-6BJ...-A0	≥ 4	IIB+IIC	6322.C3	6322.C3	6322.C3	6322.C3
1PS.45.-6BJ...-AA0	2	IIB+IIC	NU1022M.C3+6022.C3	NU1022M.C3	7218+6218.C4	NU1022M.C3
1PS.45.-6BJ...-A0	≥ 4	IIB+IIC	6324.C3	6324.C3	7224+6224.C3	NU1022M
1MV.45.-6BJ...-AA0	2	IIB+IIC	NU1022M.C3+6022.C3	NU1022M.C3	7218+6218.C4	NU1022M.C3
1MV.45.-6BJ...-A0	≥ 4	IIB+IIC	6324.C3	6324.C3	7224+6224.C3	NU1022M
1PS.50.-6BJ...-AA0	2	IIB+IIC	NU1022M.C3+6022.C3	NU1022MC3	On request	On request
1PS.50.-6BJ...-A0	≥ 4	IIB+IIC	NU1030M+6030.C3	NU1026M	7226+6226.C3	NU1022M
1MV.50.-6BJ...-AA0	2	IIB+IIC	NU1022M.C3+6022.C3	NU1022MC3	On request	On request
1MV.50.-6BJ...-A0	≥ 4	IIB+IIC	NU1030M+6030.C3	NU1026M	7226+6226.C3	NU1022M
1PS.56.-6BJ...-AA0	2	IIB+IIC	NU1022M.C3+6022.C3	NU1022M.C3	On request	On request
1PS.56.-6BJ...-A0	≥ 4	IIB+IIC	NU1034M+6034.C3	NU1034M	7234+6234.C3	NU1026M
1MV.56.-6BJ...-AA0	2	IIB+IIC	NU1022M.C3+6022.C3	NU1022M.C3	On request	On request
1MV.56.-6BJ...-A0	≥ 4	IIB+IIC	NU1034M+6034.C3	NU1034M	7234+6234.C3	NU1026M
1PS.63.-6BJ...-AA0	2		On request	On request	On request	On request
1PS.63.-6BJ...-A0	≥ 4	IIB+IIC	6034.C3+NU1034M	NU230M	On request	On request
1PS471.-6BS...-AA0	2	IIB	NU1026M.C3+6026.C3	NU1026M.C3	On request	On request
1PS471.-6BS...-A0	≥ 4	IIB	NU1034M+6034.C3	NU230M	On request	On request
1MV471.-6BS...-AA0	2	IIB	NU1026M.C3+6026.C3	NU1026M.C3	On request	On request
1MV471.-6BS...-A0	≥ 4	IIB	NU1034M+6034.C3	NU230M	On request	On request
1PS.80.-6BS...-AA0	2		On request	On request	On request	On request
1PS480.-6BS...-A0	≥ 4	IIB	NU1044M+6044M.C3	NU1044M	On request	On request

This table is only valid for 50 Hz motors, please consult Siemens for all other motors including those not mentioned in the table.

<sup>1)</sup> Two pole vertical motors for converter operation on request.

<sup>2)</sup> Locating bearing.

## Design

### Bearing design

#### Sleeve bearing design

##### Overview

All flameproof motors of frame size 400 and above can be supplied with sleeve bearings as alternative to roller bearings. See the table below for details on availability.

Basically there are 2 main groups of sleeve bearings:

- Self-lubricated design
- Force-lubricated design

The selection of the lubrication system is depending on several factors like the following:

- Bearing load (radial/axial)
- Rotation speed
- Peripheral speed
- Ambient conditions
- Oil viscosity
- Bearing insulation

An overview about the standard selections of sleeve bearings can be found on page 2/39.

In case of non-standard conditions or special customer requests the sleeve bearing cooling and lubrication has to be checked by Siemens.

If force-lubricated design is used, the external oil supply system has to be provided on site (not included in our scope of supply!).

Both sleeve bearings have axial clearance of  $\pm 4$  mm (floating design), the customer has to use a coupling with integrated axial backlash limitation (small axial clearance for using as a locating bearing). On special request sleeve bearings with integrated axial backlash limitation (used as locating bearing) are possible.

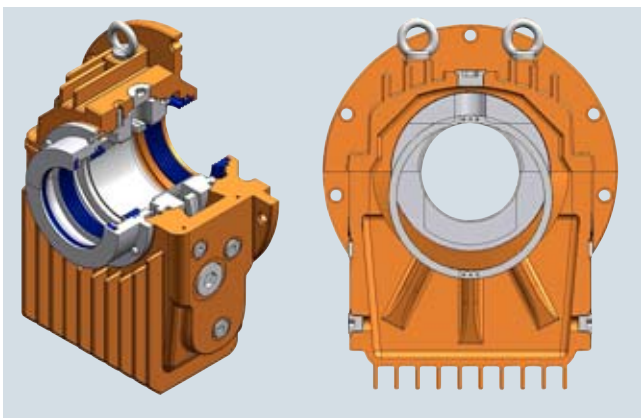
**Note:** Low temperature operation/oil sump heating. Motors with sleeve bearings must use special oil or be equipped with oil sump heating for operation below permitted temperature. For details about permitted temperature see page 2/39.

Motor type	Sleeve bearing version						IM V1
Mounting type	IM B3						
Number of poles	2-pole		4-pole		≥ 6-pole		
	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	
Shaft height 355	–	–	–	–	–	–	On special request only.
Shaft height 400	Optional	Optional	Optional	Optional	Optional	Optional	
Shaft height 450	Optional	Optional	Optional	Optional	Optional	Optional	
Shaft height 500	Optional	Mandatory	Optional	Optional	Optional	Optional	
Shaft height 560	Optional	Mandatory	Optional	Optional <sup>1)</sup>	Optional	Optional	
Shaft height 630	Mandatory	Mandatory	Optional	Optional <sup>1)</sup>	Optional	Optional <sup>1)</sup>	
Shaft height 710	Optional	Mandatory	Optional	Optional <sup>1)</sup>	Optional	Optional <sup>1)</sup>	
Shaft height 800	Mandatory	Mandatory	Optional	Optional <sup>1)</sup>	Optional <sup>1)</sup>	Optional <sup>1)</sup>	
Shaft height 1000	Mandatory	Mandatory	Optional	Optional <sup>1)</sup>	Optional <sup>1)</sup>	Optional <sup>1)</sup>	

**Note:** Sleeve bearings are not designed for mounting type IM V1 by standard.

##### More information

For available options see page 6/5.



Horizontal sleeve bearing design, self-lubricated oil ring

<sup>1)</sup> Force-lubricated oil ring sleeve bearing design instead of self-lubricated oil ring sleeve bearing design.

## Overview

**Assignment of sleeve bearing types and cooling designs to the shaft heights**

See the tables below, for the assignment of standard sleeve bearing types and lubrication systems.

The tables are based on standard conditions with no insulated bearing DE, additional bearing loads, external vibrations, motor inclination, low temperature requirements etc....

LOHER VARIO Rib-cooled flameproof motors, frame size 400

Number of poles	Ambient temp.	Oil ISO VG	50 Hz	60 Hz
2	40 °C	22	EFNLB9-80	EFNLB9-80
2	45 °C	On request	On request	On request
2	50 °C	On request	On request	On request
2	55 °C	On request	On request	On request
4	40 °C	32	EFNLB11-100	EFNLB11-100
4	45 °C	On request	On request	On request
4	50 °C	On request	On request	On request
4	55 °C	On request	On request	On request
≥ 6	40 °C	46	EFNLB11-100	EFNLB11-100
≥ 6	45 °C	On request	On request	On request
≥ 6	50 °C	On request	On request	On request
≥ 6	55 °C	On request	On request	On request

EFN... = self-lubricated oil ring sleeve bearing  
EFZ... = force-lubricated oil ring sleeve bearing

LOHER VARIO Rib-cooled flameproof motors, frame size 450

Number of poles	Ambient temp.	Oil ISO VG	50 Hz	60 Hz
2	40 °C	22	EFNLB11-80	EFNLB11-80
2	45 °C	On request	On request	On request
2	50 °C	On request	On request	On request
2	55 °C	On request	On request	On request
4	40 °C	32	EFNLB11-110	EFNLB11-110
4	45 °C	On request	On request	On request
4	50 °C	On request	On request	On request
4	55 °C	On request	On request	On request
≥ 6	40 °C	46	EFNLB11-110	EFNLB11-110
≥ 6	45 °C	On request	On request	On request
≥ 6	50 °C	On request	On request	On request
≥ 6	55 °C	On request	On request	On request

EFN... = self-lubricated oil ring sleeve bearing  
EFZ... = force-lubricated oil ring sleeve bearing

LOHER VARIO Rib-cooled flameproof motors, frame size 500

Number of poles	Ambient temp.	Oil ISO VG	50 Hz	60 Hz
2	40 °C	22	EFNLB11-80	EFNLB11-80
2	45 °C	On request	On request	On request
2	50 °C	On request	On request	On request
2	55 °C	On request	On request	On request
4	40 °C	32	EFNLB14-110	EFNLB14-110
4	45 °C	On request	On request	On request
4	50 °C	On request	On request	On request
4	55 °C	On request	On request	On request
≥ 6	40 °C	46	EFNLB14-125	EFNLB14-125
≥ 6	45 °C	On request	On request	On request
≥ 6	50 °C	On request	On request	On request
≥ 6	55 °C	On request	On request	On request

EFN... = self-lubricated oil ring sleeve bearing  
EFZ... = force-lubricated oil ring sleeve bearing

LOHER VARIO Rib-cooled flameproof motors, frame size 560

Number of poles	Ambient temp.	Oil ISO VG	50 Hz	60 Hz
2	40 °C	13 <sup>1)</sup>	EFNLB11-90	On request
2	45 °C	On request	On request	On request
2	50 °C	On request	On request	On request
2	55 °C	On request	On request	On request
4	40 °C	22	EFNLB11-125	On request
4	45 °C	On request	On request	On request
4	50 °C	On request	On request	On request
4	55 °C	On request	On request	On request
≥ 6	40 °C	32	EFNLB14-140	On request
≥ 6	45 °C	On request	On request	On request
≥ 6	50 °C	On request	On request	On request
≥ 6	55 °C	On request	On request	On request

EFN... = self-lubricated oil ring sleeve bearing  
EFZ... = force-lubricated oil ring sleeve bearing

<sup>1)</sup> Synthetic oil

## Design

### Bearing design

#### Sleeve bearing types and lubrication

##### Overview (continued)

LOHER VARIO Rib-cooled flameproof motors, frame size 630

Number of poles	Ambient temp.	Oil ISO VG	50 Hz	60 Hz
2	40 °C	13 <sup>1)</sup>	EFNLB11-110	On request
2	45 °C	On request	On request	On request
2	50 °C	On request	On request	On request
2	55 °C	On request	On request	On request
4	40 °C	32	EFNLB14-140	On request
4	45 °C	On request	On request	On request
4	50 °C	On request	On request	On request
4	55 °C	On request	On request	On request
≥ 6	40 °C	On request	On request	On request
≥ 6	45 °C	On request	On request	On request
≥ 6	50 °C	On request	On request	On request
≥ 6	55 °C	On request	On request	On request

EFN... = self-lubricated oil ring sleeve bearing  
EFZ... = force-lubricated oil ring sleeve bearing

LOHER VARIO Tube-cooled flameproof motors, frame size 710

Number of poles	Ambient temp.	Oil ISO VG	50 Hz	60 Hz
2	40 °C	13 <sup>1)</sup>	EFNLB11-110	EFZLB11-125
2	45 °C	On request	On request	On request
2	50 °C	On request	On request	On request
2	55 °C	On request	On request	On request
4	40 °C	32	EFNLB14-140	On request
4	45 °C	On request	On request	On request
4	50 °C	On request	On request	On request
4	55 °C	On request	On request	On request
≥ 6	40 °C	On request	On request	On request
≥ 6	45 °C	On request	On request	On request
≥ 6	50 °C	On request	On request	On request
≥ 6	55 °C	On request	On request	On request

EFN... = self-lubricated oil ring sleeve bearing  
EFZ... = force-lubricated oil ring sleeve bearing

LOHER VARIO Tube-cooled flameproof motors, frame size 800

Number of poles	Ambient temp.	Oil ISO VG	50 Hz	60 Hz
2	40 °C	32	EFZLB14-140	On request
2	45 °C	On request	On request	On request
2	50 °C	On request	On request	On request
2	55 °C	On request	On request	On request
4	40 °C	32	EFZLB18-180	On request
4	45 °C	On request	On request	On request
4	50 °C	On request	On request	On request
4	55 °C	On request	On request	On request
≥ 6	40 °C	On request	On request	On request
≥ 6	45 °C	On request	On request	On request
≥ 6	50 °C	On request	On request	On request
≥ 6	55 °C	On request	On request	On request

EFN... = self-lubricated oil ring sleeve bearing  
EFZ... = force-lubricated oil ring sleeve bearing

LOHER VARIO Tube-cooled flameproof motors, frame size 1000

Number of poles	Ambient temp.	Oil ISO VG	50 Hz	60 Hz
2	40 °C	32	EFZLB14-160	On request
2	45 °C	On request	On request	On request
2	50 °C	On request	On request	On request
2	55 °C	On request	On request	On request
4	40 °C	32	EFZLB18-200	On request
4	45 °C	On request	On request	On request
4	50 °C	On request	On request	On request
4	55 °C	On request	On request	On request
≥ 6	40 °C	On request	On request	On request
≥ 6	45 °C	On request	On request	On request
≥ 6	50 °C	On request	On request	On request
≥ 6	55 °C	On request	On request	On request

EFN... = self-lubricated oil ring sleeve bearing  
EFZ... = force-lubricated oil ring sleeve bearing

<sup>1)</sup> Synthetic oil

**Overview** (continued)

**Minimum starting temperature of sleeve bearing motors**

Starting of sleeve bearing motors is not permitted if the temperature detected by the Pt100 sensor in the bearing shell is below minimum temperature. Motors with sleeve bearings must use special oil or be equipped with oil sump heating for starting and operation below permitted temperature.

Minimum starting temperature of the bearing is determined by Siemens and depending mostly on oil viscosity.

See the table below for permitted starting temperatures based on standard conditions with no additional bearing loads, external vibrations, motor inclination, etc.

Minimum starting temperature of LOHER VARIO Rib-cooled/Tube-cooled flameproof motors with sleeve bearing design

Oil viscosity	Minimum starting temperature
ISO VG 13 <sup>1)</sup>	-25 °C <sup>2)</sup>
ISO VG 22	-15 °C
ISO VG 32	-10 °C
ISO VG 46	-5 °C

**Maximum permitted bearing temperature**

The temperatures of sleeve bearings have to be detected using Pt100 sensors. [For available options see page 6/9.](#)

If the bearing temperature rises above a certain level, the motor has to shut down, because of a possible bearing damage. See the table below for standard temperature limits for sleeve bearings.

	Standard bearing temperature limit
Alarm	95 °C
Shut down	100 °C

Standard temperature limits of LOHER VARIO Rib-cooled/Tube-cooled flameproof motors with sleeve bearing design.

Note: Bearing temperature detection for sleeve bearings in explosion zones is mandatory!

[For available options see page 6/9.](#)

<sup>1)</sup> Synthetic oil

<sup>2)</sup> Please check with Siemens.

## Design

### Paint finish

#### Overview

Typically flameproof motors are used in areas with higher demands for corrosion protection, therefore the painting system N08 was selected as standard. It already meets the requirement "worldwide" according to EN 60721-3.

Apart from that, several special coating systems are available against surcharge. Details can be found in the table below.

Inorganic/silicate painting is not available.

For available painting systems and options see page 6/13.

#### LOHER Painting system overview

LOHER painting system	System N08	System N14/J08	System Z21/J08
Order code	V09	V10	V11
<b>Application</b>			
Application	<ul style="list-style-type: none"> <li>• Standard coating</li> <li>• Open air climate</li> <li>• Tropical Climate</li> <li>• Damp location</li> </ul>		
<b>Max. corrosive category</b>			
Inside	C3 <sub>high</sub>	C5-M <sub>low</sub>	C5-M <sub>mid</sub>
Outside		C5-I <sub>mid</sub>	C5-M <sub>low</sub>
<b>Total thickness of layer</b>			
	> 80 µm	> 140 µm	> 210 µm
<b>Resistance</b>			
Climatic group acc. to EN 60721-3	Worldwide	Worldwide	Worldwide
Condensation climate acc. to KFW DIN 50017	+	++	++
Sulfur dioxide acc. to DIN EN ISO 6988	+	+ / ++	++
Seawater acc. to DIN 53167	+	+ / ++	++
<b>Resistance acc. to DIN EN ISO 2812-1</b>			
Ammoniac ~ 10 %	++	++	++
Petroleum, fat, solvent, benzine/benzene, alcohol	++	++	++
Sulfuric acid 10 %	+	++	++
Sulfuric acid 50 %	0	+	+
Caustic soda 10 %	+	++	++
Caustic soda 40 %	0	++	++
Hydrochloric acid 37 %	0	+	+
<b>Temperature range</b>			
	-40 ... 130 °C (short term -60 ... +150 °C, at 180 °C slight discoloration possible)		
<b>Humidity</b>			
	90 %	100 %	100 %
<b>Over painting</b>			
	Good within 1 week, afterwards only with pre-sanding		
<b>Adhesion acc. to DIN EN ISO 2409</b>			
	Characteristic value Gt 1		
<b>Pretreatment of parts</b>			
	Steel and grey cast iron parts shot blasted: derusting degree Sa 2 ½ (DIN EN ISO 12944-4 Point 6.2 and appendix A )		
	Deep- drawn plates and light metals: Cleaned and thoroughly degreased acc. to DIN EN ISO 12944-4 Point 6.1 and appendix C		



**Overview** (continued)

LOHER painting system	System N08	System N14/J08	System Z21/J08
<b>Priming</b>			
(except aluminum parts)	Parts dipped or sprayed once with anti-corrosive primer based on synthetic resin with highly effective zinc phosphate anti-corrosive pigments Dry layer thickness: 30 µm		Sprayed with epoxy-resin priming with more than 90 % zinc-dust content Dry layer thickness: 50 µm
<b>Intermediate coat</b>			
	-	One coat 2-component epoxy-zinc-phosphate coating Dry layer thickness: 70 µm	One or two coat 2-component coating based on epoxy resin with micaeous iron oxide Dry layer thickness: 80 µm
<b>Top coat</b>			
	One or two coat 2-component polyurethane varnish Dry layer thickness: 80 µm	One coat 2-component polyurethane varnish Dry layer thickness: 70 µm	One or two coat 2-component polyurethane varnish Dry layer thickness: 80 µm
<b>Drying process</b>			
	All coatings are force-dried.		
<b>Color</b>			
	Standard: RAL 7030 (stone grey) Other colors on request, see options		
<b>Treatment of blank components (shaft and flange surfaces)</b>			
	Treated with a rust-protection substance prior to delivery		
<b>Miscellaneous</b>			
	Abrasion-resistant, elastic, scratch-resistant, impact-resistant, UV light resistant, physiologically harmless		

++	Long-term resistant
+	Good resistance
0	Limited resistance
-	Short-term resistant

## Design

### Heating

#### Overview

##### **Anti-condensation heating**

All motors can be equipped with an anti-condensation heater.

The anti-condensation heater increases the temperature inside the motor enclosure above the ambient temperature. This avoids condensation developing in the motor as a result of the climatic situation, e.g. when the motor is at a standstill in humid environments.

##### Note:

- When the motor is operational, it is not permissible that the anti-condensation heater is switched on
- Due to the nature of flameproof motors, it's not necessary to place explosion protected heaters inside the flameproof motor housing; therefore the heater standard design (order code M13) is used by default.

Drain holes are not permitted for flameproof motors; there is a special cavity at the bottom of the motor on both sides for the unlikely event of condensation despite the heating.

Shaft height	Heater power
355 <sup>1)</sup>	200 W
355	250 W
400	250 W
450	280 W
500	350 W
560	467 W
630	534 W
710	666 W
800	850 W
1000	1000 W

Heater power (230 V) depending on motor frame size (order code M13)

While not advised by Siemens, but if explosion protected heater design is requested, option M15 can be used.

##### **Space heaters for low temperature design**

Motors are designed and permitted to operate at the ambient temperatures displayed on the rating plate.

In case of a special design for low ambient temperatures (e.g. special heaters inside motor and/or terminal boxes), the motor must not be taken into operation until the permitted ambient temperature is reached.

The increased heater power necessary for preheating of the motor will be designed by the engineering department.

The reinforced heater must not be taken into operation below a temperature of -40 °C.

For application example see page 5/9.

<sup>1)</sup> Article No. 10th position = H or K

### Overview

On request it is possible to include cable glands for main and auxiliary terminal boxes in our scope of supply.

Depending on the required explosion protection and cable type, a wide variety of cable glands is possible. See the table below for preferred types.

In case of special requests, please provide all necessary data (manufacturer, type, thread size, cable diameter(s), etc...) for an offer.

Preferred cable glands for LOHER VARIO Rib-cooled/Tube-cooled flameproof motors down to -30 °C.  
Special types for lower temperatures are available on request.

Type	ADE 1F2
Material	Nickel plated brass
Sealing	Neoprene
Temperatures	From -30 °C to +80 °C
Protection class	IP68
Certificate	INERIS 12 ATEX 0032X
Marking	Ex II 2 GD / Ex db/eb IIC
Connecting thread	Metric acc. to ISO 965-1/-3

Size entry thread	Clamping range	
	Outer sheath [mm]	
	≥	≤
M20 x 1.5	4.5	8.5
M20 x 1.5	7.0	12.0
M20 x 1.5	10.0	16.0
M25 x 1.5	7.0	12.0
M25 x 1.5	10.0	16.0
M25 x 1.5	13.5	20.5
M32 x 1.5	18.0	27.5
M40 x 1.5	23.0	34.0
M50 x 1.5	29.0	41.0
M50 x 1.5	35.0	45.0
M63 x 1.5	42.0	56.0
M75 x 1.5	50.0	65.0
M90 x 2.0	58.0	74.0
M90 x 2.0	66.0	83.0
M110 x 2.0	75.0	93.0
M110 x 2.0	85.0	104.0

Type	ADE 4F
Material	Nickel plated brass
Sealing	Neoprene
Temperatures	From -30 °C to +80 °C
Protection class	IP68
Certificate	INERIS 12 ATEX 0032X
Marking	Ex II 2 GD / Ex db/eb IIC
Connecting thread	Metric acc. to ISO 965-1/-3

Size entry thread	Clamping range		Clamping range		Clamping range	
	Outer sheath [mm]		Armour [mm]		Inner sheath [mm]	
	≥	≤	≥	≤	≥	≤
M20 x 1.5	7.0	12.0	0.2	0.9	4.0	8.5
M20 x 1.5	10.0	16.0	0.2	1.3	7.0	12.0
M20 x 1.5	13.5	21.0	0.2	1.3	10.0	15.5
M25 x 1.5	10.0	16.0	0.2	1.3	7.0	12.0
M25 x 1.5	13.5	21.0	0.2	1.3	10.0	15.5
M25 x 1.5	18.0	27.5	0.2	1.6	13.5	20.5
M32 x 1.5	18.0	27.5	0.2	1.6	13.5	21.0
M32 x 1.5	29.0	34.0	0.2	1.6	18.0	26.0
M40 x 1.5	23.0	34.0	0.2	1.6	18.0	27.5
M40 x 1.5	29.0	41.0	0.2	2.0	23.0	34.0
M50 x 1.5	29.0	41.0	0.2	2.0	23.0	34.0
M50 x 1.5	35.0	48.0	0.2	2.5	29.0	41.0
M63 x 1.5	42.0	56.0	0.2	2.5	35.0	48.0
M63 x 1.5	50.0	65.0	0.2	2.5	42.0	53.0
M75 x 1.5	50.0	65.0	0.2	2.5	42.0	56.0
M75 x 1.5	58.0	74.0	0.2	2.5	50.0	62.5
M90 x 2.0	66.0	83.0	0.2	3.2	58.0	74.0
M90 x 2.0	75.0	93.0	0.2	3.2	66.0	78.0
M90 x 2.0	85.0	104.0	0.2	3.2	66.0	89.0
M110 x 2.0	85.0	104.0	0.2	3.2	75.0	93.0

## Design

### Notes

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## LOHER VARIO 1PS./1MV. flameproof motors for line operation



3/2	<b>2-pole motors</b> <u>Selection and ordering data</u>	3/46	<b>Horizontal motors</b> <u>Dimensional drawings</u>
3/2	6.6 kV, 50 Hz, antifriction bearing	3/46	Rib-cooled IC411, 2-pole motors
3/4	10 kV, 50 Hz, antifriction bearing	3/54	Rib-cooled IC411, 4-pole motors
3/6	6.6 kV, 50 Hz, sleeve bearing	3/62	Rib-cooled IC411, 6-pole motors
3/8	10 kV, 50 Hz, sleeve bearing	3/68	Rib-cooled IC411, 8-pole motors
3/10	<b>4-pole motors</b> <u>Selection and ordering data</u>	3/74	Rib-cooled IC411, 10-pole motors
3/10	6.6 kV, 50 Hz, antifriction bearing	3/78	Rib-cooled IC411, 12-pole motors
3/12	10 kV, 50 Hz, antifriction bearing	3/82	Rib-cooled IC411, 14-pole motors
3/14	6.6 kV, 50 Hz, sleeve bearing	3/86	Rib-cooled IC411, 16-pole motors
3/16	10 kV, 50 Hz, sleeve bearing	3/90	Tube-cooled IC511
3/18	<b>6-pole motors</b> <u>Selection and ordering data</u>	3/98	<b>Vertical motors</b> <u>Dimensional drawings</u>
3/18	6.6 kV, 50 Hz, antifriction bearing	3/98	Rib-cooled IC411, 2-pole motors
3/20	10 kV, 50 Hz, antifriction bearing	3/100	Rib-cooled IC416
3/22	6.6 kV, 50 Hz, sleeve bearing	3/102	<b>Force-ventilated motors</b> <u>Dimensional drawings</u>
3/22	10 kV, 50 Hz, sleeve bearing	3/102	Rib-cooled IC416
3/24	<b>8-pole motors</b> <u>Selection and ordering data</u>	3/110	<b>Horizontal motors, cast iron housing</b> <u>Dimensional drawings</u>
3/24	3 ... 3.3 kV, 50 Hz, antifriction bearing	3/110	Rib-cooled IC411
3/24	3 ... 6.6 kV, 50 Hz, antifriction bearing	3/114	<b>Operational behavior, configuring for line operation</b>
3/26	10 kV, 50 Hz, antifriction bearing	3/114	Rated power for line operation
3/28	6.6 kV, 50 Hz, sleeve bearing	3/115	Allowable running-up time and locked rotor time
3/30	<b>10-pole motors</b> <u>Selection and ordering data</u>	3/116	Switching of high-voltage motors
3/30	3 ... 3.3 kV, 50 Hz, antifriction bearing	3/117	Number of starts
3/30	3 ... 6.6 kV, 50 Hz, antifriction bearing	3/118	Noise
3/32	3 ... 3.3 kV, 50 Hz, sleeve bearing		
3/32	3 ... 6.6 kV, 50 Hz, sleeve bearing		
3/34	<b>12-pole motors</b> <u>Selection and ordering data</u>		
3/34	6.6 kV, 50 Hz, antifriction bearing		
3/36	6.6 kV, 50 Hz, sleeve bearing		
3/38	<b>14-pole motors</b> <u>Selection and ordering data</u>		
3/38	3 ... 3.3 kV, 50 Hz, antifriction bearing		
3/38	3 ... 6.6 kV, 50 Hz, antifriction bearing		
3/40	3 ... 3.3 kV, 50 Hz, sleeve bearing		
3/40	3 ... 6.6 kV, 50 Hz, sleeve bearing		
3/42	<b>16-pole motors</b> <u>Selection and ordering data</u>		
3/42	3 ... 3.3 kV, 50 Hz, antifriction bearing		
3/42	3 ... 6.6 kV, 50 Hz, antifriction bearing		
3/44	3 ... 3.3 kV, 50 Hz, sleeve bearing		
3/44	3 ... 6.6 kV, 50 Hz, sleeve bearing		

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 2-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>6.6 kV, 50 Hz, antifriction bearing</b>										
2-pole										
132 <sup>2)</sup>	<b>1PS</b> ■ <b>350-6BH</b> ■ ■ ■ <b>-4AA0</b>	DHS . -355MA-02	15	2976	94.2	94.0	92.7	0.90	0.89	0.84
145 <sup>3)</sup>	<b>1PS</b> ■ <b>351-6BH</b> ■ ■ ■ <b>-4AA0</b>	DHS . -355MA-02	16.5	2978	94.2	94.0	92.7	0.90	0.89	0.83
160 <sup>3)</sup>	<b>1PS</b> ■ <b>352-6BH</b> ■ ■ ■ <b>-4AA0</b>	DHS . -355MB-02	18	2978	94.5	94.4	93.4	0.90	0.89	0.85
180 <sup>3)</sup>	<b>1PS</b> ■ <b>353-6BH</b> ■ ■ ■ <b>-4AA0</b>	DHS . -355LA-02	20	2975	94.7	94.7	93.8	0.91	0.90	0.86
200 <sup>3)</sup>	<b>1PS</b> ■ <b>354-6BH</b> ■ ■ ■ <b>-4AA0</b>	DHS . -355LB-02	22	2976	94.8	94.7	93.8	0.92	0.91	0.86
225 <sup>3)</sup>	<b>1PS</b> ■ <b>355-6BH</b> ■ ■ ■ <b>-4AA0</b>	DHS . -355LC-02	25	2977	95.4	95.4	94.6	0.90	0.88	0.83
250 <sup>3)</sup>	<b>1PS</b> ■ <b>356-6BH</b> ■ ■ ■ <b>-4AA0</b>	DHS . -355LD-02	28	2978	95.5	95.6	94.8	0.90	0.89	0.83
300	<b>1MV</b> ■ <b>355-6BD</b> ■ ■ ■ <b>-4AA0</b>	DHG . -355LR-02	35	2980	95.1	95.1	94.4	0.87	0.84	0.77
365	<b>1MV</b> ■ <b>356-6BD</b> ■ ■ ■ <b>-4AA0</b>	DHG . -355LR-02	42	2980	95.1	95.0	94.2	0.87	0.83	0.77
420	<b>1MV</b> ■ <b>357-6BD</b> ■ ■ ■ <b>-4AA0</b>	DHG . -355LS-02	48	2980	95.6	95.5	94.7	0.88	0.84	0.78
470	<b>1MV</b> ■ <b>358-6BD</b> ■ ■ ■ <b>-4AA0</b>	DHG . -355LT-02	54	2980	96.0	96.0	95.4	0.88	0.85	0.80
500	<b>1MV</b> ■ <b>407-6BJ</b> ■ ■ ■ <b>-4AA0</b>	DHS . -400LM-02	56.5	2982	95.9	95.8	95.0	0.89	0.87	0.81
560	<b>1MV</b> ■ <b>454-6BJ</b> ■ ■ ■ <b>-4AA0</b>	DHS . -450LK-02	63	2985	96.3	96.1	95.3	0.89	0.87	0.81
640	<b>1MV</b> ■ <b>455-6BJ</b> ■ ■ ■ <b>-4AA0</b>	DHS . -450LK-02	73	2985	96.3	96.2	95.5	0.88	0.87	0.81
710	<b>1MV</b> ■ <b>457-6BJ</b> ■ ■ ■ <b>-4AA0</b>	DHS . -450LM-02	79.5	2983	96.5	96.5	95.9	0.89	0.88	0.84
800	<b>1MV</b> ■ <b>502-6BJ</b> ■ ■ ■ <b>-4AA0</b>	DHS . -500LK-02	89	2987	96.5	96.3	95.4	0.90	0.88	0.84
900	<b>1MV</b> ■ <b>503-6BJ</b> ■ ■ ■ <b>-4AA0</b>	DHS . -500LK-02	100	2987	96.6	96.5	95.7	0.90	0.88	0.84
980	<b>1MV</b> ■ <b>504-6BJ</b> ■ ■ ■ <b>-4AA0</b>	DHS . -500LK-02	110	2987	96.7	96.5	95.8	0.89	0.88	0.83
1050	<b>1MV</b> ■ <b>507-6BJ</b> ■ ■ ■ <b>-4AA0</b>	DHS . -500LM-02	117	2988	96.8	96.7	96.0	0.89	0.88	0.83
1150	<b>1MV</b> ■ <b>508-6BJ</b> ■ ■ ■ <b>-4AA0</b>	DHS . -500LM-02	127	2988	96.9	96.8	96.2	0.90	0.88	0.83
1250	<b>1MV</b> ■ <b>563-6BJ</b> ■ ■ ■ <b>-4AA0</b>	DHS . -560LK-02	138	2988	96.7	96.6	95.8	0.90	0.89	0.84
1400	<b>1MV</b> ■ <b>565-6BJ</b> ■ ■ ■ <b>-4AA0</b>	DHS . -560LK-02	155	2988	96.8	96.7	96.0	0.90	0.89	0.84
1600	<b>1MV</b> ■ <b>567-6BJ</b> ■ ■ ■ <b>-4AA0</b>	DHS . -560LM-02	176	2988	97.0	96.9	96.3	0.90	0.89	0.85
1600	<b>1MV</b> ■ <b>710-6BS</b> ■ ■ ■ <b>-4AA0</b>	DHR . -710AA-02	180	2982	95.8	95.5	94.5	0.90	0.90	0.86
1850	<b>1MV</b> ■ <b>711-6BS</b> ■ ■ ■ <b>-4AA0</b>	DHR . -710AB-02	205	2982	96.0	95.7	94.8	0.91	0.90	0.87
2100	<b>1MV</b> ■ <b>712-6BS</b> ■ ■ ■ <b>-4AA0</b>	DHR . -710AC-02	235	2985	96.2	95.9	95.0	0.90	0.89	0.85
2400	<b>1MV</b> ■ <b>715-6BS</b> ■ ■ ■ <b>-4AA0</b>	DHR . -710BD-02	265	2985	96.4	96.2	95.3	0.90	0.89	0.85
2600	<b>1MV</b> ■ <b>716-6BS</b> ■ ■ ■ <b>-4AA0</b>	DHR . -710BE-02	288	2986	96.4	96.2	95.4	0.90	0.89	0.85

4	Ex protection "gas"
5	II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)
	II 2 G Ex de IIC T4 Gb (flameproof, gas group IIC)
	Rated voltage/connection/frequency
	See page 1/5
	Type of construction
0	IM B3
4	IM V1, with protective hood
6	IM B35
9	IM V10, with protective hood - <i>on request</i>

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

<sup>2)</sup>  $P_{min}$  (3 ... 3.3 kV) = 50 kW,  $P_{min}$  (6.0 kV) = 75 kW,  $P_{min}$  (6.6 kV) = 90 kW

<sup>3)</sup> Higher rating for 3 (3.3) kV: Factor 1.10 (similar electrical data)

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

2-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT	ART	$J_{Mot}$	Motor	Rotor	$I_0$		
	Nm					cold s	hot s	cold s	hot s	kgm <sup>2</sup>	t	t	A
1PS . 350-6BH...	423	1.10	2.50	5.60	0.24	39	23	65	39	2.1	1.7	0.29	3.7
1PS . 351-6BH...	465	1.20	2.60	5.80	0.24	30	18	50	32	2.1	1.7	0.29	4.2
1PS . 352-6BH...	513	1.20	2.60	6.00	0.24	31	19	52	33	2.3	1.7	0.30	4.3
1PS . 353-6BH...	578	1.15	2.40	5.50	0.24	30	18	50	32	2.5	1.8	0.32	4.3
1PS . 354-6BH...	641	1.15	2.40	5.50	0.24	25	17	42	30	2.7	1.9	0.33	5.0
1PS . 355-6BH...	721	1.15	2.60	6.00	0.24	22	16	37	27	2.9	2.0	0.37	6.6
1PS . 356-6BH...	801	1.15	2.60	6.10	0.24	21	15	36	26	3.2	2.1	0.40	7.3
1MV . 355-6BD...	961	1.25	2.55	5.50	0.22	32	21	54	35	4.8	2.9	0.45	9.8
1MV . 356-6BD...	1169	1.25	2.55	5.50	0.23	22	14	37	24	4.8	2.9	0.45	12
1MV . 357-6BD...	1345	1.25	2.55	5.50	0.23	19	11	32	18	5.2	3.0	0.47	13
1MV . 358-6BD...	1506	1.35	2.55	5.50	0.24	17	9	29	15	5.6	3.1	0.50	14
1MV . 407-6BJ...	1600	1.05	2.55	5.50	0.18	15	10	25	17	6.6	3.3		14
1MV . 454-6BJ...	1791	0.90	2.55	5.50	0.14	25	16	42	27	10.6	4.0		15
1MV . 455-6BJ...	2047	0.90	2.55	5.50	0.15	22	14	37	24	10.6	4.0		18
1MV . 457-6BJ...	2272	1.05	2.40	5.50	0.16	17	11	29	19	12.1	4.3		17
1MV . 502-6BJ...	2557	0.90	2.50	5.50	0.14	26	18	44	30	20.1	5.4		18
1MV . 503-6BJ...	2876	0.90	2.55	5.50	0.14	23	15	39	25	20.1	5.4		20
1MV . 504-6BJ...	3231	0.90	2.50	5.50	0.14	22	14	37	24	20.1	5.4		22
1MV . 507-6BJ...	3355	0.90	2.45	5.50	0.13	24	16	40	27	22.9	6.0		25
1MV . 508-6BJ...	3674	0.90	2.55	5.50	0.14	21	14	36	24	22.9	6.0		28
1MV . 563-6BJ...	3994	0.80	2.50	5.50	0.13	24	16	41	27	46.2	8.0		28
1MV . 565-6BJ...	4473	0.80	2.55	5.50	0.13	22	15	37	26	46.2	8.0		32
1MV . 567-6BJ...	5111	0.85	2.50	5.50	0.13	21	14	36	24	54	8.7		34
1MV . 710-6BS...	5123	0.85	2.35	5.50	0.14	15	11	25	18	49	10.3		41
1MV . 711-6BS...	5925	0.90	2.30	5.50	0.14	14	10	23	17	54	10.6		44
1MV . 712-6BS...	6718	0.85	2.45	5.50	0.14	16	12	27	20	57	10.9		59
1MV . 715-6BS...	7675	0.90	2.50	5.50	0.14	14	11	23	18	62	11.7		66
1MV . 716-6BS...	8313	0.90	2.55	5.50	0.14	15	11	25	18	67	12.3		72

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 2-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>10 kV, 50 Hz, antifriction bearing</b>										
2-pole										
200	<b>1MV</b> ■ <b>402-6BJ8</b> ■ <b>-4AA0</b>	DHS . -400LK-02	13.5	2980	94.2	93.8	92.3	0.91	0.90	0.86
250	<b>1MV</b> ■ <b>403-6BJ8</b> ■ <b>-4AA0</b>	DHS . -400LK-02	16.9	2981	94.8	94.4	93.1	0.90	0.89	0.84
315	<b>1MV</b> ■ <b>404-6BJ8</b> ■ <b>-4AA0</b>	DHS . -400LK-02	21	2980	95.1	94.9	93.9	0.90	0.88	0.84
360	<b>1MV</b> ■ <b>405-6BJ8</b> ■ <b>-4AA0</b>	DHS . -400LK-02	24.5	2981	95.3	95.1	94.2	0.89	0.88	0.83
400	<b>1MV</b> ■ <b>407-6BJ8</b> ■ <b>-4AA0</b>	DHS . -400LM-02	27	2982	95.6	95.4	94.6	0.89	0.88	0.84
450	<b>1MV</b> ■ <b>453-6BJ8</b> ■ <b>-4AA0</b>	DHS . -450LK-02	31	2984	95.7	95.5	94.6	0.88	0.87	0.81
500	<b>1MV</b> ■ <b>454-6BJ8</b> ■ <b>-4AA0</b>	DHS . -450LK-02	34	2984	95.9	95.7	94.8	0.88	0.86	0.80
540	<b>1MV</b> ■ <b>455-6BJ8</b> ■ <b>-4AA0</b>	DHS . -450LK-02	37	2984	96.0	95.9	95.0	0.88	0.86	0.80
600	<b>1MV</b> ■ <b>457-6BJ8</b> ■ <b>-4AA0</b>	DHS . -450LM-02	40.5	2984	96.2	96.2	95.6	0.89	0.88	0.83
710	<b>1MV</b> ■ <b>502-6BJ8</b> ■ <b>-4AA0</b>	DHS . -500LK-02	47.5	2988	96.2	96.0	95.2	0.90	0.89	0.84
800	<b>1MV</b> ■ <b>503-6BJ8</b> ■ <b>-4AA0</b>	DHS . -500LK-02	53	2988	96.4	96.2	95.5	0.90	0.89	0.84
900	<b>1MV</b> ■ <b>504-6BJ8</b> ■ <b>-4AA0</b>	DHS . -500LK-02	60	2988	96.6	96.4	95.7	0.90	0.88	0.83
940	<b>1MV</b> ■ <b>507-6BJ8</b> ■ <b>-4AA0</b>	DHS . -500LM-02	62	2988	96.6	96.5	95.9	0.90	0.89	0.84
1000	<b>1MV</b> ■ <b>562-6BJ8</b> ■ <b>-4AA0</b>	DHS . -560LK-02	66	2987	96.4	96.2	95.3	0.91	0.90	0.86
1120	<b>1MV</b> ■ <b>563-6BJ8</b> ■ <b>-4AA0</b>	DHS . -560LK-02	74	2987	96.5	96.3	95.5	0.91	0.90	0.86
1300	<b>1MV</b> ■ <b>565-6BJ8</b> ■ <b>-4AA0</b>	DHS . -560LK-02	85	2987	96.7	96.5	95.9	0.91	0.90	0.85
1370	<b>1MV</b> ■ <b>567-6BJ8</b> ■ <b>-4AA0</b>	DHS . -560LM-02	90	2988	96.8	96.7	96.0	0.91	0.90	0.86
1400	<b>1MV</b> ■ <b>710-6BS8</b> ■ <b>-4AA0</b>	DHR . -710AA-02	94	2984	95.4	95.0	93.9	0.90	0.88	0.84
1600	<b>1MV</b> ■ <b>711-6BS8</b> ■ <b>-4AA0</b>	DHR . -710AB-02	110	2983	95.6	95.3	94.2	0.90	0.89	0.86
1800	<b>1MV</b> ■ <b>713-6BS8</b> ■ <b>-4AA0</b>	DHR . -710BC-02	122	2986	95.9	95.5	94.4	0.90	0.88	0.83
2100	<b>1MV</b> ■ <b>715-6BS8</b> ■ <b>-4AA0</b>	DHR . -710BD-02	140	2986	96.1	95.9	94.9	0.90	0.89	0.85
2300	<b>1MV</b> ■ <b>716-6BS8</b> ■ <b>-4AA0</b>	DHR . -710BE-02	152	2984	96.1	95.9	95.0	0.91	0.90	0.86

		Ex protection *gas*
<b>4</b>		II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)
<b>5</b>		II 2 G Ex de IIC T4 Gb (flameproof, gas group IIC)
		Type of construction
<b>0</b>		IM B3
<b>4</b>		IM V1, with protective hood
<b>6</b>		IM B35
<b>9</b>		IM V10, with protective hood - <i>on request</i>

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W



## LOHER VARIO 1PS./1MV. flameproof motors for line operation

2-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT		ART		$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					cold s	hot s	cold s	hot s	kgm <sup>2</sup>	t	t	A
1MV . 402-6BJ8...	641	1.00	2.40	5.5	0.20	38	25	65	43	5.7	3.0		2.7
1MV . 403-6BJ8...	800	1.05	2.55	5.5	0.19	28	19	48	32	5.7	3.0		3.9
1MV . 404-6BJ8...	1009	1.05	2.50	5.5	0.19	23	15	39	26	5.7	3.0		4.9
1MV . 405-6BJ8...	1153	1.05	2.50	5.5	0.19	19	13	32	22	5.7	3.0		5.9
1MV . 407-6BJ8...	1281	1.05	2.45	5.5	0.19	20	13	34	22	6.6	3.3		6.0
1MV . 453-6BJ8...	1440	1.00	2.50	5.5	0.16	26	17	44	29	10.1	4		7.2
1MV . 454-6BJ8...	1599	1.05	2.50	5.5	0.16	22	15	37	26	10.1	4		8.4
1MV . 455-6BJ8...	1727	1.05	2.50	5.5	0.16	21	14	36	24	10.1	4		8.9
1MV . 457-6BJ8...	1920	1.05	2.40	5.5	0.17	20	13	34	22	12	4.3		8.2
1MV . 502-6BJ8...	2269	0.80	2.40	5.5	0.13	43	29	73	49	21	5.4		9.3
1MV . 503-6BJ8...	2556	0.80	2.50	5.5	0.13	37	24	63	41	21	5.4		10.8
1MV . 504-6BJ8...	2875	0.85	2.65	5.5	0.13	31	20	53	34	21	5.4		12.0
1MV . 507-6BJ8...	3004	1.00	2.60	5.5	0.15	26	17	44	29	23.2	6.0		12.7
1MV . 562-6BJ8...	3195	0.95	2.55	5.5	0.14	30	20	51	34	47	8.0		12.9
1MV . 563-6BJ8...	3580	0.95	2.45	5.5	0.14	28	18	48	31	47	8.0		14.4
1MV . 565-6BJ8...	4155	0.95	2.50	5.5	0.14	23	15	39	26	47	8.0		17.0
1MV . 567-6BJ8...	4378	0.95	2.45	5.5	0.14	26	17	44	29	53.9	8.7		17.3
1MV . 710-6BS8...	4478	0.80	2.50	5.5	0.14	19	14	32	23	47	10.4		24.5
1MV . 711-6BS8...	5121	0.85	2.45	5.5	0.14	17	12	28	20	52	10.8		25.5
1MV . 713-6BS8...	5754	0.85	2.65	5.5	0.13	19	14	32	23	55	11.2		34
1MV . 715-6BS8...	6715	0.85	2.55	5.5	0.14	17	13	28	22	61	11.7		35.5
1MV . 716-6BS8...	7359	0.95	2.45	5.5	0.15	16	12	27	20	69.0	12.2		34.0

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 2-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>6.6 kV, 50 Hz, sleeve bearing</b>										
2-pole										
400	<b>1MV4404-6BJ 0-4AD0</b>	DHTL-400LK-02	45.5	2983	95.3	95.2	94.4	0.89	0.88	0.82
440	<b>1MV4405-6BJ 0-4AD0</b>	DHTL-400LK-02	50	2982	95.5	95.4	94.7	0.89	0.88	0.83
500	<b>1MV4407-6BJ 0-4AD0</b>	DHTL-400LM-02	56.5	2982	95.9	95.8	95.0	0.89	0.87	0.81
560	<b>1MV4454-6BJ 0-4AD0</b>	DHTL-450LK-02	62	2985	96.1	95.9	95.0	0.90	0.88	0.84
640	<b>1MV4455-6BJ 0-4AD0</b>	DHTL-450LK-02	72	2985	96.2	96.0	95.3	0.89	0.88	0.83
710	<b>1MV4457-6BJ 0-4AD0</b>	DHTL-450LM-02	79	2984	96.4	96.3	95.7	0.90	0.89	0.86
800	<b>1MV4502-6BJ 0-4AD0</b>	DHTL-500LK-02	89	2988	96.4	96.2	95.3	0.90	0.89	0.85
900	<b>1MV4503-6BJ 0-4AD0</b>	DHTL-500LK-02	100	2988	96.6	96.4	95.6	0.90	0.89	0.84
1030	<b>1MV4505-6BJ 0-4AD0</b>	DHTL-500LK-02	114	2988	96.7	96.6	95.8	0.90	0.88	0.83
1150	<b>1MV4508-6BJ 0-4AD0</b>	DHTL-500LM-02	127	2988	96.9	96.8	96.1	0.90	0.89	0.85
1250	<b>1MV4563-6BJ 0-4AD0</b>	DHTL-560LK-02	137	2988	96.8	96.6	95.9	0.91	0.90	0.86
1400	<b>1MV4565-6BJ 0-4AD0</b>	DHTL-560LK-02	153	2988	96.9	96.8	96.1	0.91	0.90	0.86
1600	<b>1MV4567-6BJ 0-4AD0</b>	DHTL-560LM-02	176	2990	97.1	97.0	96.3	0.90	0.89	0.86
1700	<b>1MV4568-6BJ 0-4AD0</b>	DHTL-560LM-02	187	2990	97.1	97.0	96.4	0.90	0.89	0.85
1800	<b>1PS4632-6BJ 0-4AD0</b>	DHTL-630MK-02	196	2990	97.1	97.0	96.2	0.91	0.90	0.87
2000	<b>1PS4633-6BJ 0-4AD0</b>	DHTL-630MM-02	217	2990	97.2	97.1	96.4	0.91	0.91	0.89
2250	<b>1PS4634-6BJ 0-4AD0</b>	DHTL-630MM-02	244	2990	97.3	97.2	96.6	0.91	0.90	0.88
2500	<b>1PS4637-6BJ 0-4AD0</b>	DHTL-630LM-02	271	2990	97.4	97.4	96.8	0.91	0.91	0.89
1800	<b>1MV4710-6BS 0-4AD0</b>	DHQL-710AA-02	200	2985	96.2	95.9	94.9	0.90	0.90	0.86
2000	<b>1MV4711-6BS 0-4AD0</b>	DHQL-710AB-02	222	2986	96.3	96.0	95.0	0.90	0.89	0.85
2250	<b>1MV4712-6BS 0-4AD0</b>	DHQL-710AC-02	247	2986	96.4	96.1	95.2	0.91	0.90	0.86
2500	<b>1MV4715-6BS 0-4AD0</b>	DHQL-710BD-02	275	2985	96.5	96.3	95.5	0.91	0.90	0.87
2800	<b>1MV4716-6BS 0-4AD0</b>	DHQL-710BE-02	307	2986	96.6	96.4	95.6	0.91	0.90	0.87
2800	<b>1PS4802-6BS 0-4AD0</b>	DHQL-800MB-02	304	2988	96.9	96.7	96.0	0.91	0.91	0.87
3150	<b>1PS4805-6BS 0-4AD0</b>	DHQL-800LA-02	343	2988	97.0	96.9	96.2	0.91	0.90	0.87
3550	<b>1PS4806-6BS 0-4AD0</b>	DHQL-800LB-02	385	2988	97.1	97.0	96.4	0.91	0.91	0.88
4000	<b>1PS4807-6BS 0-4AD0</b>	DHQL-800LC-02	430	2988	97.2	97.1	96.5	0.92	0.91	0.88
		Rated voltage/connection/frequency								
		See page 1/5								

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

2-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT		ART		$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					cold	hot	cold	hot	kgm <sup>2</sup>	t	t	A
1MV4404-6BJ...	1280	0.90	2.65	5.5	0.16	24	16	41	27	6	3.3		11
1MV4405-6BJ...	1408	0.85	2.50	5.5	0.16	23	15	39	26	6	3.3		12
1MV4407-6BJ...	1600	1.05	2.55	5.5	0.18	15	10	26	17	6.6	3.6		14
1MV4454-6BJ...	1791	0.90	2.50	5.5	0.14	26	17	44	29	10.7	4.3		14
1MV4455-6BJ...	2047	0.90	2.50	5.5	0.15	22	15	37	26	10.7	4.3		16
1MV4457-6BJ...	2272	1.05	2.35	5.5	0.16	17	11	29	19	12.3	4.6		15
1MV4502-6BJ...	2556	0.85	2.50	5.5	0.13	28	18	48	31	20	5.8		17
1MV4503-6BJ...	2876	0.85	2.50	5.5	0.13	25	16	43	27	20	5.8		20
1MV4505-6BJ...	3291	0.85	2.55	5.5	0.13	21	14	36	24	20	5.8		23
1MV4508-6BJ...	3674	0.90	2.50	5.5	0.14	21	14	36	24	23.3	6.4		27
1MV4563-6BJ...	3994	0.80	2.45	5.5	0.13	26	17	44	29	36	8.4		25
1MV4565-6BJ...	4472	0.80	2.55	5.5	0.13	22	14	37	24	36	8.4		29
1MV4567-6BJ...	5108	0.90	2.40	5.5	0.13	22	14	37	24	41.8	9.1		33
1MV4568-6BJ...	5427	0.85	2.40	5.5	0.13	21	14	36	24	41.6	9.1		38
1PS4632-6BJ...	5746	0.85	2.30	6.2	0.15	22	15	37	25	70	11.3	2.6	38
1PS4633-6BJ...	6387	0.90	2.25	6.1	0.15	22	15	37	25	85	12.2	2.8	37
1PS4634-6BJ...	7185	0.95	2.25	6.2	0.15	19	13	32	22	85	12.2	2.8	43
1PS4637-6BJ...	7984	0.95	2.20	6.2	0.16	20	14	34	24	101	13.6	3.0	48
1MV4710-6BS...	5757	0.85	2.45	5.5	0.13	15	11	25	18	36.5	10.2		47
1MV4711-6BS...	6394	0.85	2.50	5.5	0.13	14	11	23	18	38	10.6		55
1MV4712-6BS...	7195	0.90	2.40	5.5	0.14	13	10	22	17	42	11		56
1MV4715-6BS...	7996	0.90	2.35	5.5	0.14	13	9	22	15	45.5	11.5		61
1MV4716-6BS...	8954	1.00	2.50	5.5	0.15	11	8	18	13	50.5	12		68
1PS4802-6BS...	8950	0.80	2.50	6.2	0.14	17	12	29	21	64	15.0	2.6	63
1PS4805-6BS...	10070	0.80	2.50	6.2	0.14	15	11	25	19	70	15.8	2.9	73
1PS4806-6BS...	11345	0.80	2.45	6.2	0.14	15	11	25	19	77	16.0	3.1	77
1PS4807-6BS...	12785	0.80	2.40	6.2	0.14	14	10	23	17	83	17.1	3.2	84

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 2-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>10 kV, 50 Hz, sleeve bearing</b>										
2-pole										
200	<b>1MV4402-6BJ80-4AD0</b>	DHTL-400LK-02	13.6	2981	94.2	93.7	92.2	0.90	0.90	0.86
250	<b>1MV4403-6BJ80-4AD0</b>	DHTL-400LK-02	16.9	2981	94.8	94.4	93.1	0.90	0.89	0.85
315	<b>1MV4404-6BJ80-4AD0</b>	DHTL-400LK-02	21	2981	95.1	94.9	93.8	0.90	0.88	0.84
370	<b>1MV4405-6BJ80-4AD0</b>	DHTL-400LK-02	25	2981	95.3	95.2	94.2	0.89	0.87	0.82
400	<b>1MV4407-6BJ80-4AD0</b>	DHTL-400LM-02	27	2982	95.6	95.4	94.6	0.89	0.88	0.84
450	<b>1MV4453-6BJ80-4AD0</b>	DHTL-450LK-02	30	2984	95.5	95.3	94.2	0.90	0.89	0.84
500	<b>1MV4454-6BJ80-4AD0</b>	DHTL-450LK-02	34	2985	95.7	95.5	94.5	0.89	0.88	0.83
540	<b>1MV4455-6BJ80-4AD0</b>	DHTL-450LK-02	36.5	2984	95.8	95.6	94.7	0.89	0.88	0.83
600	<b>1MV4457-6BJ80-4AD0</b>	DHTL-450LM-02	40	2984	96.1	96.0	95.3	0.90	0.89	0.86
710	<b>1MV4502-6BJ80-4AD0</b>	DHTL-500LK-02	47	2988	96.2	96.0	95.2	0.91	0.90	0.86
800	<b>1MV4503-6BJ80-4AD0</b>	DHTL-500LK-02	53	2988	96.4	96.3	95.5	0.91	0.90	0.86
930	<b>1MV4505-6BJ80-4AD0</b>	DHTL-500LK-02	62	2988	96.6	96.5	95.8	0.90	0.88	0.84
950	<b>1MV4507-6BJ80-4AD0</b>	DHTL-500LM-02	62	2988	96.6	96.5	95.9	0.91	0.90	0.86
1000	<b>1MV4562-6BJ80-4AD0</b>	DHTL-560LK-02	66	2988	96.4	96.1	95.3	0.91	0.91	0.88
1120	<b>1MV4563-6BJ80-4AD0</b>	DHTL-560LK-02	74	2988	96.5	96.3	95.6	0.91	0.91	0.88
1250	<b>1MV4564-6BJ80-4AD0</b>	DHTL-560LK-02	82	2988	96.7	96.5	95.8	0.91	0.91	0.88
1330	<b>1MV4565-6BJ80-4AD0</b>	DHTL-560LK-02	87	2988	96.8	96.6	95.9	0.91	0.90	0.87
1370	<b>1MV4567-6BJ80-4AD0</b>	DHTL-560LM-02	89	2988	96.8	96.7	96.1	0.92	0.91	0.89
1600	<b>1MV4710-6BS80-4AD0</b>	DHQL-710AA-02	107	2986	95.9	95.5	94.4	0.90	0.89	0.85
1800	<b>1MV4711-6BS80-4AD0</b>	DHQL-710AB-02	120	2987	96.0	95.7	94.6	0.91	0.90	0.86
2000	<b>1MV4713-6BS80-4AD0</b>	DHQL-710BC-02	132	2986	96.1	95.8	94.8	0.91	0.90	0.87
2250	<b>1MV4715-6BS80-4AD0</b>	DHQL-710BD-02	148	2985	96.3	96.0	95.2	0.91	0.90	0.87
2450	<b>1MV4716-6BS80-4AD0</b>	DHQL-710BE-02	162	2986	96.3	96.1	95.2	0.91	0.91	0.87

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

2-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT	ART	$J_{Mot}$	Motor	Rotor	$I_0$		
	Nm					cold s	hot s	cold s	hot s	kgm <sup>2</sup>	t	t	A
1MV4402-6BJ80-...	640	1.00	2.45	5.5	0.19	37	25	63	43	5.7	3.6		2.8
1MV4403-6BJ80-...	800	1.00	2.50	5.5	0.19	29	19	49	32	5.7	3.6		3.6
1MV4404-6BJ80-...	1009	1.00	2.50	5.5	0.19	23	15	39	26	5.7	3.6		4.8
1MV4405-6BJ80-...	1185	1.05	2.55	5.5	0.19	18	12	31	20	5.7	3.6		5.8
1MV4407-6BJ80-...	1281	1.05	2.45	5.5	0.19	20	13	34	22	6.6	3.9		6
1MV4453-6BJ80-...	1439	1.00	2.45	5.5	0.16	27	18	46	31	10.3	4.3		6.3
1MV4454-6BJ80-...	1599	1.05	2.55	5.5	0.16	23	15	39	26	10.3	4.3		7.5
1MV4455-6BJ80-...	1727	1.05	2.50	5.5	0.16	21	14	36	24	10.3	4.3		8.9
1MV4457-6BJ80-...	1920	1.05	2.40	5.5	0.17	20	13	34	22	12.2	4.6		8.2
1MV4502-6BJ80-...	2268	0.75	2.40	5.5	0.13	43	29	73	49	20.7	5.8		11
1MV4503-6BJ80-...	2556	0.75	2.40	5.5	0.13	38	25	65	43	20.7	5.8		12
1MV4505-6BJ80-...	2971	0.80	2.50	5.5	0.13	30	20	51	34	20.7	5.8		16
1MV4507-6BJ80-...	3036	1.00	2.55	5.5	0.15	26	17	44	29	23.7	6.4		12
1MV4562-6BJ80-...	3196	0.90	2.40	5.5	0.13	33	22	56	37	36.5	8.4		11
1MV4563-6BJ80-...	3580	0.90	2.40	5.5	0.14	28	19	48	32	36.5	8.4		12
1MV4564-6BJ80-...	3995	0.95	2.45	5.5	0.14	25	16	43	27	36.5	8.4		14
1MV4565-6BJ80-...	4250	0.95	2.50	5.5	0.13	23	15	39	25	36.5	8.4		16
1MV4567-6BJ80-...	4377	0.95	2.40	5.5	0.13	26	17	44	29	42	9.1		15
1MV4710-6BS80-...	5115	0.80	2.5	5.5	0.14	17	13	28	22	35.5	10.4		44
1MV4711-6BS80-...	5754	0.85	2.5	5.5	0.14	16	12	27	20	38	10.8		48
1MV4713-6BS80-...	6396	0.90	2.4	5.5	0.14	15	11	25	18	42	11.2		53
1MV4715-6BS80-...	7196	0.90	2.35	5.5	0.15	14	11	23	18	45.5	11.7		54
1MV4716-6BS80-...	7836	1.00	2.4	5.5	0.15	14	10	23	17	50.5	12.2		58

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 4-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \phi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>6.6 kV, 50 Hz, antifriction bearing</b>										
4-pole										
140 <sup>2)</sup>	<b>1PS</b> ■ <b>350-6BH</b> ■ ■ ■ <b>-4BA0</b>	DHS . -355MB-04	16.5	1490	94.6	94.4	93.2	0.85	0.82	0.76
160 <sup>3)</sup>	<b>1PS</b> ■ <b>351-6BH</b> ■ ■ ■ <b>-4BA0</b>	DHS . -355MB-04	19.5	1490	94.6	94.5	93.4	0.84	0.81	0.74
180 <sup>3)</sup>	<b>1PS</b> ■ <b>352-6BH</b> ■ ■ ■ <b>-4BA0</b>	DHS . -355LB-04	21.5	1490	95.0	94.9	93.9	0.85	0.82	0.75
200 <sup>3)</sup>	<b>1PS</b> ■ <b>353-6BH</b> ■ ■ ■ <b>-4BA0</b>	DHS . -355LB-04	24	1490	95.0	95.0	94.0	0.85	0.82	0.75
225 <sup>3)</sup>	<b>1PS</b> ■ <b>354-6BH</b> ■ ■ ■ <b>-4BA0</b>	DHS . -355LC-04	27	1491	95.1	95.1	94.1	0.85	0.83	0.75
250 <sup>3)</sup>	<b>1PS</b> ■ <b>355-6BH</b> ■ ■ ■ <b>-4BA0</b>	DHS . -355LC-04	30	1491	95.3	95.2	94.2	0.84	0.82	0.74
280 <sup>3)</sup>	<b>1PS</b> ■ <b>356-6BH</b> ■ ■ ■ <b>-4BA0</b>	DHS . -355LD-04	33.5	1491	95.4	95.4	94.6	0.84	0.82	0.75
280	<b>1MV</b> ■ <b>355-6BD</b> ■ ■ ■ <b>-4BA0</b>	DHG . -355LR-04	34	1488	94.9	94.9	94.1	0.83	0.80	0.71
340	<b>1MV</b> ■ <b>356-6BD</b> ■ ■ ■ <b>-4BA0</b>	DHG . -355LR-04	42	1487	95.2	95.1	94.3	0.82	0.79	0.70
400	<b>1MV</b> ■ <b>357-6BD</b> ■ ■ ■ <b>-4BA0</b>	DHG . -355LS-04	48	1487	95.7	95.6	94.9	0.84	0.80	0.71
490	<b>1MV</b> ■ <b>358-6BD</b> ■ ■ ■ <b>-4BA0</b>	DHG . -355LT-04	58	1487	96.0	96.0	95.3	0.84	0.81	0.72
560	<b>1MV</b> ■ <b>407-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -400LM-04	65	1492	96.0	96.0	95.4	0.86	0.84	0.78
600	<b>1MV</b> ■ <b>408-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -400LM-04	71	1492	96.1	96.1	95.5	0.85	0.83	0.76
630	<b>1MV</b> ■ <b>454-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -450LK-04	73	1492	96.1	96.0	95.3	0.87	0.85	0.80
760	<b>1MV</b> ■ <b>455-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -450LK-04	88	1493	96.3	96.2	95.6	0.86	0.83	0.76
800	<b>1MV</b> ■ <b>457-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -450LM-04	92	1492	96.4	96.4	95.8	0.87	0.86	0.81
850	<b>1MV</b> ■ <b>458-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -450LM-04	97	1492	96.5	96.5	95.9	0.87	0.86	0.81
900	<b>1MV</b> ■ <b>503-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -500LK-04	102	1493	96.6	96.5	95.9	0.88	0.86	0.81
1000	<b>1MV</b> ■ <b>504-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -500LK-04	114	1494	96.7	96.6	96.0	0.87	0.86	0.80
1160	<b>1MV</b> ■ <b>505-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -500LK-04	134	1494	96.8	96.7	96.1	0.86	0.84	0.77
1250	<b>1MV</b> ■ <b>507-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -500LM-04	141	1494	96.9	96.9	96.3	0.88	0.86	0.81
1400	<b>1MV</b> ■ <b>563-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -560LK-04	156	1495	96.9	96.7	96.1	0.89	0.88	0.84
1600	<b>1MV</b> ■ <b>564-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -560LK-04	178	1495	97.0	96.9	96.3	0.89	0.88	0.83
1720	<b>1MV</b> ■ <b>565-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -560LK-04	192	1495	97.1	96.9	96.4	0.89	0.87	0.83
1800	<b>1MV</b> ■ <b>567-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -560LM-04	205	1496	97.1	97.0	96.4	0.88	0.86	0.80
1900	<b>1MV</b> ■ <b>568-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -560LM-04	215	1496	97.2	97.1	96.5	0.87	0.85	0.79
2000	<b>1PS</b> ■ <b>633-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -630MK-04	225	1495	97.2	97.1	96.4	0.88	0.87	0.83
2250	<b>1PS</b> ■ <b>634-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -630MM-04	250	1495	97.3	97.2	96.6	0.89	0.88	0.83
2500	<b>1PS</b> ■ <b>635-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -630MM-04	280	1495	97.4	97.3	96.7	0.88	0.87	0.82
2800	<b>1PS</b> ■ <b>637-6BJ</b> ■ ■ ■ <b>-4BA0</b>	DHS . -630LM-04	312	1495	97.4	97.4	96.8	0.88	0.87	0.82
1900	<b>1MV</b> ■ <b>712-6BS</b> ■ ■ ■ <b>-4BA0</b>	DHR . -710AC-04	217	1492	96.7	96.6	96.0	0.87	0.85	0.79
2100	<b>1MV</b> ■ <b>714-6BS</b> ■ ■ ■ <b>-4BA0</b>	DHR . -710AD-04	240	1492	96.8	96.7	96.1	0.87	0.86	0.80
2300	<b>1MV</b> ■ <b>716-6BS</b> ■ ■ ■ <b>-4BA0</b>	DHR . -710BE-04	265	1492	96.9	96.8	96.2	0.87	0.85	0.79
2600	<b>1MV</b> ■ <b>717-6BS</b> ■ ■ ■ <b>-4BA0</b>	DHR . -710BF-04	300	1493	96.9	96.8	96.3	0.87	0.85	0.79
2800	<b>1MV</b> ■ <b>718-6BS</b> ■ ■ ■ <b>-4BA0</b>	DHR . -710CG-04	320	1493	96.9	96.8	96.3	0.87	0.85	0.79
3150	<b>1PS</b> ■ <b>805-6BS</b> ■ ■ ■ <b>-4BA0</b>	DHR . -800LA-04	355	1493	97.1	97.1	96.5	0.88	0.86	0.80
3550	<b>1PS</b> ■ <b>806-6BS</b> ■ ■ ■ <b>-4BA0</b>	DHR . -800LB-04	400	1493	97.1	97.1	96.5	0.88	0.86	0.80
4000	<b>1PS</b> ■ <b>807-6BS</b> ■ ■ ■ <b>-4BA0</b>	DHR . -800LC-04	450	1493	97.2	97.2	96.6	0.88	0.86	0.80

4	5	Ex protection *gas*
		II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)
4	5	II 2 G Ex de IIC T4 Gb (flameproof, gas group IIC)
		Rated voltage/connection/frequency
4	5	See page 1/5
		Type of construction
4	5	0 IM B3
		4 IM V1, with protective hood
4	5	6 IM B35
		9 IM V10, with protective hood - on request

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

<sup>2)</sup>  $P_{min}$  (3 ... 3.3 kV) = 50 kW,  $P_{min}$  (6.0 kV) = 75 kW,  $P_{min}$  (6.6 kV) = 90 kW

<sup>3)</sup> Higher rating for 3 (3.3) kV: Factor 1.10 (similar electrical data)

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

4-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	cos $\phi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT cold	hot	ART cold	hot	$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					s	s	s	s	kgm <sup>2</sup>	t	t	A
1PS . 350-6BH...	897	1.00	2.35	5.90	0.21	35	20	60	34	5.0	1.9	0.45	5.3
1PS . 351-6BH...	1025	1.05	2.40	6.00	0.22	28	17	47	29	5.0	1.9	0.45	6.5
1PS . 352-6BH...	1154	1.05	2.40	5.90	0.21	35	20	60	34	6.0	2.1	0.52	6.9
1PS . 353-6BH...	1281	1.00	2.30	5.80	0.21	28	18	47	31	6.0	2.1	0.52	7.4
1PS . 354-6BH...	1440	1.10	2.20	6.00	0.23	30	20	50	34	7.0	2.3	0.57	8.2
1PS . 355-6BH...	1600	1.15	2.30	6.10	0.23	30	19	50	32	7.0	2.3	0.57	9.6
1PS . 356-6BH...	1792	1.10	2.20	5.90	0.23	26	17	44	29	7.5	2.4	0.63	10.6
1MV . 355-6BD...	1797	1.45	2.30	5.50	0.21	25	15	42	25	6.3	3.1	0.50	13
1MV . 356-6BD...	2184	1.40	2.25	5.50	0.21	16	9	27	15	6.3	3.1	0.50	16
1MV . 357-6BD...	2569	1.45	2.30	5.50	0.22	17	10	29	17	7.2	3.2	0.54	18
1MV . 358-6BD...	3146	1.50	2.30	5.50	0.22	16	9	27	15	8.4	3.5	0.60	21
1MV . 407-6BJ...	3583	1.00	2.30	5.50	0.19	31	20	53	34	14	3.5		20
1MV . 408-6BJ...	3839	1.00	2.35	5.50	0.18	28	19	47	32	14	3.5		23
1MV . 454-6BJ...	4030	0.85	2.20	5.50	0.17	34	22	58	37	22	4.5		20
1MV . 455-6BJ...	4860	1.00	2.45	5.50	0.18	24	16	41	27	22	4.5		29
1MV . 457-6BJ...	5119	1.05	2.25	5.50	0.19	23	15	39	26	26.7	4.8		25
1MV . 458-6BJ...	5439	1.05	2.25	5.50	0.18	22	14	37	24	26.7	4.8		25
1MV . 503-6BJ...	5753	0.90	2.20	5.50	0.16	33	22	56	37	40.1	5.8		26
1MV . 504-6BJ...	6391	0.95	2.25	5.50	0.16	29	19	49	32	40.1	5.8		31
1MV . 505-6BJ...	7413	1.00	2.35	5.50	0.16	22	15	37	26	40	5.8		41
1MV . 507-6BJ...	7987	0.95	2.25	5.50	0.16	25	16	43	27	47.7	6.3		37
1MV . 563-6BJ...	8941	0.60	2.35	5.50	0.14	42	28	71	48	87.5	8.9		35
1MV . 564-6BJ...	10217	0.60	2.35	5.50	0.14	36	24	61	41	87.5	8.9		43
1MV . 565-6BJ...	10984	0.65	2.40	5.50	0.13	32	21	54	36	87.5	8.9		47
1MV . 567-6BJ...	11489	0.60	2.45	5.50	0.13	38	25	65	43	103	9.5		56
1MV . 568-6BJ...	12127	0.60	2.45	5.50	0.13	37	24	63	41	103	9.5		62
1PS . 633-6BJ...	12776	0.85	2.25	5.90	0.15	24	17	40	29	150	11.5	3.1	54
1PS . 634-6BJ...	14370	0.90	2.30	6.00	0.15	24	17	40	29	180	12.7	3.4	62
1PS . 635-6BJ...	15966	0.90	2.30	6.00	0.15	22	15	37	25	180	12.7	3.4	70
1PS . 637-6BJ...	17872	0.80	2.35	6.20	0.15	22	15	37	25	214	14	3.7	81
1MV . 712-6BS...	12155	0.85	2.45	5.50	0.156	16	12	27	20	74.5	10.5		65
1MV . 714-6BS...	13437	0.80	2.35	5.50	0.155	17	12	28	20	82.5	10.9		67
1MV . 716-6BS...	14715	0.80	2.35	5.50	0.156	16	12	27	20	89	11.6		76
1MV . 717-6BS...	16628	0.85	2.45	5.50	0.157	15	11	25	18	100	12.3		89
1MV . 718-6BS...	17906	0.85	2.45	5.50	0.158	16	12	27	20	110	13.2		93
1PS . 805-6BS...	20139	0.80	2.45	6.20	0.16	14	10	24	17	138	14.7	3.1	97
1PS . 806-6BS...	22697	0.80	2.45	6.20	0.16	13	9	22	15	151	15.1	3.2	112
1PS . 807-6BS...	25574	0.80	2.40	6.00	0.16	13	9	22	15	165	15.6	3.3	124

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 4-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>10 kV, 50 Hz, antifriction bearing</b>										
4-pole										
250	<b>1MV</b> ■ <b>450-6BJ8</b> ■ <b>-4BA0</b>	DHS . -450LH-04	17.6	1492	94.0	93.6	92.2	0.87	0.85	0.80
315	<b>1MV</b> ■ <b>451-6BJ8</b> ■ <b>-4BA0</b>	DHS . -450LH-04	22.5	1492	94.5	94.3	93.1	0.86	0.84	0.78
400	<b>1MV</b> ■ <b>452-6BJ8</b> ■ <b>-4BA0</b>	DHS . -450LH-04	28.5	1492	94.9	94.8	93.8	0.86	0.84	0.78
480	<b>1MV</b> ■ <b>453-6BJ8</b> ■ <b>-4BA0</b>	DHS . -450LH-04	34	1492	95.1	95.0	94.2	0.86	0.84	0.77
520	<b>1MV</b> ■ <b>454-6BJ8</b> ■ <b>-4BA0</b>	DHS . -450LK-04	36	1493	95.7	95.6	94.8	0.87	0.85	0.80
580	<b>1MV</b> ■ <b>455-6BJ8</b> ■ <b>-4BA0</b>	DHS . -450LK-04	40.5	1492	95.8	95.7	95.0	0.86	0.85	0.79
650	<b>1MV</b> ■ <b>456-6BJ8</b> ■ <b>-4BA0</b>	DHS . -450LQ-04	45	1492	96.0	96.0	95.3	0.86	0.85	0.80
710	<b>1MV</b> ■ <b>501-6BJ8</b> ■ <b>-4BA0</b>	DHS . -500LH-04	49.5	1493	96.1	96.0	95.2	0.86	0.84	0.78
780	<b>1MV</b> ■ <b>502-6BJ8</b> ■ <b>-4BA0</b>	DHS . -500LH-04	54	1493	96.2	96.1	95.4	0.86	0.84	0.78
850	<b>1MV</b> ■ <b>504-6BJ8</b> ■ <b>-4BA0</b>	DHS . -500LK-04	58	1493	96.3	96.2	95.6	0.88	0.86	0.81
930	<b>1MV</b> ■ <b>505-6BJ8</b> ■ <b>-4BA0</b>	DHS . -500LK-04	64	1493	96.5	96.4	95.7	0.87	0.85	0.79
1050	<b>1MV</b> ■ <b>507-6BJ8</b> ■ <b>-4BA0</b>	DHS . -500LM-04	71	1494	96.6	96.6	96.0	0.88	0.86	0.81
1120	<b>1MV</b> ■ <b>561-6BJ8</b> ■ <b>-4BA0</b>	DHS . -560LH-04	75	1494	96.5	96.3	95.6	0.89	0.88	0.84
1300	<b>1MV</b> ■ <b>562-6BJ8</b> ■ <b>-4BA0</b>	DHS . -560LH-04	88	1494	96.6	96.5	95.8	0.88	0.87	0.83
1400	<b>1MV</b> ■ <b>564-6BJ8</b> ■ <b>-4BA0</b>	DHS . -560LK-04	94	1494	96.7	96.6	96.1	0.89	0.88	0.84
1500	<b>1MV</b> ■ <b>565-6BJ8</b> ■ <b>-4BA0</b>	DHS . -560LK-04	101	1494	96.8	96.7	96.1	0.89	0.88	0.84
1600	<b>1PS</b> ■ <b>631-6BJ8</b> ■ <b>-4BA0</b>	DHS . -630MH-04	108	1495	96.7	96.6	95.7	0.88	0.87	0.82
1800	<b>1PS</b> ■ <b>632-6BJ8</b> ■ <b>-4BA0</b>	DHS . -630MH-04	123	1495	96.8	96.7	95.9	0.87	0.86	0.80
2000	<b>1PS</b> ■ <b>633-6BJ8</b> ■ <b>-4BA0</b>	DHS . -630MK-04	135	1495	96.9	96.9	96.1	0.88	0.87	0.81
2200	<b>1PS</b> ■ <b>636-6BJ8</b> ■ <b>-4BA0</b>	DHS . -630LK-04	148	1495	97.0	97.0	96.4	0.88	0.87	0.82
1400	<b>1MV</b> ■ <b>711-6BS8</b> ■ <b>-4BA0</b>	DHR . -710AB-04	99	1493	96.3	96.1	95.3	0.85	0.83	0.75
1600	<b>1MV</b> ■ <b>712-6BS8</b> ■ <b>-4BA0</b>	DHR . -710AC-04	110	1493	96.4	96.3	95.5	0.86	0.84	0.77
1800	<b>1MV</b> ■ <b>715-6BS8</b> ■ <b>-4BA0</b>	DHR . -710BD-04	122	1493	96.6	96.5	95.8	0.87	0.85	0.78
2000	<b>1MV</b> ■ <b>716-6BS8</b> ■ <b>-4BA0</b>	DHR . -710BE-04	137	1493	96.7	96.5	95.9	0.87	0.85	0.78
2500	<b>1PS</b> ■ <b>802-6BS8</b> ■ <b>-4BA0</b>	DHR . -800MB-04	171	1493	96.6	96.6	95.9	0.87	0.85	0.80
2800	<b>1PS</b> ■ <b>805-6BS8</b> ■ <b>-4BA0</b>	DHR . -800LA-04	191	1493	96.8	96.7	96.1	0.87	0.86	0.81
3150	<b>1PS</b> ■ <b>806-6BS8</b> ■ <b>-4BA0</b>	DHR . -800LB-04	215	1493	96.8	96.8	96.2	0.87	0.86	0.81

		Ex protection "gas"
<b>4</b>		II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)
<b>5</b>		II 2 G Ex de IIC T4 Gb (flameproof, gas group IIC)
		Type of construction
	<b>0</b>	IM B3
	<b>4</b>	IM V1, with protective hood
	<b>6</b>	IM B35
	<b>9</b>	IM V10, with protective hood - <i>on request</i>

