SIEMENS

For employment in zone 1 or zone 2 (IEC/EN 60079-10-1)
CE 0102 Ex II 2G Ex d IIB/IIC T. Gb

Optional: For use in Zone 21 or 22 (IEC/EN 60079-10-2)
CE 0102 Ex II 2D Ex tb IIIA/B/C T...°C Db or
CE Ex II 3D Ex tc IIIA/B/C T...°C Dc

# SIMOTICS XP

## Induction motor

## Type 1MD4/1MD5

Operating Instructions / Installation Instructions N-R 602d

Edition 08/2016

siemens.com

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CE 0102 Ex II 2D Ex tb IIIA/B/C T...°C Db or
CE Ex II 3D Ex tc IIIA/B/C T...°C Dc



Edition 08/2016

## Legal information

### Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

| ⚠ DANGER |
| --- |
| indicates that death or severe personal injury **will** result if proper precautions are not taken. |

| ⚠ WARNING |
| --- |
| indicates that death or severe personal injury **may** result if proper precautions are not taken. |

| ⚠ CAUTION |
| --- |
| indicates that minor personal injury can result if proper precautions are not taken. |

| NOTICE |
| --- |
| indicates that property damage can result if proper precautions are not taken. |

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

### Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

### Proper use of Siemens products

Note the following:

| ⚠ WARNING |
| --- |
| Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed. |

### Trademarks

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### Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Siemens AG
Process Industries and Drives
Postfach 48 48
90026 NÜRNBERG
GERMANY

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# Table of contents

## Tables

## Images

# Introduction 1

## 1.1 About these instructions

These instructions describe the machine and explain how to handle it, from initial delivery to final disposal of the equipment. Keep these instructions for later use.

Read these operating instructions before you handle the machine and follow the instructions to become familiar with its design and operating principles and thus ensure safe, problem-free machine operation and long service life.

Please contact the Service Center if you have any suggestions on how to improve this document.

### Text format features

The warning notice system is explained on the rear of the inside front. Always follow the safety instructions and notices in these instructions.

In addition to the safety-related warning notices which you must read, you will find the text in these instructions is formatted in the following way:

1. Handling instructions are always formatted as a numbered list. Always perform the steps in the order given.

- Lists are formatted as bulleted lists.
  - Lists on the second level are hyphenated.

**Note**

A Note is an important item of information about the product, handling of the product or the relevant section of the document. Notes provide you with help or further suggestions/ideas.

# Safety information 2

This machine has been designed and built in accordance with Directive 2014/34/EU ("Explosion Protection Directive") and is intended for use in industrial plants with potentially explosive atmosphere.

Commissioning in the European Community in accordance with Directive 2006/42/EU (“Machinery Directive”) is forbidden until the plant into which the machine will be installed has been shown to conform with this directive. Please observe the country-specific regulations when using the machine outside the European Community.

**⚠ WARNING**

**Risk of explosion with commissioning prior to determining the conformity**

If the machine is commissioned prior to determining the plant conformance, the explosion protection of the plant is not ensured. An explosion can occur. This can result in death, serious injury or material damage.

Do not commission the machine until it has been confirmed that the plant conforms with the explosion protection directive.

## 2.1 The five safety rules

For your own personal safety and to prevent material damage when carrying out any work, always observe the safety-relevant instructions and the following five safety rules according to EN 50110-1 "Working in a voltage-free state". Apply the five safety rules in the sequence stated before starting work.

### Five safety rules

1. Disconnect the system.
   Also disconnect the auxiliary circuits, for example, anti-condensation heating.
2. Secure against reconnection.
3. Verify absence of operating voltage.
4. Ground and short-circuit.
5. Provide protection against adjacent live parts.

To energize the system, apply the measures in reverse order.

## 2.2 Qualified personnel

All work at the machine must be carried out by qualified personnel only. For the purpose of this documentation, qualified personnel is taken to mean people who fulfill the following requirements:

- Through appropriate training and experience, they are able to recognize and avoid risks and potential dangers in their particular field of activity.
- They have been instructed to carry out work on the machine by the appropriate person responsible.

## 2.3 Safe handling

Workplace safety depends on the attentiveness, care, and common sense of the personnel who install, operate, and maintain the machine. In addition to the safety measures cited, as a matter of principle, the use of caution is necessary when you are near the machine. Always pay attention to your safety.

Also observe the following to prevent accidents:

- General safety regulations applicable in the country where the machine is deployed.
- Manufacturer-specific and application-specific regulations
- Special agreements made with the operator
- Separate safety instructions supplied with the machine
- Safety symbols and instructions on the machine and its packaging

**⚠ WARNING**

**Live parts**

Electric machines contain live parts.

Fatal or severe injuries and substantial material damage can occur if the covers are removed or if the machine is not handled, operated, or maintained properly.

- Always observe the “five safety rules" when carrying out any work on the machine.
- Only remove the covers using the methods described by these operating instructions.
- Operate the machine properly.
- Regularly and correctly maintain the machine.

**⚠ WARNING**

**Rotating parts**

Electric machines contain dangerous rotating parts.

Fatal or severe injuries and substantial material damage can occur if the covers are removed or if the machine is not handled, operated, or maintained properly.

- Only remove the covers using the methods described by these operating instructions.
- Operate the machine properly.
- Regularly and correctly maintain the machine.
- Secure free-standing shaft ends and other rotating parts such as couplings, belt pulleys etc. against touch.

**⚠ WARNING**

**Hot surfaces**

Electric machines have hot surfaces. Do not touch these surfaces. They could cause burns.

- Allow the machine to cool before starting work on the machine.
- Only remove the covers using the methods described by these operating instructions.
- Operate the machine properly.

**⚠ CAUTION**

**Hazardous substances**

Chemical substances required for the setup, operation and maintenance of machines can present a health risk.

Poisoning, skin damage, cauterization of the respiratory tract, and other health damage may result.

- Read the information in these operating instructions and the product information supplied by the manufacturer.
- Observe the relevant safety regulations and wear the personal protective equipment specified.

**⚠ CAUTION**

**Flammable substances**

Chemical substances required for the setup, operation and maintenance of machines may be flammable.

Burns and other damage to health and material may result.

- Read the information in these operating instructions and the product information supplied by the manufacturer.
- Observe the relevant safety regulations and wear the personal protective equipment specified.

### See also

The five safety rules (Page 13)

**⚠ WARNING**

**Noise emissions**

During operation, the machine's noise emission levels can exceed those permitted at the workplace, which can cause hearing damage.

Take steps to reduce noise, such as introducing covers and protective insulation or adopting hearing protection measures, so that the machine can be operated safely within your system.

## 2.4 Use in hazardous areas

Electrical systems in hazardous zones must be assembled, installed, and operated by the applicable responsible persons in accordance with the applicable rules and regulations.

**Note**

The basic requirements relating to electrical systems and their operation in hazardous areas are described, for instance, in EU Directive 1999/92/EC as well as in IEC / EN 60079-14.

### Ignition hazards

The assessment of operating risks and local operating conditions and the necessary monitoring methods must be clarified and made binding by the system operator in consultation with the responsible supervisory authority. The required measures must be adhered to at all times. The machine manufacturer cannot provide any generally applicable recommendations. Please observe the information in these operating instructions.

**Note**

The basic requirements relating to the assessment of ignition hazards arising from electrical equipment and their operation in hazardous zones are specified in the 2014/34/EU and 1999/92/EC directives as well as in the IEC/EN 60079 series of standards.

If a third-party certification is available for the machine, then carefully comply with the technical data defined in it and any special conditions.

The certificate must be available before commissioning.

# 2.5 Electrostatic sensitive devices

## ESD protective measures

**NOTICE**

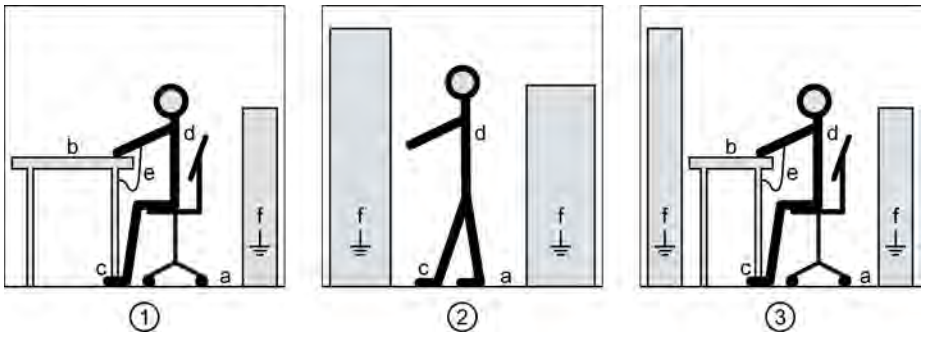
**Electrostatic discharge**

Electronic modules contain components that can be destroyed by electrostatic discharge. These modules can be easily destroyed by improper handling.

To protect equipment against damage, follow the instructions given below.

- Only touch electronic modules if you absolutely have to work on them.
- The body of the person concerned must have been electrostatically discharged and grounded immediately before any electronic modules are touched.
- Electronic modules should not be brought into contact with electrically insulating materials, such as:
  - Plastic film
  - Plastic parts
  - Insulating table supports
  - Clothing made of synthetic fibers
- Always place electrostatic sensitive devices on conductive bases.
- Always pack, store and transport electronic modules or components in conductive packaging, such as:
  - Metallized plastic or metal containers
  - Conductive foam material
  - Domestic aluminum foil

The necessary ESD protective measures for electrostatic sensitive devices are illustrated once again in the following drawings:




(1) Sitting
a = conductive floor surface
d = ESD overall

(2) Standing
b = ESD table
e = ESD wristband

(3) Standing/sitting
c = ESD shoes
f = cabinet ground connection

**⚠ WARNING**

**Risk of explosion due to electrostatic discharge**

Electrostatic discharge poses a potential ignition source. Dangerous electrostatic charges can occur, for example as a result of mechanical friction, flowing air that contains particles - or persons that are not appropriately grounded, e.g. when carrying out maintenance or cleaning work.

In an explosive atmosphere, there is a risk of an explosion. This can result in death, serious injury or material damage.

- Avoid carrying out work specified above on non-metallic parts, e.g. foam rubber for noise dampeners/attenuators.
- Please comply with ESD protective measures.

## 2.6 Interference immunity

The machine fulfills the requirements regarding interference immunity in conformity with IEC/EN 61000-6-2.

On machines with integrated sensors (e.g. PTC thermistors), the manufacturer of the overall system must himself ensure sufficient interference immunity by selecting suitable sensor signal leads and evaluation units.

## 2.7 Influence on the line power supply through a strongly irregular torque

A strongly irregular torque, for example with the drive of a reciprocating motor, forces a non-sinusoidal motor current. The emerging harmonics can have an impermissible influence on the line power supply via the connection lines.

## 2.8 Interference voltages when operating the converter

**⚠ WARNING**

**Interference voltages when operating the converter**

When a converter is in operation, the emitted interference varies in strength depending on the converter (manufacturer, type, interference suppression measures undertaken). On machines with integrated sensors (e.g. PTC thermistors), interference voltages caused by the converter may occur on the sensor lead. This can cause faults which can result in eventual or immediate death, serious injury or material damage.

Observe the EMC instructions of the converter manufacturer in order to avoid exceeding the limit values according to IEC/EN 61000-6-3 for drive systems comprising machine and converter. You must put appropriate EMC measures in place.

## 2.9 Electromagnetic fields when operating electrical power engineering installations

**⚠ WARNING**

**Interference to electronic devices caused by electrical power equipment**

Electrical power equipment generate electric fields during operation. Potentially lethal malfunctions can occur in medical implants, e.g. pacemakers, in the vicinity of electrical power equipment. Data may be lost on magnetic or electronic data carriers.

- It is forbidden for people with pacemakers to enter the vicinity of the machine.
- Protect the personnel working in the plant by taking appropriate measures, such as erecting identifying markings, safety barriers and warning signs and giving safety talks.
- Observe the nationally applicable health and safety regulations.
- Do not carry any magnetic or electronic data media.

# Description

# 3

## Applications

This electrical machine is designed for driving rotating machines in industrial environments and also for energy conversion. It is characterized by a high level of safety, long lifetime, and overall reliability.

The machine was designed in accordance with the ordering party's specification and may only be used for the contractually agreed purpose.

Carefully take into account the comparison of IEC and GOST standards, if the machine is to be used in countries belonging to the Russia/Belarus/Kazakhstan customs union.

Comparison of IEC and GOST standards

| Title | IEC/EN | EAC |
|---|---|---|
| Rating data and operating performance | IEC/EN 60034-1 | GOST R IEC 60034-1 |
| Standard methods for determining losses and efficiency | IEC/EN 60034-2-1 | GOST R IEC 60034-2-1 |
| Degrees of protection as a result of the overall design | IEC/EN 60034-5 | GOST R IEC 60034-5 |
| Classification of cooling methods | IEC/EN 60034-6 | GOST R IEC 60034-6 |
| Classification of construction types, mounting types and terminal box position | IEC/EN 60034-7 | GOST R IEC 60034-7 |
| Terminal designations and direction of rotation | IEC/EN 60034-8 | GOST R IEC 60034-8 |
| Noise limits | IEC/EN 60034-9 | GOST R IEC 60034-9 |
| Starting behavior of three-phase squirrel cage induction motors, with the exception of pole-changing motors | IEC/EN 60034-12 | GOST R IEC 60034-12 |
| Mechanical vibration of certain machines with shaft height of 56 mm and higher – measurements, evaluations and limits of vibration severity | IEC/EN 60034-14 | GOST R IEC 60034-14 |
| Efficiency classification of mains-operated three-phase motors | IEC/EN 60034-30 | GOST R IEC 60034-30 |

| Title | IEC/EN | EAC |
|---|---|---|
| Equipment – general requirements | IEC/EN 60079-0 | GOST 30852-0 |
| Device protection provided by flameproof enclosure "d" | IEC/EN 60079-1 | GOST 30852-1 |
| Device protection provided by increased safety "e" | IEC/EN 60079-7 | GOST 30852-8 |
| Device protection provided by intrinsic safety "i" | IEC/EN 60079-11 | GOST 30852-10 |
| Electrical installations design, selection and erection | IEC/EN 60079-14 | GOST 30852-13 |
| Device protection provided by type of protection "n" | IEC/EN 60079-15 | GOST 30852-14 |

| | | |
|---|---|---|
| Electrical installations inspection and maintenance | IEC/EN 60079-17 | GOST 30852-16 |
| Device dust explosion protection by enclosure "t" | IEC/EN 60079-31 | GOST R IEC 60079-31 |
| Directive on the harmonization of the laws of the Member States concerning equipment and protective systems intended for use in hazardous areas. | RL2014/34/EU | TR CU |

## Service life of electrical machines

| Power in kW | Service life |
|---|---|
| > 75 | 20 years |
| | |
| > 37...75 | 15 years |
| | |
| > 7.5...37 | 15 years |
| | |
| > 0.75...7.5 | 12 years |
| | |
| | |

## Explosion protection type (Ex d)

This machine has a "flameproof enclosure" (Ex d) type of protection according to IEC / EN 60079-1. It can therefore be operated in hazardous areas of **Zones 1 and 2** according to IEC / EN 60079-10-1.

## Use in hazardous areas

Explosion-proof electrical machines correspond to standards of the IEC/EN 60034 and IEC/EN 60079 series. Only operate the machine in hazardous areas, strictly complying with the specifications of the responsible supervisory authority. The relevant supervisory authority is responsible for determining the hazard level of each area and classifying the zones. The type of protection as well as special regulations are stamped on the rating plate or in the test certificate. If the certificate number is supplemented by an X, to safely operate the machine observe the special notes in the operating instructions or if available in the EC or EU type-examination certificate or in the IECEx Certificate of Conformity. Operation with a converter must be certified. It is essential that you observe the separate manufacturer's information and instructions.

## Type of protection Ex tb, Ex tc

Optionally, this motor has "Protection through enclosure" (Ex t) type of protection according to IEC / EN 60079-0 and IEC / EN 60079-31 . Then, it may be operated in hazardous areas of **Zones 21 and 22** in the Ex tb type of protection and **Zone 22** in the Ex tc type of protection according to IEC / EN 60079-10-2.

**⚠ DANGER**

**Explosion hazard from hybrid mixtures**

Hybrid mixtures are mixtures of flammable dusts with explosive gas/air atmospheres which can together create a dangerous explosive atmosphere if they occur at the same time. Changes can arise in the safety characteristics here, such as a change in the zonal classification, increase in the explosion pressure, reduction in the minimum ignition energy and a reduction in the maximum temperatures to be observed.

An explosion can result. This can result in death, serious injury or material damage.

- For this reason, the relative characteristics must be considered both for gas (zones 0, 1 and 2) and for dust (zones 20, 21 and 22) where hybrid mixtures arise. It is necessary for a competent assessor to determine in the individual case whether the parameters determining ignition are unfavorably affected in a particular hybrid mixture.
- Motors with dual plates for G (“Gas”) and D (“Dust”) may only be used where these two occur after prior examination of the properties of the hybrid mixtures by the user.

**NOTICE**

**Use of machines without EAC marking**

Machines without EAC marking are not intended for operation within the Russia/Belarus/ Kazakhstan customs union.

The roller bearing machines with type of protection Ex d can have the following Ex marking:

Table 3-1 Marking of machines with type of protection Ex d for Zone 1

| Directive | Ex marking |
|---|---|
| 2014/34/EU with EC or EU type-examination certificate | CE 0102 Ex II 2G Ex d IIC T3 to T6 Gb |
| | CE 0102 Ex II 2G Ex d e IIC T3 to T6 Gb |
| | CE 0102 Ex II 2G Ex d ib IIC T3 to T6 Gb |
| | CE 0102 Ex II 2G Ex d e ib IIC T3 to T6 Gb |
| IECEx scheme with Certificate of Conformity | Ex d IIC T3 to T6 Gb |
| | Ex d e IIC T3 to T6 Gb |
| | Ex d ib IIC T3 to T6 Gb |
| | Ex d e ib IIC T3 to T6 Gb |

Machines with type of protection Ex t can be marked as follows:

Table 3-2 Marking of machines with type of protection Ex tb for Zone 21

| Directive | Ex marking |
|---|---|
| 2014/34/EU with EC or EU type-examination certificate | CE 0102 Ex II 2D Ex tb IIIC T... °C Db<br>CE 0102 Ex II 2D Ex tb IIIB T... °C Db<br>CE 0102 Ex II 2D Ex tb IIIA T... °C Db |
| IECEx scheme with Certificate of Conformity | Ex tb IIIC T... °C Db<br>Ex tb IIIB T... °C Db<br>Ex tb IIIA T... °C Db |

Table 3-3 Marking of machines with type of protection Ex tc for Zone 22 without certificate

| Directive | Ex marking |
|---|---|
| 2014/34/EU optionally with outside body certificate | CE Ex II 3D Ex tc IIIC T... °C Dc<br>CE Ex II 3D Ex tc IIIB T... °C Dc<br>CE Ex II 3D Ex tc IIIA T... °C Dc |
| IECEx scheme with Certificate of Conformity | Ex tc IIIC T... °C Dc<br>Ex tc IIIB T... °C Dc<br>Ex tc IIIA T... °C Dc |

## Machine design

The regulations and standards used as the basis to design and test this machine are stamped on the rating plate.

The machine design basically complies with the subsequent standards. Please refer to the EC or EU Declarations of Conformity for the versions of the harmonized standards referenced.

Table 3-4 Machine design

| Feature | Standard |
|---|---|
| Rating and performance | IEC/EN 60034-1 |
| Degree of protection | IEC/EN 60034-5 |
| Cooling | IEC/EN 60034-6 |
| Type of construction | IEC/EN 60034-7 |
| Terminal markings and direction of rotation | IEC/EN 60034-8 |
| Noise emission | IEC/EN 60034-9 |
| Starting characteristics, rotating electrical machines | IEC/EN 60034-12* |
| Vibration severity grades | IEC/EN 60034-14 |
| Vibration limits | DIN ISO 10816-3 |

* For machines in line operation only

## See also

Quality documents (Page 123)

Additionally, the following standards apply to these explosion-protected machines:

Table 3-5 Machine design with type of protection Ex d

| Feature | Standard |
|---|---|
| Explosion protection type (Ex d) | IEC / EN 60079-0<br>IEC / EN 60079-1 |

When this machine is optionally implemented with type of protection "Protection through enclosure" (Ex t) according to IEC / EN 60079-0 and IEC / EN 60079-31, then the following standards apply:

Table 3-6 Machine design with type of protection Ex tb or Ex tc

| Feature | Standard |
|---|---|
| Type of protection Ex tb or Ex tc | IEC / EN 60079-0<br>IEC / EN 60079-31 |

## Rating plate

The rating plate shows the identification data and the most important technical data. The data on the rating plate and the contractual agreements define the limits of proper usage.

## Rotor

The rotor has a squirrel cage rotor manufactured out of die-cast aluminum or a brazed copper rotor. The rotor is dynamically balanced with half feather key as standard. With a different balancing status the marking for the corresponding balancing status is made using an adhesive sticker.

## Stator winding

The stator winding has a temperature class according to EN 60034-1, see rating plate. High-quality enameled wires, suitable surface insulating materials, and the type of impregnation guarantee great mechanical and electrical stability together with a high utility value and a long service life.

## Machine housing with surface, hollow-rib or tube cooling

Depending on their size, the stator frame and bearing shields are made of cast iron or steel. The fan cover is made of sheet steel. The stator frame surface has cooling ribs, hollow ribs, or tubes and mounted terminal box.

## Cooling for machines with surface cooling, hollow-rib cooling or tube cooling

For machines with rib, hollow-rib or tube cooling, the cooling air is drawn in through openings in the fan cover. The air is blown over the surface or through the cooling tubes of the stator frame. With hollow-rib or tube cooling, a closed cooling air circuit inside the machine assists with heat dissipation.

## Bearings

The machine is equipped with grease-lubricated roller bearings.

- The bearings of the standard size machines (up to size 280) are permanently lubricated.
- The bearings of machines from size 315 upwards have a relubrication facility and automatic grease quantity control.

## Terminal boxes

In the terminal box, additional connecting terminals are available if required for monitoring equipment. For larger machines, an additional terminal box can be optionally mounted. You can see the number of available terminals in the circuit diagrams.

## Paint finish

The machine is painted according to the instructions in your order.

### Suitability test of the paint system for hazardous areas

Proof is available for the electrostatic suitability with explosion-proof machines for the paint systems ordered by default. Such evidence is not available for paint systems that are non-standard or specifically requested by customers. Take into consideration that the provided evidence is not valid for repaintings.

## Supplementary devices

Depending on the order, various supplementary devices can be installed or mounted. These include sensors for bearing temperature monitoring or winding monitoring, for example.

## Monitoring equipment

Monitoring equipment is provided corresponding to what has been ordered. KTY83 and KTY84 semiconductor sensors are electrostatic sensitive devices (ESD). These elements can be damaged by electrostatic discharge. Observe the ESD protective measures.

**⚠ DANGER**

**Risk of explosion during operation due to too high surface temperature**

This can result in death, serious injury, or material damage.

• Prevent the maximum surface temperature from being exceeded by maintaining the specified operating conditions.

• Monitor the coil temperature. Use the temperature sensor that is built into the stator winding for this as specified on the rating plate or extra rating plate.

## Anti-condensation heating

The machine can be fitted with anti-condensation heating. The connection data is listed on an additional plate on the machine.

# Preparations for use

# 4

Good planning and preparation of machine applications are essential in terms of keeping installation simple and avoiding errors, ensuring safe operation, and allowing access to the machine for servicing and corrective maintenance.

This chapter outlines what you need to consider when configuring your plant in relation to this machine and the preparations you need to make before the machine is delivered.

## 4.1 Safety-related aspects to consider when configuring the plant

A number of residual risks are associated with the machine. These are described in the chapter titled "Safety information" (Page 13) and in related sections.

Take appropriate safety precautions (covers, barriers, markings, etc.) to ensure the machine is operated safely within your plant.

#### Observing the operating mode

Observe the machine's operating mode. Use a suitable control system to prevent overspeeds, thus protecting the machine from damage.

## 4.2 Observing the operating mode

Observe the machine's operating mode. Use a suitable control system to prevent overspeeds, thus protecting the machine from damage.

# 4.3 Terminal box with separate cable entry plate

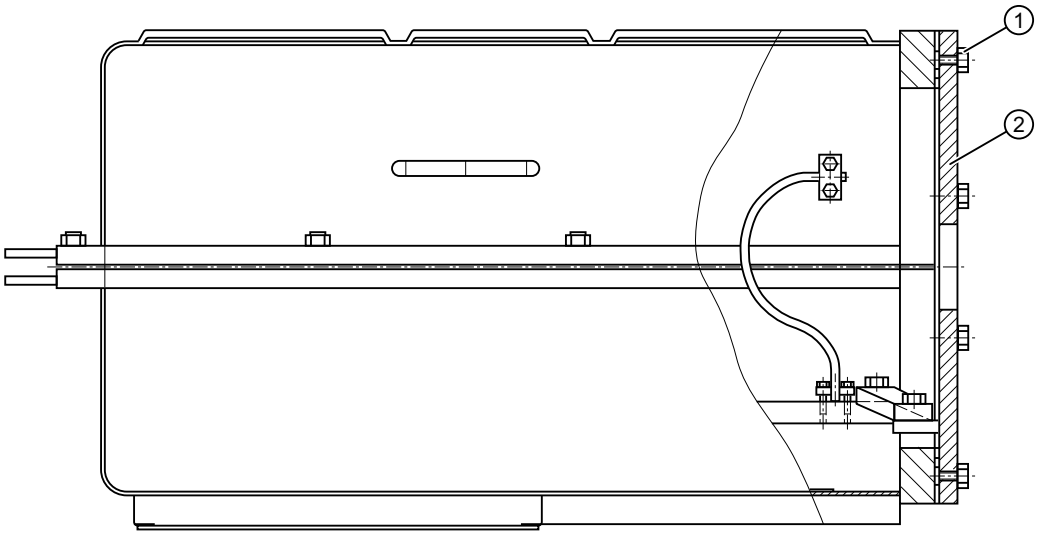



Image 4-1 Disassembly / assembly of terminal box

**Opening the terminal box:**

1. Unscrew the fixing screws ① and remove the ① cable entry plate ①. If present, unscrew the cable entry plate ① grounding strap from the terminal box base.
2. To protect the seals, position the cable entry plate ① a short distance away from the terminal box.
3. Unscrew the terminal box cover fixing screws ① and open the cover. For versions without hinges, lift the cover of the terminal box off.

**Electrical connection and final assembly:**

1. Screw the cable gland(s) into the cable entry plate ② and push the cable entry plate ② onto the connecting cables. Connect the cables to the terminals in accordance with all applicable guidelines.
2. To protect the seals, position the cable entry plate ② a short distance away from the terminal box. Then, if required, connect the grounding strap to the cable entry plate ②.
3. After making the electrical connections, close the cover of the terminal box. For versions without hinges, place the terminal box cover onto the terminal box base. The seal between the terminal box base and cover must be flush with the cable entry plate in order to ensure the required degree of protection.
4. Carefully push the cable entry plate ② toward the terminal box. Screw the terminal box base and cover together with the fixing screws ①. The terminal box base and cover must both be in contact with the cable entry plate ② to ensure the required degree of protection.
5. Screw the terminal box cover on. Ensure that the terminal box seals are intact and undamaged.

**⚠ DANGER**

**Danger due to damaged seals**

Damaged seals can result in the failure of the explosion protection.

This can cause faults which can result in eventual or immediate death, serious injury or material damage.

Only operate the machine with intact, undamaged seals.

## 4.4 Machines without final paint coating

For machines, which are only delivered with primer, you must paint them to comply with the applicable guidelines for the specific application. The primer alone does not provide adequate corrosion protection.

The paint applied must conform to the requirements to avoid electrostatic charging, see EN 60079-0.

**Note**

Please contact the Service Center for recommendations relating to the paint finish.

## 4.5 Corrosion protection for bare metal surfaces

The lower side of the machine mounting feet or the flange surface is bare metal. Ensure that there is adequate corrosion protection, e.g. using grease, sealing paste or a similar product. The terminal box cover also has bare metal surfaces. Here, only use a suitable grease to guarantee protection against corrosion.

## 4.6 Thermal protection

The machine can optionally be equipped with PTC thermistors, PT100 or micro-thermal NC contacts. Thermal motor protection by directly monitoring the winding temperature is permissible if this is certified and test data specified on the rating plate. PTC thermistors for direct temperature monitoring (sole protection) guarantee explosion protection in conjunction with function tested tripping devices with type of protection marking ⟨Ex⟩ II (2) G.

1. Direct temperature monitoring for line operation
   If the machine is marked for direct temperature monitoring on the line supply, it can be operated with a circuit breaker. Evaluate the temperature sensors.
2. Direct temperature monitoring for converter operation
   Evaluate the temperature sensors for converter operation.

No voltage > 2.5 V may be applied for any continuity test required on the temperature sensors. If no test data is specified on the rating plate, then the winding protection is only intended as

an additional protection. For pole-changing motors, use a direct temperature monitoring sensor as stated on the rating plate, e.g. PTC thermistor according to DIN 44081/44082, for each speed level in addition to the separate, mutually interlocked motor protection relays.

## 4.7 Interlock circuit for anti-condensation heating

If the anti-condensation heating is operated while the machine is running, this can increase the temperatures inside the machine.

- Install an interlock circuit that switches off the anti-condensation heating once the main machine is switched on.
- Only switch on the anti-condensation heating after the motor has been switched off. Carefully comply with the data on the anti-condensation heating plate.

### See also

Switching on with the anti-condensation heating active (Page 77)

## 4.8 Noise emissions

**⚠ WARNING**

**Noise emissions**

During operation, the machine's noise emission levels can exceed those permitted at the workplace, which can cause hearing damage.

Take steps to reduce noise, such as introducing covers and protective insulation or adopting hearing protection measures, so that the machine can be operated safely within your system.

## 4.9 Voltage and frequency fluctuations during line operation

Unless stated otherwise on the rating plate, the permissible voltage fluctuation is ± 10% and the permissible frequency fluctuation is ± 2%.
The following always applies: Under practical operating conditions, a machine may sometimes have to be operated outside the tolerance limits. Exceptions of this sort should be limited with regard to the values that arise, how often and for how long they occur. Where possible and within a reasonable time take corrective actions such as reducing the power. Such actions can avoid thermal ageing leading to a reduction in the service life of the machine.

| NOTICE |
| --- |
| **Overheating of the winding**<br>Exceeding the permissible tolerances for voltage and frequency can lead to an impermissibly high temperature rise in the windings and thus cause long-term damage to the machine. |

Every machine must be protected against an inadmissible temperature rise. Observe the following notes:

- Protect every machine according to IEC/EN 60079–14 using a current-dependent, delayed circuit breaker with phase failure protection according to IEC/EN 60947 or a similar device in all phases.
- Set the protective device to the rated current (value is stamped on the rating plate).
- Select the protective device so that the machine is thermally protected even with a locked rotor.
- For explosion-protected electrical machines with type of protection "Increased safety", also monitor the starting (starting monitoring with EC or EU type-examination certificate according to Directive 2014/34/EU or IECEx scheme with Certificate of Conformity). When the rotor is locked, the protective device must trip within the tE time (safe locked rotor time). This requirement is satisfied if the tripping time is not longer than the specified tE time.
- Protect the windings in a delta connection in such a way that the tripping unit or relay is connected in series with the winding phases. When selecting and setting the tripping unit, define the rated value of the phase current. The phase current is 0.58 times the rated machine current. Any thermal machine protection via direct temperature monitoring to be used in addition to the machine circuit breaker is specified on the rating plate if required.

## 4.10 Rotational speed limit values

**⚠ WARNING**

**Vibrations due to resonance**

At over-critical speeds, machines encounter resonance within certain speed ranges. Such vibrations can reach impermissibly high levels. This can result in death, serious injury, or material damage.

- The controller must ensure that those speed ranges are blocked when the converter is in operation. Refer to the "Electrical Data" section in the appendix for details of the blocked speed ranges.
- The blocked speed ranges must be run through rapidly.

**⚠ WARNING**

**Excessively high speeds**

Excessive rotational speed can lead to serious damage to the machine. This can result in death, serious injury, or material damage.

- Avoid operation above the permissible speed by using the appropriate control function.
- Observe the speeds stamped on the rating plate and specified in Chapter "Electrical data" in the appendix.

## 4.11 System-inherent frequencies

**NOTICE**

**System resonances**

Excessive vibrations and system resonances can damage the machine set.

- Configure and match the system consisting of the foundation and machine set in such a way that no system resonances can arise and result in the permissible vibration levels being exceeded.
- The vibration limit values according to DIN ISO 10816-3 must not be exceeded.

## 4.12 Transport and storage

When carrying out any work on the machine, observe the general safety instructions and the specifications contained in EN 50110-1 regarding safe operation of electrical equipment.

## 4.12.1 Transport markings

The packing differs depending on the transport type and size. If not otherwise contractually agreed, the packaging corresponds to the packing guidelines for International Standards for Phytosanitary Measures (ISPM).

Note the symbols which appear on the packing. These have the following meanings:

Top | Fragile material | Keep dry | Keep cool | Center of gravity | Do not use hand hook | Attach here

## 4.12.2 Checking the delivery

The components are assembled on an individual basis. When you take receipt of the delivery, please check immediately whether the scope of the delivery matches up with the accompanying documents. No claims relating to defects/items missing from the delivery will be accepted if they are submitted at a later date.

- Report any apparent transport damage to the delivery agent immediately.
- Immediately report any apparent defects/missing components to your contact partner.

These Operating Instructions are part of the scope of delivery; keep them in a location where they can be easily accessed.

## 4.12.3 Attaching the rotor locking device

| NOTICE |
| --- |
| **Bearing damage caused by vibration**<br>If storage conditions are inappropriate there is a risk of bearing seizure damage. This can result in material damage, such as damage to bearings caused by vibration.<br>• On machines that have been supplied with a rotor shipping brace, secure the rotor as per the notes on transportation.<br>• Protect the machine against strong radial vibrations, since the rotor shipping brace might not absorb these completely. |

**NOTICE**

**Bearing damage when being transported**

If the customer has already mounted parts, for example coupling, belt pulley, etc., the bearing can be damaged during transport.

- In this case, make sure that the customer uses a rotor shipping brace.

## 4.12.4 Checking the load handling attachments

Inspect the load handling attachments such as the load trestles, lifting eyes and ring bolts and also the lifting gear, before lifting the machine:

- Inspect the load handling attachments on the machine for possible damage. Replace any load suspension equipment that is found to be damaged.
- Before use, check that the load suspension equipment is correctly attached.
- When lifting the machine, use only approved and undamaged lifting gear of sufficient rated capacity. Check the lifting gear prior to its use.

**⚠ WARNING**

**The machine can be dropped**

If the load handling attachments and lifting gear are damaged or not correctly secured, the machine may be dropped during lifting. This can result in death, serious injury or material damage. Inspect the load handling attachments and lifting gear before use.

**Note**

**Place the machine in a secure and raised position**

In order to obtain easy and safe access to the underside of the machine, place it in a secure and raised position.

**⚠ DANGER**

**Standing under suspended loads**

If the lifting gear or load handling attachments were to fail, the machine could fall. This can result in death, serious injury or material damage.

Never remain under or in the immediate vicinity of the machine when it is raised.

**Note**

**Store the rotor locking device**

Be sure to store the rotor locking device. It must be remounted for possible disassembly and transport.

## 4.12.5 Storage for up to two years

### 4.12.5.1 Storage conditions

- Store the machines in a dry, dust-free room where the temperature is controlled. Special packing is therefore not necessary. In all other cases, pack the machines in a plastic film with a substance that absorbs moisture, e.g. Branogel, or in hermetically sealed welded foil. Use a protective cover to protect against sun and rain.
- Store the machines only in vibration-free rooms in order to avoid consequential damage to the bearings due to vibration at standstill.

**⚠ WARNING**

**Risk of explosion due to damaged sealing materials**

Storing the machine at temperatures that do not fall within the specified limits can damage the material of the seals and cause them to fail. As a result, a potentially explosive gaseous atmosphere can enter the machine and be ignited during commissioning. Explosions can occur. This can result in death, serious injury or material damage.

The materials used are specially designed for the temperature range required by the customer. Do not store the motor in conditions that lie outside the specified temperature limits. The relevant temperature limits are specified on the rating plate.

## 4.12.6 Storage at low temperatures

### 4.12.6.1 Storing machines at temperatures down to -50° C

If machines are stored at temperatures of down to -50° C, then also take into account the following:

- The normal roller bearing grease of machines is suitable for operating temperatures of between -30 °C and +130° C. Temperatures down to -50° C are harmless for the roller bearing grease if the machine is non operational or is in storage.
  For operation at -50 °C, the bearings have a special grease, e.g. Aeroshell Grease 7.
- Machines with regreasing system must be regreased when commissioning. Double the amount of grease that is specified on the lubricant plate.

## 4.12.7 Machines that are mounted together with the driven machine and transported

### 4.12.7.1 Storing machines together with the driven machine

- Before mounting the machines, grease the free parts of the shaft extension, as well as all other bare metal parts, such as mounting foot surfaces, flange surfaces, terminal box and cover contact surfaces. Attach caps filled with roller bearing grease to the shaft output gland to provide protection against dust and humidity.
- Fill the terminal boxes of the machines with a substance that will absorb moisture, e.g. Branogel.
- Store the machines in a dry, dust-free room where the temperature is controlled.

## 4.12.8 Storage outdoors

If the machine is stored outdoors, then the following should additionally be observed:

- Provide protective cover against the effects of sun and rain. Air must freely circulate to avoid condensation forming.
- Every two months check the following:
  - Free parts of the shaft extension and other bare metal parts, e.g. mounting foot surfaces or the flange faces, terminal box and cover contact surfaces must be greased.
  - Caps filled with grease attached to the shaft output gland to provide protection against the ingress of dust and moisture are still effective.

## 4.12.9 Commissioning after storage

### 4.12.9.1 Insulation resistance and polarization index

Measuring the insulation resistance and polarization index (PI) provides information on the condition of the machine. It is therefore important to check the insulation resistance and the polarization index at the following times:

- Before starting up a machine for the first time
- After an extended period in storage or downtime
- Within the scope of maintenance work

The following information is provided regarding the state of the winding insulation:

- Is the winding head insulation conductively contaminated?
- Has the winding insulation absorbed moisture?

As such, you can determine whether the machine needs commissioning or any necessary measures such as cleaning and/or drying the winding:

- Can the machine be put into operation?
- Must the windings be cleaned or dried?

Detailed information on testing and the limit values can be found here:

"Testing the insulation resistance and polarization index"

#### 4.12.9.2 Lubricating the roller bearings

If you correctly store the machine for a longer period of time, it can be assumed that within a period of two years, the grease in the bearings will not deteriorate.

- For motors with thermal class 155, for normal ambient temperatures, use a lithium-soap roller bearing grease with a melting point of at least 180° C.
- For machines with thermal class 180, and for certain special machines, use the special grease specified on the machine lubricant plate.

#### 4.12.9.3 Regreasing roller bearings after storage periods of up to two years

- For machines with regreasing systems, briefly lubricate both bearings after commissioning with the machine running as a precautionary measure.
- Grease type, grease quantity and relubrication intervals for the regreasing system are stamped on a supplementary plate attached to the machine.

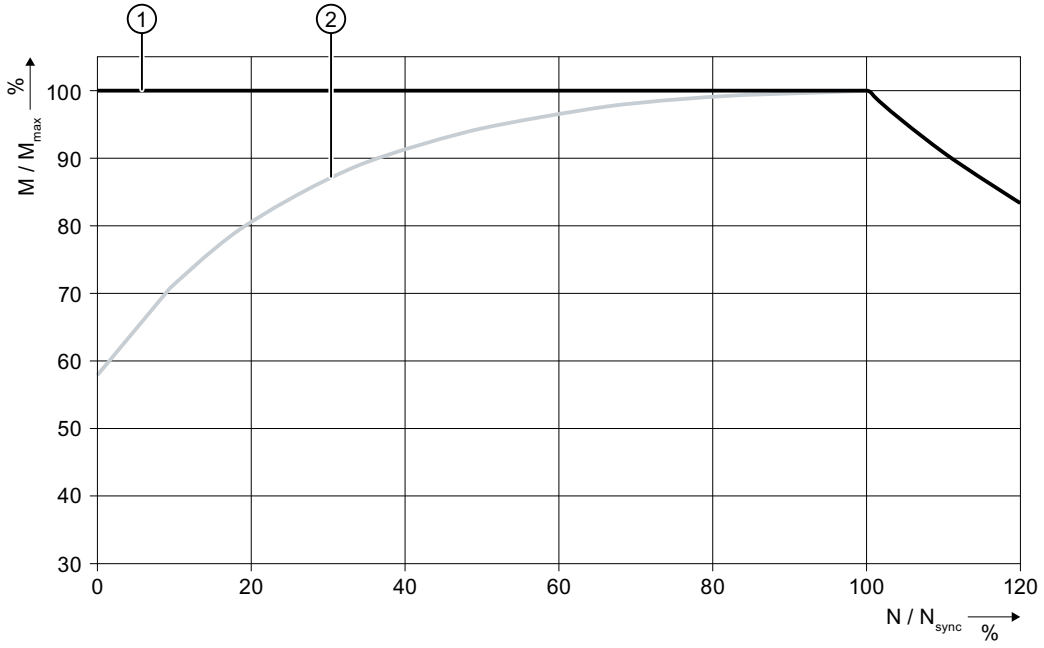
#### 4.12.9.4 Releasing the rotor shipping brace before commissioning

If one is being used, release the rotor shipping brace before commissioning.

## 4.13 Converter operation

When controlling explosion-protected machines from a converter, carefully observe the information in the appendix.

The load characteristics show the permanent permissible load torque as a function of the speed and the cooling method. The load torque is specified as a percentage referred to the maximum torque according to the supplementary plate for converter operation.




① Force ventilated, externally and internally

② Surface cooled, self-ventilated

**Converter operation**

- If the machine design requires a special converter assignment, you can find the appropriate supplementary data on the supplementary plate for the converter.
- Correctly parameterize the converter. Information about the parameters is available in the operating instructions for the converter.

**⚠ WARNING**

**Exceeding limit values**

It is not permissible that the maximum speed and torque values stamped on the supplementary plate for converter operation are exceeded.

This can result in death, serious injury, or material damage.

## 4.13.1 Reducing bearing currents when operated with a converter

Taking the following actions will reduce the bearing currents:

- Ensure that the contacts are established over a large area. Solid copper cables are not suitable for high frequency grounding because of the skin effect.

**Equipotential bonding conductors:**

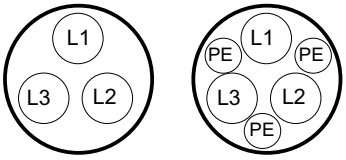
Use equipotential bonding conductors:

- Between motor and driven machine
- Between motor and converter
- Between the terminal box and the RF grounding point at the motor enclosure.

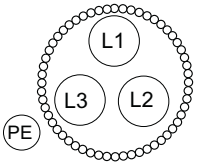
**Selecting and connecting the cable:**

As far as possible, use symmetrically arranged, shielded connection cables. The cable shielding, made up of as many strands as possible, must have good electrical conductivity. Braided shields made of copper or aluminum are very suitable.

- The shield is connected at both ends, at the motor and converter.
- To ensure good discharging of high-frequency currents, provide contacting over a large surface area:
  - as contact established through 360° at the converter
  - at the motor, for instance with EMC glands at the cable entries
- If the cable shield is connected as described, then it ensures the specified equipotential bonding between the motor enclosure and converter. A separate RF equipotential bonding conductor is then not necessary.




Concentric copper or aluminum shield




Steel armor

- If the cable shield is not connected due to special secondary conditions, or not adequately connected, then the specified equipotential bonding is not provided. In this particular case, use a separate RF equipotential bonding conductor:
  - Between the motor enclosure and protective ground rail of the converter.
  - Between motor enclosure and driven machine
  - Use braided flat copper straps or high-frequency cables with finely-stranded conductors for the separate RF equipotential bonding cable. Solid copper cables are not suitable for high frequency grounding because of the skin effect.
  - Ensure that the contacts are established over a large area.

### Overall system design

To specifically reduce bearing currents, you must consider the system as a whole, which comprises the motor, converter, and driven machine. The following measures support you when reducing bearing currents and help to avoid damage:

- In the overall system, set up a properly meshed grounding system with low impedance.
- Use the common-mode filter (damping cores) at the converter output. The Siemens sales representative is responsible for selection and dimensioning.
- Limit the rise in voltage by using output filters. Output filters dampen the harmonic content in the output voltage.

**Note**

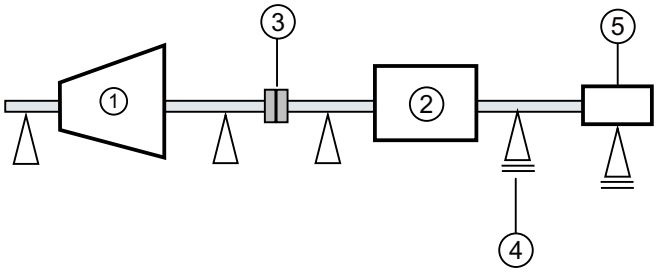
**Converter documentation**

The operating instructions for the converter are not part of this documentation. Refer also to the configuration information for the converter.

## 4.13.2 Insulated bearings when operated with a converter

Depending on the machine's size and design, an insulated bearing and an insulated tachometer can be fitted at the non-drive end.

Comply with the plates on the machine relating to bearing insulation and possible bridges.



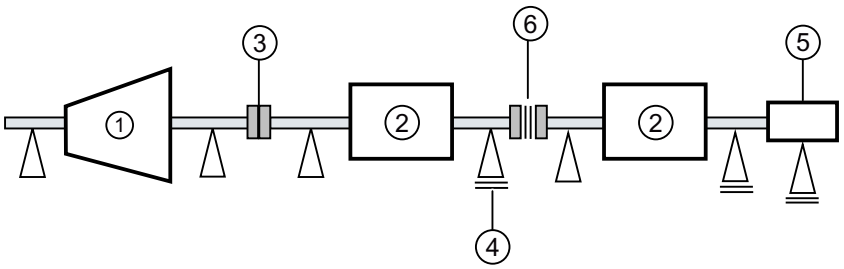

① Driving machine
② Motor
③ Coupling
④ Insulated bearings
⑤ Insulated tachometer fitting

Image 4-2 Schematic representation of a single drive

| NOTICE |
| --- |
| **Bearing damage** |
| The bearing insulation must not be bridged. |
| Damage may be caused to the bearings if there is a flow of current. |

## Tandem operation

If you connect two motors in series in "tandem operation", install an insulated coupling between the motors.




| | | | |
|---|---|---|---|
| ① | Driving machine | ④ | Insulated bearings |
| ② | Motor | ⑤ | Insulated tachometer fitting |
| ③ | Coupling | ⑥ | Insulated coupling |

Image 4-3 Schematic representation of a tandem drive

**NOTICE**

**Bearing damage**

If the coupling between the motors of the tandem drive is not insulated, bearing currents can cause damage to the drive-end bearings of both motors.

Use an insulated coupling to link the motors.

**⚠ WARNING**

**Dangerous voltage via the converter**

As long as the feeding converter is switched on, or the DC link of the converter is not discharged, there can be a voltage at the motor terminals even when the rotor is not moving. The voltage is up to 1000 V, depending on the converter type.

Ensure that the five safety rules are followed before working on the motor.

## Reducing bearing currents

Taking the following actions will reduce the bearing currents:

- Grounding: In addition to grounding the machines via the solid protective ground conductor, supplement the high frequency grounding using braided flat copper straps or high frequency stranded conductors. Ensure that the contacts cover a large area. Solid copper cables are not suitable for high frequency grounding because of the skin effect. Use equipotential bonding conductors between the motor and the driven machine and motor and converter.
- Selecting and connecting the cable: As far as possible, use symmetrically arranged, shielded connection cables with a common outer shield to improve the EMC characteristics. The cable shielding, made up of as many strands as possible, must have good electrical conductivity. Braided shields made of copper or aluminum are very suitable.
  - The shield must be connected at both ends to the motor and the converter; unshielded cable ends must be kept as short as possible.
  - To ensure good discharging of high-frequency currents, provide contacting over a large surface area: with 360° contacting at the converter, at the motor for instance with EMC screw fastenings at the cable entries.

## Measures to further reduce bearing currents

To specifically reduce and prevent damage caused by bearing currents, you must consider the system as a whole, which comprises the motor, converter, and driven machine. The following precautions help to reduce bearing currents:

- Setting up a properly interconnected grounding system in the system as a whole, with low impedance for high-frequency currents
- Use iron cores mounted above the motor connecting cable at the converter output. The iron cores reduce the common-mode components. The sales representative is responsible for selection and dimensioning.
- Limit the voltage rate of rise by using an output filter to dampen harmonic components in the output voltage

**Note**

**Configuration information**

Also observe the configuration information of the converter being used.

# Assembly 5

When carrying out any work on the machine, observe the general safety instructions and the specifications contained in EN 50110-1 regarding safe operation of electrical equipment.

**See also**

Safety information (Page 13)

## 5.1 Conformity

**Note**

**Loss of conformity with European directives**

In the delivery state, the machine corresponds to the requirements of the European directives. Unauthorized changes or modifications to the machine lead to the loss of conformity with European directives and the loss of warranty.

## 5.2 Modifications to the machine

**⚠ WARNING**

**Explosion hazard when making modifications to the machine**

Substantial modifications to the machine are not permitted – or may only be performed by the manufacturer. Otherwise an explosion can occur in an explosive atmosphere. This can result in death, serious injury or material damage.

Please contact the Service Center, if necessary.

# 5.3 Preparations for installation

## 5.3.1 Requirements for installation

The following requirements must be satisfied prior to starting installation work:

- Staff have access to the operating and installation instructions.
- The machine is unpacked and ready for mounting at the installation location.

**Note**

**Measure the insulation resistance of the winding before starting installation work**

Wherever possible, measure the insulation resistance of the winding before starting installation work. If the insulation resistance lies below the specified value, take appropriate remedial measures. These remedial measures may necessitate the machine being removed again and transported.

**NOTICE**

**High temperatures**

The motor components get very hot during operation. High temperatures can damage mounting parts such as the cable insulation.

- Temperature-sensitive parts such as normal cables or electronic components must not rest against or be attached to mounted machine parts.
- Only use heat-resistant mounting parts. The connecting cables and cable entries must be suitable for the ambient temperature.

## 5.3.2 Safety information – do not lift below -55°C

**⚠ WARNING**

**Lifting at temperatures below -55°C**

The welding material of the lifting posts or the support ribs themselves can become brittle at temperatures below -55°C. When lifting and transporting, the support ribs can tear off and the motor might be dropped.

This can result in death, serious injury or material damage.

Only lift the machine using the support ribs at temperatures above -55° C. Alternatively, warm up the support ribs or lift the machine in a different way.

### 5.3.3 Preparing the assembly area

1. Prepare a suitable assembly area (e.g. assembly stands). Make sure that the assembly area has sufficient clearance from the floor for the DE shaft end. The necessary data is provided in the machine dimension drawing.
2. Using the shipping papers, check whether all of the motor components are available for assembly.

**⚠ WARNING**

**Explosion hazard when making modifications to the machine**

Substantial modifications to the machine are not permitted – or may only be performed by the manufacturer. Otherwise an explosion can occur in an explosive atmosphere. This can result in death, serious injury or material damage.

Please contact the Service Center, if necessary.

## 5.4 Lift the machine to where it will be installed, and position it

### 5.4.1 Preconditions for correct alignment and secure attachment

Detailed specialist knowledge of the following measures is required in order to correctly align and securely fit the equipment.

- Preparing the foundation
- Selecting and mounting the coupling
- Measuring the concentricity and axial eccentricity tolerances
- Positioning the machine

If you are not familiar with the prescribed measures and procedures, then you can make use of the services offered by the local Service Center.

### 5.4.2 Checking the load handling attachments

Inspect the load handling attachments such as the load trestles, lifting eyes and ring bolts and also the lifting gear, before lifting the machine:

- Inspect the load handling attachments on the machine for possible damage. Replace any load suspension equipment that is found to be damaged.
- Before use, check that the load suspension equipment is correctly attached.
- When lifting the machine, use only approved and undamaged lifting gear of sufficient rated capacity. Check the lifting gear prior to its use.

**⚠ WARNING**

**The machine can be dropped**

If the load handling attachments and lifting gear are damaged or not correctly secured, the machine may be dropped during lifting. This can result in death, serious injury or material damage. Inspect the load handling attachments and lifting gear before use.

### 5.4.3 Lifting and transportation

- Persons driving cranes and fork lift trucks must hold appropriate qualifications.
- When lifting the machine, use only approved and undamaged sling guides and spreaders of sufficient rated capacity. Check these before using them. The weight of the machine is stated on the rating plate.

- When lifting the machine, refer to the information on the lifting plate:
  - Comply with the specified spreading angles.
  - Lift the machine without jerking it.
- When lifting, use only the load handling attachments on the stator casing, such as lifting eyes or eye bolts.

**⚠ WARNING**

**Transporting or lifting the machine**

The machine or the machine set may be transported and lifted only using the load handling attachments.

Otherwise, death, serious injury, or material damage may result.

1. Always use the load suspension device provided on the stator frame to lift the motor.
2. Use suitable rope guidance or spreading devices. The weight of the machine is stated on the rating plate.

**⚠ WARNING**

**Center of gravity when transporting or lifting the motor**

If the center of gravity of a load is not located centrally between the attachment points, the motor can tip over or slip out of the lifting gear when it is being transported or lifted.

This can result in death, serious injury, or material damage.

1. Always take account of the center of gravity when transporting or lifting the machine. The machine's center of gravity is indicated in the relevant dimension diagram.
2. Observe the handling instructions on the motor when transporting it. If the center of gravity is not located centrally between the attachment points, then position the hoisting hook above it.
3. Be aware of the possibility of different loads on the sling ropes or lifting straps and the carrying capacity of the lifting equipment.

**Note**

**Place the machine in a secure and raised position**

In order to obtain easy and safe access to the underside of the machine, place it in a secure and raised position.

**⚠ DANGER**

**Standing under suspended loads**

If the lifting gear or load handling attachments were to fail, the machine could fall. This can result in death, serious injury or material damage.

Never remain under or in the immediate vicinity of the machine when it is raised.

## 5.4.4 Setting down the machine

### Requirements

The following preconditions must be satisfied before setting down the machine at the installation location:

- The mating faces must be clean.
- The anti-corrosion protection paint has been removed from the mating faces, such as the machine mounting feet, flange, ...

### Setting down the machine

Set down the machine slowly and carefully at the installation location to avoid any impact.

### Requirement

The transmission element such as a coupling half has already been pulled on.

### Roughly aligning the machine

- For horizontal positioning, push the motor sideways across the foundation. When doing so, ensure that the axial position is maintained.

## 5.4.5 Removing anti-corrosion protection

Machined, bare metal surfaces of machine parts and small components such as screws, bolts, wedges, feather keys, and dowel pins, are treated with an anti-corrosion agent.

Carefully remove the anti-corrosion agent and immediately start the installation work.

### Bright surfaces on machine parts

- Use petroleum, petroleum ether, or a similar solvent or detergent to remove the anti-corrosion coating from the machined surfaces of machine parts and from small components.

| NOTICE |
| --- |
| **Paintwork damage**<br>Make sure that the detergent or solvent does not come into contact with any painted surfaces, as this could damage the lacquer. |

- Use a suitable solvent to soften thick layers of anti-corrosion agent. Then push off the softened layers using a piece of hardwood (approximately 10 x 10 x 1 cm). Do not sand the protective coating down or scrape it off.

| NOTICE |
| --- |
| **Do not use metal tools.**<br>Do not use metal objects such as scrapers, spatulas, or plates to remove the anti-corrosion protection,<br>as this could damage the surfaces of the machine parts. |

- Lightly oil the depreserved surfaces.

### Thread and fastening parts

- Remove the anti-corrosion protection from bolts and tapered pins.
- Use the appropriate tap or cutting die to shave the tapped holes of machine parts and threads of screws, etc. See the drawings for the relevant male and female thread dimensions.
- Use dry compressed air to purge the shaved tapped holes.
- Lightly oil the depreserved threads.

### Burrs and pressure marks

- Check the machine parts, as well as fastening and fixing elements, for burrs or pressure marks. Use a smoothing file to carefully remove any such burrs/pressure marks.
- Only whetstones may be used to smooth finished surfaces.

# 5.5 Installing the machine

## 5.5.1 Preconditions for smooth, vibration-free operation

Preconditions for smooth, vibration-free operation:

- Stable foundation design
- Precise alignment of the machine
- Correct balancing of parts to be fitted to the shaft end.
- Maintaining the vibration velocity according to ISO 10816-3

## 5.5.2 Aligning the machine to the driven machine and mounting

### 5.5.2.1 Selecting bolts

- Unless specified otherwise, use fixing screws with at least strength class 8.8 to ISO 898-1 to ensure that the machine is securely mounted and to transmit the torque-generated forces.
- When selecting the bolts and the design of the foundation, take into account the maximum forces occurring in the case of a fault such as short circuit or system transfers in phase opposition, etc.
  Request the force values for the foundation from the Service Center if required.

### 5.5.2.2 Horizontal types of construction with mounting feet

1. Refer to any instructions for aligning the driven machine and those of the coupling manufacturer.
2. Align the machines with coupling output to the driven machine in such a manner that the center lines of the shafts are parallel with no offset. This ensures that no additional forces affect their bearings during operation.
3. For the vertical positioning (x→0) place thin shims under the machine feet. The number of shims should be kept as low as possible, i.e. stack as few as possible. This also prevents the machine being subjected to any stress/distortion. If available, use the existing tapped holes for the forcing-off bolts to somewhat raise the machine.

4. When positioning the machine, ensure that a uniform axial gap (y→0) is maintained around the coupling.
5. Fix the machine to the foundation. The choice of fixing elements depends on the foundation and is the plant operator's responsibility.

**Note**

**Machine expansion**

When aligning, make allowance for the thermal expansion of the machine when the temperature increases.

**NOTICE**

**Removing the rotor shipping brace in the horizontal position.**

Dismantling the rotor shipping brace when the machine is in a horizontal position could damage the bearings.

- Only remove the rotor shipping brace when the machine is in a vertical position.

**NOTICE**

**Turning the motor over without rotor shipping brace**

Failure to fit the rotor shipping brace can result in damage to the bearings while the machine is being turned onto its side.

- Fix the rotor in place before you turn the machine into a horizontal position.

## 5.5.3 Removing the rotor shipping brace

If a rotor shipping brace is attached to the machine, remove it at the last possible moment, for example, when you are ready to push on the output or drive element.

**Note**

**Store the rotor locking device**

Be sure to store the rotor locking device. It must be remounted for possible disassembly and transport.

Details about the alignment accuracy can be found in the Section "Information about the machine dimension drawing".

## 5.5.4 Recommended alignment accuracy

The alignment accuracy required depends essentially on the configuration of the overall machine train. Observe the required alignment accuracy of the coupling manufacturer in all cases when aligning the machine.

Table 5-1 Recommended alignment accuracy

| Speed [rpm] | Parallel offset [mm] | Angular offset [mm per 100 mm coupling diameter] |
|---|---|---|
| 750 | 0.09 | 0.09 |
| 1500 | 0.06 | 0.05 |
| 3000 | 0.03 | 0.025 |

To avoid stressing the motor feet, the overall flatness of the installation surfaces must satisfy the values in the following table:

Table 5-2 Overall flatness of the installation surfaces

| Frame size | Overall flatness of the installation surfaces |
|---|---|
| ≤ 080 | 0.1 mm |
| 090 - 355 | 0.2 mm |
| ≥ 400 | 0.3 mm |

If shims are necessary for height adjustment and to avoid stresses, make them out of adequately sized pieces of flat rolled strip. Complete balancing of the rotor together with the transmission element may be found necessary.

## 5.5.5 Mounting the output elements

### Balance quality

The rotor has a squirrel cage rotor made of die-cast aluminum or a brazed copper rotor. The rotor is dynamically balanced with half feather key as standard. With a different balancing status the marking for the corresponding balancing status is made using an adhesive sticker.

## Pulling on the power output elements

- Prerequisites:
  - The coupling and/or the output element must be appropriately dimensioned for the operating case at hand. The balance quality must satisfy the following requirements.
  - Comply with the coupling manufacturer's instructions.
  - Make sure that the balancing type of the output element correctly matches the type of balance of the rotor.
  - Use only ready drilled and balanced output elements. Check the hole diameters and the balancing status before pulling them on. Thoroughly clean the shaft extension.
- Pulling on:
  - Warm up the output elements to expand them before pulling them on. Select the temperature difference for the heating process to suit the coupling diameter, fit and material. See the coupling manufacturer's instructions.
  - Power output elements may only be pulled on or pulled off with the correct equipment. The output element must be pulled on in one continuous operation via the front thread holes in the shaft or pulled on by hand.
  - Do not strike it with a hammer, as this would damage the bearings.

## Shaft extensions with feather key

To maintain the balancing quality, you have the following options:

- If the output element is shorter than the feather key with balancing type "H", then you must machine off the section of feather key protruding from the shaft contour and output element in order to maintain the balance quality.
- The feather key must be shortened if the coupling hub is shorter than the feather key.
- The center of gravity of the coupling half should be within the length of the shaft end.
- The coupling used must be prepared for system balancing. The number of poles of the machine is specified on the rating plate (in the designation of the machine type).

**⚠ WARNING**

**The feather key can fall out**

The feather keys are only locked against falling out during shipping. If a machine with two shaft extensions does not have an output element on one shaft extension, the feather key can fall out during operation.

Death or serious injury can result.

- Do not operate the machine unless the output elements have been pulled on.
- On shaft extensions without output element, make sure that the feather key cannot fall out and shorten it by approximately half for balance type "H".

### 5.5.6 Axial and radial forces

You can obtain the permissible values for axial and radial forces by contacting the Siemens Service Center or referring to the machine catalog.

| NOTICE |
| --- |
| **Damage to bearings or the shaft**<br>Large output masses and their centers of gravity outside the shaft extensions can lead to resonance in operation. This can result in damage to the bearings and shaft.<br>Ensure that the permissible loads for the forces on the shaft extension are adhered to in accordance with the catalog data or configuration data. |

# Electrical connection

# 6

When carrying out any work on the machine, observe the general safety instructions and the specifications contained in EN 50110-1 regarding safe operation of electrical equipment.

## See also

Safety information (Page 13)

**Note**

**Service Center**

If you require support when electrically connecting up the machine, please contact the Service Center.

**⚠ WARNING**

**Connected parts can loosen**

If you use fixing elements made from the wrong material or apply the wrong tightening torque, this could impair current transfer or cause connecting parts to become loose. Fastening elements can work loosely, so that the minimum air clearances are no longer maintained. Sparking formation may occur, in an explosive atmosphere it can lead to an explosion. This could result in death, serious injury or material damage to the machine or even in failure, which could in turn lead indirectly to material failure of the system.

- Tighten the screwed connections to the specified tightening torques.
- Observe any specifications regarding the materials from which fixing elements must be made.
- When performing servicing, check the fastenings.

# 6.1 Preparation

## 6.1.1 Terminal box with cable entry plate

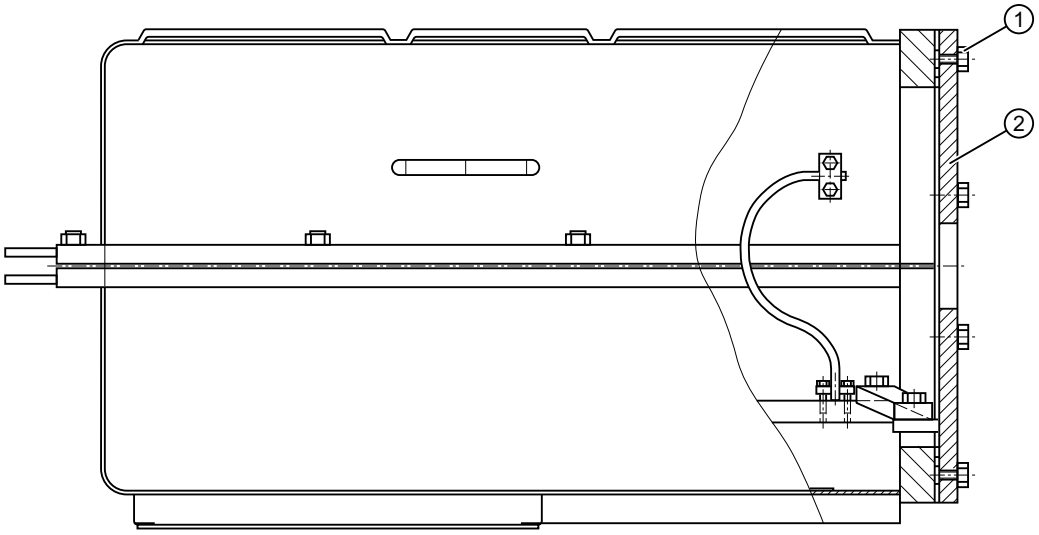



Image 6-1 Disassembly / assembly of terminal box

**Opening the terminal box:**

1. Unscrew the fixing screws ① and remove the ① cable entry plate ①. If present, unscrew the cable entry plate ① grounding strap from the terminal box base.
2. To protect the seals, position the cable entry plate ① a short distance away from the terminal box.
3. Unscrew the terminal box cover fixing screws ① and open the cover. For versions without hinges, lift the cover of the terminal box off.

**Electrical connection and final assembly:**

1. Screw the cable gland(s) into the cable entry plate ② and push the cable entry plate ② onto the connecting cables. Connect the cables to the terminals in accordance with all applicable guidelines.
2. To protect the seals, position the cable entry plate ② a short distance away from the terminal box. Then, if required, connect the grounding strap to the cable entry plate ②.
3. After making the electrical connections, close the cover of the terminal box. For versions without hinges, place the terminal box cover onto the terminal box base. The seal between the terminal box base and cover must be flush with the cable entry plate in order to ensure the required degree of protection.
4. Carefully push the cable entry plate ② toward the terminal box. Screw the terminal box base and cover together with the fixing screws ①. The terminal box base and cover must both be in contact with the cable entry plate ② to ensure the required degree of protection.
5. Screw the terminal box cover on. Ensure that the terminal box seals are intact and undamaged.

**⚠ DANGER**

**Danger due to damaged seals**

Damaged seals can result in the failure of the explosion protection.

This can cause faults which can result in eventual or immediate death, serious injury or material damage.

Only operate the machine with intact, undamaged seals.

### 6.1.2 Selecting cables

Take the following criteria into account when selecting the connecting cables:

- Rated current
- Rated voltage
- If required, service factor
- System-dependent conditions, such as ambient temperature, routing type, cable cross-section as defined by required length of cable, etc.
- Requirements according to IEC / EN 60204-1
- Requirements according to IEC / EN 60079-14 when used in Zones 1, 2 or 21, 22
- Configuration notes

## 6.2 Connecting

### 6.2.1 Terminal boxes with type of protection "Ex d"

With terminal boxes of protection type “Ex d", the type and size of the cable entry threads and the type of protection are specified on the terminal box.