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W



## LOHER VARIO 1PS./1MV. flameproof motors for line operation

4-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT		ART		$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					cold	hot	cold	hot	kgm <sup>2</sup>	t	t	A
1MV . 450-6BJ8...	1599	0.95	2.35	5.5	0.19	61	41	104	70	18.8	4.1		5.3
1MV . 451-6BJ8...	2015	0.95	2.35	5.5	0.18	48	32	82	54	18.8	4.1		7
1MV . 452-6BJ8...	2558	0.95	2.30	5.5	0.18	37	25	63	43	18.8	4.1		9.0
1MV . 453-6BJ8...	3071	1.00	2.30	5.5	0.19	29	19	49	32	18.8	4.1		11
1MV . 454-6BJ8...	3326	1.05	2.35	5.5	0.19	31	21	53	36	22.5	4.5		10
1MV . 455-6BJ8...	3710	1.05	2.25	5.5	0.19	29	19	49	32	22.5	4.5		12
1MV . 456-6BJ8...	4159	1.00	2.20	5.5	0.19	28	19	48	32	25.1	4.8		12
1MV . 501-6BJ8...	4538	0.90	2.30	5.5	0.18	28	19	48	32	33.7	5.5		15
1MV . 502-6BJ8...	4987	0.85	2.30	5.5	0.18	25	16	42	27	34	5.5		16
1MV . 504-6BJ8...	5435	0.95	2.20	5.5	0.18	27	18	46	31	40.3	5.8		15
1MV . 505-6BJ8...	5945	0.95	2.25	5.5	0.17	24	16	41	27	40	5.8		18
1MV . 507-6BJ8...	6711	0.95	2.25	5.5	0.18	26	17	44	29	47.9	6.3		19
1MV . 561-6BJ8...	7157	0.75	2.30	5.5	0.16	33	22	56	37	78.2	8.6		17
1MV . 562-6BJ8...	8305	0.75	2.30	5.5	0.15	29	19	49	32	78.2	8.6		22
1MV . 564-6BJ8...	8947	0.75	2.20	5.5	0.16	28	18	48	31	85.9	8.9		20
1MV . 565-6BJ8...	9585	0.75	2.25	5.5	0.16	25	17	43	29	85.9	8.9		23
1PS . 631-6BJ8...	10218	0.80	2.30	5.9	0.18	29	19	49	32	140	11.1	3.0	28
1PS . 632-6BJ8...	11492	0.85	2.40	6.0	0.18	24	16	40	27	140	11.1	3.0	34
1PS . 633-6BJ8...	12772	0.80	2.35	5.9	0.18	24	16	40	27	152	11.6	3.1	36
1PS . 636-6BJ8...	14049	0.85	2.30	5.9	0.18	24	16	40	27	180	14.1	3.5	37
1MV . 711-6BS8...	8948	0.75	2.50	5.5	0.16	24	17	40	28	68.5	10.6		34
1MV . 712-6BS8...	10229	0.80	2.40	5.5	0.16	21	16	35	27	74.5	10.9		34
1MV . 715-6BS8...	11508	0.85	2.45	5.5	0.16	20	15	34	25	83.5	11.4		36
1MV . 716-6BS8...	12787	0.85	2.45	5.5	0.16	20	14	34	23	89	11.8		42
1PS . 802-6BS8...	15982	0.65	2.40	5.8	0.16	17	12	28	20	127	14.3	2.9	46
1PS . 805-6BS8...	17898	0.65	2.40	5.8	0.16	16	12	27	20	140	14.8	3.1	51
1PS . 806-6BS8...	20139	0.65	2.35	5.8	0.16	15	11	26	19	151	15.2	3.2	56

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 4-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>6.6 kV, 50 Hz, sleeve bearing</b>										
4-pole										
450	<b>1MV4404-6BJ 0-4BD0</b>	DHTL-400LK-04	53	1492	95.6	95.5	94.7	0.86	0.84	0.77
500	<b>1MV4405-6BJ 0-4BD0</b>	DHTL-400LK-04	59	1492	95.7	95.6	94.9	0.85	0.83	0.76
560	<b>1MV4407-6BJ 0-4BD0</b>	DHTL-400LM-04	65	1492	95.9	95.9	95.2	0.86	0.84	0.78
600	<b>1MV4408-6BJ 0-4BD0</b>	DHTL-400LM-04	71	1492	96.0	95.9	95.3	0.85	0.83	0.76
630	<b>1MV4454-6BJ 0-4BD0</b>	DHTL-450LK-04	73	1492	96.0	95.9	95.2	0.87	0.85	0.79
760	<b>1MV4455-6BJ 0-4BD0</b>	DHTL-450LK-04	89	1493	96.2	96.1	95.4	0.86	0.83	0.75
800	<b>1MV4457-6BJ 0-4BD0</b>	DHTL-450LM-04	92	1492	96.3	96.3	95.7	0.87	0.86	0.80
850	<b>1MV4458-6BJ 0-4BD0</b>	DHTL-450LM-04	98	1492	96.4	96.4	95.8	0.87	0.86	0.80
900	<b>1MV4503-6BJ 0-4BD0</b>	DHTL-500LK-04	103	1493	96.5	96.4	95.8	0.87	0.85	0.80
1000	<b>1MV4504-6BJ 0-4BD0</b>	DHTL-500LK-04	116	1494	96.6	96.5	95.9	0.86	0.84	0.78
1160	<b>1MV4505-6BJ 0-4BD0</b>	DHTL-500LK-04	136	1494	96.8	96.7	96.1	0.85	0.82	0.74
1240	<b>1MV4507-6BJ 0-4BD0</b>	DHTL-500LM-04	142	1494	96.9	96.8	96.2	0.87	0.85	0.78
1400	<b>1MV4563-6BJ 0-4BD0</b>	DHTL-560LK-04	156	1495	96.8	96.6	95.9	0.89	0.88	0.84
1600	<b>1MV4564-6BJ 0-4BD0</b>	DHTL-560LK-04	177	1495	96.9	96.8	96.2	0.89	0.88	0.83
1720	<b>1MV4565-6BJ 0-4BD0</b>	DHTL-560LK-04	192	1495	97.0	96.9	96.3	0.89	0.87	0.83
1800	<b>1MV4567-6BJ 0-4BD0</b>	DHTL-560LM-04	205	1495	97.0	96.9	96.3	0.88	0.86	0.80
1900	<b>1MV4568-6BJ 0-4BD0</b>	DHTL-560LM-04	215	1496	97.1	97.0	96.4	0.87	0.85	0.79
2000	<b>1PS4633-6BJ 0-4BD0</b>	DHTL-630MK-04	225	1495	97.2	97.1	96.4	0.88	0.87	0.83
2250	<b>1PS4634-6BJ 0-4BD0</b>	DHTL-630MM-04	250	1495	97.3	97.2	96.6	0.89	0.88	0.83
2500	<b>1PS4635-6BJ 0-4BD0</b>	DHTL-630MM-04	280	1495	97.4	97.3	96.7	0.88	0.87	0.82
2800	<b>1PS4637-6BJ 0-4BD0</b>	DHTL-630LM-04	312	1495	97.4	97.4	96.8	0.88	0.87	0.82
1900	<b>1MV4712-6BS 0-4BD0</b>	DHQL-710AC-04	220	1492	96.5	96.4	95.7	0.86	0.83	0.76
2000	<b>1MV4714-6BS 0-4BD0</b>	DHQL-710AD-04	232	1492	96.6	96.4	95.7	0.86	0.84	0.77
2200	<b>1MV4716-6BS 0-4BD0</b>	DHQL-710BE-04	252	1492	96.6	96.5	95.8	0.87	0.85	0.78
2500	<b>1MV4717-6BS 0-4BD0</b>	DHQL-710BF-04	290	1493	96.7	96.6	95.9	0.86	0.84	0.77
3150	<b>1PS4805-6BS 0-4BD0</b>	DHQL-800LA-04	355	1493	97.1	97.1	96.5	0.88	0.86	0.80
3550	<b>1PS4806-6BS 0-4BD0</b>	DHQL-800LB-04	400	1493	97.1	97.1	96.5	0.88	0.86	0.80
4000	<b>1PS4807-6BS 0-4BD0</b>	DHQL-800LC-04	450	1493	97.2	97.2	96.6	0.88	0.86	0.80

Rated voltage/connection/frequency

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<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

4-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT		ART		$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					cold	hot	cold	hot	kgm <sup>2</sup>	t	t	A
1MV4404-6BJ...	2879	0.95	2.35	5.5	0.19	32	21	54	36	11.8	3.6		17
1MV4405-6BJ...	3199	1.00	2.40	5.5	0.18	27	18	46	31	11.8	3.6		20
1MV4407-6BJ...	3583	1.00	2.30	5.5	0.19	31	20	53	34	14.0	3.8		20
1MV4408-6BJ...	3839	1.00	2.35	5.5	0.18	28	19	48	32	14.0	3.8		23
1MV4454-6BJ...	4030	0.85	2.20	5.5	0.17	33	22	56	37	21.9	4.3		21
1MV4455-6BJ...	4860	1.00	2.45	5.5	0.18	24	16	41	27	21.9	4.3		30
1MV4457-6BJ...	5119	1.05	2.20	5.5	0.19	23	15	39	26	26.6	4.6		24
1MV4458-6BJ...	5439	1.05	2.20	5.5	0.18	22	14	37	24	26.6	4.6		26
1MV4503-6BJ...	5753	0.85	2.20	5.5	0.16	33	22	56	37	39.3	5.8		28
1MV4504-6BJ...	6391	0.90	2.25	5.5	0.16	28	19	48	32	39.3	5.8		33
1MV4505-6BJ...	7412	1.00	2.40	5.5	0.16	22	14	37	24	39.3	5.8		45
1MV4507-6BJ...	7923	0.95	2.30	5.5	0.16	25	17	42	29	46.6	6.4		41
1MV4563-6BJ...	8974	0.60	2.30	5.5	0.14	42	28	71	48	87.5	8.4		35
1MV4564-6BJ...	10217	0.60	2.35	5.5	0.13	36	24	61	41	87.5	8.4		43
1MV4565-6BJ...	10984	0.65	2.40	5.5	0.13	32	21	54	36	87.5	8.4		47
1MV4567-6BJ...	11489	0.60	2.45	5.5	0.13	41	27	70	46	103.0	9.1		56
1MV4568-6BJ...	12127	0.60	2.45	5.5	0.13	37	24	63	41	103.0	9.1		62
1PS4633-6BJ...	12776	0.85	2.25	5.9	0.15	24	17	40	29	150	11.7	3.2	54
1PS4634-6BJ...	14370	0.90	2.30	6.0	0.15	24	17	40	29	180	12.9	3.5	62
1PS4635-6BJ...	15966	0.90	2.30	6.0	0.15	22	15	37	25	180	12.9	3.5	70
1PS4637-6BJ...	17872	0.80	2.35	6.2	0.15	22	15	37	25	214	14.2	3.8	81
1MV4712-6BS...	12156	0.80	2.50	5.5	0.15	16	12	27	20	74	11.6		71
1MV4714-6BS...	12795	0.85	2.50	5.5	0.16	16	12	27	20	81	12.0		74
1MV4716-6BS...	14075	0.90	2.40	5.5	0.16	16	11	27	18	88	12.5		76
1MV4717-6BS...	15988	0.90	2.50	5.5	0.16	15	11	25	18	99	12.8		93
1PS4805-6BS...	20139	0.80	2.45	6.2	0.16	14	10	24	17	138	16.2	3.3	97
1PS4806-6BS...	22697	0.80	2.45	6.2	0.16	13	9	22	15	151	16.5	3.4	112
1PS4807-6BS...	25574	0.80	2.40	6.0	0.16	13	9	22	15	165	17.1	3.6	124

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 4-pole motors

### Selection and ordering data

Rated power $P_{\text{rated}}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{\text{rated}}$ at 6 kV A	Rated speed $n_{\text{rated}}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{\text{rated}}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{\text{rated}}$ 4/4 load	3/4 load	2/4 load
<b>10 kV, 50 Hz, sleeve bearing</b>										
4-pole										
250	<b>1MV4450-6BJ80-4BD0</b>	DHTL-450LH-04	18	1492	93.8	93.4	91.9	0.87	0.85	0.79
315	<b>1MV4451-6BJ80-4BD0</b>	DHTL-450LH-04	23	1492	94.4	94.0	92.8	0.86	0.84	0.78
400	<b>1MV4452-6BJ80-4BD0</b>	DHTL-450LH-04	29	1492	94.8	94.6	93.6	0.86	0.84	0.77
480	<b>1MV4453-6BJ80-4BD0</b>	DHTL-450LH-04	34	1492	94.9	94.9	94.1	0.85	0.83	0.77
520	<b>1MV4454-6BJ80-4BD0</b>	DHTL-450LK-04	36	1492	95.6	95.5	94.6	0.87	0.85	0.79
580	<b>1MV4455-6BJ80-4BD0</b>	DHTL-450LK-04	41	1492	95.7	95.6	94.8	0.86	0.84	0.78
650	<b>1MV4456-6BJ80-4BD0</b>	DHTL-450LQ-04	46	1492	95.9	95.8	95.1	0.86	0.85	0.79
710	<b>1MV4501-6BJ80-4BD0</b>	DHTL-500LH-04	50	1493	96.0	95.8	95.0	0.85	0.83	0.76
780	<b>1MV4502-6BJ80-4BD0</b>	DHTL-500LH-04	55	1493	96.1	96.0	95.2	0.85	0.82	0.74
850	<b>1MV4504-6BJ80-4BD0</b>	DHTL-500LK-04	59	1493	96.2	96.1	95.5	0.87	0.86	0.80
930	<b>1MV4505-6BJ80-4BD0</b>	DHTL-500LK-04	65	1493	96.4	96.3	95.6	0.86	0.84	0.77
1050	<b>1MV4507-6BJ80-4BD0</b>	DHTL-500LM-04	72	1494	96.5	96.5	95.9	0.87	0.85	0.79
1120	<b>1MV4561-6BJ80-4BD0</b>	DHTL-560LH-04	75	1494	96.4	96.2	95.4	0.89	0.88	0.84
1300	<b>1MV4562-6BJ80-4BD0</b>	DHTL-560LH-04	88	1494	96.6	96.4	95.7	0.88	0.87	0.83
1400	<b>1MV4564-6BJ80-4BD0</b>	DHTL-560LK-04	94	1494	96.6	96.6	95.9	0.89	0.88	0.85
1500	<b>1MV4565-6BJ80-4BD0</b>	DHTL-560LK-04	101	1494	96.7	96.6	96.0	0.89	0.88	0.84
1400	<b>1MV4711-6BS80-4BD0</b>	DHQL-710AB-04	99	1493	96.1	95.9	94.9	0.85	0.81	0.73
1600	<b>1MV4712-6BS80-4BD0</b>	DHQL-710AC-04	112	1493	96.2	96.0	95.2	0.86	0.83	0.76
1700	<b>1MV4715-6BS80-4BD0</b>	DHQL-710BD-04	117	1492	96.3	96.2	95.4	0.87	0.85	0.79
1900	<b>1MV4716-6BS80-4BD0</b>	DHQL-710BE-04	130	1492	96.4	96.2	95.5	0.88	0.86	0.80

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

4-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT		ART		$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					cold s	hot s	cold s	hot s	kgm <sup>2</sup>	t	t	A
1MV4450-6BJ80-...	1599	0.95	2.35	5.5	0.19	61	41	104	70	18.6	4.2		5
1MV4451-6BJ80-...	2015	0.95	2.35	5.5	0.18	48	32	82	54	18.6	4.2		7
1MV4452-6BJ80-...	2559	0.95	2.35	5.5	0.18	37	24	63	41	18.6	4.2		9
1MV4453-6BJ80-...	3071	1.00	2.35	5.5	0.19	29	19	49	32	18.6	4.2		11
1MV4454-6BJ80-...	3326	1.05	2.35	5.5	0.19	31	21	53	36	22.4	4.3		11
1MV4455-6BJ80-...	3710	1.05	2.30	5.5	0.19	28	19	48	32	22.4	4.3		12
1MV4456-6BJ80-...	4159	1.00	2.25	5.5	0.18	28	18	48	31	24.8	4.5		12
1MV4501-6BJ80-...	4539	0.90	2.30	5.5	0.18	28	18	48	31	32.9	5.5		16
1MV4502-6BJ80-...	4987	0.95	2.35	5.5	0.18	24	15	41	26	32.9	5.5		18
1MV4504-6BJ80-...	5435	0.95	2.20	5.5	0.18	26	17	44	29	39.3	5.8		16
1MV4505-6BJ80-...	5945	1.00	2.30	5.5	0.18	23	15	39	26	39.3	5.8		20
1MV4507-6BJ80-...	6711	0.95	2.25	5.5	0.18	25	16	43	27	46.7	6.4		20
1MV4561-6BJ80-...	7157	0.75	2.30	5.5	0.16	33	22	56	37	78.2	8.2		18
1MV4562-6BJ80-...	8305	0.75	2.30	5.5	0.15	29	19	49	32	78.2	8.2		22
1MV4564-6BJ80-...	8947	0.75	2.20	5.5	0.16	28	18	48	31	85.9	8.4		21
1MV4565-6BJ80-...	9585	0.75	2.25	5.5	0.16	25	17	43	29	85.9	8.4		23
1MV4711-6BS80-...	8952	0.80	2.55	5.5	0.15	21	15	35	25	67	11.2		36
1MV4712-6BS80-...	10233	0.80	2.45	5.5	0.16	20	15	34	25	73	11.7		37
1MV4715-6BS80-...	10878	0.85	2.40	5.5	0.17	19	14	32	23	81	12.2		34
1MV4716-6BS80-...	12159	0.85	2.35	5.5	0.17	19	14	32	23	88	12.7		36

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 6-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>6.6 kV, 50 Hz, antifriction bearing</b>										
6-pole										
110 <sup>2)</sup>	<b>1PS</b> ■ <b>350-6BH</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -355MB-06	13.5	991	93.8	93.8	92.9	0.84	0.81	0.74
135 <sup>3)</sup>	<b>1PS</b> ■ <b>351-6BH</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -355MB-06	16.5	992	94.0	94.0	93.0	0.83	0.80	0.72
160 <sup>3)</sup>	<b>1PS</b> ■ <b>352-6BH</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -355LB-06	19.5	992	94.3	94.4	93.5	0.84	0.81	0.73
180 <sup>3)</sup>	<b>1PS</b> ■ <b>353-6BH</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -355LB-06	22	991	94.3	94.3	93.5	0.84	0.81	0.73
200 <sup>3)</sup>	<b>1PS</b> ■ <b>355-6BH</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -355LC-06	24.5	992	94.4	94.4	93.5	0.83	0.80	0.72
225 <sup>3)</sup>	<b>1PS</b> ■ <b>356-6BH</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -355LD-06	27.5	993	94.6	94.5	93.6	0.83	0.80	0.71
250	<b>1MV</b> ■ <b>355-6BD</b> ■ ■ ■ ■ <b>-4CA0</b>	DHG . -355LR-06	32	991	94.4	94.4	93.7	0.80	0.76	0.67
280	<b>1MV</b> ■ <b>356-6BD</b> ■ ■ ■ ■ <b>-4CA0</b>	DHG . -355LR-06	36	990	94.8	94.9	94.3	0.80	0.76	0.67
330	<b>1MV</b> ■ <b>357-6BD</b> ■ ■ ■ ■ <b>-4CA0</b>	DHG . -355LS-06	41	990	95.2	95.3	94.6	0.81	0.77	0.68
400	<b>1MV</b> ■ <b>358-6BD</b> ■ ■ ■ ■ <b>-4CA0</b>	DHG . -355LT-06	50	990	95.5	95.6	95.0	0.81	0.77	0.69
450	<b>1PS</b> ■ <b>406-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -400LM-06	54.5	993	95.9	95.9	95.2	0.83	0.80	0.71
540	<b>1PS</b> ■ <b>453-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -450LK-06	64	993	96.1	96.0	95.3	0.85	0.83	0.76
560	<b>1PS</b> ■ <b>455-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -450LM-06	66	994	96.2	96.3	95.7	0.85	0.83	0.76
630	<b>1PS</b> ■ <b>456-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -450LM-06	74	994	96.3	96.4	95.9	0.85	0.84	0.77
710	<b>1PS</b> ■ <b>505-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -500LK-06	83.5	995	96.4	96.4	95.6	0.85	0.82	0.75
800	<b>1PS</b> ■ <b>506-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -500LK-06	95	995	96.5	96.5	95.8	0.85	0.82	0.74
900	<b>1PS</b> ■ <b>507-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -500LM-06	105	995	96.6	96.5	95.8	0.85	0.82	0.75
1000	<b>1PS</b> ■ <b>508-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -500LM-06	117	995	96.7	96.7	96.0	0.85	0.82	0.75
1120	<b>1PS</b> ■ <b>565-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -560LK-06	128	996	96.8	96.8	96.1	0.86	0.85	0.79
1250	<b>1PS</b> ■ <b>566-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -560LK-06	144	996	96.9	96.9	96.2	0.86	0.84	0.78
1400	<b>1PS</b> ■ <b>567-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -560LM-06	160	996	96.9	96.9	96.3	0.86	0.85	0.79
1600	<b>1PS</b> ■ <b>568-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -560LM-06	183	996	97.1	97.1	96.5	0.86	0.85	0.78
1800	<b>1PS</b> ■ <b>633-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -630MM-06	205	996	96.9	96.8	96.1	0.87	0.85	0.80
2100	<b>1PS</b> ■ <b>634-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -630MM-06	239	996	97.1	97.1	96.6	0.87	0.85	0.80
2250	<b>1PS</b> ■ <b>637-6BJ</b> ■ ■ ■ ■ <b>-4CA0</b>	DHS . -630LM-06	256	996	97.1	97.0	96.4	0.87	0.85	0.80
1650	<b>1MV</b> ■ <b>712-6BS</b> ■ ■ ■ ■ <b>-4CA0</b>	DHR . -710AC-06	193	995	96.6	96.5	96.0	0.85	0.82	0.74
1800	<b>1MV</b> ■ <b>715-6BS</b> ■ ■ ■ ■ <b>-4CA0</b>	DHR . -710BD-06	210	995	96.6	96.5	95.9	0.85	0.82	0.73
2000	<b>1MV</b> ■ <b>7166BS</b> ■ ■ ■ ■ <b>-4CA0</b>	DHR . -710BE-06	240	995	96.7	96.6	96.0	0.83	0.80	0.71
2400	<b>1MV</b> ■ <b>718-6BS</b> ■ ■ ■ ■ <b>-4CA0</b>	DHR . -710CG-06	290	996	96.7	96.6	95.9	0.83	0.79	0.70
2400	<b>1PS</b> ■ <b>805-6BS</b> ■ ■ ■ ■ <b>-4CA0</b>	DHR . -800LA-06	277	996	96.8	96.7	95.9	0.86	0.84	0.77
2700	<b>1PS</b> ■ <b>806-6BS</b> ■ ■ ■ ■ <b>-4CA0</b>	DHR . -800LB-06	311	996	96.8	96.7	96.0	0.86	0.84	0.77
3000	<b>1PS</b> ■ <b>807-6BS</b> ■ ■ ■ ■ <b>-4CA0</b>	DHR . -800LC-06	346	996	96.9	96.8	96.1	0.86	0.84	0.77
3250	<b>1PS</b> ■ <b>808-6BS</b> ■ ■ ■ ■ <b>-4CA0</b>	DHR . -800LX-06	374	996	97.0	96.9	96.2	0.86	0.84	0.77

		Ex protection "gas"
4		II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)
5		II 2 G Ex de IIC T4 Gb (flameproof, gas group IIC)
		Rated voltage/connection/frequency
		See page 1/5
		Type of construction
0		IM B3
4		IM V1, with protective hood
6		IM B35
9		IM V10, with protective hood - on request

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

<sup>2)</sup>  $P_{min}$  (3 ... 3.3 kV) = 50 kW,  $P_{min}$  (6.0 kV) = 90 kW,  $P_{min}$  (6.6 kV) = 100 kW

<sup>3)</sup> Higher rating for 3 (3.3) kV: Factor 1.10 (similar electrical data)

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

6-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT	ART	$J_{Mot}$	Motor	Rotor	$I_0$		
	Nm					cold s	hot s	cold s	hot s	kgm <sup>2</sup>	t	t	A
1PS . 350-6BH...	1059	1.10	2.20	5.70	0.29	27	16	46	27	5.9	2.0	0.55	4.6
1PS . 351-6BH...	1298	1.10	2.35	5.80	0.29	22	13	38	22	5.9	2.0	0.55	6.0
1PS . 352-6BH...	1539	1.15	2.30	5.80	0.28	26	15	44	25	7	2.3	0.62	6.7
1PS . 353-6BH...	1732	1.10	2.20	5.60	0.28	22	13	38	22	7	2.3	0.62	7.4
1PS . 355-6BH...	1924	1.00	2.20	5.60	0.25	30	20	50	34	7.8	2.4	0.77	8.3
1PS . 356-6BH...	2161	1.10	2.40	6.10	0.25	30	17	50	29	8.6	2.5	0.85	10.5
1MV . 355-6BD...	2408	1.10	2.00	5.50	0.20	57	25	96	42	11.6	3.2	0.65	13
1MV . 356-6BD...	2701	1.10	2.00	5.50	0.19	47	21	80	35	11.6	3.2	0.65	14
1MV . 357-6BD...	3183	1.10	2.00	5.50	0.19	48	21	81	35	13.5	3.4	0.73	16
1MV . 358-6BD...	3857	1.10	2.00	5.50	0.19	45	20	76	34	15.8	3.6	0.80	19
1PS . 406-6BJ...	4326	1.10	2.25	5.70	0.24	27	18	46	32	19	3.7	0.92	18.5
1PS . 453-6BJ...	5188	0.95	2.10	5.70	0.21	27	18	46	31	31	4.6	1.14	19.8
1PS . 455-6BJ...	5377	1.10	2.20	5.90	0.21	32	21	54	36	36	4.9	1.28	19.4
1PS . 456-6BJ...	6052	1.05	2.10	5.70	0.22	30	20	50	35	36	4.9	1.28	21.0
1PS . 505-6BJ...	6809	0.95	2.30	5.80	0.18	35	23	59	39	54	5.9	1.65	26
1PS . 506-6BJ...	7673	0.95	2.30	5.80	0.18	32	21	54	36	54	5.9	1.65	30
1PS . 507-6BJ...	8631	1.00	2.30	5.90	0.18	32	21	54	36	65	6.3	1.76	33
1PS . 508-6BJ...	9592	0.95	2.25	5.80	0.18	30	20	50	35	65	6.3	1.76	37
1PS . 565-6BJ...	10738	0.90	2.25	5.70	0.17	35	24	59	40	117	8.7	2.50	36
1PS . 566-6BJ...	11983	0.95	2.30	5.90	0.17	29	21	54	35	117	8.7	2.50	43
1PS . 567-6BJ...	13422	0.90	2.25	5.70	0.17	35	24	59	40	147	9.8	2.90	45
1PS . 568-6BJ...	15338	0.95	2.30	5.90	0.18	28	20	47	34	147	9.8	2.90	54
1PS . 633-6BJ...	17245	0.85	2.25	6.30	0.17	34	22	58	37	280	13	4.1	56
1PS . 634-6BJ...	20128	0.80	2.15	5.90	0.16	29	20	49	34	280	13	4.1	65
1PS . 637-6BJ...	21560	0.85	2.25	6.30	0.17	30	20	51	34	328	14.5	4.6	70
1MV . 712-6BS...	15834	1.00	2.50	5.50	0.18	19	14	32	24	118	11.1		63
1MV . 715-6BS...	17267	1.00	2.55	5.50	0.17	19	14	32	24	127	11.9		71
1MV . 7166BS...	19180	0.95	2.60	5.50	0.16	19	14	32	24	136	12.3		87
1MV . 718-6BS...	23010	0.95	2.65	5.50	0.16	20	15	34	26	166	13.0		106
1PS . 805-6BS...	23014	0.90	2.30	6.20	0.18	19	13	32	22	222	15.2	3.9	84
1PS . 806-6BS...	25887	0.90	2.25	6.20	0.18	19	13	32	22	244	15.8	4.1	97
1PS . 807-6BS...	28764	0.90	2.30	6.30	0.18	18	13	30	22	269	16.3	4.3	105
1PS . 808-6BS...	31165	0.90	2.25	6.20	0.18	18	13	30	22	307	17.4	4.7	110

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 6-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>10 kV, 50 Hz, antifriction bearing</b>										
6-pole										
180	<b>1PS</b> ■ <b>500-6BJ8</b> ■ <b>-4CA0</b>	DHS . -500LH-06	13	996	94.5	94.0	92.4	0.84	0.81	0.73
250	<b>1PS</b> ■ <b>501-6BJ8</b> ■ <b>-4CA0</b>	DHS . -500LH-06	18	995	94.9	94.7	93.4	0.85	0.82	0.75
315	<b>1PS</b> ■ <b>502-6BJ8</b> ■ <b>-4CA0</b>	DHS . -500LH-06	22.5	995	95.2	95.1	94.0	0.85	0.82	0.75
400	<b>1PS</b> ■ <b>503-6BJ8</b> ■ <b>-4CA0</b>	DHS . -500LH-06	28.5	995	95.4	95.2	94.2	0.84	0.82	0.74
500	<b>1PS</b> ■ <b>504-6BJ8</b> ■ <b>-4CA0</b>	DHS . -500LH-06	36	995	95.5	95.4	94.5	0.84	0.81	0.73
630	<b>1PS</b> ■ <b>505-6BJ8</b> ■ <b>-4CA0</b>	DHS . -500LK-06	45	995	95.9	95.8	95.0	0.84	0.82	0.75
710	<b>1PS</b> ■ <b>506-6BJ8</b> ■ <b>-4CA0</b>	DHS . -500LK-06	51.5	996	95.9	95.8	94.8	0.83	0.80	0.72
800	<b>1PS</b> ■ <b>563-6BJ8</b> ■ <b>-4CA0</b>	DHS . -560LH-06	56.5	995	96.0	95.8	94.9	0.85	0.83	0.78
900	<b>1PS</b> ■ <b>564-6BJ8</b> ■ <b>-4CA0</b>	DHS . -560LK-06	63.5	995	96.1	95.9	95.0	0.85	0.83	0.78
1000	<b>1PS</b> ■ <b>565-6BJ8</b> ■ <b>-4CA0</b>	DHS . -560LK-06	70.5	995	96.1	96.0	95.2	0.85	0.83	0.77
1150	<b>1PS</b> ■ <b>566-6BJ8</b> ■ <b>-4CA0</b>	DHS . -560LK-06	81	995	96.2	96.2	95.4	0.85	0.83	0.77
1250	<b>1PS</b> ■ <b>630-6BJ8</b> ■ <b>-4CA0</b>	DHS . -630MH-06	88	996	96.4	96.2	95.3	0.85	0.84	0.78
1400	<b>1PS</b> ■ <b>632-6BJ8</b> ■ <b>-4CA0</b>	DHS . -630MK-06	98	996	96.5	96.3	95.4	0.85	0.84	0.78
1600	<b>1PS</b> ■ <b>635-6BJ8</b> ■ <b>-4CA0</b>	DHS . -630LK-06	112	996	96.6	96.5	95.6	0.85	0.83	0.77
1800	<b>1PS</b> ■ <b>636-6BJ8</b> ■ <b>-4CA0</b>	DHS . -630LK-06	126	996	96.7	96.6	95.8	0.85	0.83	0.77
1300	<b>1MV</b> ■ <b>711-6BS8</b> ■ <b>-4CA0</b>	DHR . -710AB-06	93	994	96.3	96.3	95.7	0.84	0.81	0.74
1450	<b>1MV</b> ■ <b>712-6BS8</b> ■ <b>-4CA0</b>	DHR . -710AC-06	103	994	96.3	96.3	95.7	0.84	0.81	0.72
1600	<b>1MV</b> ■ <b>715-6BS8</b> ■ <b>-4CA0</b>	DHR . -710BD-06	114	994	96.4	96.4	95.7	0.84	0.81	0.73
1800	<b>1MV</b> ■ <b>716-6BS8</b> ■ <b>-4CA0</b>	DHR . -710BE-06	128	994	96.5	96.4	95.8	0.84	0.81	0.73
1900	<b>1PS</b> ■ <b>802-6BS8</b> ■ <b>-4CA0</b>	DHR . -800MB-06	134	996	96.4	96.3	95.4	0.85	0.82	0.74
2150	<b>1PS</b> ■ <b>805-6BS8</b> ■ <b>-4CA0</b>	DHR . -800LA-06	151	996	96.5	96.4	95.6	0.85	0.82	0.74
2350	<b>1PS</b> ■ <b>806-6BS8</b> ■ <b>-4CA0</b>	DHR . -800LB-06	167	996	96.5	96.4	95.5	0.84	0.81	0.72

		Ex protection "gas"
<b>4</b>		II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)
<b>5</b>		II 2 G Ex de IIC T4 Gb (flameproof, gas group IIC)
		Type of construction
	<b>0</b>	IM B3
	<b>4</b>	IM V1, with protective hood
	<b>6</b>	IM B35
	<b>9</b>	IM V10, with protective hood -on request

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W



## LOHER VARIO 1PS./1MV. flameproof motors for line operation

6-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT	ART	$J_{Mot}$	Motor	Rotor	$I_0$		
	Nm					cold s	hot s	cold s	hot s	kgm <sup>2</sup>	t	t	A
1PS . 500-6BJ8...	1725	0.90	2.35	6.2	0.20	116	50	197	85	46	5.7	1.6	4.5
1PS . 501-6BJ8...	2397	0.85	2.25	5.9	0.20	87	37	148	63	46	5.7	1.6	5.8
1PS . 502-6BJ8...	3020	0.85	2.25	5.9	0.20	72	33	122	56	46	5.7	1.6	7.4
1PS . 503-6BJ8...	3835	0.90	2.30	6.1	0.20	54	26	92	44	46	5.7	1.6	9.8
1PS . 504-6BJ8...	4793	0.90	2.30	6.0	0.20	43	20	73	34	46	5.7	1.6	13
1PS . 505-6BJ8...	6040	0.90	2.20	5.9	0.20	42	25	71	42	55	5.9	1.65	15
1PS . 506-6BJ8...	6805	1.00	2.40	6.4	0.19	32	19	54	32	55	5.9	1.65	19
1PS . 563-6BJ8...	7672	0.85	2.05	5.8	0.18	38	26	64	44	108	8.4	2.4	17
1PS . 564-6BJ8...	8629	0.90	2.10	5.9	0.18	35	24	60	40	117	8.7	2.5	19
1PS . 565-6BJ8...	9589	0.85	2.05	5.8	0.18	34	23	58	39	117	8.7	2.5	21
1PS . 566-6BJ8...	11027	0.90	2.10	6.0	0.18	27	18	46	31	117	8.7	2.5	25
1PS . 630-6BJ8...	11983	0.90	2.20	6.2	0.18	26	17	44	29	205	11.6	3.6	26
1PS . 632-6BJ8...	13418	0.90	2.10	6.3	0.18	26	17	44	29	227	12.3	3.8	29
1PS . 635-6BJ8...	15335	0.95	2.15	6.4	0.18	26	17	44	29	277	13.5	4.3	34
1PS . 636-6BJ8...	17254	0.95	2.15	6.4	0.18	22	15	37	25	277	13.5	4.3	38
1MV . 711-6BS8...	12490	1.10	2.25	5.5	0.20	16	12	27	20	104	10.9		30
1MV . 712-6BS8...	13924	1.20	2.40	5.5	0.20	14	10	24	17	114.4	11.3		36
1MV . 715-6BS8...	15367	1.15	2.30	5.5	0.20	15	11	26	19	125	12.1		37
1MV . 716-6BS8...	17284	1.15	2.35	5.5	0.20	14	10	24	17	134.8	12.5		43
1PS . 802-6BS8...	18214	0.90	2.35	6.1	0.18	22	16	37	27	195	14.3	3.7	46
1PS . 805-6BS8...	20609	0.90	2.35	6.2	0.18	21	15	35	25	215	15.3	3.9	51
1PS . 806-6BS8...	22518	0.90	2.40	6.2	0.18	21	16	35	27	235	15.9	4.1	60

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 6-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>6.6 kV, 50 Hz, sleeve bearing</b>										
6-pole										
315	<b>1PS4402-6BJ 0-4CD0</b>	DHTL-400LK-06	38	993	95.3	95.3	94.7	0.83	0.80	0.72
355	<b>1PS4403-6BJ 0-4CD0</b>	DHTL-400LK-06	43	993	95.5	95.5	94.9	0.83	0.80	0.72
400	<b>1PS4405-6BJ 0-4CD0</b>	DHTL-400LM-06	48	992	95.8	95.8	95.1	0.84	0.82	0.75
450	<b>1PS4406-6BJ 0-4CD0</b>	DHTL-400LM-06	54.5	993	95.9	95.9	95.2	0.83	0.80	0.71
540	<b>1PS4453-6BJ 0-4CD0</b>	DHTL-450LK-06	64	993	96.1	96.0	95.3	0.85	0.83	0.76
560	<b>1PS4455-6BJ 0-4CD0</b>	DHTL-450LM-06	66	994	96.2	96.3	95.7	0.85	0.83	0.76
630	<b>1PS4456-6BJ 0-4CD0</b>	DHTL-450LM-06	74	994	96.3	96.4	95.9	0.85	0.84	0.77
710	<b>1PS4505-6BJ 0-4CD0</b>	DHTL-500LK-06	83.5	995	96.4	96.4	95.6	0.85	0.82	0.75
800	<b>1PS4506-6BJ 0-4CD0</b>	DHTL-500LK-06	95	995	96.5	96.5	95.8	0.85	0.82	0.74
900	<b>1PS4507-6BJ 0-4CD0</b>	DHTL-500LM-06	105	995	96.6	96.5	95.8	0.85	0.82	0.75
1000	<b>1PS4508-6BJ 0-4CD0</b>	DHTL-500LM-06	117	995	96.7	96.7	96.0	0.85	0.82	0.75
1120	<b>1PS4565-6BJ 0-4CD0</b>	DHTL-560LK-06	128	996	96.8	96.8	96.1	0.86	0.85	0.79
1250	<b>1PS4566-6BJ 0-4CD0</b>	DHTL-560LK-06	144	996	96.9	96.9	96.2	0.86	0.84	0.78
1400	<b>1PS4567-6BJ 0-4CD0</b>	DHTL-560LM-06	160	996	96.9	96.9	96.3	0.86	0.85	0.79
1600	<b>1PS4568-6BJ 0-4CD0</b>	DHTL-560LM-06	183	996	97.1	97.1	96.5	0.86	0.85	0.78
1800	<b>1PS4633-6BJ 0-4CD0</b>	DHTL-630MM-06	205	996	96.9	96.8	96.1	0.87	0.85	0.80
2100	<b>1PS4634-6BJ 0-4CD0</b>	DHTL-630MM-06	239	996	97.1	97.1	96.6	0.87	0.85	0.80
2250	<b>1PS4637-6BJ 0-4CD0</b>	DHTL-630LM-06	256	996	97.1	97.0	96.4	0.87	0.85	0.80
1650	<b>1MV4712-6BS 0-4CD0</b>	DHQL-710AC-06	193	995	96.6	96.5	96.0	0.85	0.82	0.74
1800	<b>1MV4715-6BS 0-4CD0</b>	DHQL-710BD-06	215	995	96.6	96.5	96.0	0.85	0.82	0.73
2000	<b>1MV4716-6BS 0-4CD0</b>	DHQL-710BE-06	240	995	96.7	96.6	95.9	0.83	0.80	0.71
2400	<b>1MV4718-6BS 0-4CD0</b>	DHQL-710CG-06	290	995	96.7	96.6	95.9	0.83	0.79	0.70
2400	<b>1PS4805-6BS 0-4CD0</b>	DHQL-800LA-06	277	996	96.8	96.7	95.9	0.86	0.84	0.77
2700	<b>1PS4806-6BS 0-4CD0</b>	DHQL-800LB-06	311	996	96.8	96.7	96.0	0.86	0.84	0.77
3000	<b>1PS4807-6BS 0-4CD0</b>	DHQL-800LC-06	346	996	96.9	96.8	96.1	0.86	0.84	0.77
3250	<b>1PS4808-6BS 0-4CD0</b>	DHQL-800LX-06	374	996	97.0	96.9	96.2	0.86	0.84	0.77
<b>10 kV, 50 Hz, sleeve bearing</b>										
6-pole										
1300	<b>1MV4711-6BS80-4CD0</b>	DHQL-710AB-06	93	994	96.3	96.3	95.7	0.84	0.81	0.73
1450	<b>1MV4712-6BS80-4CD0</b>	DHQL-710AC-06	103	994	96.3	96.3	95.7	0.84	0.80	0.72
1600	<b>1MV4715-6BS80-4CD0</b>	DHQL-710BD-06	114	994	96.4	96.4	95.7	0.84	0.81	0.73
1800	<b>1MV4716-6BS80-4CD0</b>	DHQL-710BE-06	128	994	96.5	96.4	95.8	0.84	0.81	0.73

Rated voltage/connection/frequency

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<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

6-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT	ART	$J_{Mot}$	Motor	Rotor	$I_0$		
	Nm					cold s	hot s	cold s	hot s	kgm <sup>2</sup>	t	t	A
1PS4402-6BJ...	3028	1.00	2.20	5.60	0.24	32	20	54	36	16	3.7	0.92	12.7
1PS4403-6BJ...	3413	1.10	2.25	5.80	0.24	27	18	46	32	16	3.7	0.92	14.5
1PS4405-6BJ...	3847	1.00	2.10	5.50	0.24	32	20	54	36	19	4.0	1.02	14.5
1PS4406-6BJ...	4326	1.10	2.25	5.70	0.24	27	18	46	32	19	4.0	1.02	18.5
1PS4453-6BJ...	5188	0.95	2.10	5.7	0.21	27	18	46	31	31	5.0	1.24	20
1PS4455-6BJ...	5377	1.10	2.20	5.9	0.21	32	21	54	36	36	5.3	1.38	20
1PS4456-6BJ...	6052	1.05	2.10	5.7	0.22	30	20	50	35	36	5.3	1.38	21
1PS4505-6BJ...	6809	0.95	2.30	5.8	0.18	35	23	59	39	54	6.3	1.75	26
1PS4506-6BJ...	7673	0.95	2.30	5.8	0.18	32	21	54	36	54	6.3	1.75	30
1PS4507-6BJ...	8631	1.00	2.30	5.9	0.18	32	21	54	36	65	6.7	1.86	33
1PS4508-6BJ...	9592	0.95	2.25	5.8	0.18	30	20	50	35	65	6.7	1.86	37
1PS4565-6BJ...	10738	0.90	2.25	5.7	0.17	35	24	59	40	117	9.1	2.60	36
1PS4566-6BJ...	11983	0.95	2.30	5.9	0.17	29	21	54	35	117	9.1	2.60	43
1PS4567-6BJ...	13422	0.90	2.25	5.7	0.17	35	24	59	40	147	10.2	3.00	45
1PS4568-6BJ...	15338	0.95	2.30	5.9	0.18	28	20	47	34	147	10.2	3.00	54
1PS4633-6BJ...	17245	0.85	2.25	6.3	0.17	34	22	58	37	280	13.2	4.2	56
1PS4634-6BJ...	20128	0.80	2.15	5.9	0.16	29	20	49	34	280	13.2	4.2	65
1PS4637-6BJ...	21560	0.85	2.25	6.3	0.17	30	20	51	34	328	14.7	4.7	70
1MV4712-6BS...	15834	1.00	2.50	5.5	0.18	19	14	32	24	116.7	10.6		63
1MV4715-6BS...	17267	1.00	2.55	5.5	0.17	19	14	32	24	126.5	11.4		71
1MV4716-6BS...	19180	0.95	2.60	5.5	0.16	19	14	32	24	134.9	12.2		88
1MV4718-6BS...	23010	0.95	2.65	5.5	0.16	20	15	34	26	171.9	12.8		110
1PS4805-6BS...	23014	0.90	2.30	6.2	0.18	19	13	32	22	222	15.5	4.0	84
1PS4806-6BS...	25887	0.90	2.25	6.2	0.18	19	13	32	22	244	16.1	4.2	97
1PS4807-6BS...	28764	0.90	2.30	6.3	0.18	18	13	30	22	269	16.6	4.4	105
1PS4808-6BS...	31165	0.90	2.25	6.2	0.18	18	13	30	22	307	17.4	4.8	110
1MV4711-6BS80-...	12490	1.10	2.25	5.5	0.20	16	12	27	20	103			30
1MV4712-6BS80-...	13924	1.20	2.40	5.5	0.20	14	10	24	17	114			36
1MV4715-6BS80-...	15367	1.15	2.30	5.5	0.20	15	11	26	19	124			37
1MV4716-6BS80-...	17284	1.15	2.35	5.5	0.19	14	10	24	17	134			44

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 8-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 3 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>3 ... 3.3 kV, 50 Hz, antifriction bearing</b>										
8-pole										
100 <sup>2)</sup>	<b>1PS</b> ■ <b>350-6BH</b> ■ <b>0-4DA0</b>	DHS . -355MB-08	26	743	93.0	92.9	91.5	0.79	0.75	0.65
110	<b>1PS</b> ■ <b>351-6BH</b> ■ <b>0-4DA0</b>	DHS . -355MB-08	29	743	93.3	93.2	91.9	0.78	0.74	0.64
132	<b>1PS</b> ■ <b>352-6BH</b> ■ <b>0-4DA0</b>	DHS . -355LB-08	34.5	743	93.4	93.4	92.4	0.79	0.75	0.65
150	<b>1PS</b> ■ <b>353-6BH</b> ■ <b>0-4DA0</b>	DHS . -355LB-08	39.5	743	93.8	93.8	92.7	0.78	0.74	0.64
160	<b>1PS</b> ■ <b>355-6BH</b> ■ <b>0-4DA0</b>	DHS . -355LC-08	42.5	744	93.8	93.7	92.6	0.77	0.73	0.62
180	<b>1PS</b> ■ <b>356-6BH</b> ■ <b>0-4DA0</b>	DHS . -355LD-08	47	743	94.0	93.9	92.8	0.78	0.73	0.64
210	<b>1PS</b> ■ <b>357-6BJ</b> ■ <b>0-4DA0</b>	DHS . -355LM-08	55	743	94.8	94.7	93.9	0.78	0.74	0.64
<b>3 ... 6.6 kV, 50 Hz, antifriction bearing</b>										
8-pole										
132 <sup>2)</sup>	<b>1PS</b> ■ <b>400-6BJ</b> ■ <b>0-4DA0</b>	DHS . -400LH-08	$I_{rated}$ at 6 kV 17	744	94.2	94.1	92.9	0.80	0.76	0.67
160	<b>1PS</b> ■ <b>401-6BJ</b> ■ <b>0-4DA0</b>	DHS . -400LH-08	21	744	94.2	94.2	93.1	0.79	0.75	0.65
180	<b>1PS</b> ■ <b>402-6BJ</b> ■ <b>0-4DA0</b>	DHS . -400LH-08	23.5	744	94.3	94.3	93.3	0.78	0.74	0.64
200	<b>1PS</b> ■ <b>403-6BJ</b> ■ <b>0-4DA0</b>	DHS . -400LH-08	26.5	744	94.4	94.4	93.3	0.78	0.73	0.63
225	<b>1PS</b> ■ <b>404-6BJ</b> ■ <b>0-4DA0</b>	DHS . -400LK-08	29.5	744	94.8	94.8	93.9	0.78	0.74	0.64
260	<b>1PS</b> ■ <b>405-6BJ</b> ■ <b>0-4DA0</b>	DHS . -400LK-08	33.5	744	94.5	94.3	93.3	0.78	0.74	0.64
280	<b>1PS</b> ■ <b>406-6BJ</b> ■ <b>0-4DA0</b>	DHS . -400LM-08	36	744	95.0	95.1	94.2	0.79	0.75	0.66
315	<b>1PS</b> ■ <b>407-6BJ</b> ■ <b>0-4DA0</b>	DHS . -400LM-08	40.5	744	95.2	95.2	94.4	0.78	0.74	0.64
355	<b>1PS</b> ■ <b>408-6BJ</b> ■ <b>0-4DA0</b>	DHS . -400LX-08	46	744	95.3	95.3	94.6	0.78	0.74	0.64
400	<b>1PS</b> ■ <b>454-6BJ</b> ■ <b>0-4DA0</b>	DHS . -450LK-08	50	745	95.7	95.7	95.1	0.80	0.76	0.67
450	<b>1PS</b> ■ <b>456-6BJ</b> ■ <b>0-4DA0</b>	DHS . -450LM-08	55.5	744	95.7	95.7	95.2	0.81	0.78	0.69
500	<b>1PS</b> ■ <b>457-6BJ</b> ■ <b>0-4DA0</b>	DHS . -450LM-08	62	744	95.8	95.8	95.3	0.81	0.78	0.69
560	<b>1PS</b> ■ <b>458-6BJ</b> ■ <b>0-4DA0</b>	DHS . -450LX-08	70	744	95.9	95.9	95.4	0.80	0.76	0.68
630	<b>1PS</b> ■ <b>505-6BJ</b> ■ <b>0-4DA0</b>	DHS . -500LK-08	75	745	96.2	96.3	95.8	0.84	0.82	0.75
730	<b>1PS</b> ■ <b>507-6BJ</b> ■ <b>0-4DA0</b>	DHS . -500LM-08	86.5	745	96.1	96.2	95.7	0.84	0.82	0.75
800	<b>1PS</b> ■ <b>508-6BJ</b> ■ <b>0-4DA0</b>	DHS . -500LX-08	97.5	745	96.3	96.3	95.6	0.83	0.79	0.70
960	<b>1PS</b> ■ <b>566-6BJ</b> ■ <b>0-4DA0</b>	DHS . -560LK-08	116	746	96.5	96.3	95.4	0.83	0.80	0.72
1000	<b>1PS</b> ■ <b>567-6BJ</b> ■ <b>0-4DA0</b>	DHS . -560LM-08	120	746	96.6	96.5	95.8	0.84	0.81	0.73
1120	<b>1PS</b> ■ <b>568-6BJ</b> ■ <b>0-4DA0</b>	DHS . -560LM-08	134	746	96.7	96.6	95.9	0.83	0.81	0.73
1250	<b>1PS</b> ■ <b>632-6BJ</b> ■ <b>0-4DA0</b>	DHS . -630MK-08	148	746	96.8	96.7	96.0	0.84	0.81	0.74
1400	<b>1PS</b> ■ <b>633-6BJ</b> ■ <b>0-4DA0</b>	DHS . -630MM-08	165	746	96.8	96.8	96.1	0.84	0.82	0.75
1600	<b>1PS</b> ■ <b>634-6BJ</b> ■ <b>0-4DA0</b>	DHS . -630MM-08	189	746	96.8	96.8	96.2	0.84	0.82	0.75
1800	<b>1PS</b> ■ <b>637-6BJ</b> ■ <b>0-4DA0</b>	DHS . -630LM-08	212	746	96.9	96.9	96.3	0.84	0.82	0.75
1900	<b>1PS</b> ■ <b>805-6BS</b> ■ <b>0-4DA0</b>	DHR . -800LA-08	228	746	96.5	96.5	95.7	0.83	0.80	0.72
2150	<b>1PS</b> ■ <b>806-6BS</b> ■ <b>0-4DA0</b>	DHR . -800LB-08	257	746	96.6	96.6	95.9	0.83	0.80	0.73
2400	<b>1PS</b> ■ <b>807-6BS</b> ■ <b>0-4DA0</b>	DHR . -800LC-08	287	746	96.7	96.7	96.1	0.83	0.81	0.73

4

Ex protection "gas"

II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)

5

II 2 G Ex de IIC T4 Gb (flameproof, gas group IIC)

Rated voltage/connection/frequency

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<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

<sup>2)</sup>  $P_{min}$  (3 ... 3.3 kV) = 50 kW,  $P_{min}$  (6.0 kV) = 132 kW

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

8-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT	ART	J <sub>Mot</sub>	Motor	Rotor	$I_0$		
	Nm					cold s	hot s	cold s	hot s	kgm <sup>2</sup>	t	t	A
1PS . 350-6BH...	1283	0,95	2,20	5,20	0,26	52	22	88	37	6,8	2,05	0,58	12,0
1PS . 351-6BH...	1411	1,00	2,35	5,40	0,26	46	19	48	32	6,8	2,05	0,58	14,0
1PS . 352-6BH...	1694	0,95	2,15	5,10	0,25	50	22	85	37	8,1	2,4	0,65	15,3
1PS . 353-6BH...	1925	1,00	2,20	5,20	0,25	48	20	81	34	8,1	2,4	0,65	18,6
1PS . 355-6BH...	2052	1,10	2,35	5,40	0,25	35	16	59	27	9,0	2,5	0,82	19
1PS . 356-6BH...	2309	1,05	2,30	5,40	0,24	48	20	81	34	9,7	2,6	0,87	21,5
1PS . 357-6BJ...	2695	1,10	2,10	5,30	0,23	38	21	65	36	11,5	2,6	0,69	22,8
1PS . 400-6BJ...	1693	0,95	2,10	5,00	0,23	45	26	75	44	13	3,2	0,76	6,5
1PS . 401-6BJ...	2052	1,00	2,15	5,10	0,24	38	22	64	38	13	3,2	0,76	8,3
1PS . 402-6BJ...	2308	1,05	2,15	5,30	0,24	36	21	60	36	13	3,2	0,76	9,8
1PS . 403-6BJ...	2564	1,05	2,15	5,20	0,25	32	18	54	31	13	3,2	0,76	11,5
1PS . 404-6BJ...	2884	1,10	2,20	5,40	0,24	38	22	64	38	16	3,5	0,78	12
1PS . 405-6BJ...	3336	1,05	2,10	5,40	0,24	35	24	59	40	16	3,5	0,78	14
1PS . 406-6BJ...	3591	1,05	2,10	5,30	0,23	39	23	65	39	19	3,6	0,94	14
1PS . 407-6BJ...	4043	1,10	2,15	5,30	0,23	37	22	62	38	19	3,6	0,94	16
1PS . 408-6BJ...	4554	1,10	2,15	5,30	0,24	37	22	62	38	21	3,8	1,03	19,5
1PS . 454-6BJ...	5126	1,10	2,25	5,70	0,22	32	20	53	34	33,5	4,3	1,19	19,5
1PS . 456-6BJ...	5769	1,05	2,15	5,50	0,21	33	21	56	36	40	4,8	1,35	20
1PS . 457-6BJ...	6411	1,05	2,10	5,40	0,21	32	20	53	34	40	4,8	1,35	23
1PS . 458-6BJ...	7181	1,05	2,10	5,40	0,22	30	20	50	34	44	5,1	1,48	27,5
1PS . 505-6BJ...	8070	0,95	2,25	5,60	0,20	27	15	46	25	67	5,9	1,74	23,5
1PS . 507-6BJ...	9353	0,95	2,15	5,60	0,20	26	15	44	25	81	6,6	2,07	27,5
1PS . 508-6BJ...	10241	0,85	2,30	6,00	0,21	25	15	41	25	89	6,9	2,14	37,5
1PS . 566-6BJ...	12279	0,90	2,30	5,90	0,18	24	13	41	22	150	9,3	2,90	42
1PS . 567-6BJ...	12790	0,95	2,25	5,60	0,18	26	14	44	24	180	10,2	3,20	41
1PS . 568-6BJ...	14325	1,00	2,30	5,70	0,18	21	12	36	20	180	10,2	3,20	47
1PS . 632-6BJ...	16000	0,95	2,25	5,90	0,19	17	11	29	19	300	12,3	4,1	49
1PS . 633-6BJ...	17900	0,90	2,20	5,80	0,19	19	12	32	20	360	13,7	4,7	52
1PS . 634-6BJ...	20480	0,90	2,15	5,70	0,19	17	11	29	19	360	13,7	4,7	60
1PS . 637-6BJ...	23040	0,95	2,20	6,00	0,19	16	11	27	19	420	15,2	5,2	68
1PS . 805-6BS...	24300	0,85	2,25	5,80	0,19	16	11	27	18	275	15,6	4,3	81
1PS . 806-6BS...	27500	0,85	2,25	5,80	0,19	15	10	26	17	300	16,1	4,5	90
1PS . 807-6BS...	30710	0,85	2,15	5,60	0,18	15	10	26	17	325	16,7	4,7	96

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 8-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>10 kV, 50 Hz, antifriction bearing</b>										
8-pole										
280	<b>1PS 500-6BJ80-4DA0</b>	DHS . -500LK-08	20.5	746	95.1	95.1	94.2	0.83	0.80	0.71
315	<b>1PS 501-6BJ80-4DA0</b>	DHS . -500LK-08	22.5	745	95.1	95.2	94.5	0.84	0.81	0.74
355	<b>1PS 502-6BJ80-4DA0</b>	DHS . -500LK-08	25.5	745	95.1	95.2	94.5	0.84	0.81	0.74
400	<b>1PS 503-6BJ80-4DA0</b>	DHS . -500LK-08	29	745	95.3	95.4	94.7	0.84	0.81	0.74
450	<b>1PS 504-6BJ80-4DA0</b>	DHS . -500LK-08	32.5	745	95.3	95.4	94.7	0.84	0.81	0.73
500	<b>1PS 505-6BJ80-4DA0</b>	DHS . -500LK-08	36.5	746	95.4	95.5	94.8	0.83	0.80	0.71
560	<b>1PS 506-6BJ80-4DA0</b>	DHS . -500LM-08	40	745	95.5	95.5	94.9	0.84	0.81	0.73
630	<b>1PS 507-6BJ80-4DA0</b>	DHS . -500LM-08	45	745	95.6	95.7	95.2	0.84	0.82	0.74
710	<b>1PS 565-6BJ80-4DA0</b>	DHS . -560LK-08	51.5	746	96.0	95.9	94.9	0.83	0.80	0.72
850	<b>1PS 566-6BJ80-4DA0</b>	DHS . -560LK-08	62	746	96.1	96.0	95.1	0.82	0.79	0.71
900	<b>1PS 630-6BJ80-4DA0</b>	DHS . -630MH-08	64	746	96.3	96.2	95.4	0.84	0.81	0.74
1000	<b>1PS 631-6BJ80-4DA0</b>	DHS . -630MH-08	71	746	96.3	96.3	95.5	0.84	0.81	0.74
1120	<b>1PS 632-6BJ80-4DA0</b>	DHS . -630MK-08	80	746	96.4	96.4	95.8	0.84	0.82	0.75
1250	<b>1PS 635-6BJ80-4DA0</b>	DHS . -630LK-08	89	746	96.4	96.4	95.8	0.84	0.82	0.75
1400	<b>1PS 636-6BJ80-4DA0</b>	DHS . -630LK-08	100	746	96.5	96.5	95.8	0.84	0.81	0.74
1600	<b>1PS 805-6BS80-4DA0</b>	DHR . -800LA-08	116	746	96.1	96.0	95.2	0.83	0.80	0.71
1800	<b>1PS 806-6BS80-4DA0</b>	DHR . -800LB-08	130	746	96.2	96.2	95.4	0.83	0.80	0.73
		Ex protection "gas"								
	<b>4</b>	II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)								
	<b>5</b>	II 2 G Ex de IIC T4 Gb (flameproof, gas group IIC)								

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

8-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT		ART		$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					cold	hot	cold	hot	kgm <sup>2</sup>	t	t	A
1PS . 500-6BJ80-...	3581	0.95	2.45	6.3	0.22	51	26	86	44	67	5.9	1.74	7.5
1PS . 501-6BJ80-...	4032	0.85	2.20	5.8	0.22	51	26	86	44	67	5.9	1.74	7.5
1PS . 502-6BJ80-...	4544	0.85	2.20	5.8	0.22	44	23	75	39	67	5.9	1.74	8.5
1PS . 503-6BJ80-...	5120	0.85	2.20	5.8	0.22	39	20	66	34	67	5.9	1.74	10.0
1PS . 504-6BJ80-...	5760	0.90	2.30	5.9	0.22	33	17	56	29	67	5.9	1.74	11.0
1PS . 505-6BJ80-...	6398	0.95	2.35	6.0	0.22	28	14	47	24	67	5.9	1.74	13.5
1PS . 506-6BJ80-...	7167	0.90	2.25	5.9	0.22	31	16	53	27	80	6.6	2.07	13.5
1PS . 507-6BJ80-...	8066	0.90	2.20	5.8	0.22	28	15	48	25	80	6.6	2.07	15.0
1PS . 565-6BJ80-...	9079	0.80	2.30	5.8	0.19	30	16	51	27	150	9.3	2.9	18.5
1PS . 566-6BJ80-...	10868	0.85	2.40	6.0	0.19	23	12	39	20	150	9.3	2.9	23.5
1PS . 630-6BJ80-...	11507	0.85	2.25	5.9	0.19	25	13	43	22	270	12.0	2.8	21.5
1PS . 631-6BJ80-...	12786	0.85	2.25	5.9	0.19	23	12	39	20	270	12.0	2.8	23.5
1PS . 632-6BJ80-...	14324	0.85	2.15	5.8	0.19	22	12	37	20	300	12.4	4.0	25.5
1PS . 635-6BJ80-...	15987	0.85	2.10	5.7	0.19	24	12	41	20	360	13.9	4.6	28.0
1PS . 636-6BJ80-...	17903	0.90	2.20	5.9	0.19	21	11	36	19	360	13.9	4.6	33.0
1PS . 805-6BS80-...	20455	0.80	2.30	5.9	0.19	19	12	32	20	275	15.7	4.3	43.0
1PS . 806-6BS80-...	23017	0.80	2.20	5.7	0.19	19	12	32	20	300	16.2	4.5	45.5

Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 8-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher	Rated current $I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>6.6 kV, 50 Hz, sleeve bearing</b>										
8-pole										
132 <sup>1)</sup>	<b>1PS4400-6BJ</b> ■ <b>0-4DD0</b>	DHTL-400LH-08	17	744	94.2	94.1	92.9	0.80	0.76	0.67
160	<b>1PS4401-6BJ</b> ■ <b>0-4DD0</b>	DHTL-400LH-08	21	744	94.2	94.2	93.1	0.79	0.75	0.65
180	<b>1PS4402-6BJ</b> ■ <b>0-4DD0</b>	DHTL-400LH-08	23.5	744	94.3	94.3	93.3	0.78	0.74	0.64
200	<b>1PS4403-6BJ</b> ■ <b>0-4DD0</b>	DHTL-400LH-08	26.5	744	94.4	94.4	93.3	0.78	0.73	0.63
225	<b>1PS4404-6BJ</b> ■ <b>0-4DD0</b>	DHTL-400LK-08	29.5	744	94.8	94.8	93.9	0.78	0.74	0.64
260	<b>1PS4405-6BJ</b> ■ <b>0-4DD0</b>	DHTL-400LK-08	33.5	744	94.5	94.3	93.3	0.78	0.74	0.64
280	<b>1PS4406-6BJ</b> ■ <b>0-4DD0</b>	DHTL-400LM-08	36	744	95.0	95.1	94.2	0.79	0.75	0.66
315	<b>1PS4407-6BJ</b> ■ <b>0-4DD0</b>	DHTL-400LM-08	40.5	744	95.2	95.2	94.4	0.78	0.74	0.64
355	<b>1PS4408-6BJ</b> ■ <b>0-4DD0</b>	DHTL-400LX-08	46	744	95.3	95.3	94.6	0.78	0.74	0.64
400	<b>1PS4454-6BJ</b> ■ <b>0-4DD0</b>	DHTL-450LK-08	50	745	95.7	95.7	95.1	0.80	0.76	0.67
450	<b>1PS4456-6BJ</b> ■ <b>0-4DD0</b>	DHTL-450LM-08	55.5	744	95.7	95.7	95.2	0.81	0.78	0.69
500	<b>1PS4457-6BJ</b> ■ <b>0-4DD0</b>	DHTL-450LM-08	62	744	95.8	95.8	95.3	0.81	0.78	0.69
560	<b>1PS4458-6BJ</b> ■ <b>0-4DD0</b>	DHTL-450LX-08	70	744	95.9	95.9	95.4	0.80	0.76	0.68
630	<b>1PS4505-6BJ</b> ■ <b>0-4DD0</b>	DHTL-500LK-08	75	745	96.2	96.3	95.8	0.84	0.82	0.75
730	<b>1PS4507-6BJ</b> ■ <b>0-4DD0</b>	DHTL-500LM-08	86.5	745	96.1	96.2	95.7	0.84	0.82	0.75
800	<b>1PS4508-6BJ</b> ■ <b>0-4DD0</b>	DHTL-500LX-08	97.5	745	96.3	96.3	95.6	0.83	0.79	0.70
960	<b>1PS4566-6BJ</b> ■ <b>0-4DD0</b>	DHTL-560LK-08	116	746	96.5	96.3	95.4	0.83	0.80	0.72
1000	<b>1PS4567-6BJ</b> ■ <b>0-4DD0</b>	DHTL-560LM-08	120	746	96.6	96.5	95.8	0.84	0.81	0.73
1120	<b>1PS4568-6BJ</b> ■ <b>0-4DD0</b>	DHTL-560LM-08	134	746	96.7	96.6	95.9	0.83	0.81	0.73
1250	<b>1PS4632-6BJ</b> ■ <b>0-4DD0</b>	DHTL-630MK-08	148	746	96.8	96.7	96.0	0.84	0.81	0.74
1400	<b>1PS4633-6BJ</b> ■ <b>0-4DD0</b>	DHTL-630MM-08	165	746	96.8	96.8	96.1	0.84	0.82	0.75
1600	<b>1PS4634-6BJ</b> ■ <b>0-4DD0</b>	DHTL-630MM-08	189	746	96.8	96.8	96.2	0.84	0.82	0.75
1800	<b>1PS4637-6BJ</b> ■ <b>0-4DD0</b>	DHTL-630LM-08	212	746	96.9	96.9	96.3	0.84	0.82	0.75
1900	<b>1PS4805-6BS</b> ■ <b>0-4DD0</b>	DHQL-800LA-08	228	746	96.5	96.5	95.7	0.83	0.80	0.72
2150	<b>1PS4806-6BS</b> ■ <b>0-4DD0</b>	DHQL-800LB-08	257	746	96.6	96.6	95.9	0.83	0.80	0.73
2400	<b>1PS4807-6BS</b> ■ <b>0-4DD0</b>	DHQL-800LC-08	287	746	96.7	96.7	96.1	0.83	0.81	0.73
		Rated voltage/connection/frequency								
		See page 1/5								

<sup>1)</sup>  $P_{min}$  (3 ... 3.3 kV) = 50 kW,  $P_{min}$  (6.0 kV) = 132 kW



## LOHER VARIO 1PS./1MV. flameproof motors for line operation

8-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT		ART		$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					cold	hot	cold	hot	kgm <sup>2</sup>	t	t	A
1PS4400-6BJ...	1693	0.95	2.10	5.00	0.23	45	26	75	44	13	3.5	0.86	6.5
1PS4401-6BJ...	2052	1.00	2.15	5.10	0.24	38	22	64	38	13	3.5	0.86	8.3
1PS4402-6BJ...	2308	1.05	2.15	5.30	0.24	36	21	60	36	13	3.5	0.86	9.8
1PS4403-6BJ...	2564	1.05	2.15	5.20	0.25	32	18	54	31	13	3.5	0.86	11.5
1PS4404-6BJ...	2884	1.10	2.20	5.40	0.24	38	22	64	38	16	3.8	0.88	12
1PS4405-6BJ...	3336	1.05	2.10	5.40	0.24	35	24	59	40	16	3.5	0.78	14
1PS4406-6BJ...	3591	1.05	2.10	5.30	0.23	39	23	65	39	19	3.9	1.04	14
1PS4407-6BJ...	4043	1.10	2.15	5.30	0.23	37	22	62	38	19	3.9	1.04	16
1PS4408-6BJ...	4554	1.10	2.15	5.30	0.24	37	22	62	38	21	4.1	1.13	19.5
1PS4454-6BJ...	5126	1.10	2.25	5.7	0.22	32	20	53	34	33.5	4.7	1.29	19.5
1PS4456-6BJ...	5769	1.05	2.15	5.5	0.21	33	21	56	36	40	5.2	1.45	20
1PS4457-6BJ...	6411	1.05	2.10	5.4	0.21	32	20	53	34	40	5.2	1.45	23
1PS4458-6BJ...	7181	1.05	2.10	5.4	0.22	30	20	50	34	44	5.5	1.58	27.5
1PS4505-6BJ...	8070	0.95	2.25	5.6	0.20	27	15	46	25	67	6.3	1.84	23.5
1PS4507-6BJ...	9353	0.95	2.15	5.6	0.20	26	15	44	25	80	7.0	2.17	27.5
1PS4508-6BJ...	10241	0.85	2.30	6.0	0.21	25	15	41	25	90	7.3	2.24	37.5
1PS4566-6BJ...	12279	0.90	2.30	5.9	0.18	24	13	41	22	150	9.7	3.00	42
1PS4567-6BJ...	12790	0.95	2.25	5.6	0.18	26	14	44	24	180	10.7	3.30	41
1PS4568-6BJ...	14325	1.00	2.30	5.7	0.18	21	12	36	20	180	10.7	3.30	47
1PS4632-6BJ...	16000	0.95	2.25	5.9	0.19	17	11	29	19	300	12.5	4.2	49
1PS4633-6BJ...	17900	0.90	2.20	5.8	0.19	19	12	32	20	360	13.9	4.8	52
1PS4634-6BJ...	20480	0.90	2.15	5.7	0.19	17	11	29	19	360	13.9	4.8	60
1PS4637-6BJ...	23040	0.95	2.20	6.0	0.19	16	11	27	19	420	15.4	5.4	68
1PS4805-6BS...	24300	0.85	2.25	5.8	0.19	16	11	27	18	275	15.9	4.4	81
1PS4806-6BS...	27500	0.85	2.25	5.8	0.19	15	10	26	17	300	16.4	4.6	90
1PS4807-6BS...	30710	0.85	2.15	5.6	0.18	15	10	26	17	325	17.0	4.8	96

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 10-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 3 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load

#### 3 ... 3.3 kV, 50 Hz, antifriction bearing

10-pole

110 <sup>2)</sup>	<b>1PS</b> ■ <b>403-6BJ</b> ■ <b>0-4EA0</b>	DHS . -400LK-10	29.5	594	93.7	93.5	92.3	0.77	0.72	0.62
160	<b>1PS</b> ■ <b>405-6BJ</b> ■ <b>0-4EA0</b>	DHS . -400LK-10	43	594	93.8	93.7	92.7	0.77	0.72	0.61

#### 3 ... 6.6 kV, 50 Hz, antifriction bearing

10-pole			$I_{rated}$ at 6 kV							
140	<b>1PS</b> ■ <b>405-6BJ</b> ■ <b>0-4EA0</b>	DHS . -400LK-10	19	594	92.8	92.8	91.7	0.77	0.71	0.61
110	<b>1PS</b> ■ <b>451-6BJ</b> ■ <b>0-4EA0</b>	DHS . -450LK-10	14.5	595	93.8	93.5	92.3	0.79	0.75	0.66
160	<b>1PS</b> ■ <b>452-6BJ</b> ■ <b>0-4EA0</b>	DHS . -450LK-10	20.5	595	94.3	94.2	93.1	0.79	0.75	0.66
200	<b>1PS</b> ■ <b>453-6BJ</b> ■ <b>0-4EA0</b>	DHS . -450LK-10	26	595	94.5	94.4	93.3	0.79	0.75	0.65
250	<b>1PS</b> ■ <b>454-6BJ</b> ■ <b>0-4EA0</b>	DHS . -450LK-10	32	595	94.6	94.6	93.7	0.79	0.75	0.65
315	<b>1PS</b> ■ <b>455-6BJ</b> ■ <b>0-4EA0</b>	DHS . -450LK-10	41.5	595	94.8	94.8	94.0	0.78	0.72	0.62
400	<b>1PS</b> ■ <b>457-6BJ</b> ■ <b>0-4EA0</b>	DHS . -450LM-10	53.5	596	94.9	94.9	94.2	0.77	0.72	0.61
430	<b>1PS</b> ■ <b>458-6BJ</b> ■ <b>0-4EA0</b>	DHS . -450LX-10	55.5	595	95.2	95.2	94.5	0.79	0.74	0.64
500	<b>1PS</b> ■ <b>505-6BJ</b> ■ <b>0-4EA0</b>	DHS . -500LK-10	63	596	95.5	95.5	94.7	0.80	0.76	0.66
600	<b>1PS</b> ■ <b>507-6BJ</b> ■ <b>0-4EA0</b>	DHS . -500LM-10	75	596	95.8	95.7	95.0	0.81	0.78	0.68
630	<b>1PS</b> ■ <b>508-6BJ</b> ■ <b>0-4EA0</b>	DHS . -500LX-10	78	596	96.0	96.1	95.4	0.81	0.78	0.69
710	<b>1PS</b> ■ <b>565-6BJ</b> ■ <b>0-4EA0</b>	DHS . -560LK-10	87.5	597	96.3	96.2	95.6	0.81	0.78	0.69
800	<b>1PS</b> ■ <b>566-6BJ</b> ■ <b>0-4EA0</b>	DHS . -560LK-10	98.5	597	96.3	96.3	95.7	0.81	0.78	0.69
900	<b>1PS</b> ■ <b>567-6BJ</b> ■ <b>0-4EA0</b>	DHS . -560LM-10	110	597	96.4	96.3	95.7	0.81	0.78	0.70
1000	<b>1PS</b> ■ <b>568-6BJ</b> ■ <b>0-4EA0</b>	DHS . -560LM-10	123	597	96.4	96.4	95.7	0.81	0.78	0.70

Ex protection "gas"

4 II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)

5 II 2 G Ex de IIC T4 Gb (flameproof, gas group IIC)

Rated voltage/connection/frequency

See page 1/5

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

<sup>2)</sup>  $P_{min}$  (3 ... 3.3 kV) = 50 kW,  $P_{min}$  (6.0 kV) = 132 kW

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

10-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT	ART	$J_{Mot}$	Motor	Rotor	$I_0$		
	Nm					cold s	hot s	cold s	hot s	kgm <sup>2</sup>	t	t	A
1PS . 403-6BJ...	1765	0.90	2.30	5.20	0.25	75	50	127	85	24	3.4	1.0	13.5
1PS . 405-6BJ...	2567	0.90	2.30	5.20	0.26	60	40	102	68	24	3.4	1.0	20
1PS . 405-6BJ...	2245	0.90	2.25	5.10	0.30	33	14	56	23	24	3.4	1.0	9.0
1PS . 451-6BJ...	1763	0.85	2.10	5.00	0.22	60	40	100	70	38	4.6	1.30	5.5
1PS . 452-6BJ...	2565	0.90	2.10	5.10	0.22	50	33	85	57	38	4.6	1.30	8.0
1PS . 453-6BJ...	3206	0.90	2.15	5.20	0.23	41	27	70	46	38	4.6	1.30	10
1PS . 454-6BJ...	4009	0.95	2.05	5.10	0.23	32	21	55	36	38	4.6	1.30	12.5
1PS . 455-6BJ...	5051	1.10	2.20	5.50	0.24	30	20	50	34	38	4.6	1.30	20
1PS . 457-6BJ...	6408	1.05	2.20	5.60	0.26	25	17	45	29	46	4.9	1.44	26.5
1PS . 458-6BJ...	6894	1.00	2.20	5.40	0.24	25	17	45	29	52	5.3	1.50	24
1PS . 505-6BJ...	8004	0.75	2.30	5.30	0.21	34	23	60	40	76	5.9	1.80	26
1PS . 507-6BJ...	9605	0.80	2.20	5.30	0.21	34	23	60	40	91	6.7	2.07	29.5
1PS . 508-6BJ...	10084	0.85	2.20	5.50	0.20	28	18	50	30	101	7.0	2.25	30
1PS . 565-6BJ...	11355	0.85	2.25	5.60	0.19	28	19	50	32	169	9.1	2.95	33
1PS . 566-6BJ...	12797	0.80	2.15	5.50	0.19	28	18	50	30	169	9.1	2.95	37
1PS . 567-6BJ...	14393	0.85	2.20	5.60	0.18	28	18	50	30	203	10.1	3.35	41
1PS . 568-6BJ...	15993	0.90	2.25	5.80	0.20	24	14	41	24	203	10.1	3.35	44

Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 10-pole motors

### Selection and ordering data

Rated power $P_{\text{rated}}$ kW	Article No.	Type Loher	Rated current $I_{\text{rated}}$ at 3 kV A	Rated speed $n_{\text{rated}}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{\text{rated}}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{\text{rated}}$ 4/4 load	3/4 load	2/4 load
<b>3 ... 3.3 kV, 50 Hz, sleeve bearing</b>										
10-pole										
110	<b>1PS4403-6BJ</b> ■ <b>0-4ED0</b>	DHTL-400LK-10	29.5	594	93.7	93.5	92.3	0.77	0.72	0.62
160	<b>1PS4405-6BJ</b> ■ <b>0-4ED0</b>	DHTL-400LK-10	43	594	93.8	93.7	92.7	0.77	0.72	0.61
<b>3 ... 6.6 kV, 50 Hz, sleeve bearing</b>										
10-pole										
120	<b>1PS4404-6BJ</b> ■ <b>0-4ED0</b>	DHTL-400LK-10	$I_{\text{rated}}$ at 6 kV 16.5	595	93.3	93.1	91.8	0.76	0.71	0.60
110	<b>1PS4451-6BJ</b> ■ <b>0-4ED0</b>	DHTL-450LK-10	14.5	595	93.8	93.5	92.3	0.79	0.75	0.66
160	<b>1PS4452-6BJ</b> ■ <b>0-4ED0</b>	DHTL-450LK-10	20.5	595	94.3	94.2	93.1	0.79	0.75	0.66
200	<b>1PS4453-6BJ</b> ■ <b>0-4ED0</b>	DHTL-450LK-10	26	595	94.5	94.4	93.3	0.79	0.75	0.65
250	<b>1PS4454-6BJ</b> ■ <b>0-4ED0</b>	DHTL-450LK-10	32	595	94.6	94.6	93.7	0.79	0.75	0.65
315	<b>1PS4455-6BJ</b> ■ <b>0-4ED0</b>	DHTL-450LK-10	41.5	595	94.8	94.8	94.0	0.78	0.72	0.62
400	<b>1PS4457-6BJ</b> ■ <b>0-4ED0</b>	DHTL-450LM-10	52.5	596	94.9	94.9	94.2	0.77	0.72	0.61
430	<b>1PS4458-6BJ</b> ■ <b>0-4ED0</b>	DHTL-450LX-10	55.5	595	95.2	95.2	94.5	0.79	0.74	0.64
500	<b>1PS4505-6BJ</b> ■ <b>0-4ED0</b>	DHTL-500LK-10	63	596	95.5	95.5	94.7	0.80	0.76	0.66
600	<b>1PS4507-6BJ</b> ■ <b>0-4ED0</b>	DHTL-500LM-10	75	596	95.8	95.7	95.0	0.81	0.78	0.68
630	<b>1PS4508-6BJ</b> ■ <b>0-4ED0</b>	DHTL-500LX-10	78	596	96.0	96.1	95.4	0.81	0.78	0.69
710	<b>1PS4565-6BJ</b> ■ <b>0-4ED0</b>	DHTL-560LK-10	87.5	597	96.3	96.2	95.6	0.81	0.78	0.69
800	<b>1PS4566-6BJ</b> ■ <b>0-4ED0</b>	DHTL-560LK-10	98.5	597	96.3	96.3	95.7	0.81	0.78	0.69
900	<b>1PS4567-6BJ</b> ■ <b>0-4ED0</b>	DHTL-560LM-10	110	597	96.4	96.3	95.7	0.81	0.78	0.70
1000	<b>1PS4568-6BJ</b> ■ <b>0-4ED0</b>	DHTL-560LM-10	123	597	96.4	96.4	95.7	0.81	0.78	0.70
		Rated voltage/connection/frequency								
		See page 1/5								