**⚠ WARNING**

**Loss of type of protection “Ex d" when using cable entries, pipeline systems as well as sealing plugs with a basic design.**

An explosion can occur. This can result in death, serious injury, or material damage.

Only use sealing plugs with type of protection "Ex d" that have been tested and certified in accordance with IEC / EN 60079-1 to close openings that are not to be used.

## 6.2.2 Terminal boxes with type of protection "Ex e"

**⚠ WARNING**

**If the seal of the pressure relief flap (preset breaking point) in the lower section of the terminal box is damaged, then the explosion type of protection is no longer guaranteed.**

An explosion may occur during operation. This can result in death, serious injury or material damage.

The damaged seal may only be repaired with original sealing material.

**⚠ WARNING**

**No cable entries or simple designs of sealing plug may be used on terminal boxes with the “Ex e" type of protection.**

An explosion may occur during operation. This can result in death, serious injury or material damage.

- Use only cable entries that have been tested and certified in accordance with IEC / EN 60079–7.
- Use only sealing plugs that have been tested and certified in accordance with IEC / EN 60079–7 to close openings that are not to be used.

**⚠ CAUTION**

**Working on terminal boxes of the “Ex e" type of protection with undrilled cable entry plate**

This can result in death, serious injury or material damage.

Ensure that the cable entry plate is still strong enough after drilling the threads.

## 6.2.3 Connecting the grounding conductor

The grounding conductor cross-section of the machine must be in full conformance with the selection and installation specifications and to IEC/EN 60204-1.

Table 6-1 Determining the cross-section of the grounding conductor

| External cable cross-section S | Cross-section of the grounding conductor [mm²] |
|---|---|
| S ≤ 16 mm² | S |
| 16 mm² < S ≤ 35 mm² | 16 mm² |
| S > 35 mm² | S/2 |

A terminal strip for grounding is fitted either on the stator frame or on the flanged endshield, depending on the type of construction. The grounding point is marked.

The terminal strip is suitable for connecting stranded cables with cable lugs or connecting flat straps. In addition, all machines have a PE terminal within the terminal box.

When connecting up the grounding conductor, ensure that the contact surface of the connection is bare and protected against corrosion using a suitable agent, e.g. with acid-free Vaseline.

## 6.2.4 Circuit diagram in the terminal box cover

Data on the connection and connecting the motor winding can be found in the circuit diagram in the cover of the terminal box.

## 6.2.5 Terminal designation

According to IEC / EN 60034-8, the following basic definitions apply to the terminal designations for 3-phase machines:

Table 6-2 Terminal designations using the 1U1-1 as an example

| 1 | U | 1 | - | 1 | Designation |
|---|---|---|---|---|---|
| x | | | | | Index for pole assignment for pole-changing machines where applicable. A lower index signifies a lower speed. Special case for split winding. |
| | x | | | | Phase designation U, V, W |
| | | x | | | Index for winding start (1) or end (2) or if there is more than one connection per winding |
| | | | | x | Additional indices for cases in which it is obligatory to connect parallel power feed cables to several terminals with otherwise identical designations |

**NOTICE**

**Incorrect direction of rotation**

The machine will not be adequately cooled if it is operated other than how it was originally ordered or with the incorrect direction of rotation. This can result in machine damage.

Observe the direction of rotation data on the nameplate.

## 6.2.6 Connecting the machine for a specific direction of rotation

If the machine has one shaft extension or two shaft extensions with different diameters, the direction of rotation when looking at the front of the single or the thicker shaft extension is defined as follows:

- If you are connecting power supply cords with a phase sequence of L1, L2, L3 at U, V, W, the resulting rotation will be clockwise.
- If you transpose two connections, e.g. L1, L2, L3 at V, U, W, the resulting rotation will be counter-clockwise.

Machines which must run only in one specific direction of rotation are marked with a direction of rotation arrow.

## 6.2.7 Terminal box

### Undrilled entry plate

The number and size of the cable entry tapped holes can be found in the machine dimension drawing.

**Please note the following points for explosion-protected machines:**

- Replace the cable glands that are not being used by appropriately certified screw plugs.
- If you are using cable glands, use only appropriately certified cable glands with strain relief. Comply with the installation and operation conditions specified in the certificate for these cable glands and check that they have been fully complied with.

### Undrilled entry plate

If the entry plate is undrilled, you should match the number and size of the cable glands to the operating conditions. Not applicable for terminal boxes of the Ex d type of protection.

1. Unscrew the cable entry plate.
2. Drill the required number of holes or threads in the required size into the cable entry plate. The thickness of the plate is selected in such a way as to give a sufficient number of turns when the holes are tapped.
   Please note that you are responsible for ensuring that the entry plate still has sufficient strength after the holes have been drilled and tapped.
3. Mount the cable entry plate and the cables with the cable glands onto the terminal box.

### Inserting the cable into the terminal box

1. Only use cable entries that are suitable for the cable.
2. Only use suitable cable entries and cables for the prevailing ambient temperature.
3. Ensure that the power cables are strain relieved where they enter the terminal box.
4. Carefully connect the cable and ensure a reliable protective conductor connection.
5. Tighten the glands and the elements for the strain relief with the torque specified by the manufacturer.
6. Check the cable glands and cables to ensure that they are correctly sealed and firmly seated.
7. Correctly close and seal threads or holes that are not being used ensuring that the IP degree of protection is maintained. The IP degree of protection is specified on the rating plate.

### Pressure-tight terminal box

For terminal boxes with type protection “Ex d”, the type and size of the entry threads in the vicinity of the hole are specified.

## 6.2.8 Cable ends with wire end sleeves

Preferably use end sleeves instead of soldering cable ends. Before connecting, correctly clamp the end sleeve onto the cable to establish a connection capable of conducting current.

**⚠ WARNING**

**Securely and reliably clamping and enclosing the end of the conductor**

If the end of the conductor is not correctly enclosed by the end sleeve, but is clamped together with it, then this can lead to overheating. The temperature class of the machine can be exceeded. This can trigger ignition of an explosive mixture. This can result in death, serious injury or material damage.

- Insert only one conductor end into each end sleeve. Attach the end sleeve correctly.

## 6.2.9 Connection with terminal board

Note that for terminal boards with U-shaped terminal clamps, the conductors to be connected must be placed under the terminal clamps in a U shape. Alternatively, with multi-stranded and finely-stranded conductors, evenly divide the conductor (into two parts) and lay in a straight line under the U-shaped terminal clamps.
See sketch!

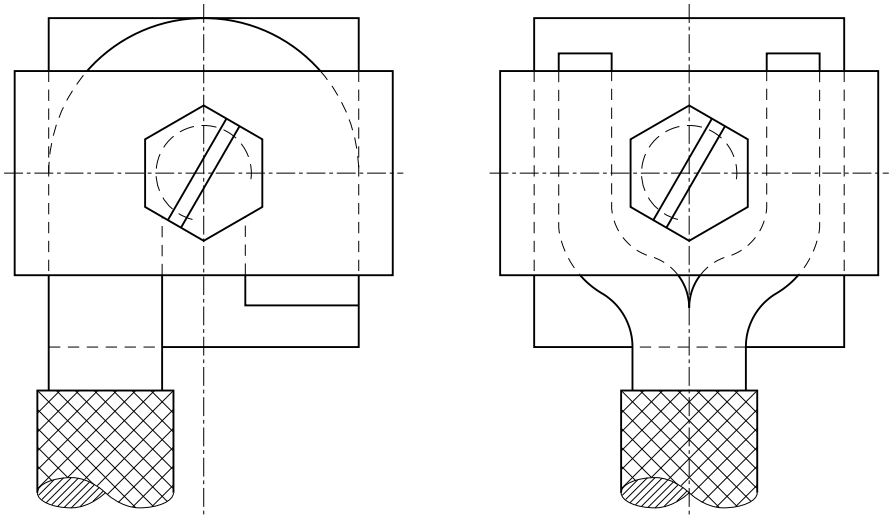
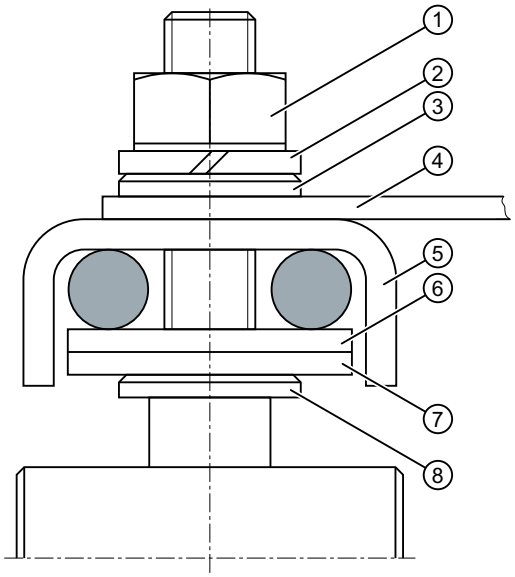


Image 6-2 Example for conductor connection




1 Hexagonal nut – DIN934
2 Spring washer – DIN128
3 or alternatively a spacer washer – DIN125 Cu (for a star connection)
4 alternatively a circuit connection
5 Terminal clamp
6 alternatively a spacer washer Cu
7 Angled cable lug
8 Washer – DIN125 St

Image 6-3 Example for conductor connection

## 6.2.10 Tightening torques for cable glands

- Tighten the cable gland and the parts of terminal box intended to act as a strain relief to the appropriate torque as specified by the manufacturer after inserting the feeder cables. The tightening torques depend on the cable gland used and the cable or wire used.
- Tighten the standard cable glands supplied with the motor in accordance with the following table.

Table 6-3 Tightening torques for standard cable glands [Nm]

| Nominal size | Cable gland for Ex e II Type HSK-M | | Cable gland for Ex e / Ex d IIC Type ADE 1F, ADE 4F R... / B... | |
|---|---|---|---|---|
| | Union nut | Connection thread | Union nut / connection thread | Union nut / connection thread |
| M12 x 1.5 | 5 | 7 | 7.5 | - |
| M16 x 1.5 | 5 | 7 | 12.5 | 17 |

| Nominal size | Cable gland for Ex e II Type HSK-M | | Cable gland for Ex e / Ex d IIC Type ADE 1F, ADE 4F R... / B... | |
|---|---|---|---|---|
| | Union nut | Connection thread | Union nut / connection thread | Union nut / connection thread |
| M20 x 1.5 | 5 | 7 | 20 | 23 |
| M25 x 1.5 | 7 | 10 | 30 | 29 |
| M32 x 1.5 | 7 | 10 | 55 | 33 |
| M40 x 1.5 | 7 | 10 | 75 | 41 |
| M50 x 1.5 | 7 | 10 | 100 | 50 |
| M63 x 1.5 | 7 | 10 | 135 | 75 |
| M75 x 1.5 | - | - | 175 | 100 |

## 6.2.11 Connecting aluminum conductors

If you are using aluminum conductors, comply in addition with the following:

- Use only cable lugs that are suitable for connecting aluminum conductors.
- Immediately before inserting the aluminum conductor, remove the oxide layer from the contact areas on the conductor and/or the mating piece, by brushing or filing.
- Then grease the contact areas immediately using neutral vaseline in order to avoid re-oxidation.

**NOTICE**

**Aluminum flow due to contact pressure**

Aluminum flows following installation due to the contact pressure. The connection with the clamping nuts can loosen as a result. The contact resistance would increase and the current-carrying impeded; as a consequence the terminal box and the surrounding components could burn. This could result in material damage to the machine or even in total failure, which could in turn lead to indirect material damage to the system.

Retighten the clamping nuts after approximately 24 hours and then again after approximately four weeks. Make sure that the terminals are de-energized before you tighten the nuts.

## 6.2.12 O-ring seal

If O-ring seals are present, you should check that they are in perfect condition and that the O-ring seals are properly seated in the grooves between the components. Replace any damaged O-ring seals.

O-ring seals can be present on the following components, for instance:

- Tapers
- Cable glands
- Bearing seals

- Bearing plate seals
- Terminal box seals
- Cable glands
- etc.

## 6.2.13 Finishing connection work

1. Before closing the terminal box, please check that:
   - The electrical connections in the terminal box are tight and in full compliance with the specifications above
   - The motor is connected so that it rotates in the direction specified
   - The inside of the terminal box is clean and free of any cable debris
   - All gaskets and seals are intact
   - Unused **cable glands** must be replaced with certified closures or closed with other suitable closure types. Comply with the installation and operation conditions specified in the certificate for these plug elements and check that they have been complied with.
   - The pressure relief device is intact Depending on the type of terminal box being used, the pressure relief device can be implemented either by sealing the slots or by using a pressure relief diaphragm.

     **⚠ WARNING**

     **Damaged pressure relief device**

     Water and foreign bodies can penetrate the enclosure if the pressure relief device is damaged: The degree of protection of the terminal box is no longer guaranteed, a short-circuit can occur, which can result in death, serious injury or material damage.

     - Do not operate the machine with a damaged pressure relief device.
     - Any damage may only be repaired after prior discussion with the person responsible for the safety of the plant or system and only using original parts. Any damage may only be repaired after prior discussion with the person responsible for the safety of the installation and only by using original parts.
2. Close the terminal box.
   See section "Tightening torques for screw and bolt connections" for the tightening torque of the fixing bolts for the cover.

## 6.2.14 Internal equipotential bonding

The equipotential bonding between the ground terminal in the terminal box enclosure and the motor frame is established via the terminal box metallic contact faces. The contact faces are protected against corrosion.

The equipotential bonding is achieved by means of a stranded wire. A copper braided strip, a stranded wire or a metal contact is used to ensure potential equalization between the cable entry plate and the terminal box enclosure.

# Start-up 7

When carrying out any work on the machine, observe the general safety instructions and the specifications contained in EN 50110-1 regarding safe operation of electrical equipment.

### See also

Safety information (Page 13)

**Note**

**Service Center**

Please contact the Service Center (Page 119), if you require commissioning support.

## 7.1 Checks to be carried out prior to commissioning

Once the system has been correctly installed, you should check the following prior to commissioning:

**Note**

**Checks to be carried out prior to commissioning**

The following list of checks to be performed prior to commissioning does not claim to be complete. It may be necessary to perform further checks and tests in accordance with the specific situation on-site.

- The machine is undamaged.
- The machine has been correctly installed and aligned, the transmission elements are correctly balanced and adjusted.
- All fixing screws, connection elements, and electrical connections have been tightened to the specified tightening torques.
- The operating conditions match the data provided in accordance with the technical documentation, such as degree of protection, ambient temperature, etc..
- Moving parts such as the coupling move freely.
- All touch protection measures for moving and live parts have been taken.


- The machine is undamaged.
- The machine has been correctly installed and aligned, the transmission elements are correctly balanced and adjusted.
- All fixing screws, connection elements, and electrical connections have been tightened to the specified tightening torques.

- The operating conditions match the data provided in accordance with the technical documentation, such as degree of protection, ambient temperature, etc..
- Moving parts, for example the coupling, move freely.
- All touch protection measures for moving and live parts have been taken.
- The air leakage filters are installed and function correctly.

**⚠ WARNING**

**Risk of losing the IP degree of protection as a result of damaged shaft sealing rings**

This can result in death, serious injury, or material damage.

Replace damaged components immediately.

- The rotor can spin without coming into contact with the stator.
- The bearing insulation is not bridged.
- Appropriately configured control and speed monitoring functions ensure that the the permissible speeds specified on the rating plate cannot be exceeded.
- Any supplementary motor monitoring devices and equipment have been correctly connected and are fully functional.

### Electrical connection

- The grounding and equipotential bonding connections have been made correctly.
- The machine is connected so that it rotates in the direction specified.
- Appropriately configured control and speed monitoring functions ensure that the motor cannot exceed the permissible speeds specified in the technical data. For this purpose, compare the data on the rating plate or, if necessary, the system-specific documentation.
- The minimum insulation resistance values are within tolerance.
- Minimum air clearances have been maintained.
- Any supplementary motor monitoring devices and equipment have been correctly connected and are functioning correctly.
- All brakes and backstops are operating correctly.
- At the monitoring devices, the values for "Warning" and "Shutdown" are set.

### Converter operation

- If the design of the motor requires connection to a particular converter type, the rating plate will contain corresponding additional information.
- The converter is correctly parameterized. The parameterization data is specified on the rating plate of the machine. Information about the parameters is available in the operating instructions for the converter.
- Any supplementary motor monitoring devices and equipment have been correctly connected and are functioning correctly.

- In continuous operation, the motor cannot exceed the specified upper speed limit $n_{max}$ or undershoot the lower speed limit $n_{min}$.
- The permissible acceleration time to the limit speed $n_{min}$ depends on the parameter assignment.

**Converter operation**

- If the design of the motor requires connection to a particular converter type, the rating plate will contain corresponding additional information.
- The converter is correctly parameterized. The parameterization data is specified on the rating plate of the machine. Information about the parameters is available in the operating instructions for the converter.
- Any supplementary motor monitoring devices and equipment have been correctly connected and are functioning correctly.
- In continuous operation, the motor cannot exceed the specified upper speed limit $n_{max}$ or undershoot the lower speed limit $n_{min}$.
  The permissible acceleration time to the limit speed $n_{min}$ depends on the parameter assignment.
- The bearing insulation should be executed as shown on the plates.

## 7.2 Insulation resistance and polarization index

Measuring the insulation resistance and polarization index (PI) provides information on the condition of the machine. It is therefore important to check the insulation resistance and the polarization index at the following times:

- Before starting up a machine for the first time
- After an extended period in storage or downtime
- Within the scope of maintenance work

The following information is provided regarding the state of the winding insulation:

- Is the winding head insulation conductively contaminated?
- Has the winding insulation absorbed moisture?

As such, you can determine whether the machine needs commissioning or any necessary measures such as cleaning and/or drying the winding:

- Can the machine be put into operation?
- Must the windings be cleaned or dried?

Detailed information on testing and the limit values can be found here:

"Testing the insulation resistance and polarization index"

# 7.3 Testing the insulation resistance and polarization index

**⚠ WARNING**

**Hazardous voltage at the terminals**

During and immediately after measuring the insulation resistance or the polarization index (PI) of the stator winding, hazardous voltages may be present at some of the terminals. Contact with these can result in death, serious injury or material damage.

- If any power cables are connected, check to make sure line supply voltage cannot be delivered.
- Discharge the winding after measurement until the risk is eliminated, e.g. using the following measures:
  - Connect the terminals with the ground potential until the recharge voltage drops to a non-hazardous level
  - Attach the connection cable.

## Measure the insulation resistance

1. Before you begin measuring the insulation resistance, please read the operating manual for the insulation resistance meter you are going to use.
2. Make sure that no power cables are connected.
3. Measure the winding temperature and the insulation resistance of the winding in relation to the machine enclosure. The winding temperature should not exceed 40° C during the measurement. Convert the measured insulation resistances in accordance with the formula to the reference temperature of 40° C. This thereby ensures that the minimum values specified can be compared.
4. Read out the insulation resistance one minute after applying the measuring voltage.

## Limit values for the stator winding insulation resistance

The following table specifies the measuring voltage and limit values for the insulation resistance. These values correspond to IEEE 43-2000 recommendations.

Table 7-1 Stator winding insulation resistance at 40° C

| $V_N$ [V] | $V_{Meas}$ [V] | $R_C$ [MΩ] |
|---|---|---|
| U ≤ 1000 | 500 | ≥ 5 |
| 1000 ≤ U ≤ 2500 | 500 (max. 1000) | 100 |
| 2500 < U ≤ 5000 | 1000 (max. 2500) | |
| 5000 < U ≤ 12000 | 2500 (max. 5000) | |
| U > 12000 | 5000 (max. 10000) | |

$U_{rated}$ = rated voltage, see the rating plate

$U_{meas}$ = DC measuring voltage

$R_C$ = minimum insulation resistance at reference temperature of 40° C

## Conversion to the reference temperature

When measuring with winding temperatures other than 40° C, convert the measuring value to the reference temperature of 40° C according to the following equations from IEEE 43-2000.

| | | |
|---|---|---|
| (1) $R_C = K_T \cdot R_T$ | $R_C$ | Insulation resistance converted to 40° C reference temperature |
| | $k_T$ | Temperature coefficient according to equation (2) |
| | $R_T$ | Measured insulation resistance for measuring/winding temperature T in °C |
| (2) $K_T = (0.5)^{(40-T)/10}$ | 40 | Reference temperature in °C |
| | 10 | Halving/doubling of the insulation resistance with 10 K |
| | T | Measuring/winding temperature in °C |

In this case, doubling or halving the insulation resistance at a temperature change of 10 K is used as the basis.

- The insulation resistance halves every time the temperature rises by 10 K.
- The resistance doubles every time the temperature falls by 10 K.

For a winding temperature of approx. 25° C, the minimum insulation resistances are 20 MΩ (U ≤ 1000 V) or 300 MΩ (U > 1000 V). The values apply for the complete winding to ground. Twice the minimum values apply to the measurement of individual assemblies.

- Dry, new windings have an insulation resistance of between 100 and 2000 MΩ, or possibly even higher values. An insulation resistance value close to the minimum value could be due to moisture and/or dirt accumulation. The size of the winding, the rated voltage and other characteristics affect the insulation resistance and may need to be taken into account when determining measures.
- Over its operating lifetime, the motor winding insulation resistance can drop due to ambient and operational influences. Calculate the critical insulation resistance value depending on the rated voltage by multiplying the rated voltage (kV) by the specific critical resistance value. Convert the value for the current winding temperature at the time of measurement, see above table.

## Measuring the polarization index

1. To determine the polarization index, measure the insulation resistances after one minute and ten minutes.
2. Express the measured values as a ratio:
   $PI = R_{insul\ 10\ min} / R_{insul\ 1\ min}$
   Many measuring devices display these values automatically following the measurement.

For insulation resistances > 5000 MΩ, the measurement of the PI is no longer meaningful and consequently not included in the assessment.

| $R_{(10\ min)} / R_{(1\ min)}$ | Assessment |
|---|---|
| ≥ 2 | Insulation in good condition |
| < 2 | Dependent on the complete diagnosis of the insulation |

| NOTICE |
| --- |
| **Damage to insulation**<br>If the critical insulation resistance is reached or undershot, this can damage the insulation and cause voltage flashovers.<br>• Contact the Service Center.<br>• If the measured value is close to the critical value, you must subsequently check the insulation resistance at shorter intervals. |

### Limit values of the anti-condensation heating insulation resistance

The insulation resistance of the anti-condensation heating with respect to the machine housing should not be lower than 1 MΩ when measured at 500 V DC.

## 7.4 Testing the cooling of the machine

**Cooling**

- Check that the machine cooling is available for commissioning.

### See also

Preparations for use (Page 29)

# Operation 8

When carrying out any work on the machine, observe the general safety instructions and the specifications contained in EN 50110-1 regarding safe operation of electrical equipment.

**See also**

Safety information (Page 13)

## 8.1 Safety instructions during operation

**⚠ WARNING**

**All terminal boxes must be closed**

Terminal boxes contain live electrical parts. Death, serious injury or material damage can result if terminal box covers are removed.

When the machine is in operation, the terminal boxes must remain closed at all times. Terminal boxes may be opened only when the machine is stopped and de-energized.

**⚠ WARNING**

**Do not remove covers when the motor is running**

Rotating or live parts are dangerous. Death, serious injury or material damage can result if the required covers are removed.

Any covers that prevent live electrical or rotating parts from being touched, or that ensure compliance with a particular degree of protection or are required for ensuring proper air flows, and hence effective cooling, must not be opened during operation.

**⚠ WARNING**

**Faults in operation**

Deviations from normal operation such as increased power consumption, temperatures or vibrations, unusual noises or odors, tripping of monitoring devices, etc., indicate that the machine is not functioning properly. This can cause faults which can result in eventual or immediate death, serious injury or material damage.

- Immediately inform the maintenance personnel.
- If you are in doubt, immediately switch off the motor, being sure to observe the system-specific safety conditions!

**⚠ CAUTION**

**Fire hazard**

Certain parts of the motor may reach temperatures above 50° C. Touching them can result in burns.

- Check the temperature of the parts before touching them and take appropriate protective measures if necessary.

**⚠ DANGER**

**Explosion hazard if the bridging is removed from the insulated bearing**

Removing the factory-fitted bridging of the insulated bearing leads to potential differences between the rotor and the grounded motor. This can cause the generation of sparks, which especially in an explosive atmosphere can ignite surrounding dust or combustible gases. Explosions can occur. There is also a risk of an electric shock. Death, serious injury, or material damage will result.

Do not open the bridging of the bearing insulation during operation.

**⚠ DANGER**

**Explosion hazard from hybrid mixtures**

Hybrid mixtures are mixtures of flammable dusts with explosive gas/air atmospheres which can together create a dangerous explosive atmosphere if they occur at the same time. Changes can arise in the safety characteristics here, such as a change in the zonal classification, increase in the explosion pressure, reduction in the minimum ignition energy and a reduction in the maximum temperatures to be observed.

An explosion can result. This can result in death, serious injury or material damage.

- For this reason, the relative characteristics must be considered both for gas (zones 0, 1 and 2) and for dust (zones 20, 21 and 22) where hybrid mixtures arise. It is necessary for a competent assessor to determine in the individual case whether the parameters determining ignition are unfavorably affected in a particular hybrid mixture.
- Motors with dual plates for G (“Gas”) and D (“Dust”) may only be used where these two occur after prior examination of the properties of the hybrid mixtures by the user.

## 8.2 Machine overheating caused by dust

**⚠ WARNING**

**Explosion hazard due to overheating of the machine caused by deposits of dust**

Deposits of dust have a thermal insulation effect, which can lead to the machine overheating. The maximum surface temperature of the machine cannot be adhered to. The dust can ignite, resulting in an explosion. This can result in death, serious injury or material damage.

- Dust the machine regularly.
- Do not switch the machine on until the dust has been removed.

**⚠ WARNING**

**Risk of explosion due to excessive bearing temperature**

The surface temperature cannot be maintained within maximum permissible limits if the bearing becomes too hot. The dust can ignite, resulting in an explosion. This can result in death, serious injury or material damage.

- Always check the bearing temperatures.
- In addition to the current-dependent overload protection device located in the three phases of the connecting cable, we recommend that you also monitor the temperature rise in the machine with the aid of the temperature sensors built into the stator winding.
  For the alarm and shutdown temperatures, see the "Explanatory text for the machine dimension drawing" section.

## 8.3 Switching on with the anti-condensation heating active

**NOTICE**

**Excessive machine temperature**

If the anti-condensation heating is operated while the machine is running, this can increase the temperatures inside the machine. This can result in material damage.

- Make sure that the anti-condensation heating is switched off before the machine is switched on.
- Only operate anti-condensation heating when the machine is switched off.

### See also

Interlock circuit for anti-condensation heating (Page 32)

| ⚠ WARNING |
| --- |
| **Explosion hazard**<br>If the anti-condensation heating is switched on during operation, the temperature class or the maximum surface temperature of the machine can be exceeded.<br>In an explosive atmosphere, there is a risk of an explosion. This can result in death, serious injury or material damage.<br>Only switch the anti-condensation heating on after the motor has been switched off. |

## 8.4 Switching on the machine

1. If at all possible, run the machine without load and check that it is running smoothly.
2. If it runs perfectly, connect a load.

| NOTICE |
| --- |
| **Thermal overload of motors connected directly to the line supply**<br>In addition to the load torque, the ramp-up (accelerating) time is essentially influenced by the moment of inertia to be accelerated. While ramping up when connected to the line supply, the inrush (starting) current is a multiple of the rated current. This can result in thermal overload. This can damage the motor.<br>As a consequence, when ramping up, observe the following:<br>• Monitor the ramp-up time and number of consecutive starts.<br>• Comply with the limit values and/or ramp-up conditions specified in the catalog or the order documentation. |

3. If this is possible using the available measuring equipment, check the bearing and stator winding temperatures.

## 8.5 Switching on again after an emergency switching-off

- Check the machine before recommissioning the driven machine after an Emergency Off.
- Eliminate all the causes that have led to the emergency off

## 8.6 Stoppages

The stoppage is a shutdown for a period of time, during which the machine is stopped but remains at the location of use.

Under normal ambient conditions, e. g. the stopped machine is not exposed to any vibration, no increased level of corrosion, etc. in general, the following measures are necessary during stoppages.

### 8.6.1 Switching on the anti-condensation heater

If the machine has anti-condensation heating, then switch it on when the machine is not in operation.

**⚠ WARNING**

**Explosion hazard**

If the anti-condensation heating is switched on directly after the machine is switched off, the temperature class or the maximum surface temperature of the machine can be exceeded.

In an explosive atmosphere, there is a risk of an explosion. This can result in death, serious injury or material damage.

- Only switch on the anti-condensation heating after the motor has been switched off. Carefully comply with the data on the anti-condensation heating plate.

### 8.6.2 Avoidance of damage to roller bearings during stoppages

Extended stoppages at the identical or almost identical resting position of the roller bearings can lead to damage such as brinelling or formation of corrosion.

- During stoppages, regularly start the machine up for a brief period once a month, or at least turn the rotor over several times.
  If you have uncoupled the machine from the driven machine and secured the rotor with a rotor shipping brace, then remove this before turning the rotor over or starting the machine up.
  Make sure that the resting position of the roller bearings after the rotor has been turned over is different from what it previously had been. Use the fitted key or the coupling halves as reference markers.
- During re-commissioning, refer to the information in the "Commissioning" section.

**See also**

Start-up (Page 69)

## 8.7 Decommissioning the machine

**NOTICE**

**Damage as a result of an extended period out of service**

If the machine is going to be out of service for longer than six months, then take the necessary measures for preservation and storing. Otherwise damage to the machine will result.

Record the decommissioning steps. This log will be useful upon recommissioning.

## 8.8 Re-commissioning the machine

When you re-commission the machine, proceed as follows:

- Study the record made when the machine was decommissioned, and reverse the measures that were taken for conservation and storage.
- Perform the measures listed in the "Commissioning" section.

### See also

Start-up (Page 69)

Decommissioning the machine (Page 79)

## 8.9 faults

### 8.9.1 Inspections in the event of faults

Natural disasters or unusual operating conditions, such as overloading or short circuit, are faults that overload the machine electrically or mechanically.

Immediately perform an inspection after such faults.

Correct the cause of the fault as described in the respective remedial measures section. Repair any damage to the machine.

### 8.9.2 Electrical faults

**Note**

If you are operating the motor with a converter, the operating instructions of the converter must also be observed if electrical faults occur.

Table 8-1 Electrical faults

| ↓ Motor fails to start | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | ↓ Motor accelerates sluggishly | | | | | | | |
| | | ↓ Rumbling noise during startup | | | | | | |
| | | | ↓ Rumbling noise during operation | | | | | |
| | | | | ↓ High temperature rise during no-load operation | | | | |
| | | | | | ↓ High temperature rise with load | | | |
| | | | | | | ↓ High temperature rise of individual winding sections | | |
| | | | | | | | **Possible causes of faults** | **Remedial measures** |
| X | X | | X | | X | | Overload | Reduce the load. |
| X | | | | | | | Interrupted phase in the supply cable | Check the switches and cables. |
| | X | X | X | | X | | Interrupted phase in the feeder cable after switching on | Check the switches and cables. |
| | X | | | | | | Mains voltage too low, frequency too high | Check the power supply conditions. |
| | | | | X | | | Mains voltage too high, frequency too low | Check the power supply conditions. |
| X | X | X | X | | | X | Stator winding incorrectly connected | Check the winding connection in the terminal box. |
| | X | X | X | | | X | Winding short circuit or phase short circuit in stator winding | Determine the winding resistances and insulation resistances. Carry out repair work **after consultation with the manufacturer**. |
| | | | | | X | | Incorrect direction of rotation | Check the connection. |

## 8.9.3 Mechanical faults

Table 8-2 Mechanical faults

| ↓ Grinding noise | | | | |
|---|---|---|---|---|
| | ↓ Radial vibrations | | | |
| | | ↓ Axial vibrations | | |
| | | | **Possible causes of faults** | **Remedial measures** |
| X | | | Rotating parts grind | Establish the cause and realign the parts. |
| | X | | Stator or coupling not balanced. | Disconnect the stator or coupling and rebalance. |
| | | | | If the machine has two shaft ends, and a transmission element is only fitted to one end, secure the fitted key at the other end to prevent it from being thrown out. If the rotor has balance type "H" (standard type), the fitted key must be cut back to roughly half of its length. |
| | X | | Rotor out of true, shaft bent | Consult the manufacturing plant. |
| | X | X | Poor alignment | Align the machine set; check the coupling. (1) |
| | X | | Coupled machine not balanced | Rebalance the coupled machine. |
| | | X | Shocks from coupled machine | Investigate the coupled machine. |
| | X | X | Uneven running of gear unit | Fix the gearing. |
| | X | X | Resonance of the overall system comprising motor and foundation | Stabilize the foundation following consultation. |

| ↓ Grinding noise | | | | |
|---|---|---|---|---|
| | ↓ Radial vibrations | | | |
| | | ↓ Axial vibrations | | |
| | | | **Possible causes of faults** | **Remedial measures** |
| | X | X | Changes in foundation | Establish the cause of the changes and eliminate them if necessary; realign the machine. |
| (1) Take any changes into account when warming up the machine. | | | | |

## 8.9.4 Roller bearing faults

**Note**

Damage to roller bearings can be difficult to detect in some cases. If in doubt, replace the bearing. Use other bearing designs only **after consulting the manufacturer**.

Table 8-3 Roller bearing faults

| ↓ Bearing overheats | | | | |
|---|---|---|---|---|
| | ↓ Bearing "whistles" | | | |
| | | ↓ Bearing "knocks" | | |
| | | | **Possible causes of faults** | **Remedial measures** |
| X | | | High coupling pressure | Align the machine more accurately. |
| X | | | Belt tension too high | Reduce the drive belt tension. |
| X | | | Bearing contaminated | Clean the bearing or replace it. Check the seals. |
| X | | | High ambient temperature | Use a suitable high-temperature grease. |
| X | X | | Insufficient lubrication | Grease the bearings as instructed. |
| X | X | | Bearing canted | Properly install the bearing. |
| X | X | | Insufficient bearing play | Contact the Service Center. |
| | | X | Excessive bearing play | Contact the Service Center. |
| X | X | | Bearing corroded | Replace the bearing. Check the seals. |
| X | | | Too much grease in bearing | Remove surplus grease. |
| X | | | Wrong grease in the bearing | Use the correct grease. |
| | | X | Friction marks on raceway | Replace the bearing. |
| | | X | Scoring (brinelling) | Replace the bearing. Avoid any vibration at standstill |

# Maintenance 9

Through careful and regular maintenance, inspections, and overhauls you can detect faults at an early stage and resolve them. This means that you can avoid consequential damage.

Operating conditions and characteristics can vary widely. For this reason, only general maintenance intervals can be specified here. Maintenance intervals should therefore be scheduled to suit the local conditions (dirt, starting frequency, load, etc.).

When carrying out any work on the machine, observe the general safety instructions and the specifications contained in EN 50110-1 regarding safe operation of electrical equipment.

**See also**

Safety information (Page 13)

Comply with the IEC / EN 60079-17 standard during all service and maintenance work on the machine.

**Note**

**Service Center**

Please contact the Service Center (Page 119), if you require support with servicing, maintenance or repair.

## 9.1 Inspection and maintenance

### 9.1.1 Safety instructions for inspection and maintenance

**⚠ WARNING**

**Rotating and live parts**

Electric machines contain live and rotating parts. Fatal or serious injuries and substantial material damage can occur if maintenance work is performed on the machine when it is not stopped or not de-energized.

- Perform maintenance work on the machine only when it is stopped. The only operation permissible while the machine is rotating is regreasing the roller bearings.
- When performing maintenance work, comply with the five safety rules (Page 13).

**⚠ WARNING**

**Machine damage**

If the machine is not maintained it can suffer damage. This can cause faults which can result in eventual or immediate death, serious injury or material damage.

Perform regular maintenance on the machine.

**⚠ CAUTION**

**Dust disturbances when working with compressed air**

When cleaning with compressed air, dust, metal chips, or cleaning agents can be whirled up. Injuries can result.

When cleaning using compressed air, make sure you use suitable extraction equipment and wear protective equipment (safety goggles, protective suit, etc.).

**NOTICE**

**Damage to insulation**

If metal swarf enters the winding head when cleaning with compressed air, this can damage the insulation. Clearance and creepage distances can be undershot. This may cause damage to the machine extending to total failure.

When cleaning with compressed air, ensure there is adequate extraction.

**NOTICE**

**Machine damage caused by foreign bodies**

Foreign bodies such as dirt, tools or loose components, such as screws etc., can be left by accident inside the machine after maintenance is performed. These can cause short circuits, reduce the performance of the cooling system or increase noise in operation. They can also damage the machine.

- When carrying out maintenance work, make sure that no foreign bodies are left in or on the machine.
- Securely attach all loose parts again once you have completed the maintenance procedures.
- Carefully remove any dirt.

**Note**

Operating conditions and characteristics can vary widely. For this reason, only general intervals for inspection and maintenance measures can be specified here.

**⚠ WARNING**

**Explosion hazard**

Components within the machine may be hotter than the maximum permissible surface temperature of the enclosure. In an explosive atmosphere, dust can ignite and an explosion occur. This can result in death, serious injury or material damage.

- Do not open the machine in an explosive and dusty atmosphere when it is still at normal operating temperature.
- Allow the machine to cool down before opening it.
- When disassembling, ensure that the parts necessary to seal the enclosure are not damaged, for example seals, face/plane mating surfaces. Perform a new routine test for the parts that have been repaired if these parts are crucial to ensure dust protection.

**⚠ WARNING**

**Explosion hazard due to overheating of the machine caused by a layer of dust**

Layers of dust thicker than 5mm can insulate the machine, resulting in overheating. The maximum surface temperature of the machine cannot be adhered to. The dust can ignite, resulting in an explosion. This can result in death, serious injury or material damage.

Dust the machine regularly. Do not allow dust layers thicker than 5 mm to build up on the machine surface. Do not switch the machine on until the dust has been removed.

**⚠ WARNING**

**Risk of explosion due to excessive bearing temperature**

The surface temperature cannot be maintained within maximum permissible limits if the bearing becomes too hot. The dust can ignite, resulting in an explosion. This can result in death, serious injury or material damage.

- Always check the bearing temperature.
- In addition to the current-dependent overload protection device located in the three phases of the connecting cable, we recommend that you also monitor the temperature rise in the motor with the aid of the temperature sensors built into the stator winding.

## 9.1.2 Risk of explosion due to electrostatic charging

**⚠ WARNING**

**Risk of explosion due to static charging**

If you clean the machine with compressed air, plastic components may become statically charged and create a potentially explosive atmosphere. An explosion can occur. This can result in death, serious injury or material damage.

- Do not use compressed air to clean plastic parts in an explosive atmosphere.
- When cleaning the machine, make sure that the air in the vicinity of the motor is free of gas and dust.

## 9.1.3 Inspections in the event of faults

Natural disasters or unusual operating conditions, such as overloading or short circuit, are faults that overload the machine electrically or mechanically.

Immediately perform an inspection after such faults.

## 9.1.4 First inspection

Perform the following checks after approximately 500 operating hours or one year, whichever comes first:

Table 9-1 Checks after installation or repair

| Check | When the motor is running | At stand-still |
|---|---|---|
| The electrical parameters are maintained. | X | |
| The permissible bearing temperatures are not exceeded. | X | |
| The smooth running characteristics and machine running noise have not deteriorated. | X | |
| The motor foundation has no cracks and indentations. (*) | X | X |

(*) You can perform these checks while the motor is at standstill or, if required, while running.

**Further checks**

Further checks may be required if so specified in supplementary instructions or in accordance with the plant-specific conditions.

**NOTICE**

If you detect any deviations during the inspection, you must rectify them immediately. They may otherwise damage the motor.

## 9.1.5 General inspection

Check that the installation conditions are observed. We recommend that the following checks are performed after approx. 16 000 operating hours or at the latest after two years:

Table 9-2 Checks that have to be performed during the general inspection

| Checking | When the motor is running | At stand-still |
|---|---|---|
| The electrical parameters are maintained | X | |
| The permissible bearing temperatures are not exceeded | X | |
| The smooth running characteristics and machine running noise have not deteriorated | X | |
| The motor foundation has no cracks and indentations (*) | X | X |
| The machine is aligned within the permissible tolerance ranges | | X |
| All the fixing bolts/screws for the mechanical and electrical connections have been securely tightened | | X |
| All the potential connections, grounding connections and shield supports are correctly seated and properly bonded | | X |
| The winding insulation resistances are sufficiently high | | X |
| Any bearing insulation is fitted as shown on the plates and labels | | X |
| The CABLES and insulating parts and components are in good condition and there is no evidence of discoloring | | X |

(*) You can perform these checks while the motor is at standstill or, if required, while running.

| NOTICE |
|---|
| If you detect any deviations during the inspection, you must rectify them immediately. They may otherwise cause damage to the machine. |

## 9.1.6 Servicing the roller bearings

When inspecting rolling-contact bearings, it is generally not necessary to dismantle the machines. The motor only has to be dismantled if the bearings are to be replaced.

## 9.1.7 Bolt grade for roller bearings

Check that all the bolts for attaching the bearing shields, bearing cover, gland plates, and terminal boxes are present and properly tightened. Replace damaged bolts with identical bolts of a perfect quality.

Depending on the ambient temperature, only bolts with the bolt grade according to the following table are permissible for motors without heating.

Table 9-3 Bolt grade between BG071 and BG315

| Type / size | Bolt grade for ambient temperature $T_u$ | | |
|---|---|---|---|
| | ≥ -20 °C | | |
| | Standard | Stainless steel bolts | Standard |
| 071, 080, 090, 100, 112, 132, 160, 200, 225, 250, 280, 315 | 8.8 | A4-70 | A4-70 |
| 355 | 8.8 | A4-80 | -- |

All machines marked in accordance with Directive 94/9/EC (“Explosion Protection Directive”, until April 19, 2016, according to Directive 2014/34/EU from April 20, 2016) must be regularly inspected for mechanical damage which could constitute a risk of ignition in accordance with IEC / EN 60079-17 .

- Comply with the following intervals:
  - Bearing replacement intervals
  - Relubrication intervals
  - Grease replacement intervals
  - Oil change intervals
- Roller bearing service life
  - Replace the roller bearings once the nominal service life is reached. Alternatively, you can verify they are free of mechanical damage as part of an inspection.
  - In the case of roller bearings without a regreasing system, it is ensured that the nominal service life will only be achieved clearly after achievement of the service life of the grease in the bearings.
  - The roller bearing service life under full specified load is at least 20 000 hours for machines subject to radial or axial forces.
  - The nominal roller bearing service life of machines which are not subject to any forces is at least 40 000 hours.
- For roller bearings with external oil supply, monitor that lubrication is maintained.

## 9.1.8 Maintenance

### 9.1.8.1 Explosion protection for machines with type of protection "Ex d"

For explosion-protected machines with type of protection "flameproof enclosure" according to IEC/EN 60079–0 and IEC/EN 60079–1, observe the following:

It is not permissible to subsequently machine or paint contact and mating surfaces of the parts listed below:

- Stator frame
- End shields
- Bearing covers

- Motor shaft
- Gland plate
- Terminal box base
- Terminal box cover
- Gland plates for additional terminal boxes, where present

Keep these surfaces clean and protect them against corrosion by applying a thin coating of grease. It is not permissible that any seals are fitted between the surfaces that guarantee that flame is not transmitted.

### 9.1.8.2 Explosion hazard due to increased surface temperature

**⚠ WARNING**

**Explosion hazard due to increased surface temperature**

Components within the motor may be hotter than the maximum permissible surface temperature for the enclosure. In an explosive atmosphere, dust can ignite and an explosion occur. This can result in death, serious injury or material damage.

- Do not open the motor in an explosive and dusty atmosphere when it is still at normal operating temperature.
- Allow the machine to cool down before opening it.

### 9.1.8.3 Insulation resistance and polarization index

Measuring the insulation resistance and polarization index (PI) provides information on the condition of the machine. It is therefore important to check the insulation resistance and the polarization index at the following times:

- Before starting up a machine for the first time
- After an extended period in storage or downtime
- Within the scope of maintenance work

The following information is provided regarding the state of the winding insulation:

- Is the winding head insulation conductively contaminated?
- Has the winding insulation absorbed moisture?

As such, you can determine whether the machine needs commissioning or any necessary measures such as cleaning and/or drying the winding:

- Can the machine be put into operation?
- Must the windings be cleaned or dried?

Detailed information on testing and the limit values can be found here:

"Testing the insulation resistance and polarization index"

### 9.1.8.4 Grease stability times and mass of fillings

**Standard roller bearings**

| Size | Grease stability time for permanent lubrication or relubrication interval for a regreasing system in operating hours at rated speed | | | | | | Grease filling quantity for permanent lubrication or grease quantity for relubrication in g per bearing | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Horizontal type of construction (B) | | | Vertical type of construction (V) | | | Permanent lubrication | | Relubrication | |
| | 3000 rpm | 1500 rpm | ≤1000 rpm | 3000 rpm | 1500 rpm | ≤1000 rpm | 3000 rpm | ≤1500 rpm | 3000 rpm | ≤1500 rpm |
| 71 | | | | | | | 3 | 3 | - | - |
| 80 | | | | | | | 3 | 3 | - | - |
| 90 | | | | | | | 4 | 4 | - | - |
| 100 | 33000 | | | 24000 | 33000 | | 9 | 9 | - | - |
| 112 | | | | | | | 9 | 9 | - | - |
| 132 | | | | | | | 18 | 18 | - | - |
| 160 | | | | | | | 32 | 32 | - | - |
| 180 | | | | | | | 51 | 51 | - | - |
| 200 | | 40000 | 40000 | | | 40000 | 63 | 63 | - | - |
| 225 | | | | | | | 79 | 79 | - | - |
| 250 | 24000 | | | 16000 | 26000 | | 99 | 99 | - | - |
| 280 | | | | | | | 99 | 132 | - | - |
| 315 | 4000 | 8000 | 11000 | 2800 | 5600 | 8000 | - | - | 35 | 25 |
| 355 | | | | | 4000 | 5600 | - | - | 35 | 50 |

The specified grease stability times and/or relubrication intervals are valid for maximum ambient temperatures of 40 °C. Reduce the lubrication interval for a 10 °C increase in temperature by a factor of 0.7 of the value listed in the table (max. 20 °C = factor 0.5). With an ambient temperature <= 25° C, twice the grease stability time can be expected; but a maximum of 40000 hours. Times for operation on 60 Hz systems on request. With pure coupling operation with flexible coupling, the calculated bearing life is L10h greater than 50000 hours. Comply with the grease service life and relubrication intervals.

**Reinforced roller bearings**

| Size | Grease stability time for permanent lubrication or relubrication interval for a regreasing system in operating hours at rated speed | | | | | | Grease quantity for relubrication in g per bearing | |
|---|---|---|---|---|---|---|---|---|
| | Horizontal type of construction (B) | | | Vertical type of construction (V) | | | | |
| | 3000 rpm | 1500 rpm | ≤1000 rpm | 3000 rpm | 1500 rpm | ≤1000 rpm | 3000 rpm | ≤1500 rpm |
| 180 | | | | | | | 17 | 17 |
| 200 | | | | | | | 20 | 20 |
| 225 | 2800 | 5600 | 8000 | 2000 | 4000 | 5600 | 25 | 25 |
| 250 | | | | | | | 25 | 25 |
| 280 | | | | | | | 25 | 35 |
| 315 | | 4000 | | 1400 | 2800 | 4000 | 35 | 25 |
| 355 | 2000 | 2800 | 5600 | | | | 35 | 50 |

The specified relubrication intervals are valid for maximum ambient temperatures of 40 °C. Reduce the relubrication intervals for a

10°C increase in temperature by a factor of 0.7 of the value listed in the table (max. 20 °C = factor 0.5). Times for operation on 60 Hz systems on request.

### 9.1.8.5 Regreasing intervals and types of grease for operating rolling-contact bearings

## Regreasing intervals

The regreasing intervals for roller bearings in operating hours and the grease types are stated on the machine's lubricant plate. Regardless of the actual number of operating hours reached, the machine must be regreased at least once a year. The lubrication information can be found on the lubricant plate.

**Note**

**Observe the regreasing intervals for the roller bearings**

The regreasing intervals for roller bearings are different from the service/inspection intervals for the machine. Failure to regrease the roller bearings at the specified intervals can result in bearing damage.

## Regreasing

The spent grease chamber is designed to accommodate the spent grease for a computed, rated service life of 40000 operating hours.

- Clean the grease nipples before regreasing and then gradually press in an appropriate type and amount of grease, as described on the lubricant plate. The shaft must then be rotated so that the new grease can be distributed throughout the roller bearing. The roller bearing temperature rises sharply at first, then drops to the normal value again after the excess grease has been displaced out of the bearing.
  - If the machine is fitted with **grease removal sliders** :
    After the bearings have been regreased, with the motor running, the used grease should be removed by pulling the slider fitted to the bearing to its stop several times.
  - If the machine is fitted with **grease collection chambers** :
    Unbolt the grease collection chambers at the intervals shown on the notice plate with the motor stopped, and remove the used bearing grease. If this is not done, the grease will clog and the bearings will overheat.

**⚠ WARNING**

**Rotor can fall out**

If the machine is in a vertical position, the rotor can fall out while work is being performed on the locating bearing. This can result in death, serious injury or material damage.

Support or relieve the rotor when carrying out work with the machine in a vertical position.

## Grease types

For the standard operating range, a grease for temperatures down to -20 °C is normally used for the initial greasing of roller bearings. If the machine has been ordered for use in the extended temperature range of below -20 °C, the permissible type of grease is indicated on the lubricant plate.

**Note**

**Grease quantity control**

The grease quantity control only operates correctly if the specified greases are used. This is specified on plates attached to the machine.

### 9.1.8.6 Alternative types of grease for operating roller bearings

**In the following table, you will find a list of approved alternative types of grease.**

| Filling with oil for the first time | Alternative permissible greases |
|---|---|
| Shell Gadus S2 V100 3 | Aral Aralub HL3<br>BP Energrease LS3<br>Castrol Optimol Olista Longtime 3<br>Exxon Mobil Beacon EP3<br>Mobilux EP3<br>OMV Signum L3<br>SKF LGMT 3 |
| Shell Gadus S3 T100 2 | BP Energrease SY2202<br>Castrol Firetemp XT2<br>Chevron Grease SRI2<br>Klüber Petamo GHY 133N<br>SKF LGHP 2<br>Exxon Mobil Polyrex EM |

**Observe the following when changing over to an alternative type of grease that is permitted according to the table:**

**Bearings with permanent lubrication:**

- Completely remove the old grease from the bearing before regreasing it.
- Fill roller bearings completely with grease and cavities in the bearing cover only up to one third.

**Bearings with regreasing:**

If complete replacement of grease and cleaning of the bearing is not possible, keep the operating time to a minimum when different greases are mixed. To do this, thoroughly grease the bearing when the machine is running with about twice the amount of grease until spent grease has been removed from the greasing ducts. Then regrease 4x at intervals of ¼ of the

normal greasing interval. During this time, very carefully monitor the bearing locations involved. Then resume the normal greasing intervals.

| NOTICE |
| --- |
| **Damage due to mixing grease types**<br>If you mix greases and oils with different soap or oil bases, then the lubricating properties may no longer be guaranteed.<br>Mixing low-temperature grease with normal temperature grease can cause lumps to form in the lubricant. The consequence can be damage to the roller bearings due to overheating.<br>Never mix greases that have different thickening agents and different base oils. |

## Cleaning

- To ensure problem-free machine cooling, the air ducts (ventilation grilles, channels, cooling fins, tubes) must be free of any dirt.

| ⚠ WARNING |
| --- |
| **Explosion hazard**<br>Cleaning the machine in an explosive atmosphere is forbidden. This can result in death, serious injury or material damage.<br>Surfaces can become statically charged and discharge to ignite potentially explosive atmospheres. |

### 9.1.8.7 Cleaning the cooling air passages

- Regularly clean the cooling air passages through which the ambient air flows, e.g. using dry compressed air.

| NOTICE |
| --- |
| **Cleaning intervals depend on the degree of fouling**<br>The frequency of the cleaning intervals depends on the local degree of fouling. The machine will overheat if the cooling air ducts are polluted and the cooling air cannot flow without obstruction.<br>Regularly check for pollution, and clean the cooling air ducts through which the ambient air flows. |

### 9.1.8.8 Maintenance and repair for machines of protection type "Ex d"

The machine marking based on IEC / EN 60079–0 was supplemented by the "X" symbol.

Maintain the special conditions for repairs. The gap dimensions for the electric machine **do not** comply with the standardized values in IEC / EN 60079–1. For repair work, obtain the gap dimensions of the electrical machine from the manufacturer.

Perform maintenance, repair and modification work on explosion-protected machines in strict compliance with the corresponding national health and safety legislation, the safety instructions and descriptions in the general maintenance instructions.

Work influencing explosion protection must be carried out by the manufacturer or by a specialist workshop for electrical machinery authorized by the manufacturer. This includes the following operations, for example:

- Repairs to the stator or rotor windings and to the terminals
- Repairs to the ventilation system
- Repairs to the bearings
- Dismantling machines with flameproof enclosures
- Connection work carried out in the terminal box

The operations must be identified by an additional repair plate carrying the following information:

- Date
- Company carrying out repair
- Type of repair
- Reference number of the repair technician regarding repair work

Testing after repair shall be carried out in accordance with EU directives.

**⚠ DANGER**

**Gap dimensions**

Changing ignition gap geometries (gap dimensions) as part of repair work according to the minimum specifications of IEC / EN 60079–1 is not permissible.

This can result in death, serious injury or material damage.

Obtain the gap dimensions of the electrical machine from the manufacturer for the repair or restoration of ignition gap geometries.

### 9.1.8.9 Maintaining terminal boxes "Ex d"

#### Requirement

The machine is de-energized.

### Checking the terminal box

- Terminal boxes must be regularly checked for tightness, undamaged insulation, and tight terminal connections.
- If dust or humidity have infiltrated the terminal box, this should be cleaned and dried (particularly the insulators).
  Check all the seals and sealing surfaces and address the cause of the leakiness.
- Check the insulators, connectors and cable connections in the terminal box.
- Line entries inside the terminal box are part of the regular inspection in accordance with IEC/EN 60079-17.
- Replace the damaged components if necessary.

**⚠ WARNING**

**Short-circuit hazard**

Short-circuits can occur as a result of damaged components that can lead to death, serious injury or material damage.

Replace damaged components.

## 9.1.8.10 Touch up any damaged paintwork

If the paint is damaged, it must be repaired in order to protect the unit against corrosion.

**Note**

**Paint system**

Contact the Service Center (Page 119) before you repair any paint damage. They will provide you with more information about the correct paint system and methods of repairing paint damage.

Complete overpainting

The paint applied must conform to the requirements to avoid electrostatic charging. See DIN EN 60079-0. The repair of painted surfaces of the **non-**conductive paint coating up to a nominal coating thickness of 350 µm was investigated and  is acceptable.

## 9.1.8.11 Repainting

**⚠ WARNING**

**Explosion hazard caused by incorrect painting**

The paint coat can become electrostatically charged where there is a thick coat. Electrostatic discharges can occur. There is a risk of explosion if potentially explosive mixtures are also present at this moment. This can result in death, serious injury or material damage.

You must comply with one of the following requirements when you repaint painted surfaces:

- Limit the total paint coating thickness according to the explosion protection group:
  - IIB: Total paint coating thickness ≤ 2 mm
  - IIC: Total paint coating thickness ≤ 0.75 mm for machines of Group II (gas)
  - III: Total paint coating thickness ≤ 0.45 mm for Group III machines (dust)
    According to tests, paint repair work up to the total paint coating thickness of the non-conductive paint coating listed has also been investigated and is harmless.
- Limit the surface resistance of the paint used:
  - IIB, IIC, III: Surface resistance ≤ 1 GΩ for machines of groups II and III (gas and dust)
- Breakdown voltage ≤ 4 kV for machines, Groups II and III (gas and dust)
- Limiting the charge transfer:M
  - IIB: Limit value for the highest transferred charge < 25 nC
  - IIC: Limit value for the highest transferred charge < 10 nC for Group II machines (gas)
  - III: Limit value for the highest transferred charge < 200 nC for Group III machines (dust)
- Incapability, dangerous charge to be saved:
  - IIB: Limit value for the maximum capacity ≤ 10 pF
  - IIC: Limit value for the maximum capacity ≤ 3 pF for Group II machines (gas)
  - III: Limit value for the maximum capacity ≤ 10 pF for Group III machines (dust)

## 9.2 Corrective Maintenance

When carrying out any work on the machine, observe the general safety instructions and the specifications contained in EN 50110-1 regarding safe operation of electrical equipment.

### See also

Safety information (Page 13)

**Note**

If the motor has to be transported, please observe the information and instructions in the "Transport" section.

### 9.2.1 Extended motor marking

The machine marking based on IEC / EN 60079–0 was supplemented by the "X" symbol.

Maintain the special conditions for repairs. The gap dimensions for the electric machine **do not** comply with the standardized values in IEC / EN 60079–1. For repair work, obtain the gap dimensions of the electrical machine from the manufacturer.

Perform maintenance, repair and modification work on explosion-protected machines in strict compliance with the corresponding national health and safety legislation, the safety instructions and descriptions in the general maintenance instructions.

Work influencing explosion protection must be carried out by the manufacturer or by a specialist workshop for electrical machinery authorized by the manufacturer. This includes the following operations, for example:

- Repairs to the stator or rotor windings and to the terminals
- Repairs to the ventilation system
- Repairs to the bearings
- Dismantling machines with flameproof enclosures
- Connection work carried out in the terminal box

The operations must be identified by an additional repair plate carrying the following information:

- Date
- Company carrying out repair
- Type of repair
- Reference number of the repair technician regarding repair work

Testing after repair shall be carried out in accordance with EU directives.

**⚠ DANGER**

**Gap dimensions**

Changing ignition gap geometries (gap dimensions) as part of repair work according to the minimum specifications of IEC / EN 60079–1 is not permissible.

This can result in death, serious injury or material damage.

Obtain the gap dimensions of the electrical machine from the manufacturer for the repair or restoration of ignition gap geometries.

## 9.2.2 Anti-condensation heating

**⚠ WARNING**

**Explosion hazard when repairing the anti-condensation heating**

If repairs to the anti-condensation heating are not carried out correctly, e.g. if unauthorized or untested spare parts are used, explosions can occur when the machine is operated in an explosive atmosphere. This can result in death, serious injury or material damage.

The anti-condensation heating must be repaired and the necessary routine testing that follows repair must always be undertaken by experts from the Service Center, as this work requires extensive specialist knowledge. Only authorized and tested spare parts may be used.

**⚠ WARNING**

**Explosion hazard due to increased surface temperature**

Components within the motor may be hotter than the maximum permissible surface temperature for the enclosure. In an explosive atmosphere, dust can ignite and an explosion occur. This can result in death, serious injury or material damage.

- Do not open the motor in an explosive and dusty atmosphere when it is still at normal operating temperature.
- Allow the machine to cool down before opening it.

**⚠ WARNING**

**Rotor can fall out**

If the motor is in a vertical position, the rotor can fall out while work is being performed on the locating bearing. This can result in death, serious injury or damage.

- Support or unload the rotor when carrying out work with the machine in a vertical position.

**⚠ WARNING**

**Overheating of the rolling bearings**

If the roller bearings are not regularly regreased, local overheating may be possible, and, as a consequence, an explosion in an explosive atmosphere. This can result in death, serious injury or material damage.

- Regrease the roller bearings regularly according to the lubrication plate.
- Implement bearing temperature monitoring if not yet in existence.

### 9.2.3 Insulated roller bearings

**NOTICE**

**Insulated roller bearings**

If insulated roller bearings are installed, use insulated roller bearings of the same type as spare part. This will prevent any bearing damage being caused by bearing currents.

### 9.2.4 O-ring seal

If O-ring seals are present, you should check that they are in perfect condition and that the O-ring seals are properly seated in the grooves between the components. Replace any damaged O-ring seals.

O-ring seals can be present on the following components, for instance:

- Tapers
- Cable glands
- Bearing seals
- Bearing plate seals
- Terminal box seals
- Cable glands
- etc.

### 9.2.5 Anti-condensation heating spare parts

**⚠ WARNING**

**Risk of explosion**

If repairs to the anti-condensation heating are not carried out correctly, e.g. if unauthorized or untested spare parts are used, this can result in explosions during operation in a potentially explosive gaseous atmosphere. This can result in death, serious injury or material damage.

Repairing and mounting the anti-condensation heating and the subsequent routine testing must always be undertaken by experts from the Service Center, because this work requires extensive specialist knowledge. Only authorized and tested spare parts may be used.

# Spare Parts 10

## 10.1 Ordering data

When ordering spare parts, in addition to the precise designation of the spare part, specify the motor type and the serial number of the motor. Ensure that the spare part designation matches the designation in the spare part lists and add the associated part number.

Example:

Bearing shield, drive end (Part 105)

Machine type DNGW-315ML-04A

Serial numberLDX/30000001

The machine type and serial number can be found on the rating plate data and in the technical data. The serial number is also stamped on the end face of the shaft extension at the drive end.

### Terminal box

If several terminal boxes are mounted on the machine, please also indicate the type designation of the terminal box in addition to details of part designation and part number according to the legend, as well as type and serial number of the motor when ordering spare parts.

**Example**

- Terminal box type
- Terminal box cover (part 20.30 )
- Serial number of the motor
- Machine type

### Rolling-contact bearings

When ordering roller bearings, in addition to the bearing identification code, the supplementary specifying code is also necessary for the bearing version. Both of these codes are stamped on the lubricant plate and specified in the motor documentation, or can also be taken from the installed bearings.

| NOTICE |
| --- |
| **Insulated roller bearings**<br>If insulated roller bearings are installed, use insulated roller bearings of the same type as spare part. This will prevent any bearing damage being caused by bearing currents. |

**⚠ WARNING**

**Risk of explosion**

If you use parts other than the original spare parts, the type of protection can no longer be guaranteed. This can result in an explosion during operation in a potentially explosive gaseous atmosphere. This can result in death, serious injury or material damage.

- Use only original spare parts for explosion-proof machines; this also applies to components such as seals, terminals, cables and cable entries. Should you have any questions, please contact the Service Center .
- Commercially available equivalent standard parts such as screws may be used.

### Anti-condensation heating

Please contact the Service Center for spare parts.

## 10.2 Anti-condensation heating

**⚠ WARNING**

**Risk of explosion**

If repairs to the anti-condensation heating are not carried out correctly, e.g. if unauthorized or untested spare parts are used, this can result in explosions during operation in a potentially explosive gaseous atmosphere. This can result in death, serious injury or material damage.

Repairing and mounting the anti-condensation heating and the subsequent routine testing must always be undertaken by experts from the Service Center, because this work requires extensive specialist knowledge. Only authorized and tested spare parts may be used.