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

10-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT		ART		$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					cold	hot	cold	hot	kgm <sup>2</sup>	t	t	A
1PS4403-6BJ...	1765	0.90	2.30	5.2	0.25	75	50	127	85	24	3.8	1.1	13.5
1PS4405-6BJ...	2567	0.90	2.30	5.2	0.26	60	40	102	68	24	3.8	1.1	20
1PS4404-6BJ...	1923	0.95	2.35	5.5	0.29	40	17	68	29	24	3.8	1.1	8.0
1PS4451-6BJ...	1763	0.85	2.10	5.0	0.22	60	40	100	70	38	5.0	1.40	5.5
1PS4452-6BJ...	2565	0.90	2.10	5.1	0.22	50	33	85	57	38	5.0	1.40	8.0
1PS4453-6BJ...	3206	0.90	2.15	5.2	0.23	41	27	70	46	38	5.0	1.40	10
1PS4454-6BJ...	4009	0.95	2.05	5.1	0.23	32	21	55	36	38	5.0	1.40	12.5
1PS4455-6BJ...	5051	1.10	2.20	5.5	0.24	30	20	50	34	38	5.0	1.40	20
1PS4457-6BJ...	6408	1.05	2.20	5.6	0.26	25	17	45	29	46	5.3	1.54	26.5
1PS4458-6BJ...	6894	1.00	2.20	5.4	0.24	25	17	45	29	52	5.7	1.60	24
1PS4505-6BJ...	8004	0.75	2.30	5.3	0.21	34	23	60	40	76	6.3	1.90	26
1PS4507-6BJ...	9605	0.80	2.20	5.3	0.21	34	23	60	40	91	7.1	2.17	29.5
1PS4508-6BJ...	10084	0.85	2.20	5.5	0.20	28	18	50	30	101	7.4	2.35	30
1PS4565-6BJ...	11355	0.85	2.25	5.6	0.19	28	19	50	32	169	9.5	3.05	33
1PS4566-6BJ...	12797	0.80	2.15	5.5	0.19	28	18	50	30	169	9.5	3.05	37
1PS4567-6BJ...	14393	0.85	2.20	5.6	0.18	28	18	50	30	203	10.5	3.45	41
1PS4568-6BJ...	15993	0.90	2.25	5.8	0.20	24	14	41	24	203	10.5	3.45	44

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 12-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>6.6 kV, 50 Hz, antifriction bearing</b>										
12-pole										
110 <sup>2)</sup>	<b>1PS</b> ■ <b>451-6BJ</b> ■ <b>0-4FA0</b>	DHS . -450LK-12	15.5	496	93.2	92.8	91.1	0.73	0.69	0.58
132	<b>1PS</b> ■ <b>452-6BJ</b> ■ <b>0-4FA0</b>	DHS . -450LK-12	18.5	496	93.5	93.0	91.3	0.73	0.68	0.57
160	<b>1PS</b> ■ <b>453-6BJ</b> ■ <b>0-4FA0</b>	DHS . -450LK-12	22.5	496	93.5	93.0	91.3	0.72	0.66	0.55
180	<b>1PS</b> ■ <b>454-6BJ</b> ■ <b>0-4FA0</b>	DHS . -450LK-12	25.5	495	93.6	93.4	91.9	0.73	0.68	0.57
200	<b>1PS</b> ■ <b>455-6BJ</b> ■ <b>0-4FA0</b>	DHS . -450LK-12	28	496	93.7	93.5	92.0	0.73	0.68	0.57
225	<b>1PS</b> ■ <b>456-6BJ</b> ■ <b>0-4FA0</b>	DHS . -450LM-12	31.5	496	93.9	93.7	92.2	0.73	0.68	0.58
250	<b>1PS</b> ■ <b>457-6BJ</b> ■ <b>0-4FA0</b>	DHS . -450LM-12	35	496	94.0	93.8	92.3	0.73	0.67	0.57
280	<b>1PS</b> ■ <b>458-6BJ</b> ■ <b>0-4FA0</b>	DHS . -450LX-12	39	496	94.3	94.1	92.9	0.73	0.67	0.57
355	<b>1PS</b> ■ <b>505-6BJ</b> ■ <b>0-4FA0</b>	DHS . -500LK-12	46	495	94.9	94.9	94.2	0.79	0.74	0.64
430	<b>1PS</b> ■ <b>507-6BJ</b> ■ <b>0-4FA0</b>	DHS . -500LM-12	55.5	495	95.1	95.1	94.7	0.79	0.75	0.66
500	<b>1PS</b> ■ <b>508-6BJ</b> ■ <b>0-4FA0</b>	DHS . -500LX-12	65	495	95.1	95.1	94.5	0.79	0.74	0.64
560	<b>1PS</b> ■ <b>565-6BJ</b> ■ <b>0-4FA0</b>	DHS . -560LK-12	70.5	496	95.6	95.6	94.9	0.80	0.77	0.68
710	<b>1PS</b> ■ <b>566-6BJ</b> ■ <b>0-4FA0</b>	DHS . -560LK-12	90	496	95.9	95.7	94.9	0.79	0.75	0.65
860	<b>1PS</b> ■ <b>568-6BJ</b> ■ <b>0-4FA0</b>	DHS . -560LM-12	112	497	95.9	95.8	94.9	0.77	0.71	0.60

		Ex protection *gas*
4		II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)
5		II 2 G Ex de IIC T4 Gb (flameproof, gas group IIC)
		Rated voltage/connection/frequency
		See page 1/5

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

<sup>2)</sup>  $P_{min} = 55$  kW

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

12-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT		ART		$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					cold	hot	cold	hot	kgm <sup>2</sup>	t	t	A
1PS . 451-6BJ...	2114	0.85	2.15	4.80	0.21	80	40	140	70	38.5	4.6	1.30	7
1PS . 452-6BJ...	2537	0.90	2.25	5.10	0.21	70	35	120	60	38.5	4.6	1.30	9
1PS . 453-6BJ...	3074	0.90	2.30	5.20	0.22	60	28	100	50	38.5	4.6	1.30	11
1PS . 454-6BJ...	3462	0.80	2.10	4.60	0.22	50	25	85	45	38.5	4.6	1.30	11
1PS . 455-6BJ...	3846	0.85	2.15	4.80	0.22	40	23	70	40	38.5	4.6	1.30	13
1PS . 456-6BJ...	4327	0.80	2.10	4.80	0.21	43	27	75	46	46	4.9	1.44	14
1PS . 457-6BJ...	4806	0.90	2.25	5.00	0.21	40	25	70	43	46	4.9	1.44	17
1PS . 458-6BJ...	5384	0.85	2.20	4.90	0.21	40	25	70	43	51	5.3	1.50	20
1PS . 505-6BJ...	6835	0.85	2.20	5.00	0.22	42	22	70	38	74	5.9	1.80	20.5
1PS . 507-6BJ...	8288	0.75	2.10	4.60	0.22	42	22	70	38	89	6.7	2.07	22.5
1PS . 508-6BJ...	9630	0.85	2.10	4.90	0.23	39	20	65	34	101	7.0	2.25	28
1PS . 565-6BJ...	10767	0.80	2.15	5.10	0.20	37	19	63	32	163	9.1	2.95	27
1PS . 566-6BJ...	13649	0.75	2.20	5.30	0.21	29	15	49	25	163	9.1	2.95	38
1PS . 568-6BJ...	16533	0.85	2.30	5.80	0.20	25	13	42	22	200	10.1	3.35	54

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 12-pole motors

### Selection and ordering data

Rated power $P_{\text{rated}}$ kW	Article No.	Type Loher	Rated current $I_{\text{rated}}$ at 6 kV A	Rated speed $n_{\text{rated}}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{\text{rated}}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{\text{rated}}$ 4/4 load	3/4 load	2/4 load
<b>6.6 kV, 50 Hz, sleeve bearing</b>										
12-pole										
110 <sup>1)</sup>	<b>1PS4451-6BJ-0-4FD0</b>	DHTL-450LK-12	15.5	496	93.2	92.8	91.1	0.73	0.69	0.58
132	<b>1PS4452-6BJ-0-4FD0</b>	DHTL-450LK-12	18.5	496	93.5	93.0	91.3	0.73	0.68	0.57
160	<b>1PS4453-6BJ-0-4FD0</b>	DHTL-450LK-12	22.5	496	93.5	93.0	91.3	0.72	0.66	0.55
180	<b>1PS4454-6BJ-0-4FD0</b>	DHTL-450LK-12	25.5	495	93.6	93.4	91.9	0.73	0.68	0.57
200	<b>1PS4455-6BJ-0-4FD0</b>	DHTL-450LK-12	28	496	93.7	93.5	92.0	0.73	0.68	0.57
225	<b>1PS4456-6BJ-0-4FD0</b>	DHTL-450LM-12	31.5	496	93.9	93.7	92.2	0.73	0.68	0.58
250	<b>1PS4457-6BJ-0-4FD0</b>	DHTL-450LM-12	35	496	94.0	93.8	92.3	0.73	0.67	0.57
280	<b>1PS4458-6BJ-0-4FD0</b>	DHTL-450LX-12	39	496	94.3	94.1	92.9	0.73	0.67	0.57
355	<b>1PS4505-6BJ-0-4FD0</b>	DHTL-500LK-12	46	495	94.9	94.9	94.2	0.79	0.74	0.64
430	<b>1PS4507-6BJ-0-4FD0</b>	DHTL-500LM-12	55.5	495	95.1	95.1	94.7	0.79	0.75	0.66
500	<b>1PS4508-6BJ-0-4FD0</b>	DHTL-500LX-12	65	495	95.1	95.1	94.5	0.79	0.74	0.64
560	<b>1PS4565-6BJ-0-4FD0</b>	DHTL-560LK-12	70.5	496	95.6	95.6	94.9	0.80	0.77	0.68
710	<b>1PS4566-6BJ-0-4FD0</b>	DHTL-560LK-12	90	496	95.9	95.7	94.9	0.79	0.75	0.65
860	<b>1PS4568-6BJ-0-4FD0</b>	DHTL-560LM-12	112	497	95.9	95.8	94.9	0.77	0.71	0.60
		Rated voltage/connection/frequency								
		See page 1/5								

<sup>1)</sup>  $P_{\text{min}} = 55 \text{ kW}$



## LOHER VARIO 1PS./1MV. flameproof motors for line operation

12-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT		ART		$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					cold	hot	cold	hot	kgm <sup>2</sup>	t	t	A
1PS4451-6BJ...	2114	0.85	2.15	4.8	0.21	80	40	140	70	38.5	5.0	1.40	7
1PS4452-6BJ...	2537	0.90	2.25	5.1	0.21	70	35	120	60	38.5	5.0	1.40	9
1PS4453-6BJ...	3074	0.90	2.30	5.2	0.22	60	28	100	50	38.5	5.0	1.40	11
1PS4454-6BJ...	3462	0.80	2.10	4.6	0.22	50	25	85	45	38.5	5.0	1.40	11
1PS4455-6BJ...	3846	0.85	2.15	4.8	0.22	40	23	70	40	38.5	5.0	1.40	13
1PS4456-6BJ...	4327	0.80	2.10	4.8	0.21	43	27	75	46	46	5.3	1.54	14
1PS4457-6BJ...	4806	0.90	2.25	5.0	0.21	40	25	70	43	46	5.3	1.54	17
1PS4458-6BJ...	5384	0.85	2.20	4.9	0.21	40	25	70	43	51	5.7	1.60	20
1PS4505-6BJ...	6835	0.85	2.20	5.0	0.22	42	22	70	38	74	6.3	1.90	20.5
1PS4507-6BJ...	8288	0.75	2.10	4.6	0.22	42	22	70	38	89	7.1	2.17	22.5
1PS4508-6BJ...	9630	0.85	2.10	4.9	0.23	39	20	65	34	101	7.4	2.35	28
1PS4565-6BJ...	10767	0.80	2.15	5.1	0.20	37	19	63	32	163	9.5	3.05	27
1PS4566-6BJ...	13649	0.75	2.20	5.3	0.21	29	15	49	25	163	9.5	3.05	38
1PS4568-6BJ...	16533	0.85	2.30	5.8	0.20	25	13	42	22	200	10.5	3.45	54

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 14-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 3 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>3 ... 3.3 kV, 50 Hz, antifriction bearing</b>										
14-pole										
110	<b>1PS 452-6BJ 0-4GA0</b>	DHS . -450LK-14	30.5	424	93.3	93.0	91.4	0.74	0.69	0.58
132	<b>1PS 453-6BJ 0-4GA0</b>	DHS . -450LK-14	36	423	93.3	93.3	92.3	0.75	0.71	0.61
160	<b>1PS 454-6BJ 0-4GA0</b>	DHS . -450LK-14	44	424	93.4	93.4	92.4	0.75	0.70	0.60
180	<b>1PS 455-6BJ 0-4GA0</b>	DHS . -450LM-14	49	423	93.5	93.6	92.5	0.75	0.71	0.61
200	<b>1PS 456-6BJ 0-4GA0</b>	DHS . -450LM-14	55.5	424	93.5	93.5	92.4	0.74	0.69	0.58
225	<b>1PS 457-6BJ 0-4GA0</b>	DHS . -450LM-14	62	424	93.8	93.8	92.7	0.74	0.69	0.58

### 3 ... 6.6 kV, 50 Hz, antifriction bearing

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	$I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
14-pole										
180 <sup>2)</sup>	<b>1PS 502-6BJ 0-4GA0</b>	DHS . -500LK-14	25	425	93.7	93.5	92.1	0.74	0.69	0.58
200	<b>1PS 503-6BJ 0-4GA0</b>	DHS . -500LK-14	28	425	93.8	93.6	92.2	0.73	0.68	0.57
225	<b>1PS 504-6BJ 0-4GA0</b>	DHS . -500LK-14	31	425	93.8	93.8	92.6	0.74	0.69	0.59
280	<b>1PS 505-6BJ 0-4GA0</b>	DHS . -500LK-14	40	425	94.0	93.8	92.6	0.72	0.66	0.54
315	<b>1PS 506-6BJ 0-4GA0</b>	DHS . -500LM-14	43.5	425	94.3	94.2	93.1	0.74	0.70	0.60
355	<b>1PS 507-6BJ 0-4GA0</b>	DHS . -500LM-14	50	425	94.5	94.3	93.1	0.73	0.67	0.56
400	<b>1PS 508-6BJ 0-4GA0</b>	DHS . -500LX-14	57	425	94.4	94.1	92.8	0.73	0.66	0.54
450	<b>1PS 564-6BJ 0-4GA0</b>	DHS . -560LK-14	60.5	425	95.2	95.1	94.0	0.75	0.70	0.60
500	<b>1PS 565-6BJ 0-4GA0</b>	DHS . -560LK-14	68	425	95.2	95.1	94.0	0.74	0.69	0.59
560	<b>1PS 566-6BJ 0-4GA0</b>	DHS . -560LM-14	76.5	425	95.3	95.2	94.1	0.74	0.69	0.59
630	<b>1PS 567-6BJ 0-4GA0</b>	DHS . -560LM-14	87.5	426	95.4	95.3	94.2	0.73	0.68	0.57

		Ex protection "gas"
4		II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)
5		II 2 G Ex de IIC T4 Gb (flameproof, gas group IIC)
		Rated voltage/connection/frequency
		See page 1/5

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

<sup>2)</sup>  $P_{min}$  (6 kV) = 160 kW,  $P_{min}$  (6.6 kV) = 180 kW

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

14-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT		ART		$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					cold	hot	cold	hot	kgm <sup>2</sup>	t	t	A
1PS . 452-6BJ...	2471	0.90	2.25	4.90	0.23	60	35	100	60	48	4.6	1.30	15
1PS . 453-6BJ...	2971	0.80	1.95	4.40	0.23	60	35	100	60	48	4.6	1.30	15
1PS . 454-6BJ...	3601	0.85	2.00	4.50	0.23	50	30	85	50	48	4.6	1.30	19.5
1PS . 455-6BJ...	4051	0.80	1.95	4.50	0.22	50	30	85	50	57	4.9	1.47	21
1PS . 456-6BJ...	4499	0.90	2.15	4.80	0.23	45	25	80	45	57	4.9	1.47	24.5
1PS . 457-6BJ...	5059	0.85	2.10	4.70	0.23	50	30	85	50	57	4.9	1.47	30
1PS . 502-6BJ...	4037	0.90	2.05	4.80	0.22	50	30	85	50	88	5.9	1.86	11.5
1PS . 503-6BJ...	4484	0.95	2.20	4.90	0.22	45	28	80	50	88	5.9	1.86	13
1PS . 504-6BJ...	5050	0.85	1.95	4.60	0.22	45	26	80	46	88	5.9	1.86	13.5
1PS . 505-6BJ...	6279	0.90	2.20	5.30	0.23	45	23	76	39	88	5.9	1.86	21
1PS . 506-6BJ...	7069	0.90	2.00	4.80	0.22	45	25	80	45	109	6.7	2.07	19
1PS . 507-6BJ...	7961	0.90	2.20	5.20	0.22	42	22	71	37	109	6.7	2.07	26
1PS . 508-6BJ...	8968	0.95	2.40	5.70	0.24	45	25	80	45	120	7.0	2.30	31
1PS . 564-6BJ...	10090	0.85	2.10	5.00	0.19	40	20	62	32	197	9.2	3.15	26.5
1PS . 565-6BJ...	11209	0.90	2.15	5.10	0.20	36	18	56	29	197	9.2	3.15	30.5
1PS . 566-6BJ...	12555	0.90	2.20	5.20	0.20	40	20	62	32	237	10.3	3.69	35
1PS . 567-6BJ...	14120	0.95	2.25	5.30	0.20	34	17	53	27	237	10.3	3.69	42

Note:

Efficiencies according to IEC 60034-2-1

Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 14-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher	Rated current $I_{rated}$ at 3 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>3 ... 3.3 kV, 50 Hz, sleeve bearing</b>										
14-pole										
110	<b>1PS4452-6BJ</b> ■ <b>0-4GD0</b>	DHTL-450LK-14	30.5	424	93.3	93.0	91.4	0.74	0.69	0.58
132	<b>1PS4453-6BJ</b> ■ <b>0-4GD0</b>	DHTL-450LK-14	36	423	93.3	93.3	92.3	0.75	0.71	0.61
160	<b>1PS4454-6BJ</b> ■ <b>0-4GD0</b>	DHTL-450LK-14	44	424	93.4	93.4	92.4	0.75	0.70	0.60
180	<b>1PS4455-6BJ</b> ■ <b>0-4GD0</b>	DHTL-450LM-14	49	423	93.5	93.6	92.5	0.75	0.71	0.61
200	<b>1PS4456-6BJ</b> ■ <b>0-4GD0</b>	DHTL-450LM-14	55.5	424	93.5	93.5	92.4	0.74	0.69	0.58
225	<b>1PS4457-6BJ</b> ■ <b>0-4GD0</b>	DHTL-450LM-14	62	424	93.8	93.8	92.7	0.74	0.69	0.58
<b>3 ... 6.6 kV, 50 Hz, sleeve bearing</b>										
14-pole										
			$I_{rated}$ at 6 kV							
180 <sup>1)</sup>	<b>1PS4502-6BJ</b> ■ <b>0-4GD0</b>	DHTL-500LK-14	25	425	93.7	93.5	92.1	0.74	0.69	0.58
200	<b>1PS4503-6BJ</b> ■ <b>0-4GD0</b>	DHTL-500LK-14	28	425	93.8	93.6	92.2	0.73	0.68	0.57
225	<b>1PS4504-6BJ</b> ■ <b>0-4GD0</b>	DHTL-500LK-14	31	425	93.8	93.8	92.6	0.74	0.69	0.59
280	<b>1PS4505-6BJ</b> ■ <b>0-4GD0</b>	DHTL-500LK-14	40	425	94.0	93.8	92.6	0.72	0.66	0.54
315	<b>1PS4506-6BJ</b> ■ <b>0-4GD0</b>	DHTL-500LM-14	43.5	425	94.3	94.2	93.1	0.74	0.70	0.60
355	<b>1PS4507-6BJ</b> ■ <b>0-4GD0</b>	DHTL-500LM-14	50	425	94.5	94.3	93.1	0.73	0.67	0.56
400	<b>1PS4508-6BJ</b> ■ <b>0-4GD0</b>	DHTL-500LX-14	57	425	94.4	94.1	92.8	0.73	0.66	0.54
400	<b>1PS4563-6BJ</b> ■ <b>0-4GD0</b>	DHTL-560LK-14	54.5	426	95.1	94.9	93.7	0.74	0.69	0.58
450	<b>1PS4564-6BJ</b> ■ <b>0-4GD0</b>	DHTL-560LK-14	60.5	425	95.2	95.1	94.0	0.75	0.70	0.60
500	<b>1PS4565-6BJ</b> ■ <b>0-4GD0</b>	DHTL-560LK-14	68	425	95.2	95.1	94.0	0.74	0.69	0.59
560	<b>1PS4566-6BJ</b> ■ <b>0-4GD0</b>	DHTL-560LM-14	76.5	425	95.3	95.2	94.1	0.74	0.69	0.59
630	<b>1PS4567-6BJ</b> ■ <b>0-4GD0</b>	DHTL-560LM-14	87.5	426	95.4	95.3	94.2	0.73	0.68	0.57
		Rated voltage/connection/frequency								
		See page 1/5								

<sup>1)</sup>  $P_{min}$  (6 kV) = 160 kW,  $P_{min}$  (6.6 kV) = 180 kW

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

14-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT	ART	$J_{Mot}$	Motor	Rotor	$I_0$		
	Nm					cold s	hot s	cold s	hot s	kgm <sup>2</sup>	t	t	A
1PS4452-6BJ...	2471	0.90	2.25	4.9	0.23	60	35	100	60	48	5.0	1.40	15
1PS4453-6BJ...	2971	0.80	1.95	4.4	0.23	60	35	100	60	48	5.0	1.40	15
1PS4454-6BJ...	3601	0.85	2.00	4.5	0.23	50	30	85	50	48	5.0	1.40	19.5
1PS4455-6BJ...	4051	0.80	1.95	4.5	0.22	50	30	85	50	57	5.3	1.57	21
1PS4456-6BJ...	4499	0.90	2.15	4.8	0.23	45	25	80	45	57	5.3	1.57	24.5
1PS4457-6BJ...	5059	0.85	2.10	4.7	0.23	50	30	85	50	57	5.3	1.57	30
1PS4502-6BJ...	4037	0.90	2.05	4.8	0.22	50	30	85	50	88	6.3	1.96	11.5
1PS4503-6BJ...	4484	0.95	2.20	4.9	0.22	45	28	80	50	88	6.3	1.96	13
1PS4504-6BJ...	5050	0.85	1.95	4.6	0.22	45	26	80	46	88	6.3	1.96	13.5
1PS4505-6BJ...	6279	0.90	2.20	5.3	0.23	45	23	76	39	88	6.3	1.96	21
1PS4506-6BJ...	7069	0.90	2.00	4.8	0.22	45	25	80	45	109	7.1	2.17	19
1PS4507-6BJ...	7961	0.90	2.20	5.2	0.22	42	22	71	37	109	7.1	2.17	26
1PS4508-6BJ...	8968	0.95	2.40	5.7	0.24	45	25	80	45	120	7.4	2.40	31
1PS4563-6BJ...	8965	0.90	2.25	5.2	0.19	42	22	65	37	197	9.6	3.25	27.5
1PS4564-6BJ...	10090	0.85	2.10	5.0	0.19	40	20	62	32	197	9.6	3.25	26.5
1PS4565-6BJ...	11209	0.90	2.15	5.1	0.20	36	18	56	29	197	9.6	3.25	30.5
1PS4566-6BJ...	12555	0.90	2.20	5.2	0.20	40	20	62	32	237	10.7	3.79	35
1PS4567-6BJ...	14120	0.95	2.25	5.3	0.20	34	17	53	27	237	10.7	3.79	42

## Note:

Efficiencies according to IEC 60034-2-1  
Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 16-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	Rated current $I_{rated}$ at 3 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>3 ... 3.3 kV, 50 Hz, antifriction bearing</b>										
16-pole										
80 <sup>2)</sup>	<b>1PS</b> ■ <b>454-6BJ</b> ■ <b>0-4HA0</b>	DHS . -450LM-16	23.5	370	92.4	92.1	90.3	0.71	0.66	0.54
100	<b>1PS</b> ■ <b>455-6BJ</b> ■ <b>0-4HA0</b>	DHS . -450LM-16	29.5	370	92.4	92.2	90.5	0.70	0.64	0.53
140	<b>1PS</b> ■ <b>456-6BJ</b> ■ <b>0-4HA0</b>	DHS . -450LM-16	41.5	370	92.5	92.3	90.8	0.70	0.64	0.53
160	<b>1PS</b> ■ <b>457-6BJ</b> ■ <b>0-4HA0</b>	DHS . -450LM-16	47.5	370	92.7	92.5	91.1	0.70	0.64	0.53
180	<b>1PS</b> ■ <b>458-6BJ</b> ■ <b>0-4HA0</b>	DHS . -450LX-16	52.5	370	92.9	92.9	91.6	0.71	0.65	0.54

### 3 ... 6.6 kV, 50 Hz, antifriction bearing

Rated power $P_{rated}$ kW	Article No.	Type Loher <sup>1)</sup>	$I_{rated}$ at 6 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
16-pole										
160 <sup>2)</sup>	<b>1PS</b> ■ <b>503-6BJ</b> ■ <b>0-4HA0</b>	DHS . -500LK-16	23	371	92.9	92.8	91.4	0.72	0.68	0.57
180	<b>1PS</b> ■ <b>504-6BJ</b> ■ <b>0-4HA0</b>	DHS . -500LK-16	26	371	93.0	92.8	91.4	0.72	0.67	0.56
200	<b>1PS</b> ■ <b>505-6BJ</b> ■ <b>0-4HA0</b>	DHS . -500LK-16	29	371	93.2	92.9	91.5	0.71	0.65	0.54
225	<b>1PS</b> ■ <b>506-6BJ</b> ■ <b>0-4HA0</b>	DHS . -500LM-16	32	371	93.3	93.2	91.9	0.72	0.68	0.57
250	<b>1PS</b> ■ <b>507-6BJ</b> ■ <b>0-4HA0</b>	DHS . -500LM-16	36	371	93.4	93.3	91.9	0.71	0.66	0.55
280	<b>1PS</b> ■ <b>508-6BJ</b> ■ <b>0-4HA0</b>	DHS . -500LX-16	40	371	93.6	93.5	92.1	0.72	0.66	0.55
315	<b>1PS</b> ■ <b>563-6BJ</b> ■ <b>0-4HA0</b>	DHS . -560LK-16	43.5	372	94.8	94.5	93.3	0.73	0.69	0.59
355	<b>1PS</b> ■ <b>564-6BJ</b> ■ <b>0-4HA0</b>	DHS . -560LK-16	50	372	94.9	94.5	93.4	0.72	0.66	0.56
400	<b>1PS</b> ■ <b>565-6BJ</b> ■ <b>0-4HA0</b>	DHS . -560LK-16	57	372	94.9	94.6	93.5	0.71	0.65	0.55
450	<b>1PS</b> ■ <b>566-6BJ</b> ■ <b>0-4HA0</b>	DHS . -560LM-16	64.5	372	95.0	94.8	93.6	0.71	0.65	0.55
500	<b>1PS</b> ■ <b>567-6BJ</b> ■ <b>0-4HA0</b>	DHS . -560LM-16	70	372	95.1	95.0	93.9	0.72	0.67	0.56

		Ex protection "gas"
4		II 2 G Ex de IIB T4 Gb (flameproof, gas group IIB)
5		II 2 G Ex de IIC T4 Gb (flameproof, gas group IIC)
		Rated voltage/connection/frequency
		See page 1/5

<sup>1)</sup> When 4th digit of Article No. = 4 the 4th digit of LOHER motor type = L  
When 4th digit of Article No. = 5 the 4th digit of LOHER motor type = W

<sup>2)</sup>  $P_{min} = 50$  kW,  $P_{min} (6$  kV) = 140 kW,  $P_{min} (6.6$  kV) = 160 kW

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

16-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT	LRT	ART	ART	$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					cold	hot	cold	hot	kgm <sup>2</sup>	t	t	A
1PS . 454-6BJ...	2056	0.85	2.10	4.30	0.22	75	50	125	85	57	4.9	1.47	11.5
1PS . 455-6BJ...	2570	0.90	2.10	4.40	0.22	65	45	110	75	57	4.9	1.47	15
1PS . 456-6BJ...	3602	0.85	2.00	4.20	0.23	55	35	95	60	57	4.9	1.47	20.5
1PS . 457-6BJ...	4116	0.90	2.10	4.30	0.23	50	30	85	50	57	4.9	1.47	24
1PS . 458-6BJ...	4633	0.85	2.00	4.20	0.23	50	30	85	50	61	5.0	1.56	28
1PS . 503-6BJ...	4112	0.90	1.95	4.40	0.24	50	30	85	50	87	5.9	1.86	10.5
1PS . 504-6BJ...	4625	0.95	2.05	4.50	0.24	45	28	77	47	87	5.9	1.86	12.5
1PS . 505-6BJ...	5136	1.00	2.15	4.50	0.24	40	25	70	43	87	5.9	1.86	15
1PS . 506-6BJ...	5785	0.90	1.90	4.30	0.24	50	30	85	50	105	6.7	2.07	14
1PS . 507-6BJ...	6422	1.00	2.10	4.50	0.24	40	25	70	43	105	6.7	2.07	17.5
1PS . 508-6BJ...	7192	1.00	2.10	4.50	0.24	40	23	70	39	114	7.0	2.30	20
1PS . 563-6BJ...	8078	0.85	2.00	4.70	0.21	50	30	85	50	195	9.2	3.20	21
1PS . 564-6BJ...	9096	0.90	2.15	4.80	0.21	40	25	70	43	195	9.2	3.20	26.5
1PS . 565-6BJ...	10250	1.00	2.30	5.20	0.21	50	30	85	50	195	9.2	3.20	29
1PS . 566-6BJ...	11529	0.95	2.20	4.90	0.21	40	25	70	43	235	10.3	3.69	32
1PS . 567-6BJ...	12822	0.90	2.05	4.90	0.21	40	25	70	43	235	10.3	3.69	33

Note:

Efficiencies according to IEC 60034-2-1

Higher ratings and frame sizes are available on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## 16-pole motors

### Selection and ordering data

Rated power $P_{rated}$ kW	Article No.	Type Loher	Rated current $I_{rated}$ at 3 kV A	Rated speed $n_{rated}$ rpm	Efficiency			Power factor		
					$\eta$ at $P/P_{rated}$ 4/4 load %	3/4 load %	2/4 load %	$\cos \varphi$ at $P/P_{rated}$ 4/4 load	3/4 load	2/4 load
<b>3 ... 3.3 kV, 50 Hz, sleeve bearing</b>										
16-pole										
80 <sup>1)</sup>	<b>1PS4454-6BJ 0-4HD0</b>	DHTL-450LM-16	23.5	370	92.4	92.1	90.3	0.71	0.66	0.54
100	<b>1PS4455-6BJ 0-4HD0</b>	DHTL-450LM-16	29.5	370	92.4	92.2	90.5	0.70	0.64	0.53
140	<b>1PS4456-6BJ 0-4HD0</b>	DHTL-450LM-16	41.5	370	92.5	92.3	90.8	0.70	0.64	0.53
160	<b>1PS4457-6BJ 0-4HD0</b>	DHTL-450LM-16	47.5	370	92.7	92.5	91.1	0.70	0.64	0.53
180	<b>1PS4458-6BJ 0-4HD0</b>	DHTL-450LX-16	52.5	370	92.9	92.9	91.6	0.71	0.65	0.54
<b>3 ... 6.6 kV, 50 Hz, sleeve bearing</b>										
16-pole										
			$I_{rated}$ at 6 kV							
160 <sup>1)</sup>	<b>1PS4503-6BJ 0-4HD0</b>	DHTL-500LK-16	23	371	92.9	92.8	91.4	0.72	0.68	0.57
180	<b>1PS4504-6BJ 0-4HD0</b>	DHTL-500LK-16	26	371	93.0	92.8	91.4	0.72	0.67	0.56
200	<b>1PS4505-6BJ 0-4HD0</b>	DHTL-500LK-16	29	371	93.2	92.9	91.5	0.71	0.65	0.54
225	<b>1PS4506-6BJ 0-4HD0</b>	DHTL-500LM-16	32	371	93.3	93.2	91.9	0.72	0.68	0.57
250	<b>1PS4507-6BJ 0-4HD0</b>	DHTL-500LM-16	36	371	93.4	93.3	91.9	0.71	0.66	0.55
280	<b>1PS4508-6BJ 0-4HD0</b>	DHTL-500LX-16	40	371	93.6	93.5	92.1	0.72	0.66	0.55
315	<b>1PS4563-6BJ 0-4HD0</b>	DHTL-560LK-16	43.5	372	94.8	94.5	93.3	0.73	0.69	0.59
355	<b>1PS4564-6BJ 0-4HD0</b>	DHTL-560LK-16	50	372	94.9	94.5	93.4	0.72	0.66	0.56
400	<b>1PS4565-6BJ 0-4HD0</b>	DHTL-560LK-16	57	372	94.9	94.6	93.5	0.71	0.65	0.55
450	<b>1PS4566-6BJ 0-4HD0</b>	DHTL-560LM-16	64.5	372	95.0	94.8	93.6	0.71	0.65	0.55
500	<b>1PS4567-6BJ 0-4HD0</b>	DHTL-560LM-16	70	372	95.1	95.0	93.9	0.72	0.67	0.56
		Rated voltage/connection/frequency								
		See page 1/5								

<sup>1)</sup>  $P_{min} = 50$  kW,  $P_{min}$  (6.0 kV) = 140 kW,  $P_{min}$  (6.6 kV) = 160 kW



## LOHER VARIO 1PS./1MV. flameproof motors for line operation

16-pole motors

## Selection and ordering data (continued)

Article No. (repeated)	Rated torque	Locked rotor torque	Break-down torque	Locked rotor current	$\cos \varphi_K$	Locked rotor time		Allowable running-up time		Moment of inertia	Weight		Static current
	$T_{rated}$	$T_{LR}/T_{rated}$	$T_B/T_{rated}$	$I_{LR}/I_{rated}$		LRT		ART		$J_{Mot}$	Motor	Rotor	$I_0$
	Nm					cold	hot	cold	hot	kgm <sup>2</sup>	t	t	A
1PS4454-6BJ...	2056	0.85	2.10	4.3	0.22	75	50	125	85	57	5.3	1.57	11.5
1PS4455-6BJ...	2570	0.90	2.10	4.4	0.22	65	45	110	75	57	5.3	1.57	15
1PS4456-6BJ...	3602	0.85	2.00	4.2	0.23	55	35	95	60	57	5.3	1.57	20.5
1PS4457-6BJ...	4116	0.90	2.10	4.3	0.23	50	30	85	50	57	5.3	1.57	24
1PS4458-6BJ...	4633	0.85	2.00	4.2	0.23	50	30	85	50	61	5.4	1.66	28
1PS4503-6BJ...	4112	0.90	1.95	4.4	0.24	50	30	85	50	87	6.3	1.96	10.5
1PS4504-6BJ...	4625	0.95	2.05	4.5	0.24	45	28	77	47	87	6.3	1.96	12.5
1PS4505-6BJ...	5136	1.00	2.15	4.5	0.24	40	25	70	43	87	6.3	1.96	15
1PS4506-6BJ...	5785	0.90	1.90	4.3	0.24	50	30	85	50	105	7.1	2.17	14
1PS4507-6BJ...	6422	1.00	2.10	4.5	0.24	40	25	70	43	105	7.1	2.17	17.5
1PS4508-6BJ...	7192	1.00	2.10	4.5	0.24	40	23	70	39	114	7.4	2.40	20
1PS4563-6BJ...	8078	0.85	2.00	4.7	0.21	50	30	85	50	195	9.6	3.30	21
1PS4564-6BJ...	9096	0.90	2.15	4.8	0.21	40	25	70	43	195	9.6	3.30	26.5
1PS4565-6BJ...	10250	1.00	2.30	5.2	0.21	50	30	85	50	195	9.6	3.30	29
1PS4566-6BJ...	11529	0.95	2.20	4.9	0.21	40	25	70	43	235	10.7	3.79	32
1PS4567-6BJ...	12822	0.90	2.05	4.9	0.21	40	25	70	43	235	10.7	3.79	33

Note:

Efficiencies according to IEC 60034-2-1

Higher ratings and frame sizes are available on request.

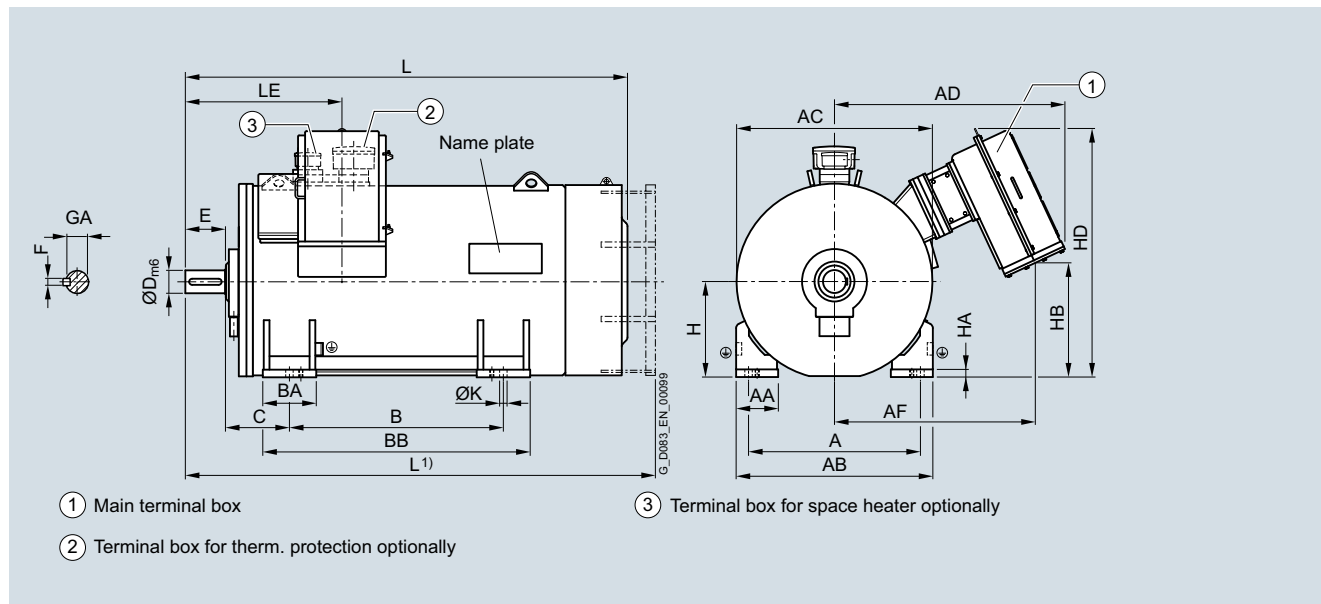
3

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Horizontal motors

Rib-cooled IC411, 2-pole motors

## Dimensional drawings



Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, 50 Hz, IM B3 type of construction, antifriction bearing, rib-cooled, flameproof</b>										
2-pole										
1PS.350-6BH.0-4AA0	DHS.-355MA-02A	610	120	700	698	1090	940	560	150	650
1PS.351-6BH.0-4AA0	DHS.-355MA-02A	610	120	700	698	1090	940	560	150	650
1PS.352-6BH.0-4AA0	DHS.-355MB-02A	610	120	700	698	1090	940	560	150	650
1PS.353-6BH.0-4AA0	DHS.-355LA-02A	610	120	700	698	1090	940	630	150	720
1PS.354-6BH.0-4AA0	DHS.-355LB-02A	610	120	700	698	1090	940	630	150	720
1PS.355-6BH.0-4AA0	DHS.-355LC-02A	610	120	700	698	1090	940	800	150	890
1PS.356-6BH.0-4AA0	DHS.-355LD-02A	610	120	700	698	1090	940	800	150	890
1PS.357-6BJ.0-4AA0	DHS.-355LM-02A	630	140	780	745	1065	910	800	210	950
1PS.358-6BJ.0-4AA0	DHS.-355LM-02A	630	140	780	745	1065	910	800	210	950
1MV.404-6BJ.0-4AA0	DHS.-400LK-02A	710	185	860	825	1115	960	900	210	1090
1MV.405-6BJ.0-4AA0	DHS.-400LK-02A	710	185	860	825	1115	960	900	210	1090
1MV.407-6BJ.0-4AA0	DHS.-400LM-02A	710	185	860	825	1115	960	900	210	1090
1MV.454-6BJ.0-4AA0	DHS.-450LK-02A	800	230	900	925	1145	990	1000	260	1260
1MV.455-6BJ.0-4AA0	DHS.-450LK-02A	800	230	900	925	1145	990	1000	260	1260
1MV.457-6BJ.0-4AA0	DHS.-450LM-02A	800	230	900	925	1145	990	1000	260	1260
1MV.502-6BJ.0-4AA0	DHS.-500LK-02A <sup>3)</sup>	900	220	1030	1025	1210	1050	1120	280	1400
1MV.503-6BJ.0-4AA0	DHS.-500LK-02A <sup>3)</sup>	900	220	1030	1025	1210	1050	1120	280	1400
1MV.504-6BJ.0-4AA0	DHS.-500LK-02A <sup>3)</sup>	900	220	1030	1025	1210	1050	1120	280	1400
1MV.507-6BJ.0-4AA0	DHS.-500LM-02A <sup>3)</sup>	900	220	1030	1025	1210	1050	1120	280	1400
1MV.508-6BJ.0-4AA0	DHS.-500LM-02A <sup>3)</sup>	900	220	1030	1025	1210	1050	1120	280	1400
1MV.563-6BJ.0-4AA0	DHS.-560LK-02A <sup>3)</sup>	1000	250	1150	1165	1335	1180	1250	300	1550
1MV.565-6BJ.0-4AA0	DHS.-560LK-02A <sup>3)</sup>	1000	250	1150	1165	1335	1180	1250	300	1550
1MV.567-6BJ.0-4AA0	DHS.-560LM-02A <sup>3)</sup>	1000	250	1150	1165	1335	1180	1250	300	1550

<sup>1)</sup> 2-pole motors: noise class 3 standard design.

<sup>2)</sup> Version with two terminal boxes: + 100 kg.

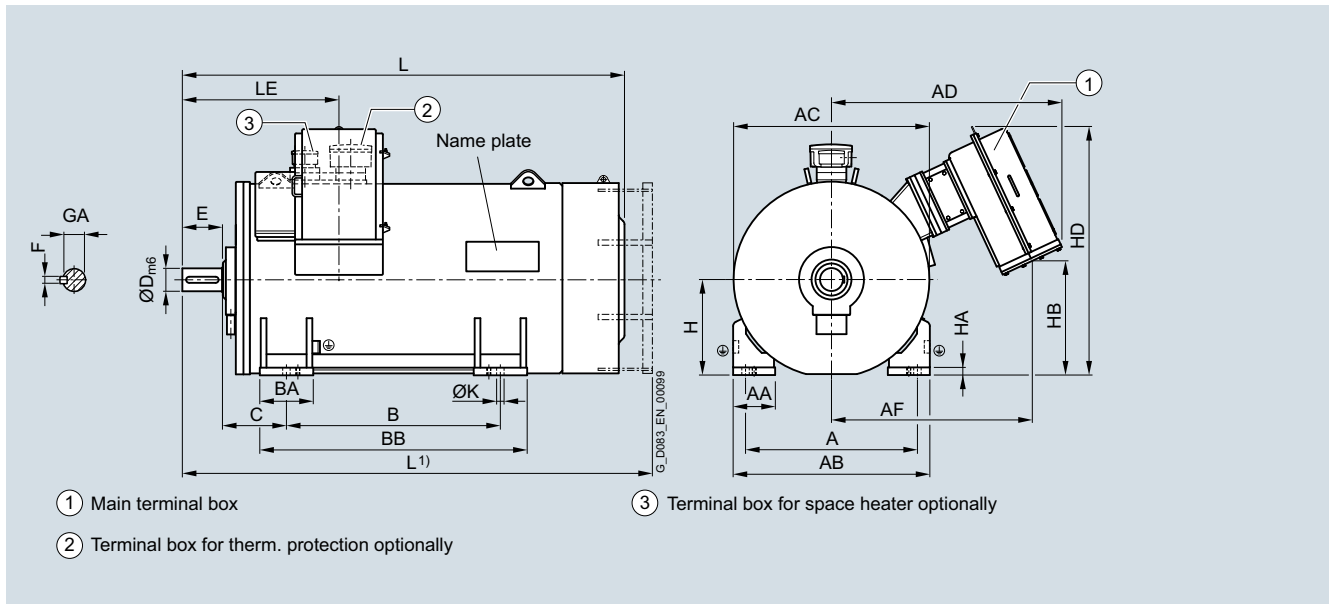
<sup>3)</sup> Only 50 Hz-operation.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 2-pole motors

## Dimensional drawings (continued)



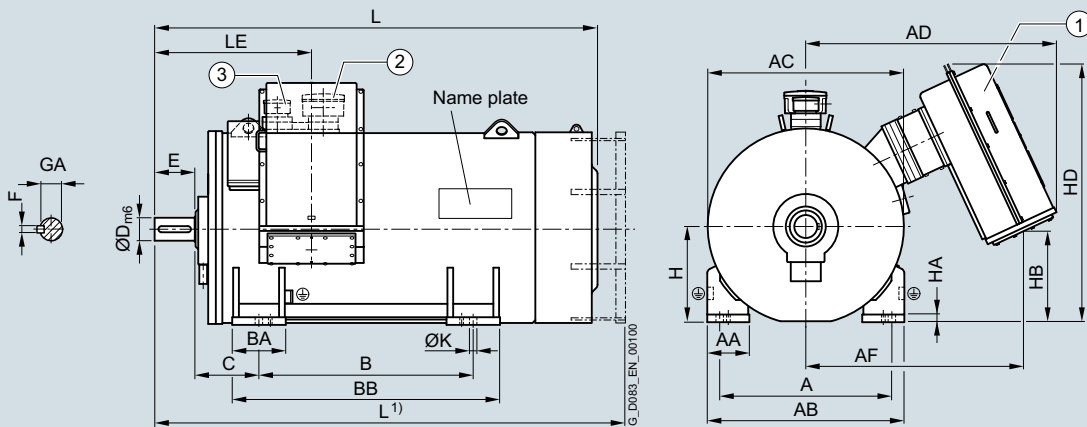
Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1PS.350-6BH...	254	75	140	20	79.5	355	30	320	995	28	1735	779	1700 <sup>2)</sup>
1PS.351-6BH...	254	75	140	20	79.5	355	30	320	995	28	1735	779	1700 <sup>2)</sup>
1PS.352-6BH...	254	75	140	20	79.5	355	30	320	995	28	1735	779	1750 <sup>2)</sup>
1PS.353-6BH...	254	75	140	20	79.5	355	30	320	995	28	1870	779	1800 <sup>2)</sup>
1PS.354-6BH...	254	75	140	20	79.5	355	30	320	995	28	1870	779	1900 <sup>2)</sup>
1PS.355-6BH...	254	75	140	20	79.5	355	30	320	995	28	1950	779	2000 <sup>2)</sup>
1PS.356-6BH...	254	75	140	20	79.5	355	30	320	995	28	1950	779	2100 <sup>2)</sup>
1PS.357-6BJ...	254	75	140	20	79.5	355	35	390	1095	33	2016	750	2500 <sup>2)</sup>
1PS.358-6BJ...	254	75	140	20	79.5	355	35	390	1095	33	2016	750	2500 <sup>2)</sup>
1MV.404-6BJ...	280	80	170	22	85	400	30	405	1110	33	2131	780	3000 <sup>2)</sup>
1MV.405-6BJ...	280	80	170	22	85	400	30	405	1110	33	2131	780	3000 <sup>2)</sup>
1MV.407-6BJ...	280	80	170	22	85	400	30	405	1110	33	2131	780	3300 <sup>2)</sup>
1MV.454-6BJ...	315	85	170	22	90	450	30	570	1265	39	2251	780	4000 <sup>2)</sup>
1MV.455-6BJ...	315	85	170	22	90	450	30	570	1265	39	2251	780	4000 <sup>2)</sup>
1MV.457-6BJ...	315	85	170	22	90	450	30	570	1265	39	2251	780	4300 <sup>2)</sup>
1MV.502-6BJ...	335	90	170	25	95	500	40	600	1305	39	2421	780	5400 <sup>2)</sup>
1MV.503-6BJ...	335	90	170	25	95	500	40	600	1305	39	2421	780	5400 <sup>2)</sup>
1MV.504-6BJ...	335	90	170	25	95	500	40	600	1305	39	2421	780	5400 <sup>2)</sup>
1MV.507-6BJ...	335	90	170	25	95	500	40	600	1305	39	2421	780	6000 <sup>2)</sup>
1MV.508-6BJ...	335	90	170	25	95	500	40	600	1305	39	2421	780	6000 <sup>2)</sup>
1MV.563-6BJ...	355	100	210	28	106	560	40	500	1365	42	2650	840	8000 <sup>2)</sup>
1MV.565-6BJ...	355	100	210	28	106	560	40	500	1365	42	2650	840	8000 <sup>2)</sup>
1MV.567-6BJ...	355	100	210	28	106	560	40	500	1365	42	2650	840	8700 <sup>2)</sup>

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Horizontal motors

Rib-cooled IC411, 2-pole motors

## Dimensional drawings



① Main terminal box

② Terminal box for therm. protection optionally

③ Terminal box for space heater optionally

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>6.7 ... 11 kV, IM B3 type of construction, antifriction bearing, rib-cooled, flameproof</b>										
2-pole										
1MV.402-6BJ.0-4AA0	DHS.-400LK-02A	710	185	860	825	1220	1045	900	210	1090
1MV.403-6BJ.0-4AA0	DHS.-400LK-02A	710	185	860	825	1220	1045	900	210	1090
1MV.404-6BJ.0-4AA0	DHS.-400LK-02A	710	185	860	825	1220	1045	900	210	1090
1MV.405-6BJ.0-4AA0	DHS.-400LK-02A	710	185	860	825	1220	1045	900	210	1090
1MV.407-6BJ.0-4AA0	DHS.-400LM-02A	710	185	860	825	1220	1045	900	210	1090
1MV.453-6BJ.0-4AA0	DHS.-450LK-02A	800	230	900	925	1260	1090	1000	260	1260
1MV.454-6BJ.0-4AA0	DHS.-450LK-02A	800	230	900	925	1260	1090	1000	260	1260
1MV.455-6BJ.0-4AA0	DHS.-450LK-02A	800	230	900	925	1260	1090	1000	260	1260
1MV.457-6BJ.0-4AA0	DHS.-450LM-02A	800	230	900	925	1260	1090	1000	260	1260
1MV.502-6BJ.0-4AA0	DHS.-500LK-02A <sup>3)</sup>	900	220	1030	1025	1310	1140	1120	280	1400
1MV.503-6BJ.0-4AA0	DHS.-500LK-02A <sup>3)</sup>	900	220	1030	1025	1310	1140	1120	280	1400
1MV.504-6BJ.0-4AA0	DHS.-500LK-02A <sup>3)</sup>	900	220	1030	1025	1310	1140	1120	280	1400
1MV.507-6BJ.0-4AA0	DHS.-500LM-02A <sup>3)</sup>	900	220	1030	1025	1310	1140	1120	280	1400
1MV.562-6BJ.0-4AA0	DHS.-560LK-02A <sup>3)</sup>	1000	250	1150	1165	1440	1265	1250	300	1550
1MV.563-6BJ.0-4AA0	DHS.-560LK-02A <sup>3)</sup>	1000	250	1150	1165	1440	1265	1250	300	1550
1MV.565-6BJ.0-4AA0	DHS.-560LK-02A <sup>3)</sup>	1000	250	1150	1165	1440	1265	1250	300	1550
1MV.567-6BJ.0-4AA0	DHS.-560LM-02A <sup>3)</sup>	1000	250	1150	1165	1440	1265	1250	300	1550

<sup>1)</sup> 2-pole motors: noise class 3 standard design.

<sup>2)</sup> Version with two terminal boxes: + 100 kg.

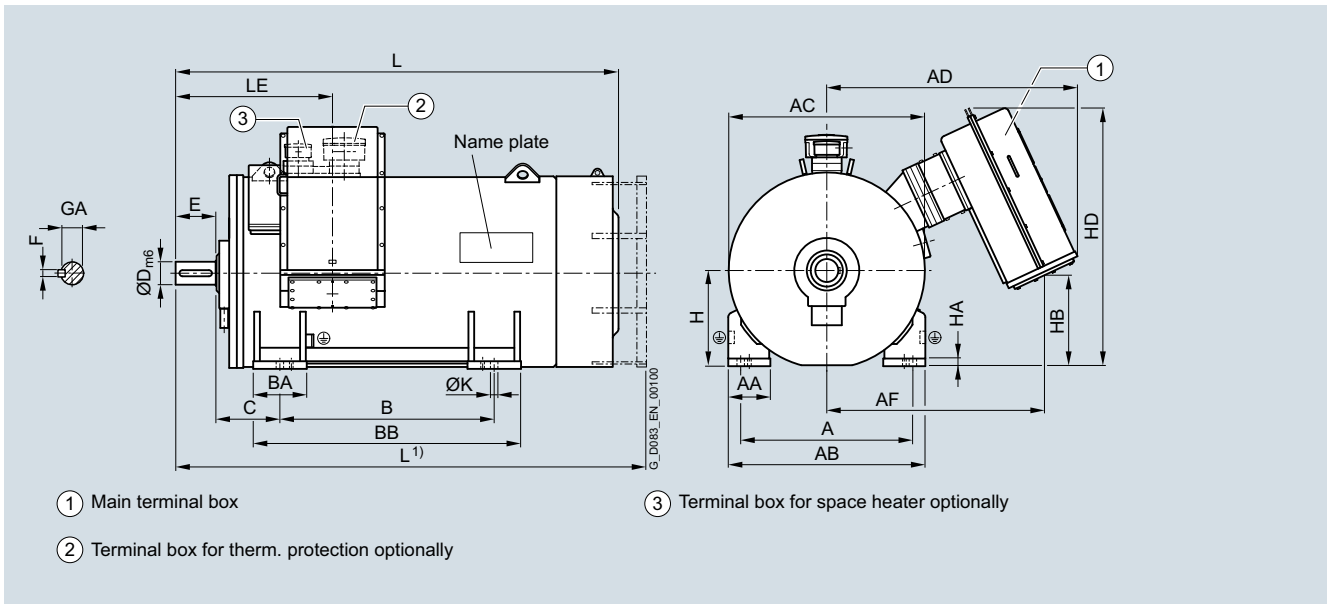
<sup>3)</sup> Only 50 Hz-operation.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 2-pole motors

## Dimensional drawings (continued)

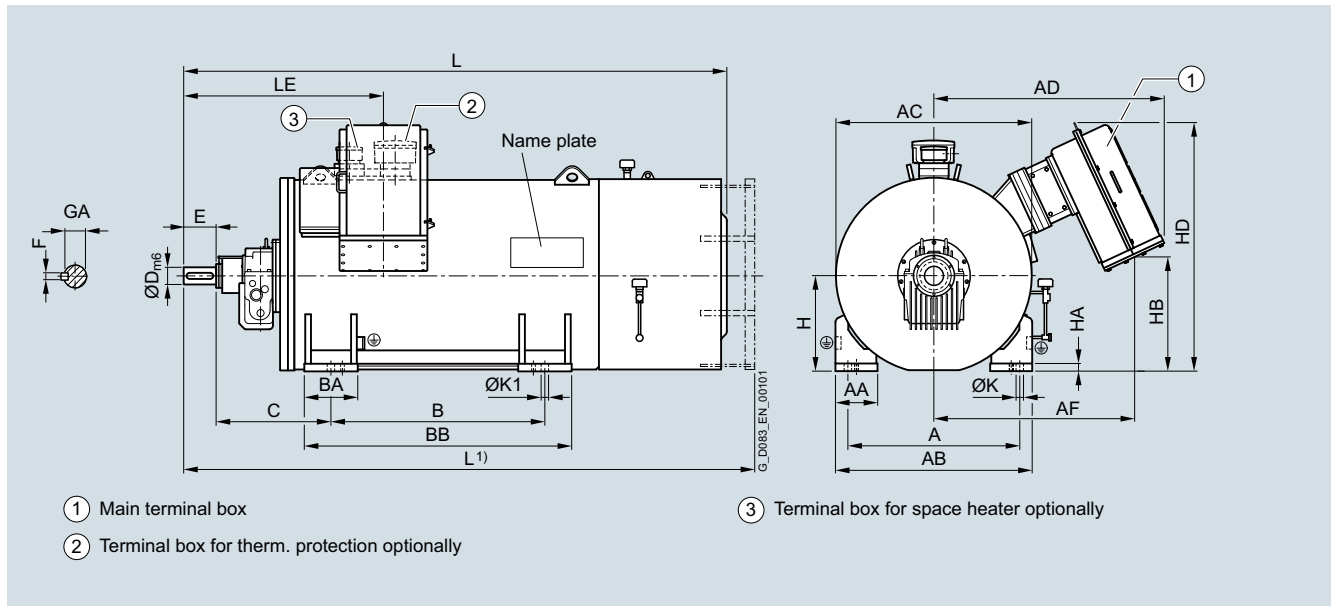


Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1MV.402-6BJ...	280	80	170	22	85	400	30	285	1160	33	2131	780	3000 <sup>2)</sup>
1MV.403-6BJ...	280	80	170	22	85	400	30	285	1160	33	2131	780	3000 <sup>2)</sup>
1MV.404-6BJ...	280	80	170	22	85	400	30	285	1160	33	2131	780	3000 <sup>2)</sup>
1MV.405-6BJ...	280	80	170	22	85	400	30	285	1160	33	2131	780	3000 <sup>2)</sup>
1MV.407-6BJ...	280	80	170	22	85	400	30	285	1160	33	2131	780	3300 <sup>2)</sup>
1MV.453-6BJ...	315	85	170	22	90	450	30	450	1315	39	2251	780	4000 <sup>2)</sup>
1MV.454-6BJ...	315	85	170	22	90	450	30	450	1315	39	2251	780	4000 <sup>2)</sup>
1MV.455-6BJ...	315	85	170	22	90	450	30	450	1315	39	2251	780	4000 <sup>2)</sup>
1MV.457-6BJ...	315	85	170	22	90	450	30	450	1315	39	2251	780	4300 <sup>2)</sup>
1MV.502-6BJ...	335	90	170	25	95	500	40	475	1350	39	2421	780	5400 <sup>2)</sup>
1MV.503-6BJ...	335	90	170	25	95	500	40	475	1350	39	2421	780	5400 <sup>2)</sup>
1MV.504-6BJ...	335	90	170	25	95	500	40	475	1350	39	2421	780	5400 <sup>2)</sup>
1MV.507-6BJ...	335	90	170	25	95	500	40	475	1350	39	2421	780	6000 <sup>2)</sup>
1MV.562-6BJ...	355	100	210	28	106	560	40	380	1335	42	2650	840	8000 <sup>2)</sup>
1MV.563-6BJ...	355	100	210	28	106	560	40	380	1335	42	2650	840	8000 <sup>2)</sup>
1MV.565-6BJ...	355	100	210	28	106	560	40	380	1335	42	2650	840	8000 <sup>2)</sup>
1MV.567-6BJ...	355	100	210	28	106	560	40	380	1335	42	2650	840	8700 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 2-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, sleeve bearing, rib-cooled, flameproof</b>										
2-pole										
1MV4404-6BJ.0-4AD0	DHTL-400LK-02A	710	185	860	825	1115	960	900	210	1090
1MV4405-6BJ.0-4AD0	DHTL-400LK-02A	710	185	860	825	1115	960	900	210	1090
1MV4407-6BJ.0-4AD0	DHTL-400LM-02A	710	185	860	825	1115	960	900	210	1090
1MV4454-6BJ.0-4AD0	DHTL-450LK-02A	800	230	900	925	1145	990	1000	260	1260
1MV4455-6BJ.0-4AD0	DHTL-450LK-02A	800	230	900	925	1145	990	1000	260	1260
1MV4457-6BJ.0-4AD0	DHTL-450LM-02A	800	230	900	925	1145	990	1000	260	1260
1MV4502-6BJ.0-4AD0	DHTL-500LK-02A	900	220	1030	1025	1210	1050	1120	280	1400
1MV4503-6BJ.0-4AD0	DHTL-500LK-02A	900	220	1030	1025	1210	1050	1120	280	1400
1MV4505-6BJ.0-4AD0	DHTL-500LK-02A	900	220	1030	1025	1210	1050	1120	280	1400
1MV4508-6BJ.0-4AD0	DHTL-500LM-02A	900	220	1030	1025	1210	1050	1120	280	1400
1MV4563-6BJ.0-4AD0	DHTL-560LK-02A	1000	250	1150	1165	1335	1180	1250	300	1550
1MV4565-6BJ.0-4AD0	DHTL-560LK-02A	1000	250	1150	1165	1335	1180	1250	300	1550
1MV4567-6BJ.0-4AD0	DHTL-560LM-02A	1000	250	1150	1165	1335	1180	1250	300	1550
1MV4568-6BJ.0-4AD0	DHTL-560LM-02A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4632-6BJ.0-4AD0	DHTL-630MK-02A <sup>3)</sup>	1120	250	1300	1300	1530	1365	1400	300	1700
1PS4633-6BJ.0-4AD0	DHTL-630MM-02A <sup>3)</sup>	1120	250	1300	1300	1530	1365	1400	300	1700
1PS4634-6BJ.0-4AD0	DHTL-630MM-02A <sup>3)</sup>	1120	250	1300	1300	1530	1365	1400	300	1700
1PS4637-6BJ.0-4AD0	DHTL-630LM-02A <sup>3)</sup>	1120	250	1300	1300	1530	1365	1400	300	1700

1) 2-pole motors: noise class 3 standard design.

2) Version with two terminal boxes: + 100 kg.

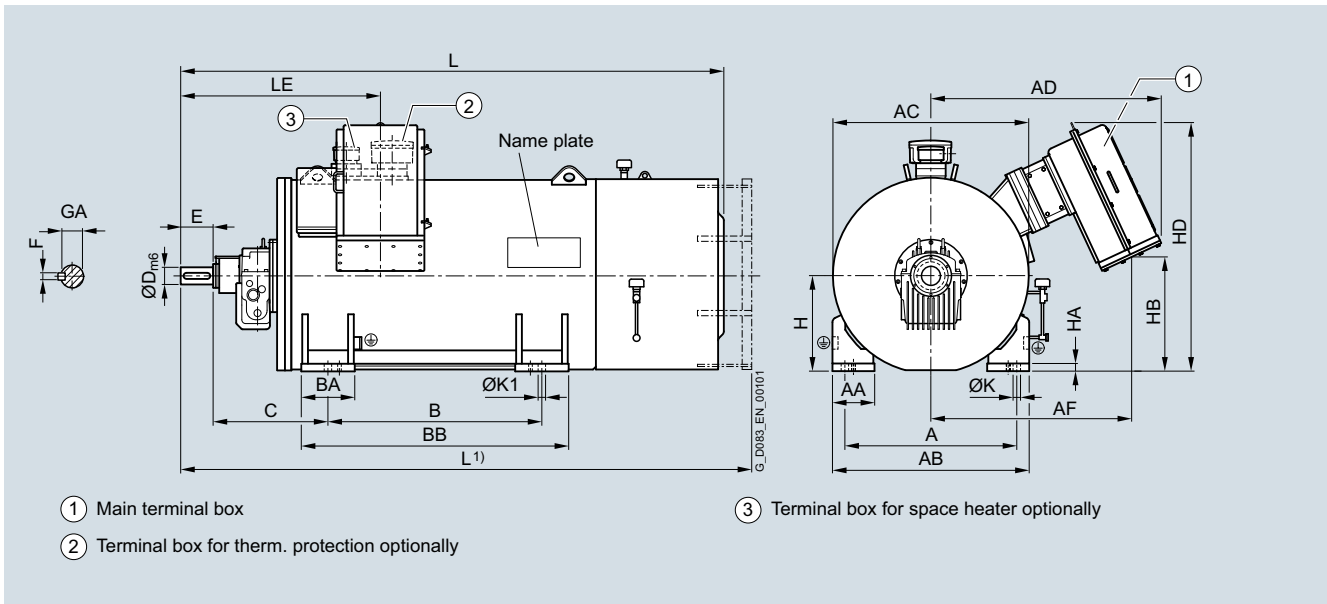
3) 60 Hz operation on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 2-pole motors

### Dimensional drawings (continued)

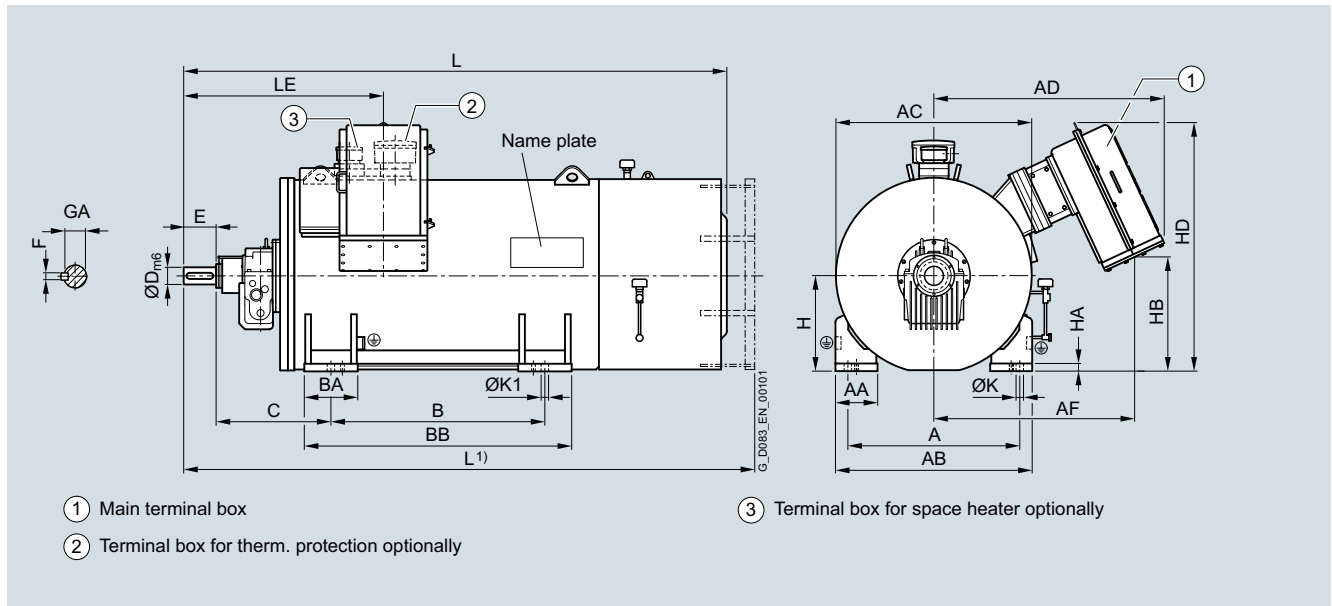


Motor type (repeated)	Dimensions in mm													Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	K1	L <sup>1)</sup>	LE	
1MV4404-6BJ...	600	80	170	22	85	400	30	405	1110	35	60	2670	1100	3300 <sup>2)</sup>
1MV4405-6BJ...	600	80	170	22	85	400	30	405	1110	35	60	2670	1100	3300 <sup>2)</sup>
1MV4407-6BJ...	600	80	170	22	85	400	30	405	1110	35	60	2670	1100	3600 <sup>2)</sup>
1MV4454-6BJ...	630	85	170	22	90	450	30	570	1265	42	72	2820	1095	4300 <sup>2)</sup>
1MV4455-6BJ...	630	85	170	22	90	450	30	570	1265	42	72	2820	1095	4300 <sup>2)</sup>
1MV4457-6BJ...	630	85	170	22	90	450	30	570	1265	42	72	2820	1095	4600 <sup>2)</sup>
1MV4502-6BJ...	670	90	170	25	95	500	40	600	1305	42	72	3010	1115	5800 <sup>2)</sup>
1MV4503-6BJ...	670	90	170	25	95	500	40	600	1305	42	72	3010	1115	5800 <sup>2)</sup>
1MV4505-6BJ...	670	90	170	25	95	500	40	600	1305	42	72	3010	1115	5800 <sup>2)</sup>
1MV4508-6BJ...	670	90	170	25	95	500	40	600	1305	42	72	3010	1115	6400 <sup>2)</sup>
1MV4563-6BJ...	710	100	210	28	106	560	40	500	1365	42	72	3450	1195	8400 <sup>2)</sup>
1MV4565-6BJ...	710	100	210	28	106	560	40	500	1365	42	72	3450	1195	8400 <sup>2)</sup>
1MV4567-6BJ...	710	100	210	28	106	560	40	500	1365	42	72	3450	1195	9100 <sup>2)</sup>
1MV4568-6BJ...	710	100	210	28	106	560	40	500	1365	42	72	3450	1195	9100 <sup>2)</sup>
1PS4632-6BJ...	800	120	210	32	127	630	40	500	1500	42	72	3680	1245	11300 <sup>2)</sup>
1PS4633-6BJ...	800	120	210	32	127	630	40	500	1500	42	72	3680	1245	12200 <sup>2)</sup>
1PS4634-6BJ...	800	120	210	32	127	630	40	500	1500	42	72	3680	1245	12200 <sup>2)</sup>
1PS4637-6BJ...	800	120	210	32	127	630	40	500	1500	42	72	3880	1245	13600 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 2-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>6.7 ... 11 kV, IM B3 type of construction, sleeve bearing, rib-cooled, flameproof</b>										
<b>2-pole</b>										
1MV4402-6BJ.0-4AD0	DHTL-400LK-02A	710	185	860	825	1220	1045	900	210	1090
1MV4403-6BJ.0-4AD0	DHTL-400LK-02A	710	185	860	825	1220	1045	900	210	1090
1MV4404-6BJ.0-4AD0	DHTL-400LK-02A	710	185	860	825	1220	1045	900	210	1090
1MV4405-6BJ.0-4AD0	DHTL-400LK-02A	710	185	860	825	1220	1045	900	210	1090
1MV4407-6BJ.0-4AD0	DHTL-400LM-02A	710	185	860	825	1220	1045	900	210	1090
1MV4453-6BJ.0-4AD0	DHTL-450LK-02A	800	230	900	925	1260	1090	1000	260	1260
1MV4454-6BJ.0-4AD0	DHTL-450LK-02A	800	230	900	925	1260	1090	1000	260	1260
1MV4455-6BJ.0-4AD0	DHTL-450LK-02A	800	230	900	925	1260	1090	1000	260	1260
1MV4457-6BJ.0-4AD0	DHTL-450LM-02A	800	230	900	925	1260	1090	1000	260	1260
1MV4502-6BJ.0-4AD0	DHTL-500LK-02A	900	220	1030	1025	1310	1140	1120	280	1400
1MV4503-6BJ.0-4AD0	DHTL-500LK-02A	900	220	1030	1025	1310	1140	1120	280	1400
1MV4505-6BJ.0-4AD0	DHTL-500LK-02A	900	220	1030	1025	1310	1140	1120	280	1400
1MV4507-6BJ.0-4AD0	DHTL-500LM-02A	900	220	1030	1025	1310	1140	1120	280	1400
1MV4562-6BJ.0-4AD0	DHTL-560LK-02A	1000	250	1150	1165	1440	1265	1250	300	1550
1MV4563-6BJ.0-4AD0	DHTL-560LK-02A	1000	250	1150	1165	1440	1265	1250	300	1550
1MV4564-6BJ.0-4AD0	DHTL-560LK-02A	1000	250	1150	1165	1440	1265	1250	300	1550
1MV4565-6BJ.0-4AD0	DHTL-560LK-02A	1000	250	1150	1165	1440	1265	1250	300	1550
1MV4567-6BJ.0-4AD0	DHTL-560LM-02A	1000	250	1150	1165	1440	1265	1250	300	1550

1) 2-pole motors: noise class 3 standard design.

2) Version with two terminal boxes: + 150 kg.

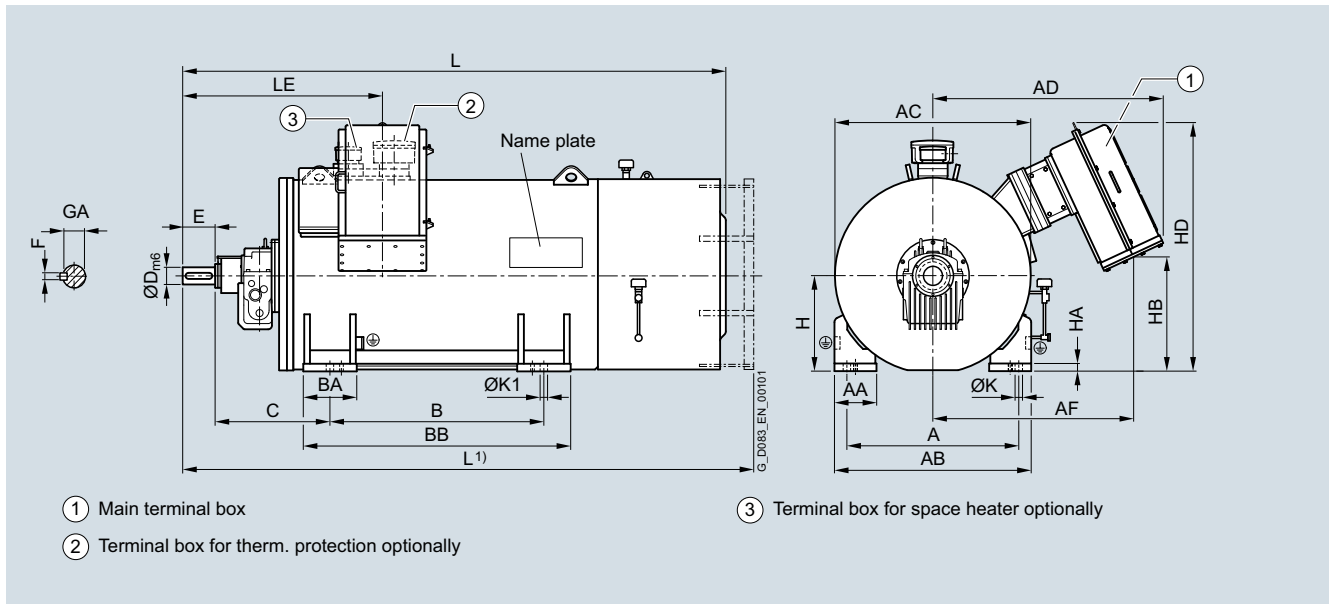


# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 2-pole motors

## Dimensional drawings (continued)



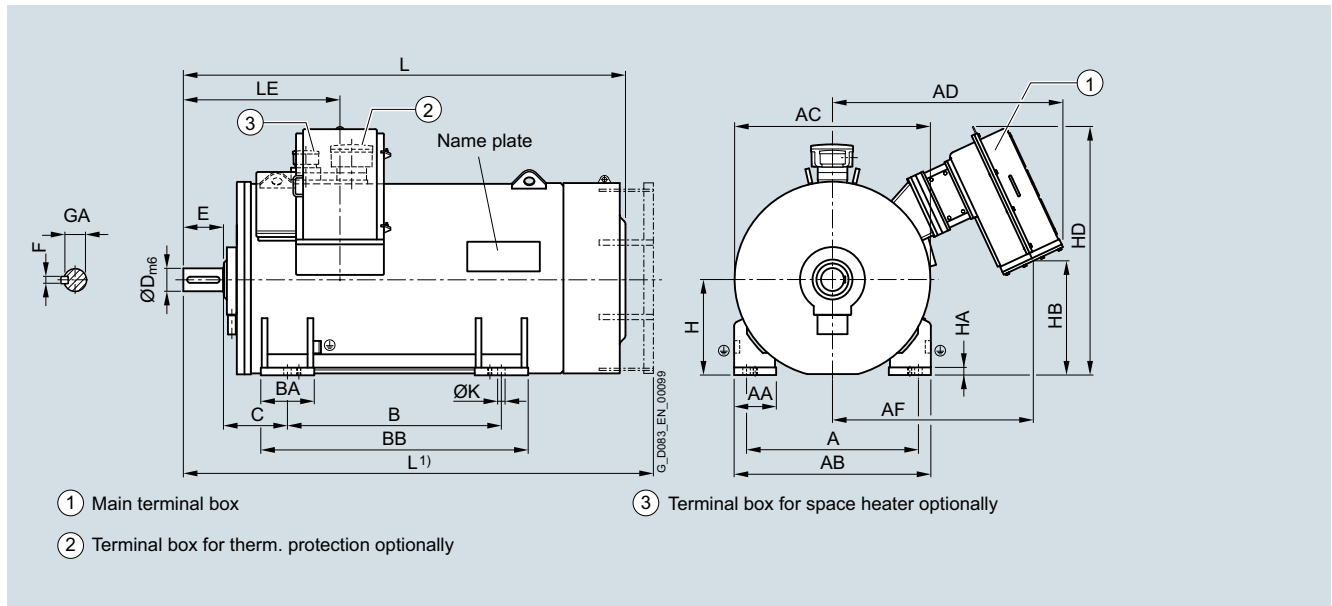
Motor type (repeated)	Dimensions in mm													Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	K1	L <sup>1)</sup>	LE	
1MV4402-6BJ...	600	80	170	22	85	400	30	285	1160	35	60	2670	1100	3300 <sup>2)</sup>
1MV4403-6BJ...	600	80	170	22	85	400	30	285	1160	35	60	2670	1100	3300 <sup>2)</sup>
1MV4404-6BJ...	600	80	170	22	85	400	30	285	1160	35	60	2670	1100	3300 <sup>2)</sup>
1MV4405-6BJ...	600	80	170	22	85	400	30	285	1160	35	60	2670	1100	3300 <sup>2)</sup>
1MV4407-6BJ...	600	80	170	22	85	400	30	285	1160	35	60	2670	1100	3600 <sup>2)</sup>
1MV4453-6BJ...	630	85	170	22	90	450	30	450	1315	42	72	2820	1095	4300 <sup>2)</sup>
1MV4454-6BJ...	630	85	170	22	90	450	30	450	1315	42	72	2820	1095	4300 <sup>2)</sup>
1MV4455-6BJ...	630	85	170	22	90	450	30	450	1315	42	72	2820	1095	4300 <sup>2)</sup>
1MV4457-6BJ...	630	85	170	22	90	450	30	450	1315	42	72	2820	1095	4600 <sup>2)</sup>
1MV4502-6BJ...	670	90	170	25	95	500	40	475	1350	42	72	3010	1115	5800 <sup>2)</sup>
1MV4503-6BJ...	670	90	170	25	95	500	40	475	1350	42	72	3010	1115	5800 <sup>2)</sup>
1MV4505-6BJ...	670	90	170	25	95	500	40	475	1350	42	72	3010	1115	5800 <sup>2)</sup>
1MV4507-6BJ...	670	90	170	25	95	500	40	475	1350	42	72	3010	1115	6400 <sup>2)</sup>
1MV4562-6BJ...	710	100	210	28	106	560	40	380	1335	42	72	3450	1195	8400 <sup>2)</sup>
1MV4563-6BJ...	710	100	210	28	106	560	40	380	1335	42	72	3450	1195	8400 <sup>2)</sup>
1MV4564-6BJ...	710	100	210	28	106	560	40	380	1335	42	72	3450	1195	8400 <sup>2)</sup>
1MV4565-6BJ...	710	100	210	28	106	560	40	380	1335	42	72	3450	1195	8400 <sup>2)</sup>
1MV4567-6BJ...	710	100	210	28	106	560	40	380	1335	42	72	3450	1195	9100 <sup>2)</sup>

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Horizontal motors

Rib-cooled IC411, 4-pole motors

## Dimensional drawings



Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, antifriction bearing, rib-cooled, flameproof</b>										
4-pole										
1PS.350-6BH.0-4BA0	DHS.-355MB-04A	610	120	700	698	1090	940	560	150	650
1PS.351-6BH.0-4BA0	DHS.-355MB-04A	610	120	700	698	1090	940	560	150	650
1PS.352-6BH.0-4BA0	DHS.-355LB-04A	610	120	700	698	1090	940	560	150	720
1PS.353-6BH.0-4BA0	DHS.-355LB-04A	610	120	700	698	1090	940	560	150	720
1PS.354-6BH.0-4BA0	DHS.-355LC-04A	610	120	700	698	1090	940	560	150	890
1PS.355-6BH.0-4BA0	DHS.-355LC-04A	610	120	700	698	1090	940	560	150	890
1PS.356-6BH.0-4BA0	DHS.-355LD-04A	610	120	700	698	1090	940	560	150	890
1PS.357-6BJ.0-4BA0	DHS.-355LM-04A	630	140	780	745	1065	910	800	210	950
1PS.358-6BJ.0-4BA0	DHS.-355LM-04A	630	140	780	745	1065	910	800	210	950
1MV.404-6BJ.0-4BA0	DHS.-400LK-04A	710	185	860	825	1115	960	900	210	1090
1MV.405-6BJ.0-4BA0	DHS.-400LK-04A	710	185	860	825	1115	960	900	210	1090
1MV.407-6BJ.0-4BA0	DHS.-400LM-04A	710	185	860	825	1115	960	900	210	1090
1MV.408-6BJ.0-4BA0	DHS.-400LM-04A	710	185	860	825	1115	960	900	210	1090
1MV.454-6BJ.0-4BA0	DHS.-450LK-04A	800	230	900	925	1145	990	1000	260	1260
1MV.455-6BJ.0-4BA0	DHS.-450LK-04A	800	230	900	925	1145	990	1000	260	1260
1MV.457-6BJ.0-4BA0	DHS.-450LM-04A	800	230	900	925	1145	990	1000	260	1260
1MV.458-6BJ.0-4BA0	DHS.-450LM-04A	800	230	900	925	1145	990	1000	260	1260
1MV.503-6BJ.0-4BA0	DHS.-500LK-04A	900	220	1030	1025	1210	1050	1120	280	1400
1MV.504-6BJ.0-4BA0	DHS.-500LK-04A	900	220	1030	1025	1210	1050	1120	280	1400
1MV.505-6BJ.0-4BA0	DHS.-500LK-04A	900	220	1030	1025	1210	1050	1120	280	1400
1MV.507-6BJ.0-4BA0	DHS.-500LM-04A	900	220	1030	1025	1210	1050	1120	280	1400
1MV.563-6BJ.0-4BA0	DHS.-560LK-04A	1000	250	1150	1165	1335	1180	1250	300	1550
1MV.564-6BJ.0-4BA0	DHS.-560LK-04A	1000	250	1150	1165	1335	1180	1250	300	1550
1MV.565-6BJ.0-4BA0	DHS.-560LK-04A	1000	250	1150	1165	1335	1180	1250	300	1550
1MV.567-6BJ.0-4BA0	DHS.-560LM-04A	1000	250	1150	1165	1335	1180	1250	300	1550
1MV.568-6BJ.0-4BA0	DHS.-560LM-04A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.633-6BJ.0-4BA0	DHS.-630MK-04A	1120	250	1300	1300	1530	1365	1400	300	1700
1PS.634-6BJ.0-4BA0	DHS.-630MM-04A	1120	250	1300	1300	1530	1365	1400	300	1700
1PS.635-6BJ.0-4BA0	DHS.-630MM-04A	1120	250	1300	1300	1530	1365	1400	300	1700
1PS.637-6BJ.0-4BA0	DHS.-630LM-04A	1120	250	1300	1300	1530	1365	1400	300	1700

1) For noise class 3 dimension L changes + 150 mm (frame size 560 +165 mm, 630 + 200 mm).