# 10.3 Spare parts list, frame sizes 071 to 132

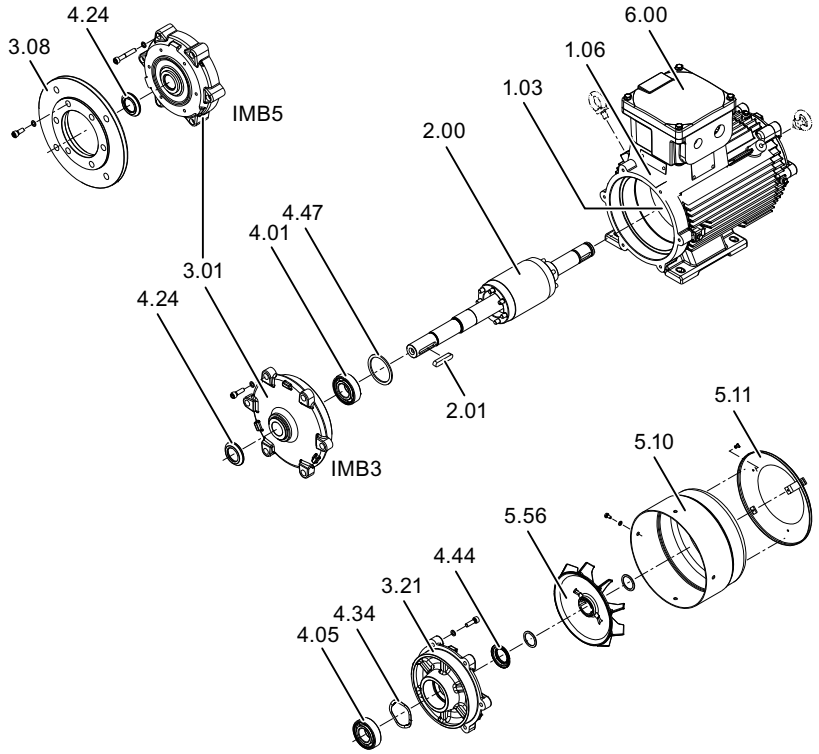



Image 10-1 D-DN000-0007

| Parts Number | Designation | Parts Number | Designation |
|---|---|---|---|
| 1.03 | Stator laminated core with winding | 4.18 | Grease slinger |
| 1.06 | Stator frame | 4.24 | Gamma ring |
| 2.00 | Shaft with rotor | 4.34 | Spacer washers |
| 2.01 | Feather key | 4.44 | Gamma ring |
| 3.01 | End shield, drive end | 5.10 | Fan cover |
| 3.08 | Flange plate | 5.11 | Protective cover |
| 3.21 | End shield, non-drive end | 5.56 | Fan |
| 4.01 | Roller bearing, DE | 6.00 | Terminal box |
| 4.05 | Roller bearings, NDE | | |

## 10.4 Spare parts list, frame sizes 160 to 280

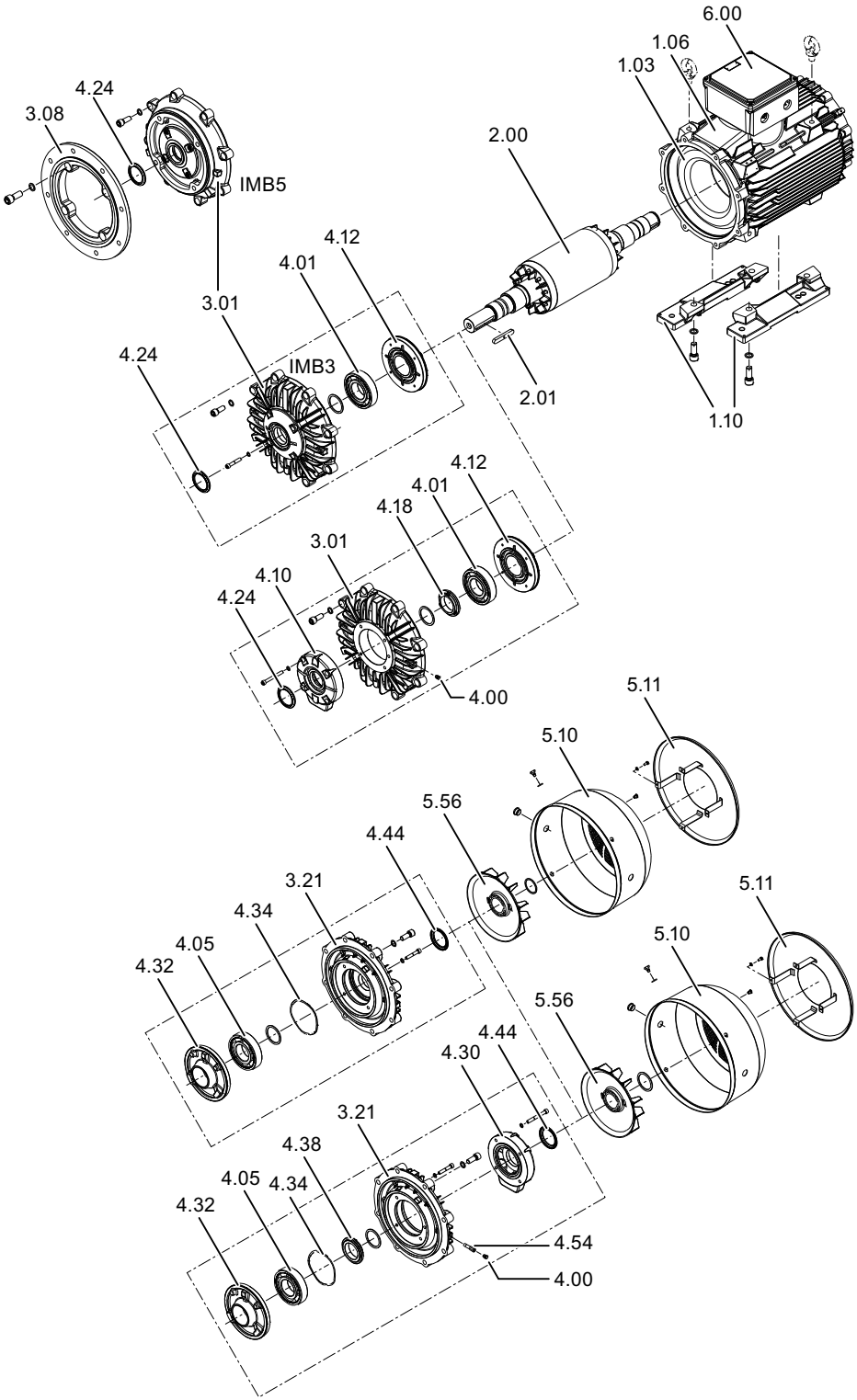



Image 10-2 E-DN000-0008

| Parts Number | Designation | Parts Number | Designation |
|---|---|---|---|
| 1.03 | Stator laminated core with winding | 4.24 | Gamma ring |
| 1.06 | Stator frame | 4.18 | Grease slinger |
| 1.10 | Housing foot, right | 4.24 | Gamma ring |
| 1.10 | Housing foot, left | 4.30 | Outer grease chamber cover, NDE |
| 2.00 | Shaft with rotor | 4.32 | Inner grease chamber cover, NDE |
| 2.01 | Feather key | 4.38 | Grease slinger |
| 3.01 | End shield, drive end | 4.44 | Gamma ring |
| 3.08 | Flange plate | 4.54 | Grease nipple |
| 3.21 | End shield, non-drive end | 4.54 | Regreasing assembly |
| 4.01 | Roller bearing, DE | 5.10 | Fan cover |
| 4.10 | Outer grease chamber cover, DE | 5.11 | Protective cover |
| 4.12 | Inner grease chamber cover, DE | 5.56 | Fan |
| 4.18 | Grease slinger | 6.00 | Terminal box |

# 10.5 Spare parts list, frame size 315

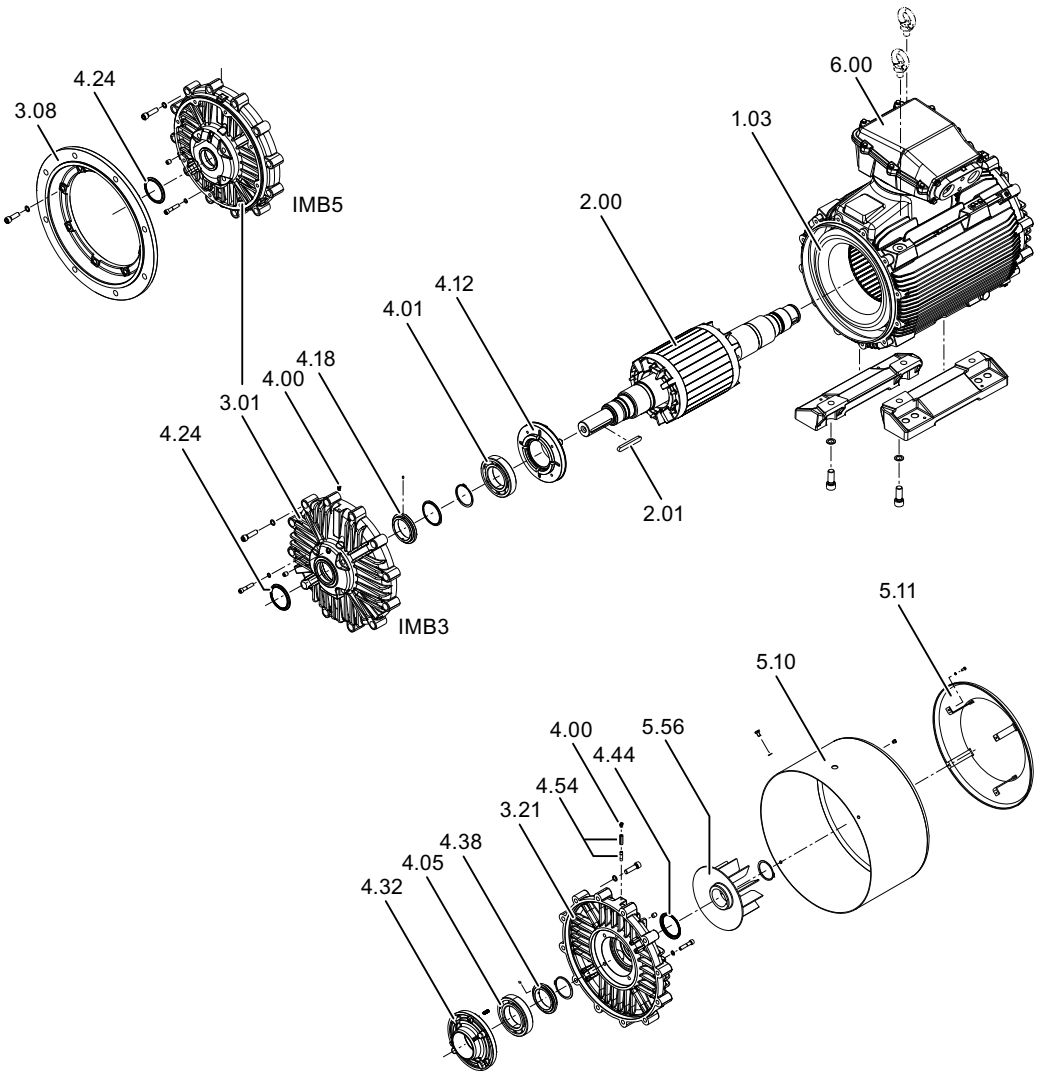



Image 10-3 E-AN000-0009

| Parts Number | Designation | Parts Number | Designation |
|---|---|---|---|
| 1.03 | Stator laminated core with winding | 4.18 | Grease slinger DE |
| 2.00 | Rotor, complete (balanced) | 4.24 | Sealing ring DE, outer |
| 2.01 | Keyway | 4.32 | Grease chamber cover NDE, inner |
| 3.01 | Bearing shield DE | 4.38 | Outer grease chamber cover |
| 3.08 | Flange plate DE | 4.44 | Sealing ring NDE, outer |
| 3.21 | Bearing shield NDE | 4.54 | Relubrication NDE |

| Parts Number | Designation | Parts Number | Designation |
|---|---|---|---|
| 4.00 | Bearing shield NDE | 5.10 | Complete fan cowl |
| 4.01 | Bearing DE | 5.11 | Protective cover |
| 4.05 | Bearing NDE | 5.56 | Fan, complete |
| 4.12 | Grease chamber cover DE, inner | 6.00 | Terminal box |

# 10.6 Spare parts list, frame size 355

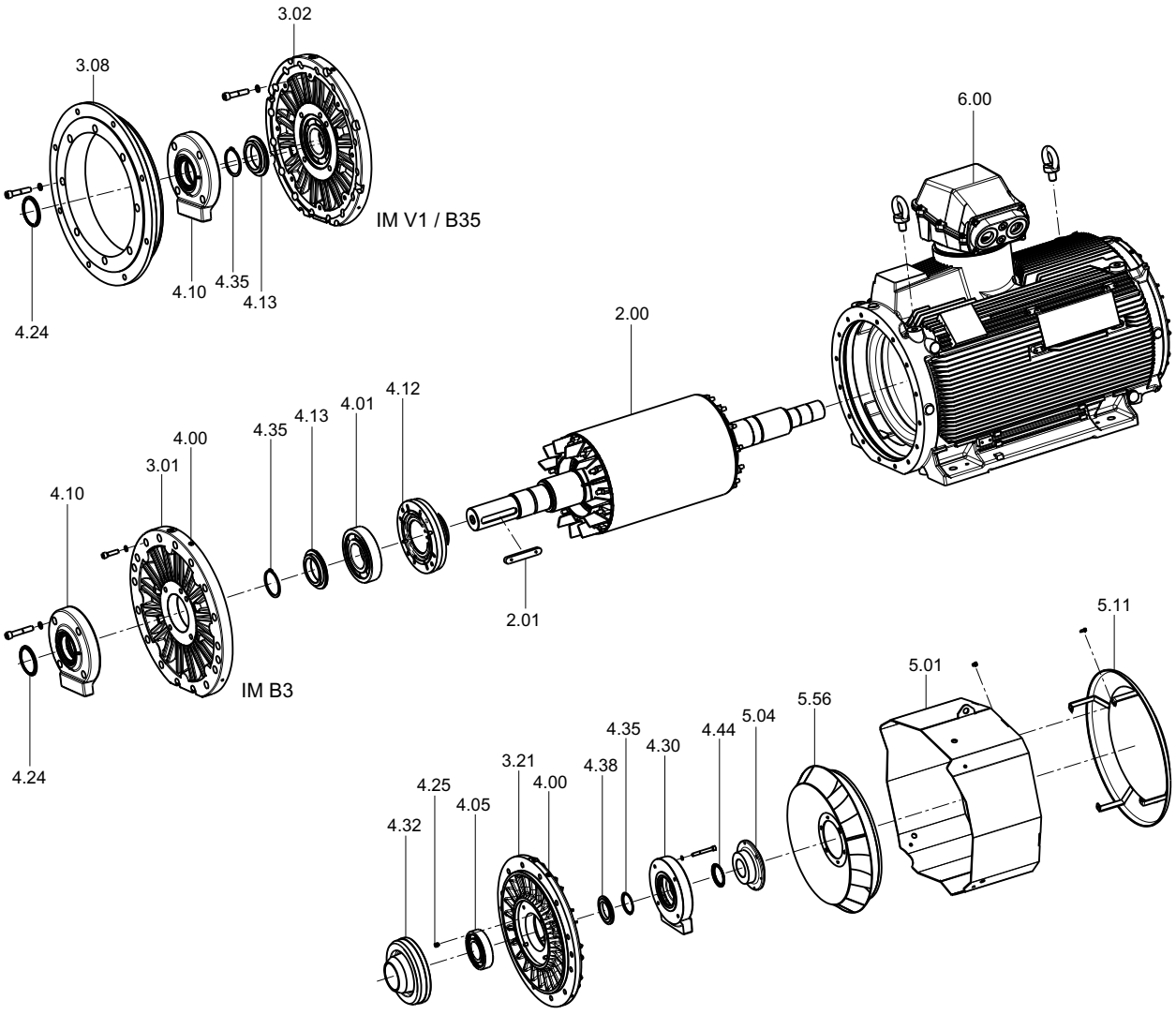



Image 10-4 E-DN000-0010

| Parts Number | Designation | Parts Number | Designation |
|---|---|---|---|
| 2.00 | Rotor, complete (balanced) | 4.25 | Compression spring |
| 2.01 | Keyway | 4.30 | Grease chamber cover NDE, outer |
| 3.01 | Bearing shield DE | 4.32 | Grease chamber cover NDE, inner |
| 3.02 | Flange bearing shield DE | 4.35 | Snap ring |
| 3.08 | Flange plate DE | 4.38 | Grease slinger NDE |
| 3.21 | Bearing shield NDE | 4.44 | Sealing ring NDE, outer |
| 4.00 | Grease nipple | 5.01 | Fan cowl, complete |
| 4.01 | Bearing DE | 5.04 | Fan hub NDE |
| 4.05 | Bearing NDE | 5.11 | Protective cover |
| 4.10 | Grease chamber cover DE, outer | 5.56 | Fan, complete |
| 4.12 | Grease chamber cover DE, inner | 6.00 | Terminal box |
| 4.13 | Grease slinger DE | | |
| 4.24 | Sealing ring DE, outer | | |

# 10.7 Spare parts list for terminal boxes with type of protection "Ex e", frame sizes 071-160

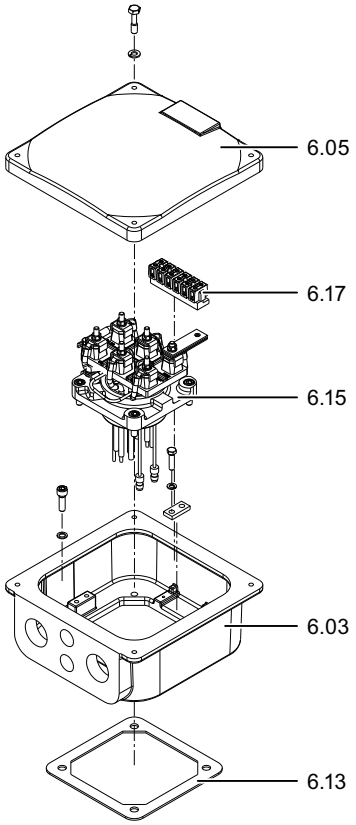



Image 10-5 E-9-101_162-0002

| Part number | Designation | Part number | Designation |
|---|---|---|---|
| 6.03 | Terminal box base | 6.15 | Complete terminal board |
| 6.05 | Terminal box cover | 6.17 | Additional terminal |
| 6.13 | Terminal box seal | | |

## 10.8 Spare parts list for terminal boxes with type of protection "Ex d", frame sizes 071-160

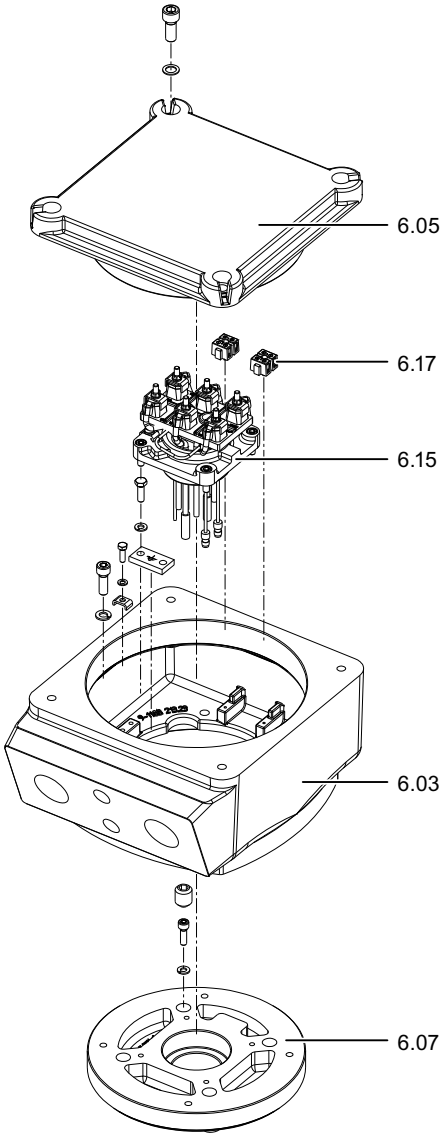



Image 10-6 E-9-108_213-0001

| Part number | Designation | Part number | Designation |
|---|---|---|---|
| 6.03 | Terminal box base | 6.15 | Complete terminal board |
| 6.05 | Terminal box cover | 6.17 | Additional terminal |
| 6.07 | Gland plate | | |

# 10.9 Spare parts list for terminal boxes with type of protection "Ex d", frame sizes 180-225

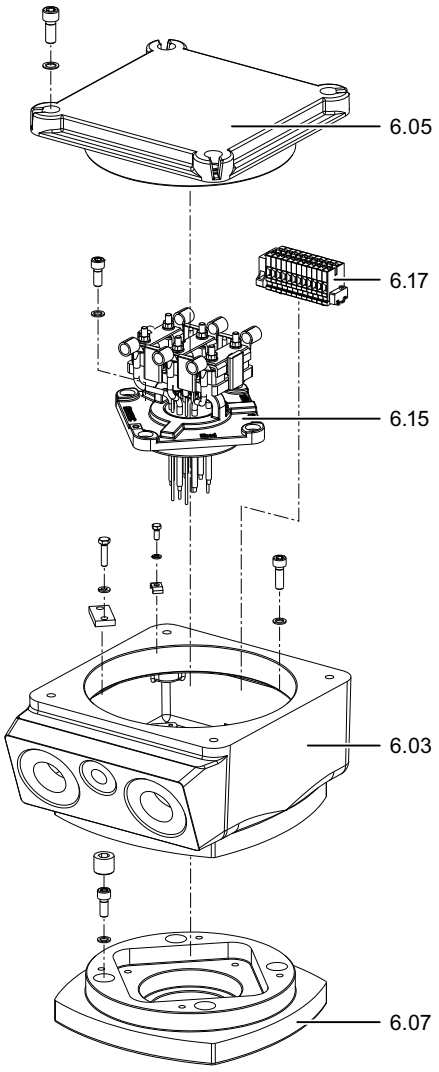



Image 10-7 E-9-108_213-0002

| Part number | Designation | Part number | Designation |
|---|---|---|---|
| 6.03 | Terminal box base | 6.15 | Complete terminal board |
| 6.05 | Terminal box cover | 6.17 | Additional terminal |
| 6.07 | Gland plate | | |

# 10.10 Spare parts list for terminal boxes with type of protection "Ex e", frame sizes 180-225

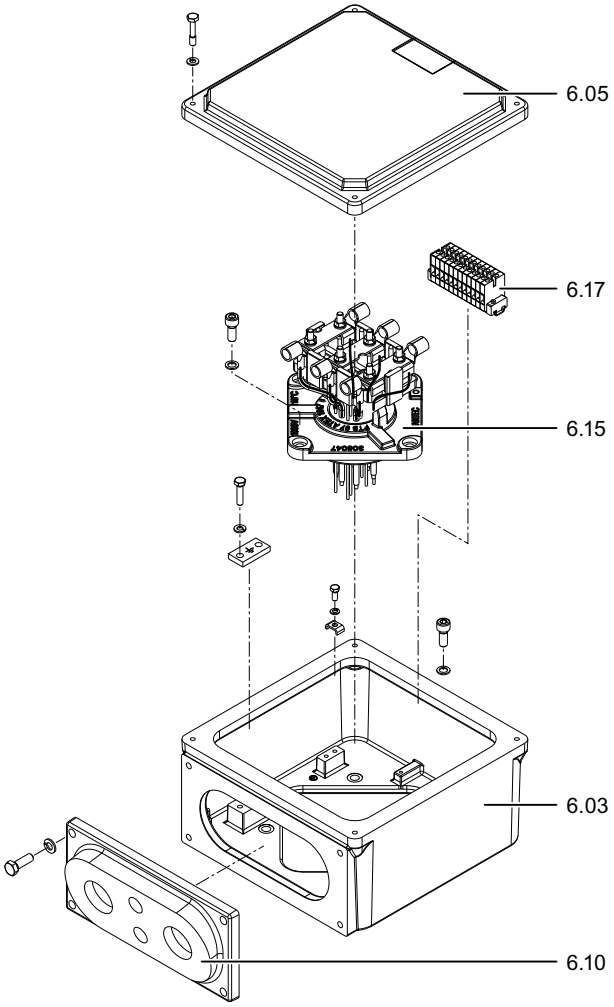



Image 10-8 E-9-101_208-0002

| Part number | Designation | Part number | Designation |
|---|---|---|---|
| 6.03 | Terminal box base | 6.15 | Complete terminal board |
| 6.05 | Terminal box cover | 6.17 | Additional terminal |
| 6.10 | Gland plate | | |

# 10.11 Spare parts list for terminal boxes with type of protection "Ex d", frame sizes 250 to 355

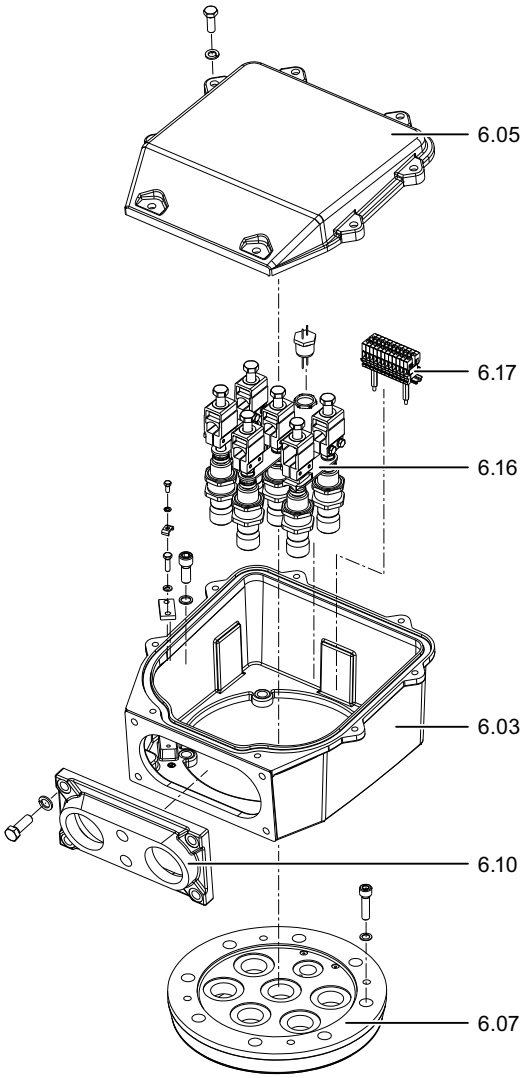
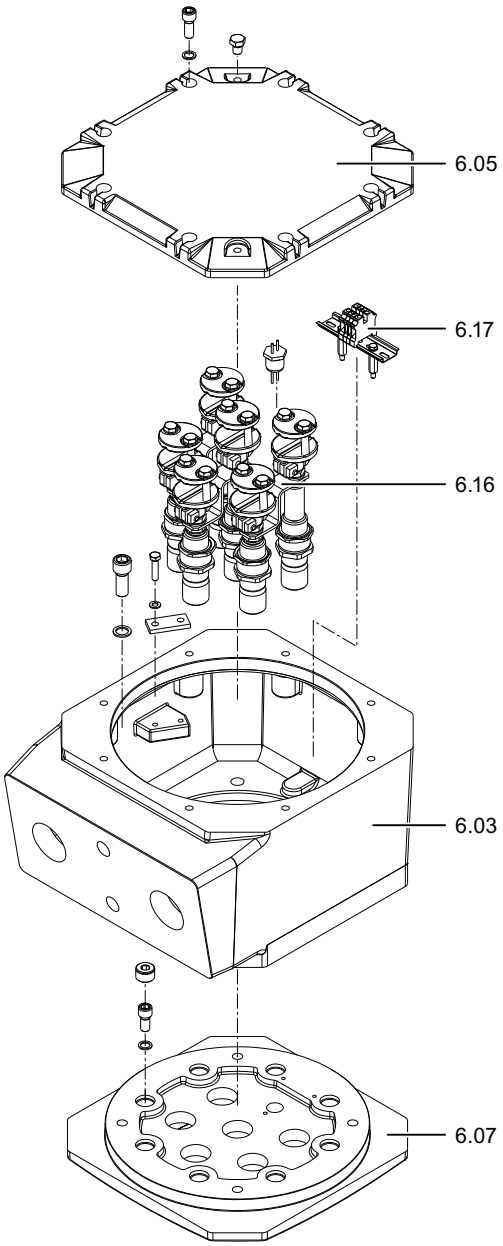



Image 10-9 E-9-101_285-0002

| Part number | Designation | Part number | Designation |
|---|---|---|---|
| 6.03 | Terminal box base | 6.15 | Gland terminal |
| 6.05 | Terminal box cover | 6.16 | Complete terminal board |
| 6.07 | Gland plate | 6.17 | Additional terminal |

## 10.12 Spare parts list for terminal boxes with type of protection "Ex d", frame sizes 250 to 355



| Part number | Designation | Part number | Designation |
|---|---|---|---|
| 6.03 | Terminal box base | 6.16 | Complete terminal board |
| 6.05 | Terminal box cover | 6.17 | Additional terminal |
| 6.07 | Gland plate | | |

# Disposal

# 11

Protecting the environment and preserving its resources are corporate goals of the highest priority for us. Our worldwide environmental management system to ISO 14001 ensures compliance with legislation and sets high standards in this regard. Environmentally friendly design, technical safety and health protection are always firm goals even at the product development stage.

Recommendations for the environmentally friendly disposal of the machine and its components are given in the following section. Be sure to comply with local disposal regulations.

## 11.1 RoHS - restricting the use of certain hazardous substances

In compliance with RoHS ("Restriction of certain Hazardous Substances" ) we replace substances that are damaging to the environment by those that are not based on state-of-the-art technology. In doing so, safety in operation and handling will take priority at all times.

**Note**

**Country-specific legislation**

When disposing of the machine or of waste that is created during the individual phases of its life cycle, please observe the statutory requirements applicable in the country of use.

## 11.2 Dismantling the machine

Dismantle the machine using the general procedures commonly used in mechanical engineering.

**⚠ WARNING**

**Machine parts can fall**

The machine is made up of heavy parts. These parts are liable to fall during dismantling. This can result in death, serious injury or material damage.

Before you release any machine parts, secure them so that they cannot fall.

# 11.3 Disposal of components

## Components

The machines consist mainly of steel and various proportions of copper and aluminum. Metals are generally considered to be unlimitedly recyclable.

Sort the components for recycling according to whether they are:

- Iron and steel
- Aluminum
- Non-ferrous metal, e.g. windings
  The winding insulation is incinerated during copper recycling.
- Insulating materials
- Cables and wires
- Electronic waste

## Process materials and chemicals

Sort the process materials and chemicals for recycling according to whether they are for example:

- Oil
- Grease
- Cleaning substances and solvents
- Paint residues
- Anti-corrosion agent
- Coolant additives such as inhibitors, antifreeze or biocides

Dispose of the separated components according to local regulations or via a specialist disposal company. The same applies for cloths and cleaning substances which have been used while working on the machine.

## Packaging material

- If necessary, contact a suitable specialist disposal company.
- Wooden packaging for sea transport consists of impregnated wood. Observe the local regulations.
- The foil used for water-proof packaging is an aluminum composite foil. It can be recycled thermally. Dirty foil must be disposed of via waste incineration.

# Service and Support

# A

## Technical queries or additional information

If you have any technical queries or you require additional information, please contact Technical Support (https://support.industry.siemens.com/cs/ww/en/sc/2090).

Please have the following data ready:

- Type
- Serial number

You can find this data on the rating plate.

## Contact person

If you wish to request on-site service or order spare parts, please contact your local office. This office will contact the responsible service center on your behalf. You can find your contact person in the relevant contact database:

www.siemens.com/yourcontact (www.siemens.com/yourcontact)

## Siemens Support for on the move

You can obtain optimum support anywhere you go using the "Siemens Industry Online Support" app. The app is available for Apple iOS, Android and Windows Phone.

# Technical data and drawings

# B

### Bolt locking devices

- Refit nuts or bolts that are mounted together with locking, resilient, and/or force-distributing elements with identical, fully-functional elements when re-assembling. Always renew keyed elements.
- When screwing together threads secured with a liquid adhesive, use a suitable medium such as Loctite 243.

### Tightening torques

The bolted connections with metal contact surfaces, such as end shields, bearing cartridge parts, terminal box parts bolted onto the stator frame, should be tightened to the following torques, depending on the thread size:

Table B-1 Tightening torques for bolted connections with a tolerance of ±10%.

| Case | M4 | M5 | M6 | M8 | M10 | M12 | M16 | M20 | M24 | M30 | M36 | M42 | M48 | M56 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1.2 | 2.5 | 4 | 8 | 13 | 20 | 40 | 52 | 80 | 150 | - | - | - | - | Nm |
| B | 1.3 | 2.6 | 4.5 | 11 | 22 | 38 | 92 | 180 | 310 | 620 | 1080 | 1700 | 2600 | 4200 | Nm |
| C | 3 | 5 | 8 | 20 | 40 | 70 | 170 | 340 | 600 | 1200 | 2000 | 3100 | 4700 | 7500 | Nm |

### Applications

The above-mentioned tightening torques apply for the following applications:

- Case A
  Applies to electrical connections in which the permissible torque is normally limited by the bolt materials and/or the current carrying capacity of the insulators, with the exception of the busbar connections in case B.
- Case B
  Applies to bolts screwed into components made from materials with lower property class (e. g. aluminum) and to bolts with property class 8.8 according to ISO 898-1.
- Case C
  Applies to bolts with property class 8.8 or A4-70 according to ISO 898-1, however only to bolts screwed into components made from materials with higher property class, e.g. cast iron, steel or cast steel.

**Note**

**Non-standard tightening torques**

Different tightening torques for electrical connections and bolted connections for parts with flat seals or insulating parts are specified in the relevant sections and drawings.

# Quality documents

# C

## C.1 EC Declaration of Conformity

SIEMENS

## EG/EU-Konformitätserklärung

**(nach Anhang VII der EG-Richtlinie 94/9/EG bzw. EU-Richtlinie 2014/34/EU)**

*Nr. A5E03869385A*

| | |
|---|---|
| Hersteller: | Siemens Aktiengesellschaft<br>Division Process Industries and Drives, Large Drives, PD LD |
| Anschrift: | Hans-Loher-Straße 32<br>D-94099 Ruhstorf a. d. Rott |
| Produktbezeichnung: | Drehstrom-Asynchronmaschinen<br>Zündschutzart Druckfeste Kapselung „d"<br>Typ: D . . . 071 . . . bis / to D . . . 910 . . .<br>Alternative Typbezeichnung:<br>1PS.07. - . . . . - . . . . bis / to 1PS.91. - . . . . - . . . .<br>1MD.07. - . . . . - . . . . bis / to 1MD.35. - . . . . - . . . .<br>1MV.35. - . . . . - . . . . bis / to 1MV.91. - . . . . - . . . .<br>Gerätegruppe II, Gerätekategorie 2G |
| Notifizierte Stelle: | siehe Anhang |
| Drittstellenzertifikat: | siehe Anhang |

**Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union:**

**bis 19.04.2016 EG-Richtlinie 94/9/EG:**
Richtlinie des Europäischen Parlaments und des Rates vom 23. März 1994 zur Angleichung der Rechtsvorschriften der Mitgliedsstaaten für Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen

**ab 20.04.2016 EU-Richtlinie 2014/34/EU:**
Richtlinie des Europäischen Parlaments und des Rates vom 26. Februar 2014 zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten für Geräte und Schutzsysteme zur bestimmungs-gemäßen Verwendung in explosionsgefährdeten Bereichen. Amtsblatt der EU L96, 29.03.2014, S. 309-356

**Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.**

**Wir bestätigen die Konformität des oben genannten Produktes mit den Normen:**

| Referenznummer | Ausgabedatum | Referenznummer | Ausgabedatum |
|---|---|---|---|
| *EN 60079-0+A11* | *2013* | *EN 60079-1* | *2007* |
| *EN 60079-7* | *2007* | *EN 60079-11* | *2012* |

Das bezeichnete Produkt ist bestimmt zum Einbau in eine andere Maschine für den Einsatz in explosionsgefährdeten Bereichen der Zone 1 nach EN 60079-10-1 und Richtlinie 1999/92/EG. Weitere Angaben über die Einhaltung dieser Richtlinie enthält der Anhang, der ein integraler Bestandteil dieser Konformitätserklärung ist.

Siemens Aktiengesellschaft
Ruhstorf, den 08.04.2016

i.V .....
Fritz Winkler Unterschrift/Signature
Werksleiter/Head of Manufacturing

i.V .....
Dr. Hartmut Vogel Unterschrift/Signature
Produktsicherheitsbeauftragter / Product safety officer

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinie(n), ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie.
Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.

Siemens Aktiengesellschaft: Vorsitzender des Aufsichtsrats: Gerhard Cromme; Vorstand: Joe Kaeser, Vorsitzender; Roland Busch, Lisa Davis, Klaus Helmrich, Janina Kugel, Siegfried Russwurm, Ralf P. Thomas; Sitz der Gesellschaft: Berlin und München, Deutschland; Registergericht: Berlin Charlottenburg, HRB 12300, München, HRB 6684; WEEE-Reg.-Nr. DE 23691322

SIEMENS

**Englisch / English**

## EC/EU Declaration of Conformity (according to Annex VII of EC Directive 94/9/EC, 2014/34/EU)

Manufacturer: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**The object of the declaration described above is in conformity with the relevant Union harmonization legislation:**

≤ 19.04.2016 94/9/EC:
Directive of the European Parliament and the Council on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres.