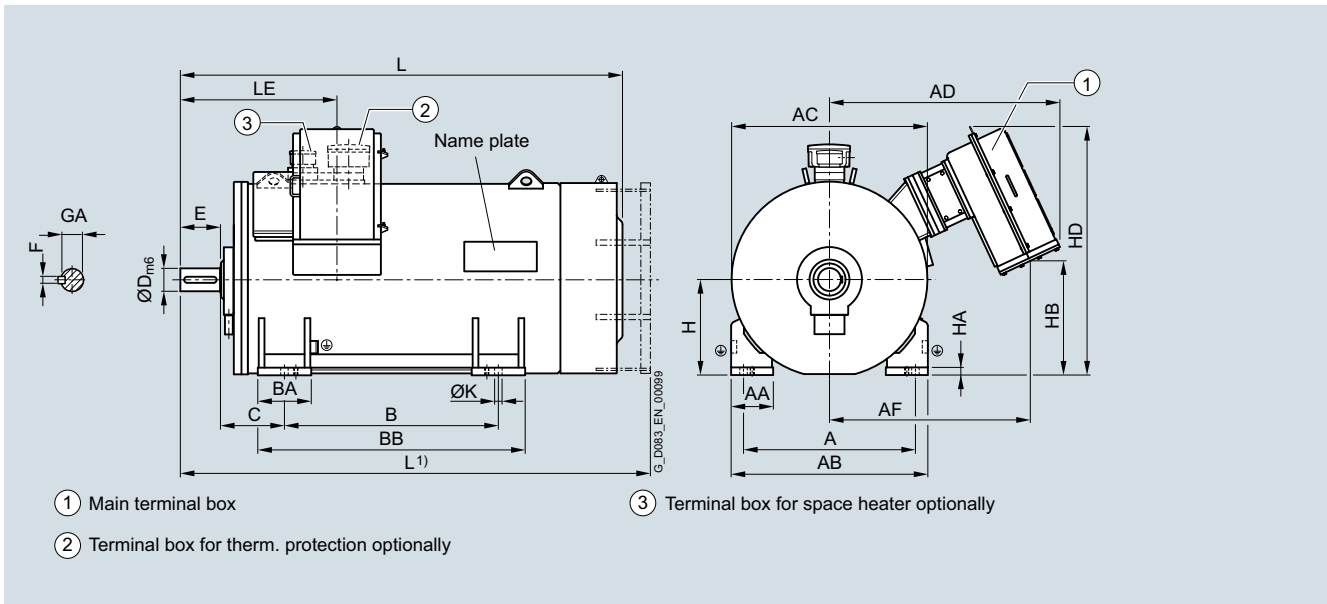
2) Version with two terminal boxes: + 100 kg.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 4-pole motors

## Dimensional drawings (continued)



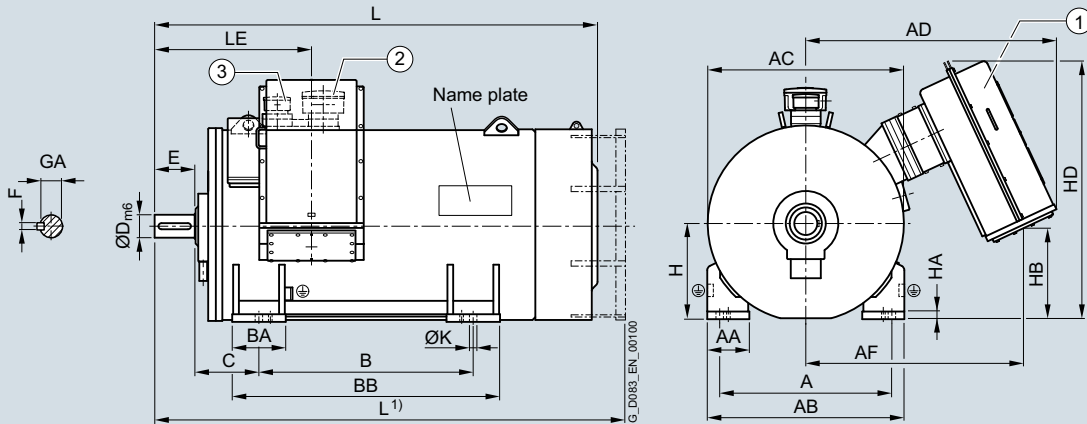
Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1PS.350-6BH...	254	90	170	25	95	355	30	320	995	28	1640	809	1900 <sup>2)</sup>
1PS.351-6BH...	254	90	170	25	95	355	30	320	995	28	1640	809	1900 <sup>2)</sup>
1PS.352-6BH...	254	90	170	25	95	355	30	320	995	28	1775	809	2100 <sup>2)</sup>
1PS.353-6BH...	254	90	170	25	95	355	30	320	995	28	1775	809	2100 <sup>2)</sup>
1PS.354-6BH...	254	90	170	25	95	355	30	320	995	28	1855	809	2300 <sup>2)</sup>
1PS.355-6BH...	254	90	170	25	95	355	30	320	995	28	1855	809	2300 <sup>2)</sup>
1PS.356-6BH...	254	90	170	25	95	355	30	320	995	28	1855	809	2400 <sup>2)</sup>
1PS.357-6BJ...	254	90	170	25	95	355	35	390	1095	33	1900	780	2700 <sup>2)</sup>
1PS.358-6BJ...	254	90	170	25	95	355	35	390	1095	33	1900	780	2700 <sup>2)</sup>
1MV.404-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3300 <sup>2)</sup>
1MV.405-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3300 <sup>2)</sup>
1MV.407-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3500 <sup>2)</sup>
1MV.408-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3500 <sup>2)</sup>
1MV.454-6BJ...	315	110	210	28	116	450	30	570	1265	39	2145	820	4500 <sup>2)</sup>
1MV.455-6BJ...	315	110	210	28	116	450	30	570	1265	39	2145	820	4500 <sup>2)</sup>
1MV.457-6BJ...	315	110	210	28	116	450	30	570	1265	39	2145	820	4800 <sup>2)</sup>
1MV.458-6BJ...	315	110	210	28	116	450	30	570	1265	39	2145	820	4800 <sup>2)</sup>
1MV.503-6BJ...	335	140	250	36	148	500	40	600	1305	39	2355	860	5800 <sup>2)</sup>
1MV.504-6BJ...	335	140	250	36	148	500	40	600	1305	39	2355	860	5800 <sup>2)</sup>
1MV.505-6BJ...	335	140	250	36	148	500	40	600	1305	39	2355	860	5800 <sup>2)</sup>
1MV.507-6BJ...	335	140	250	36	148	500	40	600	1305	39	2355	860	6300 <sup>2)</sup>
1MV.563-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	8900 <sup>2)</sup>
1MV.564-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	8900 <sup>2)</sup>
1MV.565-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	8900 <sup>2)</sup>
1MV.567-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	9500 <sup>2)</sup>
1MV.568-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	9500 <sup>2)</sup>
1PS.633-6BJ...	400	160	300	40	169	630	40	500	1500	42	3000	934	11500 <sup>2)</sup>
1PS.634-6BJ...	400	160	300	40	169	630	40	500	1500	42	3000	934	12700 <sup>2)</sup>
1PS.635-6BJ...	400	160	300	40	169	630	40	500	1500	42	3000	934	12700 <sup>2)</sup>
1PS.637-6BJ...	400	160	300	40	169	630	40	500	1500	42	3200	934	14000 <sup>2)</sup>

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Horizontal motors

Rib-cooled IC411, 4-pole motors

## Dimensional drawings



① Main terminal box

② Terminal box for therm. protection optionally

③ Terminal box for space heater optionally

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>6.7 ... 11 kV, IM B3 type of construction, antifriction bearing, rib-cooled, flameproof</b>										
4-pole										
1MV.450-6BJ.0-4BA0	DHS.-450LH-04A	800	230	900	925	1260	1090	1000	260	1260
1MV.451-6BJ.0-4BA0	DHS.-450LH-04A	800	230	900	925	1260	1090	1000	260	1260
1MV.452-6BJ.0-4BA0	DHS.-450LH-04A	800	230	900	925	1260	1090	1000	260	1260
1MV.453-6BJ.0-4BA0	DHS.-450LH-04A	800	230	900	925	1260	1090	1000	260	1260
1MV.454-6BJ.0-4BA0	DHS.-450LK-04A	800	230	900	925	1260	1090	1000	260	1260
1MV.455-6BJ.0-4BA0	DHS.-450LK-04A	800	230	900	925	1260	1090	1000	260	1260
1MV.456-6BJ.0-4BA0	DHS.-450LQ-04A	800	230	900	925	1260	1090	1000	260	1260
1MV.501-6BJ.0-4BA0	DHS.-500LH-04A	900	220	1030	1025	1310	1140	1120	280	1400
1MV.502-6BJ.0-4BA0	DHS.-500LH-04A	900	220	1030	1025	1310	1140	1120	280	1400
1MV.504-6BJ.0-4BA0	DHS.-500LK-04A	900	220	1030	1025	1310	1140	1120	280	1400
1MV.505-6BJ.0-4BA0	DHS.-500LK-04A	900	220	1030	1025	1310	1140	1120	280	1400
1MV.507-6BJ.0-4BA0	DHS.-500LM-04A	900	220	1030	1025	1310	1140	1120	280	1400
1MV.561-6BJ.0-4BA0	DHS.-560LH-04A	1000	250	1150	1165	1440	1265	1250	300	1550
1MV.562-6BJ.0-4BA0	DHS.-560LH-04A	1000	250	1150	1165	1440	1265	1250	300	1550
1MV.564-6BJ.0-4BA0	DHS.-560LK-04A	1000	250	1150	1165	1440	1265	1250	300	1550
1MV.565-6BJ.0-4BA0	DHS.-560LK-04A	1000	250	1150	1165	1440	1265	1250	300	1550
1PS.631-6BJ.0-4BA0	DHS.-630MH-04A	1120	250	1300	1300	1435	1245	1400	300	1700
1PS.632-6BJ.0-4BA0	DHS.-630MH-04A	1120	250	1300	1300	1435	1245	1400	300	1700
1PS.633-6BJ.0-4BA0	DHS.-630MK-04A	1120	250	1300	1300	1435	1245	1400	300	1700
1PS.636-6BJ.0-4BA0	DHS.-630LK-04A	1120	250	1300	1300	1435	1245	1400	300	1700

<sup>1)</sup> For noise class 3 dimension L changes + 150 mm (frame size 560 +165 mm, 630 + 200 mm).

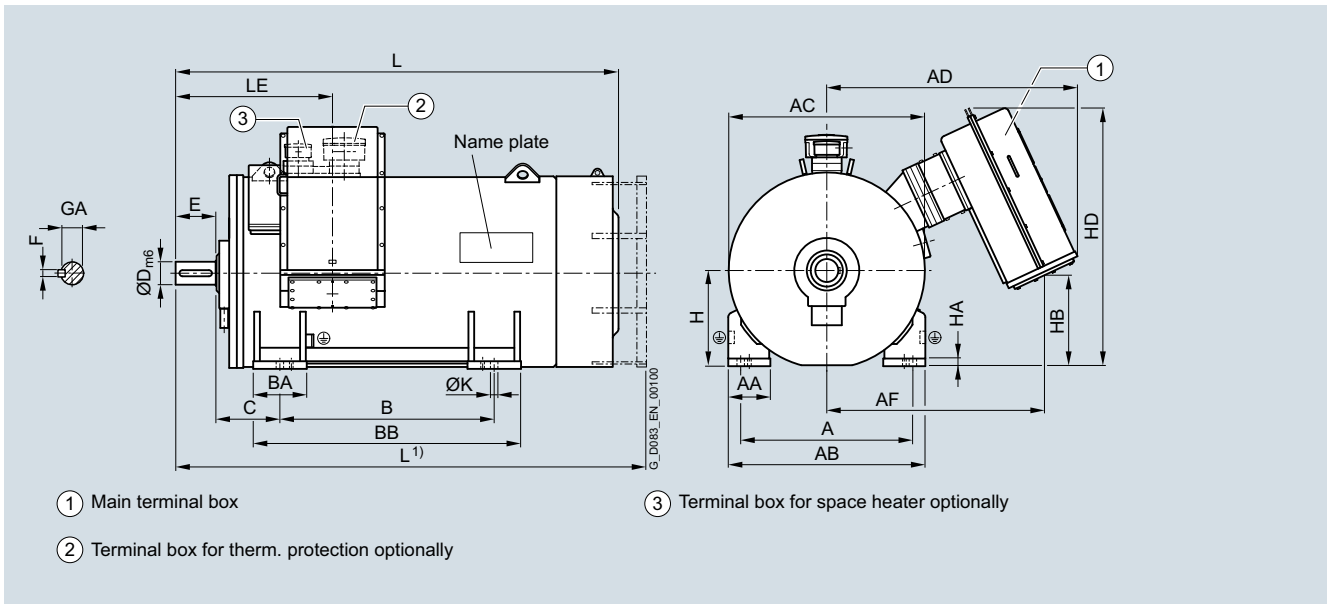
<sup>2)</sup> Version with two terminal boxes: + 100 kg.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 4-pole motors

## Dimensional drawings (continued)

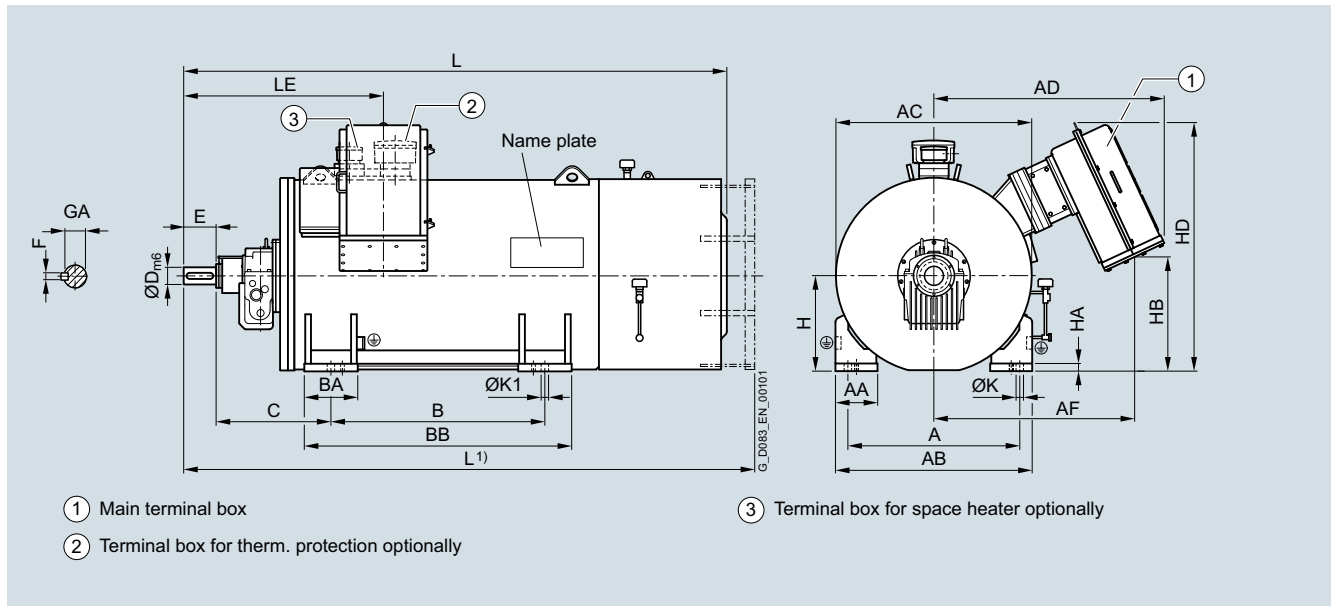


Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1MV.450-6BJ...	315	110	210	28	116	450	30	450	1315	39	2145	820	4100 <sup>2)</sup>
1MV.451-6BJ...	315	110	210	28	116	450	30	450	1315	39	2145	820	4100 <sup>2)</sup>
1MV.452-6BJ...	315	110	210	28	116	450	30	450	1315	39	2145	820	4100 <sup>2)</sup>
1MV.453-6BJ...	315	110	210	28	116	450	30	450	1315	39	2145	820	4100 <sup>2)</sup>
1MV.454-6BJ...	315	110	210	28	116	450	30	450	1315	39	2145	820	4500 <sup>2)</sup>
1MV.455-6BJ...	315	110	210	28	116	450	30	450	1315	39	2145	820	4500 <sup>2)</sup>
1MV.456-6BJ...	315	110	210	28	116	450	30	450	1315	39	2145	820	4800 <sup>2)</sup>
1MV.501-6BJ...	335	140	250	36	148	500	40	475	1350	39	2355	860	5500 <sup>2)</sup>
1MV.502-6BJ...	335	140	250	36	148	500	40	475	1350	39	2355	860	5500 <sup>2)</sup>
1MV.504-6BJ...	335	140	250	36	148	500	40	475	1350	39	2355	860	5800 <sup>2)</sup>
1MV.505-6BJ...	335	140	250	36	148	500	40	475	1350	39	2355	860	5800 <sup>2)</sup>
1MV.507-6BJ...	335	140	250	36	148	500	40	475	1350	39	2355	860	6300 <sup>2)</sup>
1MV.561-6BJ...	355	160	300	40	169	560	40	380	1335	42	2680	930	8600 <sup>2)</sup>
1MV.562-6BJ...	355	160	300	40	169	560	40	380	1335	42	2680	930	8600 <sup>2)</sup>
1MV.564-6BJ...	355	160	300	40	169	560	40	380	1335	42	2680	930	8900 <sup>2)</sup>
1MV.565-6BJ...	355	160	300	40	169	560	40	380	1335	42	2680	930	8900 <sup>2)</sup>
1PS.631-6BJ...	400	160	300	40	169	630	40	475	1470	42	3000	934	11100 <sup>2)</sup>
1PS.632-6BJ...	400	160	300	40	169	630	40	475	1470	42	3000	934	11100 <sup>2)</sup>
1PS.633-6BJ...	400	160	300	40	169	630	40	475	1470	42	3000	934	11600 <sup>2)</sup>
1PS.636-6BJ...	400	160	300	40	169	630	40	475	1470	42	3200	934	14100 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 4-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, sleeve bearing, rib-cooled, flameproof</b>										
4-pole										
1MV4404-6BJ.0-4BD0	DHTL-400LK-04A	710	185	860	825	1115	960	900	210	1090
1MV4405-6BJ.0-4BD0	DHTL-400LK-04A	710	185	860	825	1115	960	900	210	1090
1MV4407-6BJ.0-4BD0	DHTL-400LM-04A	710	185	860	825	1115	960	900	210	1090
1MV4408-6BJ.0-4BD0	DHTL-400LM-04A	710	185	860	825	1115	960	900	210	1090
1MV4454-6BJ.0-4BD0	DHTL-450LK-04A	800	230	900	925	1145	990	1000	260	1260
1MV4455-6BJ.0-4BD0	DHTL-450LK-04A	800	230	900	925	1145	990	1000	260	1260
1MV4457-6BJ.0-4BD0	DHTL-450LM-04A	800	230	900	925	1145	990	1000	260	1260
1MV4458-6BJ.0-4BD0	DHTL-450LM-04A	800	230	900	925	1145	990	1000	260	1260
1MV4503-6BJ.0-4BD0	DHTL-500LK-04A	900	220	1030	1025	1210	1050	1120	280	1400
1MV4504-6BJ.0-4BD0	DHTL-500LK-04A	900	220	1030	1025	1210	1050	1120	280	1400
1MV4505-6BJ.0-4BD0	DHTL-500LK-04A	900	220	1030	1025	1210	1050	1120	280	1400
1MV4507-6BJ.0-4BD0	DHTL-500LM-04A	900	220	1030	1025	1210	1050	1120	280	1400
1MV4563-6BJ.0-4BD0	DHTL-560LK-04A	1000	250	1150	1165	1335	1180	1250	300	1550
1MV4564-6BJ.0-4BD0	DHTL-560LK-04A	1000	250	1150	1165	1335	1180	1250	300	1550
1MV4565-6BJ.0-4BD0	DHTL-560LK-04A	1000	250	1150	1165	1335	1180	1250	300	1550
1MV4567-6BJ.0-4BD0	DHTL-560LM-04A	1000	250	1150	1165	1335	1180	1250	300	1550
1MV4568-6BJ.0-4BD0	DHTL-560LM-04A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4633-6BJ.0-4BD0	DHTL-630MK-04A	1120	250	1300	1300	1530	1365	1400	300	1700
1PS4634-6BJ.0-4BD0	DHTL-630MM-04A	1120	250	1300	1300	1530	1365	1400	300	1700
1PS4635-6BJ.0-4BD0	DHTL-630MM-04A	1120	250	1300	1300	1530	1365	1400	300	1700
1PS4637-6BJ.0-4BD0	DHTL-630LM-04A	1120	250	1300	1300	1530	1365	1400	300	1700

<sup>1)</sup> For noise class 3 dimension L changes + 150 mm (frame size 630 + 200 mm).

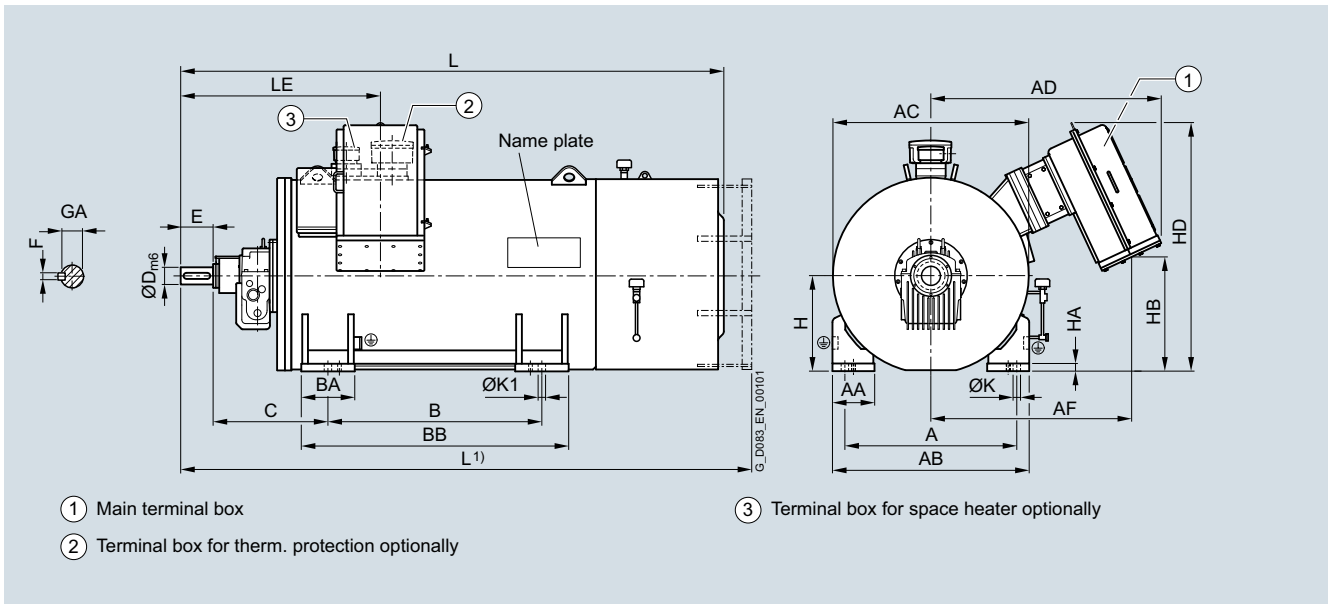
<sup>2)</sup> Version with two terminal boxes: + 100 kg.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 4-pole motors

### Dimensional drawings (continued)

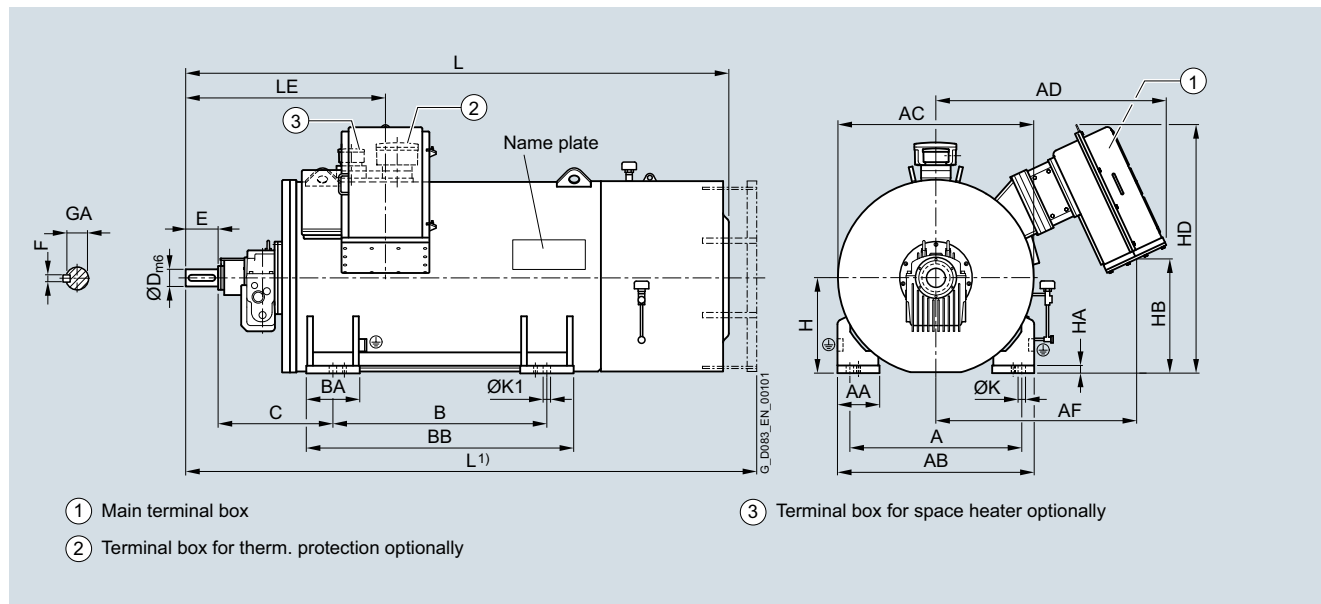


Motor type (repeated)	Dimensions in mm													Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	K1	L <sup>1)</sup>	LE	
1MV4404-6BJ...	600	100	210	28	106	400	30	405	1110	35	60	2620	1140	3700 <sup>2)</sup>
1MV4405-6BJ...	600	100	210	28	106	400	30	405	1110	35	60	2620	1140	3700 <sup>2)</sup>
1MV4407-6BJ...	600	100	210	28	106	400	30	405	1110	35	60	2620	1140	3900 <sup>2)</sup>
1MV4408-6BJ...	600	100	210	28	106	400	30	405	1110	35	60	2620	1140	3900 <sup>2)</sup>
1MV4454-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	4900 <sup>2)</sup>
1MV4455-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	4900 <sup>2)</sup>
1MV4457-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5200 <sup>2)</sup>
1MV4458-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5200 <sup>2)</sup>
1MV4503-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6200 <sup>2)</sup>
1MV4504-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6200 <sup>2)</sup>
1MV4505-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6200 <sup>2)</sup>
1MV4507-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6700 <sup>2)</sup>
1MV4563-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9300 <sup>2)</sup>
1MV4564-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9300 <sup>2)</sup>
1MV4565-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9300 <sup>2)</sup>
1MV4567-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9900 <sup>2)</sup>
1MV4568-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9900 <sup>2)</sup>
1PS4633-6BJ...	800	160	300	40	169	630	40	500	1500	42	72	3750	1330	11700 <sup>2)</sup>
1PS4634-6BJ...	800	160	300	40	169	630	40	500	1500	42	72	3750	1330	12900 <sup>2)</sup>
1PS4635-6BJ...	800	160	300	40	169	630	40	500	1500	42	72	3750	1330	12900 <sup>2)</sup>
1PS4637-6BJ...	800	160	300	40	169	630	40	500	1500	42	72	3950	1330	14200 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 4-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>6.7 ... 11 kV, IM B3 type of construction, sleeve bearing, rib-cooled, flameproof</b>										
4-pole										
1MV4450-6BJ.0-4BD0	DHTL-450LH-04A	800	230	900	925	1260	1090	1000	260	1260
1MV4451-6BJ.0-4BD0	DHTL-450LH-04A	800	230	900	925	1260	1090	1000	260	1260
1MV4452-6BJ.0-4BD0	DHTL-450LH-04A	800	230	900	925	1260	1090	1000	260	1260
1MV4453-6BJ.0-4BD0	DHTL-450LH-04A	800	230	900	925	1260	1090	1000	260	1260
1MV4454-6BJ.0-4BD0	DHTL-450LK-04A	800	230	900	925	1260	1090	1000	260	1260
1MV4455-6BJ.0-4BD0	DHTL-450LK-04A	800	230	900	925	1260	1090	1000	260	1260
1MV4456-6BJ.0-4BD0	DHTL-450LQ-04A	800	230	900	925	1260	1090	1000	260	1260
1MV4501-6BJ.0-4BD0	DHTL-500LH-04A	900	220	1030	1025	1310	1140	1120	280	1400
1MV4502-6BJ.0-4BD0	DHTL-500LH-04A	900	220	1030	1025	1310	1140	1120	280	1400
1MV4504-6BJ.0-4BD0	DHTL-500LK-04A	900	220	1030	1025	1310	1140	1120	280	1400
1MV4505-6BJ.0-4BD0	DHTL-500LK-04A	900	220	1030	1025	1310	1140	1120	280	1400
1MV4507-6BJ.0-4BD0	DHTL-500LM-04A	900	220	1030	1025	1310	1140	1120	280	1400
1MV4561-6BJ.0-4BD0	DHTL-560LH-04A	1000	250	1150	1165	1440	1265	1250	300	1550
1MV4562-6BJ.0-4BD0	DHTL-560LH-04A	1000	250	1150	1165	1440	1265	1250	300	1550
1MV4564-6BJ.0-4BD0	DHTL-560LK-04A	1000	250	1150	1165	1440	1265	1250	300	1550
1MV4565-6BJ.0-4BD0	DHTL-560LK-04A	1000	250	1150	1165	1440	1265	1250	300	1550

1) For noise class 3 dimension L changes + 150 mm.

2) Version with two terminal boxes: + 150 kg.

3) Only 50 Hz-operation.

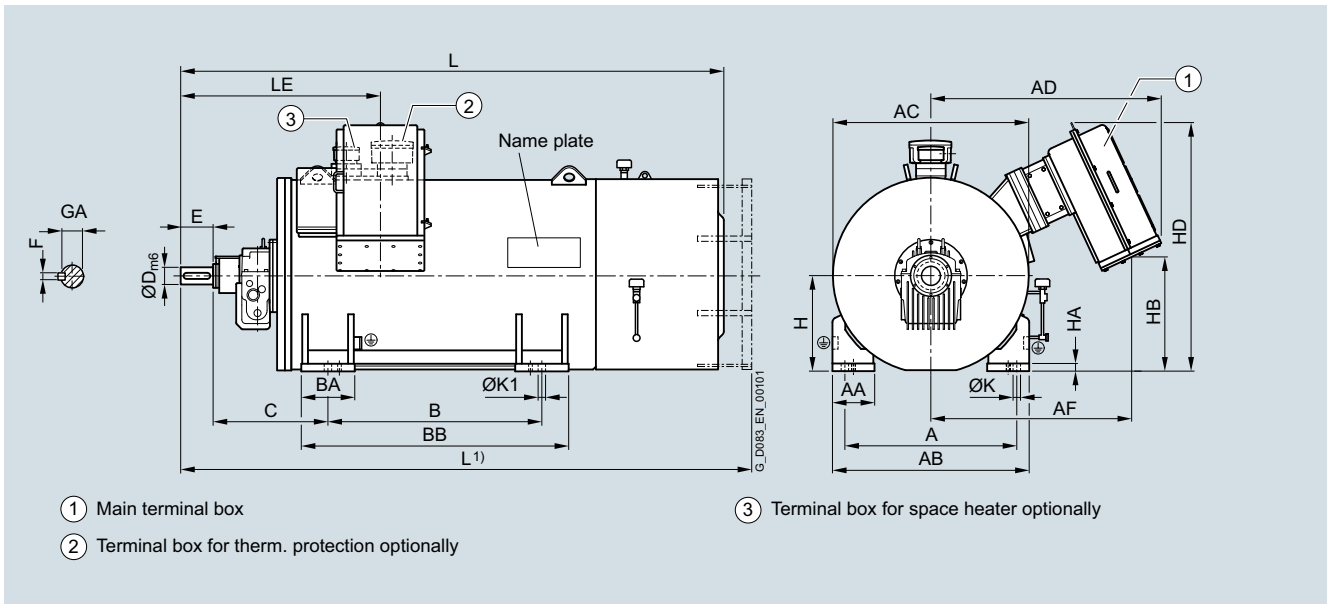


# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 4-pole motors

### Dimensional drawings (continued)

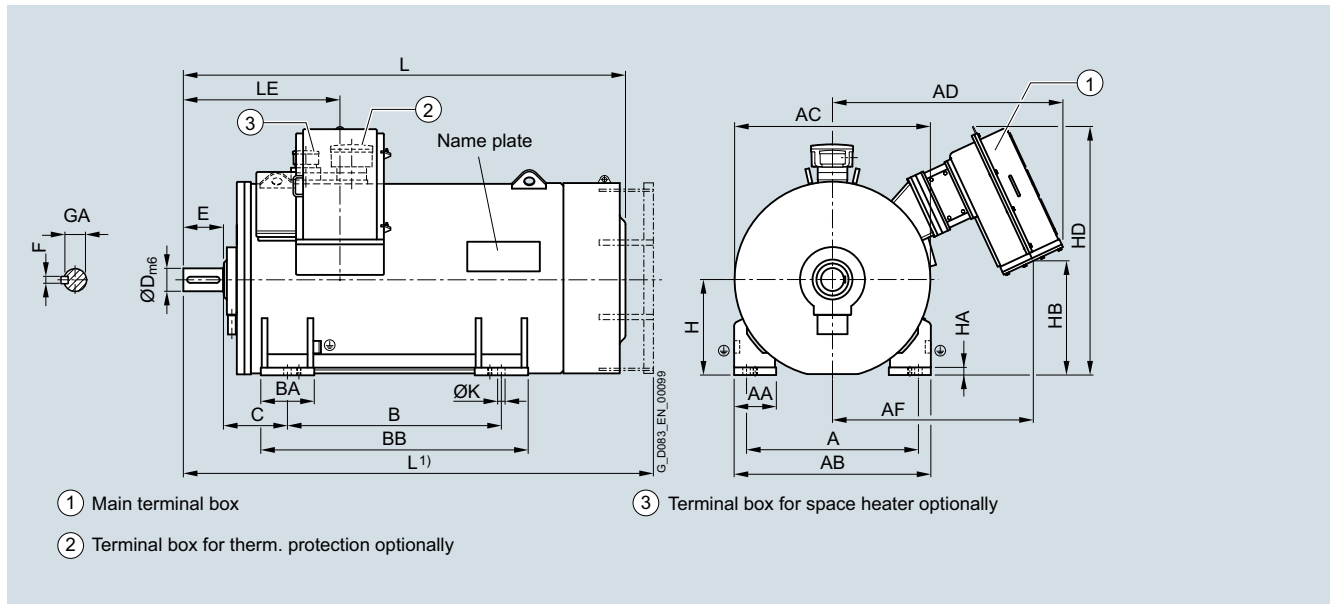


Motor type (repeated)	Dimensions in mm													Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	K1	L <sup>1)</sup>	LE	
1MV4450-6BJ...	630	110	210	28	116	450	30	450	1315	42	72	2710	1135	4500 <sup>2)</sup>
1MV4451-6BJ...	630	110	210	28	116	450	30	450	1315	42	72	2710	1135	4500 <sup>2)</sup>
1MV4452-6BJ...	630	110	210	28	116	450	30	450	1315	42	72	2710	1135	4500 <sup>2)</sup>
1MV4453-6BJ...	630	110	210	28	116	450	30	450	1315	42	72	2710	1135	4500 <sup>2)</sup>
1MV4454-6BJ...	630	110	210	28	116	450	30	450	1315	42	72	2710	1135	4900 <sup>2)</sup>
1MV4455-6BJ...	630	110	210	28	116	450	30	450	1315	42	72	2710	1135	4900 <sup>2)</sup>
1MV4456-6BJ...	630	110	210	28	116	450	30	450	1315	42	72	2710	1135	5200 <sup>2)</sup>
1MV4501-6BJ...	710	140	250	36	148	500	40	475	1350	42	72	3010	1235	5900 <sup>2)</sup>
1MV4502-6BJ...	710	140	250	36	148	500	40	475	1350	42	72	3010	1235	5900 <sup>2)</sup>
1MV4504-6BJ...	710	140	250	36	148	500	40	475	1350	42	72	3010	1235	6200 <sup>2)</sup>
1MV4505-6BJ...	710	140	250	36	148	500	40	475	1350	42	72	3010	1235	6200 <sup>2)</sup>
1MV4507-6BJ...	710	140	250	36	148	500	40	475	1350	42	72	3010	1235	6700 <sup>2)</sup>
1MV4561-6BJ...	750	160	300	40	169	560	40	380	1335	42	72	3330	1325	9000 <sup>2)</sup>
1MV4562-6BJ...	750	160	300	40	169	560	40	380	1335	42	72	3330	1325	9000 <sup>2)</sup>
1MV4564-6BJ...	750	160	300	40	169	560	40	380	1335	42	72	3330	1325	9300 <sup>2)</sup>
1MV4565-6BJ...	750	160	300	40	169	560	40	380	1335	42	72	3330	1325	9300 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 6-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, antifriction bearing, rib-cooled, flameproof</b>										
<b>6-pole</b>										
1PS.350-6BH.0-4CA0	DHS.-355MB-06	610	120	700	698	1090	940	560	150	650
1PS.351-6BH.0-4CA0	DHS.-355MB-06	610	120	700	698	1090	940	560	150	650
1PS.352-6BH.0-4CA0	DHS.-355LB-06	610	120	700	698	1090	940	630	150	720
1PS.353-6BH.0-4CA0	DHS.-355LB-06	610	120	700	698	1090	940	630	150	720
1PS.355-6BH.0-4CA0	DHS.-355LC-06	610	120	700	698	1090	940	800	150	890
1PS.356-6BH.0-4CA0	DHS.-355LD-06	610	120	700	698	1090	940	800	150	890
1PS.357-6BJ.0-4CA0	DHS.-355LM-06	630	140	780	745	1065	910	800	210	950
1PS.358-6BJ.0-4CA0	DHS.-355LM-06	630	140	780	745	1065	910	800	210	950
1PS.402-6BJ.0-4CA0	DHS.-400LK-06	710	185	860	825	1115	960	900	210	1090
1PS.403-6BJ.0-4CA0	DHS.-400LK-06	710	185	860	825	1115	960	900	210	1090
1PS.405-6BJ.0-4CA0	DHS.-400LM-06	710	185	860	825	1115	960	900	210	1090
1PS.406-6BJ.0-4CA0	DHS.-400LM-06	710	185	860	825	1115	960	900	210	1090
1PS.453-6BJ.0-4CA0	DHS.-450LK-06	800	230	900	925	1145	990	1000	260	1260
1PS.455-6BJ.0-4CA0	DHS.-450LM-06	800	230	900	925	1145	990	1000	260	1260
1PS.456-6BJ.0-4CA0	DHS.-450LM-06	800	230	900	925	1145	990	1000	260	1260
1PS.505-6BJ.0-4CA0	DHS.-500LK-06	900	220	1030	1025	1210	1050	1120	280	1400
1PS.506-6BJ.0-4CA0	DHS.-500LK-06	900	220	1030	1025	1210	1050	1120	280	1400
1PS.507-6BJ.0-4CA0	DHS.-500LM-06	900	220	1030	1025	1210	1050	1120	280	1400
1PS.508-6BJ.0-4CA0	DHS.-500LM-06	900	220	1030	1025	1210	1050	1120	280	1400
1PS.565-6BJ.0-4CA0	DHS.-560LK-06	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.566-6BJ.0-4CA0	DHS.-560LK-06	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.567-6BJ.0-4CA0	DHS.-560LM-06	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.568-6BJ.0-4CA0	DHS.-560LM-06	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.633-6BJ.0-4CA0	DHS.-630MM-06	1120	250	1300	1300	1530	1365	1400	300	1700
1PS.634-6BJ.0-4CA0	DHS.-630MM-06	1120	250	1300	1300	1530	1365	1400	300	1700
1PS.637-6BJ.0-4CA0	DHS.-630LM-06	1120	250	1300	1300	1530	1365	1400	300	1700

<sup>1)</sup> For noise class 3 dimension L changes + 150 mm (frame size 560 + 165 mm, 630 + 200 mm).

<sup>2)</sup> Version with two terminal boxes: + 100 kg.

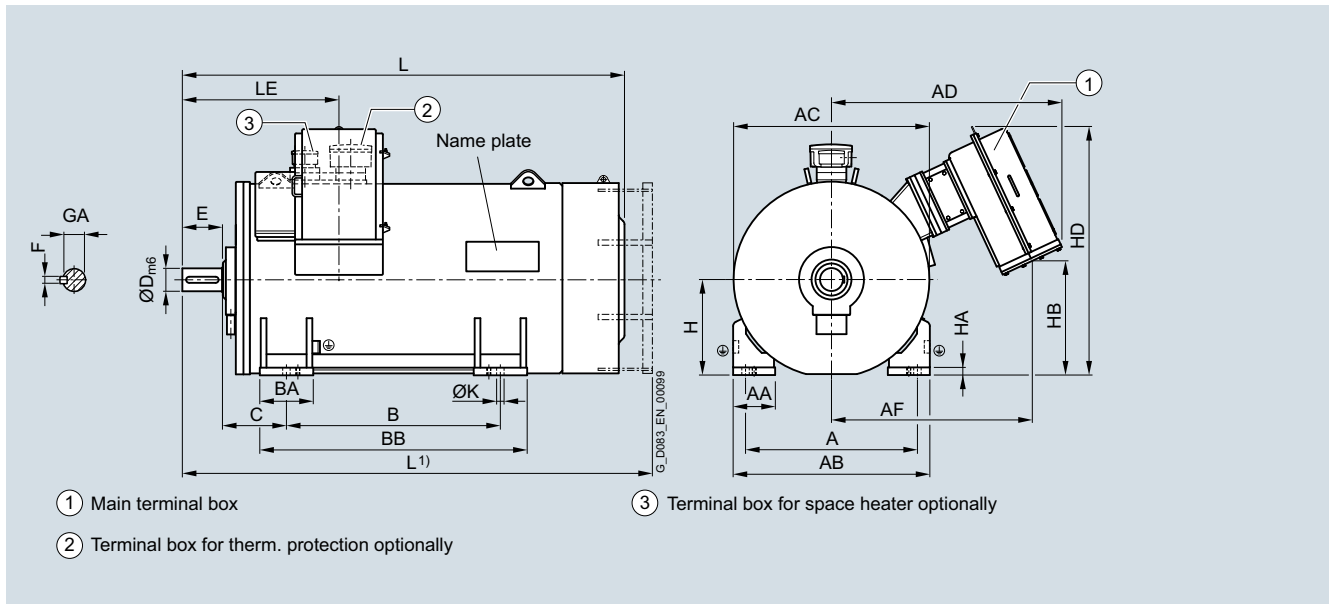
<sup>3)</sup> Frame size 630 Ex d IIC: D = 160; F = 40; GA = 169.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 6-pole motors

## Dimensional drawings (continued)

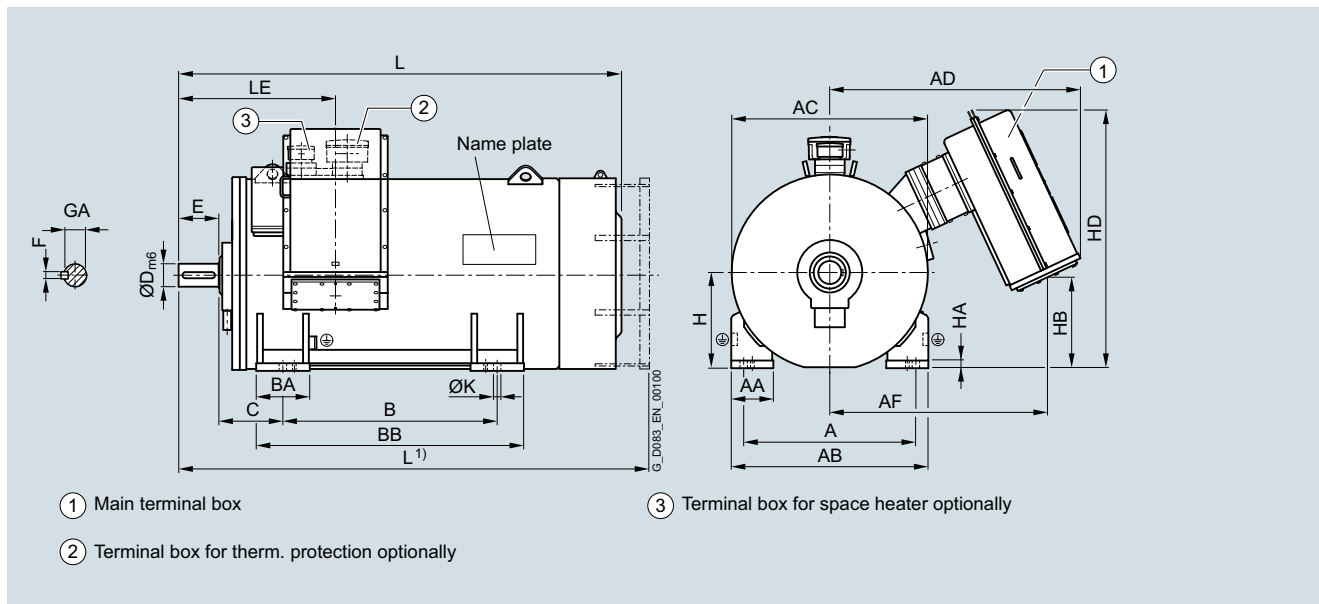


Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1PS.350-6BH...	254	90	170	25	95	355	30	320	995	28	1640	809	2000 <sup>2)</sup>
1PS.351-6BH...	254	90	170	25	95	355	30	320	995	28	1640	809	2000 <sup>2)</sup>
1PS.352-6BH...	254	90	170	25	95	355	30	320	995	28	1775	809	2300 <sup>2)</sup>
1PS.353-6BH...	254	90	170	25	95	355	30	320	995	28	1775	809	2300 <sup>2)</sup>
1PS.355-6BH...	254	90	170	25	95	355	30	320	995	28	1855	809	2400 <sup>2)</sup>
1PS.356-6BH...	254	90	170	25	95	355	30	320	995	28	1855	809	2500 <sup>2)</sup>
1PS.357-6BJ...	254	90	170	25	95	355	35	390	1095	33	1900	780	2800 <sup>2)</sup>
1PS.358-6BJ...	254	90	170	25	95	355	35	390	1095	33	1900	780	2800 <sup>2)</sup>
1PS.402-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3400 <sup>2)</sup>
1PS.403-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3400 <sup>2)</sup>
1PS.405-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3700 <sup>2)</sup>
1PS.406-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3700 <sup>2)</sup>
1PS.453-6BJ...	315	110	210	28	116	450	30	570	1265	39	2145	820	4600 <sup>2)</sup>
1PS.455-6BJ...	315	110	210	28	116	450	30	570	1265	39	2145	820	4900 <sup>2)</sup>
1PS.456-6BJ...	315	110	210	28	116	450	30	570	1265	39	2145	820	4900 <sup>2)</sup>
1PS.505-6BJ...	335	140	250	36	148	500	40	600	1305	39	2355	860	5900 <sup>2)</sup>
1PS.506-6BJ...	335	140	250	36	148	500	40	600	1305	39	2355	860	5900 <sup>2)</sup>
1PS.507-6BJ...	335	140	250	36	148	500	40	600	1305	39	2355	860	6300 <sup>2)</sup>
1PS.508-6BJ...	335	140	250	36	148	500	40	600	1305	39	2355	860	6300 <sup>2)</sup>
1PS.565-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	8700 <sup>2)</sup>
1PS.566-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	8700 <sup>2)</sup>
1PS.567-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	9800 <sup>2)</sup>
1PS.568-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	9800 <sup>2)</sup>
1PS.633-6BJ...	400	180 <sup>3)</sup>	300	45 <sup>3)</sup>	190 <sup>3)</sup>	630	40	500	1500	42	3000	934	13000 <sup>2)</sup>
1PS.634-6BJ...	400	180 <sup>3)</sup>	300	45 <sup>3)</sup>	190 <sup>3)</sup>	630	40	500	1500	42	3000	934	13000 <sup>2)</sup>
1PS.637-6BJ...	400	180 <sup>3)</sup>	300	45 <sup>3)</sup>	190 <sup>3)</sup>	630	40	500	1500	42	3200	934	14500 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 6-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>6.7 ... 11 kV, IM B3 type of construction, antifriction bearing, rib-cooled, flameproof</b>										
<b>6-pole</b>										
1PS.500-6BJ.0-4CA0	DHS.-500LH-06A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.501-6BJ.0-4CA0	DHS.-500LH-06A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.502-6BJ.0-4CA0	DHS.-500LH-06A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.503-6BJ.0-4CA0	DHS.-500LH-06A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.504-6BJ.0-4CA0	DHS.-500LH-06A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.505-6BJ.0-4CA0	DHS.-500LK-06A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.506-6BJ.0-4CA0	DHS.-500LK-06A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.563-6BJ.0-4CA0	DHS.-560LH-06A	1000	250	1150	1165	1440	1265	1250	300	1550
1PS.564-6BJ.0-4CA0	DHS.-560LK-06A	1000	250	1150	1165	1440	1265	1250	300	1550
1PS.565-6BJ.0-4CA0	DHS.-560LK-06A	1000	250	1150	1165	1440	1265	1250	300	1550
1PS.566-6BJ.0-4CA0	DHS.-560LK-06A	1000	250	1150	1165	1440	1265	1250	300	1550
1PS.630-6BJ.0-4CA0	DHS.-630MH-06A	1120	250	1300	1300	1435	1245	1400	300	1700
1PS.632-6BJ.0-4CA0	DHS.-630MK-06A	1120	250	1300	1300	1435	1245	1400	300	1700
1PS.635-6BJ.0-4CA0	DHS.-630LK-06A	1120	250	1300	1300	1435	1245	1400	300	1700
1PS.636-6BJ.0-4CA0	DHS.-630LK-06A	1120	250	1300	1300	1435	1245	1400	300	1700

<sup>1)</sup> For noise class 3 dimension L changes + 150 mm (frame size 560 + 165 mm, 630 + 200 mm).

<sup>2)</sup> Version with two terminal boxes: + 100 kg.

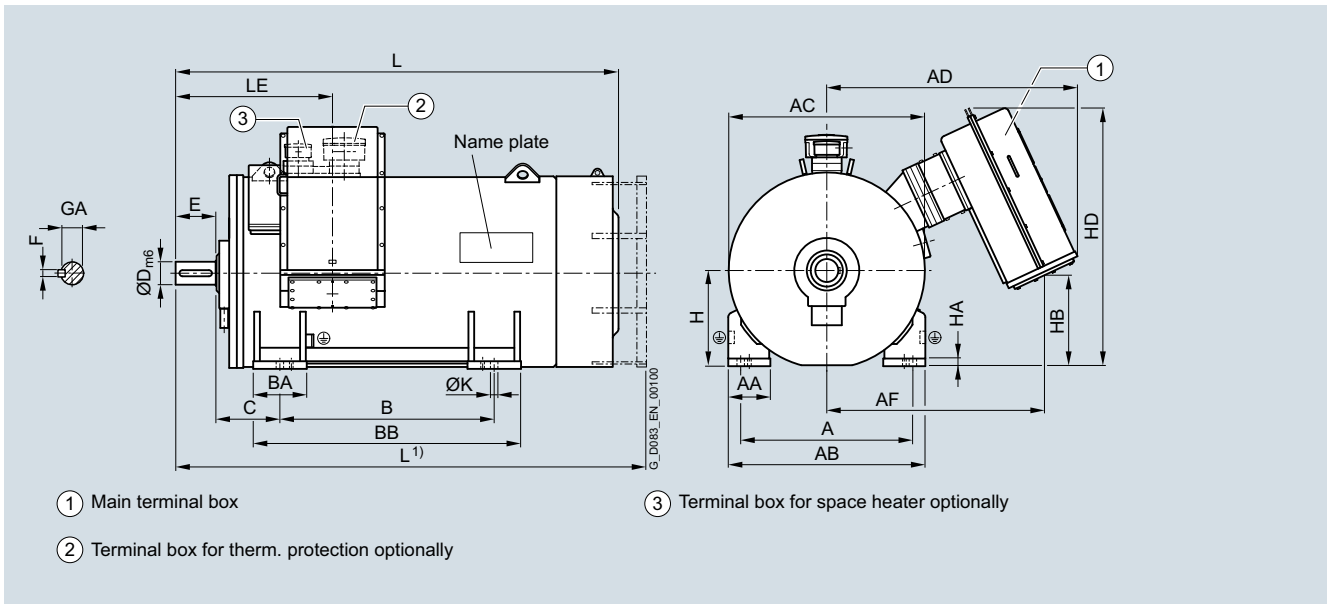
<sup>3)</sup> Frame size 630 Ex d IIC: D = 160 mm; F = 40 mm; GA = 169 mm.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 6-pole motors

## Dimensional drawings (continued)

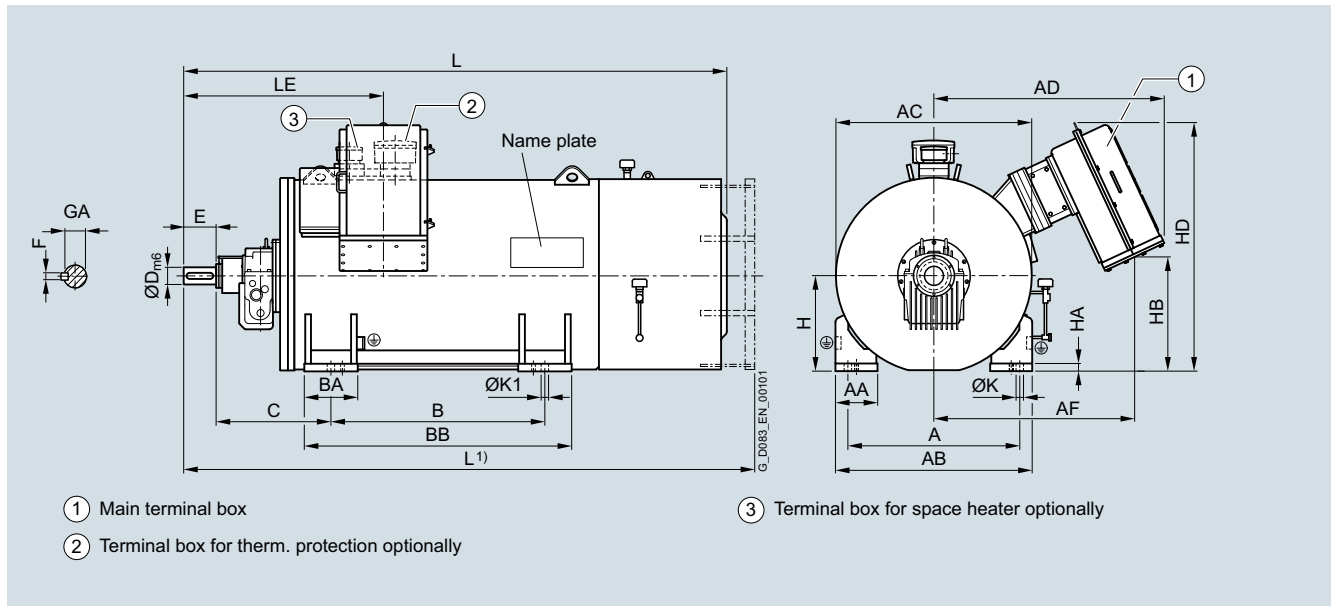


Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1PS.500-6BJ...	335	140	250	36	148	500	40	475	1350	39	2355	860	5700 <sup>2)</sup>
1PS.501-6BJ...	335	140	250	36	148	500	40	475	1350	39	2355	860	5700 <sup>2)</sup>
1PS.502-6BJ...	335	140	250	36	148	500	40	475	1350	39	2355	860	5700 <sup>2)</sup>
1PS.503-6BJ...	335	140	250	36	148	500	40	475	1350	39	2355	860	5700 <sup>2)</sup>
1PS.504-6BJ...	335	140	250	36	148	500	40	475	1350	39	2355	860	5700 <sup>2)</sup>
1PS.505-6BJ...	335	140	250	36	148	500	40	475	1350	39	2355	860	
1PS.506-6BJ...	335	140	250	36	148	500	40	475	1350	39	2355	860	
1PS.563-6BJ...	355	160	300	40	169	560	40	380	1335	42	2680	930	8400 <sup>2)</sup>
1PS.564-6BJ...	355	160	300	40	169	560	40	380	1335	42	2680	930	8700 <sup>2)</sup>
1PS.565-6BJ...	355	160	300	40	169	560	40	380	1335	42	2680	930	8700 <sup>2)</sup>
1PS.566-6BJ...	355	160	300	40	169	560	40	380	1335	42	2680	930	8700 <sup>2)</sup>
1PS.630-6BJ...	400	180 <sup>3)</sup>	300	45 <sup>3)</sup>	190 <sup>3)</sup>	630	40	475	1470	42	3000	934	11600 <sup>2)</sup>
1PS.632-6BJ...	400	180 <sup>3)</sup>	300	45 <sup>3)</sup>	190 <sup>3)</sup>	630	40	475	1470	42	3000	934	12300 <sup>2)</sup>
1PS.635-6BJ...	400	180 <sup>3)</sup>	300	45 <sup>3)</sup>	190 <sup>3)</sup>	630	40	475	1470	42	3000	934	13500 <sup>2)</sup>
1PS.636-6BJ...	400	180 <sup>3)</sup>	300	45 <sup>3)</sup>	190 <sup>3)</sup>	630	40	475	1470	42	3200	934	13500 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 6-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, sleeve bearing, rib-cooled, flameproof</b>										
6-pole										
1PS4453-6BJ.0-4CD0	DHTL-450LK-06A	800	230	900	925	1145	990	1000	260	1260
1PS4455-6BJ.0-4CD0	DHTL-450LM-06A	800	230	900	925	1145	990	1000	260	1260
1PS4456-6BJ.0-4CD0	DHTL-450LM-06A	800	230	900	925	1145	990	1000	260	1260
1PS4505-6BJ.0-4CD0	DHTL-500LK-06A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4506-6BJ.0-4CD0	DHTL-500LK-06A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4507-6BJ.0-4CD0	DHTL-500LM-06A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4508-6BJ.0-4CD0	DHTL-500LM-06A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4565-6BJ.0-4CD0	DHTL-560LK-06A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4566-6BJ.0-4CD0	DHTL-560LK-06A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4567-6BJ.0-4CD0	DHTL-560LM-06A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4568-6BJ.0-4CD0	DHTL-560LM-06A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4633-6BJ.0-4CD0	DHTL-630MM-06A	1120	250	1300	1300	1530	1365	1400	300	1700
1PS4634-6BJ.0-4CD0	DHTL-630MM-06A	1120	250	1300	1300	1530	1365	1400	300	1700
1PS4637-6BJ.0-4CD0	DHTL-630LM-06A	1120	250	1300	1300	1530	1365	1400	300	1700

<sup>1)</sup> For noise class 3 dimension L changes + 150 mm (frame size 630 + 200 mm).

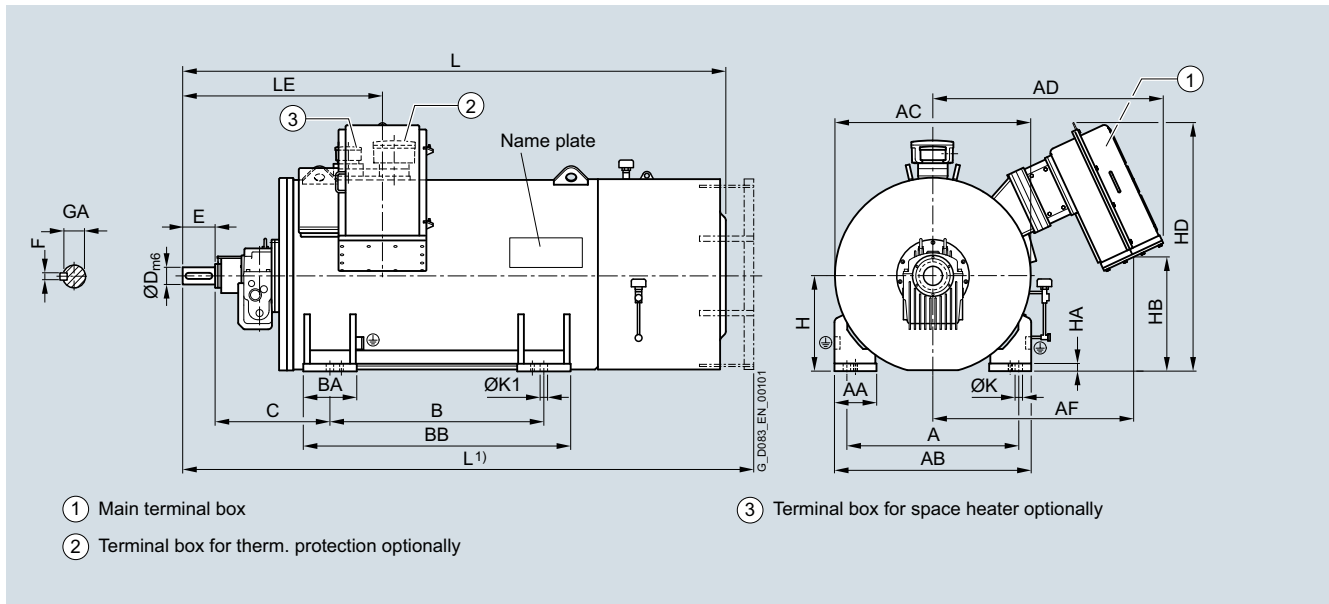
<sup>2)</sup> Version with two terminal boxes: + 100 kg.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 6-pole motors

### Dimensional drawings (continued)

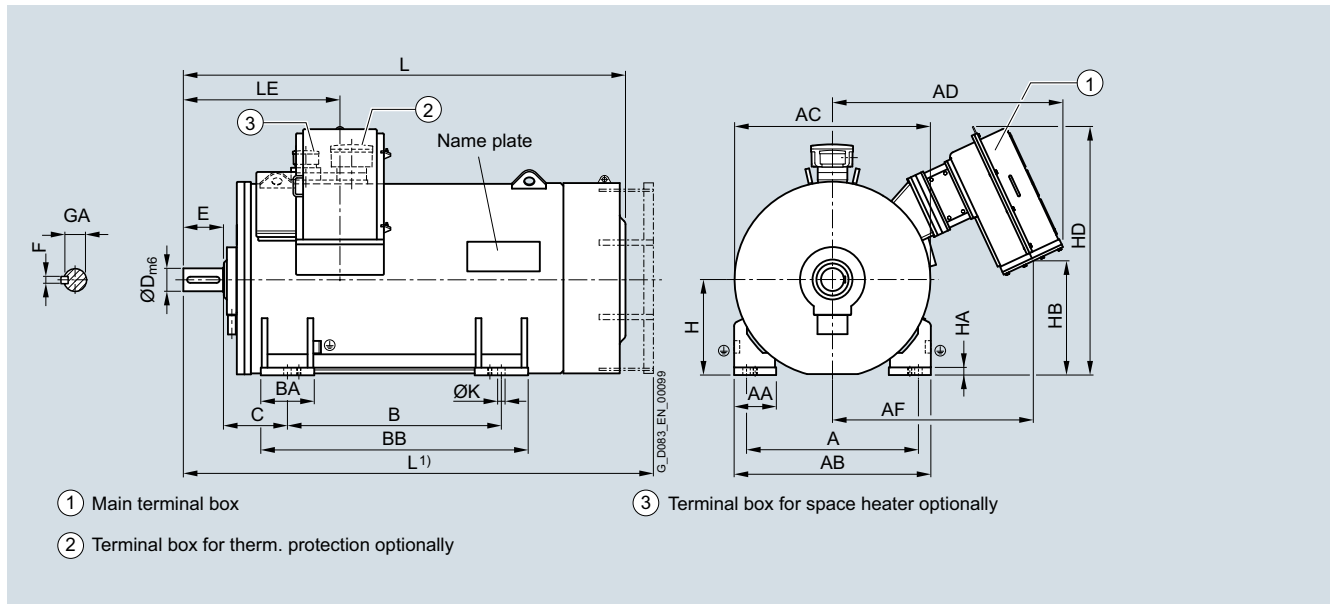


Motor type (repeated)	Dimensions in mm													Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	K1	L <sup>1)</sup>	LE	
1PS4453-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4455-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5300 <sup>2)</sup>
1PS4456-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5300 <sup>2)</sup>
1PS4505-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6300 <sup>2)</sup>
1PS4506-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6300 <sup>2)</sup>
1PS4507-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6700 <sup>2)</sup>
1PS4508-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6700 <sup>2)</sup>
1PS4565-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9100 <sup>2)</sup>
1PS4566-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9100 <sup>2)</sup>
1PS4567-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	10200 <sup>2)</sup>
1PS4568-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	10200 <sup>2)</sup>
1PS4633-6BJ...	800	180	300	45	190	630	40	500	1500	42	72	3450	1330	13200 <sup>2)</sup>
1PS4634-6BJ...	800	180	300	45	190	630	40	500	1500	42	72	3450	1330	13200 <sup>2)</sup>
1PS4637-6BJ...	800	180	300	45	190	630	40	500	1500	42	72	3650	1330	14700 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 8-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, antifriction bearing, rib-cooled, flameproof</b>										
<b>8-pole</b>										
1PS.350-6BH.0-4DA0 <sup>3)</sup>	DHS.-355MB-08A	610	120	700	698	1090	940	560	150	650
1PS.351-6BH.0-4DA0 <sup>3)</sup>	DHS.-355MB-08A	610	120	700	698	1090	940	560	150	650
1PS.352-6BH.0-4DA0 <sup>3)</sup>	DHS.-355LB-08A	610	120	700	698	1090	940	630	150	720
1PS.353-6BH.0-4DA0 <sup>3)</sup>	DHS.-355LB-08A	610	120	700	698	1090	940	630	150	720
1PS.355-6BH.0-4DA0 <sup>3)</sup>	DHS.-355LC-08A	610	120	700	698	1090	940	800	150	890
1PS.356-6BH.0-4DA0 <sup>3)</sup>	DHS.-355LD-08A	610	120	700	698	1090	940	800	150	890
1PS.357-6BJ.0-4DA0 <sup>3)</sup>	DHS.-355LM-08A	630	140	780	745	1035	910	800	210	950
1PS.400-6BJ.0-4DA0	DHS.-400LH-08A	710	185	860	825	1115	960	900	210	1090
1PS.401-6BJ.0-4DA0	DHS.-400LH-08A	710	185	860	825	1115	960	900	210	1090
1PS.402-6BJ.0-4DA0	DHS.-400LH-08A	710	185	860	825	1115	960	900	210	1090
1PS.403-6BJ.0-4DA0	DHS.-400LH-08A	710	185	860	825	1115	960	900	210	1090
1PS.404-6BJ.0-4DA0	DHS.-400LK-08A	710	185	860	825	1115	960	900	210	1090
1PS.405-6BJ.0-4DA0	DHS.-400LK-08A	710	185	860	825	1115	960	900	210	1090
1PS.406-6BJ.0-4DA0	DHS.-400LM-08A	710	185	860	825	1115	960	900	210	1090
1PS.407-6BJ.0-4DA0	DHS.-400LM-08A	710	185	860	825	1115	960	900	210	1090
1PS.408-6BJ.0-4DA0	DHS.-400LX-08A	710	185	860	825	1115	960	900	210	1090
1PS.454-6BJ.0-4DA0	DHS.-450LK-08A	800	230	900	925	1145	990	1000	260	1260
1PS.456-6BJ.0-4DA0	DHS.-450LM-08A	800	230	900	925	1145	990	1000	260	1260
1PS.457-6BJ.0-4DA0	DHS.-450LM-08A	800	230	900	925	1145	990	1000	260	1260
1PS.458-6BJ.0-4DA0	DHS.-450LX-08A	800	230	900	925	1145	990	1000	260	1260
1PS.505-6BJ.0-4DA0	DHS.-500LK-08A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.507-6BJ.0-4DA0	DHS.-500LM-08A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.508-6BJ.0-4DA0	DHS.-500LX-08A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.565-6BJ.0-4DA0	DHS.-560LK-08A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.566-6BJ.0-4DA0	DHS.-560LK-08A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.567-6BJ.0-4DA0	DHS.-560LM-08A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.568-6BJ.0-4DA0	DHS.-560LM-08A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.632-6BJ.0-4DA0	DHS.-630MK-08A	1120	250	1300	1300	1345	1180	1400	300	1700
1PS.633-6BJ.0-4DA0	DHS.-630MM-08A	1120	250	1300	1300	1345	1180	1400	300	1700
1PS.634-6BJ.0-4DA0	DHS.-630MM-08A	1120	250	1300	1300	1345	1180	1400	300	1700
1PS.637-6BJ.0-4DA0	DHS.-630LM-08A	1120	250	1300	1300	1345	1180	1400	300	1700

<sup>1)</sup> For noise class 3 dimension L changes + 150 mm (frame size 560 + 165 mm, 630 + 200 mm).

<sup>2)</sup> Version with two terminal boxes: + 100 kg.

<sup>3)</sup> Max. 3.3 kV

<sup>4)</sup> Frame size 630 Ex d IIC: D = 160; F = 40; GA = 169.

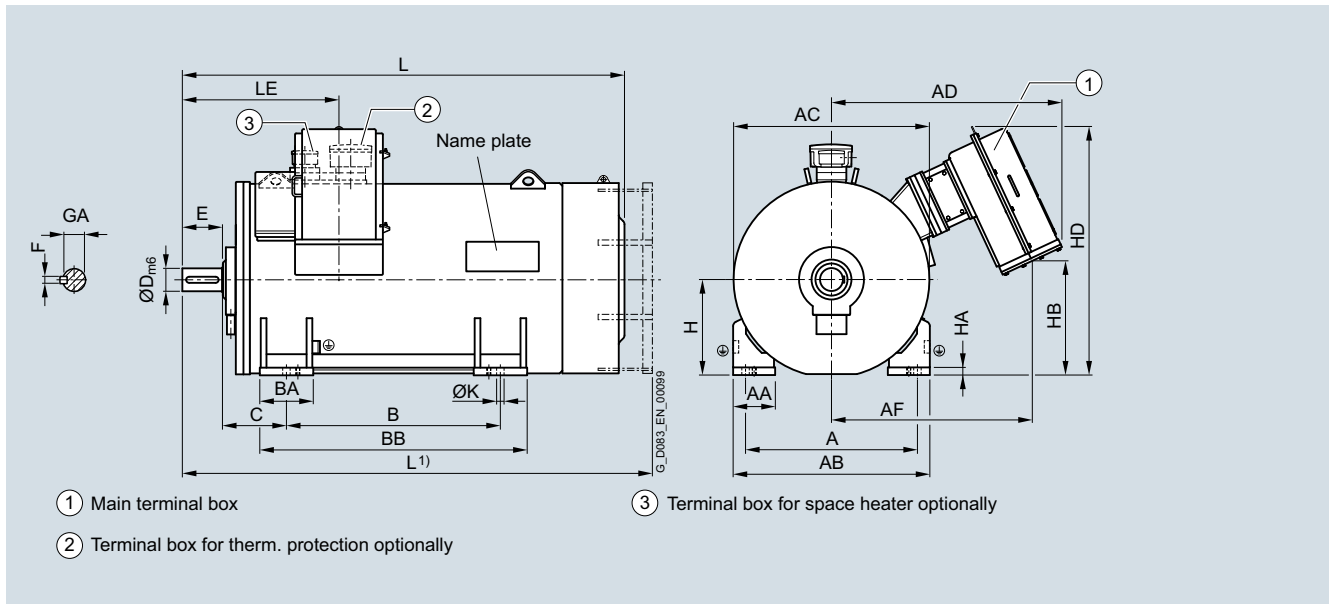


# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 8-pole motors

## Dimensional drawings (continued)

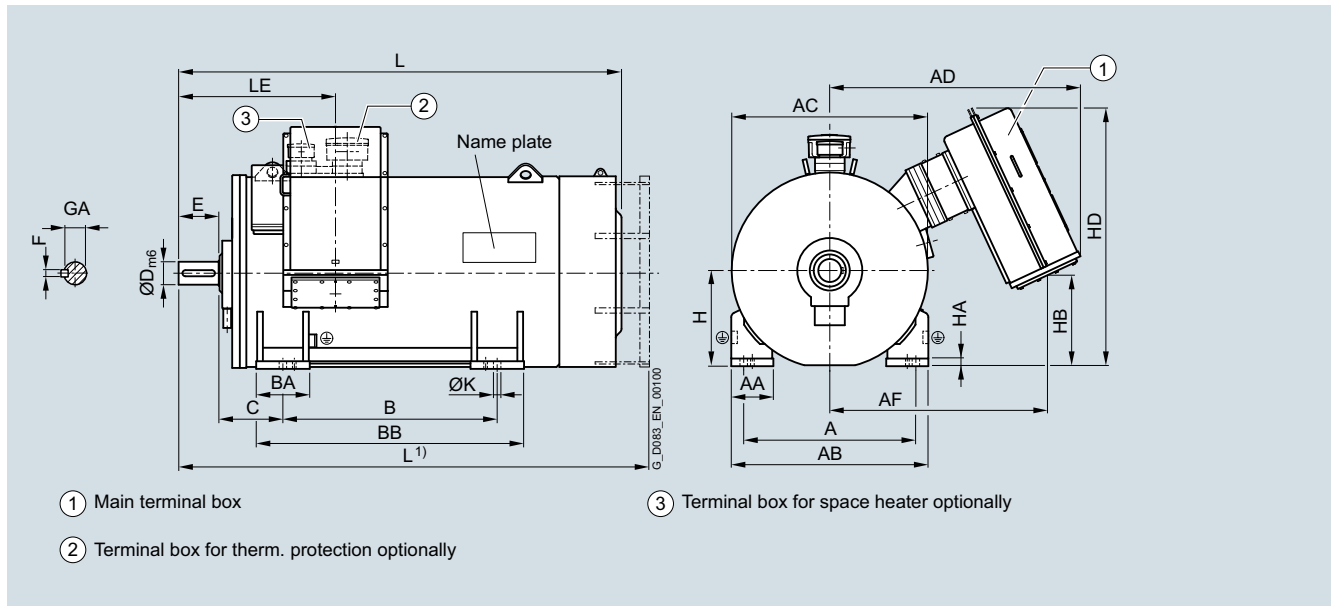


Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1PS.350-6BH...	254	90	170	25	95	355	30	320	995	28	1640	809	2000 <sup>2)</sup>
1PS.351-6BH...	254	90	170	25	95	355	30	320	995	28	1640	809	2000 <sup>2)</sup>
1PS.352-6BH...	254	90	170	25	95	355	30	320	995	28	1775	809	2300 <sup>2)</sup>
1PS.353-6BH...	254	90	170	25	95	355	30	320	995	28	1775	809	2300 <sup>2)</sup>
1PS.355-6BH...	254	90	170	25	95	355	30	320	995	28	1855	809	2400 <sup>2)</sup>
1PS.356-6BH...	254	90	170	25	95	355	30	320	995	28	1855	809	2500 <sup>2)</sup>
1PS.357-6BJ...	254	90	170	25	95	355	35	390	1095	33	1900	780	2600 <sup>2)</sup>
1PS.400-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3200 <sup>2)</sup>
1PS.401-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3200 <sup>2)</sup>
1PS.402-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3200 <sup>2)</sup>
1PS.403-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3200 <sup>2)</sup>
1PS.404-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3500 <sup>2)</sup>
1PS.405-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3500 <sup>2)</sup>
1PS.406-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3600 <sup>2)</sup>
1PS.407-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3600 <sup>2)</sup>
1PS.408-6BJ...	280	100	210	28	106	400	30	405	1110	33	2025	820	3800 <sup>2)</sup>
1PS.454-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4300 <sup>2)</sup>
1PS.456-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4800 <sup>2)</sup>
1PS.457-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4800 <sup>2)</sup>
1PS.458-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	5100 <sup>2)</sup>
1PS.505-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	5900 <sup>2)</sup>
1PS.507-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	6600 <sup>2)</sup>
1PS.508-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	6900 <sup>2)</sup>
1PS.565-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	9300 <sup>2)</sup>
1PS.566-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	9300 <sup>2)</sup>
1PS.567-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	10300 <sup>2)</sup>
1PS.568-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	10300 <sup>2)</sup>
1PS.632-6BJ...	400	180 <sup>4)</sup>	300	45 <sup>4)</sup>	190 <sup>4)</sup>	630	40	610	1500	42	3000	934	12300 <sup>2)</sup>
1PS.633-6BJ...	400	180 <sup>4)</sup>	300	45 <sup>4)</sup>	190 <sup>4)</sup>	630	40	610	1500	42	3000	935	13700 <sup>2)</sup>
1PS.634-6BJ...	400	180 <sup>4)</sup>	300	45 <sup>4)</sup>	190 <sup>4)</sup>	630	40	610	1500	42	3000	936	13700 <sup>2)</sup>
1PS.637-6BJ...	400	180 <sup>4)</sup>	300	45 <sup>4)</sup>	190 <sup>4)</sup>	630	40	610	1500	42	3200	937	15200 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 8-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>6.7 ... 11 kV, IM B3 type of construction, antifriction bearing, rib-cooled, flameproof</b>										
8-pole										
1PS.500-6BJ.0-4DA0	DHS.-500LK-08A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.501-6BJ.0-4DA0	DHS.-500LK-08A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.502-6BJ.0-4DA0	DHS.-500LK-08A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.503-6BJ.0-4DA0	DHS.-500LK-08A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.504-6BJ.0-4DA0	DHS.-500LK-08A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.505-6BJ.0-4DA0	DHS.-500LK-08A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.506-6BJ.0-4DA0	DHS.-500LM-08A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.507-6BJ.0-4DA0	DHS.-500LM-08A	900	220	1030	1025	1310	1140	1120	280	1400
1PS.565-6BJ.0-4DA0	DHS.-560LK-08A	1000	250	1150	1165	1440	1265	1250	300	1550
1PS.566-6BJ.0-4DA0	DHS.-560LK-08A	1000	250	1150	1165	1440	1265	1250	300	1550
1PS.630-6BJ.0-4DA0	DHS.-630MH-08A	1120	250	1300	1300	1435	1245	1400	300	1700
1PS.631-6BJ.0-4DA0	DHS.-630MH-08A	1120	250	1300	1300	1435	1245	1400	300	1700
1PS.632-6BJ.0-4DA0	DHS.-630MK-08A	1120	250	1300	1300	1435	1245	1400	300	1700
1PS.635-6BJ.0-4DA0	DHS.-630LK-08A	1120	250	1300	1300	1435	1245	1400	300	1700
1PS.636-6BJ.0-4DA0	DHS.-630LK-08A	1120	250	1300	1300	1435	1245	1400	300	1700

<sup>1)</sup> For noise class 3 dimension L changes + 150 mm (frame size 560 + 165 mm, 630 + 200 mm).

<sup>2)</sup> Version with two terminal boxes: + 100 kg.

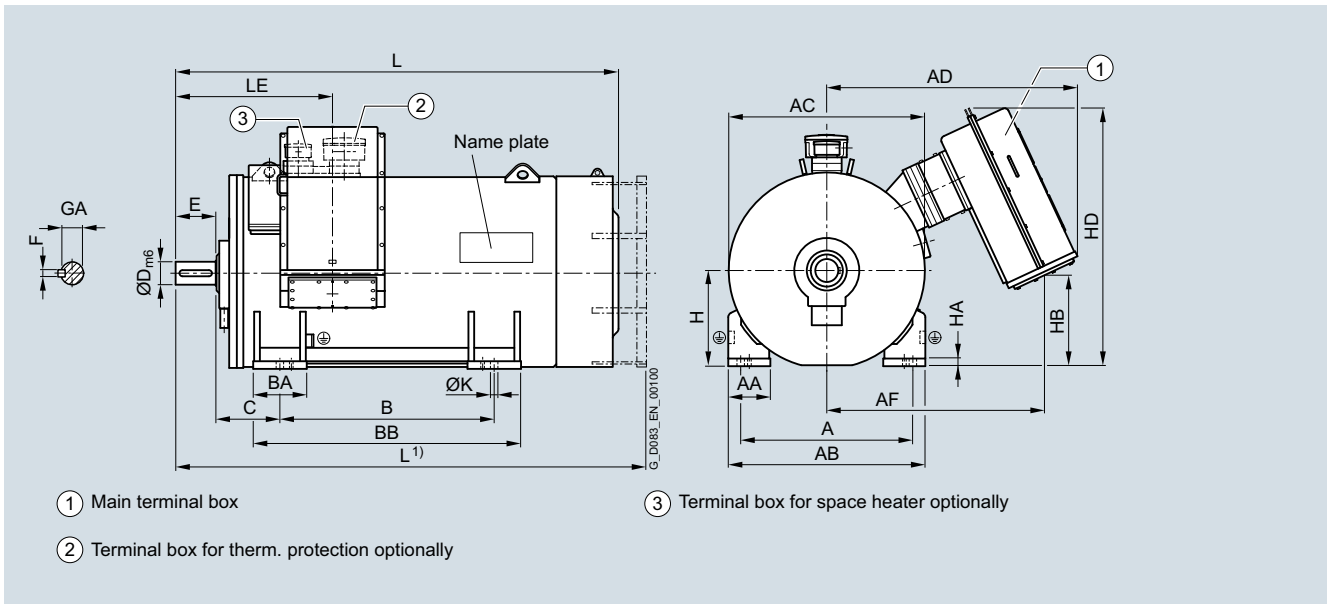
<sup>3)</sup> Frame size 630 Ex d IIC: D = 160 mm; F = 40 mm; GA = 169 mm.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 8-pole motors

### Dimensional drawings (continued)

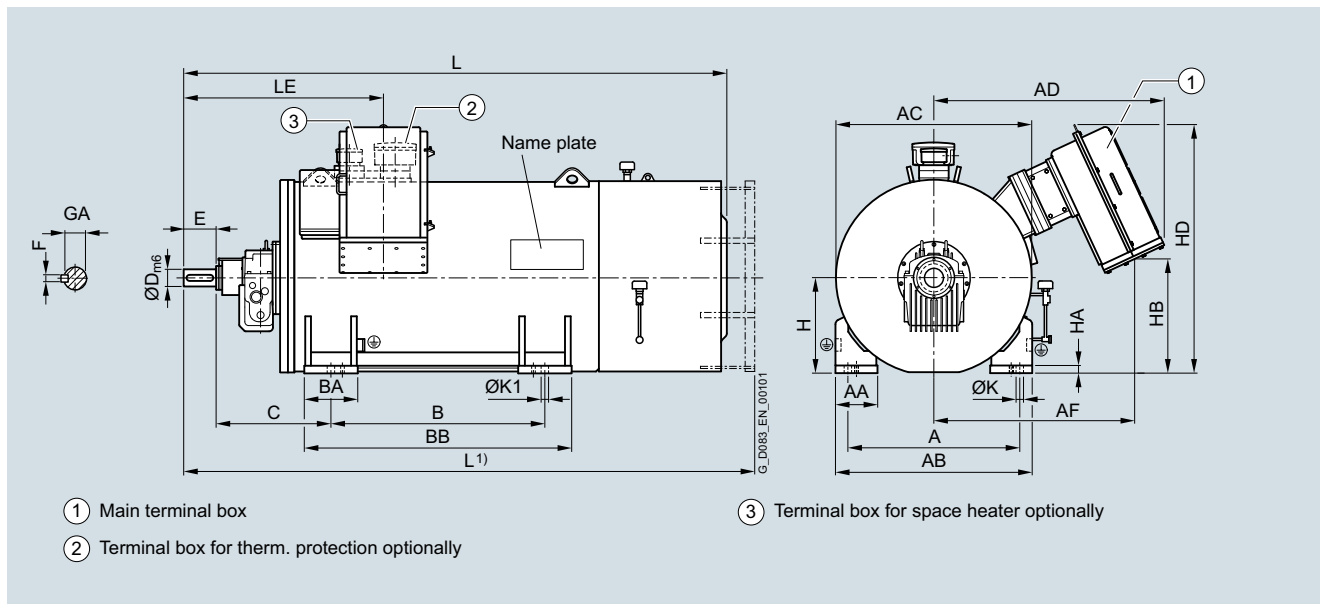


Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1PS.500-6BJ...	335	140	250	36	148	500	40	475	1350	39	2390	860	5900 <sup>2)</sup>
1PS.501-6BJ...	335	140	250	36	148	500	40	475	1350	39	2390	860	5900 <sup>2)</sup>
1PS.502-6BJ...	335	140	250	36	148	500	40	475	1350	39	2390	860	5900 <sup>2)</sup>
1PS.503-6BJ...	335	140	250	36	148	500	40	475	1350	39	2390	860	5900 <sup>2)</sup>
1PS.504-6BJ...	335	140	250	36	148	500	40	475	1350	39	2390	860	5900 <sup>2)</sup>
1PS.505-6BJ...	335	140	250	36	148	500	40	475	1350	39	2390	860	5900 <sup>2)</sup>
1PS.506-6BJ...	335	140	250	36	148	500	40	475	1350	39	2390	860	6600 <sup>2)</sup>
1PS.507-6BJ...	335	140	250	36	148	500	40	475	1350	39	2390	860	6600 <sup>2)</sup>
1PS.565-6BJ...	355	160	300	40	169	560	40	380	1335	42	2680	930	9300 <sup>2)</sup>
1PS.566-6BJ...	355	160	300	40	169	560	40	380	1335	42	2680	930	9300 <sup>2)</sup>
1PS.630-6BJ...	400	180 <sup>3)</sup>	300	45 <sup>3)</sup>	190 <sup>3)</sup>	630	40	475	1470	42	3000	934	12000 <sup>2)</sup>
1PS.631-6BJ...	400	180 <sup>3)</sup>	300	45 <sup>3)</sup>	190 <sup>3)</sup>	630	40	475	1470	42	3000	934	12000 <sup>2)</sup>
1PS.632-6BJ...	400	180 <sup>3)</sup>	300	45 <sup>3)</sup>	190 <sup>3)</sup>	630	40	475	1470	42	3000	934	12400 <sup>2)</sup>
1PS.635-6BJ...	400	180 <sup>3)</sup>	300	45 <sup>3)</sup>	190 <sup>3)</sup>	630	40	475	1470	42	3200	934	13900 <sup>2)</sup>
1PS.636-6BJ...	400	180 <sup>3)</sup>	300	45 <sup>3)</sup>	190 <sup>3)</sup>	630	40	475	1470	42	3200	934	13900 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 8-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, sleeve bearing, rib-cooled, flameproof</b>										
<b>8-pole</b>										
1PS4454-6BJ.0-4DD0	DHTL-450LK-08A	800	230	900	925	1145	990	1000	260	1260
1PS4456-6BJ.0-4DD0	DHTL-450LM-08A	800	230	900	925	1145	990	1000	260	1260
1PS4457-6BJ.0-4DD0	DHTL-450LM-08A	800	230	900	925	1145	990	1000	260	1260
1PS4458-6BJ.0-4DD0	DHTL-450LX-08A	800	230	900	925	1145	990	1000	260	1260
1PS4505-6BJ.0-4DD0	DHTL-500LK-08A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4507-6BJ.0-4DD0	DHTL-500LM-08A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4508-6BJ.0-4DD0	DHTL-500LX-08A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4565-6BJ.0-4DD0	DHTL-560LK-08A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4566-6BJ.0-4DD0	DHTL-560LK-08A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4567-6BJ.0-4DD0	DHTL-560LM-08A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4568-6BJ.0-4DD0	DHTL-560LM-08A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4632-6BJ.0-4DD0	DHTL-630MK-08A	1120	250	1300	1300	1345	1180	1400	300	1700
1PS4633-6BJ.0-4DD0	DHTL-630MM-08A	1120	250	1300	1300	1345	1180	1400	300	1700
1PS4634-6BJ.0-4DD0	DHTL-630MM-08A	1120	250	1300	1300	1345	1180	1400	300	1700
1PS4637-6BJ.0-4DD0	DHTL-630LM-08A	1120	250	1300	1300	1345	1180	1400	300	1700

<sup>1)</sup> For noise class 3 dimension L changes + 150 mm (frame size 630 + 200 mm).

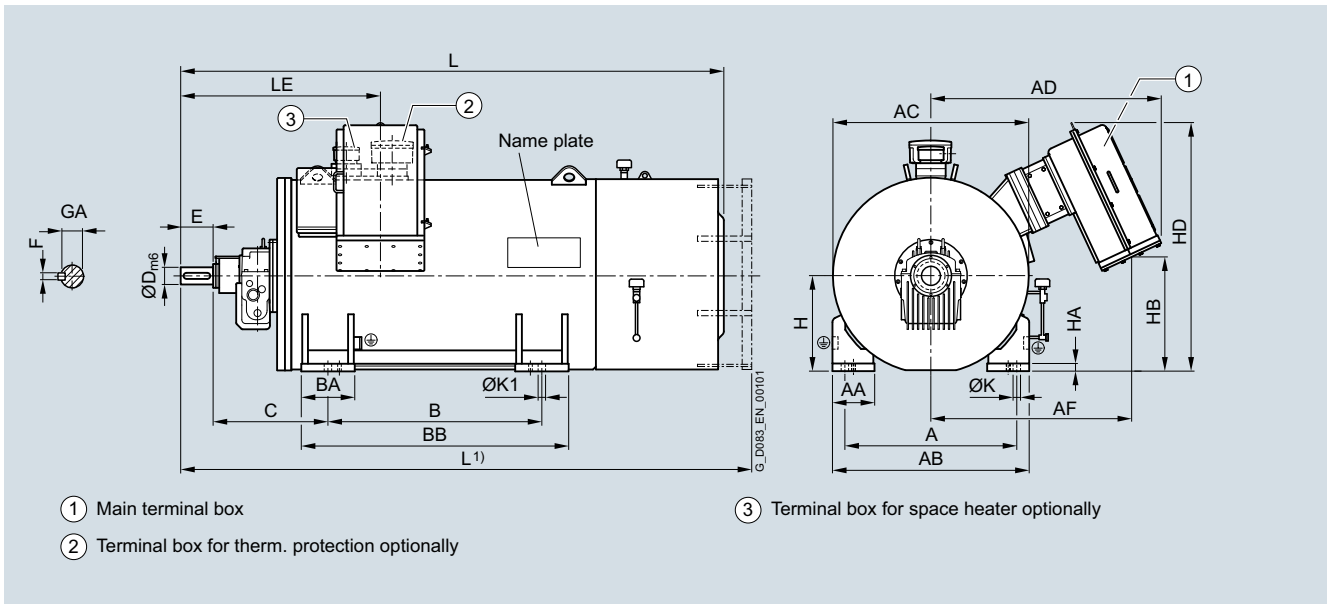
<sup>2)</sup> Version with two terminal boxes: + 100 kg.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 8-pole motors

### Dimensional drawings (continued)

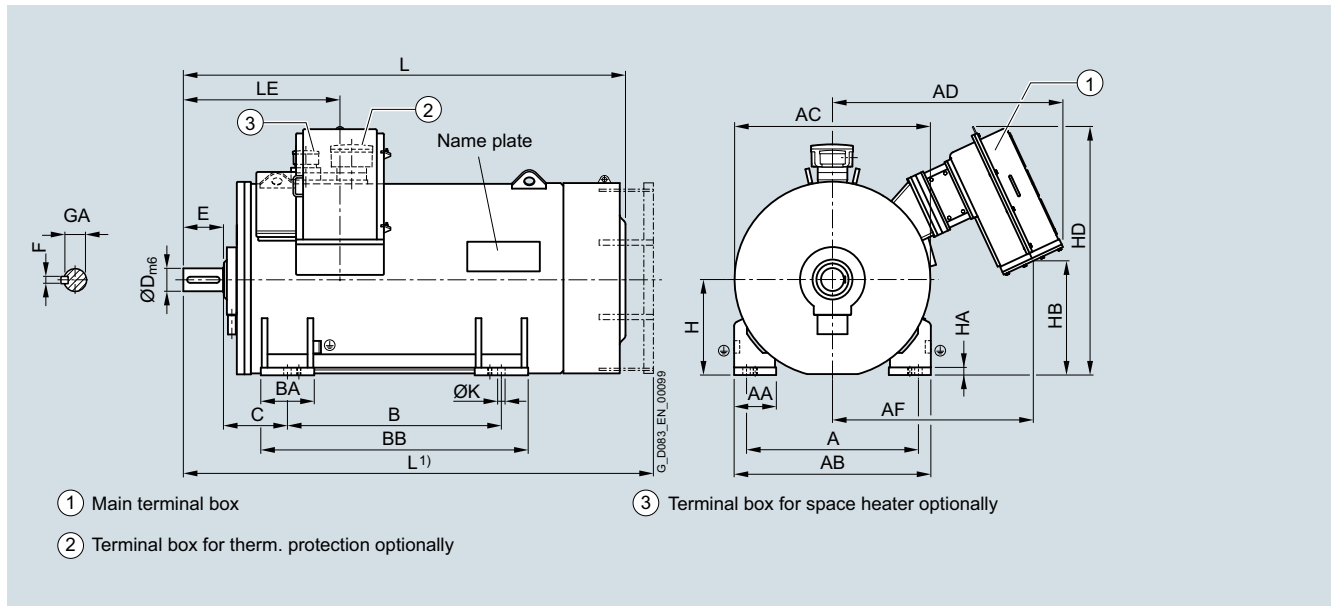


Motor type (repeated)	Dimensions in mm													Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	K1	L <sup>1)</sup>	LE	
1PS4454-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	4700 <sup>2)</sup>
1PS4456-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5200 <sup>2)</sup>
1PS4457-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5200 <sup>2)</sup>
1PS4458-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5500 <sup>2)</sup>
1PS4505-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6300 <sup>2)</sup>
1PS4507-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7000 <sup>2)</sup>
1PS4508-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7300 <sup>2)</sup>
1PS4565-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9700 <sup>2)</sup>
1PS4566-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9700 <sup>2)</sup>
1PS4567-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	10700 <sup>2)</sup>
1PS4568-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	10700 <sup>2)</sup>
1PS4632-6BJ...	800	180	300	45	190	630	40	610	1500	42	72	3450	1330	12500 <sup>2)</sup>
1PS4633-6BJ...	800	180	300	45	190	630	40	610	1500	42	72	3450	1330	13900 <sup>2)</sup>
1PS4634-6BJ...	800	180	300	45	190	630	40	610	1500	42	72	3450	1330	13900 <sup>2)</sup>
1PS4637-6BJ...	800	180	300	45	190	630	40	610	1500	42	72	3650	1330	15400 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 10-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, antifriction bearing, rib-cooled, flameproof</b>										
10-pole										
1PS.451-6BJ.0-4EA0	DHS.-450LK-10A	800	230	900	925	1145	990	1000	260	1260
1PS.452-6BJ.0-4EA0	DHS.-450LK-10A	800	230	900	925	1010	860	1000	260	1260
1PS.453-6BJ.0-4EA0	DHS.-450LK-10A	800	230	900	925	1010	860	1000	260	1260
1PS.454-6BJ.0-4EA0	DHS.-450LK-10A	800	230	900	925	1010	860	1000	260	1260
1PS.455-6BJ.0-4EA0	DHS.-450LK-10A	800	230	900	925	1010	860	1000	260	1260
1PS.456-6BJ.0-4EA0	DHS.-450LM-10A	800	230	900	925	1010	860	1000	260	1260
1PS.457-6BJ.0-4EA0	DHS.-450LM-10A	800	230	900	925	1010	860	1000	260	1260
1PS.458-6BJ.0-4EA0	DHS.-450LX-10A	800	230	900	925	1010	860	1000	260	1260
1PS.505-6BJ.0-4EA0	DHS.-500LK-10A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.506-6BJ.0-4EA0	DHS.-500LM-10A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.507-6BJ.0-4EA0	DHS.-500LM-10A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.508-6BJ.0-4EA0	DHS.-500LX-10A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.565-6BJ.0-4EA0	DHS.-560LK-10A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.566-6BJ.0-4EA0	DHS.-560LK-10A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.567-6BJ.0-4EA0	DHS.-560LM-10A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.568-6BJ.0-4EA0	DHS.-560LM-10A	1000	250	1150	1165	1335	1180	1250	300	1550

1) For noise class 3 dimension L changes + 150 mm.  
(frame size 560 + 165 mm, 630 + 200 mm).

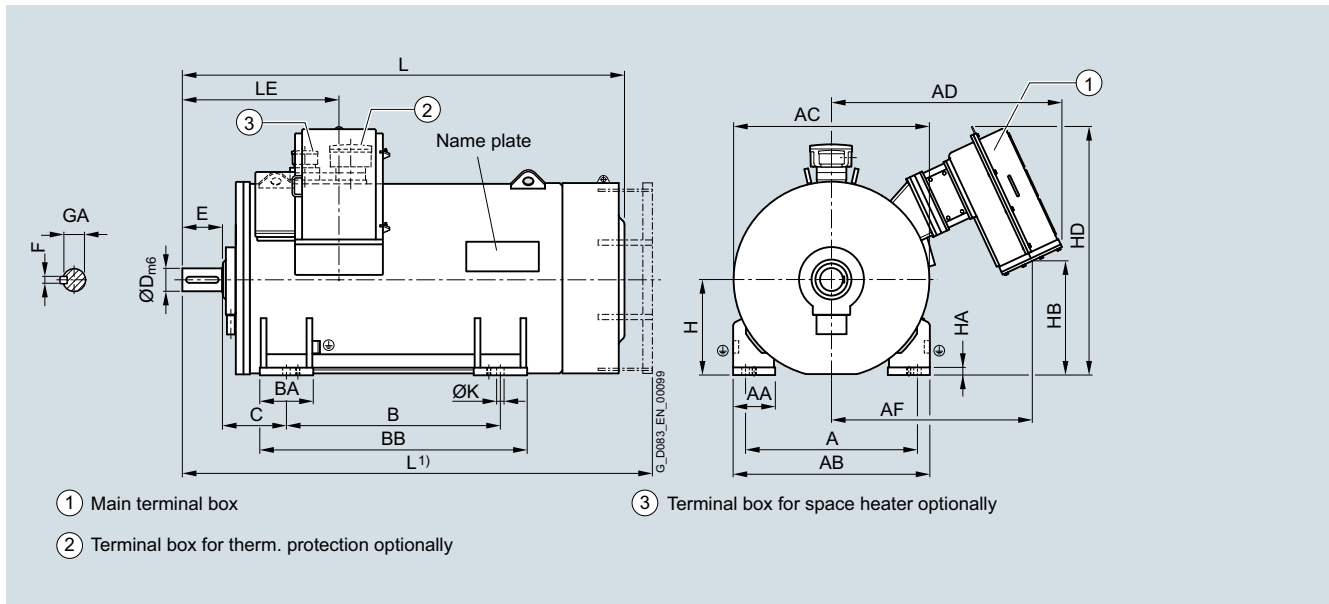
2) Version with two terminal boxes: + 100 kg.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 10-pole motors

### Dimensional drawings (continued)



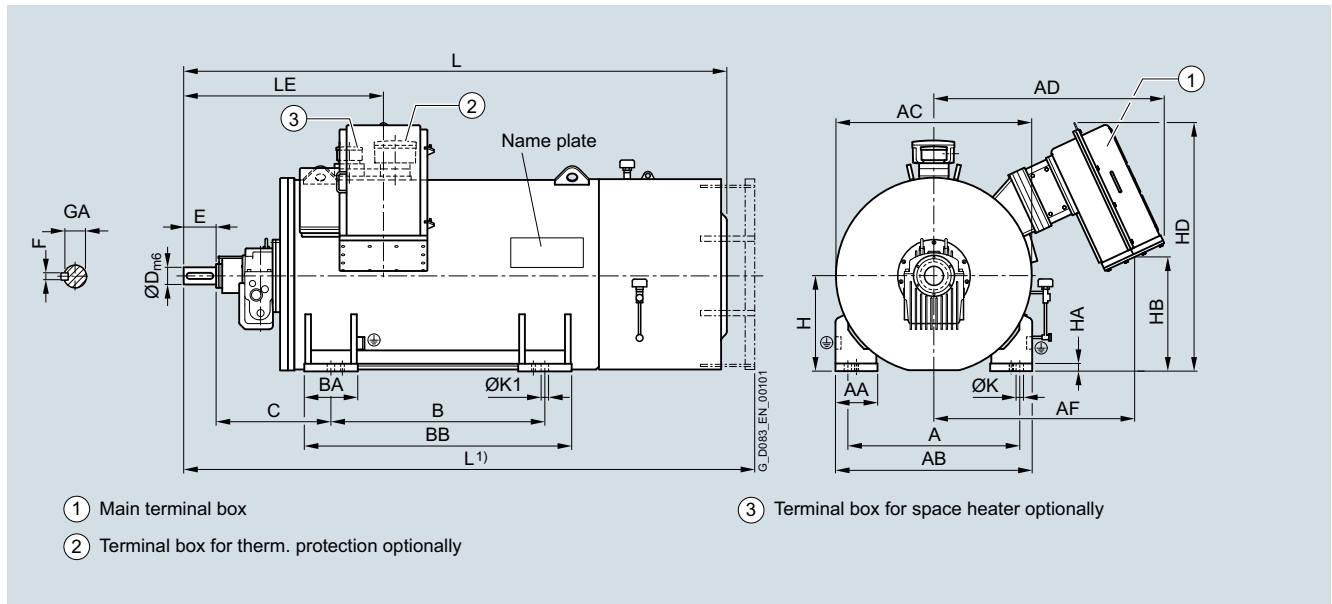
Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1PS.451-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4600 <sup>2)</sup>
1PS.452-6BJ...	315	110	210	28	116	450	30	500	1195	39	2180	820	4600 <sup>2)</sup>
1PS.453-6BJ...	315	110	210	28	116	450	30	500	1195	39	2180	820	4600 <sup>2)</sup>
1PS.454-6BJ...	315	110	210	28	116	450	30	500	1195	39	2180	820	4600 <sup>2)</sup>
1PS.455-6BJ...	315	110	210	28	116	450	30	500	1195	39	2180	820	4600 <sup>2)</sup>
1PS.456-6BJ...	315	110	210	28	116	450	30	500	1195	39	2180	820	4900 <sup>2)</sup>
1PS.457-6BJ...	315	110	210	28	116	450	30	500	1195	39	2180	820	4900 <sup>2)</sup>
1PS.458-6BJ...	315	110	210	28	116	450	30	500	1195	39	2180	820	5300 <sup>2)</sup>
1PS.505-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	5900 <sup>2)</sup>
1PS.506-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	6700 <sup>2)</sup>
1PS.507-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	6700 <sup>2)</sup>
1PS.508-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	7000 <sup>2)</sup>
1PS.565-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	9100 <sup>2)</sup>
1PS.566-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	9100 <sup>2)</sup>
1PS.567-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	10100 <sup>2)</sup>
1PS.568-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	10100 <sup>2)</sup>

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Horizontal motors

Rib-cooled IC411, 10-pole motors

## Dimensional drawings



Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, sleeve bearing, rib-cooled, flameproof</b>										
10-pole										
1PS4451-6BJ.0-4ED0	DHTL-450LK-10A	800	230	900	925	1145	990	1000	260	1260
1PS4452-6BJ.0-4ED0	DHTL-450LK-10A	800	230	900	925	1145	990	1000	260	1260
1PS4453-6BJ.0-4ED0	DHTL-450LK-10A	800	230	900	925	1145	990	1000	260	1260
1PS4454-6BJ.0-4ED0	DHTL-450LK-10A	800	230	900	925	1145	990	1000	260	1260
1PS4455-6BJ.0-4ED0	DHTL-450LK-10A	800	230	900	925	1145	990	1000	260	1260
1PS4456-6BJ.0-4ED0	DHTL-450LM-10A	800	230	900	925	1145	990	1000	260	1260
1PS4457-6BJ.0-4ED0	DHTL-450LM-10A	800	230	900	925	1145	990	1000	260	1260
1PS4458-6BJ.0-4ED0	DHTL-450LX-10A	800	230	900	925	1145	990	1000	260	1260
1PS4505-6BJ.0-4ED0	DHTL-500LK-10A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4506-6BJ.0-4ED0	DHTL-500LM-10A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4507-6BJ.0-4ED0	DHTL-500LM-10A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4508-6BJ.0-4ED0	DHTL-500LX-10A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4565-6BJ.0-4ED0	DHTL-560LK-10A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4566-6BJ.0-4ED0	DHTL-560LK-10A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4567-6BJ.0-4ED0	DHTL-560LM-10A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4568-6BJ.0-4ED0	DHTL-560LM-10A	1000	250	1150	1165	1335	1180	1250	300	1550

<sup>1)</sup> For noise class 3 dimension L changes + 150 mm.

<sup>2)</sup> Version with two terminal boxes: + 100 kg.

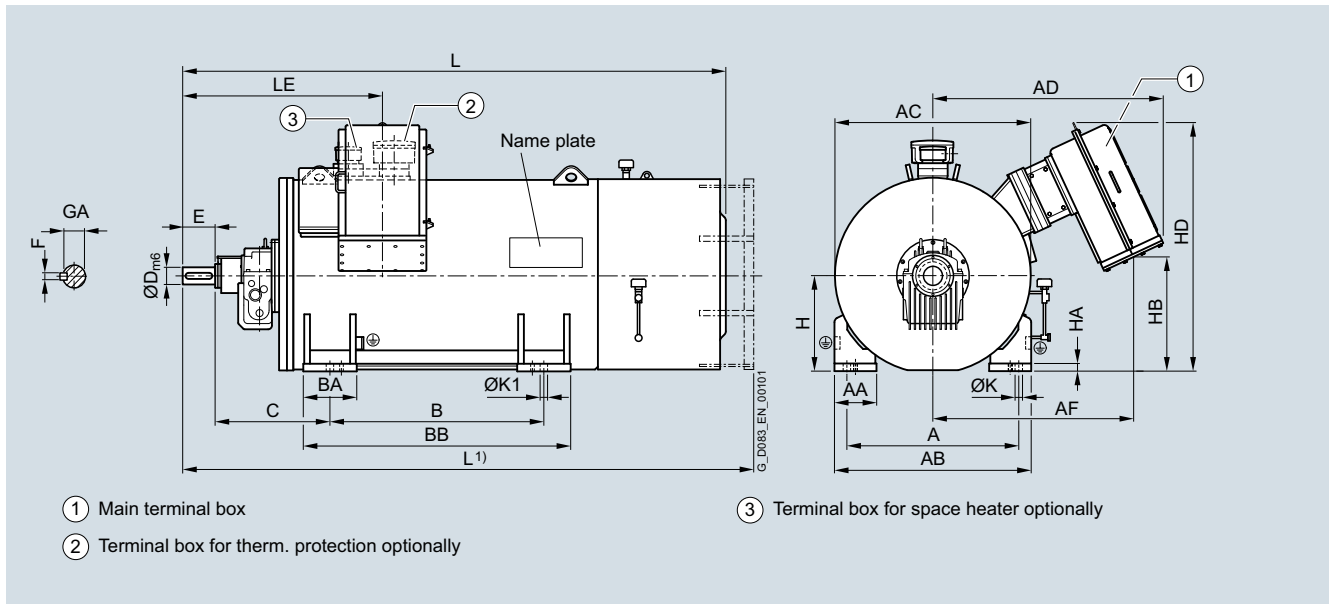


# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 10-pole motors

### Dimensional drawings (continued)



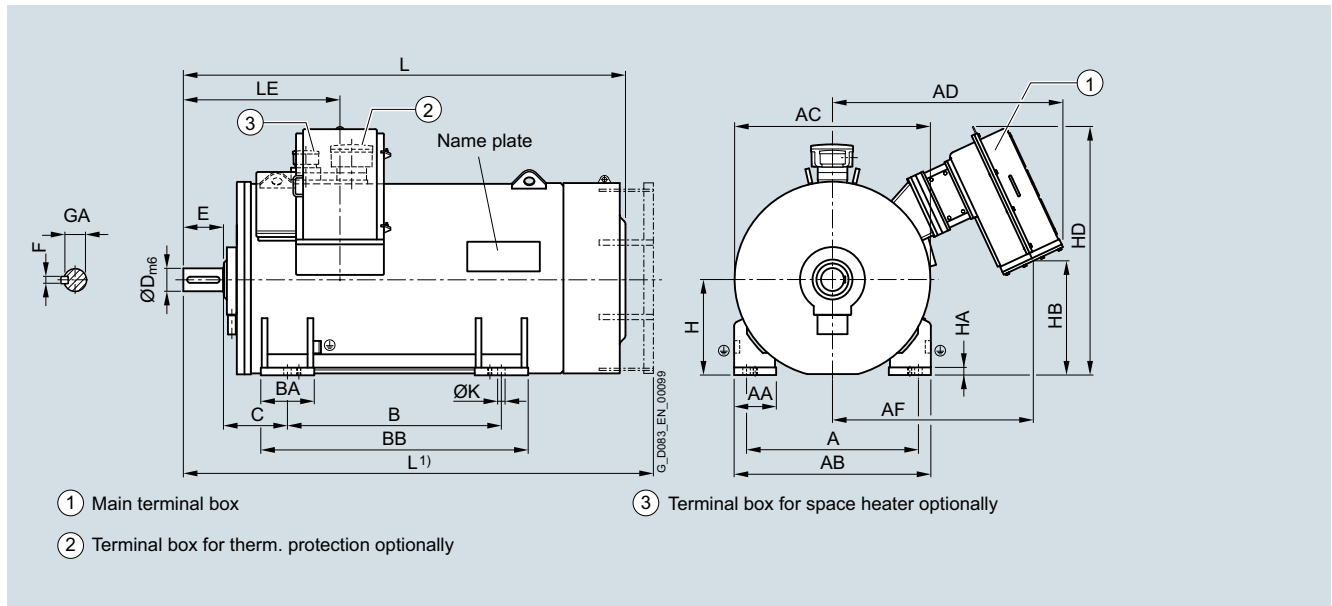
Motor type (repeated)	Dimensions in mm													Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	K1	L <sup>1)</sup>	LE	
1PS4451-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4452-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4453-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4454-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4455-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4456-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5300 <sup>2)</sup>
1PS4457-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5300 <sup>2)</sup>
1PS4458-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5700 <sup>2)</sup>
1PS4505-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6300 <sup>2)</sup>
1PS4506-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7100 <sup>2)</sup>
1PS4507-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7100 <sup>2)</sup>
1PS4508-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7400 <sup>2)</sup>
1PS4565-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9500 <sup>2)</sup>
1PS4566-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9500 <sup>2)</sup>
1PS4567-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	10500 <sup>2)</sup>
1PS4568-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	10500 <sup>2)</sup>

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Horizontal motors

Rib-cooled IC411, 12-pole motors

## Dimensional drawings



Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, antifriction bearing, rib-cooled, flameproof</b>										
12-pole										
1PS.451-6BJ.0-4FA0	DHS.-450LK-12A	800	230	900	925	1145	990	1000	260	1260
1PS.452-6BJ.0-4FA0	DHS.-450LK-12A	800	230	900	925	1145	990	1000	260	1260
1PS.453-6BJ.0-4FA0	DHS.-450LK-12A	800	230	900	925	1145	990	1000	260	1260
1PS.454-6BJ.0-4FA0	DHS.-450LK-12A	800	230	900	925	1145	990	1000	260	1260
1PS.455-6BJ.0-4FA0	DHS.-450LK-12A	800	230	900	925	1145	990	1000	260	1260
1PS.456-6BJ.0-4FA0	DHS.-450LM-12A	800	230	900	925	1145	990	1000	260	1260
1PS.457-6BJ.0-4FA0	DHS.-450LM-12A	800	230	900	925	1145	990	1000	260	1260
1PS.458-6BJ.0-4FA0	DHS.-450LX-12A	800	230	900	925	1145	990	1000	260	1260
1PS.505-6BJ.0-4FA0	DHS.-500LK-12A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.506-6BJ.0-4FA0	DHS.-500LM-12A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.507-6BJ.0-4FA0	DHS.-500LM-12A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.508-6BJ.0-4FA0	DHS.-500LX-12A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.564-6BJ.0-4FA0	DHS.-560LK-12A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.565-6BJ.0-4FA0	DHS.-560LK-12A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.566-6BJ.0-4FA0	DHS.-560LK-12A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.567-6BJ.0-4FA0	DHS.-560LM-12A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.568-6BJ.0-4FA0	DHS.-560LM-12A	1000	250	1150	1165	1335	1180	1250	300	1550

<sup>1)</sup> For noise class 3 dimension L changes + 150 mm.  
(frame size 560 + 165 mm, 630 + 200 mm).

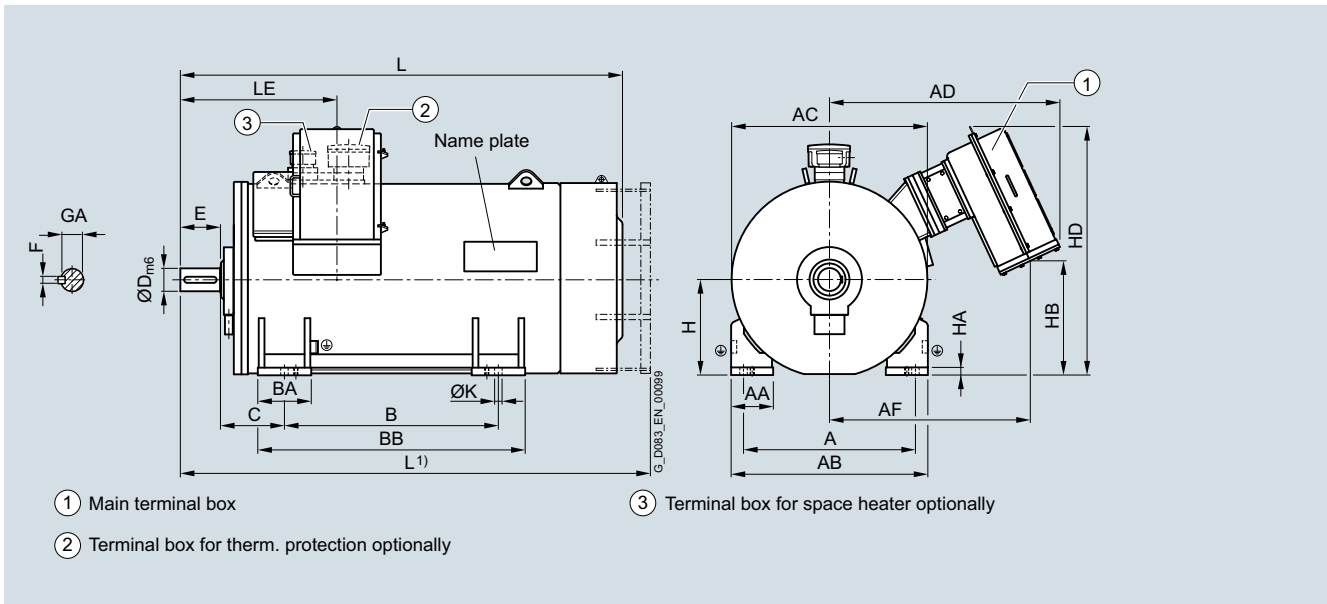
<sup>2)</sup> Version with two terminal boxes: + 100 kg.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 12-pole motors

### Dimensional drawings (continued)

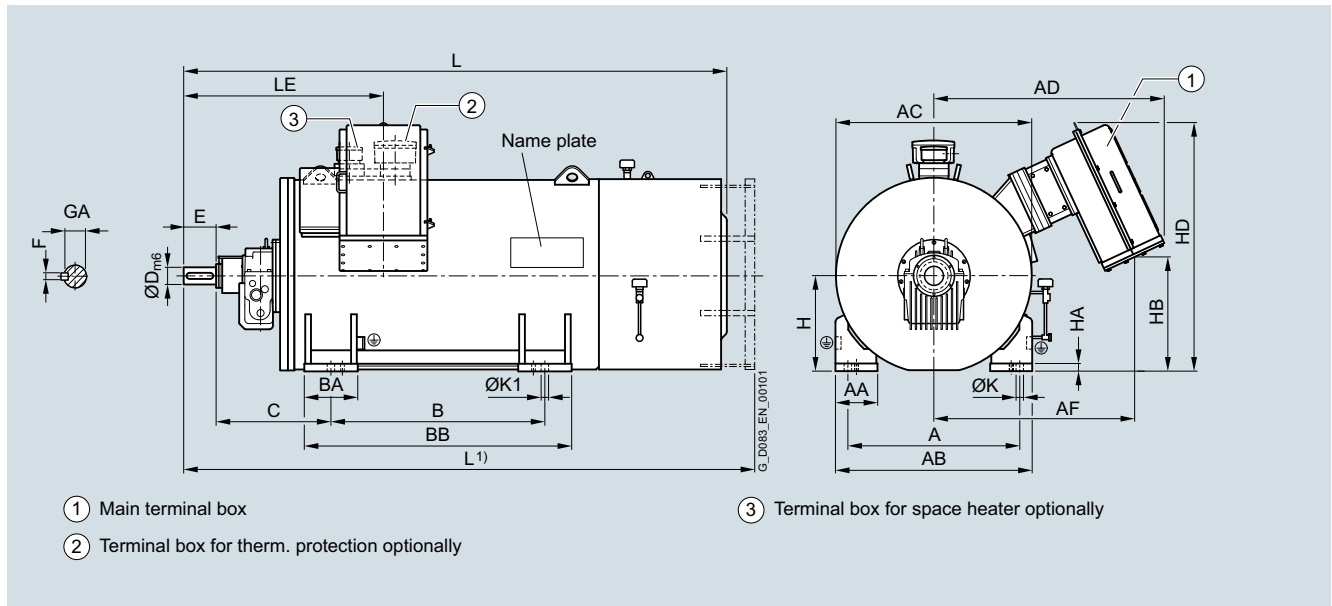


Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1PS.451-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4600 <sup>2)</sup>
1PS.452-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4600 <sup>2)</sup>
1PS.453-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4600 <sup>2)</sup>
1PS.454-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4600 <sup>2)</sup>
1PS.455-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4600 <sup>2)</sup>
1PS.456-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4900 <sup>2)</sup>
1PS.457-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4900 <sup>2)</sup>
1PS.458-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	5300 <sup>2)</sup>
1PS.505-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	5900 <sup>2)</sup>
1PS.506-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	6700 <sup>2)</sup>
1PS.507-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	6700 <sup>2)</sup>
1PS.508-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	7000 <sup>2)</sup>
1PS.564-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	9100 <sup>2)</sup>
1PS.565-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	9100 <sup>2)</sup>
1PS.566-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	9100 <sup>2)</sup>
1PS.567-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	10100 <sup>2)</sup>
1PS.568-6BJ...	355	160	300	40	169	560	40	500	1365	42	2680	930	10100 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 12-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, sleeve bearing, rib-cooled, flameproof</b>										
12-pole										
1PS4451-6BJ.0-4FD0	DHTL-450LK-12A	800	230	900	925	1145	990	1000	260	1260
1PS4452-6BJ.0-4FD0	DHTL-450LK-12A	800	230	900	925	1145	990	1000	260	1260
1PS4453-6BJ.0-4FD0	DHTL-450LK-12A	800	230	900	925	1145	990	1000	260	1260
1PS4454-6BJ.0-4FD0	DHTL-450LK-12A	800	230	900	925	1145	990	1000	260	1260
1PS4455-6BJ.0-4FD0	DHTL-450LK-12A	800	230	900	925	1145	990	1000	260	1260
1PS4456-6BJ.0-4FD0	DHTL-450LM-12A	800	230	900	925	1145	990	1000	260	1260
1PS4457-6BJ.0-4FD0	DHTL-450LM-12A	800	230	900	925	1145	990	1000	260	1260
1PS4458-6BJ.0-4FD0	DHTL-450LX-12A	800	230	900	925	1145	990	1000	260	1260
1PS4505-6BJ.0-4FD0	DHTL-500LK-12A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4506-6BJ.0-4FD0	DHTL-500LM-12A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4507-6BJ.0-4FD0	DHTL-500LM-12A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4508-6BJ.0-4FD0	DHTL-500LX-12A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4564-6BJ.0-4FD0	DHTL-560LK-12A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4565-6BJ.0-4FD0	DHTL-560LK-12A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4566-6BJ.0-4FD0	DHTL-560LK-12A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4567-6BJ.0-4FD0	DHTL-560LM-12A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4568-6BJ.0-4FD0	DHTL-560LM-12A	1000	250	1150	1165	1335	1180	1250	300	1550

1) For noise class 3 dimension L changes + 150 mm.

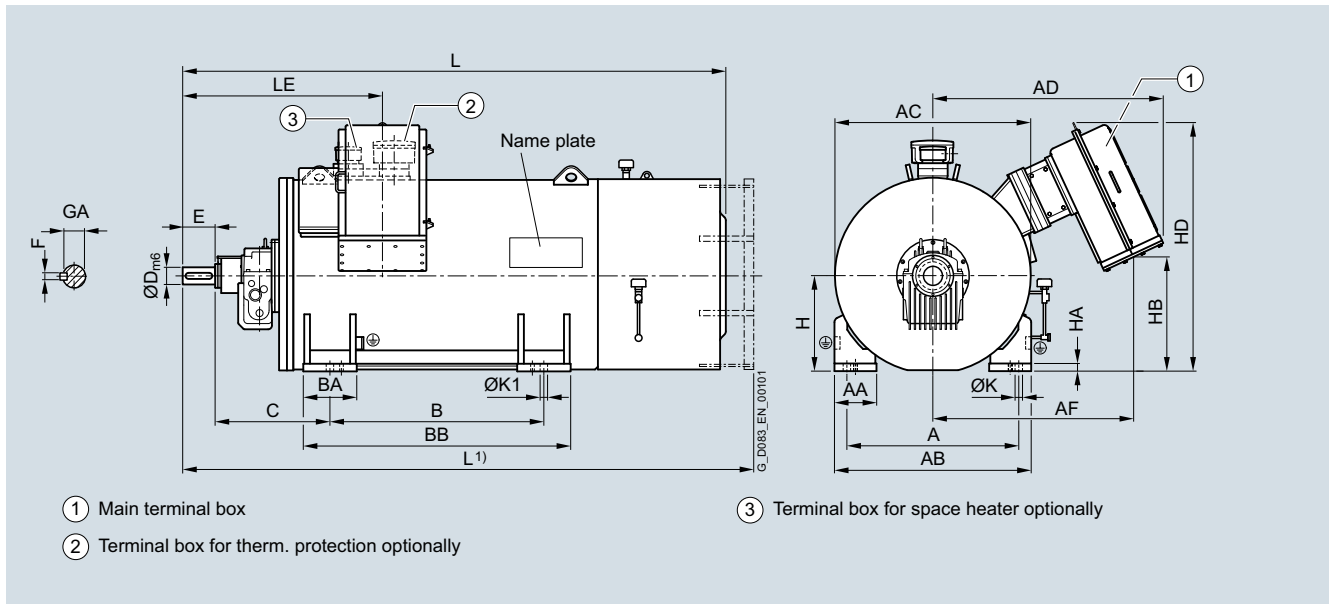
2) Version with two terminal boxes: + 100 kg.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 12-pole motors

### Dimensional drawings (continued)



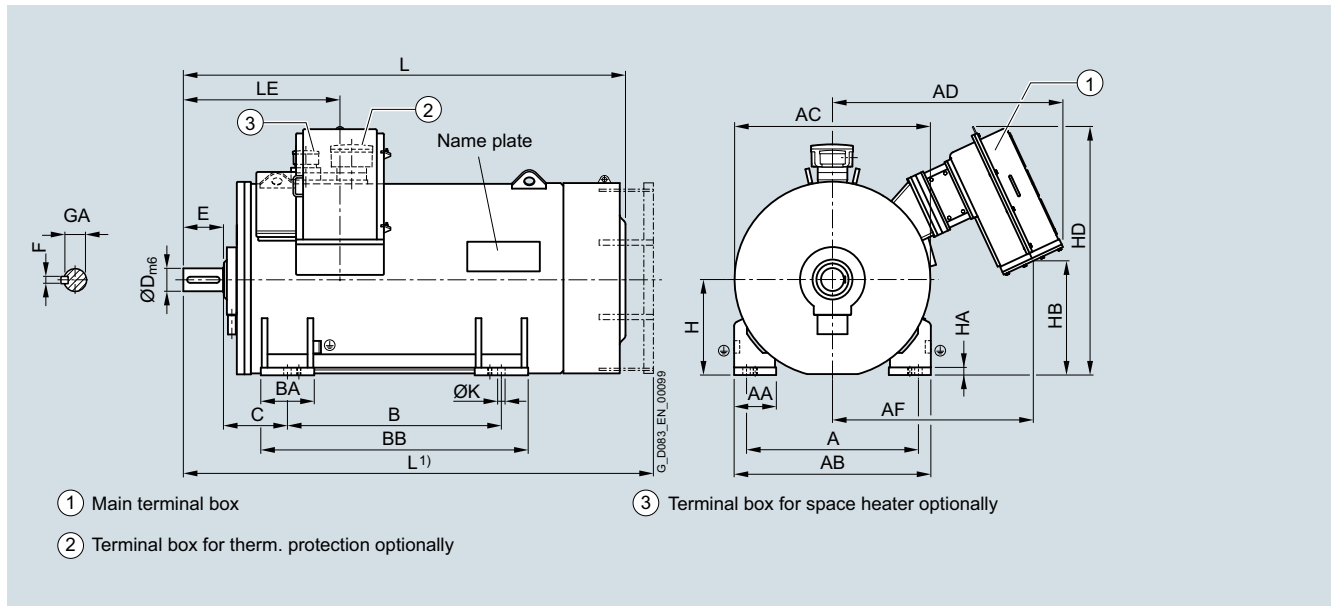
Motor type (repeated)	Dimensions in mm													Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	K1	L <sup>1)</sup>	LE	
1PS4451-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4452-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4453-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4454-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4455-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4456-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5300 <sup>2)</sup>
1PS4457-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5300 <sup>2)</sup>
1PS4458-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5700 <sup>2)</sup>
1PS4505-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6300 <sup>2)</sup>
1PS4506-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7100 <sup>2)</sup>
1PS4507-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7100 <sup>2)</sup>
1PS4508-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7400 <sup>2)</sup>
1PS4564-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9500 <sup>2)</sup>
1PS4565-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9500 <sup>2)</sup>
1PS4566-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9500 <sup>2)</sup>
1PS4567-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	10500 <sup>2)</sup>
1PS4568-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	10500 <sup>2)</sup>

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Horizontal motors

Rib-cooled IC411, 14-pole motors

## Dimensional drawings



Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, antifriction bearing, rib-cooled, flameproof</b>										
14-pole										
1PS.452-6BJ.0-4GA0 <sup>3)</sup>	DHS.-450LK-14A	800	230	900	925	1145	990	1000	260	1260
1PS.453-6BJ.0-4GA0 <sup>3)</sup>	DHS.-450LK-14A	800	230	900	925	1145	990	1000	260	1260
1PS.454-6BJ.0-4GA0 <sup>3)</sup>	DHS.-450LK-14A	800	230	900	925	1145	990	1000	260	1260
1PS.455-6BJ.0-4GA0 <sup>3)</sup>	DHS.-450LM-14A	800	230	900	925	1145	990	1000	260	1260
1PS.456-6BJ.0-4GA0 <sup>3)</sup>	DHS.-450LM-14A	800	230	900	925	1145	990	1000	260	1260
1PS.457-6BJ.0-4GA0 <sup>3)</sup>	DHS.-450LM-14A	800	230	900	925	1145	990	1000	260	1260
1PS.502-6BJ.0-4GA0	DHS.-500LK-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.503-6BJ.0-4GA0	DHS.-500LK-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.504-6BJ.0-4GA0	DHS.-500LK-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.505-6BJ.0-4GA0	DHS.-500LK-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.506-6BJ.0-4GA0	DHS.-500LM-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.507-6BJ.0-4GA0	DHS.-500LM-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.508-6BJ.0-4GA0	DHS.-500LX-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.563-6BJ.0-4GA0	DHS.-560LK-14A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.564-6BJ.0-4GA0	DHS.-560LK-14A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.565-6BJ.0-4GA0	DHS.-560LK-14A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.566-6BJ.0-4GA0	DHS.-560LM-14A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.567-6BJ.0-4GA0	DHS.-560LM-14A	1000	250	1150	1165	1335	1180	1250	300	1550

<sup>1)</sup> For noise class 3 dimension L changes + 150 mm.  
(frame size 560 + 165 mm, 630 + 200 mm).

<sup>2)</sup> Version with two terminal boxes: + 100 kg.

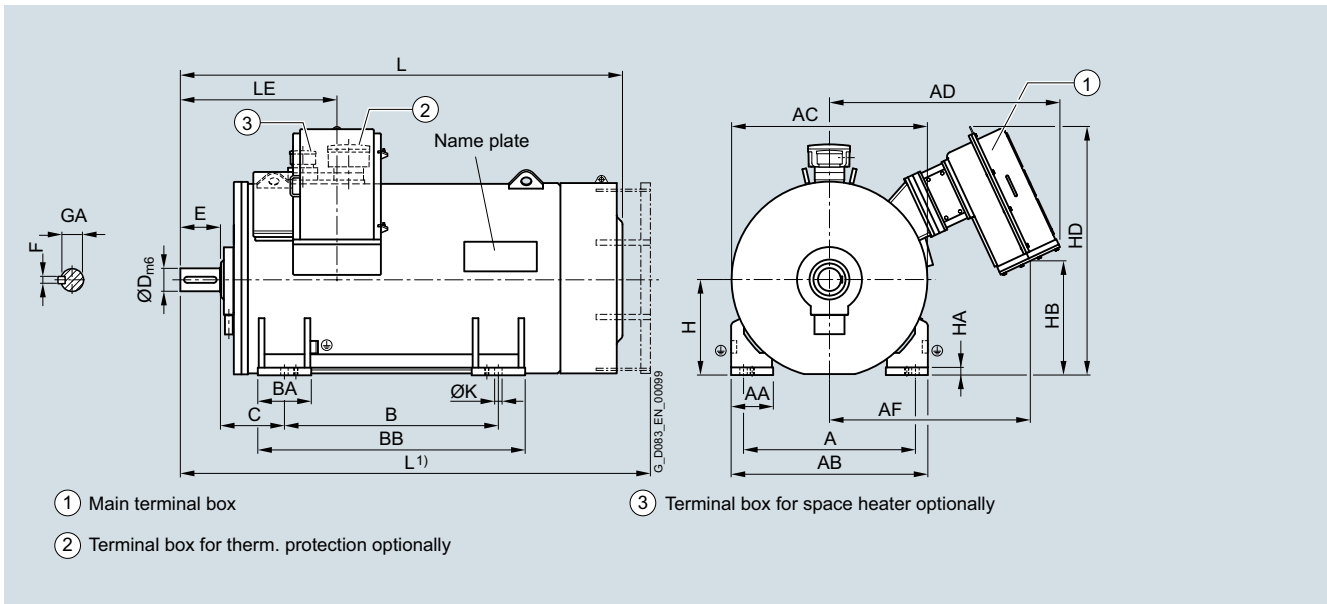
<sup>3)</sup> Max. 3.3 kV.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 14-pole motors

### Dimensional drawings (continued)

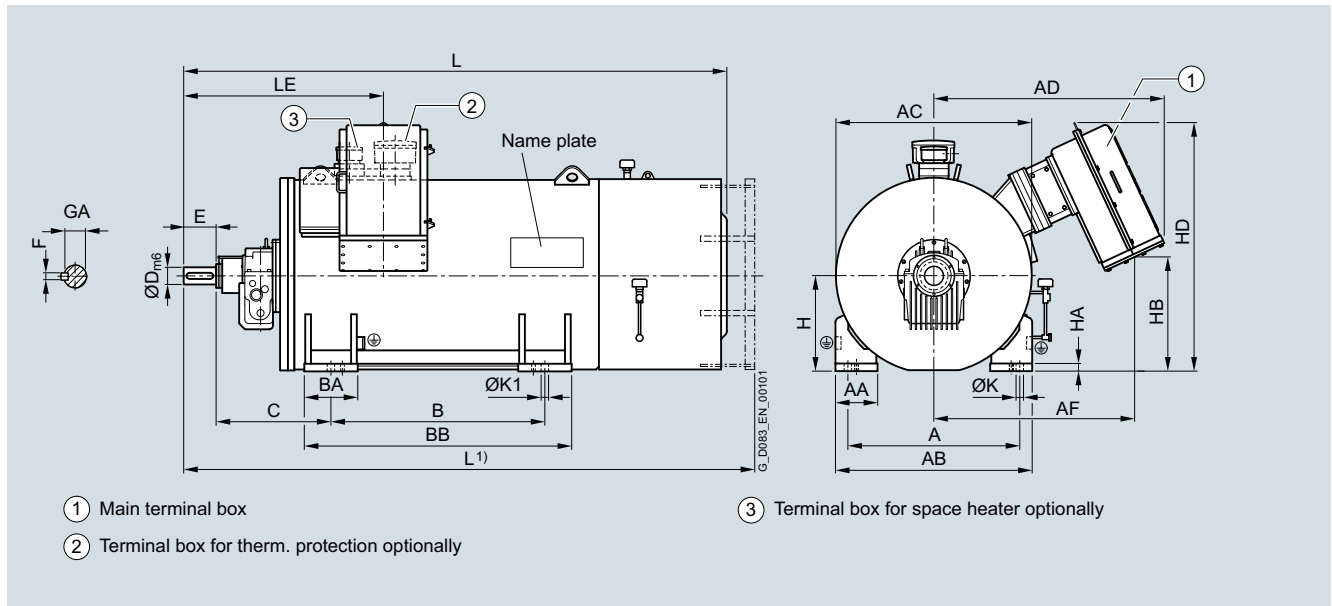


Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1PS.452-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4600 <sup>2)</sup>
1PS.453-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4600 <sup>2)</sup>
1PS.454-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4600 <sup>2)</sup>
1PS.455-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4900 <sup>2)</sup>
1PS.456-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4900 <sup>2)</sup>
1PS.457-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4900 <sup>2)</sup>
1PS.502-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	5900 <sup>2)</sup>
1PS.503-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	5900 <sup>2)</sup>
1PS.504-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	5900 <sup>2)</sup>
1PS.505-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	5900 <sup>2)</sup>
1PS.506-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	6700 <sup>2)</sup>
1PS.507-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	6700 <sup>2)</sup>
1PS.508-6BJ...	335	140	250	36	148	500	40	600	1305	39	2390	860	7000 <sup>2)</sup>
1PS.563-6BJ...	355	160	300	40	169	560	40	500	1365	42	2700	930	9200 <sup>2)</sup>
1PS.564-6BJ...	355	160	300	40	169	560	40	500	1365	42	2700	930	9200 <sup>2)</sup>
1PS.565-6BJ...	355	160	300	40	169	560	40	500	1365	42	2700	930	9200 <sup>2)</sup>
1PS.566-6BJ...	355	160	300	40	169	560	40	500	1365	42	2700	930	10300 <sup>2)</sup>
1PS.567-6BJ...	355	160	300	40	169	560	40	500	1365	42	2700	930	10300 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 14-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, sleeve bearing, rib-cooled, flameproof</b>										
14-pole										
1PS4452-6BJ.0-4GD0	DHTL-450LK-14A <sup>3)</sup>	800	230	900	925	1145	990	1000	260	1260
1PS4453-6BJ.0-4GD0	DHTL-450LK-14A <sup>3)</sup>	800	230	900	925	1145	990	1000	260	1260
1PS4454-6BJ.0-4GD0	DHTL-450LK-14A <sup>3)</sup>	800	230	900	925	1145	990	1000	260	1260
1PS4455-6BJ.0-4GD0	DHTL-450LM-14A <sup>3)</sup>	800	230	900	925	1145	990	1000	260	1260
1PS4456-6BJ.0-4GD0	DHTL-450LM-14A <sup>3)</sup>	800	230	900	925	1145	990	1000	260	1260
1PS4457-6BJ.0-4GD0	DHTL-450LM-14A <sup>3)</sup>	800	230	900	925	1145	990	1000	260	1260
1PS4502-6BJ.0-4GD0	DHTL-500LK-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4503-6BJ.0-4GD0	DHTL-500LK-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4504-6BJ.0-4GD0	DHTL-500LK-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4505-6BJ.0-4GD0	DHTL-500LK-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4506-6BJ.0-4GD0	DHTL-500LM-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4507-6BJ.0-4GD0	DHTL-500LM-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4508-6BJ.0-4GD0	DHTL-500LX-14A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4563-6BJ.0-4GD0	DHTL-560LK-14A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4564-6BJ.0-4GD0	DHTL-560LK-14A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4565-6BJ.0-4GD0	DHTL-560LK-14A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4566-6BJ.0-4GD0	DHTL-560LM-14A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4567-6BJ.0-4GD0	DHTL-560LM-14A	1000	250	1150	1165	1335	1180	1250	300	1550

1) For noise class 3 dimension L changes + 150 mm.

2) Version with two terminal boxes: + 100 kg.

3) Max. 3.3 kV.

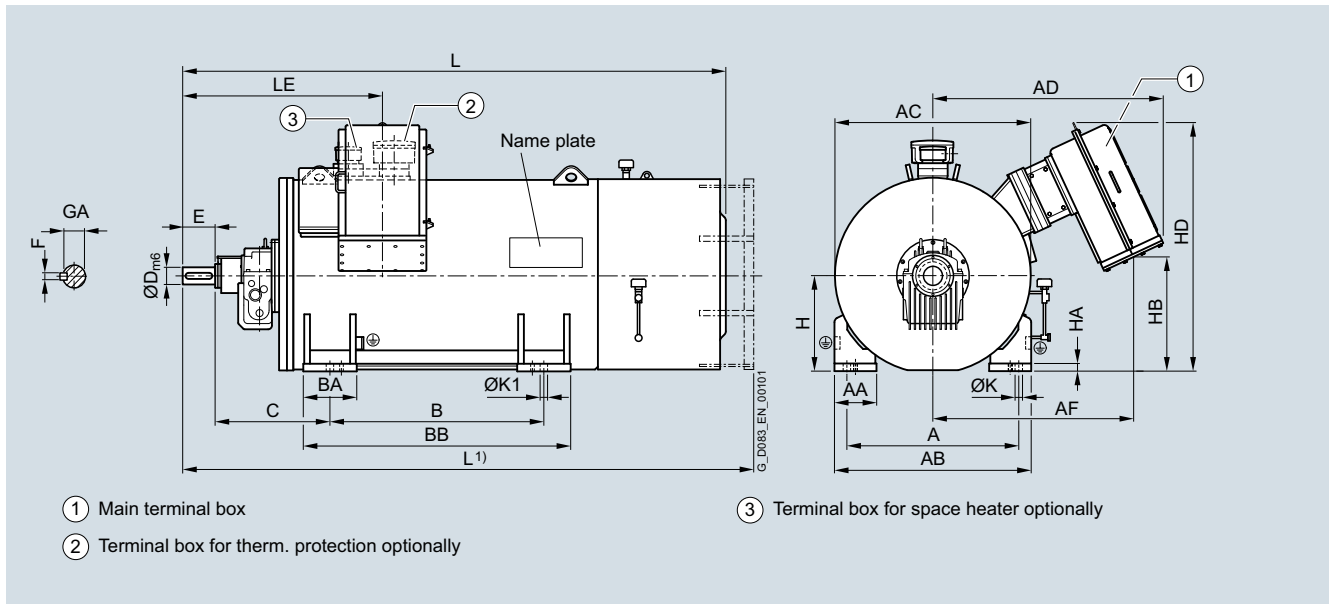


# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 14-pole motors

### Dimensional drawings (continued)

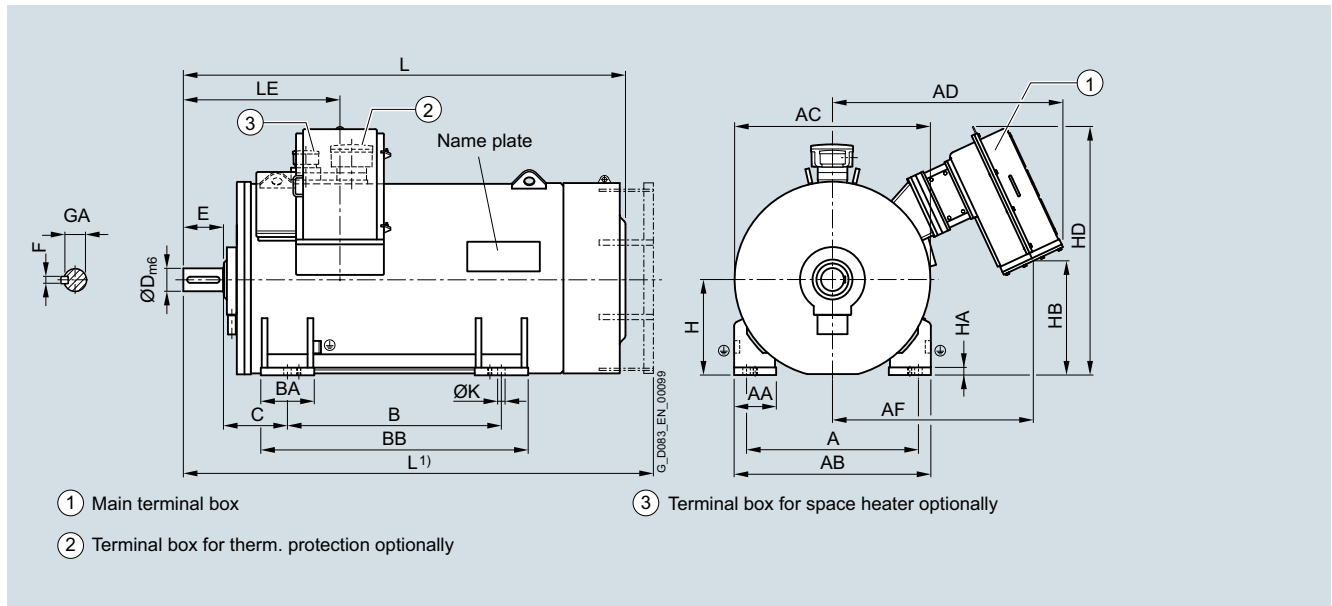


Motor type (repeated)	Dimensions in mm													Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	K1	L <sup>1)</sup>	LE	
1PS4452-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4453-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4454-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5000 <sup>2)</sup>
1PS4455-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5300 <sup>2)</sup>
1PS4456-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5300 <sup>2)</sup>
1PS4457-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5300 <sup>2)</sup>
1PS4502-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6300 <sup>2)</sup>
1PS4503-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6300 <sup>2)</sup>
1PS4504-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6300 <sup>2)</sup>
1PS4505-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6300 <sup>2)</sup>
1PS4506-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7100 <sup>2)</sup>
1PS4507-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7100 <sup>2)</sup>
1PS4508-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7400 <sup>2)</sup>
1PS4563-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9600 <sup>2)</sup>
1PS4564-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9600 <sup>2)</sup>
1PS4565-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9600 <sup>2)</sup>
1PS4566-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	10700 <sup>2)</sup>
1PS4567-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	10700 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Rib-cooled IC411, 16-pole motors

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, antifriction bearing, rib-cooled, flameproof</b>										
16-pole										
1PS.454-6BJ.0-4HA0 <sup>3)</sup>	DHS.-450LM-16A	800	230	900	925	1145	990	1000	260	1260
1PS.455-6BJ.0-4HA0 <sup>3)</sup>	DHS.-450LM-16A	800	230	900	925	1145	990	1000	260	1260
1PS.456-6BJ.0-4HA0 <sup>3)</sup>	DHS.-450LM-16A	800	230	900	925	1145	990	1000	260	1260
1PS.457-6BJ.0-4HA0 <sup>3)</sup>	DHS.-450LM-16A	800	230	900	925	1145	990	1000	260	1260
1PS.458-6BJ.0-4HA0 <sup>3)</sup>	DHS.-450LX-16A	800	230	900	925	1145	990	1000	260	1260
1PS.503-6BJ.0-4HA0	DHS.-500LK-16A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.504-6BJ.0-4HA0	DHS.-500LK-16A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.505-6BJ.0-4HA0	DHS.-500LK-16A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.506-6BJ.0-4HA0	DHS.-500LM-16A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.507-6BJ.0-4HA0	DHS.-500LM-16A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.508-6BJ.0-4HA0	DHS.-500LX-16A	900	220	1030	1025	1210	1050	1120	280	1400
1PS.563-6BJ.0-4HA0	DHS.-560LK-16A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.564-6BJ.0-4HA0	DHS.-560LK-16A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.565-6BJ.0-4HA0	DHS.-560LK-16A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.566-6BJ.0-4HA0	DHS.-560LM-16A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS.567-6BJ.0-4HA0	DHS.-560LM-16A	1000	250	1150	1165	1335	1180	1250	300	1550

<sup>1)</sup> For noise class 3 dimension L changes + 150 mm.  
(frame size 560 + 165 mm, 630 + 200 mm).

<sup>2)</sup> Version with two terminal boxes: + 100 kg.

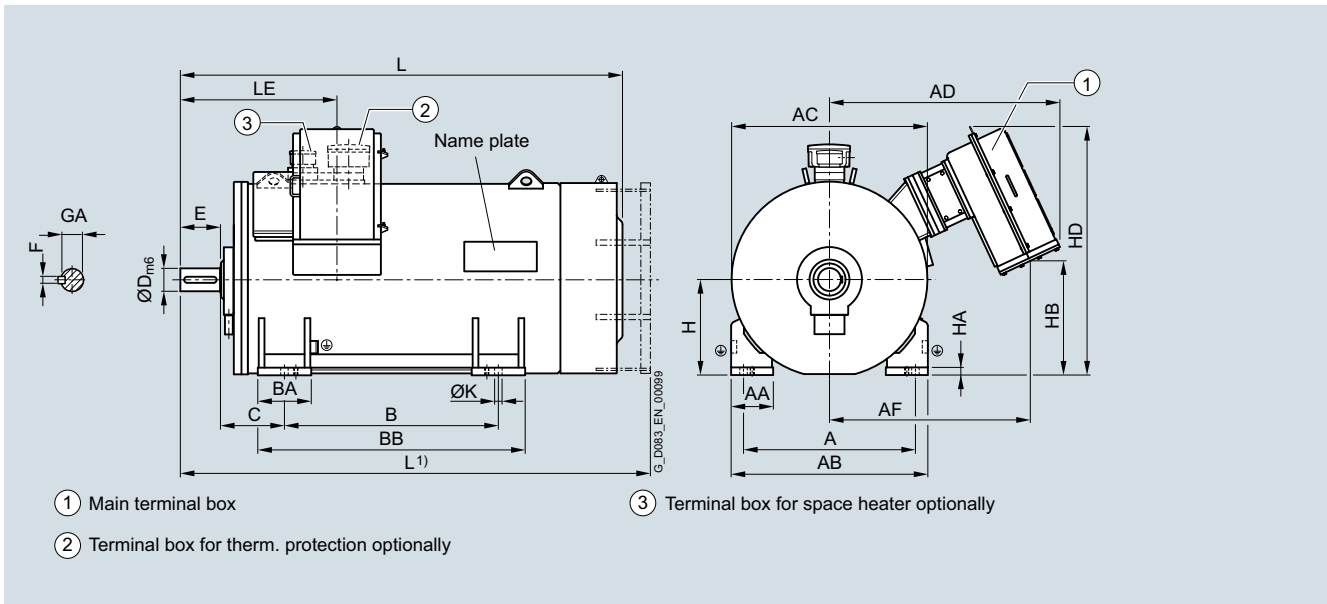
<sup>3)</sup> Max. 3.3 kV.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 16-pole motors

## Dimensional drawings (continued)



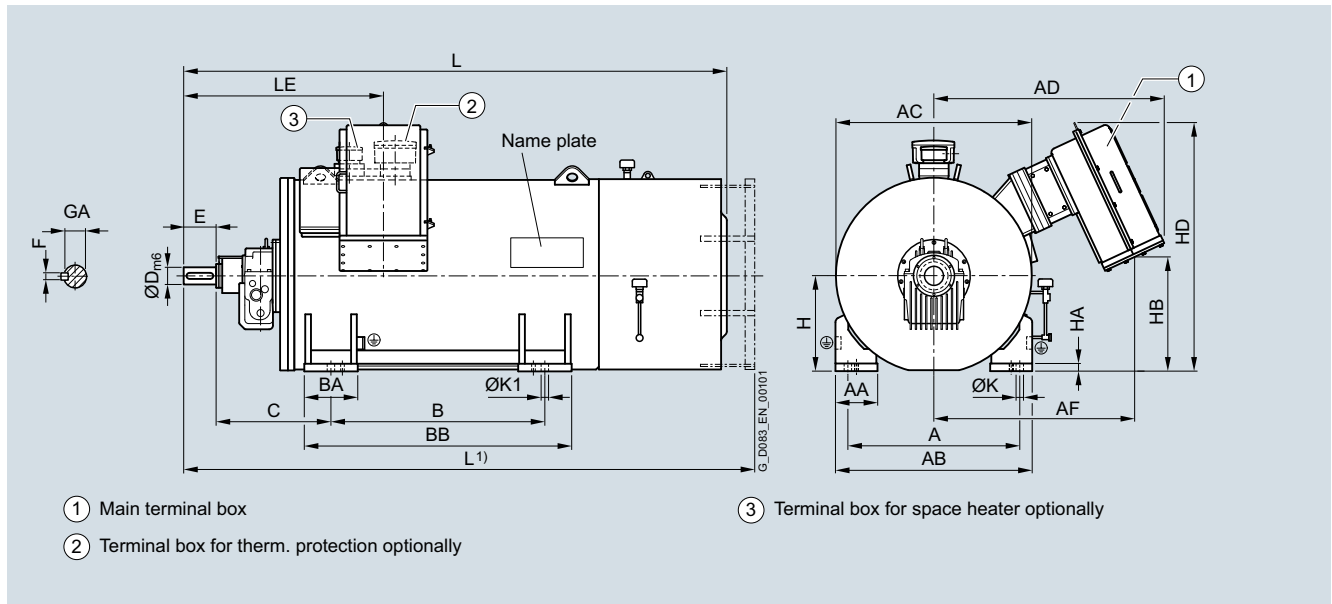
Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1PS.454-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4900 <sup>2)</sup>
1PS.455-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4900 <sup>2)</sup>
1PS.456-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4900 <sup>2)</sup>
1PS.457-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	4900 <sup>2)</sup>
1PS.458-6BJ...	315	110	210	28	116	450	30	570	1265	39	2180	820	5000 <sup>2)</sup>
1PS.503-6BJ...	335	140	250	36	148	500	40	600	1305	39	2415	860	5900 <sup>2)</sup>
1PS.504-6BJ...	335	140	250	36	148	500	40	600	1305	39	2415	860	5900 <sup>2)</sup>
1PS.505-6BJ...	335	140	250	36	148	500	40	600	1305	39	2415	860	5900 <sup>2)</sup>
1PS.506-6BJ...	335	140	250	36	148	500	40	600	1305	39	2415	860	6700 <sup>2)</sup>
1PS.507-6BJ...	335	140	250	36	148	500	40	600	1305	39	2415	860	6700 <sup>2)</sup>
1PS.508-6BJ...	335	140	250	36	148	500	40	600	1305	39	2415	860	7000 <sup>2)</sup>
1PS.563-6BJ...	355	160	300	40	169	560	40	500	1365	42	2700	930	9200 <sup>2)</sup>
1PS.564-6BJ...	355	160	300	40	169	560	40	500	1365	42	2700	930	9200 <sup>2)</sup>
1PS.565-6BJ...	355	160	300	40	169	560	40	500	1365	42	2700	930	9200 <sup>2)</sup>
1PS.566-6BJ...	355	160	300	40	169	560	40	500	1365	42	2700	930	10300 <sup>2)</sup>
1PS.567-6BJ...	355	160	300	40	169	560	40	500	1365	42	2700	930	10300 <sup>2)</sup>

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Horizontal motors

Rib-cooled IC411, 16-pole motors

## Dimensional drawings



Motor type	Type Loher	Dimensions in mm								
		A	AA	AB	AC	AD	AF	B	BA	BB
<b>1.0 ... 6.6 kV, IM B3 type of construction, sleeve bearing, rib-cooled, flameproof</b>										
16-pole										
1PS4454-6BJ.0-4HD0	DHTL-450LM-16A <sup>3)</sup>	800	230	900	925	1145	990	1000	260	1260
1PS4455-6BJ.0-4HD0	DHTL-450LM-16A <sup>3)</sup>	800	230	900	925	1145	990	1000	260	1260
1PS4456-6BJ.0-4HD0	DHTL-450LM-16A <sup>3)</sup>	800	230	900	925	1145	990	1000	260	1260
1PS4457-6BJ.0-4HD0	DHTL-450LM-16A <sup>3)</sup>	800	230	900	925	1145	990	1000	260	1260
1PS4458-6BJ.0-4HD0	DHTL-450LX-16A <sup>3)</sup>	800	230	900	925	1145	990	1000	260	1260
1PS4503-6BJ.0-4HD0	DHTL-500LK-16A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4504-6BJ.0-4HD0	DHTL-500LK-16A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4505-6BJ.0-4HD0	DHTL-500LK-16A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4506-6BJ.0-4HD0	DHTL-500LM-16A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4507-6BJ.0-4HD0	DHTL-500LM-16A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4508-6BJ.0-4HD0	DHTL-500LX-16A	900	220	1030	1025	1210	1050	1120	280	1400
1PS4563-6BJ.0-4HD0	DHTL-560LK-16A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4564-6BJ.0-4HD0	DHTL-560LK-16A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4565-6BJ.0-4HD0	DHTL-560LK-16A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4566-6BJ.0-4HD0	DHTL-560LM-16A	1000	250	1150	1165	1335	1180	1250	300	1550
1PS4567-6BJ.0-4HD0	DHTL-560LM-16A	1000	250	1150	1165	1335	1180	1250	300	1550

<sup>1)</sup> For noise class 3 dimension L changes + 150 mm.