≥ 20.04.2016 2014/34/EU:
Directive of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres. Official Journal of the EU, L96 29.03.2014, p. 309-356

**This declaration of conformity is issued under the sole responsibility of the manufacturer.**
**We confirm conformity of the product indicated above with the standards:** see page 1 and annex

The product indicated is intended to be installed in another machine for use in hazardous areas of zone 1 in accordance with EN 60079-10-1 and Directive 1999/92/EC. Further information about the conformity to this Directive is given in the annex, which is an integral part of this declaration of conformity.

This declaration is an attestation of conformity with the indicated Directive(s) but does not imply any guarantee of quality or durability.
The safety instructions of the accompanying product documentation shall be observed.

**Tschechisch / český jazyk**

## Prohlášení o shodě s předpisy ES/EU (podle dodatku VII směrnice EU 94/9/ES, 2014/34/EU)

Výrobce: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Výše uvedený výrobek se shoduje s předpisy následujících harmonizovaných předpisů Evropské unie:**

≤ 19.04.2016 94/9/ES:
směrnice Evropského parlamentu a Rady o sjednocení legislativy členských států EU týkající se přístrojů a ochranných systémů za účelem jejich správného používání v oblastech ohrožených explozí.

≥ 20.04.2016 2014/34/EU:
směrnice Evropského parlamentu a Rady ze dne 26. února 2014 o harmonizaci legislativy členských států EU týkající se zařízení a ochranných systémů za účelem jejich správného používání v oblastech ohrožených nebezpečím výbuchu. Oficiální tisk EU, L96 29.03.204, str. 309-356.

**Veškerou odpovědnost za vystavení tohoto Prohlášení o shodě nese výrobce produktu.**
**Potvrzujeme tímto, že se výše uvedený výrobek shoduje s normami:** viz strana 1 a příloha

Uvedený výrobek je určen pro instalaci do jiných strojů pro použití v nebezpečných oblastech zóny 1 podle normy EN 60079-10-1 a směrnice 1999/92/EG. Další informace o shodě podle této směrnice jsou uvedeny v příloze, která je nedílnou součástí tohoto prohlášení o shodě.

Toto prohlášení potvrzuje shodu s uvedenými směrnicemi, neznamená však záruku jakosti nebo trvanlivosti.
Musí být dodržovány bezpečnostní pokyny uvedené v doprovodné dokumentaci tohoto produktu.

SIEMENS

**Dänisch / dansk**

## EF-overensstemmelseserklæring (i henhold til bilag VII I EF-direktivet 94/9/EF, 2014/34/EU)

Fabrikant: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Genstanden for erklæringen, som beskrevet ovenfor, er i overensstemmelse med den relevante EU-harmoniseringslovgivning:**

≤ 19.04.2016 94/9/EF:
Directive of the European Parliament and the Council on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres.

≥ 20.04.2016 2014/34/EU:
Europa-Parlamentets og Rådets direktiv 2014/34/EU af 26. februar 2014 om harmonisering af medlemsstaternes love om materiel og sikringssystemer til anvendelse i en potentielt eksplosiv atmosfære.
Den Europæiske Unions Tidende EU, L96 29.03.2014, s. 309-356

**Denne overensstemmelseserklæring udstedes på fabrikantens ansvar.**
**Vi bekræfter det ovennævnte produkts overensstemmelse med standarderne:** se side 1 og bilag

Det beskrevne produkt er bestemt til indbygning i en anden maskine til indsats i eksplosive områder i zone 1 i overensstemmelse med EN 60079-10-1 og direktiv 1999/92/EF. Yderligere oplysninger om overensstemmelsen med dette direktiv findes i bilaget, som er en integreret del af denne overensstemmelseserklæring.

Denne erklæring gælder som dokumentation for overensstemmelse med de nævnte direktiver men er dog ingen beskaffenheds- eller holdbarhedsgaranti. Sikkerhedshenvisningerne i den medleverede produktinformation skal overholdes.

**Estnisch / eesti keel**

## ELi vastavusdeklaratsioon (vastavalt EÜ direktiivi 94/9/EÜ, 2014/34/EL lisale VII)

Tootja: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Deklaratsiooni ülalkirjeldatud ese on kooskõlas Liidu asjaomase harmoniseeritud seadusandlusega:**

≤ 19.04.2016 94/9/EÜ:
Euroopa Parlamendi ja Nõukogu direktiiv plahvatusohtlikus keskkonnas kasutatavaid seadmeid ja kaitsesüsteeme käsitlevate liikmesriikide õigusaktide ühtlustamise kohta.

≥ 20.04.2016 2014/34/EL:
Euroopa Parlamendi ja nõukogu direktiiv 26. veebruarist 2014 liikmesriikide seaduste harmoniseerimise kohta varustuse ja kaitsesüsteemide kohta, mis on ette nähtud kasutamiseks potentsiaalselt plahvatusohtlikes atmosfäärides. ELi ametlikud aktid, L96 29.03.2014, lk 309-356

**Käesolev vastavusdeklaratsioon on välja antud tootja ainuisikulisel vastutusel.**
**Me deklareerime ülalnimetatud toote vastavust järgmistele standarditele:** vt lk 1 ja lisa

Mainitud toode on ette nähtud teise masinasse installeerimiseks kasutuseesmärgiga EN 60079-10-1 ja direktiivi 1999/92/EÜ kohase tsooni 1 ohtlikes piirkondades. Edasine informatsioon sellele direktiivile vastavuse kohta on esitatud lisas, mis on käesoleva vastavusdeklaratsiooni lahutamatu osa.

Käesolev deklaratsioon on vastavuse tõend mainitud direktiivi(de)ga, kuid ei hõlma mitte mingisugust garantiid ega vastupidavuskvaliteeti. Tuleb järgida tootega kaasapandud dokumentatsioonis esitatud ohutusjuhiseid.

SIEMENS

**Griechisch / ελληνική γλώσσα**

## Δήλωση συμμόρφωσης ΕΚ/ΕΕ (σύμφωνα με το Παράρτημα VII της Κοινοτικής Οδηγίας 94/9/ΕΚ, 2014/34/ΕΕ)

Κατασκευαστής: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Το αντικείμενο της δήλωσης που περιγράφεται παραπάνω συμμορφώνεται με τη σχετική Κοινοτική νομοθεσία περί εναρμόνισης:**

≤ 19.04.2016 94/9/ΕΚ:
Οδηγία του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου για την προσέγγιση των νομικών διατάξεων των χωρών μελών που αφορούν εξοπλισμό και συστήματα προστασίας που προορίζονται για χρήση σε περιοχές με κίνδυνο έκρηξης.

≥ 20.04.2016 2014/34/ΕΕ:
Οδηγία της 26ης Φεβρουαρίου 2014 του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου για την για την εναρμόνιση των νομοθεσιών των κρατών μελών σχετικά με τις συσκευές και τα συστήματα προστασίας που προορίζονται για χρήση σε εκρήξιμες ατμόσφαιρες. Επίσημη Εφημερίδα της ΕΕ, L96 29.03.2014, σελ. 309-356

**Την αποκλειστική ευθύνη για την έκδοση την παρούσας Δήλωσης συμμόρφωσης την φέρει ο κατασκευαστής**
**Με το παρόν πιστοποιούμε τη συμμόρφωση του ανωτέρω αναφερόμενου προϊόντος με τα πρότυπα:** βλ. σελίδα 1 και παράρτημα

Το αναφερόμενο προϊόν προορίζεται για εγκατάσταση σε άλλη μηχανή για χρήση σε περιοχές με κίνδυνο έκρηξης της ζώνης 1 σύμφωνα με το EN 60079-10-1 και την Οδηγία 1999/92/ΕΚ. Περισσότερες πληροφορίες σχετικά με τη συμμόρφωση με την παρούσα Οδηγία αναφέρονται στο παράρτημα, το οποίο αποτελεί αναπόσπαστο τμήμα της παρούσας Δήλωσης συμμόρφωσης.

Αυτή η δήλωση πιστοποιεί τη συμμόρφωση με την αναφερόμενη Οδηγία, ωστόσο δεν αποτελεί εγγύηση καλής κατάστασης ή διάρκειας ζωής. Πρέπει να τηρούνται οι οδηγίες ασφαλείας της συνοδευτικής τεκμηρίωσης προϊόντος

**Spanisch / español**

## Declaración CE/UE de conformidad (según el Anexo VII de la Directiva 94/9/CE, 2014/34/UE)

Fabricante: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**El producto arriba mencionado es conforme a la legislación de armonización de la Unión pertinente:**

≤ 19.4.2016 94/9/CE:
Directiva del Parlamento Europeo y del Consejo para la armonización de las leyes de los estados miembros relativa a aparatos y sistemas de protección para uso conforme en atmósferas potencialmente explosivas.

≥ 20.04.2016 2014/34/UE:
Directiva del Parlamento Europeo y del Consejo de 26 de febrero de 2014 sobre la armonización de las legislaciones de los Estados miembros en materia de aparatos y sistemas de protección para uso en atmósferas potencialmente explosivas. Diario Oficial de la Unión Europea EU, L96 29.03.2014, págs. 309-356

**La presente declaración de conformidad se expide bajo la exclusiva responsabilidad del fabricante.**
**Confirmamos que el producto arriba mencionado cumple las siguientes normas:** véase la página 1 y el anexo

El producto mencionado está previsto para su montaje en otra máquina prevista para su instalación en atmósferas potencialmente explosivas de la zona 1 conforme a EN 60079-10-1 y la directiva 1999/92/CE. Más información relativa a la conformidad con dicha directiva figura en el anexo que forma parte integral de la presente declaración de conformidad.

Esta declaración certifica el cumplimiento de las directivas mencionadas pero no garantiza las características ni la durabilidad.
Deben observarse las consignas de seguridad de la documentación de producto suministrada.

SIEMENS

**Französisch / français**

## Déclaration CE de conformité (selon annexe VII de la directive 94/9/CE, 2014/34/UE)

Constructeur : *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Le produit sus-mentionné est conforme à la législation communautaire d'harmonisation pertinente:**

≤ 19.04.2016 94/9/CE:
Directive du parlement européen et du conseil concernant le rapprochement des législations des États membres pour les appareils et les systèmes de protection destinés à être utilisés en atmosphères explosibles.

≥ 20.04.2016 2014/34/UE:
Directive du Parlement européen et du Conseil du 26 février 2014 relative à l'harmonisation des législations des États membres concernant les appareils et les systèmes de protection destinés à être utilisés en atmosphères explosibles. Journal officiel de l'UE L96, 29.03.2014, p. 309-356

**Le fabricant est seul responsable de l'établissement de cette déclaration de conformité.**
**Nous certifions la conformité du produit susmentionné avec les normes suivantes :** voir page 1 et annexe

Le produit désigné est destiné à l'implantation dans une autre machine pour l'utilisation en atmosphère explosible, zone 1 selon la norme EN 60079-10-1 et la directive 1999/92/EG. Des informations complémentaires sur la conformité avec cette directive figurent dans l'annexe qui fait partie intégrante de cette déclaration de conformité.

Ce certificat atteste la conformité aux directives mentionnées, mais ne tient pas lieu de garantie de qualité ni de longévité.
Respecter les consignes de sécurité figurant dans la documentation produit fournie.

**Italienisch / italiano**

## Dichiarazione di conformità CE/UE (secondo l'allegato VII della Direttiva Europea 94/9/CE, 2014/34/UE)

Costruttore: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**L'oggetto della dichiarazione sopra descritto è conforme alle prescrizioni di armonizzazione pertinenti dell'Unione**

≤ 19.04.2016 94/9/CE:
Direttiva del Parlamento Europeo e del Consiglio concernente il ravvicinamento delle legislazioni degli Stati membri relativa agli apparecchi e sistemi di protezione destinati ad essere utilizzati in atmosfera potenzialmente esplosiva.

≥ 20.04.2016 2014/34/UE:
Direttiva del Parlamento Europeo e del Consiglio del 26 Febbraio 2014 concernente l'armonizzazione delle legislazioni degli Stati membri relative agli apparecchi e sistemi di protezione destinati a essere utilizzati in atmosfera potenzialmente esplosiva. Gazzetta Ufficiale della UE, L96 29.03.2014, p. 309-356

**Questa dichiarazione di conformità è rilasciata sotto la sola responsabilità del costruttore.**
**Confermiamo la conformità del prodotto sopra designato alle norme:** vedi pagina 1 e allegato

Il prodotto designato è destinato a essere installato in un'altra macchina per l'impiego in aree a rischio di esplosione della Zona 1 secondo la norma EN 60079-10-1 e la Direttiva 1999/92/CE.
Ulteriori indicazioni sulla conformità a questa Direttiva sono contenute nell'allegato, che è parte integrale di questa dichiarazione di conformità.

Questa dichiarazione certifica la conformità con le Direttive citate, non costituisce però alcuna garanzia di caratteristiche di prodotto oppure di durata. Le avvertenze di sicurezza riportate nella documentazione di prodotto allegata devono essere rispettate.

SIEMENS

**Lettisch / latviešu**

## EK/ES atbilstības deklarācija (saskaņā ar EK Direktīvas 94/9/EK, 2014/34/ES pielikumu VII)

Ražotājs: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf*

**Iepriekš aprakstītās deklarācijas objekts atbilst attiecīgajiem Savienības saskaņotajiem tiesību aktiem:**

≤ 19.04.2016 94/9/EK:
Eiropas parlamenta un padomes direktīva, saskaņā ar dalībvalstu likumiem, attiecībā uz ieceri izmantot ierīces un aizsardzības sistēmas iespējami sprādzienbīstamā vidē.

≥ 20.04.2016 2014/34/ES:
Eiropas Parlamenta un Padomes 2014. gada 26. februāra Direktīva par dalībvalstu tiesību aktu saskaņošanu attiecībā uz iekārtām un aizsardzības sistēmām, kas paredzētas lietošanai sprādzienbīstamā vidē. ES Oficiālais vēstnesis, L96 29.03.2014, 309.-356. lpp.

**Par šīs atbilstības deklarācijas sastādīšanu ir atbildīgs vienīgi ražotājs.**
**Mēs apstiprinām iepriekš minētā izstrādājuma atbilstību standartiem:** skatiet 1. lappusi un pielikumu

Norādītais izstrādājums ir paredzēts uzstādīšanai citā iekārtā un izmantošanai zonas 1 bīstamajās vietās saskaņā ar standartu EN 60079-10-1 un Direktīvu 1999/92/EK. Papildinformācija par atbilstību šai Direktīvai ir iekļauta pielikumā, kas ir šīs atbilstības deklarācijas neatņemama sastāvdaļa.

Ar šo deklarāciju tiek apliecināta atbilstība norādītajai(-ām) direktīvai(-ām), bet tā neietver nekādu kvalitātes vai ilgmūžīguma garantiju.
Jāievēro pievienotās izstrādājuma dokumentācijas drošības instrukcijas.

**Litauisch / lietuvių**

## EB/ES atitikties deklaracija (pagal EB direktyvos 94/9/EB, 2014/34/ES VII priedą)

Gamintojas: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Pirmiau aprašytas deklaruojamas dalykas atitinka atitinkamus Sąjungos derinamuosius teisės aktus:**

≤ 19.4.2016 94/9/EB:
Europos Parlamento ir Tarybos direktyva dėl valstybių narių įstatymų, susijusių su potencialiai sprogioje aplinkoje naudojama įranga ir apsaugos sistemomis, suderinimo

≥ 20.04.2016 2014/34/ES
2014 m. vasario 26 d. Europos Parlamento ir Tarybos direktyva dėl valstybių narių įstatymų, susijusių su potencialiai sprogioje aplinkoje naudojama įranga ir apsaugos sistemomis, suderinimo
Europos Sąjungos oficialusis leidinys, L96 2014.03.29, p. 309–356

**Ši atitikties deklaracija išduota tik gamintojo atsakomybe.**
**Tvirtiname, kad pirmiau nurodytas gaminys atitinka standartus:** žr. 1 p. ir priedą

Nurodytas produktas skirtas montuoti į kitą mašiną ir naudoti pavojingoje 1 zonos aplinkoje pagal EN 60079-10-1 ir direktyvą 1999/92/EB. Papildomos informacijos apie atitiktį šiai direktyvai pateikiama priede, kuris yra neatsiejama šios atitikties deklaracijos dalis.

Ši deklaracija patvirtina atitikimą nurodytai (-oms) direktyvai (-oms), tačiau negarantuoja kokybės ar atsparumo.

Būtina laikytis pridedamoje gaminio dokumentacijoje pateiktų saugos nurodymų.

SIEMENS

**Ungarisch / magyar nyelv**

## EK/EU megfelelőségi nyilatkozat (a 94/9/EK, 2014/34/EU irányelv VII függeléke szerint)

Gyártó: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**A fentiekben leírt nyilatkozat tárgya megfelel a vonatkozó uniós harmonizálási jogszabálynak:**

≤ 19.04.2016 94/9/EK:
Az Európai Parlament és az Európa Tanács irányelve a tagállamok készülékekre és védelmi rendszerekre vonatkozó jogi előírásainak harmonizálásáról a robbanásveszélyes területeken való rendeltetésszerű használathoz.

≥ 20.4.2016 2014/34/EU:
Az Európai Parlament és a Tanács irányelve (2014. február 26.) a robbanásveszélyes légkörben való használatra szánt felszerelésekre és védelmi rendszerekre vonatkozó tagállami jogszabályok harmonizációjáról. Az Európai Unió Hivatalos Lapja, L96 2014.03.29., 309-356 o.

**Ez a megfelelőségi nyilatkozat a gyártó kizárólagos felelőssége alatt lett kiadva.**
**Megerősítjük a fent jelezett termékek szabványok szerinti megfelelőségét:** lásd 1. oldal és melléklet

A jelzett termék 1 veszélyes zónaterületeken használatos másik gépbe lesz beszerelve az EN 60079-10-1 és az 1999/92/EK irányelv szerint. Az irányelv szerinti megfelelőségről további információk a mellékletben találhatók, amely a jelen megfelelőségi nyilatkozat szerves részét képezi.

Ez a nyilatkozat tanúsítja a jelzett irányelv(ek) szerinti megfelelőséget, de nem jelent garanciát a minőségre vagy tartósságra nézve.
A kísérő termékdokumentáció biztonsági utasításait figyelembe kell venni.

**Maltesisch/ Malti**

## Dikjarazzjoni ta' Konformità tal-UE (skont l-Anness VII tad-Direttiva 94/9/KE, 2014/34/UE tal-KE)

Manifattur: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Il-prodott indikat fid-dikjarazzjoni msemmija hawn fuq huwa f'konformità mal-leġiżlazzjoni rilevanti tal-Unjoni dwar l-armonizzazzjoni:**

≤ 19.04.2016 94/9/KE:
Direttiva tal-parlament Ewropew u tal-Kunsill dwar l-approssimazzjoni tal-liġijiet ta'l-Istati Membri li jirrigwardaw tagħmir u sistemi ta' sigurtà għal użu skond ir-regolamenti f' żoni fejn hemm periklu ta' splużżjonijiet.

≥ 20.04.2016 2014/34/UE:
Direttiva tal-Parlament Ewropew u tal-Kunsill tas-26 ta' Frar 2014 dwar l-armonizzazzjoni tal-liġijiet tal-Istati Membri relattivament għal tagħmir u sistemi ta' protezzjoni maħsuba għall-użu f'atmosferi potenzjalment esplużivi. Ġurnal Uffiċjali tal-UE, L96 29.03.2014, p. 309-356

**Din id-dikjarazzjoni ta' konformità hija maħruġa bir-responsabilità unika tal-manifattur.**
**Nikkonfermaw il-konformità tal-prodott indikat hawn fuq mal-istandards:** ara paġna 1 u l-anness

Il-prodott indikat huwa maħsub biex jiġi mmuntat f'magna oħra għall-użu f'żoni ta' periklu taż-żona 1 f'konformità ma' EN 60079-10-1 u mad-Direttiva 1999/92/KE. Aktar informazzjoni dwar il-konformità ma' din id-Direttiva hija pprovduta fl-Anness li jifforma parti integrali ta' din id-dikjarazzjoni ta' konformità.

Din id-dikjarazzjoni tiċċertifika l-konformità mad-Direttiva/i indikat/i iżda ma tiggarantix il-kwalità tal-prodott jew kemm idum iservi.
L-istruzzjonijiet tas-sikurezza fid-dokumentazzjoni tal-prodott għandhom jiġu osservati.

SIEMENS

**Niederländisch / Nederlandse**

## EG/EU-conformiteitsverklaring (volgens bijlage VII van de EU-richtlijn 94/9/EG, 2014/34/EU)

Fabrikant: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Het omschreven product stemt overeen met de voorschriften van de volgende Europese richtlijn:**

≤ 19.4.2016 94/9/EG
Richtlijn van het Europees Parlement en de Raad inzake de onderlinge aanpassing van de wetgevingen van de lidstaten betreffende apparaten en beveiligingssystemen bedoeld voor gebruik op plaatsen waar ontploffingsgevaar kan heersen.

≥ 20.4.2016 2014/34/EU
Richtlijn van het Europees Parlement en de Raad d.d. 26 februari 2014 inzake de onderlinge aanpassing van de wetgevingen van de lidstaten betreffende apparaten en beveiligingssystemen bedoeld voor gebruik op plaatsen waar ontploffingsgevaar kan heersen. Publicatieblad van de EU, L96 29-03-2014, p. 309-356

**Deze conformiteitsverklaring wordt verstrekt onder volledige verantwoordelijkheid van de fabrikant.**
**Wij bevestigen de conformiteit van bovengenoemd product met de normen:** zie pagina 1 en de bijlage

Het omschreven product is bedoeld voor inbouw in een andere machine voor gebruik op explosiegevaarlijke plaatsen van zone 1 volgens EN 60079-10-1 en richtlijn 1999/92/EC. Meer informatie over de conformiteit met deze richtlijn vindt u in de bijlage die een integraal onderdeel vormt van deze conformiteitsverklaring

Deze verklaring bevestigt de conformiteit met de genoemde richtlijn(en), maar geeft geen garantie betreffende de gesteldheid of de houdbaarheid. De veiligheidsaanwijzingen in de meegeleverde productdocumentatie dienen te worden nageleefd

**Norwegisch / Norsk**

## EU-konformitetserklæring (i henhold til vedlegg VII til EUs direktiv 94/9/EU, 2014/34/EU)

Produsent: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Objektet for erklæringen overfor er i overensstemmelse med forskriftene i følgende EU-direktiv angående tilpasning:**

≤ 19.4.2016 94/9/EU:
Direktiv fra EU-parlamentet og rådet for tilpasning av medlemsstatenes rettslige forskrifter for utstyr og beskyttelsessystemer for forskriftemessig bruk i eksplosjonsfarlige områder.

≥ 20.4.2016 2014/34/EU:
Direktiv fra Europaparlamentet og Rådet for tilpasning av 26 februar 2014 av medlemsstatenes lover for utstyr og beskyttelsessystemer ment for bruk i eksplosjonsfarlige omgivelser. Official Journal of the EU, L96 29.03.2014, p 309-356

**Produsenten har det hele og fulle ansvar for utstedelsen av denne konformitetserklæringen.**
**Vi bekrefter at det ovennevnte produktet er i overensstemmelse med standardene** (se side 1 og vedlegg)

Det omtalte produktet er ment for innbygging i en annen maskin for bruk i eksplosjonsfarlige områder i sone 1 i henhold til EN 60079-10-1 og direktiv 1999/92/EF. Mer informasjon om produktets overensstemmelse med dette direktivet kan ses i vedlegget, som er en integrert del av denne konformitetserklæringen.

Denne erklæringen bekrefter at produktet er i overensstemmelse med det angitte direktivet (de angitte direktivene), men er ingen garanti for kvalitet eller levetid. Sikkerhetshenvisningene i den medfølgende produktdokumentasjonen må følges.

SIEMENS

**Polnisch / polszczyzna**

## Deklaracja zgodności UE (zgodnie z załącznikiem VII do Dyrektywy 94/9/WE, 2014/34/UE)

Producent: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße*
*D-94099 Ruhstorf a. d. Rott*

**Przedmiot deklaracji opisany powyżej jest zgodny z właściwymi przepisami zharmonizowanymi Unii Europejskiej:**

≤ 19.4.2016 94/9/WE:
Dyrektywa Parlamentu Europejskiego i Rady ds. Harmonizacji Przepisów Prawnych Państw Członkowskich dla Urządzeń i Systemów Ochronnych w celu ich użytkowania zgodnego z przeznaczeniem w obszarach zagrożonych wybuchami.

≥ 20.4.2016 2014/34/UE:
Dyrektywą Parlamentu Europejskiego i Rady z dnia 26 lutego 2014 w sprawie harmonizacji ustawodawstw państw członkowskich odnoszących się do urządzeń i systemów ochronnych przeznaczonych do użytku w atmosferze potencjalnie wybuchowej. Dz. U. UE, L96 29.03.2014, str. 309-356

**Niniejsza deklaracja zgodności wydawana jest na wyłączną odpowiedzialność producenta. Potwierdzamy zgodność produktu wskazanego powyżej z następującymi normami:** patrz strona 1 oraz załącznik

Wskazany produkt przeznaczony jest do instalacji w innej maszynie przeznaczonej do użytkowania w obszarach niebezpiecznych strefy 1 zgodnie z normą EN 60079-10-1 oraz Dyrektywą 1999/92/WE. Dalsze informacje dotyczące zgodności z tą Dyrektywą podano w załączniku, który stanowi integralną część niniejszej deklaracji zgodności.

Niniejsza deklaracja stanowi zaświadczenie zgodności ze wskazanymi Dyrektywami, jednak nie implikuje żadnej gwarancji jakości lub trwałości. Należy przestrzegać instrukcji bezpieczeństwa zawartych w dokumentacji dołączonej do produktu.

**Portugiesisch / português**

## Declaração de conformidade CE/UE (segundo Anexo VII da Diretiva 94/9/CE, 2014/34/UE)

Fabricante: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**O produto acima especificado está em conformidade com a legislação de harmonização da União Europeia relevante:**

≤ 19.4.2016 94/9/CE:
Directiva do Parlamento Europeu e do Conselho relativa à aproximação das legislações dos Estados-Membros sobre aparelhos e sistemas de protecção destinados a serem utilizados em conformidade com as especificações em atmosferas potencialmente explosivas

≥ 20.4.2016 2014/34/UE:
Diretiva do Parlamento Europeu e do Conselho de 26 de fevereiro de 2014 relativa à harmonização das leis dos Estados-Membros sobre aparelhos e sistemas de proteção destinados a serem utilizados em atmosferas potencialmente explosivas. Jornal Oficial da UE, L96 29.03.2014, p. 309-356

**A presente declaração de conformidade é emitida sob a exclusiva responsabilidade do fabricante. Certificamos a conformidade do produto supracitado com as seguintes normas:** consulte a página 1 e anexo

O produto supracitado destina-se à instalação noutra máquina para a utilização em atmosferas potencialmente explosivas da zona 1 em conformidade com a Norma EN 60079-10-1 e Diretiva 1999/92/CE. Mais informação sobre a conformidade desta Diretiva encontra-se no anexo, que é parte integrante da presente declaração de conformidade.

A presente declaração atesta a conformidade com a(s) Diretiva(s) mencionada(s), no entanto, não constitui uma garantia de qualidade ou durabilidade. Respeitar as indicações de segurança da documentação do produto juntamente fornecida.

SIEMENS

**Russisch / русский язык**

## Декларация о соответствии стандартам ЕС (согласно приложению VII Директивы 94/9/EG, 2014/34/EU)

Производитель: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Описанный выше объект декларации отвечает требованиям соответствующего законодательства ЕС по гармонизации:**

≤ 19.4.2016 94/9/EG:
Директива Европейского Парламента и Совета по адаптации правовых предписаний стран-участниц на устройства и системы защиты, применяемые во взрывоопасных помещениях.

≥ 20.4.2016 2014/34/EU:
Директива Европейского парламента и Совета от 26 февраля 2014 по гармонизации законов стран ЕС об оборудовании и защитных системах, предназначенных для использования в потенциально взрывоопасной атмосфере. Официальный журнал ЕС, L96 29.03.2014, с. 309-356

**Эта декларация о соответствии выдана под исключительную ответственность производителя.**

**Подтверждаем соответствие вышеназванного изделия следующим стандартам:** см. с. 1 и приложение

Названное изделие предназначено для встраивания в другой механизм для применения во взрывоопасных помещениях зоны 1 согласно EN 60079-10-1 и Директиве 1999/92/EG. Дополнительную информацию о соответствии этой Директиве см. в приложении, которое является неотъемлемой частью данной декларации о соответствии.

Данная декларация подтверждает соответствие названным Директивам, но не является гарантией качества или долговечности. Необходимо соблюдать указания по технике безопасности в документации из комплекта поставки изделия.

**Slowakisch / slovenský jazyk**

## Prehlásenie o zhode s normami EÚ (v súlade s prílohou VII Smernice 94/9/ES, 2014/34/EÚ)

Výrobca: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Vyššie popísaný predmet prehlásenia je v súlade s príslušnými harmonizačnými právnymi predpismi Únie:**

≤ 19.4.2016 94/9/ES:
Smernica Európskeho parlamentu a Rady o zosúladení zákonných požiadaviek členských štátov týkajúcich sa prístrojov a ochranných systémov, ktoré sú určené na použitie v rámci stanovených predpisov v prostrediach s nebezpečím výbuchu.

≥ 20.4.2016 2014/34/EÚ:
Smernica Európskeho parlamentu a Rady 2014/34/EÚ z 26. februára 2014 o harmonizácii právnych predpisov členských štátov týkajúcich sa zariadení a ochranných systémov určených na použitie v potenciálne výbušnej atmosfére. Úradný vestník EÚ, L96 29.03.2014, s. 309-356

**Toto prehlásenie o zhode sa vydáva na výhradnú zodpovednosť výrobcu**
**Potvrdzujeme zhodu horeuvedeného výrobku s normami:** pozri strana 1 a príloha

Uvedený výrobok je určený na zabudovanie do iného stroja pre použitie v prostredí s nebezpečenstvom výbuchu v zóne 1 v súlade s EN 60079-10-1 a smernicou 1999/92/ES. Ďalšie informácie o súlade s touto smernicou sú uvedené v prílohe, ktorá je neoddeliteľnou súčasťou tohto prehlásenia o zhode.

Toto prehlásenie osvedčuje zhodu s uvedenými smernicami, neznamená však záruku vlastností alebo trvanlivosti. Dodržiavajte bezpečnostné pokyny podľa dodanej dokumentácie k výrobku.

SIEMENS

**Slowenisch / slovenščina**

## ES/EU izjava o skladnosti **(skladno z dodatkom VII Direktive 94/9/ES, 2014/34/EU)**

Izdelovalec: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Predmet izjave, ki je opisan zgoraj, je skladen z ustrezno usklajevalno zakonodajo unije:**

≤ 19.4.2016 94/9/ES:
Smernice Evropskega parlametna in sveta za zakonsko prilagajanje predpisov držav članic za naprave in varovalne sisteme.V eksplozijsko ogroženih področjih velja uporaba ustreznih določil.

≥ 20.4.2016 2014/34/EU:
Direktiva Evropskega Parlamenta in Sveta z dne 26. februarja 2014 o usklajevanju zakonov držav članic, ki se navezujejo na opremo in zaščitne sisteme, namenjene za uporabo v potencialno eksplozivnih ozračjih.
Uradni list EU, L96 29.03.2014, str. 309-356

**Ta izjava o skladnosti je izdana na izključno odgovornost izdelovalca.**
**Potrjujemo skladnost izdelka, ki je imenovan zgoraj, s standardi:** glejte stran 1 in dodatek

Navedeni izdelek je namenjen za namestitev v drug stroj, ki se uporablja v nevarnih območjih cone 1 v skladu s standardom EN 60079-10-1 in Direktivo 1999/92/ES. Nadaljnje informacije o skladnosti s to direktivo so v dodatku, ki je sestavni del te izjave o skladnosti.

Ta izjava je potrdilo skladnosti z navedenimi direktivami, vendar ne predstavlja jamstva za kakovost ali rok uporabnosti.
Upoštevajte varnostna navodila iz spremne dokumentacije izdelka.

**Finnisch / suomi**

## EU-vaatimustenmukaisuusvakuutus **(EY-direktiivin 94/9/EY, 2014/34/EU liitteen VII mukaan)**

Valmistaja: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Edellä kuvattu vakuutuksen kohde on unionin sovellettavan yhdenmukaistamislainsäädännön mukainen:**

≤ 19.4.2016 94/9/EY
Euroopan Parlamentin ja Neuvoston direktiivi räjähdysvaarallisissa tiloissa käytettäväksi tarkoitettuja laitteita ja suojajärjestelmiä koskevan jäsenvaltioiden lainsäädännön lähentämisestä..

≥ 20.4.2016 2014/34/EU
Euroopan parlamentin ja neuvoston direktiivi 2014/34/EU, annettu 26. päivänä helmikuuta 2014, räjähdysvaarallisissa tiloissa käytettäviksi tarkoitettuja laitteita ja suojajärjestelmiä koskevan jäsenvaltioiden lainsäädännön yhdenmukaistamisesta. EU:n virallinen lehti, L96 29.03.2014, s. 309-356

**Vastuu tämän vaatimustenmukaisuusvakuutuksen laadinnasta on yksinomaan valmistajalla.**
**Vakuutamme, että edellä mainittu tuote vastaa seuraavia standardeja:** ks. sivu 1 ja liite

Mainittu tuote on tarkoitettu asennettavaksi toiseen koneeseen, jota käytetään tilaluokan 1 vaarallisissa tiloissa standardin EN 60079-10-1 ja direktiivin 1999/92/EY mukaisesti. Lisätietoja tämän direktiivin vaatimusten täyttymisestä on liitteessä, joka on olennainen osa tätä vaatimustenmukaisuusvakuutusta.