<sup>2)</sup> Version with two terminal boxes: + 100 kg.

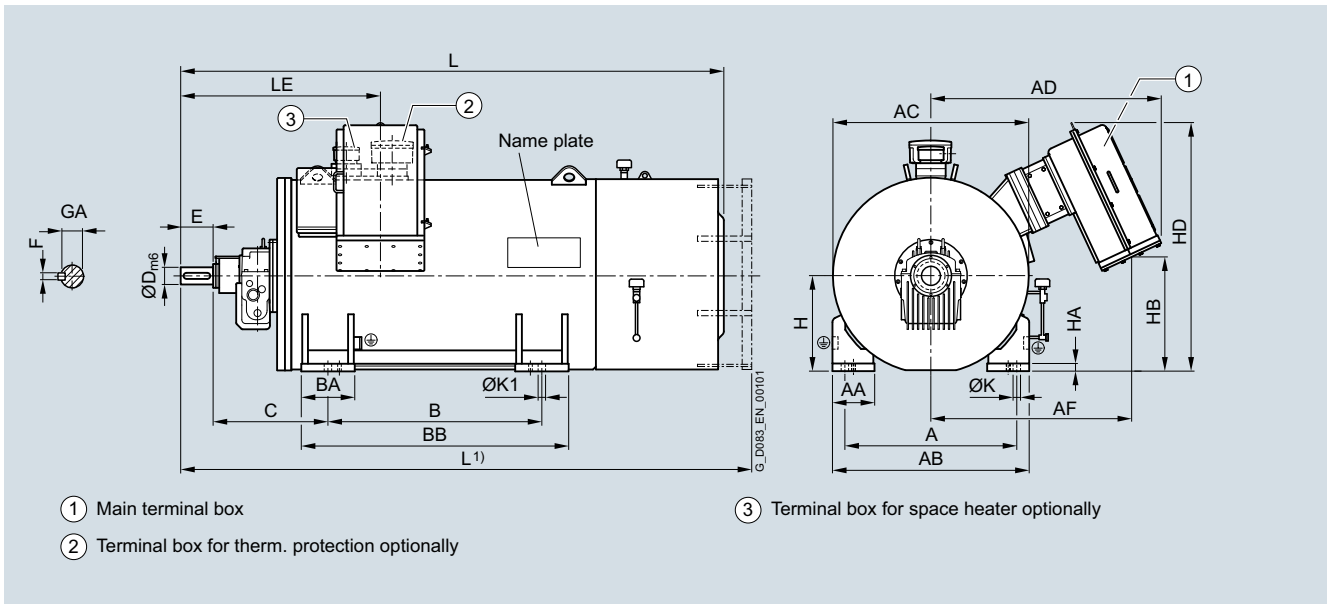
<sup>3)</sup> Max. 3.3 kV.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Rib-cooled IC411, 16-pole motors

### Dimensional drawings (continued)

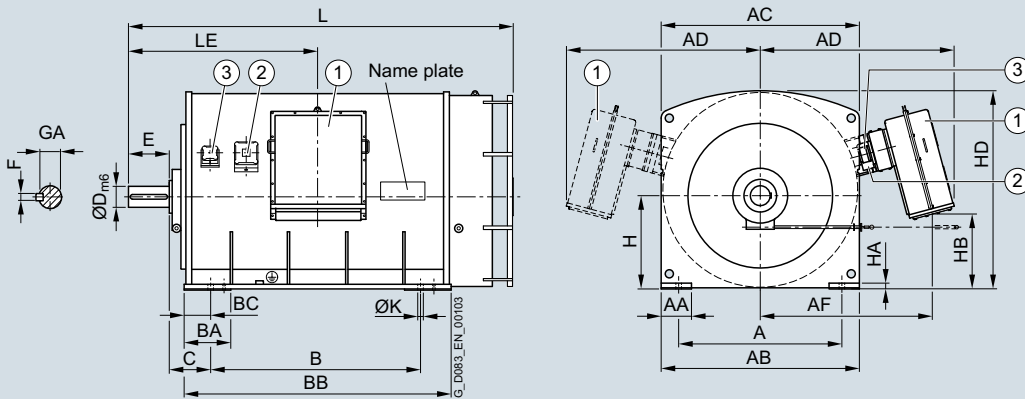


Motor type (repeated)	Dimensions in mm													Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	K1	L <sup>1)</sup>	LE	
1PS4454-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5300 <sup>2)</sup>
1PS4455-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5300 <sup>2)</sup>
1PS4456-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5300 <sup>2)</sup>
1PS4457-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5300 <sup>2)</sup>
1PS4458-6BJ...	630	110	210	28	116	450	30	570	1265	42	72	2710	1135	5400 <sup>2)</sup>
1PS4503-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6300 <sup>2)</sup>
1PS4504-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6300 <sup>2)</sup>
1PS4505-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	6300 <sup>2)</sup>
1PS4506-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7100 <sup>2)</sup>
1PS4507-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7100 <sup>2)</sup>
1PS4508-6BJ...	710	140	250	36	148	500	40	600	1305	42	72	3010	1235	7400 <sup>2)</sup>
1PS4563-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9600 <sup>2)</sup>
1PS4564-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9600 <sup>2)</sup>
1PS4565-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	9600 <sup>2)</sup>
1PS4566-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	10700 <sup>2)</sup>
1PS4567-6BJ...	750	160	300	40	169	560	40	500	1365	42	72	3330	1325	10700 <sup>2)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Tube-cooled IC511

**Dimensional drawings**

- ① Main terminal box, optionally with star point terminal box      ③ Terminal box for space heater optionally  
 ② Terminal box for therm. protection optionally

Motor type	Type Loher	Dimensions in mm									
		A	AA	AB	AC	AD	AF	B	BA	BB	BC
<b>1.0 ... 6.6 kV, IM B3 type of construction, antifriction bearing, tube-cooled, flameproof</b>											
2-pole											
1MV.710-6BS.0-4AA0	DHR.-710AA-02A <sup>2)</sup>	1320	220	1520	1520	1490	1320	1600	400	1950	175
1MV.711-6BS.0-4AA0	DHR.-710AB-02A <sup>2)</sup>	1320	220	1520	1520	1490	1320	1600	400	1950	175
1MV.712-6BS.0-4AA0	DHR.-710AC-02A <sup>2)</sup>	1320	220	1520	1520	1490	1320	1600	400	1950	175
1MV.715-6BS.0-4AA0	DHR.-710BD-02A <sup>2)</sup>	1320	220	1520	1520	1490	1320	1800	400	2150	175
1MV.716-6BS.0-4AA0	DHR.-710BE-02A <sup>2)</sup>	1320	220	1520	1520	1490	1320	1800	400	2150	175
<b>1.0 ... 6.6 kV, IM B3 type of construction, antifriction bearing, tube-cooled, flameproof</b>											
4-pole											
1MV.712-6BS.0-4BA0	DHR.-710AC-04A	1320	220	1520	1520	1490	1320	1600	400	1950	175
1MV.714-6BS.0-4BA0	DHR.-710AD-04A	1320	220	1520	1520	1490	1320	1600	400	1950	175
1MV.716-6BS.0-4BA0	DHR.-710BE-04A	1320	220	1520	1520	1490	1320	1800	400	2150	175
1MV.717-6BS.0-4BA0	DHR.-710BF-04A	1320	220	1520	1520	1490	1320	1800	400	2150	175
1MV.718-6BS.0-4BA0	DHR.-710CG-04A	1320	220	1520	1520	1490	1320	2000	400	2350	175
1PS.805-6BS.0-4BA0	DHR.-800LA-04A	1400	260	1700	1700	1760	1595	1800	400	2290	228
1PS.806-6BS.0-4BA0	DHR.-800LB-04A	1400	260	1700	1700	1760	1595	1800	400	2290	228
1PS.807-6BS.0-4BA0	DHR.-800LC-04A	1400	260	1700	1700	1760	1595	1800	400	2290	228
<b>1.0 ... 6.6 kV, IM B3 type of construction, antifriction bearing, tube-cooled, flameproof</b>											
6-pole											
1MV.712-6BS.0-4CA0	DHR.-710AC-06A	1320	220	1520	1520	1490	1325	1600	400	1950	175
1MV.715-6BS.0-4CA0	DHR.-710BD-06A	1320	220	1520	1520	1490	1325	1800	400	2150	175
1MV.716-6BS.0-4CA0	DHR.-710BE-06A	1320	220	1520	1520	1490	1325	1800	400	2150	175
1MV.718-6BS.0-4CA0	DHR.-710CG-06A	1320	220	1520	1520	1600	1430	2000	400	2350	175
1PS.805-6BS.0-4CA0	DHR.-800LA-06A	1400	260	1700	1700	1760	1595	1800	400	2290	228
1PS.806-6BS.0-4CA0	DHR.-800LB-06A	1400	260	1700	1700	1760	1595	1800	400	2290	228
1PS.807-6BS.0-4CA0	DHR.-800LC-06A	1400	260	1700	1700	1760	1595	1800	400	2290	228
1PS.808-6BS.0-4CA0	DHR.-800LX-06A	1400	260	1700	1700	1760	1595	1800	400	2290	228
<b>1.0 ... 6.6 kV, IM B3 type of construction, antifriction bearing, tube-cooled, flameproof</b>											
8-pole											
1PS.805-6BS.0-4DA0	DHR.-800LA-08A	1400	260	1700	1700	1430	1270	1800	400	2290	228
1PS.806-6BS.0-4DA0	DHR.-800LB-08A	1400	260	1700	1700	1430	1270	1800	400	2290	228
1PS.807-6BS.0-4DA0	DHR.-800LC-08A	1400	260	1700	1700	1430	1270	1800	400	2290	228

1) Version with two terminal boxes: + 200 kg.

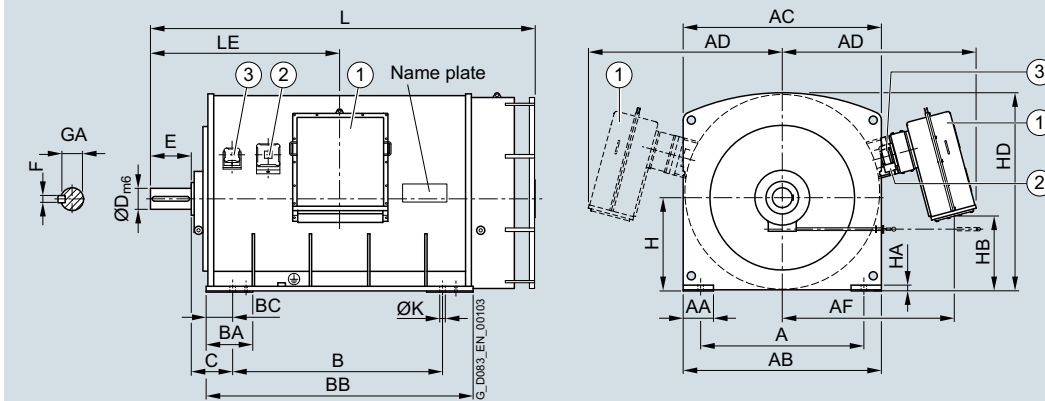
2) Only 50 Hz-operation.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Tube-cooled IC511

### Dimensional drawings (continued)



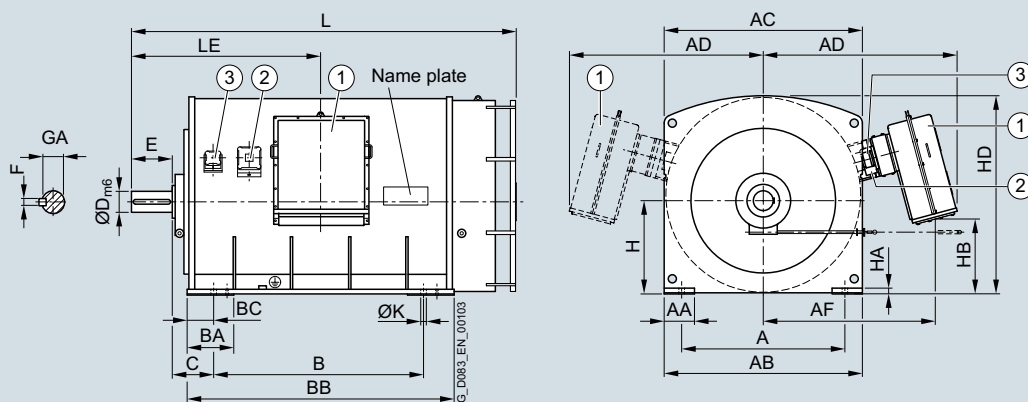
- ① Main terminal box, optionally with star point terminal box  
 ② Terminal box for therm. protection optionally  
 ③ Terminal box for space heater optionally

Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1MV.710-6BS...	315	120	210	32	127	710	50	650	1620	42	3100	1100	10300 <sup>1)</sup>
1MV.711-6BS...	315	120	210	32	127	710	50	650	1620	42	3100	1100	10600 <sup>1)</sup>
1MV.712-6BS...	315	120	210	32	127	710	50	650	1620	42	3100	1100	10900 <sup>1)</sup>
1MV.715-6BS...	315	120	210	32	127	710	50	650	1620	42	3300	1065	11700 <sup>1)</sup>
1MV.716-6BS...	315	120	210	32	127	710	50	650	1620	42	3300	1065	12300 <sup>1)</sup>
1MV.712-6BS...	315	160	300	40	169	710	50	650	1620	42	3100	1465	10500 <sup>1)</sup>
1MV.714-6BS...	315	160	300	40	169	710	50	650	1620	42	3100	1465	10900 <sup>1)</sup>
1MV.716-6BS...	315	160	300	40	169	710	50	650	1620	42	3300	1565	11600 <sup>1)</sup>
1MV.717-6BS...	315	160	300	40	169	710	50	650	1620	42	3300	1565	12300 <sup>1)</sup>
1MV.718-6BS...	315	160	300	40	169	710	50	650	1620	42	3500	1665	13200 <sup>1)</sup>
1PS.805-6BS...	355	200	350	45	210	800	50	670	1700	48	3630	1622	14700 <sup>1)</sup>
1PS.806-6BS...	355	200	350	45	210	800	50	670	1700	48	3630	1622	15100 <sup>1)</sup>
1PS.807-6BS...	355	200	350	45	210	800	50	670	1700	48	3630	1622	15600 <sup>1)</sup>
1MV.712-6BS...	315	200	350	45	210	710	50	650	1620	42	2800	1515	11100 <sup>1)</sup>
1MV.715-6BS...	315	200	350	45	210	710	50	650	1620	42	2800	1615	11900 <sup>1)</sup>
1MV.716-6BS...	315	200	350	45	210	710	50	650	1620	42	3000	1615	12300 <sup>1)</sup>
1MV.718-6BS...	315	200	350	45	210	710	50	520	1620	42	3000	1715	13000 <sup>1)</sup>
1PS.805-6BS...	355	200	350	45	210	800	50	670	1700	48	3330	1622	15200 <sup>1)</sup>
1PS.806-6BS...	355	200	350	45	210	800	50	670	1700	48	3330	1622	15800 <sup>1)</sup>
1PS.807-6BS...	355	200	350	45	210	800	50	670	1700	48	3330	1622	16300 <sup>1)</sup>
1PS.808-6BS...	355	200	350	45	210	800	50	670	1700	48	3330	1622	17400 <sup>1)</sup>
1PS.805-6BS...	355	200	350	45	210	800	50	740	1700	48	3330	1622	15600 <sup>1)</sup>
1PS.806-6BS...	355	200	350	45	210	800	50	740	1700	48	3330	1622	16100 <sup>1)</sup>
1PS.807-6BS...	355	200	350	45	210	800	50	740	1700	48	3330	1622	16700 <sup>1)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Tube-cooled IC511

**Dimensional drawings**

- ① Main terminal box, optionally with star point terminal box      ③ Terminal box for space heater optionally
- ② Terminal box for therm. protection optionally

Motor type	Type Loher	Dimensions in mm									
		A	AA	AB	AC	AD	AF	B	BA	BB	BC
<b>6.7 ... 11 kV, IM B3 type of construction, antifriction bearing, tube-cooled, flameproof</b>											
2-pole											
1MV.710-6BS.0-4AA0	DHR.-710AA-02A <sup>2)</sup>	1320	220	1520	1520	1575	1390	1600	400	1950	175
1MV.711-6BS.0-4AA0	DHR.-710AB-02A <sup>2)</sup>	1320	220	1520	1520	1575	1390	1600	400	1950	175
1MV.713-6BS.0-4AA0	DHR.-710BC-02A <sup>2)</sup>	1320	220	1520	1520	1575	1390	1800	400	2150	175
1MV.715-6BS.0-4AA0	DHR.-710BD-02A <sup>2)</sup>	1320	220	1520	1520	1575	1390	1800	400	2150	175
1MV.716-6BS.0-4AA0	DHR.-710BE-02A <sup>2)</sup>	1320	220	1520	1520	1575	1390	1800	400	2150	175
<b>6.7 ... 11 kV, IM B3 type of construction, antifriction bearing, tube-cooled, flameproof</b>											
4-pole											
1MV.711-6BS.0-4BA0	DHR.-710AB-04A	1320	220	1520	1520	1575	1390	1600	400	1950	175
1MV.712-6BS.0-4BA0	DHR.-710AC-04A	1320	220	1520	1520	1575	1390	1600	400	1950	175
1MV.715-6BS.0-4BA0	DHR.-710BD-04A	1320	220	1520	1520	1575	1390	1800	400	2150	175
1MV.716-6BS.0-4BA0	DHR.-710BE-04A	1320	220	1520	1520	1575	1390	1800	400	2150	175
1PS.802-6BS.0-4BA0	DHR.-800MB-04A	1400	260	1700	1700	1665	1475	1600	400	2090	228
1PS.805-6BS.0-4BA0	DHR.-800LA-04A	1400	260	1700	1700	1665	1475	1600	400	2290	228
1PS.806-6BS.0-4BA0	DHR.-800LB-04A	1400	260	1700	1700	1665	1475	1600	400	2290	228
<b>6.7 ... 11 kV, IM B3 type of construction, antifriction bearing, tube-cooled, flameproof</b>											
6-pole											
1MV.711-6BS.0-4CA0	DHR.-710AB-06A	1320	220	1520	1520	1575	1390	1600	400	1950	175
1MV.712-6BS.0-4CA0	DHR.-710AC-06A	1320	220	1520	1520	1575	1390	1600	400	1950	175
1MV.715-6BS.0-4CA0	DHR.-710BD-06A	1320	220	1520	1520	1575	1390	1800	400	2150	175
1MV.716-6BS.0-4CA0	DHR.-710BE-06A	1320	220	1520	1520	1575	1390	1800	400	2150	175
1PS.802-6BS.0-4CA0	DHR.-800MB-06A	1400	260	1700	1700	1665	1475	1600	400	2090	228
1PS.805-6BS.0-4CA0	DHR.-800LA-06A	1400	260	1700	1700	1665	1475	1800	400	2290	228
1PS.806-6BS.0-4CA0	DHR.-800LB-06A	1400	260	1700	1700	1665	1475	1800	400	2290	228
<b>6.7 ... 11 kV, IM B3 type of construction, antifriction bearing, tube-cooled, flameproof</b>											
8-pole											
1PS.805-6BS.0-4DA0	DHR.-800LA-08A	1400	260	1700	1700	1665	1475	1800	400	2290	228
1PS.806-6BS.0-4DA0	DHR.-800LB-08A	1400	260	1700	1700	1665	1475	1800	400	2290	228

1) Version with two terminal boxes: + 400 kg.

2) Only 50 Hz-operation.

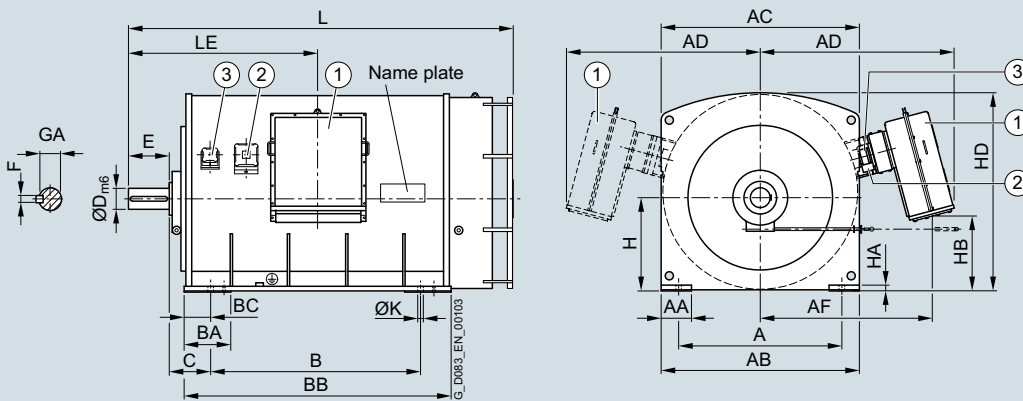


# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Tube-cooled IC511

### Dimensional drawings (continued)



- ① Main terminal box, optionally with star point terminal box      ③ Terminal box for space heater optionally  
 ② Terminal box for therm. protection optionally

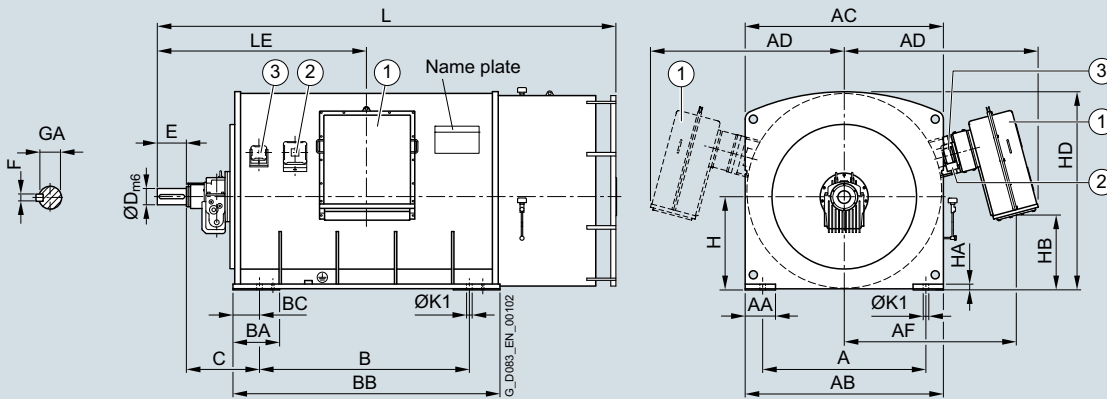
Motor type (repeated)	Dimensions in mm												Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	L <sup>1)</sup>	LE	
1MV.710-6BS...	315	120	210	32	127	710	50	515	1620	42	3100	1100	10500 <sup>1)</sup>
1MV.711-6BS...	315	120	210	32	127	710	50	515	1620	42	3100	1100	10800 <sup>1)</sup>
1MV.713-6BS...	315	120	210	32	127	710	50	515	1620	42	3300	1065	11200 <sup>1)</sup>
1MV.715-6BS...	315	120	210	32	127	710	50	515	1620	42	3300	1065	11900 <sup>1)</sup>
1MV.716-6BS...	315	120	210	32	127	710	50	515	1620	42	3300	1065	12500 <sup>1)</sup>
1MV.711-6BS...	315	160	300	40	169	710	50	515	1620	42	3100	1465	10600 <sup>1)</sup>
1MV.712-6BS...	315	160	300	40	169	710	50	515	1620	42	3100	1465	10900 <sup>1)</sup>
1MV.715-6BS...	315	160	300	40	169	710	50	515	1620	42	3300	1565	11400 <sup>1)</sup>
1MV.716-6BS...	315	160	300	40	169	710	50	515	1620	42	3300	1565	11800 <sup>1)</sup>
1PS.802-6BS...	355	200	350	45	210	800	50	645	1700	48	3430	1622	14300 <sup>1)</sup>
1PS.805-6BS...	355	200	350	45	210	800	50	645	1700	48	3630	1622	14800 <sup>1)</sup>
1PS.806-6BS...	355	200	350	45	210	800	50	645	1700	48	3630	1622	15200 <sup>1)</sup>
1MV.711-6BS...	315	200	350	45	210	710	50	515	1620	42	2800	1515	10900 <sup>1)</sup>
1MV.712-6BS...	315	200	350	45	210	710	50	515	1620	42	2800	1515	11300 <sup>1)</sup>
1MV.715-6BS...	315	200	350	45	210	710	50	515	1620	42	3000	1615	12100 <sup>1)</sup>
1MV.716-6BS...	315	200	350	45	210	710	50	515	1620	42	3000	1615	12500 <sup>1)</sup>
1PS.802-6BS...	355	200	350	45	210	800	50	645	1700	48	3130	1622	14300 <sup>1)</sup>
1PS.805-6BS...	355	200	350	45	210	800	50	645	1700	48	3330	1622	15300 <sup>1)</sup>
1PS.806-6BS...	355	200	350	45	210	800	50	645	1700	48	3330	1622	15900 <sup>1)</sup>
1PS.805-6BS...	355	200	350	45	210	800	50	645	1700	48	3330	1622	15700 <sup>1)</sup>
1PS.806-6BS...	355	200	350	45	210	800	50	645	1700	48	3330	1622	16200 <sup>1)</sup>

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Horizontal motors

Tube-cooled IC511

## Dimensional drawings



- ① Main terminal box, optionally with star point terminal box      ③ Terminal box for space heater optionally  
 ② Terminal box for therm. protection optionally

Motor type	Type Loher	Dimensions in mm										
		A	AA	AB	AC	AD	AF	B	BA	BB	BC	
<b>1.0 ... 6.6 kV, IM B3 type of construction, sleeve bearing, tube-cooled, flameproof</b>												
2-pole												
1MV4710-6BS.0-4AD0	DHQL-710AA-02A	1320	220	1520	1520	1490	1320	1600	400	1950	175	
1MV4711-6BS.0-4AD0	DHQL-710AB-02A	1320	220	1520	1520	1490	1320	1600	400	1950	175	
1MV4712-6BS.0-4AD0	DHQL-710AC-02A	1320	220	1520	1520	1490	1320	1600	400	1950	175	
1MV4715-6BS.0-4AD0	DHQL-710BD-02A	1320	220	1520	1520	1490	1320	1800	400	2150	175	
1MV4716-6BS.0-4AD0	DHQL-710BE-02A	1320	220	1520	1520	1490	1320	1800	400	2150	175	
1PS4802-6BS.0-4AD0	DHQL-800MB-02A <sup>2)</sup>	1400	260	1700	1700	1760	1595	1600	400	2090	228	
1PS4805-6BS.0-4AD0	DHQL-800LA-02A <sup>2)</sup>	1400	260	1700	1700	1760	1595	1800	400	2290	228	
1PS4806-6BS.0-4AD0	DHQL-800LB-02A <sup>2)</sup>	1400	260	1700	1700	1760	1595	1800	400	2290	228	
1PS4807-6BS.0-4AD0	DHQL-800LC-02A <sup>2)</sup>	1400	260	1700	1700	1760	1595	1800	400	2290	228	
<b>1.0 ... 6.6 kV, IM B3 type of construction, sleeve bearing, tube-cooled, flameproof</b>												
4-pole												
1MV4712-6BS.0-4BD0	DHQL-710AC-04A	1320	220	1520	1520	1490	1320	1600	400	1950	175	
1MV4714-6BS.0-4BD0	DHQL-710AD-04A	1320	220	1520	1520	1490	1320	1600	400	1950	175	
1MV4716-6BS.0-4BD0	DHQL-710BE-04A	1320	220	1520	1520	1490	1320	1800	400	2150	175	
1MV4717-6BS.0-4BD0	DHQL-710BF-04A	1320	220	1520	1520	1490	1320	1800	400	2150	175	
1PS4805-6BS.0-4BD0	DHQL-800LA-04A	1400	260	1700	1700	1760	1595	1800	400	2290	228	
1PS4806-6BS.0-4BD0	DHQL-800LB-04A	1400	260	1700	1700	1760	1595	1800	400	2290	228	
1PS4807-6BS.0-4BD0	DHQL-800LC-04A	1400	260	1700	1700	1760	1595	1800	400	2290	228	
<b>1.0 ... 6.6 kV, IM B3 type of construction, sleeve bearing, tube-cooled, flameproof</b>												
6-pole												
1MV4712-6BS.0-4CD0	DHQL-710AC-06A	1320	220	1520	1520	1490	1320	1600	400	1950	175	
1MV4715-6BS.0-4CD0	DHQL-710BD-06A	1320	220	1520	1520	1490	1320	1800	400	2150	175	
1MV4716-6BS.0-4CD0	DHQL-710BE-06A	1320	220	1520	1520	1490	1320	1800	400	2150	175	
1MV4718-6BS.0-4CD0	DHQL-710CG-06A	1320	220	1520	1520	1490	1320	2000	400	2350	175	
1PS4805-6BS.0-4CD0	DHQL-800LA-06A	1400	260	1700	1700	1760	1595	1800	400	2290	228	
1PS4806-6BS.0-4CD0	DHQL-800LB-06A	1400	260	1700	1700	1760	1595	1800	400	2290	228	
1PS4807-6BS.0-4CD0	DHQL-800LC-06A	1400	260	1700	1700	1760	1595	1800	400	2290	228	
1PS4808-6BS.0-4CD0	DHQL-800LX-06A	1400	260	1700	1700	1760	1595	1800	400	2290	228	
<b>1.0 ... 6.6 kV, IM B3 type of construction, sleeve bearing, tube-cooled, flameproof</b>												
8-pole												
1PS4805-6BS.0-4DD0	DHQL-800LA-08A	1400	260	1700	1700	1430	1270	1800	400	2290	228	
1PS4806-6BS.0-4DD0	DHQL-800LB-08A	1400	260	1700	1700	1430	1270	1800	400	2290	228	
1PS4807-6BS.0-4DD0	DHQL-800LC-08A	1400	260	1700	1700	1430	1270	1800	400	2290	228	

<sup>1)</sup> Version with two terminal boxes: + 200 kg.

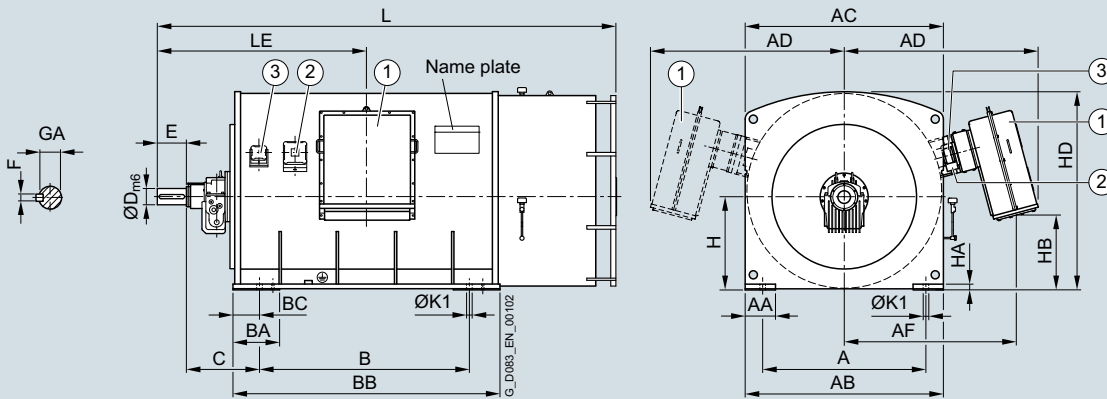
<sup>2)</sup> 60 Hz operation on request.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Tube-cooled IC511

## Dimensional drawings (continued)



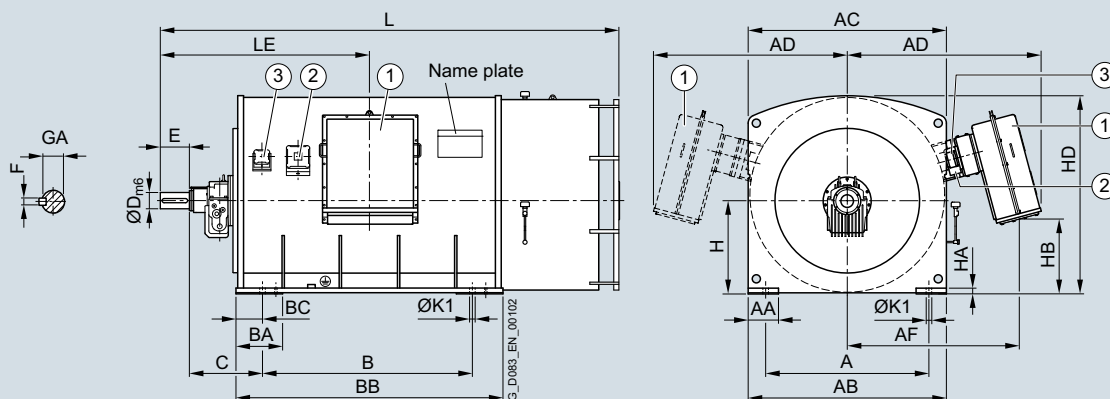
- ① Main terminal box, optionally with star point terminal box      ③ Terminal box for space heater optionally
- ② Terminal box for therm. protection optionally

Motor type (repeated)	Dimensions in mm													Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	K1	L <sup>1)</sup>	LE	
1MV4710-6BS...	670	120	210	32	127	710	50	650	1620	42	72	3550	1485	10200 <sup>1)</sup>
1MV4711-6BS...	670	120	210	32	127	710	50	650	1620	42	72	3550	1485	10600 <sup>1)</sup>
1MV4712-6BS...	670	120	210	32	127	710	50	650	1620	42	72	3550	1485	11000 <sup>1)</sup>
1MV4715-6BS...	670	120	210	32	127	710	50	650	1620	42	72	3750	1385	11500 <sup>1)</sup>
1MV4716-6BS...	670	120	210	32	127	710	50	650	1620	42	72	3750	1385	12000 <sup>1)</sup>
1PS4802-6BS...	630	140	250	36	148	800	50	670	1700	48	84	3750	1798	15000 <sup>1)</sup>
1PS4805-6BS...	630	140	250	36	148	800	50	670	1700	48	84	3950	1798	15800 <sup>1)</sup>
1PS4806-6BS...	630	140	250	36	148	800	50	670	1700	48	84	3950	1798	16000 <sup>1)</sup>
1PS4807-6BS...	630	140	250	36	148	800	50	670	1700	48	84	3950	1798	17100 <sup>1)</sup>
1MV4712-6BS...	670	160	300	40	169	710	50	650	1620	42	72	3550	1730	11600 <sup>1)</sup>
1MV4714-6BS...	670	160	300	40	169	710	50	650	1620	42	72	3550	1730	12000 <sup>1)</sup>
1MV4716-6BS...	670	160	300	40	169	710	50	650	1620	42	72	3750	1830	12500 <sup>1)</sup>
1MV4717-6BS...	670	160	300	40	169	710	50	650	1620	42	72	3750	1830	12800 <sup>1)</sup>
1PS4805-6BS...	710	200	350	45	210	800	50	670	1700	48	84	4270	1978	16200 <sup>1)</sup>
1PS4806-6BS...	710	200	350	45	210	800	50	670	1700	48	84	4270	1978	16500 <sup>1)</sup>
1PS4807-6BS...	710	200	350	45	210	800	50	670	1700	48	84	4270	1978	17100 <sup>1)</sup>
1MV4712-6BS...	670	160	300	40	169	710	50	650	1620	42	72	3300	1680	10600 <sup>1)</sup>
1MV4715-6BS...	670	160	300	40	169	710	50	650	1620	42	72	3500	1780	11400 <sup>1)</sup>
1MV4716-6BS...	670	160	300	40	169	710	50	650	1620	42	72	3500	1780	12200 <sup>1)</sup>
1MV4718-6BS...	670	160	300	40	169	710	50	650	1620	42	72	3700	1880	12800 <sup>1)</sup>
1PS4805-6BS...	710	200	350	45	210	800	50	670	1700	48	84	3970	1978	15500 <sup>1)</sup>
1PS4806-6BS...	710	200	350	45	210	800	50	670	1700	48	84	3970	1978	16100 <sup>1)</sup>
1PS4807-6BS...	710	200	350	45	210	800	50	670	1700	48	84	3970	1978	16600 <sup>1)</sup>
1PS4808-6BS...	710	200	350	45	210	800	50	670	1700	48	84	3970	1978	17400 <sup>1)</sup>
1PS4805-6BS...	710	200	350	45	210	800	50	740	1700	48	84	3970	1978	15900 <sup>1)</sup>
1PS4806-6BS...	710	200	350	45	210	800	50	740	1700	48	84	3970	1978	16400 <sup>1)</sup>
1PS4807-6BS...	710	200	350	45	210	800	50	740	1700	48	84	3970	1978	17000 <sup>1)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors

Tube-cooled IC511

**Dimensional drawings**

- ① Main terminal box, optionally with star point terminal box      ③ Terminal box for space heater optionally  
 ② Terminal box for therm. protection optionally

Motor type	Type Loher	Dimensions in mm									
		A	AA	AB	AC	AD	AF	B	BA	BB	BC
<b>6.7 ... 11 kV, IM B3 type of construction, sleeve bearing, tube-cooled, flameproof</b>											
2-pole											
1MV4710-6BS.0-4AD0	DHQL-710AA-02A	1320	220	1520	1520	1575	1390	1600	400	1950	175
1MV4711-6BS.0-4AD0	DHQL-710AB-02A	1320	220	1520	1520	1575	1390	1600	400	1950	175
1MV4713-6BS.0-4AD0	DHQL-710BC-02A	1320	220	1520	1520	1575	1390	1800	400	2150	175
1MV4715-6BS.0-4AD0	DHQL-710BD-02A	1320	220	1520	1520	1575	1390	1800	400	2150	175
1MV4716-6BS.0-4AD0	DHQL-710BE-02A	1320	220	1520	1520	1575	1390	1800	400	2150	175
<b>6.7 ... 11 kV, IM B3 type of construction, sleeve bearing, tube-cooled, flameproof</b>											
4-pole											
1MV4711-6BS.0-4BD0	DHQL-710AB-04A	1320	220	1520	1520	1575	1390	1600	400	1950	175
1MV4712-6BS.0-4BD0	DHQL-710AC-04A	1320	220	1520	1520	1575	1390	1600	400	1950	175
1MV4715-6BS.0-4BD0	DHQL-710BD-04A	1320	220	1520	1520	1575	1390	1800	400	2150	175
1MV4716-6BS.0-4BD0	DHQL-710BE-04A	1320	220	1520	1520	1575	1390	1800	400	2150	175
<b>6.7 ... 11 kV, IM B3 type of construction, sleeve bearing, tube-cooled, flameproof</b>											
6-pole											
1MV4711-6BS.0-4CD0	DHQL-710AB-06A	1320	220	1520	1520	1575	1390	1600	400	1950	175
1MV4712-6BS.0-4CD0	DHQL-710AC-06A	1320	220	1520	1520	1575	1390	1600	400	1950	175
1MV4715-6BS.0-4CD0	DHQL-710BD-06A	1320	220	1520	1520	1575	1390	2000	400	2150	175
1MV4716-6BS.0-4CD0	DHQL-710BE-06A	1320	220	1520	1520	1575	1390	2000	400	2150	175

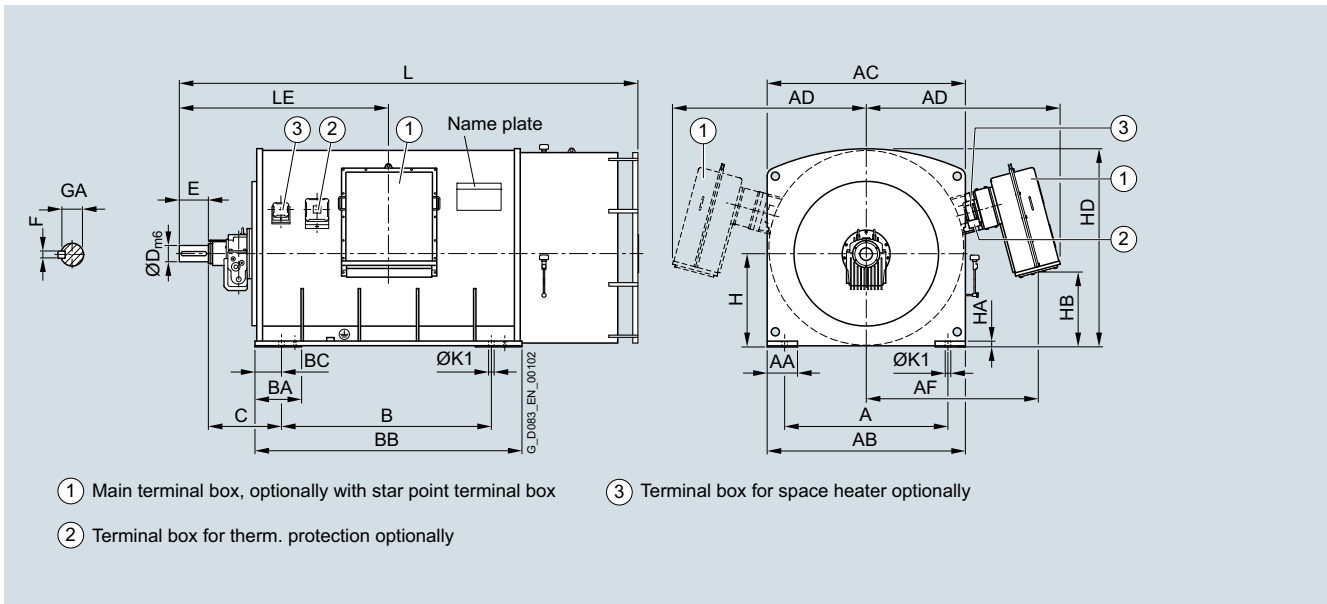
1) Version with two terminal boxes: + 400 kg.

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Horizontal motors

Tube-cooled IC511

### Dimensional drawings (continued)

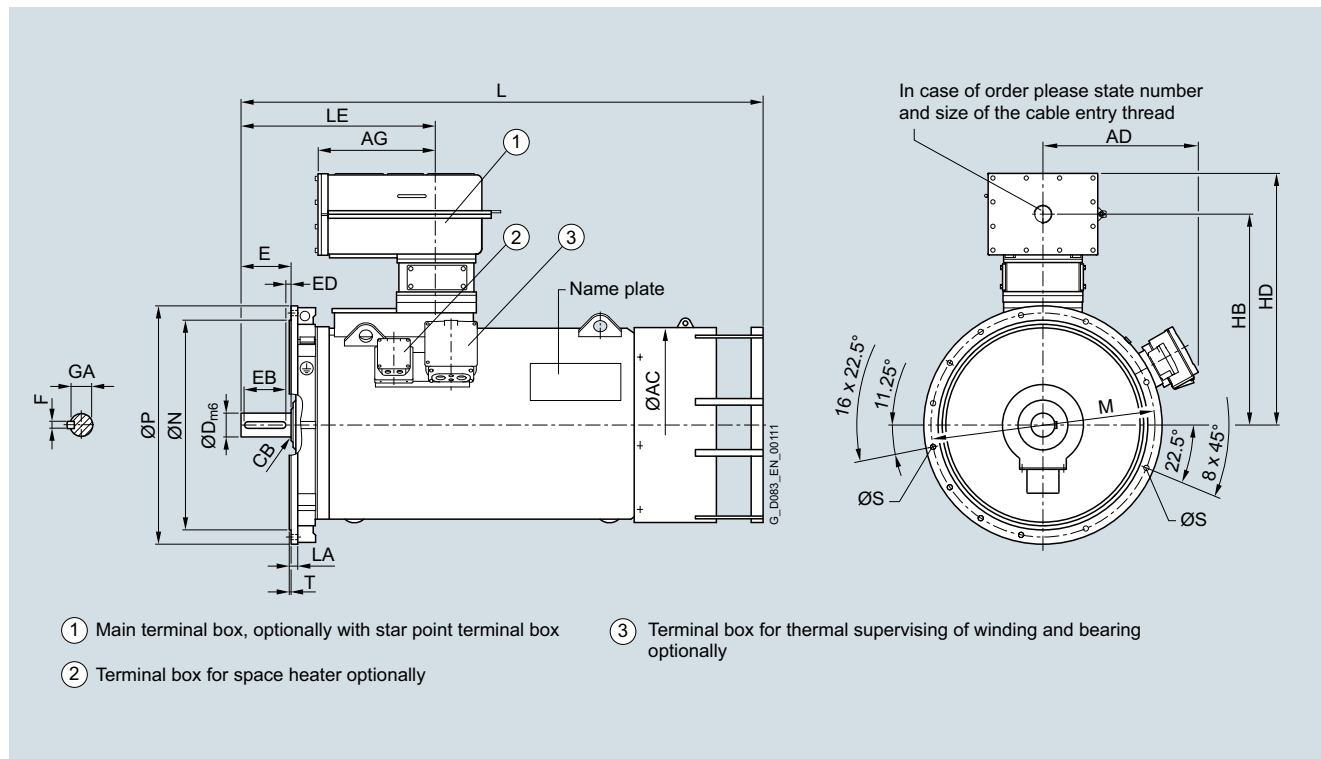


Motor type (repeated)	Dimensions in mm													Weight ±10 % kg
	C	D	E	F	GA	H	HA	HB	HD	K	K1	L <sup>1)</sup>	LE	
1MV4710-6BS...	670	120	210	32	127	710	50	515	1620	42	72	3550	1485	10400 <sup>1)</sup>
1MV4711-6BS...	670	120	210	32	127	710	50	515	1620	42	72	3550	1485	10800 <sup>1)</sup>
1MV4713-6BS...	670	120	210	32	127	710	50	515	1620	42	72	3750	1385	11200 <sup>1)</sup>
1MV4715-6BS...	670	120	210	32	127	710	50	515	1620	42	72	3750	1385	11700 <sup>1)</sup>
1MV4716-6BS...	670	120	210	32	127	710	50	515	1620	42	72	3750	1385	12200 <sup>1)</sup>
1MV4711-6BS...	670	160	300	40	169	710	50	515	1620	42	72	3550	1730	11200 <sup>1)</sup>
1MV4712-6BS...	670	160	300	40	169	710	50	515	1620	42	72	3550	1730	11700 <sup>1)</sup>
1MV4715-6BS...	670	160	300	40	169	710	50	515	1620	42	72	3750	1830	12200 <sup>1)</sup>
1MV4716-6BS...	670	160	300	40	169	710	50	515	1620	42	72	3750	1830	12700 <sup>1)</sup>
1MV4711-6BS...	670	160	300	40	169	710	50	515	1620	42	72	3300	1680	10400 <sup>1)</sup>
1MV4712-6BS...	670	160	300	40	169	710	50	515	1620	42	72	3300	1680	10800 <sup>1)</sup>
1MV4715-6BS...	670	160	300	40	169	710	50	515	1620	42	72	3500	1780	11600 <sup>1)</sup>
1MV4716-6BS...	670	160	300	40	169	710	50	515	1620	42	72	3500	1780	12400 <sup>1)</sup>

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Vertical motors

Rib-cooled IC411, 2-pole motors

**Dimensional drawings**

Motor type	Type Loher	Number of poles	Dimensions in mm									
			AC	AG <sup>1)</sup>	AG <sup>2)</sup>	CB	D	DB	E	EB	ED	F
<b>6.6 kV, 50/60 Hz, IM V1 type of construction, roller bearing, rib-cooled, flameproof</b>												
<b>2-pole</b>												
1PS.35.-6BJ.4-.AA0	DHS.-355..-02M	2	740	500	511	1	75	M20	140	125	7.5	20
1PS.40.-6BJ.4-.AA0	DHS.-400..-02M	2	820	500	511	1	80	M20	170	140	15	22
1PS.45.-6BJ.4-.AA0	DHS.-450..-02M	2	920	500	511	1	85	M20	170	140	15	22
1PS.50.-6BJ.4-.AA0	DHS.-500..-02M	2	1015	500	511	1	90	M24	170	140	15	25
1PS.56.-6BJ.4-.AA0	DHS.-560..-02M	2	1165	500	511	2.5	100	M24	210	180	15	28

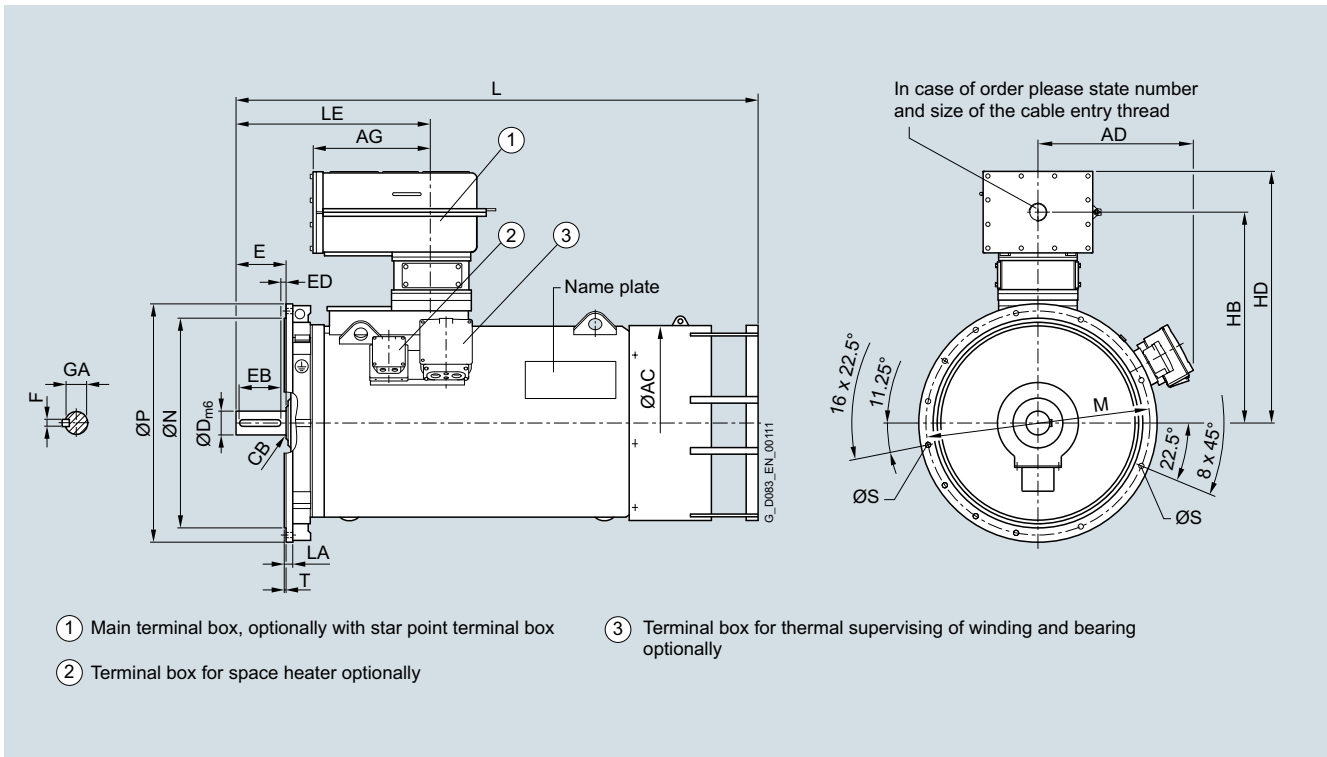
1) Terminal box: E Ex e II

2) Terminal box: E Ex d IIC

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Vertical motors

Rib-cooled IC411, 2-pole motors

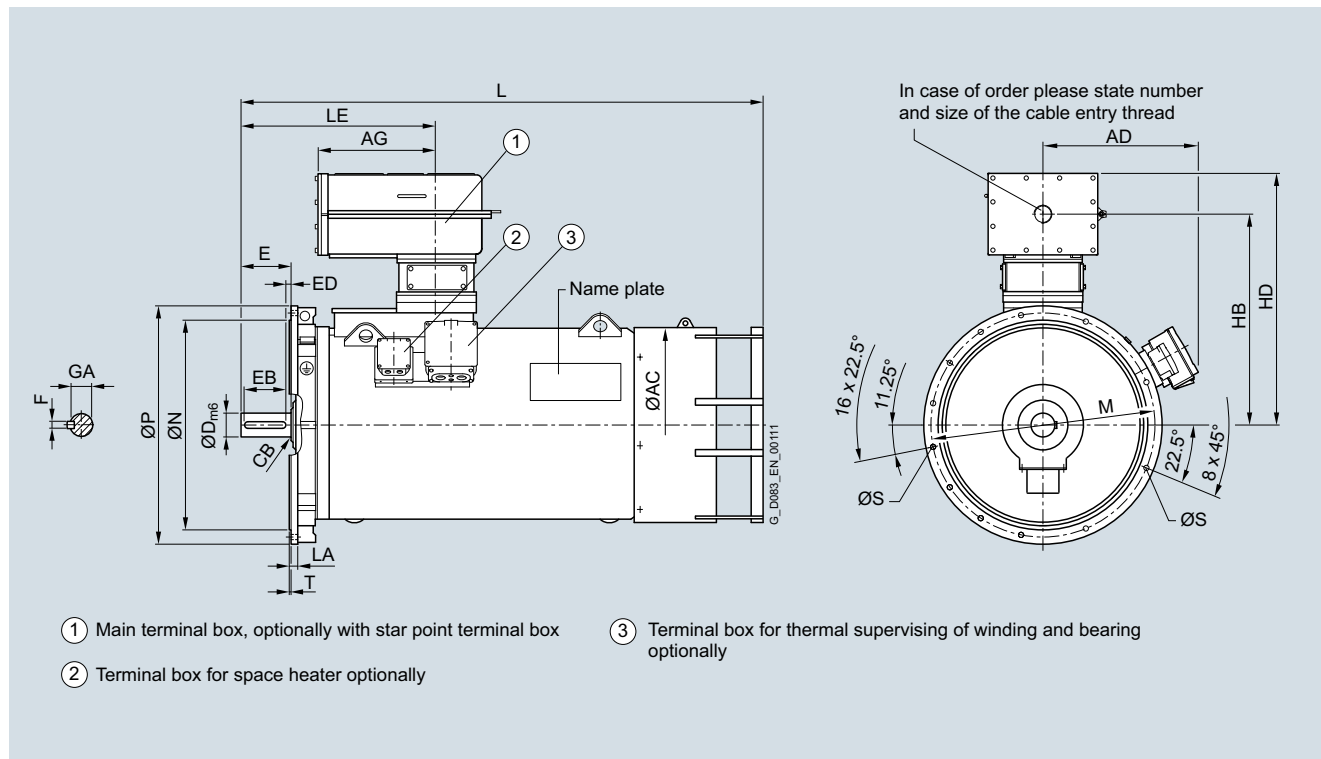
**Dimensional drawings** (continued)

Motor type (repeated)	Dimensions in mm									Shaft end (acc. to DIN 748)			
	GA	HB <sup>1)</sup>	HB <sup>2)</sup>	HD <sup>1)</sup>	HD <sup>2)</sup>	L	LA	LE	M	N	P	S	T
1PS.35.-6BJ...	79.5	860	675	1035	855	2016	25	750	740	680	800	24	6
1PS.40.-6BJ...	85	885	695	1055	880	2131	28	780	940	880	1000	24	6
1PS.45.-6BJ...	90	855	770	1130	955	2251	30	780	1080	1000	1150	28	6
1PS.50.-6BJ...	95	1010	820	1180	1005	2421	30	780	1180	1120	1250	28	7
1PS.56.-6BJ...	106	1075	885	1245	1070	2650	35	840	1320	1250	1400	28	8

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Vertical motors

Rib-cooled IC416

**Dimensional drawings**

Motor type	Type Loher	Number of poles	Dimensions in mm									
			AC	AG <sup>1)</sup>	AG <sup>2)</sup>	CB	D	DB	E	EB	ED	F
<b>6.6 kV, 50/60 Hz, IM V1 type of construction, roller bearing, rib-cooled, flameproof</b>												
4 ... 12-pole												
1PS.35.-6BJ.4-...A0	DHS.-355.-...M	4-12	740	500	511	2.5	90	M24	170	140	15	25
1PS.40.-6BJ.4-...A0	DHS.-400.-...M	4-12	820	500	511	2.5	100	M24	210	180	15	28
1PS.45.-6BJ.4-...A0	DHS.-450.-...M	4-12	920	500	511	2.5	110	M24	210	180	15	28
1PS.50.-6BJ.4-...A0	DHS.-500.-...M	4-12	1015	500	511	2.5	120	M24	210	180	15	32
1PS.56.-6BJ.4-...A0	DHS.-560.-...M	4-12	1165	500	511	2.5	140	M30	250	220	15	36

1) Terminal box: E Ex e II

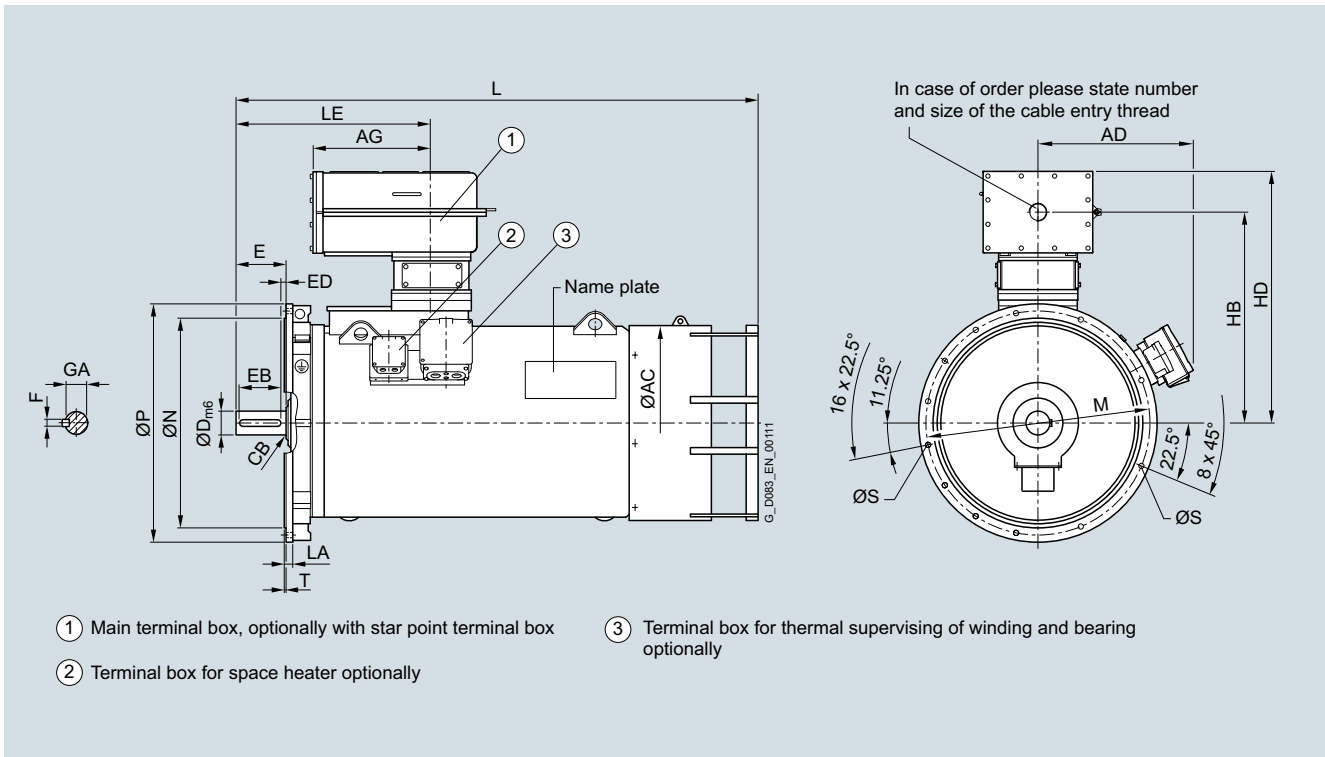
2) Terminal box: E Ex d IIC



**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Vertical motors

Rib-cooled IC416

**Dimensional drawings** (continued)

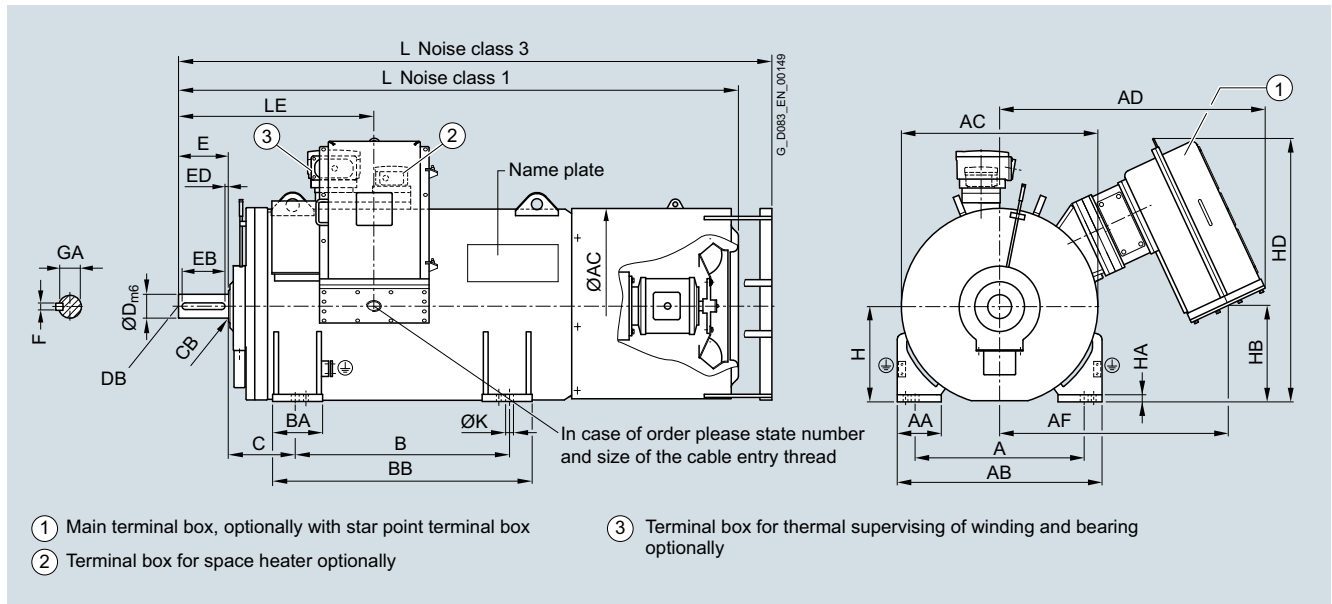
Motor type (repeated)	Dimensions in mm									Shaft end (acc. to DIN 748)			
	GA	HB <sup>1)</sup>	HB <sup>2)</sup>	HD <sup>1)</sup>	HD <sup>2)</sup>	L	LA	LE	M	N	P	S	T
1PS.35.-6BJ...	95	860	675	1035	855	2066	25	780	740	680	800	24	6
1PS.40.-6BJ...	106	885	695	1055	880	2191	28	820	940	880	1000	24	6
1PS.45.-6BJ...	116	955	770	1130	955	2346	30	820	1080	1000	1150	28	6
1PS.50.-6BJ...	127	1010	820	1180	1005	2541	30	820	1180	1120	1250	28	7
1PS.56.-6BJ...	148	1075	885	1245	1070	2815	35	880	1320	1250	1400	28	8

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Force-ventilated motors

Rib-cooled IC416

## Dimensional drawings



Motor type	Type Loher	Dimensions in mm										
		A	AA	AB	AC	AD <sup>4)</sup>	AD <sup>5)</sup>	AF <sup>4)</sup>	AF <sup>5)</sup>	B	BA	BB
<b>3 ... 6.6 kV, 50/60 Hz, IM B3 type of construction, roller bearing, rib-cooled, flameproof</b>												
2-pole												
1PS . 357-6BL . 0- . AA0	DHU.-355LM-02A	630	140	780	745	1065	860	910	745	800	210	950
1PS . 358-6BL . 0- . AA0	DHU.-355LM-02A	630	140	780	745	1065	860	910	745	800	210	950
1PS . 402-6BL . 0- . AA0	DHU.-400LK-02A	710	185	860	825	1115	910	960	795	900	210	1090
1PS . 403-6BL . 0- . AA0	DHU.-400LK-02A	710	185	860	825	1115	910	960	795	900	210	1090
1PS . 405-6BL . 0- . AA0	DHU.-400LM-02A	710	185	860	825	1115	910	960	795	900	210	1090
1PS . 406-6BL . 0- . AA0	DHU.-400LM-02A	710	185	860	825	1115	910	960	795	900	210	1090
1PS . 455-6BL . 0- . AA0	DHU.-450LK-02A	800	230	900	925	1145	940	990	830	1000	260	1260
1PS . 457-6BL . 0- . AA0	DHU.-450LK-02A	800	230	900	925	1145	940	990	830	1000	260	1260
1PS . 458-6BL . 0- . AA0	DHU.-450LM-02A	800	230	900	925	1145	940	990	830	1000	260	1260
1PS . 505-6BL . 0- . AA0 <sup>3)</sup>	DHU.-500LK-02A <sup>3)</sup>	900	220	1030	1025	1210	1000	1050	885	1120	280	1400
1PS . 506-6BL . 0- . AA0 <sup>3)</sup>	DHU.-500LK-02A <sup>3)</sup>	900	220	1030	1025	1210	1000	1050	885	1120	280	1400
1PS . 507-6BL . 0- . AA0 <sup>3)</sup>	DHU.-500LM-02A <sup>3)</sup>	900	220	1030	1025	1210	1000	1050	885	1120	280	1400
1PS . 508-6BL . 0- . AA0 <sup>3)</sup>	DHU.-500LM-02A <sup>3)</sup>	900	220	1030	1025	1210	1000	1050	885	1120	280	1400
1PS . 565-6BL . 0- . AA0 <sup>3)</sup>	DHU.-560LK-02A <sup>3)</sup>	1000	250	1150	1165	1335	1135	1180	1015	1250	300	1550
1PS . 566-6BL . 0- . AA0 <sup>3)</sup>	DHU.-560LK-02A <sup>3)</sup>	1000	250	1150	1165	1335	1135	1180	1015	1250	300	1550
1PS . 567-6BL . 0- . AA0 <sup>3)</sup>	DHU.-560LM-02A <sup>3)</sup>	1000	250	1150	1165	1335	1135	1180	1015	1250	300	1550
1PS . 568-6BL . 0- . AA0 <sup>3)</sup>	DHU.-560LM-02A <sup>3)</sup>	1000	250	1150	1165	1335	1135	1180	1015	1250	300	1550

1) Terminal box: E Ex e II

2) Terminal box: E Ex d IIC

3) Noise class 1

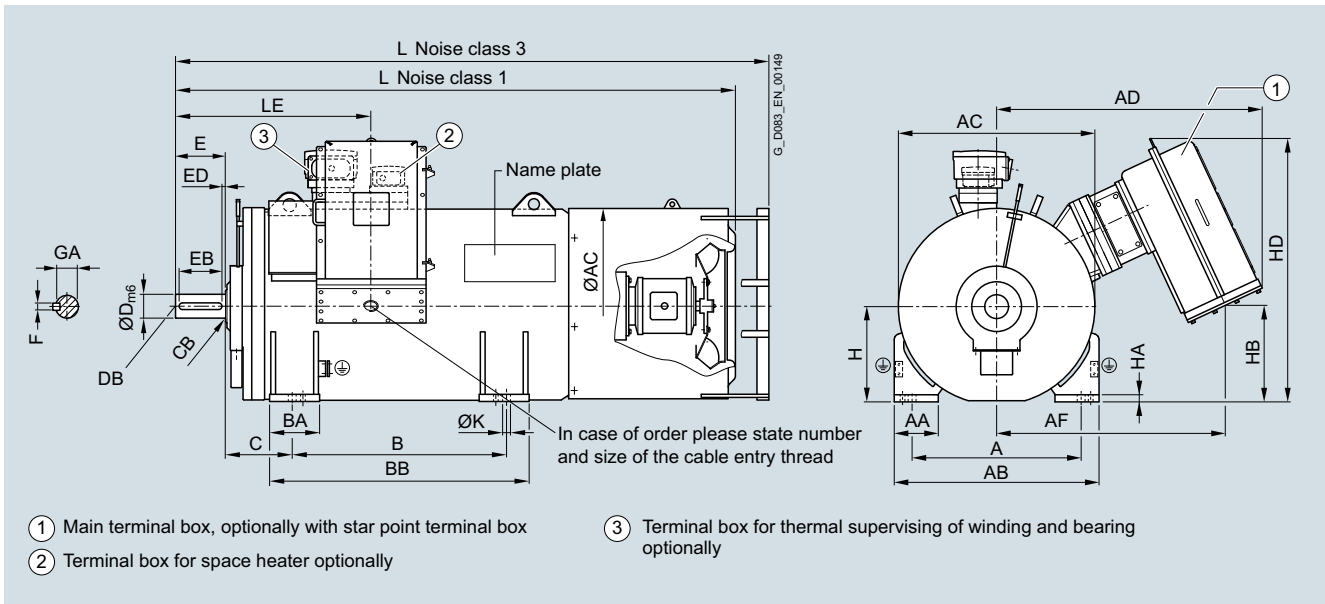
4) Noise class 3

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Force-ventilated motors

Rib-cooled IC416

## Dimensional drawings (continued)



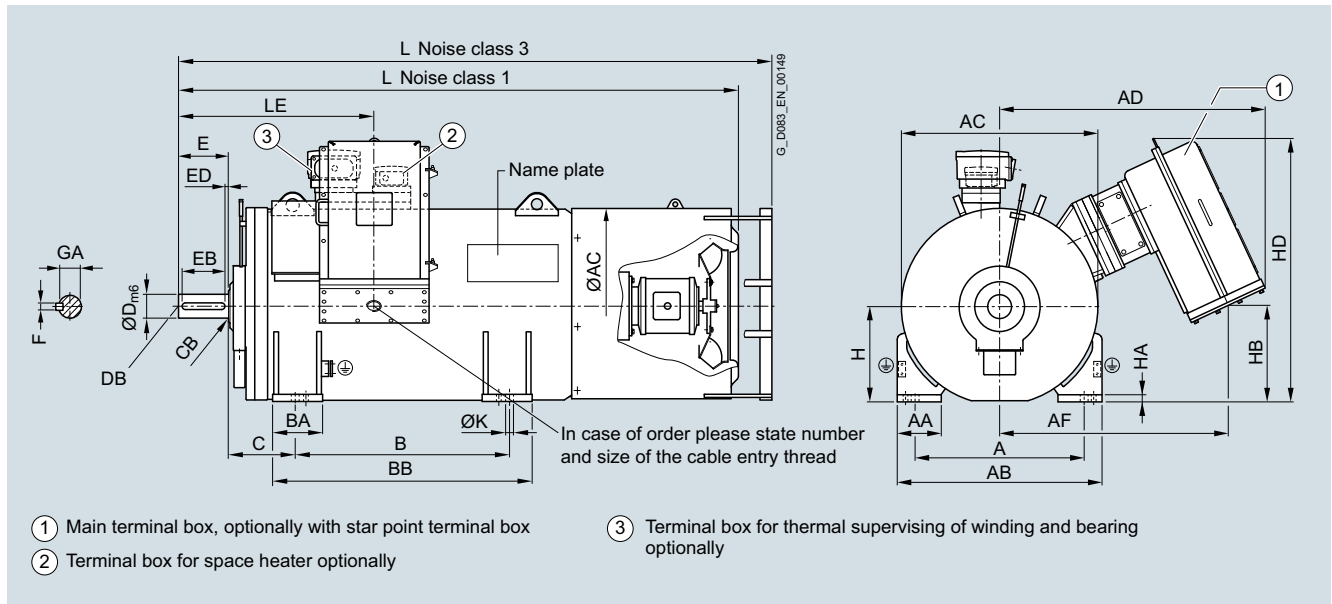
Motor type (repeated)	Dimensions in mm											Shaft end (acc. to DIN 748)			
	C	H	HA	HB <sup>1)</sup>	HB <sup>2)</sup>	HD <sup>1)</sup>	HD <sup>2)</sup>	K	L <sup>3)</sup>	L <sup>4)</sup>	LE	D	E	F	GA
1PS . 357-6BL...	254	355	35	390	300	1095	1015	33	2195	2340	750	75	140	20	79.5
1PS . 358-6BL...	254	355	35	390	300	1095	1015	33	2195	2340	750	75	140	20	79.5
1PS . 402-6BL...	280	400	30	405	315	1110	1030	33	2310	2455	780	80	170	22	85
1PS . 403-6BL...	280	400	30	405	315	1110	1030	33	2310	2455	780	80	170	22	85
1PS . 405-6BL...	280	400	30	405	315	1110	1030	33	2310	2455	780	80	170	22	85
1PS . 406-6BL...	280	400	30	405	315	1110	1030	33	2310	2455	780	80	170	22	85
1PS . 455-6BL...	315	450	30	570	475	1265	1185	39	2430	2575	780	85	170	22	90
1PS . 457-6BL...	315	450	30	570	475	1265	1185	39	2430	2575	780	85	170	22	90
1PS . 458-6BL...	315	450	30	570	475	1265	1185	39	2430	2575	780	85	170	22	90
1PS . 505-6BL...	335	500	40	600	505	1305	1220	39	2600	2745	780	90	170	25	95
1PS . 506-6BL...	335	500	40	600	505	1305	1220	39	2600	2745	780	90	170	25	95
1PS . 507-6BL...	335	500	40	600	505	1305	1220	39	2600	2745	780	90	170	25	95
1PS . 508-6BL...	335	500	40	600	505	1305	1220	39	2600	2745	780	90	170	25	95
1PS . 565-6BL...	355	560	40	500	420	1365	1335	42	2920	3070	840	100	210	28	106
1PS . 566-6BL...	355	560	40	500	420	1365	1335	42	2920	3070	840	100	210	28	106
1PS . 567-6BL...	355	560	40	500	420	1365	1335	42	2920	3070	840	100	210	28	106
1PS . 568-6BL...	355	560	40	500	420	1365	1335	42	2920	3070	840	100	210	28	106

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Force-ventilated motors

Rib-cooled IC416

## Dimensional drawings



Motor type	Type Loher	Dimensions in mm										
		A	AA	AB	AC	AD <sup>1)</sup>	AD <sup>2)</sup>	AF <sup>1)</sup>	AF <sup>2)</sup>	B	BA	BB
<b>3 ... 6.6 kV, 50/60 Hz, IM B3 type of construction, roller bearing, rib-cooled, flameproof</b>												
4 ... 16-pole												
1PS . 357-6BL . 0- . . A0	DHU.-355LM-..A	630	140	780	745	1065	860	910	745	800	210	950
1PS . 358-6BL . 0- . . A0	DHU.-355LM-..A	630	140	780	745	1065	860	910	745	800	210	950
1PS . 402-6BL . 0- . . A0	DHU.-400LK-..A	710	185	860	825	1115	910	960	795	900	210	1090
1PS . 403-6BL . 0- . . A0	DHU.-400LK-..A	710	185	860	825	1115	910	960	795	900	210	1090
1PS . 405-6BL . 0- . . A0	DHU.-400LM-..A	710	185	860	825	1115	910	960	795	900	210	1090
1PS . 406-6BL . 0- . . A0	DHU.-400LM-..A	710	185	860	825	1115	910	960	795	900	210	1090
1PS . 455-6BL . 0- . . A0	DHU.-450LK-..A	800	230	900	925	1145	940	990	830	1000	260	1260
1PS . 457-6BL . 0- . . A0	DHU.-450LK-..A	800	230	900	925	1145	940	990	830	1000	260	1260
1PS . 458-6BL . 0- . . A0	DHU.-450LM-..A	800	230	900	925	1145	940	990	830	1000	260	1260
1PS . 505-6BL . 0- . . A0	DHU.-500LK-..A	900	220	1030	1025	1210	1000	1050	885	1120	280	1400
1PS . 506-6BL . 0- . . A0	DHU.-500LK-..A	900	220	1030	1025	1210	1000	1050	885	1120	280	1400
1PS . 507-6BL . 0- . . A0	DHU.-500LM-..A	900	220	1030	1025	1210	1000	1050	885	1120	280	1400
1PS . 508-6BL . 0- . . A0	DHU.-500LM-..A	900	220	1030	1025	1210	1000	1050	885	1120	280	1400
1PS . 565-6BL . 0- . . A0	DHU.-560LK-..A	1000	250	1150	1165	1335	1135	1180	1015	1250	300	1550
1PS . 566-6BL . 0- . . A0	DHU.-560LK-..A	1000	250	1150	1165	1335	1135	1180	1015	1250	300	1550
1PS . 567-6BL . 0- . . A0	DHU.-560LM-..A	1000	250	1150	1165	1335	1135	1180	1015	1250	300	1550
1PS . 568-6BL . 0- . . A0	DHU.-560LM-..A	1000	250	1150	1165	1335	1135	1180	1015	1250	300	1550