Tämä vakuutus todistaa yhdenmukaisuuden mainittujen direktiivien kanssa, mutta se ei anna takuuta ominaisuuksista tai kestävyydestä.
Tuotteen mukana toimitettavan dokumentaation turvallisuusohjeita on noudatettava.

SIEMENS

**Schwedisch / svenska**

## EG/EU-försäkran om överensstämmelse (enligt bilaga VII till EG-direktiv 94/9/EG, 2014/34/EU)

Tillverkare: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Den märkta produkten stämmer överens med föreskrifterna i följande europeiska direktiv:**

≤ 19.4.2016 94/9/EG:
Direktiv från det europeiska parlamentet och rådet för anpassning av medlemsstaternas rättsliga föreskrifter angående apparater och skyddssystem för användning inom bestämda områden med explosionsrisk.

≥ 20.4.2016 2014/34/EU:
Direktiv från det europeiska parlamentet och rådet från den 26 februari 2014 för anpassning av medlemsstaternas rättsliga föreskrifter angående apparater och skyddssystem för användning inom bestämda områden med explosionsrisk. Officiell EU-handling, L96 29.03.2014, s. 309-356

**Denna försäkran om överensstämmelse är endast utfärdad under tillverkarens ansvar.**
**Vi bekräftar att produkten som anges ovan överensstämmer med normerna:** se sida 1 och bilagan

Den märkta produkten är avsedd att byggas in i en annan maskin för användning i områden med explosionsrisk i zon 1 i enlighet med EN 60079-10-1 och direktiv 1999/92/EC. Ytterligare information om överensstämmelsen till detta direktiv finns i bilagan, som är en integrerad del i denna försäkran om överensstämmelse.

Denna förklaring garanterar överensstämmelse med nämnda standarder, men gäller inte som garanti av något slag.
Beakta säkerhetsanvisningarna i den medföljande produktdokumentationen

**Rumänisch / România**

## Declaraţie de conformitate CE/UE (în conformitate cu anexa VII a Directivei CE 94/9/CE, 2014/34/UE)

Producător: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Obiectul declaraţiei descrise mai sus este conform cu legislaţia armonizată relevantă a Uniunii:**

bis ≤ 19.4.2016 94/9/CE:
Directiva Parlamentului European şi a Consiliului cu privire la uniformizarea legislaţiei statelor membre pentru aparate şi sisteme de protecţie cu privire la utilizarea conformă cu scopul de fabricaţie în zone cu pericol de explozie.

ab ≥ 20.4.2016 2014/34/UE:
Directiva Parlamentului European şi a Consiliului din 26 februarie 2014 privind armonizarea legislaţiilor statelor membre referitoare la echipamentele şi sistemele de protecţie destinate utilizării în atmosfere potenţial explozive. Jurnalul Oficial al UE, L96 29.03.2014, p. 309-356

**Această declaraţie de conformitate este emisă pe responsabilitatea unică a producătorului.**
**Confirmăm conformitatea produsului indicat mai sus cu standardele:** consultaţi pagina 1 şi anexa

Produsul indicat este destinat instalării într-o altă maşină prevăzută pentru utilizarea în spaţii periculoase din zona 1 în conformitate cu EN 60079-10-1 şi Directiva 1999/92/CE. Mai multe informaţii privind conformitatea cu această directivă sunt prevăzute în anexă, care constituie o parte integrantă a acestei declaraţii de conformitate.

Această declaraţie atestă conformitatea cu directiva sau directivele menţionate, însă nu implică o garanţie a calităţii sau durabilităţii.
Se vor respecta instrucţiunile de siguranţă din documentaţia care însoţeşte produsul.

SIEMENS

**Bulgarisch / български език**

## ЕС Декларация за съответствие (съгласно приложение VII на Директива на ЕС 94/9/ЕО, 2014/34/ЕС)

Производител: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Обозначеният продукт съответства на предписанията на следната хармонизирана европейска директива:**

≤ 19.4.2016 94/9/ЕО:
Директива на Европейския парламент и съвет за правно уеднаквяване на нормативните актове на държавите членки за уреди и защитни системи за употреба съгласно предназначението във взривоопасни области.

≥ 20.4.2016 2014/34/ЕС:
Директива на Европейския парламент и на Съвета от 26 февруари 2014 за хармонизиране на законодателствата на държавите членки относно съоръженията и системите за защита, предназначени за използване в потенциално експлозивна атмосфера. Официален вестник на ЕС, L96 29.03.2014, стр. 309-356

**Тази декларация е изготвена на собствена отговорност на производителя.**
**Ние потвърждаваме съответствието на гореспоменатия продукт със стандартите:** виж страница 1 и Приложението

Обозначеният продукт е предназначен за вграждане в друга машина за използване в опасни области от зона 1 в съответствие с EN 60079-10-1 и Директива 1999/92/ЕС. Допълнителна информация за съответствието с настоящата директива е дадена в приложението, което е неразделна част от тази декларация за съответствие.

Тази декларация удостоверява съответствието с посочените директива (и), но не е гаранция за качество или трайност.
Да се спазват указанията за безопасност от придружаващата продукта документация.

**Kroatisch / hrvatski jezik**

## Izjava o usklađenosti EU-a (u skladu s Prilogom VII Direktive EZ-a 94/9/EZ, 2014/34/EU)

Proizvođač: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Predmet gore opisane izjave je usklađenost s relevantnim harmoniziranim zakonima Unije:**

≤ 19.4.2016 94/9/EZ:
Direktiva Europskog parlamenta i Vijeća o usklađivanju zakonodavstava država članica u odnosu na opremu i zaštitne sustave namijenjene za uporabu u potencijalno eksplozivnim atmosferama.

ab ≥ 20.4.2016 2014/34/EU:
Direktiva Europskog parlamenta i Vijeća od 26. veljače 2014. o harmonizaciji zakona zemalja članica u pogledu opreme i zaštitnih sustava namijenjenih uporabi u potencijalno eksplozivnim atmosferama. Službeni list EU-a, L96 29.03.2014., str. 309.-356.

**Ova izjava o usklađenosti izdaje se na vlastitu odgovornost proizvođača.**
**Potvrđujemo usklađenost gore navedenog proizvoda s normama:** vidi stranicu 1. i prilog

Navedeni proizvod namijenjen je ugradnji u drugi stroj za uporabu u opasnim područjima zone 1 u skladu s normom EN 60079-10-1 i Direktivom 1999/92/EZ. Dodatne informacije o usklađenosti s ovom Direktivom navedene su u prilogu koji je sastavni dio ove izjave o usklađenosti.

Ova je izjava potvrda o usklađenosti s navedenim Direktivama, ali ne znači jamstvo kvalitete ili trajnosti.
Morate se pridržavati sigurnosnih uputa u pripadajućoj dokumentaciji o proizvodu.

SIEMENS

## Anhang zur EG/EU-Konformitätserklärung / Annex to EC/EU Declaration of Conformity

*Nr. /No. A5E03869385A*

Die Drittstellenzertifikate wurden ausgestellt von den folgenden notifizierten Stellen /
The Third-Party Certificates were issued by the following notified bodies:

| Gerät Equipment | | | EG/EU-Baumuster-prüfbescheinigung | Gasgruppe | | Notifizierte Stelle |
|---|---|---|---|---|---|---|
| Typ type | Alternativier Typ alternative type | Lagerung bearing | EC/EU-Type Examination Certificate | IIB | IIC | Notified Body |
| D***-071**-** | 1PS*07*-*****-****<br>1MD*07*-*****-**** | anti-friction | PTB 10 ATEX 1007 X | | x | NB 0102 [1] |
| | | | BVS 11 ATEX E 053 X | x | x | NB 0158 [2] |
| | | | BVS 13 ATEX E 129 X | x | x | NB 0158 [2] |
| D***-080**-** | 1PS*08*-*****-****<br>1MD*08*-*****-**** | anti-friction | PTB 09 ATEX 1091 X | | x | NB 0102 [1] |
| | | | BVS 11 ATEX E 027 X | x | x | NB 0158 [2] |
| | | | BVS 13 ATEX E 128 X | x | x | NB 0158 [2] |
| D***-090**-** | 1PS*09*-*****-****<br>1MD*09*-*****-**** | anti-friction | PTB 08 ATEX 1021 X | | x | NB 0102 [1] |
| | | | BVS 11 ATEX E 015 X | x | x | NB 0158 [2] |
| | | | BVS 13 ATEX E 098 X | x | x | NB 0158 [2] |
| D***-100**-** | 1PS*10*-*****-****<br>1MD*10*-*****-**** | anti-friction | PTB 09 ATEX 1087 X | | x | NB 0102 [1] |
| | | | BVS 10 ATEX E 155 X | x | x | NB 0158 [2] |
| | | | BVS 13 ATEX E 127 X | x | x | NB 0158 [2] |
| D***-112**-** | 1PS*11*-*****-****<br>1MD*11*-*****-**** | anti-friction | PTB 08 ATEX 1123 X | | x | NB 0102 [1] |
| | | | BVS 10 ATEX E 159 X | x | x | NB 0158 [2] |
| | | | BVS 13 ATEX E 126 X | x | x | NB 0158 [2] |
| D***-132**-** | 1PS*13*-*****-****<br>1MD*13*-*****-**** | anti-friction | PTB 08 ATEX 1119 X | | x | NB 0102 [1] |
| | | | BVS 10 ATEX E 123 X | x | x | NB 0158 [2] |
| | | | BVS 13 ATEX E 099 X | x | x | NB 0158 [2] |
| D***-160**-** | 1PS*16*-*****-****<br>1MD*16*-*****-**** | anti-friction | PTB 08 ATEX 1103 X | | x | NB 0102 [1] |
| | | | BVS 11 ATEX E 012 X | x | x | NB 0158 [2] |
| | | | BVS 13 ATEX E 019 X | x | x | NB 0158 [2] |
| D***-180**-** | 1PS*18*-*****-****<br>1MD*18*-*****-**** | anti-friction | PTB 09 ATEX 1044 X | | x | NB 0102 [1] |
| | | | BVS 11 ATEX E 047 X | x | x | NB 0158 [2] |
| | | | BVS 13 ATEX E 017 X | x | x | NB 0158 [2] |
| D***-200**-** | 1PS*20*-*****-****<br>1MD*20*-*****-**** | anti-friction | PTB 08 ATEX 1054 X | | x | NB 0102 [1] |
| | | | BVS 11 ATEX E 020 X | x | x | NB 0158 [2] |
| | | | BVS 13 ATEX E 012 X | x | x | NB 0158 [2] |
| D***-225**-** | 1PS*22*-*****-****<br>1MD*22*-*****-**** | anti-friction | PTB 08 ATEX 1107 X | | x | NB 0102 [1] |
| | | | BVS 11 ATEX E 046 X | x | x | NB 0158 [2] |
| | | | BVS 12 ATEX E 103 X | x | x | NB 0158 [2] |
| D***-250**-** | 1PS*25*-*****-****<br>1MD*25*-*****-**** | anti-friction | PTB 09 ATEX 1046 X | | x | NB 0102 [1] |
| | | | BVS 11 ATEX E 030 X | x | x | NB 0158 [2] |
| | | | BVS 11 ATEX E 045 X | x | x | NB 0158 [2] |
| D***-280**-** | 1PS*28*-*****-****<br>1MD*28*-*****-**** | anti-friction | PTB 09 ATEX 1070 X | | x | NB 0102 [1] |
| | | | BVS 11 ATEX E 051 X | x | x | NB 0158 [2] |
| | | | BVS 12 ATEX E 029 X | x | x | NB 0158 [2] |
| D***-315**-** | 1PS*31*-*****-****<br>1MD*31*-*****-**** | anti-friction | PTB 08 ATEX 1037 X | | x | NB 0102 [1] |
| | | | BVS 11 ATEX E 025 X | x | x | NB 0158 [2] |
| | | | BVS 12 ATEX E 051 X | x | x | NB 0158 [2] |
| DJS*-315**-** | 1PS*31*-*****-**** | anti-friction | BVS 12 ATEX E 077 X | x | x | NB 0158 [2] |

SIEMENS

| Gerät Equipment | | | EG/EU-Baumuster-prüfbescheinigung | Gasgruppe | | Notifizierte Stelle |
|---|---|---|---|---|---|---|
| Typ type | Alternativier Typ alternative type | Lagerung bearing | EC/EU-Type Examination Certificate | IIB | IIC | Notified Body |
| D***-355**-** | 1PS*35*-*****-****<br>1MD*35*-*****-****<br>1MV*35*-*****-**** | anti-friction | PTB 08 ATEX 1077 X | | x | NB 0102 [1] |
| | | | PTB 08 ATEX 1078 X | x | | NB 0102 [1] |
| | | | PTB 08 ATEX 1079 X | | x | NB 0102 [1] |
| | | | BVS 11 ATEX E 003 X | x | x | NB 0158 [2] |
| | | | BVS 13 ATEX E 120 X | x | x | NB 0158 [2] |
| D***-400**-** | 1PS*40*-*****-****<br>1MV*40*-*****-**** | anti-friction | PTB 07 ATEX 1060 X | x | | NB 0102 [1] |
| | | | PTB 07 ATEX 1047 X | | x | NB 0102 [1] |
| | | | BVS 11 ATEX E 162 X | x | x | NB 0158 [2] |
| D*T*-400**-**<br>D*V*-400**-** | 1PS440*-*****-****<br>1MV440*-*****-**** | sleeve | BVS 11 ATEX E 029 X | x | | NB 0158 [2] |
| D***-450**-** | 1PS*45*-*****-****<br>1MV*45*-*****-**** | anti-friction | PTB 07 ATEX 1068 X | | x | NB 0102 [1] |
| | | | BVS 11 ATEX E 084 X | x | x | NB 0158 [2] |
| D*T*-450**-**<br>D*V*-450**-** | 1PS445*-*****-****<br>1MV445*-*****-**** | sleeve | BVS 11 ATEX E 067 X | x | | NB 0158 [2] |
| D***-500**-** | 1PS*50*-*****-****<br>1MV*50*-*****-**** | anti-friction | PTB 08 ATEX 1035 X | | x | NB 0102 [1] |
| | | | PTB 08 ATEX 1036 X | x | | NB 0102 [1] |
| | | | BVS 15 ATEX E 088 X | x | x | NB 0158 [2] |
| D*T*-500**-**<br>D*V*-500**-** | 1PS450*-*****-****<br>1MV450*-*****-**** | sleeve | PTB 07 ATEX 1074 X | x | | NB 0102 [1] |
| | | | BVS 10 ATEX E 142 X | x | | NB 0158 [2] |
| D*W*-500**-** | 1PS*50*-*****-****<br>1MV*50*-*****-**** | anti-friction | BVS 09 ATEX E 159 X | x | x | NB 0158 [2] |
| D***-560**-** | 1PS*56*-*****-****<br>1MV*56*-*****-**** | anti-friction | PTB 07 ATEX 1042 X | | x | NB 0102 [1] |
| | | | PTB 07 ATEX 1043 X | x | | NB 0102 [1] |
| D*T*-560**-**<br>D*V*-560**-** | 1PS456*-*****-****<br>1MV456*-*****-**** | sleeve | PTB 07 ATEX 1046 X | x | | NB 0102 [1] |
| | | | BVS 12 ATEX E 092 X | x | | NB 0158 [2] |
| D***-630**-** | 1PS*63*-*****-****<br>1MV*63*-*****-**** | anti-friction | PTB 06 ATEX 1028 X | x | | NB 0102 [1] |
| | | | PTB 06 ATEX 1022 X | | x | NB 0102 [1] |
| D*T*-630**-**<br>D*V*-630**-** | 1PS463*-*****-****<br>1MV463*-*****-**** | sleeve | PTB 07 ATEX 1075 X | x | | NB 0102 [1] |
| D***-710**-** | 1PS471*-*****-****<br>1MV471*-*****-**** | anti-friction<br>sleeve | PTB 09 ATEX 1009 X | x | | NB 0102 [1] |
| | | | BVS 13 ATEX E 045 X | x | | NB 0158 [2] |
| D***-800**-** | 1PS*80*-*****-****<br>1MV*80*-*****-**** | anti-friction<br>sleeve | PTB 09 ATEX 1078 X | x | | NB 0102 [1] |
| | | | BVS 11 ATEX E 170 X | x | x | NB 0158 [2] |
| D*Q*-800**-** | 1PS480*-*****-****<br>1MV480*-*****-**** | sleeve | PTB 06 ATEX 1049 X | x | | NB 0102 [1] |
| D*Q*-910**-** | 1PS491*-*****-****<br>1MV491*-*****-**** | sleeve | BVS 10 ATEX E 103 X | x | | NB 0158 [2] |

Die Bewertung des Qualitätssicherungssystems erfolgte durch die Benannte Stelle: NB 0102 [1]
*The assessment of our quality system was done by the following notified body:*

[1] NB 0102: PTB, Physikalisch-Technische Bundesanstalt,
Bundesallee 100, D-38116 Braunschweig

[2] NB 0158 DEKRA EXAM GmbH,
Dinnendahlstraße 9, D-44809 Bochum

Ende des Anhangs / End of Annex

# C.2 EC Declaration of Conformity, Zone 21 or 22

SIEMENS

## EG/EU-Konformitätserklärung

**(nach Anhang VII der EG-Richtlinie 94/9/EG bzw. EU-Richtlinie 2014/34/EU)**

*Nr. A5E35855445A*

| | |
|---|---|
| Hersteller: | Siemens Aktiengesellschaft<br>Division Process Industries and Drives, Large Drives, PD LD |
| Anschrift: | Hans-Loher-Straße 32<br>D-94099 Ruhstorf a. d. Rott |
| Produktbezeichnung: | Drehstrom-Asynchronmaschinen<br>Zündschutzart Geräte-Staubexplosionsschutz durch Gehäuse „tb"<br>Typ: A . . . 071 . . . bis / to A . . . 800 . . .<br>E . . . 071 . . . bis / to E . . . 800 . . .<br>D . . . 071 . . . bis / to D . . . 910 . . .<br>Alternative Typbezeichnung:<br>1PS.07. - . . . . - . . . . bis / to 1PS.91. - . . . . - . . . .<br>1MD.07. - . . . . - . . . . bis / to 1MD.35. - . . . . - . . . .<br>1MV.35. - . . . . - . . . . bis / to 1MV.91. - . . . . - . . . .<br>Gerätegruppe II, Gerätekategorie 2D |
| Notifizierte Stelle: | siehe Anhang |
| Drittstellenzertifikat: | siehe Anhang |

**Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union:**

**bis 19.04.2016 EG-Richtlinie 94/9/EG:**
Richtlinie des Europäischen Parlaments und des Rates vom 23. März 1994 zur Angleichung der Rechtsvorschriften der Mitgliedsstaaten für Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen

**ab 20.04.2016 EU-Richtlinie 2014/34/EU:**
Richtlinie des Europäischen Parlaments und des Rates vom 26. Februar 2014 zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten für Geräte und Schutzsysteme zur bestimmungs-gemäßen Verwendung in explosionsgefährdeten Bereichen. Amtsblatt der EU L96, 29.03.2014, S. 309-356

**Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.**

**Wir bestätigen die Konformität des oben genannten Produktes mit den Normen:**

| Referenznummer | Ausgabedatum | Referenznummer | Ausgabedatum |
|---|---|---|---|
| *EN 60079-0+A11* | *2013* | *EN 60079-31* | *2014* |

Das bezeichnete Produkt ist bestimmt zum Einbau in eine andere Maschine für den Einsatz in explosionsgefährdeten Bereichen der Zone 21 nach EN 60079-10-2 und Richtlinie 1999/92/EG. Weitere Angaben über die Einhaltung dieser Richtlinie enthält der Anhang, der ein integraler Bestandteil dieser Konformitätserklärung ist.

Siemens Aktiengesellschaft
Ruhstorf, den 08.04.2016

i.V .....
Fritz Winkler Unterschrift/Signature
Werksleiter/Head of Manufacturing

i.V .....
Dr. Hartmut Vogel Unterschrift/Signature
Produktsicherheitsbeauftragter / Product safety officer

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinie(n), ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie.
Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.

Siemens Aktiengesellschaft: Vorsitzender des Aufsichtsrats: Gerhard Cromme; Vorstand: Joe Kaeser, Vorsitzender; Roland Busch, Lisa Davis, Klaus Helmrich, Janina Kugel, Siegfried Russwurm, Ralf P. Thomas; Sitz der Gesellschaft: Berlin und München, Deutschland; Registergericht: Berlin Charlottenburg, HRB 12300, München, HRB 6684; WEEE-Reg.-Nr. DE 23691322

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SIEMENS

**Englisch / English**

## EC/EU Declaration of Conformity (according to Annex VII of EC Directive 94/9/EC, 2014/34/EU)

Manufacturer: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**The object of the declaration described above is in conformity with the relevant Union harmonization legislation:**

≤ 19.04.2016 94/9/EC:
Directive of the European Parliament and the Council on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres.

≥ 20.04.2016 2014/34/EU:
Directive of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres. Official Journal of the EU, L96 29.03.2014, p. 309-356

**This declaration of conformity is issued under the sole responsibility of the manufacturer.**
**We confirm conformity of the product indicated above with the standards:** see page 1 and annex

The product indicated is intended to be installed in another machine for use in hazardous areas of zone 21 in accordance with EN 60079-10-2 and Directive 1999/92/EC. Further information about the conformity to this Directive is given in the annex, which is an integral part of this declaration of conformity.

This declaration is an attestation of conformity with the indicated Directive(s) but does not imply any guarantee of quality or durability.
The safety instructions of the accompanying product documentation shall be observed.

**Tschechisch / český jazyk**

## Prohlášení o shodě s předpisy ES/EU (podle dodatku VII směrnice EU 94/9/ES, 2014/34/EU)

Výrobce: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Výše uvedený výrobek se shoduje s předpisy následujících harmonizovaných předpisů Evropské unie:**

≤ 19.04.2016 94/9/ES:
směrnice Evropského parlamentu a Rady o sjednocení legislativy členských států EU týkající se přístrojů a ochranných systémů za účelem jejich správného používání v oblastech ohrožených explozí.

≥ 20.04.2016 2014/34/EU:
směrnice Evropského parlamentu a Rady ze dne 26. února 2014 o harmonizaci legislativy členských států EU týkající se zařízení a ochranných systémů za účelem jejich správného používání v oblastech ohrožených nebezpečím výbuchu. Oficiální tisk EU, L96 29.03.204, str. 309-356.

**Veškerou odpovědnost za vystavení tohoto Prohlášení o shodě nese výrobce produktu.**
**Potvrzujeme tímto, že se výše uvedený výrobek shoduje s normami:** viz strana 1 a příloha

Uvedený výrobek je určen pro instalaci do jiných strojů pro použití v nebezpečných oblastech zóny 21 podle normy EN 60079-10-2 a směrnice 1999/92/EG. Další informace o shodě podle této směrnice jsou uvedeny v příloze, která je nedílnou součástí tohoto prohlášení o shodě.

Toto prohlášení potvrzuje shodu s uvedenými směrnicemi, neznamená však záruku jakosti nebo trvanlivosti.
Musí být dodržovány bezpečnostní pokyny uvedené v doprovodné dokumentaci tohoto produktu.

SIEMENS

**Dänisch / dansk**

## EF-overensstemmelseserklæring (i henhold til bilag VII I EF-direktivet 94/9/EF, 2014/34/EU)

Fabrikant: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Genstanden for erklæringen, som beskrevet ovenfor, er i overensstemmelse med den relevante EU-harmoniseringslovgivning:**

≤ 19.04.2016 94/9/EF:
Directive of the European Parliament and the Council on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres.

≥ 20.04.2016 2014/34/EU:
Europa-Parlamentets og Rådets direktiv 2014/34/EU af 26. februar 2014 om harmonisering af medlemsstaternes love om materiel og sikringssystemer til anvendelse i en potentielt eksplosiv atmosfære. Den Europæiske Unions Tidende EU, L96 29.03.2014, s. 309-356

**Denne overensstemmelseserklæring udstedes på fabrikantens ansvar.**
**Vi bekræfter det ovennævnte produkts overensstemmelse med standarderne:** se side 1 og bilag

Det beskrevne produkt er bestemt til indbygning i en anden maskine til indsats i eksplosive områder i zone 21 i overensstemmelse med EN 60079-10-2 og direktiv 1999/92/EF. Yderligere oplysninger om overensstemmelsen med dette direktiv findes i bilaget, som er en integreret del af denne overensstemmelseserklæring.

Denne erklæring gælder som dokumentation for overensstemmelse med de nævnte direktiver men er dog ingen beskaffenheds- eller holdbarhedsgaranti. Sikkerhedshenvisningerne i den medleverede produktinformation skal overholdes.

**Estnisch / eesti keel**

## ELi vastavusdeklaratsioon (vastavalt EÜ direktiivi 94/9/EÜ, 2014/34/EL lisale VII)

Tootja: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Deklaratsiooni ülalkirjeldatud ese on kooskõlas Liidu asjaomase harmoniseeritud seadusandlusega:**

≤ 19.04.2016 94/9/EÜ:
Euroopa Parlamendi ja Nõukogu direktiiv plahvatusohtlikus keskkonnas kasutatavaid seadmeid ja kaitsesüsteeme käsitlevate liikmesriikide õigusaktide ühtlustamise kohta.

≥ 20.04.2016 2014/34/EL:
Euroopa Parlamendi ja nõukogu direktiiv 26. veebruarist 2014 liikmesriikide seaduste harmoniseerimise kohta varustuse ja kaitsesüsteemide kohta, mis on ette nähtud kasutamiseks potentsiaalselt plahvatusohtlikes atmosfäärides. ELi ametlikud aktid, L96 29.03.2014, lk 309-356

**Käesolev vastavusdeklaratsioon on välja antud tootja ainuisikulisel vastutusel.**
**Me deklareerime ülalnimetatud toote vastavust järgmistele standarditele:** vt lk 1 ja lisa

Mainitud toode on ette nähtud teise masinasse installeerimiseks kasutuseesmärgiga EN 60079-10-2 ja direktiivi 1999/92/EÜ kohase tsooni 21 ohtlikes piirkondades. Edasine informatsioon sellele direktiivile vastavuse kohta on esitatud lisas, mis on käesoleva vastavusdeklaratsiooni lahutamatu osa.

Käesolev deklaratsioon on vastavuse tõend mainitud direktiivi(de)ga, kuid ei hõlma mitte mingisugust garantiid ega vastupidavuskvaliteeti. Tuleb järgida tootega kaasapandud dokumentatsioonis esitatud ohutusjuhiseid.

SIEMENS

**Griechisch / ελληνική γλώσσα**

## Δήλωση συμμόρφωσης ΕΚ/ΕΕ (σύμφωνα με το Παράρτημα VII της Κοινοτικής Οδηγίας 94/9/ΕΚ, 2014/34/ΕΕ)

Κατασκευαστής: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Το αντικείμενο της δήλωσης που περιγράφεται παραπάνω συμμορφώνεται με τη σχετική Κοινοτική νομοθεσία περί εναρμόνισης:**

≤ 19.04.2016 94/9/ΕΚ:
Οδηγία του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου για την προσέγγιση των νομικών διατάξεων των χωρών μελών που αφορούν εξοπλισμό και συστήματα προστασίας που προορίζονται για χρήση σε περιοχές με κίνδυνο έκρηξης.

≥ 20.04.2016 2014/34/ΕΕ:
Οδηγία της 26ης Φεβρουαρίου 2014 του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου για την για την εναρμόνιση των νομοθεσιών των κρατών μελών σχετικά με τις συσκευές και τα συστήματα προστασίας που προορίζονται για χρήση σε εκρήξιμες ατμόσφαιρες. Επίσημη Εφημερίδα της ΕΕ, L96 29.03.2014, σελ. 309-356

**Την αποκλειστική ευθύνη για την έκδοση την παρούσας Δήλωσης συμμόρφωσης την φέρει ο κατασκευαστής**
**Με το παρόν πιστοποιούμε τη συμμόρφωση του ανωτέρω αναφερόμενου προϊόντος με τα πρότυπα:** βλ. σελίδα 1 και παράρτημα

Το αναφερόμενο προϊόν προορίζεται για εγκατάσταση σε άλλη μηχανή για χρήση σε περιοχές με κίνδυνο έκρηξης της ζώνης 21 σύμφωνα με το EN 60079-10-2 και την Οδηγία 1999/92/ΕΚ. Περισσότερες πληροφορίες σχετικά με τη συμμόρφωση με την παρούσα Οδηγία αναφέρονται στο παράρτημα, το οποίο αποτελεί αναπόσπαστο τμήμα της παρούσας Δήλωσης συμμόρφωσης.

Αυτή η δήλωση πιστοποιεί τη συμμόρφωση με την αναφερόμενη Οδηγία, ωστόσο δεν αποτελεί εγγύηση καλής κατάστασης ή διάρκειας ζωής. Πρέπει να τηρούνται οι οδηγίες ασφαλείας της συνοδευτικής τεκμηρίωσης προϊόντος

**Spanisch / español**

## Declaración CE/UE de conformidad (según el Anexo VII de la Directiva 94/9/CE, 2014/34/UE)

Fabricante: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**El producto arriba mencionado es conforme a la legislación de armonización de la Unión pertinente:**

≤ 19.4.2016 94/9/CE:
Directiva del Parlamento Europeo y del Consejo para la armonización de las leyes de los estados miembros relativa a aparatos y sistemas de protección para uso conforme en atmósferas potencialmente explosivas.

≥ 20.04.2016 2014/34/UE:
Directiva del Parlamento Europeo y del Consejo de 26 de febrero de 2014 sobre la armonización de las legislaciones de los Estados miembros en materia de aparatos y sistemas de protección para uso en atmósferas potencialmente explosivas. Diario Oficial de la Unión Europea EU, L96 29.03.2014, págs. 309-356

**La presente declaración de conformidad se expide bajo la exclusiva responsabilidad del fabricante.**
**Confirmamos que el producto arriba mencionado cumple las siguientes normas:** véase la página 1 y el anexo

El producto mencionado está previsto para su montaje en otra máquina prevista para su instalación en atmósferas potencialmente explosivas de la zona 21 conforme a EN 60079-10-2 y la directiva 1999/92/CE. Más información relativa a la conformidad con dicha directiva figura en el anexo que forma parte integral de la presente declaración de conformidad.

Esta declaración certifica el cumplimiento de las directivas mencionadas pero no garantiza las características ni la durabilidad.
Deben observarse las consignas de seguridad de la documentación de producto suministrada.

SIEMENS

**Französisch / français**

## Déclaration CE de conformité (selon annexe VII de la directive 94/9/CE, 2014/34/UE)

Constructeur : *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Le produit sus-mentionné est conforme à la législation communautaire d'harmonisation pertinente:**

≤ 19.04.2016 94/9/CE:
Directive du parlement européen et du conseil concernant le rapprochement des législations des États membres pour les appareils et les systèmes de protection destinés à être utilisés en atmosphères explosibles.

≥ 20.04.2016 2014/34/UE:
Directive du Parlement européen et du Conseil du 26 février 2014 relative à l'harmonisation des législations des États membres concernant les appareils et les systèmes de protection destinés à être utilisés en atmosphères explosibles. Journal officiel de l'UE L96, 29.03.2014, p. 309-356

**Le fabricant est seul responsable de l'établissement de cette déclaration de conformité.**
**Nous certifions la conformité du produit susmentionné avec les normes suivantes :** voir page 1 et annexe

Le produit désigné est destiné à l'implantation dans une autre machine pour l'utilisation en atmosphère explosible, zone 21 selon la norme EN 60079-10-2 et la directive 1999/92/EG. Des informations complémentaires sur la conformité avec cette directive figurent dans l'annexe qui fait partie intégrante de cette déclaration de conformité.

Ce certificat atteste la conformité aux directives mentionnées, mais ne tient pas lieu de garantie de qualité ni de longévité.
Respecter les consignes de sécurité figurant dans la documentation produit fournie.

**Italienisch / italiano**

## Dichiarazione di conformità CE/UE (secondo l'allegato VII della Direttiva Europea 94/9/CE, 2014/34/UE)

Costruttore: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**L'oggetto della dichiarazione sopra descritto è conforme alle prescrizioni di armonizzazione pertinenti dell'Unione**

≤ 19.04.2016 94/9/CE:
Direttiva del Parlamento Europeo e del Consiglio concernente il ravvicinamento delle legislazioni degli Stati membri relativa agli apparecchi e sistemi di protezione destinati ad essere utilizzati in atmosfera potenzialmente esplosiva.

≥ 20.04.2016 2014/34/UE:
Direttiva del Parlamento Europeo e del Consiglio del 26 Febbraio 2014 concernente l'armonizzazione delle legislazioni degli Stati membri relative agli apparecchi e sistemi di protezione destinati a essere utilizzati in atmosfera potenzialmente esplosiva. Gazzetta Ufficiale della UE, L96 29.03.2014, p. 309-356

**Questa dichiarazione di conformità è rilasciata sotto la sola responsabilità del costruttore.**
**Confermiamo la conformità del prodotto sopra designato alle norme:** vedi pagina 1 e allegato

Il prodotto designato è destinato a essere installato in un'altra macchina per l'impiego in aree a rischio di esplosione della Zona 21 secondo la norma EN 60079-10-2 e la Direttiva 1999/92/CE.
Ulteriori indicazioni sulla conformità a questa Direttiva sono contenute nell'allegato, che è parte integrale di questa dichiarazione di conformità.