1) Terminal box: E Ex e II

2) Terminal box: E Ex d IIC

3) Noise class 1

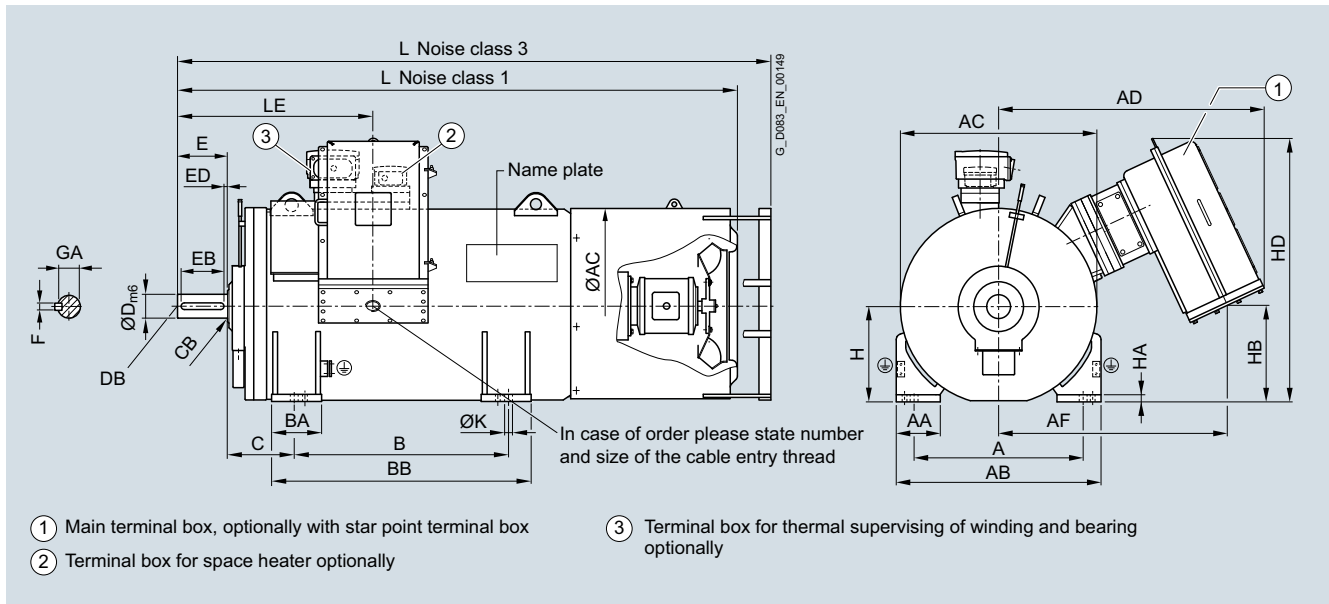
4) Noise class 3

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Force-ventilated motors

Rib-cooled IC416

## Dimensional drawings (continued)



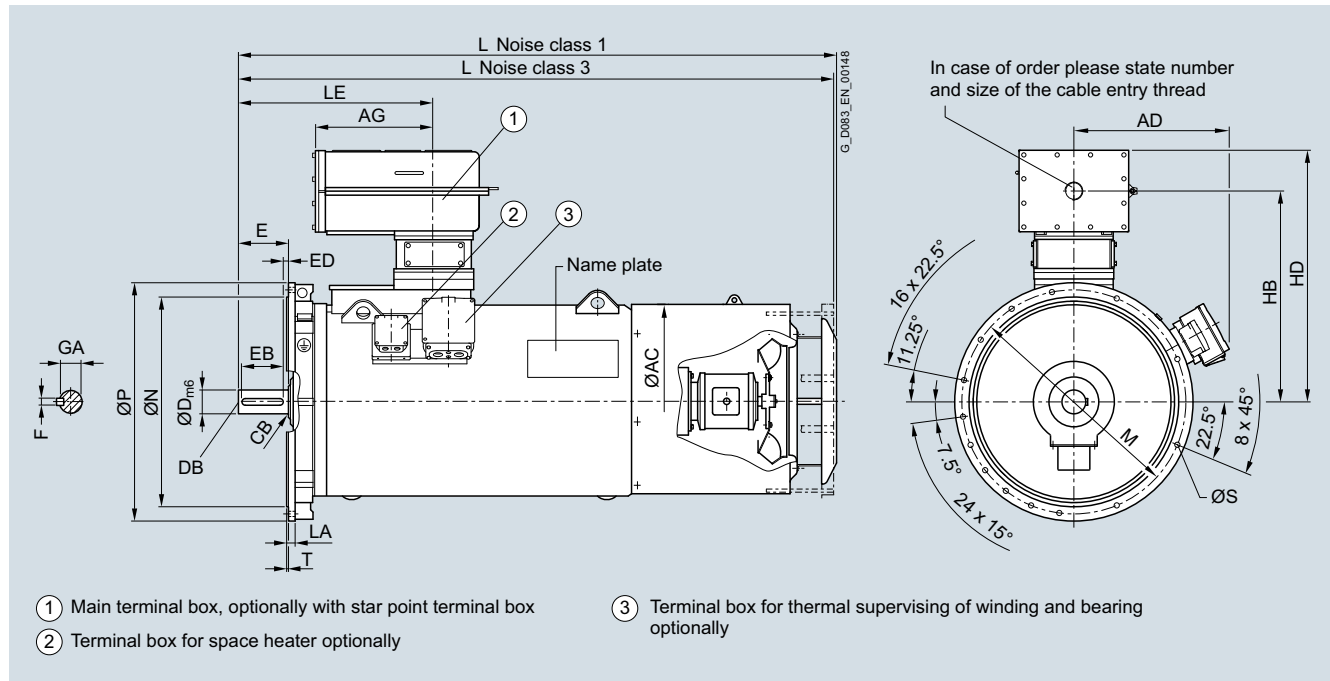
Motor type (repeated)	Dimensions in mm											Shaft end (acc. to DIN 748)			
	C	H	HA	HB <sup>1)</sup>	HB <sup>2)</sup>	HD <sup>1)</sup>	HD <sup>2)</sup>	K	L <sup>3)</sup>	L <sup>4)</sup>	LE	D	E	F	GA
1PS . 357-6BL...	254	355	35	390	300	1095	1015	33	2225	2370	780	90	170	25	95
1PS . 358-6BL...	254	355	35	390	300	1095	1015	33	2225	2370	780	90	170	25	95
1PS . 402-6BL...	280	400	30	405	315	1110	1030	33	2350	2495	820	100	210	28	106
1PS . 403-6BL...	280	400	30	405	315	1110	1030	33	2350	2495	820	100	210	28	106
1PS . 405-6BL...	280	400	30	405	315	1110	1030	33	2350	2495	820	100	210	28	106
1PS . 406-6BL...	280	400	30	405	315	1110	1030	33	2350	2495	820	100	210	28	106
1PS . 455-6BL...	315	450	30	570	475	1265	1185	39	2470	2615	820	110	210	28	116
1PS . 457-6BL...	315	450	30	570	475	1265	1185	39	2470	2615	820	110	210	28	116
1PS . 458-6BL...	315	450	30	570	475	1265	1185	39	2470	2615	820	110	210	28	116
1PS . 505-6BL...	335	500	40	600	505	1305	1220	39	3640	2785	820	120	210	32	127
1PS . 506-6BL...	335	500	40	600	505	1305	1220	39	3640	2785	820	120	210	32	127
1PS . 507-6BL...	335	500	40	600	505	1305	1220	39	3640	2785	820	120	210	32	127
1PS . 508-6BL...	335	500	40	600	505	1305	1220	39	3640	2785	820	120	210	32	127
1PS . 565-6BL...	355	560	40	500	420	1365	1335	42	2960	3110	880	140	250	36	148
1PS . 566-6BL...	355	560	40	500	420	1365	1335	42	2960	3110	880	140	250	36	148
1PS . 567-6BL...	355	560	40	500	420	1365	1335	42	2960	3110	880	140	250	36	148
1PS . 568-6BL...	355	560	40	500	420	1365	1335	42	2960	3110	880	140	250	36	148

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Force-ventilated motors

Rib-cooled IC416

## Dimensional drawings



Motor type	Type Loher	Dimensions in mm									
		AC	AG <sup>1)</sup>	AG <sup>2)</sup>	HB <sup>1)</sup>	HB <sup>2)</sup>	HD <sup>1)</sup>	HD <sup>2)</sup>	L <sup>3)</sup>	L <sup>4)</sup>	
<b>3 ... 6.6 kV, 50 Hz, IM V1 type of construction, roller bearing, rib-cooled, flameproof</b>											
<b>2-pole</b>											
1PS . 357-6BL . 4- . AAO	DHU.-355LM-02M	740	500	511	860	675	1035	855	2360	2340	
1PS . 358-6BL . 4- . AAO	DHU.-355LM-02M	740	500	511	860	675	1035	855	2360	2340	
1PS . 402-6BL . 4- . AAO	DHU.-400LK-02M	820	500	511	885	695	1055	880	2475	2455	
1PS . 403-6BL . 4- . AAO	DHU.-400LK-02M	820	500	511	885	695	1055	880	2475	2455	
1PS . 405-6BL . 4- . AAO	DHU.-400LM-02M	820	500	511	885	695	1055	880	2475	2455	
1PS . 406-6BL . 4- . AAO	DHU.-400LM-02M	820	500	511	885	695	1055	880	2475	2455	
1PS . 455-6BL . 4- . AAO <sup>3)</sup>	DHU.-450LK-02M <sup>3)</sup>	920	500	511	955	770	1130	955	2595	2575	
1PS . 457-6BL . 4- . AAO <sup>3)</sup>	DHU.-450LK-02M <sup>3)</sup>	920	500	511	955	770	1130	955	2595	2575	
1PS . 458-6BL . 4- . AAO <sup>3)</sup>	DHU.-450LM-02M <sup>3)</sup>	920	500	511	955	770	1130	955	2595	2575	
1PS . 505-6BL . 4- . AAO <sup>3)</sup>	DHU.-500LK-02M <sup>3)</sup>	1015	500	511	1010	820	1180	1005	2765	2745	
1PS . 506-6BL . 4- . AAO <sup>3)</sup>	DHU.-500LK-02M <sup>3)</sup>	1015	500	511	1010	820	1180	1005	2765	2745	
1PS . 507-6BL . 4- . AAO <sup>3)</sup>	DHU.-500LM-02M <sup>3)</sup>	1015	500	511	1010	820	1180	1005	2765	2745	
1PS . 508-6BL . 4- . AAO <sup>3)</sup>	DHU.-500LM-02M <sup>3)</sup>	1015	500	511	1010	820	1180	1005	2765	2745	
1PS . 565-6BL . 4- . AAO <sup>3)</sup>	DHU.-560LK-02M <sup>3)</sup>	1065	500	511	1075	885	1245	1070	3090	3070	
1PS . 566-6BL . 4- . AAO <sup>3)</sup>	DHU.-560LK-02M <sup>3)</sup>	1065	500	511	1075	885	1245	1070	3090	3070	
1PS . 567-6BL . 4- . AAO <sup>3)</sup>	DHU.-560LM-02M <sup>3)</sup>	1065	500	511	1075	885	1245	1070	3090	3070	
1PS . 568-6BL . 4- . AAO <sup>3)</sup>	DHU.-560LM-02M <sup>3)</sup>	1065	500	511	1075	885	1245	1070	3090	3070	

<sup>1)</sup> Terminal box: E Ex e II

<sup>2)</sup> Terminal box: E Ex d IIC

<sup>3)</sup> Noise class 1

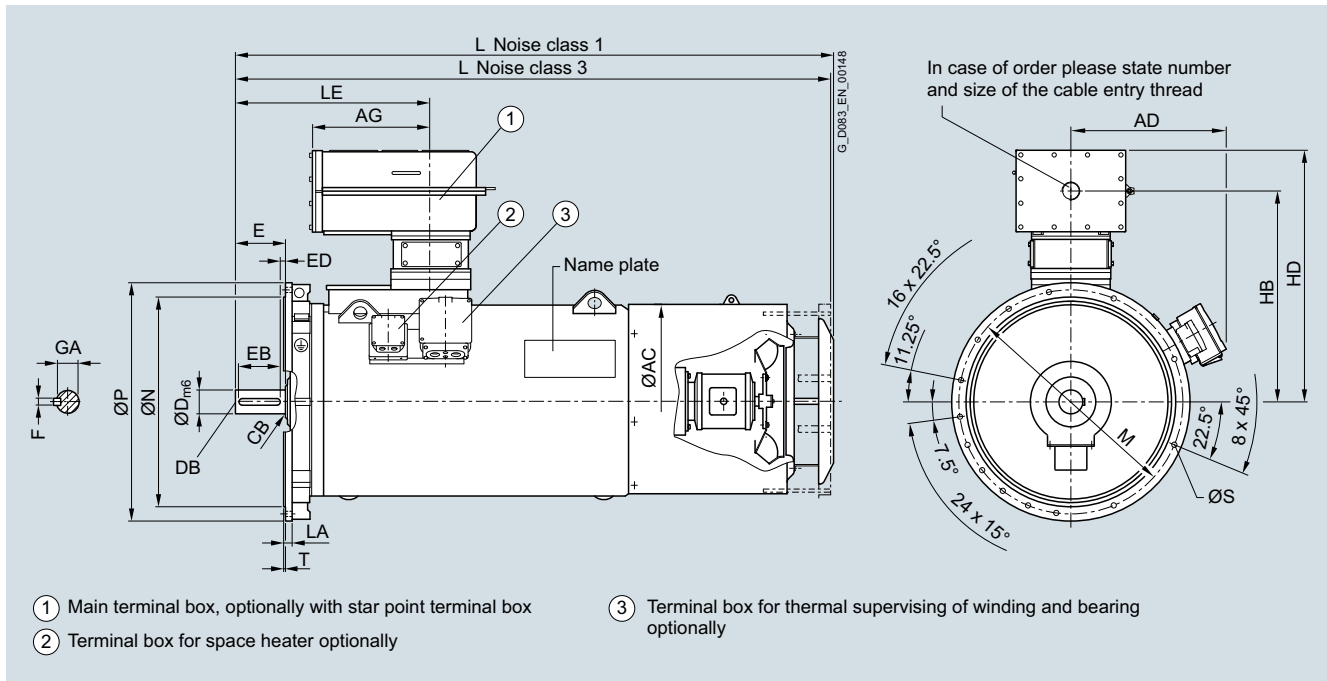
<sup>4)</sup> Noise class 3

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Force-ventilated motors

Rib-cooled IC416

## Dimensional drawings (continued)



Motor type (repeated)	Dimensions in mm							Shaft end (acc. to DIN 748)			
	LA	LE	M	N	P	S	T	D	E	F	GA
1PS . 357-6BL...	25	750	740	680	800	24	6	75	140	20	79.5
1PS . 358-6BL...	25	750	740	680	800	24	6	75	140	20	79.5
1PS . 402-6BL...	28	780	940	880	1000	24	6	80	170	22	85
1PS . 403-6BL...	28	780	940	880	1000	24	6	80	170	22	85
1PS . 405-6BL...	28	780	940	880	1000	24	6	80	170	22	85
1PS . 406-6BL...	28	780	940	880	1000	24	6	80	170	22	85
1PS . 455-6BL...	30	780	1080	1000	1150	28	6	85	170	22	90
1PS . 457-6BL...	30	780	1080	1000	1150	28	6	85	170	22	90
1PS . 458-6BL...	30	780	1080	1000	1150	28	6	85	170	22	90
1PS . 505-6BL...	30	780	1180	1120	1250	28	7	90	170	25	95
1PS . 506-6BL...	30	780	1180	1120	1250	28	7	90	170	25	95
1PS . 507-6BL...	30	780	1180	1120	1250	28	7	90	170	25	95
1PS . 508-6BL...	30	780	1180	1120	1250	28	7	90	170	25	95
1PS . 565-6BL...	35	840	1320	1250	1400	28	8	90	210	28	106
1PS . 566-6BL...	35	840	1320	1250	1400	28	8	90	210	28	106
1PS . 567-6BL...	35	840	1320	1250	1400	28	8	90	210	28	106
1PS . 568-6BL...	35	840	1320	1250	1400	28	8	90	210	28	106

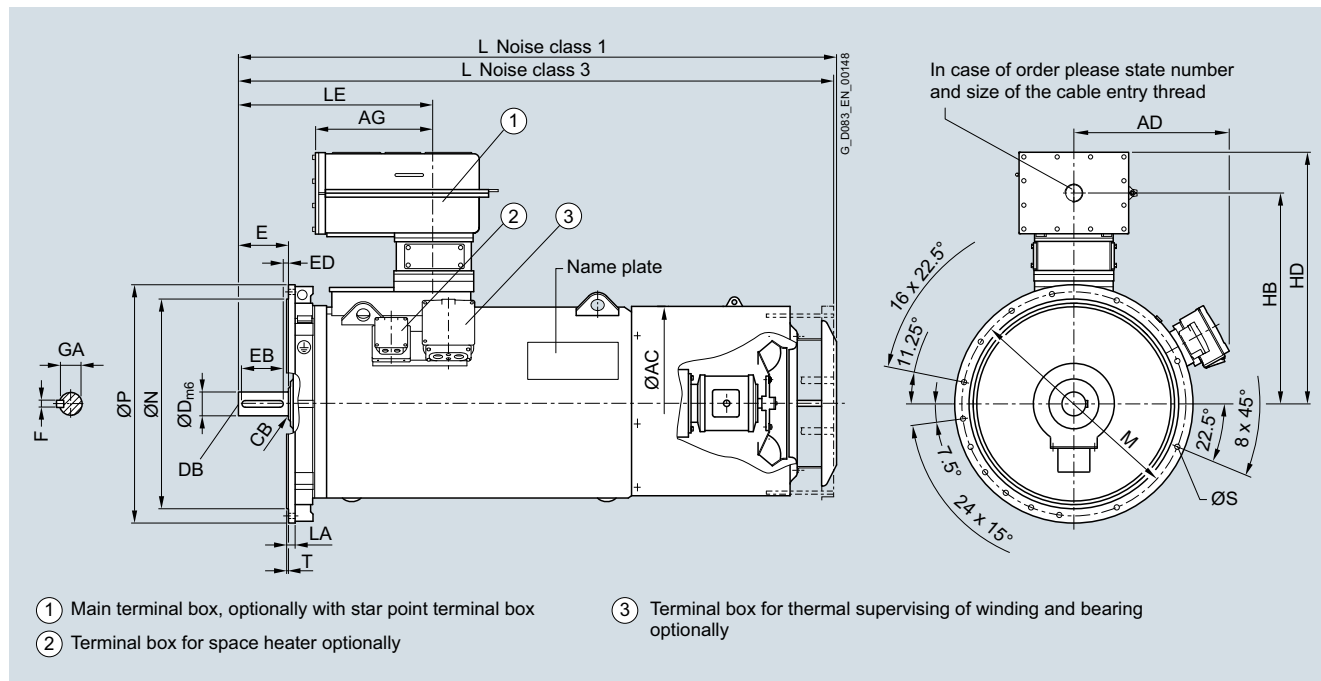
Note:

2-pole vertical motors of frame size 450 and higher only available on request!

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Force-ventilated motors

Rib-cooled IC416

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm									
		AC	AG <sup>1)</sup>	AG <sup>2)</sup>	HB <sup>1)</sup>	HB <sup>2)</sup>	HD <sup>1)</sup>	HD <sup>2)</sup>	L <sup>3)</sup>	L <sup>4)</sup>	
<b>3 ... 6.6 kV, 50 Hz, IM V1 type of construction, roller bearing, rib-cooled, flameproof</b>											
4 ... 16-pole											
1PS . 357-6BL . 4- . . A0	DHU.-355LM-..M	740	500	511	860	675	1035	855	2390	2370	
1PS . 358-6BL . 4- . . A0	DHU.-355LM-..M	740	500	511	860	675	1035	855	2390	2370	
1PS . 402-6BL . 4- . . A0	DHU.-400LK-..M	820	500	511	885	695	1055	880	2515	2495	
1PS . 403-6BL . 4- . . A0	DHU.-400LK-..M	820	500	511	885	695	1055	880	2515	2495	
1PS . 405-6BL . 4- . . A0	DHU.-400LM-..M	820	500	511	885	695	1055	880	2515	2495	
1PS . 406-6BL . 4- . . A0	DHU.-400LM-..M	820	500	511	885	695	1055	880	2515	2495	
1PS . 455-6BL . 4- . . A0	DHU.-450LK-..M	920	500	511	955	770	1130	955	2635	2615	
1PS . 457-6BL . 4- . . A0	DHU.-450LK-..M	920	500	511	955	770	1130	955	2635	2615	
1PS . 458-6BL . 4- . . A0	DHU.-450LM-..M	920	500	511	955	770	1130	955	2635	2615	
1PS . 505-6BL . 4- . . A0	DHU.-500LK-..M	1015	500	511	1010	820	1180	1005	2805	2785	
1PS . 506-6BL . 4- . . A0	DHU.-500LK-..M	1015	500	511	1010	820	1180	1005	2805	2785	
1PS . 507-6BL . 4- . . A0	DHU.-500LM-..M	1015	500	511	1010	820	1180	1005	2805	2785	
1PS . 508-6BL . 4- . . A0	DHU.-500LM-..M	1015	500	511	1010	820	1180	1005	2805	2785	
1PS . 565-6BL . 4- . . A0	DHU.-560LK-..M	1065	500	511	1075	885	1245	1070	3130	3110	
1PS . 566-6BL . 4- . . A0	DHU.-560LK-..M	1065	500	511	1075	885	1245	1070	3130	3110	
1PS . 567-6BL . 4- . . A0	DHU.-560LM-..M	1065	500	511	1075	885	1245	1070	3130	3110	
1PS . 568-6BL . 4- . . A0	DHU.-560LM-..M	1065	500	511	1075	885	1245	1070	3130	3110	

1) Terminal box: E Ex e II

2) Terminal box: E Ex d IIC

3) Noise class 1

4) Noise class 3

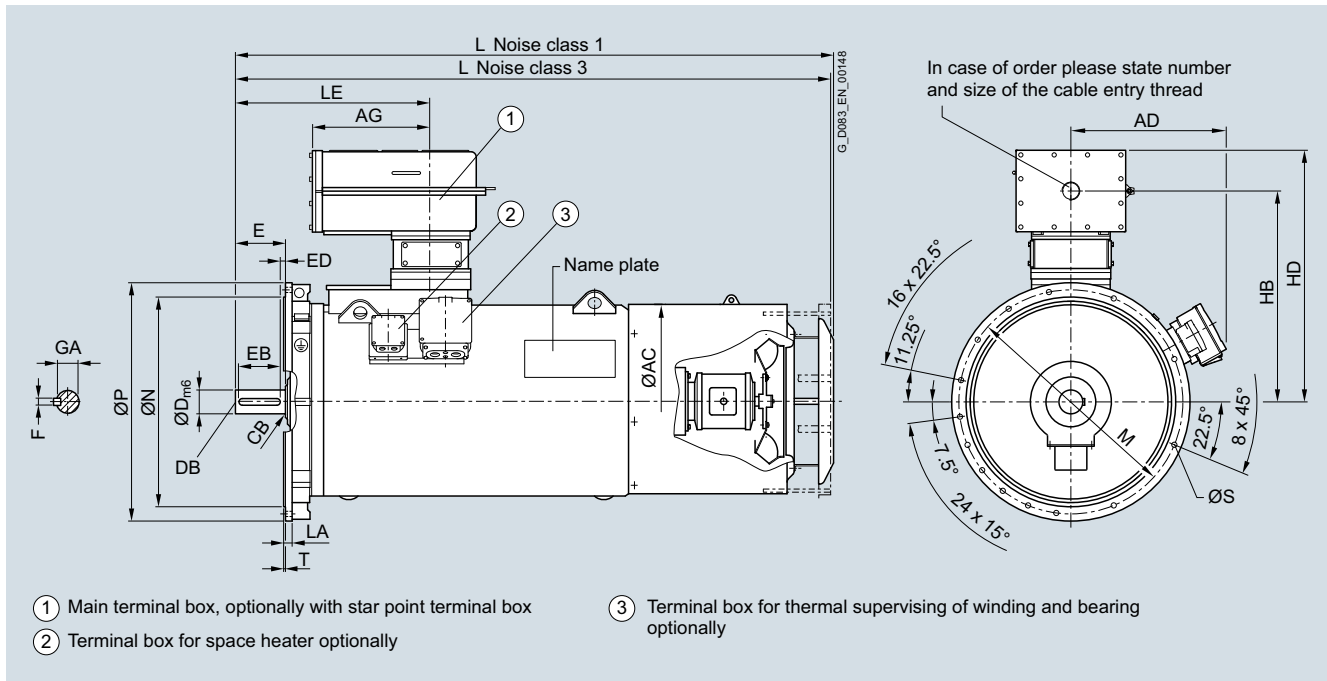


# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Force-ventilated motors

Rib-cooled IC416

## Dimensional drawings (continued)

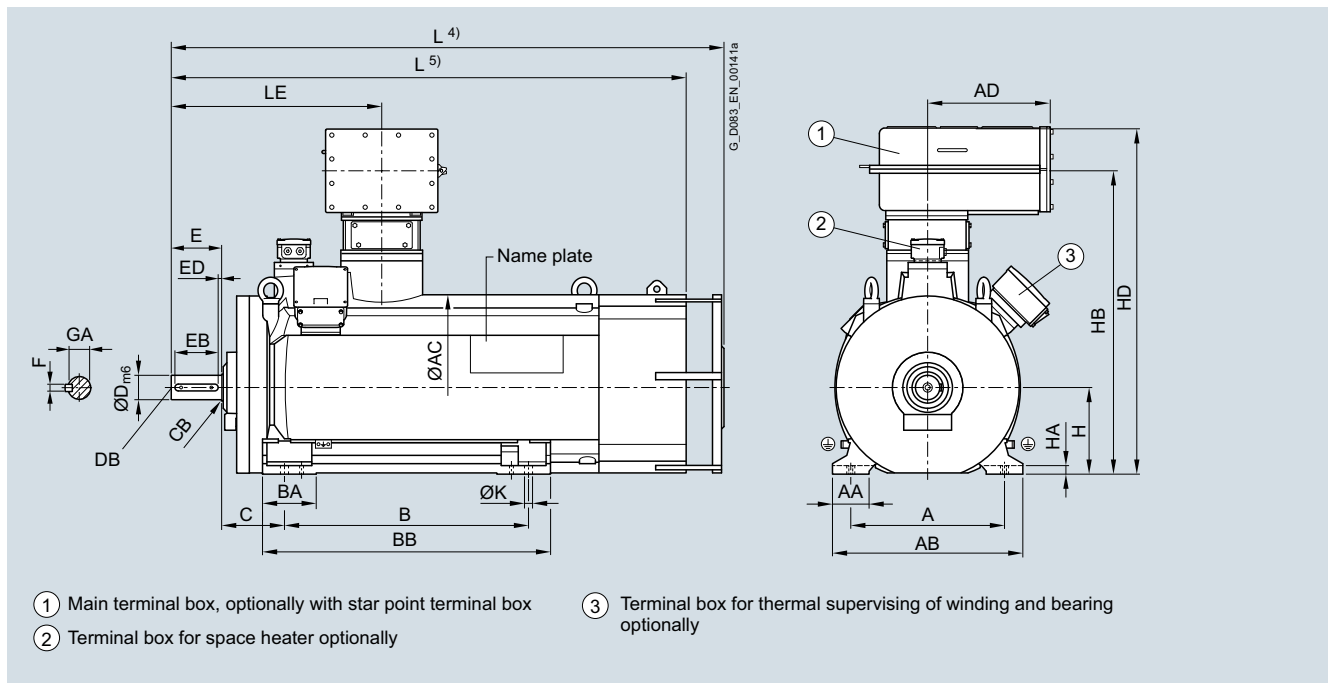


Motor type (repeated)	Dimensions in mm							Shaft end (acc. to DIN 748)			
	LA	LE	M	N	P	S	T	D	E	F	GA
1PS . 357-6BL...	25	780	740	680	800	24	6	90	170	25	95
1PS . 358-6BL...	25	780	740	680	800	24	6	90	170	25	95
1PS . 402-6BL...	28	820	940	880	1000	24	6	100	210	28	106
1PS . 403-6BL...	28	820	940	880	1000	24	6	100	210	28	106
1PS . 405-6BL...	28	820	940	880	1000	24	6	100	210	28	106
1PS . 406-6BL...	28	820	940	880	1000	24	6	100	210	28	106
1PS . 455-6BL...	30	820	1080	1000	1150	28	6	110	210	28	116
1PS . 457-6BL...	30	820	1080	1000	1150	28	6	110	210	28	116
1PS . 458-6BL...	30	820	1080	1000	1150	28	6	110	210	28	116
1PS . 505-6BL...	30	820	1180	1120	1250	28	7	120	210	32	127
1PS . 506-6BL...	30	820	1180	1120	1250	28	7	120	210	32	127
1PS . 507-6BL...	30	820	1180	1120	1250	28	7	120	210	32	127
1PS . 508-6BL...	30	820	1180	1120	1250	28	7	120	210	32	127
1PS . 565-6BL...	35	880	1320	1250	1400	28	8	120	250	36	148
1PS . 566-6BL...	35	880	1320	1250	1400	28	8	120	250	36	148
1PS . 567-6BL...	35	880	1320	1250	1400	28	8	120	250	36	148
1PS . 568-6BL...	35	880	1320	1250	1400	28	8	120	250	36	148

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors, cast iron housing

Rib-cooled IC411

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm													
		A	AA	AB	AC	AD <sup>1)</sup>	AD <sup>2)</sup>	AD <sup>3)</sup>	AF <sup>2)</sup>	B	BA	BB	C	CB	D
<b>3 ... 6.6 kV, 50 Hz, IM B3 type of construction, roller bearing, rib-cooled, flameproof</b>															
<b>2-pole</b>															
1MV.355-6BD.0-4AA0	DHG.-355LR-02A	630	150	780	760	500	700	490	550	1000	220	1180	254	1	75
1MV.356-6BD.0-4AA0	DHG.-355LR-02A	630	150	780	760	500	700	490	550	1000	220	1180	254	1	75
1MV.357-6BD.0-4AA0	DHG.-355LS-02A	630	150	780	760	500	700	490	550	1000	220	1180	254	1	75
1MV.358-6BD.0-4AA0	DHG.-355LT-02A	630	150	780	760	500	700	490	550	1000	220	1180	254	1	75
<b>4-pole</b>															
1MV.355-6BD.0-4BA0	DHG.-355LR-04A	630	150	780	760	500	700	490	550	1000	220	1180	254	2.5	100
1MV.356-6BD.0-4BA0	DHG.-355LR-04A	630	150	780	760	500	700	490	550	1000	220	1180	254	2.5	100
1MV.357-6BD.0-4BA0	DHG.-355LS-04A	630	150	780	760	500	700	490	550	1000	220	1180	254	2.5	100
1MV.358-6BD.0-4BA0	DHG.-355LT-04A	630	150	780	760	500	700	490	550	1000	220	1180	254	2.5	100
<b>6-pole</b>															
1MV.355-6BD.0-4CA0	DHG.-355LR-06A	630	150	780	760	500	700	490	550	1000	220	1180	254	2.5	100
1MV.356-6BD.0-4CA0	DHG.-355LR-06A	630	150	780	760	500	700	490	550	1000	220	1180	254	2.5	100
1MV.357-6BD.0-4CA0	DHG.-355LS-06A	630	150	780	760	500	700	490	550	1000	220	1180	254	2.5	100
1MV.358-6BD.0-4CA0	DHG.-355LT-06A	630	150	780	760	500	700	490	550	1000	220	1180	254	2.5	100

1) Terminal box high voltage: Ex e II, terminal studs 3 × M16

2) Terminal box high voltage and star point terminal box: Ex e II, terminal studs: 3 × M16

3) Terminal box: Ex d IIC, terminal studs: 3 × M12 / 3 × M16

4) 2-pole

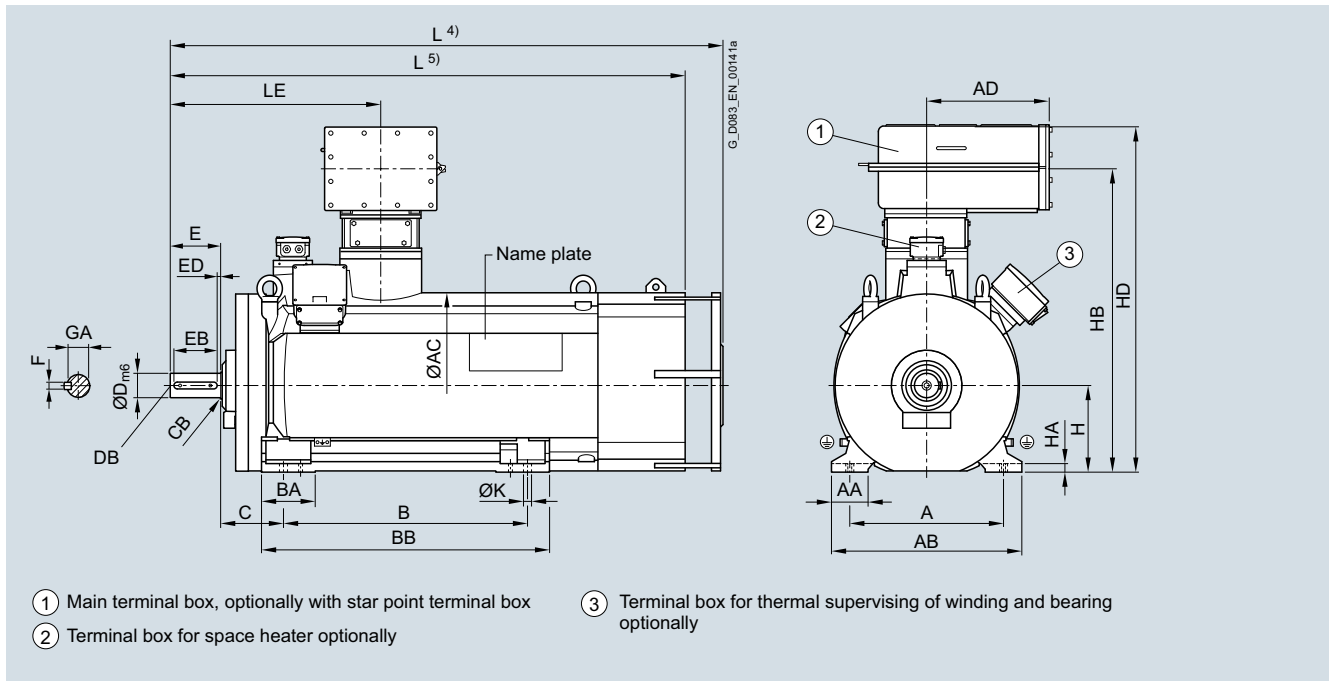
5) 4/6-pole

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Horizontal motors, cast iron housing

Rib-cooled IC411

## Dimensional drawings (continued)

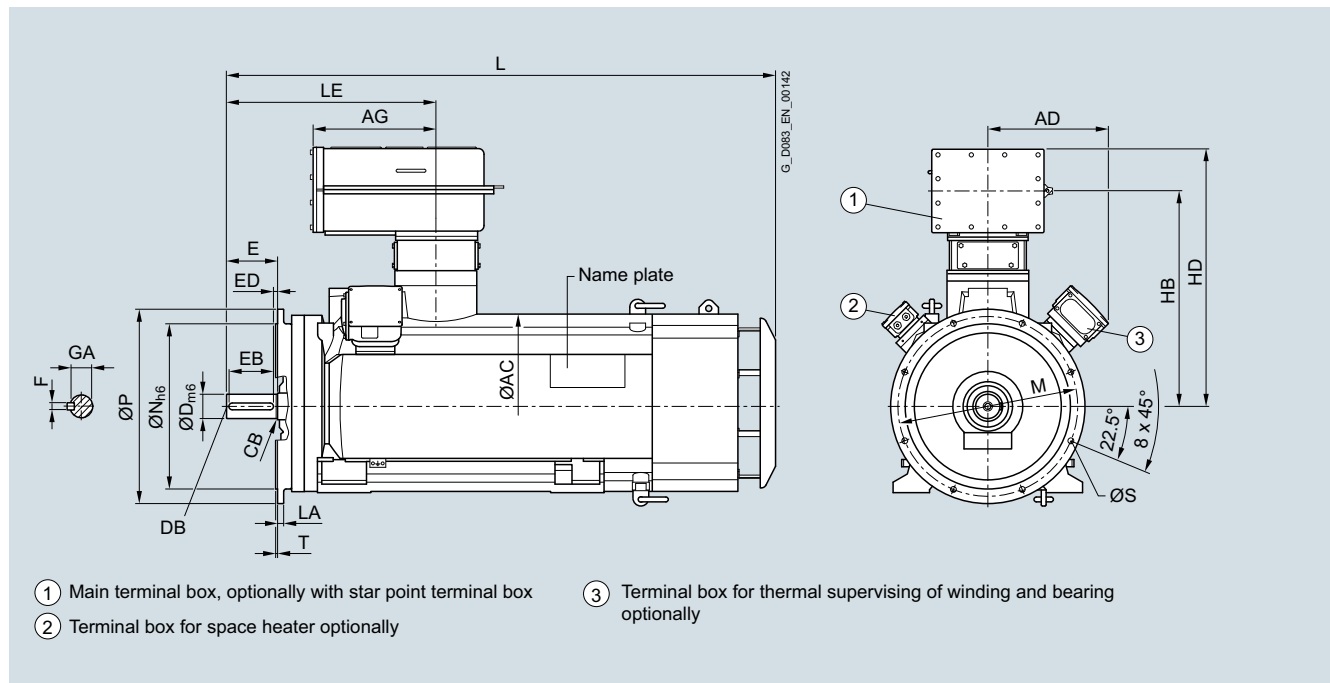


Motor type (repeated)	Dimensions in mm																	Weight ±10 % kg
	DB	E	EB	ED	F	GA	H	HA	HB <sup>1)</sup>	HB <sup>2)</sup>	HB <sup>3)</sup>	HD <sup>1)</sup>	HD <sup>2)</sup>	HD <sup>3)</sup>	K	L	LE	
1MV.355-6BD...	M20	140	125	7.5	20	79.5	355	35	1245	705	1055	1415	1405	1240	33	2190	790	2885
1MV.356-6BD...	M20	140	125	7.5	20	79.5	355	35	1245	705	1055	1415	1405	1240	33	2190	790	2885
1MV.357-6BD...	M20	140	125	7.5	20	79.5	355	35	1245	705	1055	1415	1405	1240	33	2190	790	3000
1MV.358-6BD...	M20	140	125	7.5	20	79.5	355	35	1245	705	1055	1415	1405	1240	33	2190	790	3100
1MV.355-6BD...	M24	210	180	15	28	106	355	35	1245	705	1055	1415	1405	1240	33	2110	860	3070
1MV.356-6BD...	M24	210	180	15	28	106	355	35	1245	705	1055	1415	1405	1240	33	2110	860	3070
1MV.357-6BD...	M24	210	180	15	28	106	355	35	1245	705	1055	1415	1405	1240	33	2110	860	3225
1MV.358-6BD...	M24	210	180	15	28	106	355	35	1245	705	1055	1415	1405	1240	33	2110	860	3450
1MV.355-6BD...	M24	210	180	15	28	106	355	35	1245	705	1055	1415	1405	1240	33	2110	860	3170
1MV.356-6BD...	M24	210	180	15	28	106	355	35	1245	705	1055	1415	1405	1240	33	2110	860	3170
1MV.357-6BD...	M24	210	180	15	28	106	355	35	1245	705	1055	1415	1405	1240	33	2110	860	3370
1MV.358-6BD...	M24	210	180	15	28	106	355	35	1245	705	1055	1415	1405	1240	33	2110	860	3580

**LOHER VARIO 1PS./1MV. flameproof motors for line operation**

Horizontal motors, cast iron housing

Rib-cooled IC411

**Dimensional drawings**

Motor type	Type Loher	Dimensions in mm										
		AC	AD <sup>1)</sup>	AD <sup>2)</sup>	AD <sup>3)</sup>	AG <sup>1) 2)</sup>	AG <sup>3)</sup>	CB	D	DB	E	EB
<b>3 ... 6.6 kV, 50 Hz, IM V1 type of construction, roller bearing, rib-cooled, flameproof</b>												
<b>2-pole</b>												
1MV.355-6BD.4-4AA0	DHG.-355LR-02M	760	500	580	505	500	490	1	75	M20	140	125
1MV.356-6BD.4-4AA0	DHG.-355LR-02M	760	500	580	505	500	490	1	75	M20	140	125
1MV.357-6BD.4-4AA0	DHG.-355LS-02M	760	500	580	505	500	490	1	75	M20	140	125
1MV.358-6BD.4-4AA0	DHG.-355LT-02M	760	500	580	505	500	490	1	75	M20	140	125
<b>4-pole</b>												
1MV.355-6BD.4-4BA0	DHG.-355LR-04M	760	500	580	505	500	490	2.5	100	M24	210	180
1MV.356-6BD.4-4BA0	DHG.-355LR-04M	760	500	580	505	500	490	2.5	100	M24	210	180
1MV.357-6BD.4-4BA0	DHG.-355LS-04M	760	500	580	505	500	490	2.5	100	M24	210	180
1MV.358-6BD.4-4BA0	DHG.-355LT-04M	760	500	580	505	500	490	2.5	100	M24	210	180
<b>6-pole</b>												
1MV.355-6BD.4-4CA0	DHG.-355LR-06M	760	500	580	505	500	490	2.5	100	M24	210	180
1MV.356-6BD.4-4CA0	DHG.-355LR-06M	760	500	580	505	500	490	2.5	100	M24	210	180
1MV.357-6BD.4-4CA0	DHG.-355LS-06M	760	500	580	505	500	490	2.5	100	M24	210	180
1MV.358-6BD.4-4CA0	DHG.-355LT-06M	760	500	580	505	500	490	2.5	100	M24	210	180

<sup>1)</sup> Terminal box high voltage Ex e II, terminal studs: 3 × M16

<sup>2)</sup> Terminal box high voltage and star point terminal box: Ex e II, terminal studs: 3 × M16

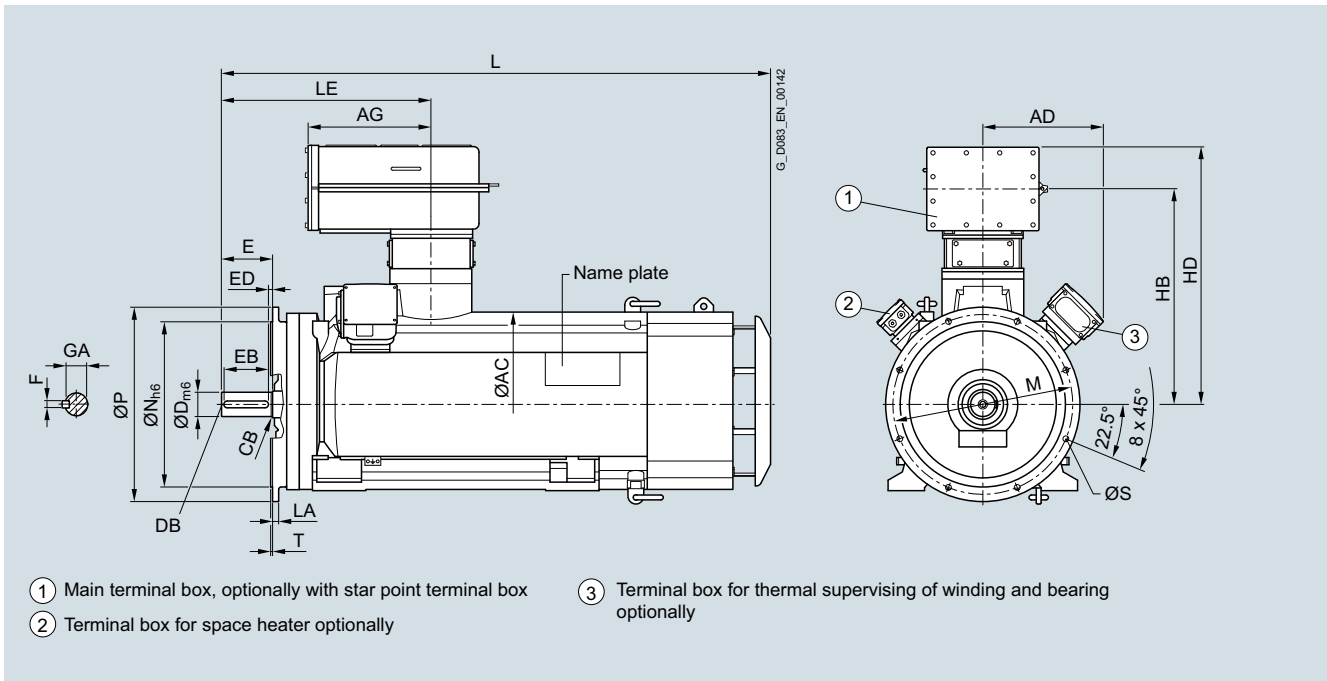
<sup>3)</sup> Terminal box Ex d IIC, 3 × M16, terminal studs: 3 × M12 / 3 × M16

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

Horizontal motors, cast iron housing

Rib-cooled IC411

## Dimensional drawings (continued)



Motor type (repeated)	Dimensions in mm																	Weight ±10 % kg
	ED	F	GA	HB <sup>1)</sup>	HB <sup>2)</sup>	HB <sup>3)</sup>	HD <sup>1)</sup>	HD <sup>2)</sup>	HD <sup>3)</sup>	L	LA	LE	M	N	P	S	T	
1MV.355-6BD...	7.5	20	79.5	890	810	705	1060	1080	885	2190	25	790	740	680	800	24	6	2900
1MV.356-6BD...	7.5	20	79.5	890	810	705	1060	1080	885	2190	25	790	740	680	800	24	6	2900
1MV.357-6BD...	7.5	20	79.5	890	810	705	1060	1080	885	2190	25	790	740	680	800	24	6	3000
1MV.358-6BD...	7.5	20	79.5	890	810	705	1060	1080	885	2190	25	790	740	680	800	24	6	3100
1MV.355-6BD...	15	28	106	890	810	705	1060	1080	885	2260	25	860	740	680	800	24	6	3100
1MV.356-6BD...	15	28	106	890	810	705	1060	1080	885	2260	25	860	740	680	800	24	6	3100
1MV.357-6BD...	15	28	106	890	810	705	1060	1080	885	2260	25	860	740	680	800	24	6	3250
1MV.358-6BD...	15	28	106	890	810	705	1060	1080	885	2260	25	860	740	680	800	24	6	3450
1MV.355-6BD...	15	28	106	890	810	705	1060	1080	885	2260	25	860	740	680	800	24	6	3200
1MV.356-6BD...	15	28	106	890	810	705	1060	1080	885	2260	25	860	740	680	800	24	6	3200
1MV.357-6BD...	15	28	106	890	810	705	1060	1080	885	2260	25	860	740	680	800	24	6	3400
1MV.358-6BD...	15	28	106	890	810	705	1060	1080	885	2260	25	860	740	680	800	24	6	3600

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Operational behavior, configuring for line operation

### Rated power for line operation

#### Overview

The rated power (see pages 1/8 to 1/9) is valid for the following conditions:

- Continuous duty S1
- Coolant temperature (CT) = 40 °C
- Installation altitude = 0 ... 1000 m above sea level
- Temperature class 155(F), utilized to temperature class 130(B)
- Starting current 550 % + tolerance according IEC

Permissible tolerance in compliance with IEC/EN 60034-1:

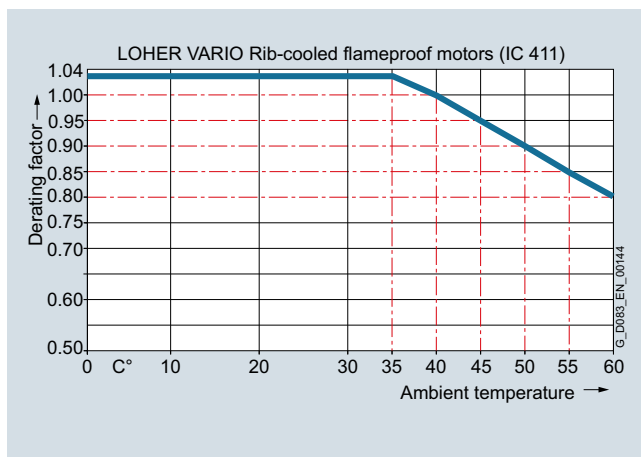
- Rated voltage  $V_{rated} \pm 10\%$
- Rated frequency  $f_{rated} \pm 2\%$
- Combined tolerance voltage and frequency  $\pm 10\%$
- Starting current  $\pm 20\%$

Permissible power when utilized to temperature class 155(F):

- Typically the motor power is increased by approx. 10 %, but has to be confirmed by Siemens.

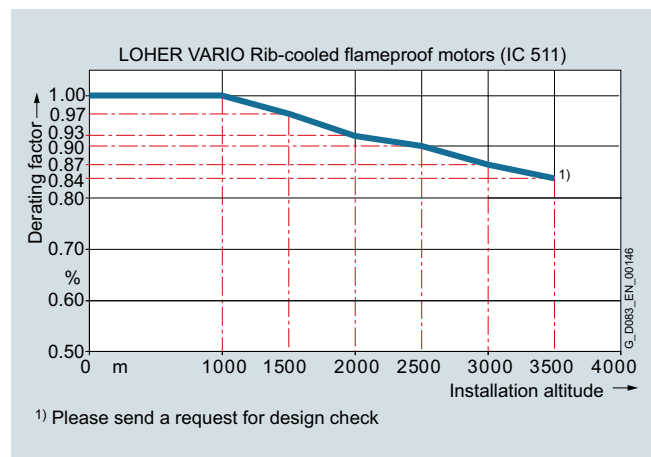
The rated power has to be derated to consider deviations from standard conditions. Factors to consider several influences on rated motor power can be found below, and have to be considered in parallel.

#### Influence of ambient temperature

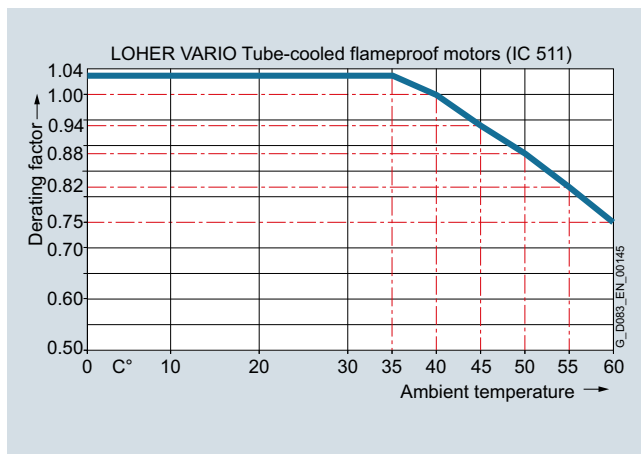


LOHER VARIO Rib-cooled flameproof motors (IC411)

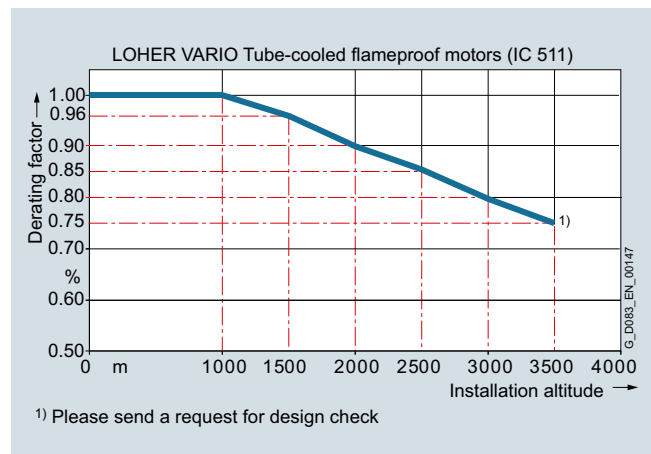
#### Influence of installation altitude



LOHER VARIO Rib-cooled flameproof motors (IC411)



LOHER VARIO Tube-cooled flameproof motors (IC511)



LOHER VARIO Tube-cooled flameproof motors (IC511)

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Operational behavior, configuring for line operation

### Allowable running-up time and locked rotor time

#### Overview

##### **Allowable running-up time (ART)**

The „allowable running-up time“(ART), specified in the various catalogs, is subject to the following conditions:

- Rated voltage
- Rated frequency

The allowable running-up time is used to assess the calculated starting time for the individual motor application.

In case of 3/2 (cold/warm) consecutive starts the calculated starting time has to be lower than 33 % (cold), respectively 50 % (warm) of the allowable running-up time.

The calculated starting time has to consider the following:

- Data of the driven load
- Starting requirements (starting frequency, load torque characteristic)

##### **Locked rotor time (LRT)**

The maximum permissible “locked rotor time” (LRT), specified in the various catalogs, is based on the following conditions:

- Rated voltage
- The motor does not immediately start after it has been locked.

## LOHER VARIO 1PS./1MV. flameproof motors for line operation

### Operational behavior, configuring for line operation

#### Switching of high-voltage motors

##### Overview

##### **Switching overvoltage**

If vacuum circuit breakers and vacuum contactors are used, multiple restrikes can occur when the motor is switched off. This depends on various factors, such as:

- Arc-extinguishing principle of the switch
- Size of the motor
- Length of the power feeder cable
- Line capacitance, etc.

In some cases, multiple restrikes can result in switching overvoltage which is too high for the insulation of the motor stator winding. This can occur when high-voltage motors, with starting currents  $I_A \leq 600$  A, are switched off while they are starting or after the rotor has been locked.

The peak voltages, which occur as a result, can damage the winding insulation.

In case of vacuum circuit breakers and vacuum contactors, use an appropriate surge suppressor in the switchgear, such as the Siemens 3EF (zinc oxide varistor with spark gap).

Motor terminal boxes suitable for surge arresters are available, see options.

##### **Example**

This current limit corresponds to the following upper power limits, depending on the relationship between the starting current  $I_A$  and rated current  $I_N$  and on the line voltage dip (up to approximately 20 %) while the motor is starting:

- Approximately 750 kW at  $I_N = 3$  kV
- Approximately 1500 kW at  $I_N = 6$  kV
- Approximately 2500 kW at  $I_N = 10$  kV

A surge suppressor to ground is installed in the switchgear between the circuit breaker and the cable termination for each of the three conductors. The level of protection for the motor windings is sufficient given the correct selection of surge suppressor (rated motor voltage/response voltage).



## LOHER VARIO 1PS./1MV. flameproof motors for line operation

### Operational behavior, configuring for line operation

Number of starts

#### Overview

All motors are designed for continuous operation in accordance with IEC/VDE 0530 Part 1.

In the basic version, the motors are designed for up to 1000 starts per year (with copper cage).

On request special design for 3000 up to 10000 starts per year is available.

The starts should be evenly distributed over the year.

3

# LOHER VARIO 1PS./1MV. flameproof motors for line operation

## Operational behavior, configuring for line operation

### Noise

#### Overview

##### Noise values

Even the basic version of LOHER VARIO Rib-cooled/Tube-cooled flameproof series motors has low noise levels. This is achieved through the following measures:

- Low noise motor design
- Optimized external ventilation
- Fans with flow optimized aerodynamic design
- Noise-optimized design of the steel fan cover
- Number of stator and rotor slots carefully selected for low magnetic noise excitation
- Magnetic slot seals
- Chamfered rotor bars

##### Noise reduction

The specified measuring-surface sound pressure levels can be further reduced at an additional cost.

Special measures to reduce noise:

- Special noise optimized fan and air intake sound absorber (noise class 3); standard design for some of the larger frame sizes, see table below. Fitting a sound absorber for the air intake changes the dimensions of the motor.
- Reduction of the motor power and shaft-mounted fan with reduced diameter
- Noise jacket for surface cooled motors IC411
- Noise cabinet with inspection door, possible in zinc galvanized, V2A and V4A design

For available options see page 6/8.

Noise levels - LOHER VARIO Rib-cooled/Tube-cooled flameproof motors

LOHER VARIO Rib-cooled/Tube-cooled flameproof motors in standard design – noise class 1																
$L_{pA}$ sound pressure level, $L_{WA}$ sound power level																
Shaft height	2-pole <sup>1)</sup>		4-pole <sup>1)</sup>		6-pole		8-pole		10-pole		12-pole		14-pole		16-pole	
	3000 rpm		1500 rpm		1000 rpm		750 rpm		600 rpm		500 rpm		428 rpm		375 rpm	
	$L_{pA}$ dB(A)	$L_{WA}$ dB(A)	$L_{pA}$ dB(A)	$L_{WA}$ dB(A)	$L_{pA}$ dB(A)	$L_{WA}$ dB(A)	$L_{pA}$ dB(A)	$L_{WA}$ dB(A)	$L_{pA}$ dB(A)	$L_{WA}$ dB(A)	$L_{pA}$ dB(A)	$L_{WA}$ dB(A)	$L_{pA}$ dB(A)	$L_{WA}$ dB(A)	$L_{pA}$ dB(A)	$L_{WA}$ dB(A)
355 <sup>3)</sup>	79	93	79	91	77	89										
355	78	93	76	91	74	89	75	90	–	–	–	–	–	–	–	–
400	80	95.5	80	95.5	77	92.5	77	92.5	–	–	–	–	–	–	–	–
450	82	98	80	96	79	95	79	95	76	92	77	93	76	92	77	93
500	–	–	82	98.5	80	96.5	79	95.5	77	93.5	77	93.5	77	93.5	78	94.5
560	–	–	–	–	82	99	81	98	78	95	77	94	77	94	77	94
630	–	–	–	–	–	–	81	98.5								
800	–	–	–	–	–	–	81	99.5								

LOHER VARIO Rib-cooled/Tube-cooled flameproof motors in low noise design <sup>2)</sup> – noise class 3						
Outer fan direction-dependent design, air intake sound absorber						
Shaft height	2-pole <sup>1)</sup>		4-pole <sup>1)</sup>		6-pole	
	3000 rpm		1500 rpm		1000 rpm	
	$L_{pA}$ dB(A)	$L_{WA}$ dB(A)	$L_{pA}$ dB(A)	$L_{WA}$ dB(A)	$L_{pA}$ dB(A)	$L_{WA}$ dB(A)
355 <sup>3)</sup>	77	89.5	77	89.5		
355	74	89.5	–	–	–	–
400	77	93	77	93		
450	79	95	77	93		
500	81	97.5	79	95.5		
560	82	99	82	99		
630	82	99.5	82	99.5	82	99.5
800	82	100.5	82	100.5	82	100.5

#### 60 Hz operation:

2-pole:	+4 dB(A)
4 ... 6-pole:	+3 dB(A)
8 ... 10-pole:	+2 dB(A)
12 ... 16-pole:	+1 dB(A)

Values for "non sparking" fan design on request

<sup>1)</sup> Outer fan direction-dependent design. In case of a bidirectional fan, the noise is increased by:  
+4 dB(A) for 2-pole motors,  
+3 dB(A) for 4-pole motors

<sup>2)</sup> Increased motor length for noise class 3, see mechanical data sheets

<sup>3)</sup> Motors with cast iron housing (Article No. 10th position = D)

## Special features for converter operation



4/2

**Forced ventilation**

## Special features for converter operation

### Forced ventilation

#### Technical specification

##### General information about converter operation

Speed adjustable operation of motors in combination with converters can result in increased electric stress of the motor winding.

The motor's self-cooling capabilities might be no longer sufficient to dissipate the heat losses, depending on load profile and speed range of the converter operation.

Due to the nature of flameproof motors and their demand for a defined maximum surface temperature, converter related thermic effects have to be considered.

In the end, some of the motors operating at converters can have the same rating as their direct on line counterparts, while others demand for significant de-rating.

The following factors are influencing the de-rating factors, amongst others:

- Type of converter
  - Siemens converter, sinusoidal output voltage
  - Siemens converter, non-sinusoidal output voltage
  - Non-Siemens converters
- Load characteristics
  - Square load
  - Constant load
  - Constant power
  - Proportional load
  - Others
- Speed range
  - 1:10
  - 1:5
  - 1:3
  - 70 ... 100 %
  - 100 ... 110 %
  - Others
- Utilization of the motor winding
  - F/B
  - F/F
- Overload cycles
- Voltage level
- Load cycle, reversing torque
- Service factor
- Maximum permissible surface temperature of the motor enclosure

As a result, any power assignment list for converter operation can only cover a portion of this wide spread topic.

For LOHER VARIO Rib-cooled and LOHER VARIO Tube-cooled flameproof motors there is no power assignment list available at the moment.

Most of the common cases can be handled by using engineering tools.

#### Design

Forced ventilation of LOHER VARIO Rib-cooled and LOHER VARIO Tube-cooled flameproof motors is placed at the NDE side.

The external fan unit comprises a steel fan impeller with optimized profile and an external fan motor in flameproof design.

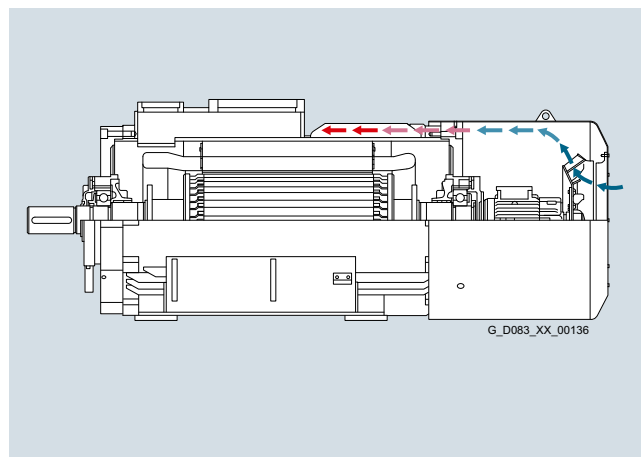
[For geometrical dimensions see pages 3/46 to 3/113 or on request, for special applications.](#)

By default, the force-ventilated motor is connected to an auxiliary terminal box outside the fan cover, usually also used to connect the motor's space heater.

When specified, a separate auxiliary terminal box can be connected for the external fan unit.

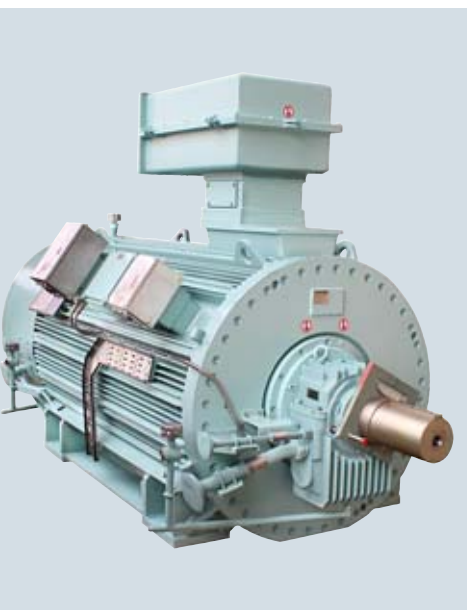
A second shaft extension is not available for force-ventilated LOHER VARIO Rib-cooled and LOHER VARIO Tube-cooled flameproof motors.

**Note:** Please provide information about the requested voltage of the force-ventilated motor in case of an order.



Forced ventilation principle, LOHER VARIO Rib-cooled motor

## Special versions



5/2	Subcritical 2-pole sleeve bearing motors
5/3	Offshore Oil&Gas applications
5/4	Marine applications
5/8	Retrofit
5/9	Extreme low temperature design
5/10	Water jacket cooled flameproof motors
5/11	Axial down thrust motors
5/12	Motors for operation in dust explosion zones

## Special versions

### Subcritical 2-pole sleeve bearing motors

#### Overview

##### **Customer requirement**

- Speed adjustable large 2-pole sleeve bearing motor, which has normally overcritical rotor design, on request.
- Requirement for adjusting motor speed without restrictions – no permission for a “forbidden window” to prevent operation near the critical speed
- Bypass direct on line (DOL) operation scenario

##### **Special versions on request**

The following modifications are possible to meet this special requirement and to increase the critical speed.

- Housing and shaft will be shorter compared to standard 2-pole motors (shorter distance between bearings)
- Shaft stiffness increased
- Optimized rotor weight
- Bearing stiffness increased; higher speed limit and stability limit

Motors with subcritical rotor design can be operated from 500 rpm –  $n_{\max}$  without further changes in design.

**Overview**

Oil&Gas offshore applications are characterized by significantly higher requirements compared to usual chemical industry design:

- Extensive specifications
- Challenging electrical design (i.e. very low starting current limits)
- Highest requirements for coating (see pages 2/42 and 6/12)
- Great variety of customer specific accessory and monitoring requirements
- Customized project specific documentation (see pages 7/5)
- Factory hold points for customer inspections (see page 7/2)
- Intense witnessed testing requirements (see pages 7/4)
- Design, documentation and testing according API 541

Please do not hesitate to send an inquiry to Siemens if you encounter such topics.

Based on decades of experience in ETO (engineered to order) business and thousands of references in Oil&Gas industry, Siemens can perfectly adapt our motor to almost every requirement.



Typical example of extremely customized Oil&Gas flameproof LOHER VARIO Rib-cooled motor

## Special versions

### Marine applications

#### Overview

LOHER VARIO flameproof motors for marine applications 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 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.

Services of the motor manufacturer, associated with the categories

	Essential Service for Propulsion	Essential Service	Non-Essential Service
<b>Typical applications</b>	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
<b>Version</b>	In accordance with the regulations of the classification society		In accordance with ambient conditions of the classification society
<b>Acceptance test certificate</b>	Acceptance test certificate 3.2 according to EN 10204		Acceptance test certificate 3.1 according to EN 10204 <sup>1)</sup>
<b>Individual acceptance by classification society</b>	Will be performed. Motor is assigned an individual certificate of the classification society.		Not necessary
<b>Ordering several identical motors</b>	Differentiation between the first motor and additional ones must be realized when ordering using an order code.		No distinction
<b>Rating plate data</b>	Information about ambient conditions of the classification society		
<b>Stamp of the classification society</b>	Stamp on the shaft <sup>2)</sup> and enclosure		No stamp

Ship building societies

Society	Abbreviation	Location
American Bureau Of Shipping	ABS	USA
Bureau Veritas	BV	France
China Classification Society	CCS	China
Det Norske Veritas	DNV	Norway
Germanischer Lloyd	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> If the classification society supervises construction.



#### Benefits

The marine motors offer 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

Motors for marine applications are designed for use onboard ships (standard: installed below deck).

Applications onboard ships as main and auxiliary drives below deck, e.g.:

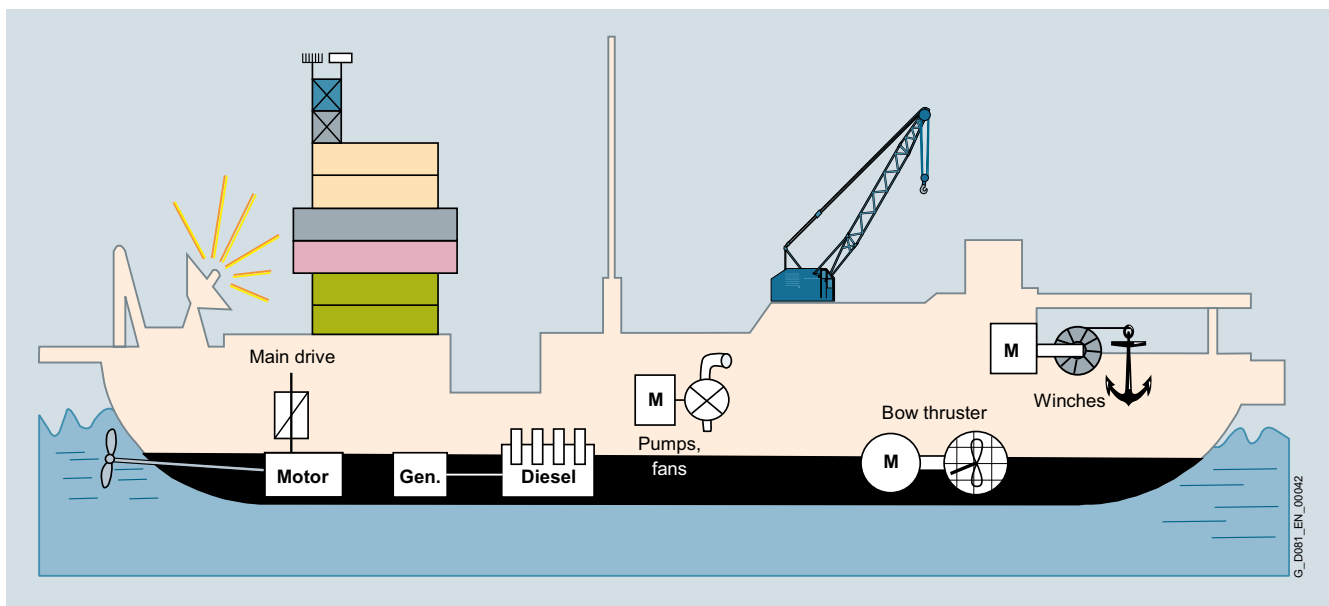
- Fans (air conditioning, refrigeration plants)
- Pumps (for fire-extinguishing water, fuels, oils)
- Winches (anchor winches, warping winches, lifting gear)
- Compressors
- Bow thruster drives
- Main propulsion drives
- Ex motors for hazardous zones

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.

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

## Special versions

### Marine applications

#### Technical specifications

Regulations of the individual classifications societies for motors

Class. society	Coolant temperature CT		Admissible temperature rise limit according to the classification society			Rated power limit individual accept. test	Constr. supervision mandatory
	Water cooling	Air cooling	Temperature class				
	°C	°C	130 (B) K	155 (F), $P_{rated} < 5 \text{ MW}$ K	155 (F), $P_{rated} \geq 5 \text{ MW}$ K	kW	kW
<b>GL</b>	32	45	75	100	100	≥ 50	All
<b>LR</b>	32	45	70	95	90	≥ 100	≥ 100 kW
<b>BV</b>	32	45	75	100	95	≥ 100	≥ 500 kW
<b>DNV</b>	32	45	75	100	100	≥ 300	-
<b>ABS</b>	32	45	70	95	90	≥ 100	-
<b>KR</b>	32	45	75	100	95	≥ 7.5	-
<b>CCS</b>	32	45	75	100	95	All	All

LOHER VARIO flameproof 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:

- **Design options** define the marine-compatible technical design in accordance with the definitions of the classification society
- **Certification options** define the scope of the test certificates
- **Test options** define the scope of the individual tests
- **Additional options** for deviations and special conditions: specify the request for participation in the tests at Siemens, 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, X04, 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.

Order codes for Non-Essential Service marine Motors LOHER VARIO flameproof:

Non-Essential Service	Options according to the classification society						
	ABS	BV	CCS	DNV	GL	KR	LR
Technical version	<b>X00</b>	<b>X01</b>	<sup>1)</sup>	<b>X03</b>	<b>X04</b>	<b>X05</b>	<b>X06</b>

<sup>1)</sup> Non-Essential Service must be handled by CCS just like an essential service.

#### Technical specification (continued)

##### 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.

Order codes for Essential Service marine motors LOHER VARIO flameproof:

Essential Service	Options according to the classification society						
	ABS	BV	CCS	DNV	GL	KR	LR
Technical version	X10	X11	X12	X13	X14	X15	X16
<b>Certification</b>							
• First motor	J70	J72	J74	J76	J78	J80	J82
• Additional motor	J71	J73	J75	J77	J79	J81	J83
<b>Scope of the tests and presence of representatives of the classification society</b>							
• First motor	X30	X32	X34	X36	X38	X40	X42
• Additional motor	X31	X33	X35	X37	X39	X41	X43
<b>Tests in presence of representatives of the customer (in addition to the inspector of the classification society)</b>	X99						
<b>Conditions deviating from classification requirements must be fulfilled</b>	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 are 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.

Order codes for Essential Service for Propulsion marine motors LOHER VARIO flameproof:

Essential Service for Propulsion	Options according to the classification society						
	ABS	BV	CCS	DNV	GL	KR	LR
Technical version	X20	X21	X22	X23	X24	X25	X26
<b>Certification</b>							
• First motor	N40	N42	N44	N46	N48	N50	N52
• Additional motor	N41	N43	N45	N47	N49	N51	N53
<b>Scope of the tests and presence of representatives of the classification society</b>							
• First motor	X60	X62	X64	X66	X68	X70	X72
• Additional motor	X61	X63	X65	X67	X69	X71	X73
<b>Tests in presence of representatives of the customer (in addition to the inspector of the classification society)</b>	X99						
<b>Conditions deviating from classification requirements must be fulfilled</b>	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.

## Special versions

### Retrofit

#### Application

##### **Customer requirement**

- Replacement of old motors mechanically and electrically
- No changes to existing machinery, cables, coupling, foundation etc.
- Increased demand for explosion protection
- Mechanical retrofit and switching to converter operation

##### **Special versions on request**

Very often the state of the art motor design results in smaller frame sizes compared to old motors. Due to the welded steel enclosure it is possible to easily adapt the motor feet and housing according to the old motor design. If a simple feet adaption is not sufficient, base frame plates can be used to increase the retrofit motor frame size. Apart from that, a great variety of customizing options for terminal box design and position is available.

Electrical retrofit is achieved by recalculation and adaption of the new motors winding according to given motor specification (i.e. starting current limits, heavy starting etc.).

Due to the easy plug in principle of flameproof motors, a mechanical retrofit in combination with switching to converter operation is easy to be done. There is no need for a system test of the new motor in combination with the converter.

**Note:** Please contact Siemens for a special checklist for retrofit offers, which helps to collect all needed data from the old motor and to minimize offer time.



Retrofit example: LOHER VARIO Rib-cooled motor with base frame plate for height adaption, shaft modification and terminal box adaption (non-flameproof design)

#### Application

##### Customer requirement

- Operation at extreme low temperature (i.e.  $-60\text{ }^{\circ}\text{C}$ )
- Flameproof motor design
- Outdoor operation

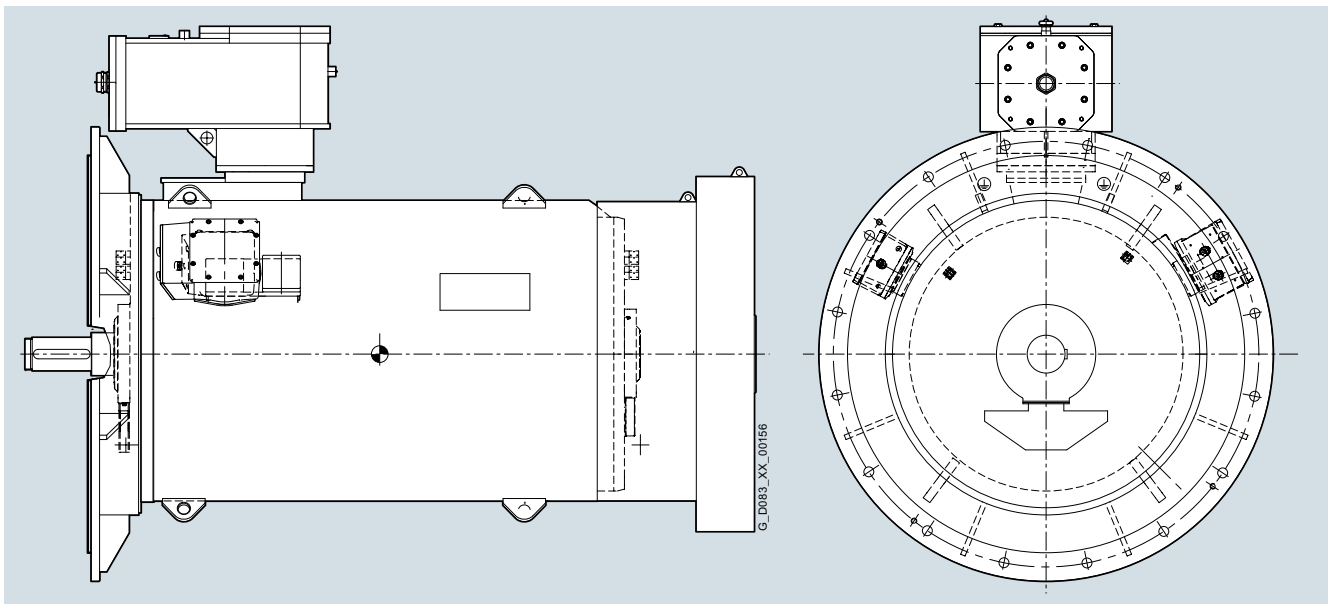
##### Special versions on request

Motor design will be specifically adapted to meet this requirement.

Reinforced motor heating ensures that the motor stays within certified temperature limits even at harshest environmental conditions.

Special Ex d terminal box design/heating and monitoring sensors for extreme low temperature operation guarantees normal behavior and operation of the motor.

Motor is still accessible like a conventional motor; no housing, heating cover etc. is needed.



Application example: LOHER VARIO Rib-cooled flameproof motor, frame size 630 mm, IM V1, 6-pole, 10 kV, suitable for outdoor operation down to  $-60\text{ }^{\circ}\text{C}$ , special design, including reinforced heating and retrofit modification

#### More information

For available options see page 6/4.

## Special versions

### Water jacket cooled flameproof motors

#### Application

##### Customer requirement

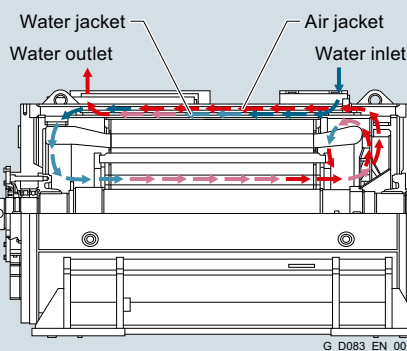
- Water cooling for flameproof motors
- Smallest possible footprint
- Higher output compared to air cooled motor, approx. +50 % power using the same footprint
- Highest motor rating at converter operation
- No external motor fan
- Ultra silent motor operation

##### Special versions on request

Special motor design using water jacket cooled motor enclosure.

Inner air cooling circuit of the motor is a closed loop; water cooling circuit is used for heat dissipation using counter flow heat exchanger principle.

Note: Please send an inquiry for water-jacket cooled motors, not all frame sizes are available yet (frame size 450 and 500 available in antifriction bearing design).



LOHER VARIO water jacket cooled flameproof motor

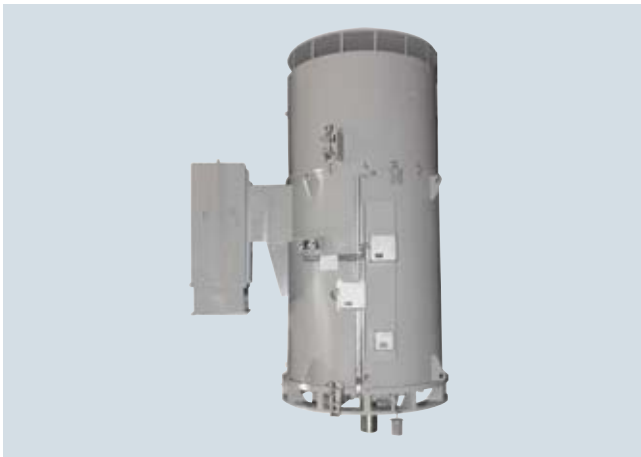
**Application****Customer requirement**

- Vertical motor operating under high axial thrust because of operation characteristics or direct pump rotor coupling.
- Motor has to be designed for high static and/or dynamic axial loads
- Flameproof motor explosion protection
- Non-return device optional
- Hollow shaft design optional
- Oil-lubricated thrust antifriction bearing design (up to 220 kN depending on speed) available as an alternative to complex vertical thrust sleeve bearing design

**Special versions on request**

Special vertical motor design using one high thrust bearing (normally at NDE) for axial rotor loads.

Note: Please send an inquiry for axial down thrust motors, the resulting design is highly dependent on the required loads.



Axial down thrust motors, antifriction bearings

## Special versions

### Motors for operation in dust explosion zones

#### Application

##### **Customer requirement**

- Motor operation in hazardous areas: dust explosions (zone 21 and 22)
- Conductive or non-conductive dusts

##### **Special versions on request**

Special motor design and certification or manufacturers declaration for operation in

- Zone 21: II 2D Ex tb IIIC T130°C Db (conductive dust)
- Zone 22: II 3D Ex tc IIIC T130°C Dc (conductive dust)
- Zone 22: II 3D Ex tc IIIB T130°C Dc (non-conductive dust)

For further information about dust explosion protected motors, see brochure "Explosion protection Fundamentals" on the Internet: [http://w3app.siemens.com/salesmaterial-as/brochure/en/brochure\\_explosion\\_protection\\_en.pdf](http://w3app.siemens.com/salesmaterial-as/brochure/en/brochure_explosion_protection_en.pdf)

##### Note:

- Please clarify, if the dust is conductive or non-conductive!
- Requests for hybrid mixtures of explosive gases and dusts cannot be certified on a general basis, therefore such motors cannot be offered.
- Please send an inquiry for motors operating in dust explosion zones, not all frame sizes are available yet. Especially if the motors are operated at converters, the necessary tests have to be determined.



## Options

**6/2 Options**

- 6/2 General
- 6/3 Winding & rotor design
- International certificates
- Frame fittings/adaptations & fixing elements
- 6/4 Special measures for low temperature design
- Degree of protection
- 6/5 Water jacket cooling options
- Air cooler design for IC51x (concentric tubes)
- Sleeve bearing options
- 6/6 Antifriction bearing options
- Shaft/rotor design
- 6/7 Vibration values/monitoring
- 6/8 Noise & ventilation design
- Speed monitoring and shaft grounding
- 6/9 Winding temperature monitoring
- Bearing temperature monitoring
- Temperature gauges and transmitters
- 6/10 Heaters
- Auxiliary terminal boxes
- Main terminal box & options
- 6/11 Neutral point terminal box & options
- 6/12 Fittings for main and neutral point terminal boxes
- Name plates
- 6/13 Painting systems
- Ship building classifications
- Warranty

## Options

### General

#### Overview

Motors can be supplied with additional equipment and/or as special versions.

#### **Order codes for the article number**

Order codes have been defined for frequently requested "special versions/options". The use of order codes simplifies and speeds up the ordering process.

Note: Always use the order code for the required design.

#### **Standard accessories**

The following is advised as standard accessories with each motor (not included):

- 6 Pt100 in the stator winding (option A65) as 3 or 4-wire circuit from a separate auxiliary terminal box (option M50)
- SPM nipple for antifriction bearing design motors at DE and NDE (option G50)
- 2 x 2 Pt100 in each bearing shell (option A42) as 3 or 4-wire circuit from terminal box for motors with sleeve bearing design
- Anti-condensation heater in a separate auxiliary terminal box (option M52), standard voltage range 220 V up to 240 V (option M13)
- Standard documentation package (option U92 - free of charge)

The following tables give an overview about the available options for LOHER VARIO Rib-cooled and LOHER VARIO Tube-cooled flameproof motors.

Note: Please contact Siemens, if your requirement is not listed!

## Selection and ordering data

Special versions	Additional identification code -Z with order code and plain text if required	LOHER VARIO Rib-cooled						LOHER VARIO Tube-cooled			Available for sleeve bearing motors
		Frame size						Frame size			
		355	400	450	500	560	630	710	800	1000	
1PS(1MV)4...-6B...-Z											
1PS(1MV)5...-6B...-Z											
<b>Winding &amp; rotor design</b>											
Non standard winding	C20	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Retrofit (description of the special design separately)	B15	O. R. <sup>1)</sup>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Site altitude max. 1500 m above sea level (regard power reduction)	D06	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Site altitude max. 2000 m above sea level (regard power reduction)	D07	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Site altitude max. 2500 m above sea level (regard power reduction)	D08	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Site altitude max. 3000 m above sea level (regard power reduction)	D09	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cooling air temperature max. 45 °C (consider power reduction)	D11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cooling air temperature max. 50 °C (consider power reduction)	D12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cooling air temperature max. 55 °C (consider power reduction)	D13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cooling air temperature max. 60 °C (consider power reduction)	D14	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HV-motor pole change – two separated windings	V03	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
HV-motor pole change – Dahlander winding	V04	O. R. <sup>1)</sup>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Motor with 2 separated winding systems	V05	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Special rotor for heavy duty starting (e.g. DS-rotor or brass cage rotor)	Q22	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Max. 3000 starts per year	Q23	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Max. 10000 starts per year	Q24	O. R. <sup>1)</sup>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
<b>International certificates</b>											
Electric design according to NEMA MG1-12	D30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certificate according NEPSI	D32	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.	✓
Certificate EAC for Eurasian Customs Union	D35	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC Ex Certificate	D37	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ex Certification for India (PESO – CCOE)	D38	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	✓
<b>Frame fittings/adaptations &amp; fixing elements</b>											
Machined surface on motor feet with dowel pin holes	Q94	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Slotted feet holes	Q95	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Provisioned for lateral installation of sun shield	Q99	✓	✓	✓	✓	✓	✓	–	–	–	✓
Sun protection shield – fixing parts of mild steel, cover of stainless steel unpainted for vertical motors	V87	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sun protection shield – fixing parts of mild steel, cover of stainless steel unpainted for horizontal motors	V99	✓	✓	✓	✓	✓	✓	–	–	–	✓
Adaptation of flange dimensions and flange fixing holes	Q98	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 6/14.

## Options

## Selection and ordering data (continued)

Special versions	Additional identification code <b>-Z</b> with order code and plain text if required	LOHER VARIO Rib-cooled						LOHER VARIO Tube-cooled			Available for sleeve bearing motors	
		Frame size						Frame size				
		355	400	450	500	560	630	710	800	1000		
1PS(1MV)4...-6B...-.....-Z												
1PS(1MV)5...-6B...-.....-Z												
<b>Frame fittings/adaptations &amp; fixing elements (continuation)</b>												
Adaptation of foot and shaft dimensions to next higher frame size (no terminal box adaptation!)	<b>Q97</b>	✓ <sup>1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	✓
Base frame for height adaptation of max. 2 frame sizes difference	<b>Q96</b>	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.	✓
Anchor bolts, sole plates and stainless steel shims for fixing on concrete base	<b>L33</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Machine mounting bolts, shims and tapered pins for mounting on steel foundation	<b>L31</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shims of brass material – 4 mm/motor foot, not laminated	<b>V31</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shims of stainless steel (V4A/AISI316) – 4 mm/motor foot, not laminated	<b>Q92</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Brackets for lifting and shifting	<b>P42</b>	✓ <sup>1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stainless steel external bolts	<b>P45</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional measures for 2 up to 4 years storage to storage instructions R82	<b>W50</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Impact protection for accessory equipment	<b>M81</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Internal fastening devices secured acc. to API541 2.4.1.1.d	<b>Q51</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Reverse lock for direction right seen from DE (left locked)	<b>G48</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Reverse lock for direction left seen from DE (right locked)	<b>G49</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
<b>Special measures for low temperature design</b>												
Operation at ambient temperatures down to -50 °C and transport down to -50 °C	<b>D02</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.
Operation at ambient temperatures down to -40 °C and transport down to -40 °C	<b>D03</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operation at ambient temperatures down to -30 °C and transport down to -40 °C	<b>D04</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sleeve bearing design without forced lubrication for low temperatures <sup>2)</sup>	<b>Q26</b>	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low temperature sleeve bearings for forced oil lubrication	<b>Q27</b>	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low temperature sleeve bearings without forced lubrication however with bearing heater <sup>2)</sup>	<b>Q28</b>	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oil level switch for sleeve bearings	<b>Q29</b>	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Degree of protection</b>												
Enclosure IP56	<b>K51</b>	□	□	□	□	□	□	□	✓	✓	✓	□
Enclosure IP65	<b>K50</b>	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.	–
Terminal boxes in IP65	<b>Q71</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Weather protection IP66	<b>L94</b>	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.	–
Tropical design for outdoor onshore installation (incl. P45, V10)	<b>L28</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 6/14.

## Selection and ordering data (continued)

Special versions	Additional identification code -Z with order code and plain text if required	LOHER VARIO Rib-cooled						LOHER VARIO Tube-cooled			Available for sleeve bearing motors
		Frame size						Frame size			
		355	400	450	500	560	630	710	800	1000	
1PS(1MV)4...-6B...-Z											
1PS(1MV)5...-6B...-Z											
<b>Water jacket cooling options</b>											
Flow meter for water inlet	P58	-	-	O.R.	O.R.	-	-	-	-	-	O.R.
Moisture detector	Q15	-	-	-	-	-	-	-	-	-	O.R.
Dial thermometer without contact for water inlet temperature measurement	P56	-	-	O.R.	O.R.	-	-	-	-	-	O.R.
Water jacket with special powder coating for seawater	V93	-	-	O.R.	O.R.	-	-	-	-	-	O.R.
<b>Air cooler design for IC51x (concentric tubes)</b>											
Cooling tubes zinc galvanized	Q16	-	-	-	-	-	-	-	-	-	-
Cooling tubes of stainless steel V2A (1.4301/AISI 304)	V97	-	-	-	-	-	-	□	□	□	✓
Cooling tubes of stainless steel V4A (1.4541/AISI 316SS)	Q17	-	-	-	-	-	-	✓	✓	✓	✓
<b>Sleeve bearing options</b>											
Sleeve bearings with increased axial float of total 12.7 mm (± 6.35 mm) acc. to API541	Q01	-	-	-	-	-	-	-	-	-	-
DIN-flanges (incl. counter flange) for oil connection (circul. oil lub.)	H43	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
ANSI-flanges (incl. counter flange) for oil connection (circul. oil lub.)	H44	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing provisioned for oil pressure relief, (hydrostatic)	P07	-	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	✓
Forced circulation oil lubrication (with oil cooling) instead of oil-ring lubrication – without oil flow sight glass	L60	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
Forced oil lubrication instead of ring lubrication – welded flanges DIN or ANSI without oil flow sight glass	Q18	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oil inlet with throttle valve, flow meter, manometer, oil drain with sight glass and DIN-flange incl. counter flange	H11 <sup>3)</sup>	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oil inlet with throttle valve, flow meter, manometer, oil drain with sight glass and ANSI-flange 150lb incl. counter flange	H12 <sup>3)</sup>	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stainless steel oil collection piping acc. to ANSI/ASME design	P44	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oil inlet- and outlet piping in DIN-design	Q52	-	○	○	○	○	○	○	○	○	○
Oil inlet- and outlet piping in ANSI-design	Q53	-	□	□	□	□	□	□	□	□	□
Counter flanges for oil inlet- and outlet	Q54	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
Orifice for oil inlet DE and NDE	Q55	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
Throttle valve for oil inlet and outlet DE and NDE	Q56	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oil flow meter without contact DE and NDE	Q57	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pressure gauge with ball valve DE and NDE	Q58	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gauge-glass for oil drain DE and NDE	Q59	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oil flow indicator and regulation valve (without contacts) for oil inlet DE and NDE	V69	-	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 6/14.

## Options

## Selection and ordering data (continued)

Special versions	Additional identification code -Z with order code and plain text if required	LOHER VARIO Rib-cooled						LOHER VARIO Tube-cooled			Available for sleeve bearing motors
		Frame size						Frame size			
		355	400	450	500	560	630	710	800	1000	
1PS(1MV)4...-6B...-.....-Z											
1PS(1MV)5...-6B...-.....-Z											
<b>Sleeve bearing options (continuation)</b>											
Oil flow meter with contacts (two-way contact) and leads in aux. terminal box	P66	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
DE insulation for sleeve bearing	L18	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing insulation NDE for sleeve bearings	Q07	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing insulation DE and NDE (DE linked to earth) for sleeve bearings	Q08	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Constant oiler DE and NDE (200 ml)	V71	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing ventilation for lower bearing temperature for sleeve bearing design	V26	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Support ring for coupling guard	L15	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Provision for oil change during operation for sleeve bearings without forced lubrication	Q50	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dial temperature gauge (Thermowell) for oil drain	V73	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Antifriction bearing options</b>											
Bearing for increased lateral forces (roller bearing DE)	K20	O. R.	O. R.	–	–	–	–	–	–	–	–
Axial thrust bearing	V20	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–
Bearing insulation NDE for antifriction bearing	L27	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
Bearing insulation DE and NDE (DE linked to earth) for antifriction bearing design	V18	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
Bearing ventilation for lower bearing temperature – for antifriction bearing design grease lubricated	V17	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
Grease extractors for bearing DE and NDE	V21	–	–	✓	✓	✓	✓	✓	✓	✓	–
Automatic lubricator DE and NDE – suitable for ambient temperature from -15 °C up to + 50 °C	V22	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
Enlarged grease chamber DE and NDE	V25	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
Preparation for Shock pulse measurement (SPM) bearing monitoring, only thread M8 for adapter	W84	✓ <sup>1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	–
SPM bearing monitoring: measuring nipple system 32 – thread M8, DE + NDE	G50	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
Shock pulse measurement (SPM), fixed sensor and distribution box	H05	–	–	–	–	–	–	–	–	–	–
Shock pulse measuring (SPM), alarm box complete, no Ex-protection	H07	–	–	–	–	–	–	–	–	–	–
Support ring for coupling guard	L15	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
<b>Shaft/rotor design</b>											
Half key balancing (Standard)	L69	□	□	□	□	□	□	□	□	□	□
Balancing with full key	L68	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second shaft end up to 50 % rated torque	K16	✓	✓	✓	✓	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Second standard shaft extension for up to 100 % nominal torque with IMB3	Q21	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓

For legends and footnotes, see page 6/14.

## Selection and ordering data (continued)

Special versions	Additional identification code <b>-Z</b> with order code and plain text if required	LOHER VARIO Rib-cooled						LOHER VARIO Tube-cooled			Available for sleeve bearing motors
		Frame size						Frame size			
		355	400	450	500	560	630	710	800	1000	
<b>1PS(1MV)4...-6B...-.....-Z</b>											
<b>1PS(1MV)5...-6B...-.....-Z</b>											
<b>Shaft/rotor design</b> (continuation)											
Non-standard cylindrical shaft end (diameter identical or smaller as standard)	<b>Y55</b>	●	●	●	●	●	●	●	●	●	✓
Pressure oil connection with cylindrical or stepped shaft end instead of feather key connection	<b>Y85</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tapered shaft end with shaft nut	<b>T36</b>	✓ <sup>1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓
Flanged shaft end for sleeve bearing motors	<b>V65</b>	–	–	–	–	–	–	–	–	–	–
Shaft material of alloy steel (1.7225 – 42CrMo4)	<b>L72</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Short circuit ring with stainless steel shrink caps for increased motor speed	<b>Q05</b>	O.R. <sup>1)</sup>	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	✓
Shaft and flange with increased precision acc. to DIN 42955	<b>K04</b>	✓	✓	✓	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	✓
Fitting of coupling half (customer supplied, ready machined and balanced)	<b>L17</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Vibration values/monitoring</b>											
Vibration severity grade A (IEC 60034-14) – for converter driven motors at minimum and rated frequency only!	<b>K01</b>	□	□	□	□	□	□	□	□	□	□
Vibration severity grade B (IEC 60034-14) – for converter driven motors at minimum and rated frequency only!	<b>K02</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Run out and shaft vibration acc. to IEC 60034-14 grade A	<b>V66</b>	–	□	□	□	□	□	□	□	□	□
Run out and shaft vibration acc. to IEC 60034-14 grade B	<b>V67</b>	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Run out and shaft vibration acc. to PGI-Norm; max. 15 µm/50.8 µm	<b>Q03</b>	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Run out and shaft vibration acc. to Shell DEP; mx. 12.5 µm/50 µm	<b>Q04</b>	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Run out acc. to API 541-2003 → max. 11.4/38 µm	<b>V68</b>	–	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	✓
Provision for housing vibration probe, one flat surface with thread M8x1 – no cabling and no terminal box)	<b>P63</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sensor for enclosure vibration monitoring (preferred product) with loose cable	<b>V14</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sensor for enclosure vibration monitoring (preferred product), without junction box	<b>V15</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sensor for enclosure vibration monitoring Bently Nevada Accelerometers without separate junction box	<b>V16</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prepared for shaft vibration monitoring with sleeve bearings in X-Y-direction	<b>A39</b>	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft vibration monitoring for sleeve bearings, Bently Nevada Proxpac	<b>A02</b>	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sleeve bearings with installed shaft vibration probes ( 2 × 2 in X-Y) with aux. terminal box	<b>Q02</b>	–	✓	✓	✓	✓	✓	✓	✓	✓	✓

## Options

## Selection and ordering data (continued)

Special versions	Additional identification code <b>-Z</b> with order code and plain text if required	LOHER VARIO Rib-cooled						LOHER VARIO Tube-cooled			Available for sleeve bearing motors
		Frame size						Frame size			
		355	400	450	500	560	630	710	800	1000	
<b>1PS(1MV)4...-6B...-.....-Z</b>											
<b>1PS(1MV)5...-6B...-.....-Z</b>											
<b>Vibration values/monitoring (continuation)</b>											
Sleeve bearings provisioned for one keyphasor	<b>Q06</b>	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
One keyphasor installed and wired to aux. terminal box	<b>P61</b>	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Noise &amp; ventilation design</b>											
Clockwise rotation viewed to DE	<b>K97</b>	□	□	□	□	□	□	□	□	□	□
Anti-clockwise rotation viewed to DE	<b>K98</b>	○	○	○	○	○	○	○	○	○	○
Operation for both rotations <sup>4)</sup>	<b>K99</b>	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	✓
Outer fan with corrosion protection in case of metal fan	<b>W63</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Outer fan of brass (non sparking design)	<b>W66</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Outer fan of stainless steel (non corroding)	<b>V94</b>	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	✓
Galvanized fan cowl	<b>W69</b>	✓	✓	✓	–	–	–	–	–	–	✓
Stainless steel grid for air inlet silencer	<b>L25</b>	✓ <sup>1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stainless steel grid for air outlet silencer	<b>L26</b>	–	–	–	–	–	–	✓	✓	✓	✓
Noise reduction: silencer for air inlet (GG3)	<b>L20</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Noise jacket, noise reduction approx. 3-5dB (A) compared to standard GG1	<b>V34</b>	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	✓
Noise cabinet with inspection door, Zinc galvanized, unpainted (reduction approx. 15dB (A) based on GG1)	<b>V32</b>	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	✓
Noise cabinet with inspection door V2A (AISI304 or equivalent) unpainted (reduction approx. 15dB (A) based on GG1)	<b>V33</b>	✓	✓	✓	✓	✓	✓	O.R.	O.R.	O.R.	✓
Noise cabinet with inspection door V4A (AISI316 or equivalent) unpainted (reduction approx. 15dB (A) based on GG1)	<b>V35</b>	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	✓
Forced ventilation for outer air circuit – for Ex motors	<b>V28</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Abnormal voltage for separate fan drive motor	<b>Y81</b>	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	✓
<b>Speed monitoring and shaft grounding</b>											
Speed monitoring by inductive proximity switches, Fa. Pepperl + Fuchs, without evaluation unit	<b>A03</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Speed encoder Ex design (LOHER preferred brand)	<b>V72</b>	✓ <sup>1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hollow shaft encoder → special brand e.g. Baumer Hübner	<b>Q93</b>	–	–	–	–	–	–	–	–	–	–
Shaft earthing-brush for inverter operation	<b>M44</b>	–	–	–	–	–	–	–	–	–	–
Shaft grounding device with bearing insulation	<b>V36</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Speed encoder Ex design with integrated shaft earthing device (LOHER preferred brand)	<b>V77</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical protection for speed encoder	<b>M68</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 6/14.



## Selection and ordering data (continued)

Special versions	Additional identification code <b>-Z</b> with order code and plain text if required	LOHER VARIO						LOHER VARIO			Available for sleeve bearing motors
		Rib-cooled						Tube-cooled			
		Frame size						Frame size			
1PS(1MV)4...-6B...-Z 1PS(1MV)5...-6B...-Z		355	400	450	500	560	630	710	800	1000	
<b>Winding temperature monitoring</b>											
Motor Protection with 2 × 3 PTC Thermistors for prewarning/switching-off	<b>A12</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Motor Protection with 2 × 3 PTC Thermistors for prewarning/switching-off as sole protection with converter (TMS)	<b>A16</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Motor protection with 2 × 3 PTC's for prewarning/switching-off with surge arrestors	<b>A17</b>	O. R. <sup>1)</sup>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Temperature measuring of the winding by means of embedded temperature sensor KTY84-130	<b>A23</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 embedded resistance thermometers Pt100 without lightning arresters for 4-wire connection from terminals	<b>A65</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 embedded resistance thermometers Pt100 with lightning arresters for 4-wire connection from terminals	<b>A66</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 embedded resistance thermometers Pt100 in shielded design without lightning arresters for 4-wire connection from terminals	<b>A67</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 Ex i slot resistance thermometers Pt100 in shielded design, with surge arrestors for 3- and 4-wire connection ex terminal	<b>Q40</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Winding RTD's – Pt100 in 3- or 4-wire type ex sensor instead ex terminal (not possible for Ex i)	<b>Q43</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pt100 winding in tolerance class A with calibration certificate	<b>V78</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Bearing temperature monitoring</b>											
2 double resistance thermometers Pt100 for 3- or 4-wire connection from terminals, rolling-contact bearing	<b>A42</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
2 double resistance thermometers Pt100 for 3- or 4-wire connection from terminals, sleeve bearing	<b>A43</b>	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 double RTD's PT100 in shielded Ex i design for antifriction or sleeve bearing	<b>V80</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1 thermocouple per bearing	<b>Q49</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing RTD's – PT100 in 3- or 4-wire type ex sensor instead of ex terminal	<b>Q44</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1 bimetal-thermometer, diameter 100 mm, for bearing DE and NDE	<b>V70</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pt100 bearing in tolerance class A with calibration certificate	<b>V76</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Temperature gauges and transmitters</b>											
2 Capillary dial-type thermometers without contacts	<b>A70</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1 Dial type thermometer with contacts (capillary principle) – Ex i design – without supply unit	<b>V89</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3 Transmitters 4-20 mA for Pt100 winding	<b>P20</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

## Options

## Selection and ordering data (continued)

Special versions	Additional identification code <b>-Z</b> with order code and plain text if required	LOHER VARIO Rib-cooled						LOHER VARIO Tube-cooled			Available for sleeve bearing motors
		Frame size						Frame size			
		355	400	450	500	560	630	710	800	1000	
<b>1PS(1MV)4...-6B...-.....-Z</b> <b>1PS(1MV)5...-6B...-.....-Z</b>											
<b>Temperature gauges and transmitters (continuation)</b>											
1 transmitter (total 2) 4-20 mA for Pt100 bearing DE and NDE	<b>V83</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1 transmitter 4-20 mA with digital display with Exd or Exi-approval	<b>V88</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Heaters</b>											
Space heater 110-120 V (min 100 V, max. 132 V)	<b>M12</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Space heater 220-240 V (min 200 V, max. 264 V)	<b>M13</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heater Ex e II T3, 110-120 V (min 100 V, max. 132 V)	<b>M14</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Anti-condensation heater Ex e II T3, 220-240 V (min. 200 V, max. 264 V) <sup>5)</sup>	<b>M15</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Anti-condensation heater with other rated voltages for Ex-motors, voltage to be defined	<b>Q48</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Heater in main terminal box	<b>P84</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Auxiliary terminal boxes</b>											
Auxiliary terminal box Ex e – design/grey cast iron	<b>W72</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Auxiliary terminal box in cast iron design (safe, Ex e, Ex i) with removable gland plate "undrilled"	<b>Q75</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Auxiliary terminal box – stainless steel model	<b>M51</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Separate auxiliary terminal box for heater	<b>M52</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Auxiliary terminal box in cast iron design (safe, Ex e or Ex i) with removable gland plate "metric thread drilled and with metal plug"	<b>Q76</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Drain & breather for auxiliary terminal box (IP56) – not available for Ex d terminal boxes	<b>Q77</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional terminal box Ex d IIC made of grey cast iron (cable entry thread size required)	<b>V43</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Separate Ex d terminal box for CT's, Iris couplers, surge arrestors or surge capacitors	<b>V90</b>	O. R. <sup>1)</sup>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
<b>Main terminal box &amp; options</b>											
Terminal box on RHS (view onto DE)	<b>K09</b>	□ <sup>6)</sup>	□	□	□	□	□	□	□	□	✓
Terminal box on left hand side (view onto DE)	<b>K10</b>	○	○	○	○	○	○	○	○	○	✓
Terminal box on top	<b>K11</b>	○ <sup>6)</sup>	○	○	○	○	○	O. R.	O. R.	O. R.	✓
Cable entry side DE	<b>K83</b>	○	○	○	○	○	○	○	○	○	✓
Cable entry side NDE	<b>K84</b>	○	○	○	○	○	○	○	○	○	✓
Turn of the cable box about 180°	<b>K85</b>	○	○	○	○	○	○	○	○	○	✓
Undrilled cable gland plate at main terminal box	<b>L01</b>	○	○	○	○	○	○	○	○	○	✓
Raychem heat shrink caps for terminals, in main terminal box (phase insulation) <sup>7)</sup>	<b>V53</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 6/14.

## Selection and ordering data (continued)

Special versions	Additional identification code <b>-Z</b> with order code and plain text if required	LOHER VARIO						LOHER VARIO			Available for sleeve bearing motors
		Rib-cooled						Tube-cooled			
		Frame size						Frame size			
1PS(1MV)4...-6B...-Z 1PS(1MV)5...-6B...-Z		355	400	450	500	560	630	710	800	1000	
<b>Main terminal box &amp; options</b> (continuation)											
Cable pothead (e.g. Raychem kit) for main terminal box <sup>7)</sup>	<b>V54</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Main terminal with tinned cable lug for copper cable	<b>W34</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Drain & breather for main terminal box (IP56 only!) – not available for Ex d terminal boxes	<b>Q78</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Main terminal box suitable for installation of 3 current transformers differential type <sup>7)</sup>	<b>Q33</b>	O.R. <sup>1)</sup>	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	✓
Enlarged main terminal box with 6 terminals for parallel connection – synthetic studs and pressure relief <sup>7)</sup>	<b>Q32</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second main terminal box – standard type, located opposite <sup>7)</sup>	<b>Q34</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Main terminal box phase segregated Ex e design with 3 synthetic terminals and short circuit certificate <sup>7)</sup>	<b>V50</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Main terminal box phase segregated Ex e design with 6 synthetic terminals and certificate for short circuit capability <sup>7)</sup>	<b>V51</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Main terminal box phase segregated Ex e design max. 11 kV – 3 synthetic studs & pressure relief <sup>7)</sup>	<b>V23</b>	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Main terminal box phase segregated Ex e design max. 11 kV with 6 synthetic terminals for increased short circuit <sup>7)</sup>	<b>V24</b>	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Main terminal box Shell-design 100 mm longer with 3 synthetic terminals <sup>7)</sup>	<b>Q30</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Main terminal box phase segregated Ex e design with 3 synthetic terminals and short circuit certificate <sup>7)</sup>	<b>V52</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Main terminal box in Ex d design with 3 standard terminal studs max. 6.6 kV <sup>7)</sup>	<b>Q31</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Main terminal box in Ex d design with 3 terminals (synthetic studs) max. 6.6 kV <sup>7)</sup>	<b>V37</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Main terminal box in Ex d design with 3 terminals (synthetic studs) max. 11 kV <sup>7)</sup>	<b>V45</b>	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Main terminal box in Ex d design 6 terminals for integrated star point <sup>7)</sup>	<b>V44</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Euromold main terminal box (safe area or Ex e design) with connector → 3 terminals <sup>7)</sup>	<b>V48</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Euromold main terminal box (safe area or Ex e) with connector → 6 terminals <sup>7)</sup>	<b>V49</b>	✓ <sup>1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pfisterer main terminal box with connector → 3 terminals	<b>V46</b>	–	–	–	–	–	–	–	–	–	–

## Options

## Selection and ordering data (continued)

Special versions	Additional identification code <b>-Z</b> with order code and plain text if required	LOHER VARIO						LOHER VARIO			Available for sleeve bearing motors
		Rib-cooled						Tube-cooled			
		Frame size						Frame size			
1PS(1MV)4...-6B...-.....-Z	1PS(1MV)5...-6B...-.....-Z	355	400	450	500	560	630	710	800	1000	
<b>Neutral point terminal box &amp; options</b>											
Neutral point terminal box – standard – max. 6.6 kV <sup>8)</sup>	<b>L55</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Neutral point terminal box – standard, max. 11 kV <sup>8)</sup>	<b>L56</b>	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Drain & breather for neutral point terminal box (IP56)	<b>Q79</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Neutral point terminal box in Ex d (flame proof) provisioned for 3 window type current transformers (CT selection V57) <sup>8)</sup>	<b>V40</b>	✓ <sup>1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓
Neutral point terminal box in Ex d (flame proof) with standard terminal studs <sup>8)</sup>	<b>V38</b>	✓ <sup>1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓
Neutral point terminal box in Ex d (flame proof) with synthetic terminal studs <sup>8)</sup>	<b>V39</b>	✓ <sup>1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓
Neutral point terminal box phase segregated Ex e design – 3 terminals – 6.6 kV <sup>8)</sup>	<b>V41</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Neutral point terminal box phase segregated Ex e design – 6 synthetic terminals – 6.6 kV <sup>8)</sup>	<b>V42</b>	✓ <sup>1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓
Neutral point terminal box phase segregated (Ex e) – 3 synthetic terminals – 11 kV with flexible star point link <sup>8)</sup>	<b>Q38</b>	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Neutral point terminal box Ex e phase segregated – 6 synthetic terminals – 11 kV <sup>8)</sup>	<b>Q72</b>	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Pfisterer neutral point terminal box with connector → 3 terminals	<b>V47</b>	–	–	–	–	–	–	–	–	–	–
<b>Fittings for main- and neutral point terminal boxes</b>											
3 differential Current Transformer – window type – for star point term. box V40 or Q36 or Q37	<b>V57</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3 current transformers "window self balance type" in Ex d terminal box with attached main terminal box	<b>V27</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Partial discharge monitoring – inductive; without evaluation unit and commissioning e.g. Rogowsky coils	<b>V59</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Partial discharge monitoring – capacitive; without evaluation unit and commissioning e.g. IRIS couplers	<b>V60</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lightning arrestors und surge capacitors in separate Ex d terminal boxes	<b>V64</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Lightning arrestors und surge capacitors in special main terminal box for Ex n, Ex e, Ex d motors	<b>V63</b>	–	–	–	✓	✓	✓	✓	✓	✓	✓
<b>Name plates</b>											
Second rating plate separately	<b>K31</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second rating plate installed in terminal box	<b>W47</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Engraved tag plate fixed on terminal box	<b>V96</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional plate for customer data	<b>Y82</b>	●	●	●	●	●	●	●	●	●	✓
Plates in other languages as German or English	<b>W49</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 6/14.

## Selection and ordering data (continued)

Special versions	Additional identification code <b>-Z</b> with order code and plain text if required	LOHER VARIO Rib-cooled						LOHER VARIO Tube-cooled			Available for sleeve bearing motors
		Frame size						Frame size			
		355	400	450	500	560	630	710	800	1000	
<b>1PS(1MV)4...-6B...-Z</b>											
<b>1PS(1MV)5...-6B...-Z</b>											
<b>Painting systems</b>											
RAL colors different from catalogue	<b>Y51</b>	●	●	●	●	●	●	●	●	●	✓
Paint colors according Munsell or British Standard	<b>Y50</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Standard coating in RAL 1004/1018/2000/2004/5009/5012/5015/6003/6011/7000/7011/7031/7038/9002	<b>Y53</b>	●	●	●	●	●	●	●	●	●	✓
Special coating in RAL 1004/1018/2000/2004/5009/5012/5015/6003/6011/7000/7011/7031/7038/9002 – special coat system extra!	<b>Y54</b>	●	●	●	●	●	●	●	●	●	✓
Coating system N08 – 110 µm (C3-medium)	<b>V09</b>	□	□	□	□	□	□	□	□	□	✓
Coating system N14/J08 – 170 µm (chemical industry + on-shore, C5-industrial climate)	<b>V10</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coating system Z21/J08 – 210 µm (offshore, C5M-M)	<b>V11</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased layer thickness 275 µm for coating system Z21 (C5M-high) – only in combination with V11	<b>V19</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special offshore painting S13 related to NORSOK M501 (C5M-high) with comments and deviations	<b>V12</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Special coating system S11/J08 (e.g. submerged motors) – corrosion category acc. to EN/ISO 12944-5	<b>V13</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
Outer painting for zinc galvanized noise cabinet N08 (110 µm) – no special pre-treatment	<b>V98</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
2 metal test sheets (100 x 150 mm) with paint layer for special paint inspection	<b>V08</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Ship building classifications</b>											

For ship building options see pages 5/4 to 5/7.

<b>Warranty</b>											
Extension of liability for defects by 12 months to a total of 24 months from delivery	<b>Q80</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of liability for defects by 18 months to a total of 30 months from delivery	<b>Q81</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of liability for defects by 24 months to a total of 36 months from delivery	<b>Q82</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of liability for defects by 30 months to a total of 42 months from delivery	<b>Q83</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of liability for defects by 36 months to a total of 48 months from delivery	<b>Q84</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of liability for defects by 48 months to a total of 60 months from delivery	<b>Q85</b>	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓

For legends and footnotes, see page 6/14.

## Options

### Selection and ordering data (continued)

- Standard version
- Alternative design, without additional charge
- Additional plain text is required for clarification
- ✓ With additional charge
- O. R. On request
- Not available

<sup>1)</sup> Not possible for cast iron housing motors (Article No. 10th position = D/F)  
<sup>2)</sup> 2-pole motors: on request only!  
<sup>3)</sup> Configure oil supply system using options Q52-Q59, V69, P66 if necessary.  
<sup>4)</sup> For Direction of rotation, fans and fan cover see page 2/10 and for Noise see page 3/118.  
<sup>5)</sup> For Space heaters see page 2/44.

<sup>6)</sup> Terminal box on top: standard design for cast iron housing motors (Article No. 10th position = D/F)  
<sup>7)</sup> For Main terminal boxes see page 2/13.  
<sup>8)</sup> For Terminal boxes for neutral point see page 2/22.

## Tests/Documentation



**7/2** Testing of LOHER VARIO  
Rib-cooled/Tube-cooled motors

**7/4** Test options

**7/5** Documentation options



## Tests/Documentation

### Testing of LOHER VARIO Rib-cooled/Tube-cooled motors

#### Overview



Ruhstorf test facility for large motors

The Siemens factory in Ruhstorf can rely on a state of the art test facility, to meet the high requirements of customers in Oil&Gas and chemical industry. Quality and reliability are confirmed multiple times by certification authorities for explosion proof motors. Our test facilities are designed to test the full spectrum of LOHER VARIO Rib-cooled and LOHER VARIO Tube-cooled flameproof motor series according to latest standards and rules.

Each motor has to undergo a routine test (F00) before leaving the Siemens factory. Type tests, heat runs and special tests are possible. The test facility is separated into two divisions according to the different sizes of motors produced in Ruhstorf. See the diagrams below for test capacities of the larger testing facility.

#### Noise tests



Ruhstorf test facility – noise test room for measurements at load condition

Noise tests can be done in a sound proof room (please contact Siemens for details) on request. Normally the noise testing is done without load. On request the testing can be done while under load. See the diagram below for maximum noise testing powers inside the sound proof room. Larger motors can be tested outside the sound proof room using special testing methods to filter ambient noise.

#### Special tests



Ruhstorf test facility – water basin for submersed heat run test up to approx. 3 MW

Special equipment for specific customer ambient conditions is available, like:

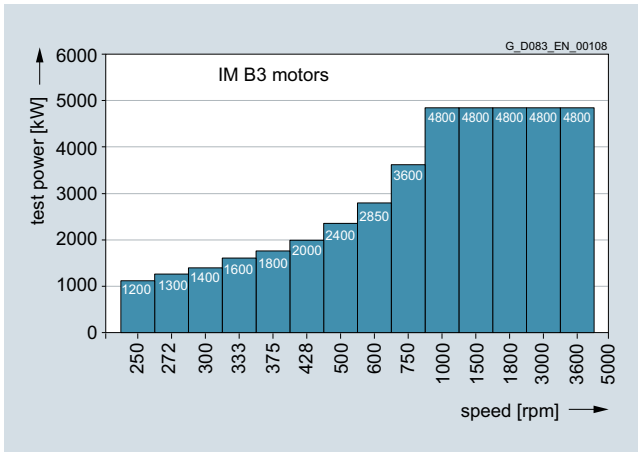
- Cooling water supply up to 40 m<sup>3</sup>/h and +55 °C
- Oil aggregates up to 150 l/min
- Mobile oil aggregate with filters according API regulation
- Water basin for testing of submersible motors up to frame size 630

Apart from the possibilities of the testing facility it is possible to agree on “hold points”. These “hold points” can be used to inspect/test parts of the motor even when the production is not finished yet according to customer requirements. This inspections/tests are carried out in special areas of the factory or, if required, in the testing facility.

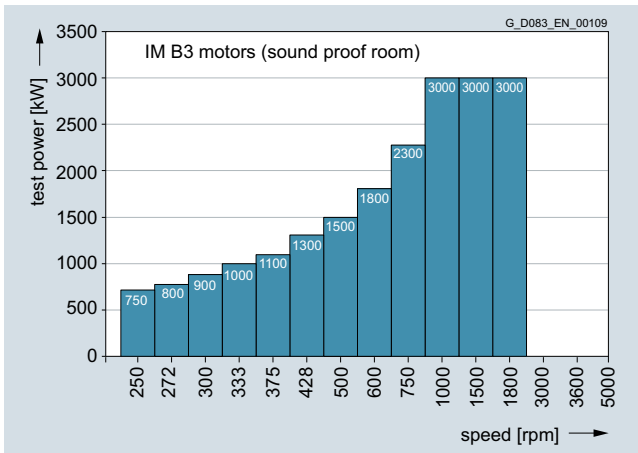
The Ruhstorf test facility can not only organize inspections and witnessed tests but also tests of complete drive systems (motor + converter + transformer). On request Siemens can test the motors according special procedures like API.



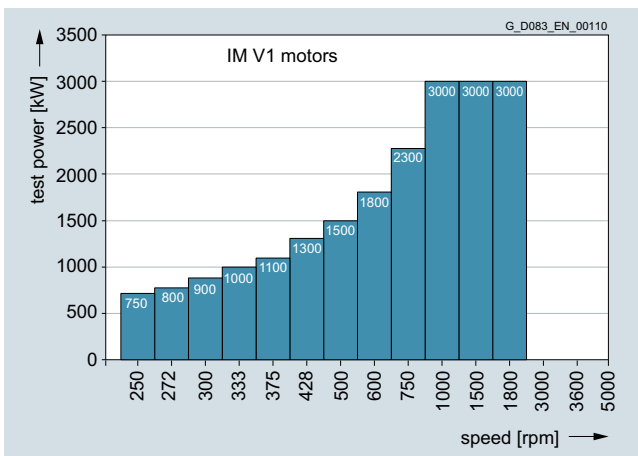
## Characteristic curves



Maximum possible test bed powers for large horizontal motors, Ruhstorf factory



Maximum possible test bed powers for large horizontal motors in a soundproof room, Ruhstorf factory



Maximum possible test bed powers for large vertical motors, Ruhstorf factory

## Tests/Documentation

### Test options

#### Selection and ordering data

Tests and inspections for LOHER VARIO Rib-cooled/Tube-cooled flameproof motors 1PS4/1PS5/1MV4/1MV5

Order code		Documentation	Test description
Unwitnessed	Witnessed		
<b>F00</b>	<b>F01</b>	<b>U51</b>	Routine test acc. to IEC (sine wave voltage)
	<b>F03</b>	<sup>1)</sup>	Visual witness inspection with test report review
<b>F14</b>	<b>F15</b>	<sup>2)</sup>	Recording of no-load characteristic <sup>2)</sup>
<b>F16</b>	<b>F17</b>	<sup>2)</sup>	Recording of short-circuit characteristic <sup>2)</sup>
<b>F18</b>	<b>F19</b>	<sup>1)</sup>	Recording of load characteristic
<b>F22</b>	<b>F23</b>		Dissipation factor test (loss tan delta) on 2 test coils (test coils separate F90)
<b>F26</b>	<b>F27</b>		Dissipation factor test (loss tan delta) on built-in stator winding in test bay
<b>F28</b>	<b>F29</b>		No-load noise measurement, without noise analysis Please use option F62/F63 for noise analysis
<b>F30</b>	<b>F31</b>		Measurement of cooling air flow and pressure drop
<b>F32</b>	<b>F33</b>		Measurement of cooling flow distribution
<b>F34</b>	<b>F35</b>		Plotting of current and speed variation during starting and determination of torque-speed curve
<b>F36</b>	<b>F37</b>		Determination of moment of inertia by retardation method
<b>F38</b>	<b>F39</b>		Overspeed test
<b>F40</b>	<b>F41</b>		Plotting of residual voltage curve
<b>F42</b>	<b>F43</b>		Sealed winding conformance test (spray-test) according NEMA
<b>F46</b>	<b>F47</b>	<b>U73</b>	Partial discharge measurement on completed winding
<b>F52</b>	<b>F53</b>	<sup>2)</sup>	Measurement of starting torque and -current
<b>F54</b>	<b>F55</b>	<sup>1) 2)</sup>	Measurement of polarization index
<b>F56</b>	<b>F57</b>		Measurement of shaft vibrations (sleeve bearing only!)
<b>F58</b>	<b>F59</b>	<b>U56</b>	Vibration modal analysis (2-pole and V1 fixed mounted)
<b>F60</b>	<b>F61</b>		Impulse-voltage test or AC test on 2 single test coils (select test coils extra with F90)
<b>F62</b>	<b>F63</b>		Noise analysis <sup>3)</sup>
<b>F68</b>	<b>F69</b>		Sleeve bearing inspection
<b>F70</b>		<b>U79</b>	Ultrasonic test on motor shaft with certificate
<b>Standard</b>	<b>F71</b>	<b>U50</b>	Rotor balancing with witness inspection
<b>F72</b>	<b>F73</b>		Stator Core Test with Infrared-Camera
<b>F74</b>	<b>F75</b>	<b>U55</b>	Noise test under load, without noise analysis Only in combination with type test, please use option F62/F63 for noise analysis
<b>F76</b>		<b>U76</b>	Magnetic particle test on motor shaft with certificate
	<b>F77</b>	<b>U81</b>	Painting inspection (sample paint sheets if required with extra price → option V90)
<b>F78</b>			Functional test Ex p device (purging system) unwitnessed
	<b>F79</b>		Packing inspection by third party inspector or customer
<b>F82</b>	<b>F83</b>	<b>U53</b>	Type test with heat run for horizontal motors acc. to IEC (sine wave voltage)
<b>F90</b>			2 Test coils for sample coil test (used for tests F22/23/60/60/61)
<b>F92</b>	<b>F93</b>	<b>U53</b>	Type test with heat run for vertical motors acc. to IEC (sine wave voltage)
	<b>F95</b>	<b>U53</b>	Type test for motor together with SINAMICS G180 converter
	<b>F97</b>	<b>U53</b>	Type test for motor together with SINAMICS GM/SM or SINAMICS PERFECT HARMONY converter (max. 3 days! Service technician for converter adjustment not included!)
	<b>F99</b>	<b>U53</b>	Type test for motor together with non-Siemens converter (max. 3 days! Service technician for converter adjustment not included!)
			Special test on request
			Expediting during production

#### Marine applications

For a detailed description of available ship building options and the necessary tests see pages 5/4 to 5/7.

<sup>1)</sup> Only in combination with F82/83 or F92/93: document U53

<sup>2)</sup> Only in combination with F00/01: document U51

<sup>3)</sup> Only in combination with F74/74 or F28/29

**Selection and ordering data**

 Documentation for LOHER VARIO Rib-cooled/Tube-cooled  
 flameproof motors 1PS4/1PS5/1MV4/1MV5

Order code	Documentation description	Available language
U92	Documentation package TM1 included in motor price, consisting of: U01+U04+U06+U08+U15+U17+U24+U25+U36+U43+U51+U56+U57+U58	DE, EN
U01	LOHER data sheet	DE, EN, FR, IT, ES, RU
U02	Customer data sheet	
U03	Current-starting time characteristic	DE, EN
U04	Current-torque characteristic with indicated load torque curve	DE, EN
U05	Transient air gap torques	DE, EN
U06	Circuit diagram(s)	DE, EN, FR
U07	Equivalent circuit diagram	DE, EN, FR, IT, ES
U08	Terminal box drawing	DE, EN
U09	Wöhler-Curve (endurance range of motor shaft)	DE, EN
U10	Indication of the shock resistance	DE, EN
U11	Calculation of shock resistance	DE, EN
U12	Foundation load	DE, EN, FR, IT, ES
U13	Calculation of the axial magnetic pull	DE, EN
U14	Lateral critical speed analysis + 1 week delivery time	DE, EN
U15	Dimension drawing	DE, EN
U16	Speed-starting time characteristic	DE, EN
U17	Bearing and lubrication data sheet	DE, EN, FR, IT, ES, RU
U18	Installation and operating instructions	DE, EN, FR, IT, ES, RU
U19	Shaft drawing with values of torsion stiffness 6 weeks after entered & clarified SAP order	DE, EN
U20	Shaft drawing (without values of torsional stiffness) 4 weeks after entered & clarified SAP order	DE, EN
U21	Instrument data sheet (all instruments combined)	DE, EN
U22	Rating plate drawing	DE, EN
U23	Noise characteristics report (standard)	DE, EN
U24	Set point values e.g. for Pt100	DE, EN
U25	Cooler data (water cooler) only in case of IC8xW motors	DE, EN
U26	Spare parts list with sectional drawing (without prices)	DE, EN
U27	Spare parts list with sectional drawing with prices 12 weeks after entered & clarified order	DE, EN
U28	Drawing motor thermal growth	DE, EN
U30	Winding diagram	DE, EN
U31	Shell record card	DE, EN
U34	Calculation of the Reed-frequency	DE, EN
U35	Lifting and transport recommendation	DE, EN
U36	Painting description	DE, EN
U37	P and ID diagram	DE, EN
U38	Power factor-efficiency characteristic	DE, EN
U39	Power factor-speed characteristic	DE, EN
U41	Certificate of conformity for mounting parts	DE, EN
U42	Certificate of conformity for terminal box	DE, EN
U43	Declaration of incorporation	DE, EN
U44	Certificate of conformity of IP-Protection	DE, EN
U45	Lifting lug calculation	DE, EN
U46	Bearing life time calculation	DE, EN
U47	Air gap calculation	DE, EN

## Tests/Documentation

### Documentation options

#### Selection and ordering data (continued)

Order code	Documentation description	Available language
U50	Balancing certificate (multi)	DE, EN
U51	Inspection certificate 3.1 EN10204 (multi)	DE, EN, FR, RU
U52	Type test report (original motor)	DE, EN
U53	Type test report (order-specific) only in combination with test F82/F83/F92/F93/F95/F97/F99	DE, EN
U54	Load characteristics select applicable type test e.g. F82/F83/F92/F93/F95/F97/F99	DE, EN
U55	Order-specific noise test report 3.1 at no load	DE, EN
U56	Vibration test report 3.1 (EN10204) according to test F62/F63/F74/F75	DE, EN
U57	Data information only for converter driven motors	DE, EN
U58	EC type examination	DE, EN
U59	Acceptance test certificate select applicable witnessed test	DE, EN
U60	Shaft material certificate 3.1	DE, EN
U61	Cooling material certificate 3.1	DE, EN
U62	Calibration certificates	DE, EN
U63	Quality plan not including material certificates	DE, EN
U64	Thermal limit characteristic	DE, EN
U65	Temperature rise characteristic	DE, EN
U66	External certificate according design option <a href="#">see page 6/3</a> "International certificates" for available design options	DE, EN
U67	Manufacturers certificate – flame path 3.1	DE, EN
U68	Certificate of compliance	DE, EN
U69	Manufacturing record book includes U60/U74/U75	DE, EN
U70	Tangent-delta measuring protocol (complete winding) 3.1	DE, EN
U71	Tangent-delta measuring protocol (10 % of the coils) 3.1	DE, EN
U72	Sample coil test protocol 3.1 only in combination with tests F60+F90	DE, EN
U73	Partial discharge measurement report 3.1	DE, EN
U74	Material certificate for lamination 2.2	DE, EN
U75	Material certificate for copper 2.2	DE, EN
U76	Magnetic particle test report for motor shaft	DE, EN
U77	Magnetic particle inspection measurement report for lifting eye 3.1	DE, EN
U78	Liquid-penetrant test report for motor shaft 3.1	DE, EN
U79	Ultrasonic test report for motor shaft 3.1 only in combination with test F70	DE, EN
U80	Air gap measurement report 3.1 measured before assembly!	DE, EN
U81	Layer thickness protocol 3.1 - total layer thickness only	DE, EN
U82	Protection level certificate 3.1	DE, EN
U83	Shaft vibration and run out protocol	DE, EN
U84	Customer-specific dimension protocol only in combination with tests F82/F83/F92/F93	DE, EN
U85	Layer thickness protocol 3.1 of each layer	DE, EN
U86	Test Procedure	DE, EN
U93	DPV1 - Pre-Pre-documentation (only with GA-drawing, starting curve and data sheet with electrical values) 2 weeks after entered & clarified SAP order	DE, EN
U94	Documents for approval TM 8 weeks after entered & clarified order	DE, EN

#### Selection and ordering data (continued)

Order code	Documentation description	Available language
<b>D00</b>	Documentation language German - standard <sup>1)</sup>	
<b>D54</b>	Documentation language Czech (operating & safety instructions) <sup>2)</sup>	
<b>D55</b>	Documentation language Polish (operating & safety instructions) <sup>2)</sup>	
<b>D56</b>	Documentation language Russian (operating & safety instructions, data sheet & dimension drawing) <sup>2)</sup>	
<b>D71</b>	Documentation language Romanian (operating & safety instructions) <sup>2)</sup>	
<b>D72</b>	Documentation language Italian (operating & safety instructions) <sup>2)</sup>	
<b>D73</b>	Documentation language Finnish (operating & safety instructions) <sup>2)</sup>	
<b>D74</b>	Documentation language Dutch (operating & safety instructions) <sup>2)</sup>	
<b>D75</b>	Documentation language Turkish (operating & safety instructions) <sup>2)</sup>	
<b>D76</b>	Documentation language US-English – standard <sup>1)</sup>	
<b>D77</b>	Documentation language French (operating & safety instructions) <sup>2)</sup>	
<b>D78</b>	Documentation language Spanish (operating & safety instructions) <sup>2)</sup>	
<b>D79</b>	Documentation language Portuguese (operating & safety instructions) <sup>2)</sup>	
<b>D81</b>	Documentation language Norwegian (operating & safety instructions) <sup>2)</sup>	
<b>D82</b>	Documentation language Hungarian (operating & safety instructions) <sup>2)</sup>	
<b>D83</b>	Documentation language Swedish (operating & safety instructions) <sup>2)</sup>	
<b>D84</b>	Documentation language Chinese simplified (operating & safety instructions) <sup>2)</sup>	
<b>D91</b>	Documentation language Serbian (operating & safety instructions) <sup>2)</sup>	
<b>B16</b>	Photos for approval before shipment (name plates + 2 motor views, shipment after approval)	
<b>B17</b>	Expediting during production	
<b>B21</b>	Motor documentation as CD (PDF format) instead sheets of paper	
<b>B22</b>	Motor documentation as email (PDF format) instead sheets of paper	
<b>B23</b>	Documentation on paper 1 set	
<b>B43</b>	Document - production flowchart: One issue	
<b>B45</b>	Document - production flowchart: Updated every month	
<b>B48</b>	Order specific plan for test procedure	
<b>On request</b>	Customer specific drawings: <ul style="list-style-type: none"> <li>• Additional individual headers in all drawings (the header has to be provided as DXF-file)</li> <li>• Documentation for approval</li> <li>• Motor cross section drawing</li> <li>• Special documentation</li> <li>• Customized operation manual</li> <li>• Compilation of the final documentation in a folder</li> </ul>	

The supplementary operating instructions contained in the operating instructions for accessories ordered from third-party companies, for example rotary pulse encoders or sleeve bearings are often only available in two languages (German and English). If other languages are not available, then these instructions are only printed in English.

<sup>1)</sup> Complete documentation available.

<sup>2)</sup> Please contact Siemens about availability/delivery time of additional documents.

## Tests/Documentation

### Notes

7



8/2

Industry Services

## Service & Support Industry Services

Your machines and plant can do more – with Industry Services.

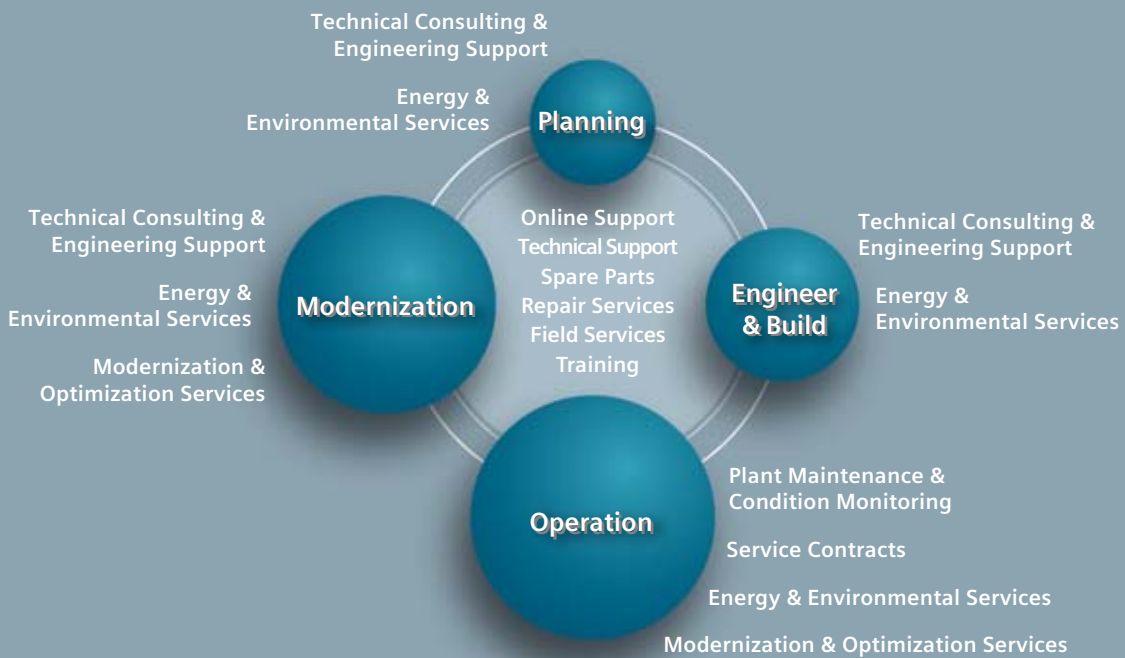


Whether it is production or process industry - in view of rising cost pressure, growing energy costs, and increasingly stringent environmental regulations, services for industry are a crucial competitive factor in manufacturing as well as in process industries.

All over the world Siemens supports its customers with product, system, and application-related services throughout the entire life cycle of a plant. Right from the earliest stages of planning, engineering, and building, all the way to operation and modernization. These services enable customers to benefit from the Siemens experts' unique technological and product knowledge and industry expertise.

Thus downtimes are reduced and the utilization of resources is optimized. The bottom line: increased plant productivity, flexibility, and efficiency, plus reduced overall costs.

Discover all advantages of our service portfolio:  
[www.siemens.com/industry-services](http://www.siemens.com/industry-services)



G\_DA65\_EN\_00270

Siemens supports its clients with technology based Services across a plants entire life cycle.



### Online Support

Online support is a comprehensive information system for all questions relating to products, systems, and solutions that Siemens has developed for industry over time. With more than 300,000 documents, examples and tools, it offers users of automation and drive technology a way to quickly find up-to-date information. The 24-hour service enables direct, central access to detailed product information as well as numerous solution examples for programming, configuration and application.

The content, in six languages, is increasingly multimediated – and now also available as a mobile app. Online support's "Technical Forum" offers users the opportunity to share information with each other. The "Support Request" option can be used to contact Siemens' technical support experts. The latest content, software updates, and news via newsletters and Twitter ensure that industry users are always up to date.



[www.siemens.com/industry/onlinesupport](http://www.siemens.com/industry/onlinesupport)

### Online Support App



Using the Online Support app, you can access over 300,000 documents covering all Siemens industrial products - anywhere, any time. Regardless of whether you need help implementing your project, fault-finding, expanding your system or are planning a new machine.

You have access to FAQs, manuals, certificates, characteristics curves, application examples, product notices (e.g. announcements of new products) and information on successor products in the event that a product is discontinued.

Just scan the product code printed on the product directly using the camera of your mobile device to immediately see all technical information available on this product at a glance. The graphical CAx information (3D model, circuit diagrams or EPLAN macros) is also displayed. You can forward this information to your workplace using the e-mail function.

The search function retrieves product information and articles and supports you with a personalized suggestion list. You can find your favorite pages – articles you need frequently – under

"mySupport". You also receive selected news on new functions, important articles or events in the News section.

Scan the QR code  
for information on  
our Online Support  
app.



The app is available free of charge from the Apple App Store (iOS) or from Google Play (Android).

[www.siemens.com/industry/onlinesupportapp](http://www.siemens.com/industry/onlinesupportapp)

### Technical Support

The ability to quickly analyze system and error messages and take appropriate action are key factors in ensuring that plants run safely and efficiently. Questions can arise at any time and in any industry, whether it's an individual product or a complete automation solution. Siemens technical support offers individual technical assistance in matters related to functionality, how to operate, applications, and fault clearance in industrial products and systems – at any time and globally, over the phone, by e-mail, or via remote access. Experienced experts from Siemens answer incoming questions promptly. Depending on the requirements, they first consult specialists in the areas of development, on-site services, and sales. Technical support is also available for discontinued products that are no longer available. Using the support request number, any inquiry can be clearly identified and systematically tracked.



<http://support.automation.siemens.com/WW/view/en/16605032>

## Service & Support

### Industry Services

#### Industry Services for the entire life cycle

##### **Spare Parts**

Drive and automation systems must be available at all times. Even a single missing spare part can bring the entire plant to a standstill – and result in substantial financial losses for the operator. The spare parts services from Siemens protect against such losses – with the aid of quickly available, original spare parts that ensure smooth interaction with all other system components. Spare parts are kept on hand for up to ten years; defective parts can be returned. For many products and solutions, individual spare parts packages ensure a preventive stock of spare parts on-site. The spare parts services is available around the world and around the clock. Optimum supply chain logistics ensure that replacement components reach their destination as quickly as possible. Siemens' logistics experts take care of planning and management as well as procurement, transportation, customs handling, warehousing, and complete order management for spare parts.



<http://support.automation.siemens.com/WW/view/en/43502238>

##### **Repair Services**

Reliable electrical and electronic equipment is crucial for operating continuous processes. That is why it is essential that motors and converters always undergo highly specialized repair and maintenance. Siemens offers complete customer and repair services – on site and in repair centers – as well as technical emergency services worldwide. The repair services include all measures necessary to quickly restore the functionality of defective units. In addition, services such as spare parts logistics, spare parts storage and rapid manufacturing are available to plant operators in all verticals. With a global network of certified repair shops operated by Siemens as well as third parties, Siemens handles the maintenance and overhaul of motors, converters, and other devices as an authorized service partner.



<http://support.automation.siemens.com/WW/view/en/16610214>

##### **Field Services**

It's a top priority in all industries: the availability of plants and equipment. Siemens offers specialized maintenance services such as inspection and upkeep as well as rapid fault clearance in industrial plants – worldwide, continuously, and even with emergency services as needed. The services include startup as well as maintenance and fault clearance during operation. The startup service includes checking the installation, function tests, parameterization, integration tests for machines and plants, trial operation, final acceptance, and employee training. All services, including remote maintenance of drives, are also available as elements of customized service contracts.



<http://support.automation.siemens.com/WW/view/en/66012486>



### **Training**

Increasingly, up-to-date knowledge is becoming a determining factor in success. One of the key resources of any company is well-trained staff that can make the right decision at the right moment and take full advantage of the potential. With SITRAIN – Training for Industry, Siemens offers comprehensive advanced training programs. The technical training courses convey expertise and practical knowledge directly from the manufacturer. SITRAIN covers Siemens' entire product and system portfolio in the field of automation and drives. Together with the customer, Siemens determines the company's individual training needs and then develops an advanced training program tailored to the desired requirements. Additional services guarantee that the knowledge of all Siemens partners and their employees is always up-to-date.



<http://support.automation.siemens.com/WW/view/en/43514324>

### **Technical Consulting & Engineering Support**

The efficiency of plants and processes leads to sustainable economic success. Individual services from Siemens help save substantial time and money while also guaranteeing maximum safety. Technical consulting covers the selection of products and systems for efficient industrial plants. The services include planning, consulting, and conceptual design as well as product training, application support, and configuration verification – in all phases of a plant's lifecycle and in all questions related to product safety. Engineering support offers competent assistance throughout the entire project, from developing a precise structure for startup to product-specific preparation for implementation as well as support services in areas such as prototype development, testing and acceptance.



<http://support.automation.siemens.com/WW/view/en/16605680>

### **Energy & Environmental Services**

Efficient energy use and resource conservation – these top sustainability concerns pay off – both for the environment and for companies. Siemens offers integrated solutions that unlock all technical and organizational potential for successful environmental management. Customized consulting services are aimed at sustainably lowering the cost of energy and environmental protection and thus increasing plant efficiency and availability. The experts provide support in the conceptual design and implementation of systematic solutions in energy and environmental management, enabling maximum energy efficiency and optimized water consumption throughout the entire company. Improved data transparency makes it possible to identify savings potential, reduce emissions, optimize production processes, and thereby noticeably cut costs.



<http://support.automation.siemens.com/WW/view/en/42350774>

## Service & Support

### Industry Services

#### Industry Services for the entire life cycle

##### **Modernization & Optimization Services**

High machine availability, expanded functionality and selective energy savings – in all industries, these are decisive factors for increasing productivity and lowering costs. Whether a company wants to modernize individual machines, optimize drive systems, or upgrade entire plants, Siemens' experts support the projects from planning to commissioning.

Expert consulting and project management with solution responsibility lead to security and make it possible to specifically identify savings potential in production. This secures investments over the long term and increases economic efficiency in operation.



<http://support.automation.siemens.com/WW/view/en/66005532>

##### **Plant Maintenance & Condition Monitoring**

Modern industrial plants are complex and highly automated. They must operate efficiently in order to ensure the company's competitive strength. In addition, the steadily increasing networking of machines and plants require consistent security concepts. Maintenance and status monitoring as well as the implementation of integrated security concepts by Siemens' experts support optimum plant use and avoid downtime. The services include maintenance management as well as consulting on maintenance concepts, including the complete handling and execution of the necessary measures. Complete solutions also cover remote services, including analysis, remote diagnosis, and remote monitoring. These are based on the Siemens Remote Services platform with certified IT security.



<http://support.automation.siemens.com/WW/view/en/59456862>

##### **Service Contracts**

Making maintenance costs calculable, reducing interfaces, speeding up response times, and unburdening the company's resources – the reduced downtimes that these measures achieve increase the productivity of a plant. Service contracts from Siemens make maintenance and repairs more cost-effective and efficient. The service packages include local and remote maintenance for a system or product group in automation and drive technology. Whether you need extended service periods, defined response times, or special maintenance intervals, the services are compiled individually and according to need. They can be adjusted flexibly at any time and used independently of each other. The expertise of Siemens' specialists and the capabilities of remote maintenance thus ensure reliable and fast maintenance processes throughout a plant's entire lifecycle.



<http://support.automation.siemens.com/WW/view/en/65961857>

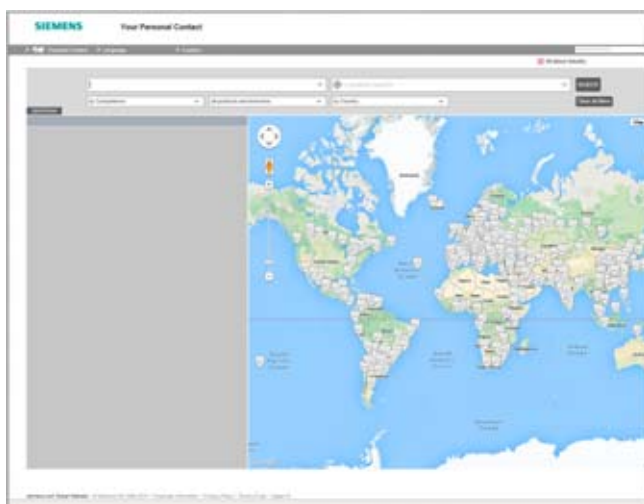
## Appendix



<b>9/2</b>	<b>Partner at Siemens</b>
<b>9/3</b>	<b>Online Services</b>
<b>9/5</b>	<b>Indexes</b>
9/5	Subject index
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9/11	Index of order codes
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## Appendix

### Partner at Siemens



At Siemens we are resolutely pursuing the same goal: long-term improvement of your competitive ability. We are committed to this goal. Thanks to our commitment, we continue to set new standards in automation and drive technology. In all industries – worldwide.

At your service locally, around the globe for consulting, sales, training, service, support, spare parts ... on the entire Industry Automation and Drive Technologies range.

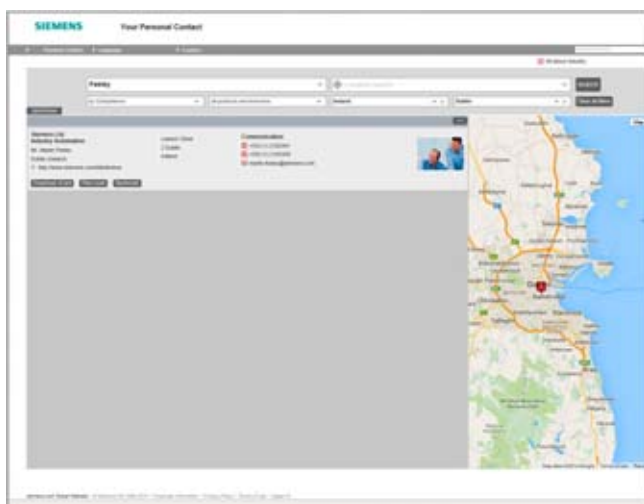
Your personal contact can be found in our Contacts Database at: [www.siemens.com/automation/partner](http://www.siemens.com/automation/partner)

You start by selecting

- the required competence,
- products and branches,
- a country,
- a city

or by a

- location search or
- person search.





### Information and Ordering Options on the Internet and DVD

#### The Future of Manufacturing in the WWW



Detailed knowledge of the range of products and services available is essential when planning and engineering automation systems. It goes without saying that this information must always be as up-to-date as possible.

Industry is on the threshold of the fourth industrial revolution as digitization now follows after the automation of production. The goals are to increase productivity and efficiency, speed, and quality. In this way, companies can remain competitive on the path to the future of industry.

You will find everything you need to know about products, systems and services on the internet at:

[www.siemens.com/industry](http://www.siemens.com/industry)

#### Product Selection Using the Interactive CA 01 Automation and Drives Catalog



Detailed information together with user-friendly interactive functions:

The CA 01 interactive catalog covers more than 100,000 products, thus providing a comprehensive overview of the product range provided by Siemens.

You will find everything you need here for solving tasks in the fields of automation, switching, installation and drives. All information is provided over a user interface that is both user-friendly and intuitive.

You can order the CA 01 product catalog from your Siemens sales contact or in the Information and Download Center:

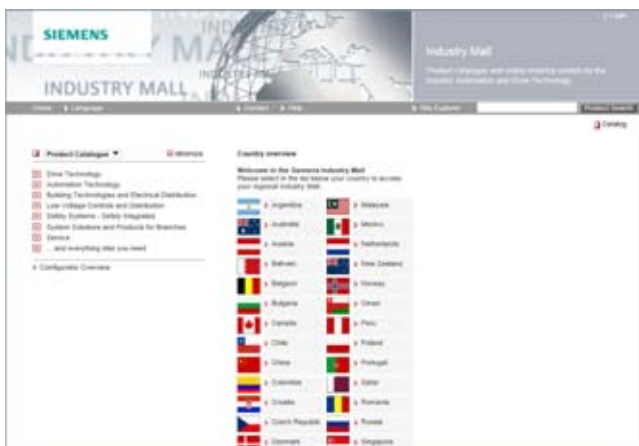
[www.siemens.com/industry/infocenter](http://www.siemens.com/industry/infocenter)

Information about the CA 01 interactive catalog can be found on the Internet at:

[www.siemens.com/automation/ca01](http://www.siemens.com/automation/ca01)

or on DVD.

#### Easy Shopping with the Industry Mall



The Industry Mall is the electronic ordering platform of Siemens AG on the Internet. Here you have online access to a huge range of products presented in an informative and attractive way.

Data transfer via EDIFACT 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.

Numerous additional functions are provided for your support. For example, 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.

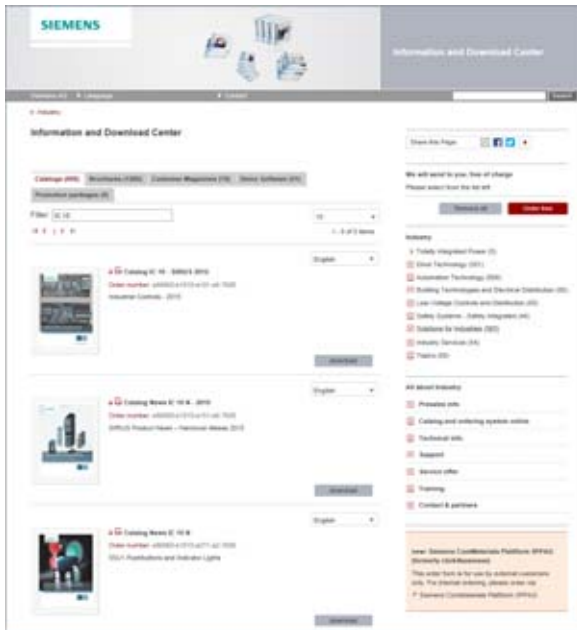
You can find the Industry Mall on the Internet at:

[www.siemens.com/industrymall](http://www.siemens.com/industrymall)

## Appendix Online Services

### Information and Download Center, Social Media, Mobile Media

#### Downloading Catalogs



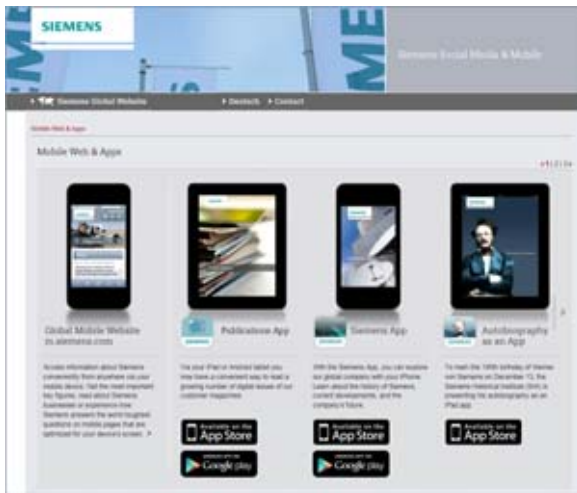
In addition to numerous other useful documents, you can also find the catalogs listed on the back inside cover of this catalog in the Information and Download Center. You can download these catalogs in PDF format without having to register.

The filter dialog above the first catalog displayed makes it possible to carry out targeted searches. If you enter "MD 3" for example, you will find both the MD 30.1 and MD 31.1 catalogs. If you enter "IC 10", both the IC 10 catalog and the associated news or add-ons are displayed.

Visit us at:

[www.siemens.com/industry/infocenter](http://www.siemens.com/industry/infocenter)

#### Social and Mobile Media



Connect with Siemens through social media: visit our social networking sites for a wealth of useful information, demos on products and services, the opportunity to provide feedback, to exchange information and ideas with customers and other Siemens employees, and much, much more. Stay in the know and follow us on the ever-expanding global network of social media.

To find out more about Siemens' current social media activities, visit us at:

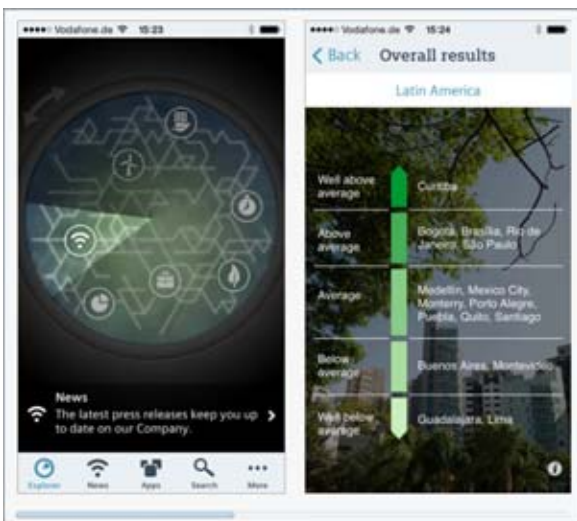
[www.siemens.com/socialmedia](http://www.siemens.com/socialmedia)

Or via our product pages at:

[www.siemens.com/automation](http://www.siemens.com/automation) or [www.siemens.com/drives](http://www.siemens.com/drives)

Connect with Siemens Industry at our central access point to read all the news on the future of manufacturing, watch current videos and inform yourself about all the latest industry developments:

[www.siemens.com/future-of-manufacturing/news.html](http://www.siemens.com/future-of-manufacturing/news.html)



Discover the world of Siemens.

We are also constantly expanding our offering of cross-platform apps for smartphones and tablets. You will find the current Siemens apps at the App Store (iOS) or at Google Play (Android):

<https://itunes.apple.com/en/app/siemens/id452698392?mt=8>

<https://play.google.com/store/search?q=siemens>

The Siemens app, for example, tells you all about the history, latest developments and future plans of the company – with informative pictures, fascinating reports and the most recent press releases.



**Numerics**

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V22.....	6/6	W66.....	6/8		
V23.....	6/11	W69.....	6/8		
V24.....	6/11	W72.....	6/10		
V25.....	6/6	W84.....	6/6		
V26.....	6/6				
V27.....	6/12	<b>X</b>			
V28.....	6/8	X00.....	5/6		
V31.....	6/4	X01.....	5/6		
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V33.....	6/8	X04.....	5/6		
V34.....	6/8	X05.....	5/6		
V35.....	6/8	X06.....	5/6		
V36.....	6/8	X10.....	5/7		
V37.....	6/11	X11.....	5/7		
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V40.....	6/12	X14.....	5/7		
V41.....	6/12	X15.....	5/7		
V42.....	6/12	X16.....	5/7		
V43.....	6/10	X20.....	5/7		
V44.....	6/11	X21.....	5/7		
V45.....	6/11	X22.....	5/7		
V46.....	6/11	X23.....	5/7		
V47.....	6/12	X24.....	5/7		
V48.....	6/11	X25.....	5/7		
V49.....	6/11	X26.....	5/7		
V50.....	6/11	X30.....	5/7		
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V53.....	6/10	X33.....	5/7		
V54.....	6/11	X34.....	5/7		
V57.....	6/12	X35.....	5/7		
V59.....	6/12	X36.....	5/7		
V60.....	6/12	X37.....	5/7		
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## Appendix

### Conditions of sale and delivery

#### 1. General Provisions

By using this catalog you can acquire hardware and software products described therein from Siemens AG subject to the following Terms and Conditions of Sale and Delivery (hereinafter referred to as "T&C"). Please note that the scope, the quality and the conditions for supplies and services, including software products, by any Siemens entity having a registered office outside Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity. The following T&C apply exclusively for orders placed with Siemens Aktiengesellschaft, Germany.

##### 1.1 For customers with a seat or registered office in Germany

For customers with a seat or registered office in Germany, the following applies subordinate to the T&C:

- the "General Terms of Payment"<sup>1)</sup> and,
- for software products, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or Registered Office in Germany"<sup>1)</sup> and,
- for other supplies and services, the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"<sup>1)</sup>.

##### 1.2 For customers with a seat or registered office outside Germany

For customers with a seat or registered office outside Germany, the following applies subordinate to the T&C:

- the "General Terms of Payment"<sup>1)</sup> and,
- for software products, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or Registered Office outside of Germany"<sup>1)</sup> and
- for other supplies and/or services, the "General Conditions for Supplies of Siemens Industry for Customers with a Seat or Registered Office outside of Germany"<sup>1)</sup>.

#### 2. Prices

The prices are in € (Euro) ex point of delivery, exclusive of packaging.

The sales tax (value added tax) is not included in the prices. It shall be charged separately at the respective rate according to the applicable statutory legal regulations.

Prices are subject to change without prior notice. We will charge the prices valid at the time of delivery.

To compensate for variations in the price of raw materials (e.g. silver, copper, aluminum, lead, gold, dysprosium and neodym), surcharges are calculated on a daily basis using the so-called metal factor for products containing these raw materials. A surcharge for the respective raw material is calculated as a supplement to the price of a product if the basic official price of the raw material in question is exceeded.

The metal factor of a product indicates the basic official price (for those raw materials concerned) as of which the surcharges on the price of the product are applied, and with what method of calculation.

An exact explanation of the metal factor can be downloaded at:

[www.siemens.com/automation/salesmaterial-as/catalog/en/terms\\_of\\_trade\\_en.pdf](http://www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf)

To calculate the surcharge (except in the cases of dysprosium and neodym), the official price from the day prior to that on which the order was received or the release order was effected is used.

To calculate the surcharge applicable to dysprosium and neodym ("rare earths"), the corresponding three-month basic average price in the quarter prior to that in which the order was received or the release order was effected is used with a one-month buffer (details on the calculation can be found in the explanation of the metal factor).

#### 3. Additional Terms and Conditions

The dimensions are in mm. In Germany, according to the German law on units in measuring technology, data in inches apply only to devices for export.

Illustrations are not binding.

Insofar as there are no remarks on the individual pages of this catalog - especially with regard to data, dimensions and weights given - these are subject to change without prior notice.

#### 4. Export regulations

We shall not be obligated to fulfill any agreement if such fulfillment is prevented by any impediments arising out of national or international foreign trade or customs requirements or any embargoes and/or other sanctions.

Export of goods listed in this catalog may be subject to licensing requirements. We will indicate in the delivery details whether licenses are required under German, European and US export lists. Goods labeled with "AL" not equal to "N" are subject to European or German export authorization when being exported out of the EU. Goods labeled with "ECCN" not equal to "N" are subject to US re-export authorization.

The export indications can be viewed in advance in the description of the respective goods on the Industry Mall, our online catalog system. Only the export labels "AL" and "ECCN" indicated on order confirmations, delivery notes and invoices are authoritative.

Even without a label, or with label "AL:N" or "ECCN:N", authorization may be required i .a. due to the final disposition and intended use of goods.

If you transfer goods (hardware and/or software and/or technology as well as corresponding documentation, regardless of the mode of provision) delivered by us or works and services (including all kinds of technical support) performed by us to a third party worldwide, you must comply with all applicable national and international (re-)export control regulations.

If required for the purpose of conducting export control checks, you (upon request by us) shall promptly provide us with all information pertaining to the particular end customer, final disposition and intended use of goods delivered by us respectively works and services provided by us, as well as to any export control restrictions existing in this relation.

The products listed in this catalog may be subject to European/German and/or US export regulations. Any export requiring approval is therefore subject to authorization by the relevant authorities.

Errors excepted and subject to change without prior notice.

1) The text of the Terms and Conditions of Siemens AG can be downloaded at [www.siemens.com/automation/salesmaterial-as/catalog/en/terms\\_of\\_trade\\_en.pdf](http://www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf)

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SINAMICS S150 Converter Cabinet Units		ALPHA FIX Terminal Blocks	LV 52
SINAMICS DCM DC Converter, Control Module	D 23.1	SIVACON S4 Power Distribution Boards	LV 56
SINAMICS DCM Cabinet	D 23.2	SIVACON 8PS Busbar Trunking Systems	LV 70
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SINAMICS G120P and SINAMICS G120P Cabinet pump, fan, compressor converters	D 35	<b>Motion Control</b>	
Three-Phase Induction Motors SIMOTICS HV, SIMOTICS TN	D 84.1	SINUMERIK 840D sl Type 1B	NC 62
• Series H-compact		Equipment for Machine Tools	
• Series H-compact PLUS		SINUMERIK 808	NC 81.1
Three-Phase Induction Motors SIMOTICS HV, Series H-compact	D 86.1	Equipment for Machine Tools	
Synchronous Motors with Permanent-Magnet Technology, HT-direct	D 86.2	SINUMERIK 828	NC 82
DC Motors	DA 12	Equipment for Machine Tools	
SIMOREG DC MASTER 6RA70 Digital Chassis Converters	DA 21.1	SIMOTION, SINAMICS S120 & SIMOTICS	PM 21
SIMOREG K 6RA22 Analog Chassis Converters	DA 21.2	Equipment for Production Machines	
<i>Digital: SIMOREG DC MASTER 6RM70 Digital Converter Cabinet Units</i>	DA 22	Drive and Control Components for Cranes	CR 1
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