Questa dichiarazione certifica la conformità con le Direttive citate, non costituisce però alcuna garanzia di caratteristiche di prodotto oppure di durata. Le avvertenze di sicurezza riportate nella documentazione di prodotto allegata devono essere rispettate.

SIEMENS

**Lettisch / latviešu**

## EK/ES atbilstības deklarācija (saskaņā ar EK Direktīvas 94/9/EK, 2014/34/ES pielikumu VII)

Ražotājs: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf*

**Iepriekš aprakstītās deklarācijas objekts atbilst attiecīgajiem Savienības saskaņotajiem tiesību aktiem:**

≤ 19.04.2016 94/9/EK:
Eiropas parlamenta un padomes direktīva, saskaņā ar dalībvalstu likumiem, attiecībā uz ieceri izmantot ierīces un aizsardzības sistēmas iespējami sprādzienbīstamā vidē.

≥ 20.04.2016 2014/34/ES:
Eiropas Parlamenta un Padomes 2014. gada 26. februāra Direktīva par dalībvalstu tiesību aktu saskaņošanu attiecībā uz iekārtām un aizsardzības sistēmām, kas paredzētas lietošanai sprādzienbīstamā vidē. ES Oficiālais vēstnesis, L96 29.03.2014, 309.-356. lpp.

**Par šīs atbilstības deklarācijas sastādīšanu ir atbildīgs vienīgi ražotājs.**
**Mēs apstiprinām iepriekš minētā izstrādājuma atbilstību standartiem:** skatiet 1. lappusi un pielikumu

Norādītais izstrādājums ir paredzēts uzstādīšanai citā iekārtā un izmantošanai zonas 21 bīstamajās vietās saskaņā ar standartu EN 60079-10-2 un Direktīvu 1999/92/EK. Papildinformācija par atbilstību šai Direktīvai ir iekļauta pielikumā, kas ir šīs atbilstības deklarācijas neatņemama sastāvdaļa.

Ar šo deklarāciju tiek apliecināta atbilstība norādītajai(-ām) direktīvai(-ām), bet tā neietver nekādu kvalitātes vai ilgmūžīguma garantiju.
Jāievēro pievienotās izstrādājuma dokumentācijas drošības instrukcijas.

**Litauisch / lietuvių**

## EB/ES atitikties deklaracija (pagal EB direktyvos 94/9/EB, 2014/34/ES VII priedą)

Gamintojas: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Pirmiau aprašytas deklaruojamas dalykas atitinka atitinkamus Sąjungos derinamuosius teisės aktus:**

≤ 19.4.2016 94/9/EB:
Europos Parlamento ir Tarybos direktyva dėl valstybių narių įstatymų, susijusių su potencialiai sprogioje aplinkoje naudojama įranga ir apsaugos sistemomis, suderinimo

≥ 20.04.2016 2014/34/ES
2014 m. vasario 26 d. Europos Parlamento ir Tarybos direktyva dėl valstybių narių įstatymų, susijusių su potencialiai sprogioje aplinkoje naudojama įranga ir apsaugos sistemomis, suderinimo
Europos Sąjungos oficialusis leidinys, L96 2014.03.29, p. 309–356

**Ši atitikties deklaracija išduota tik gamintojo atsakomybe.**
**Tvirtiname, kad pirmiau nurodytas gaminys atitinka standartus:** žr. 1 p. ir priedą

Nurodytas produktas skirtas montuoti į kitą mašiną ir naudoti pavojingoje 21 zonos aplinkoje pagal EN 60079-10-2 ir direktyvą 1999/92/EB. Papildomos informacijos apie atitiktį šiai direktyvai pateikiama priede, kuris yra neatsiejama šios atitikties deklaracijos dalis.

Ši deklaracija patvirtina atitikimą nurodytai (-oms) direktyvai (-oms), tačiau negarantuoja kokybės ar atsparumo.

Būtina laikytis pridedamoje gaminio dokumentacijoje pateiktų saugos nurodymų.

SIEMENS

**Ungarisch / magyar nyelv**

## EK/EU megfelelőségi nyilatkozat (a 94/9/EK, 2014/34/EU irányelv VII függeléke szerint)

Gyártó: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**A fentiekben leírt nyilatkozat tárgya megfelel a vonatkozó uniós harmonizálási jogszabálynak:**

≤ 19.04.2016 94/9/EK:
Az Európai Parlament és az Európa Tanács irányelve a tagállamok készülékekre és védelmi rendszerekre vonatkozó jogi előírásainak harmonizálásáról a robbanásveszélyes területeken való rendeltetésszerű használathoz.

≥ 20.4.2016 2014/34/EU:
Az Európai Parlament és a Tanács irányelve (2014. február 26.) a robbanásveszélyes légkörben való használatra szánt felszerelésekre és védelmi rendszerekre vonatkozó tagállami jogszabályok harmonizációjáról. Az Európai Unió Hivatalos Lapja, L96 2014.03.29., 309-356 o.

**Ez a megfelelőségi nyilatkozat a gyártó kizárólagos felelőssége alatt lett kiadva.**
**Megerősítjük a fent jelezett termékek szabványok szerinti megfelelőségét:** lásd 1. oldal és melléklet

A jelzett termék 21 veszélyes zónaterületeken használatos másik gépbe lesz beszerelve az EN 60079-10-2 és az 1999/92/EK irányelv szerint. Az irányelv szerinti megfelelőségről további információk a mellékletben találhatók, amely a jelen megfelelőségi nyilatkozat szerves részét képezi.

Ez a nyilatkozat tanúsítja a jelzett irányelv(ek) szerinti megfelelőséget, de nem jelent garanciát a minőségre vagy tartósságra nézve.
A kísérő termékdokumentáció biztonsági utasításait figyelembe kell venni.

**Maltesisch/ Malti**

## Dikjarazzjoni ta' Konformità tal-UE (skont l-Anness VII tad-Direttiva 94/9/KE, 2014/34/UE tal-KE)

Manifattur: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Il-prodott indikat fid-dikjarazzjoni msemmija hawn fuq huwa f'konformità mal-leġiżlazzjoni rilevanti tal-Unjoni dwar l-armonizzazzjoni:**

≤ 19.04.2016 94/9/KE:
Direttiva tal-parlament Ewropew u tal-Kunsill dwar l-approssimazzjoni tal-liġijiet ta'l-Istati Membri li jirrigwardaw tagħmir u sistemi ta' sigurtà għal użu skond ir-regolamenti f' żoni fejn hemm periklu ta' splużżjonijiet.

≥ 20.04.2016 2014/34/UE:
Direttiva tal-Parlament Ewropew u tal-Kunsill tas-26 ta' Frar 2014 dwar l-armonizzazzjoni tal-liġijiet tal-Istati Membri relattivament għal tagħmir u sistemi ta' protezzjoni maħsuba għall-użu f'atmosferi potenzjalment esplużivi. Ġurnal Uffiċjali tal-UE, L96 29.03.2014, p. 309-356

**Din id-dikjarazzjoni ta' konformità hija maħruġa bir-responsabilità unika tal-manifattur.**
**Nikkonfermaw il-konformità tal-prodott indikat hawn fuq mal-istandards:** ara paġna 1 u l-anness

Il-prodott indikat huwa maħsub biex jiġi mmuntat f'magna oħra għall-użu f'żoni ta' periklu taż-żona 21 f'konformità ma' EN 60079-10-2 u mad-Direttiva 1999/92/KE. Aktar informazzjoni dwar il-konformità ma' din id-Direttiva hija pprovduta fl-Anness li jifforma parti integrali ta' din id-dikjarazzjoni ta' konformità.

Din id-dikjarazzjoni tiċċertifika l-konformità mad-Direttiva/i indikat/i iżda ma tiggarantix il-kwalità tal-prodott jew kemm idum iservi.
L-istruzzjonijiet tas-sikurezza fid-dokumentazzjoni tal-prodott għandhom jiġu osservati.

SIEMENS

**Niederländisch / Nederlandse**

## EG/EU-conformiteitsverklaring (volgens bijlage VII van de EU-richtlijn 94/9/EG, 2014/34/EU)

Fabrikant: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Het omschreven product stemt overeen met de voorschriften van de volgende Europese richtlijn:**

≤ 19.4.2016 94/9/EG
Richtlijn van het Europees Parlement en de Raad inzake de onderlinge aanpassing van de wetgevingen van de lidstaten betreffende apparaten en beveiligingssystemen bedoeld voor gebruik op plaatsen waar ontploffingsgevaar kan heersen.

≥ 20.4.2016 2014/34/EU
Richtlijn van het Europees Parlement en de Raad d.d. 26 februari 2014 inzake de onderlinge aanpassing van de wetgevingen van de lidstaten betreffende apparaten en beveiligingssystemen bedoeld voor gebruik op plaatsen waar ontploffingsgevaar kan heersen. Publicatieblad van de EU, L96 29-03-2014, p. 309-356

**Deze conformiteitsverklaring wordt verstrekt onder volledige verantwoordelijkheid van de fabrikant.**
**Wij bevestigen de conformiteit van bovengenoemd product met de normen:** zie pagina 1 en de bijlage

Het omschreven product is bedoeld voor inbouw in een andere machine voor gebruik op explosiegevaarlijke plaatsen van zone 21 volgens EN 60079-10-2 en richtlijn 1999/92/EC. Meer informatie over de conformiteit met deze richtlijn vindt u in de bijlage die een integraal onderdeel vormt van deze conformiteitsverklaring

Deze verklaring bevestigt de conformiteit met de genoemde richtlijn(en), maar geeft geen garantie betreffende de gesteldheid of de houdbaarheid. De veiligheidsaanwijzingen in de meegeleverde productdocumentatie dienen te worden nageleefd

**Norwegisch / Norsk**

## EU-konformitetserklæring (i henhold til vedlegg VII til EUs direktiv 94/9/EU, 2014/34/EU)

Produsent: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Objektet for erklæringen overfor er i overensstemmelse med forskriftene i følgende EU-direktiv angående tilpasning:**

≤ 19.4.2016 94/9/EU:
Direktiv fra EU-parlamentet og rådet for tilpasning av medlemsstatenes rettslige forskrifter for utstyr og beskyttelsessystemer for forskriftemessig bruk i eksplosjonsfarlige områder.

≥ 20.4.2016 2014/34/EU:
Direktiv fra Europaparlamentet og Rådet for tilpasning av 26 februar 2014 av medlemsstatenes lover for utstyr og beskyttelsessystemer ment for bruk i eksplosjonsfarlige omgivelser. Official Journal of the EU, L96 29.03.2014, p 309-356

**Produsenten har det hele og fulle ansvar for utstedelsen av denne konformitetserklæringen.**
**Vi bekrefter at det ovennevnte produktet er i overensstemmelse med standardene** (se side 1 og vedlegg)

Det omtalte produktet er ment for innbygging i en annen maskin for bruk i eksplosjonsfarlige områder i sone 21 i henhold til EN 60079-10-2 og direktiv 1999/92/EF. Mer informasjon om produktets overensstemmelse med dette direktivet kan ses i vedlegget, som er en integrert del av denne konformitetserklæringen.

Denne erklæringen bekrefter at produktet er i overensstemmelse med det angitte direktivet (de angitte direktivene), men er ingen garanti for kvalitet eller levetid. Sikkerhetshenvisningene i den medfølgende produktdokumentasjonen må følges.

SIEMENS

**Polnisch / polszczyzna**

## Deklaracja zgodności UE (zgodnie z załącznikiem VII do Dyrektywy 94/9/WE, 2014/34/UE)

Producent: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße*
*D-94099 Ruhstorf a. d. Rott*

**Przedmiot deklaracji opisany powyżej jest zgodny z właściwymi przepisami zharmonizowanymi Unii Europejskiej:**

≤ 19.4.2016 94/9/WE:
Dyrektywa Parlamentu Europejskiego i Rady ds. Harmonizacji Przepisów Prawnych Państw Członkowskich dla Urządzeń i Systemów Ochronnych w celu ich użytkowania zgodnego z przeznaczeniem w obszarach zagrożonych wybuchami.

≥ 20.4.2016 2014/34/UE:
Dyrektywą Parlamentu Europejskiego i Rady z dnia 26 lutego 2014 w sprawie harmonizacji ustawodawstw państw członkowskich odnoszących się do urządzeń i systemów ochronnych przeznaczonych do użytku w atmosferze potencjalnie wybuchowej. Dz. U. UE, L96 29.03.2014, str. 309-356

**Niniejsza deklaracja zgodności wydawana jest na wyłączną odpowiedzialność producenta. Potwierdzamy zgodność produktu wskazanego powyżej z następującymi normami:** patrz strona 1 oraz załącznik

Wskazany produkt przeznaczony jest do instalacji w innej maszynie przeznaczonej do użytkowania w obszarach niebezpiecznych strefy 21 zgodnie z normą EN 60079-10-2 oraz Dyrektywą 1999/92/WE. Dalsze informacje dotyczące zgodności z tą Dyrektywą podano w załączniku, który stanowi integralną część niniejszej deklaracji zgodności.

Niniejsza deklaracja stanowi zaświadczenie zgodności ze wskazanymi Dyrektywami, jednak nie implikuje żadnej gwarancji jakości lub trwałości. Należy przestrzegać instrukcji bezpieczeństwa zawartych w dokumentacji dołączonej do produktu.

**Portugiesisch / português**

## Declaração de conformidade CE/UE (segundo Anexo VII da Diretiva 94/9/CE, 2014/34/UE)

Fabricante: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**O produto acima especificado está em conformidade com a legislação de harmonização da União Europeia relevante:**

≤ 19.4.2016 94/9/CE:
Directiva do Parlamento Europeu e do Conselho relativa à aproximação das legislações dos Estados-Membros sobre aparelhos e sistemas de protecção destinados a serem utilizados em conformidade com as especificações em atmosferas potencialmente explosivas

≥ 20.4.2016 2014/34/UE:
Diretiva do Parlamento Europeu e do Conselho de 26 de fevereiro de 2014 relativa à harmonização das leis dos Estados-Membros sobre aparelhos e sistemas de proteção destinados a serem utilizados em atmosferas potencialmente explosivas. Jornal Oficial da UE, L96 29.03.2014, p. 309-356

**A presente declaração de conformidade é emitida sob a exclusiva responsabilidade do fabricante. Certificamos a conformidade do produto supracitado com as seguintes normas:** consulte a página 1 e anexo

O produto supracitado destina-se à instalação noutra máquina para a utilização em atmosferas potencialmente explosivas da zona 21 em conformidade com a Norma EN 60079-10-2 e Diretiva 1999/92/CE. Mais informação sobre a conformidade desta Diretiva encontra-se no anexo, que é parte integrante da presente declaração de conformidade.

A presente declaração atesta a conformidade com a(s) Diretiva(s) mencionada(s), no entanto, não constitui uma garantia de qualidade ou durabilidade. Respeitar as indicações de segurança da documentação do produto juntamente fornecida.

SIEMENS

**Russisch / русский язык**

## Декларация о соответствии стандартам ЕС (согласно приложению VII Директивы 94/9/EG, 2014/34/EU)

Производитель: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Описанный выше объект декларации отвечает требованиям соответствующего законодательства ЕС по гармонизации:**

≤ 19.4.2016 94/9/EG:
Директива Европейского Парламента и Совета по адаптации правовых предписаний стран-участниц на устройства и системы защиты, применяемые во взрывоопасных помещениях.

≥ 20.4.2016 2014/34/EU:
Директива Европейского парламента и Совета от 26 февраля 2014 по гармонизации законов стран ЕС об оборудовании и защитных системах, предназначенных для использования в потенциально взрывоопасной атмосфере. Официальный журнал ЕС, L96 29.03.2014, с. 309-356

**Эта декларация о соответствии выдана под исключительную ответственность производителя.**
**Подтверждаем соответствие вышеназванного изделия следующим стандартам:** см. с. 1 и приложение

Названное изделие предназначено для встраивания в другой механизм для применения во взрывоопасных помещениях зоны 21 согласно EN 60079-10-2 и Директиве 1999/92/EG. Дополнительную информацию о соответствии этой Директиве см. в приложении, которое является неотъемлемой частью данной декларации о соответствии.

Данная декларация подтверждает соответствие названным Директивам, но не является гарантией качества или долговечности.
Необходимо соблюдать указания по технике безопасности в документации из комплекта поставки изделия.

**Slowakisch / slovenský jazyk**

## Prehlásenie o zhode s normami EÚ (v súlade s prílohou VII Smernice 94/9/ES, 2014/34/EÚ)

Výrobca: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Vyššie popísaný predmet prehlásenia je v súlade s príslušnými harmonizačnými právnymi predpismi Únie:**

≤ 19.4.2016 94/9/ES:
Smernica Európskeho parlamentu a Rady o zosúladení zákonných požiadaviek členských štátov týkajúcich sa prístrojov a ochranných systémov, ktoré sú určené na použitie v rámci stanovených predpisov v prostrediach s nebezpečím výbuchu.

≥ 20.4.2016 2014/34/EÚ:
Smernica Európskeho parlamentu a Rady 2014/34/EÚ z 26. februára 2014 o harmonizácii právnych predpisov členských štátov týkajúcich sa zariadení a ochranných systémov určených na použitie v potenciálne výbušnej atmosfére. Úradný vestník EÚ, L96 29.03.2014, s. 309-356

**Toto prehlásenie o zhode sa vydáva na výhradnú zodpovednosť výrobcu**
**Potvrdzujeme zhodu horeuvedeného výrobku s normami:** pozri strana 1 a príloha

Uvedený výrobok je určený na zabudovanie do iného stroja pre použitie v prostredí s nebezpečenstvom výbuchu v zóne 21 v súlade s EN 60079-10-2 a smernicou 1999/92/ES. Ďalšie informácie o súlade s touto smernicou sú uvedené v prílohe, ktorá je neoddeliteľnou súčasťou tohto prehlásenia o zhode.

Toto prehlásenie osvedčuje zhodu s uvedenými smernicami, neznamená však záruku vlastností alebo trvanlivosti.
Dodržiavajte bezpečnostné pokyny podľa dodanej dokumentácie k výrobku.

SIEMENS

**Slowenisch / slovenščina**

## ES/EU izjava o skladnosti **(skladno z dodatkom VII Direktive 94/9/ES, 2014/34/EU)**

Izdelovalec: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Predmet izjave, ki je opisan zgoraj, je skladen z ustrezno usklajevalno zakonodajo unije:**

≤ 19.4.2016 94/9/ES:
Smernice Evropskega parlametna in sveta za zakonsko prilagajanje predpisov držav članic za naprave in varovalne sisteme.V eksplozijsko ogroženih področjih velja uporaba ustreznih določil.

≥ 20.4.2016 2014/34/EU:
Direktiva Evropskega Parlamenta in Sveta z dne 26. februarja 2014 o usklajevanju zakonov držav članic, ki se navezujejo na opremo in zaščitne sisteme, namenjene za uporabo v potencialno eksplozivnih ozračjih.
Uradni list EU, L96 29.03.2014, str. 309-356

**Ta izjava o skladnosti je izdana na izključno odgovornost izdelovalca.**
**Potrjujemo skladnost izdelka, ki je imenovan zgoraj, s standardi:** glejte stran 1 in dodatek

Navedeni izdelek je namenjen za namestitev v drug stroj, ki se uporablja v nevarnih območjih cone 21 v skladu s standardom EN 60079-10-2 in Direktivo 1999/92/ES. Nadaljnje informacije o skladnosti s to direktivo so v dodatku, ki je sestavni del te izjave o skladnosti.

Ta izjava je potrdilo skladnosti z navedenimi direktivami, vendar ne predstavlja jamstva za kakovost ali rok uporabnosti.
Upoštevajte varnostna navodila iz spremne dokumentacije izdelka.

**Finnisch / suomi**

## EU-vaatimustenmukaisuusvakuutus **(EY-direktiivin 94/9/EY, 2014/34/EU liitteen VII mukaan)**

Valmistaja: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Edellä kuvattu vakuutuksen kohde on unionin sovellettavan yhdenmukaistamislainsäädännön mukainen:**

≤ 19.4.2016 94/9/EY
Euroopan Parlamentin ja Neuvoston direktiivi räjähdysvaarallisissa tiloissa käytettäväksi tarkoitettuja laitteita ja suojajärjestelmiä koskevan jäsenvaltioiden lainsäädännön lähentämisestä..

≥ 20.4.2016 2014/34/EU
Euroopan parlamentin ja neuvoston direktiivi 2014/34/EU, annettu 26. päivänä helmikuuta 2014, räjähdysvaarallisissa tiloissa käytettäviksi tarkoitettuja laitteita ja suojajärjestelmiä koskevan jäsenvaltioiden lainsäädännön yhdenmukaistamisesta. EU:n virallinen lehti, L96 29.03.2014, s. 309-356

**Vastuu tämän vaatimustenmukaisuusvakuutuksen laadinnasta on yksinomaan valmistajalla.**
**Vakuutamme, että edellä mainittu tuote vastaa seuraavia standardeja:** ks. sivu 1 ja liite

Mainittu tuote on tarkoitettu asennettavaksi toiseen koneeseen, jota käytetään tilaluokan 21 vaarallisissa tiloissa standardin EN 60079-10-2 ja direktiivin 1999/92/EY mukaisesti. Lisätietoja tämän direktiivin vaatimusten täyttymisestä on liitteessä, joka on olennainen osa tätä vaatimustenmukaisuusvakuutusta.

Tämä vakuutus todistaa yhdenmukaisuuden mainittujen direktiivien kanssa, mutta se ei anna takuuta ominaisuuksista tai kestävyydestä.
Tuotteen mukana toimitettavan dokumentaation turvallisuusohjeita on noudatettava.

SIEMENS

**Schwedisch / svenska**

## EG/EU-försäkran om överensstämmelse **(enligt bilaga VII till EG-direktiv 94/9/EG, 2014/34/EU)**

Tillverkare: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Den märkta produkten stämmer överens med föreskrifterna i följande europeiska direktiv:**

≤ 19.4.2016 94/9/EG:
Direktiv från det europeiska parlamentet och rådet för anpassning av medlemsstaternas rättsliga föreskrifter angående apparater och skyddssystem för användning inom bestämda områden med explosionsrisk.

≥ 20.4.2016 2014/34/EU:
Direktiv från det europeiska parlamentet och rådet från den 26 februari 2014 för anpassning av medlemsstaternas rättsliga föreskrifter angående apparater och skyddssystem för användning inom bestämda områden med explosionsrisk. Officiell EU-handling, L96 29.03.2014, s. 309-356

**Denna försäkran om överensstämmelse är endast utfärdad under tillverkarens ansvar.**
**Vi bekräftar att produkten som anges ovan överensstämmer med normerna:** se sida 1 och bilagan

Den märkta produkten är avsedd att byggas in i en annan maskin för användning i områden med explosionsrisk i zon 21 i enlighet med EN 60079-10-2 och direktiv 1999/92/EC. Ytterligare information om överensstämmelsen till detta direktiv finns i bilagan, som är en integrerad del i denna försäkran om överensstämmelse.

Denna förklaring garanterar överensstämmelse med nämnda standarder, men gäller inte som garanti av något slag.
Beakta säkerhetsanvisningarna i den medföljande produktdokumentationen

**Rumänisch / România**

## Declaraţie de conformitate CE/UE **(în conformitate cu anexa VII a Directivei CE 94/9/CE, 2014/34/UE)**

Producător: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Obiectul declaraţiei descrise mai sus este conform cu legislaţia armonizată relevantă a Uniunii:**

bis ≤ 19.4.2016 94/9/CE:
Directiva Parlamentului European şi a Consiliului cu privire la uniformizarea legislaţiei statelor membre pentru aparate şi sisteme de protecţie cu privire la utilizarea conformă cu scopul de fabricaţie în zone cu pericol de explozie.

ab ≥ 20.4.2016 2014/34/UE:
Directiva Parlamentului European şi a Consiliului din 26 februarie 2014 privind armonizarea legislaţiilor statelor membre referitoare la echipamentele şi sistemele de protecţie destinate utilizării în atmosfere potenţial explozive. Jurnalul Oficial al UE, L96 29.03.2014, p. 309-356

**Această declaraţie de conformitate este emisă pe responsabilitatea unică a producătorului.**
**Confirmăm conformitatea produsului indicat mai sus cu standardele:** consultaţi pagina 1 şi anexa

Produsul indicat este destinat instalării într-o altă maşină prevăzută pentru utilizarea în spaţii periculoase din zona 21 în conformitate cu EN 60079-10-2 şi Directiva 1999/92/CE. Mai multe informaţii privind conformitatea cu această directivă sunt prevăzute în anexă, care constituie o parte integrantă a acestei declaraţii de conformitate.

Această declaraţie atestă conformitatea cu directiva sau directivele menţionate, însă nu implică o garanţie a calităţii sau durabilităţii.
Se vor respecta instrucţiunile de siguranţă din documentaţia care însoţeşte produsul.

SIEMENS

**Bulgarisch / български език**

## ЕС Декларация за съответствие (съгласно приложение VII на Директива на ЕС 94/9/ЕО, 2014/34/ЕС)

Производител: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Обозначеният продукт съответства на предписанията на следната хармонизирана европейска директива:**

≤ 19.4.2016 94/9/ЕО:
Директива на Европейския парламент и съвет за правно уеднаквяване на нормативните актове на държавите членки за уреди и защитни системи за употреба съгласно предназначението във взривоопасни области.

≥ 20.4.2016 2014/34/ЕС:
Директива на Европейския парламент и на Съвета от 26 февруари 2014 за хармонизиране на законодателствата на държавите членки относно съоръженията и системите за защита, предназначени за използване в потенциално експлозивна атмосфера. Официален вестник на ЕС, L96 29.03.2014, стр. 309-356

**Тази декларация е изготвена на собствена отговорност на производителя.**
**Ние потвърждаваме съответствието на гореспоменатия продукт със стандартите:** виж страница 1 и Приложението

Обозначеният продукт е предназначен за вграждане в друга машина за използване в опасни области от зона 21 в съответствие с EN 60079-10-2 и Директива 1999/92/ЕС. Допълнителна информация за съответствието с настоящата директива е дадена в приложението, което е неразделна част от тази декларация за съответствие.

Тази декларация удостоверява съответствието с посочените директива (и), но не е гаранция за качество или трайност.
Да се спазват указанията за безопасност от придружаващата продукта документация.

**Kroatisch / hrvatski jezik**

## Izjava o usklađenosti EU-a (u skladu s Prilogom VII Direktive EZ-a 94/9/EZ, 2014/34/EU)

Proizvođač: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Predmet gore opisane izjave je usklađenost s relevantnim harmoniziranim zakonima Unije:**

≤ 19.4.2016 94/9/EZ:
Direktiva Europskog parlamenta i Vijeća o usklađivanju zakonodavstava država članica u odnosu na opremu i zaštitne sustave namijenjene za uporabu u potencijalno eksplozivnim atmosferama.

ab ≥ 20.4.2016 2014/34/EU:
Direktiva Europskog parlamenta i Vijeća od 26. veljače 2014. o harmonizaciji zakona zemalja članica u pogledu opreme i zaštitnih sustava namijenjenih uporabi u potencijalno eksplozivnim atmosferama. Službeni list EU-a, L96 29.03.2014., str. 309.-356.

**Ova izjava o usklađenosti izdaje se na vlastitu odgovornost proizvođača.**
**Potvrđujemo usklađenost gore navedenog proizvoda s normama:** vidi stranicu 1. i prilog

Navedeni proizvod namijenjen je ugradnji u drugi stroj za uporabu u opasnim područjima zone 21 u skladu s normom EN 60079-10-2 i Direktivom 1999/92/EZ. Dodatne informacije o usklađenosti s ovom Direktivom navedene su u prilogu koji je sastavni dio ove izjave o usklađenosti.

Ova je izjava potvrda o usklađenosti s navedenim Direktivama, ali ne znači jamstvo kvalitete ili trajnosti.
Morate se pridržavati sigurnosnih uputa u pripadajućoj dokumentaciji o proizvodu.

SIEMENS

## Anhang zur EG/EU-Konformitätserklärung / Annex to EC/EU Declaration of Conformity

*Nr. /No. A5E35855445A*

Die Drittstellenzertifikate wurden ausgestellt von den folgenden notifizierten Stellen /
The Third-Party Certificates were issued by the following notified bodies:

| Gerät Equipment | | EG/EU-Baumuster-prüfbescheinigung | Notifizierte Stelle |
|---|---|---|---|
| Typ type | Alternativier Typ alternative type | EC/EU-Type Examination Certificate | Notified Body |
| A***-071**-*** E***-071**-*** | 1PS*07*-*****-**** | BVS 11 ATEX E 006 | NB 0158 2) |
| | | BVS 14 ATEX E 101 | NB 0158 2) |
| D***-071**-** | 1PS*07*-*****-**** 1MD*07*-*****-**** | BVS 11 ATEX E 053 X | NB 0158 2) |
| | | BVS 13 ATEX E 129 X | NB 0158 2) |
| A***-080**-*** E***-080**-*** | 1PS*08*-*****-**** | BVS 11 ATEX E 014 | NB 0158 2) |
| | | BVS 14 ATEX E 092 | NB 0158 2) |
| D***-080**-** | 1PS*08*-*****-**** 1MD*08*-*****-**** | BVS 11 ATEX E 027 X | NB 0158 2) |
| | | BVS 13 ATEX E 128 X | NB 0158 2) |
| A***-090**-*** E***-090**-*** | 1PS*09*-*****-**** | BVS 11 ATEX E 092 | NB 0158 2) |
| | | BVS 14 ATEX E 089 | NB 0158 2) |
| D***-090**-** | 1PS*09*-*****-**** 1MD*09*-*****-**** | BVS 11 ATEX E 015 X | NB 0158 2) |
| | | BVS 13 ATEX E 098 X | NB 0158 2) |
| A***-100**-*** E***-100**-*** | 1PS*10-*****-**** | BVS 11 ATEX E 105 | NB 0158 2) |
| | | BVS 14 ATEX E 079 | NB 0158 2) |
| D***-100**-** | 1PS*10*-*****-**** 1MD*10*-*****-**** | BVS 10 ATEX E 155 X | NB 0158 2) |
| | | BVS 13 ATEX E 127 X | NB 0158 2) |
| A***-112**-*** E***-112**-*** | 1PS*11*-*****-**** | BVS 11 ATEX E 112 | NB 0158 2) |
| | | BVS 14 ATEX E 070 | NB 0158 2) |
| D***-112**-** | 1PS*11*-*****-**** 1MD*11*-*****-**** | BVS 11 ATEX E 159 X | NB 0158 2) |
| | | BVS 13 ATEX E 126 X | NB 0158 2) |
| A***-132**-*** E***-132**-*** | 1PS*13*-*****-**** | BVS 11 ATEX E 118 | NB 0158 2) |
| | | BVS 14 ATEX E 053 | NB 0158 2) |
| D***-132**-** | 1PS*13*-*****-**** 1MD*13*-*****-**** | BVS 10 ATEX E 123 X | NB 0158 2) |
| | | BVS 13 ATEX E 099 X | NB 0158 2) |
| A***-160**-*** E***-160**-*** | 1PS*16*-*****-**** | BVS 11 ATEX E 126 | NB 0158 2) |
| | | BVS 13 ATEX E 086 | NB 0158 2) |
| D***-160**-** | 1PS*16*-*****-**** 1MD*16*-*****-**** | BVS 11 ATEX E 012 X | NB 0158 2) |
| | | BVS 13 ATEX E 019 X | NB 0158 2) |
| A***-180**-*** E***-180**-*** | 1PS*18*-*****-**** | BVS 11 ATEX E 010 | NB 0158 2) |
| | | BVS 13 ATEX E 077 | NB 0158 2) |
| D***-180**-** | 1PS*18*-*****-**** 1MD*18*-*****-**** | BVS 11 ATEX E 047 X | NB 0158 2) |
| | | BVS 13 ATEX E 017 X | NB 0158 2) |
| A***-200**-*** E***-200**-*** | 1PS*20*-*****-**** | BVS 11 ATEX E 005 | NB 0158 2) |
| | | BVS 13 ATEX E 056 | NB 0158 2) |
| D***-200**-** | 1PS*20*-*****-**** 1MD*20*-*****-**** | BVS 11 ATEX E 020 X | NB 0158 2) |
| | | BVS 13 ATEX E 012 X | NB 0158 2) |
| A***-225**-*** E***-225**-*** | 1PS*22*-*****-**** | BVS 11 ATEX E 017 | NB 0158 2) |
| | | BVS 13 ATEX E 095 | NB 0158 2) |
| D***-225**-** | 1PS*22*-*****-**** 1MD*22*-*****-**** | BVS 11 ATEX E 046 X | NB 0158 2) |
| | | BVS 12 ATEX E 103 X | NB 0158 2) |
| A***-250**-*** E***-250**-*** | 1PS*25*-*****-**** | BVS 11 ATEX E 034 | NB 0158 2) |
| | | BVS 12 ATEX E 109 | NB 0158 2) |

SIEMENS

| Gerät Equipment | | EG/EU-Baumuster-prüfbescheinigung | Notifizierte Stelle |
|---|---|---|---|
| Typ type | Alternativier Typ alternative type | EC/EU-Type Examination Certificate | Notified Body |
| D***-250**-** | 1PS*25*-*****-****<br>1MD*25*-*****-**** | BVS 11 ATEX E 030 X | NB 0158 [2] |
| | | BVS 11 ATEX E 045 X | NB 0158 [2] |
| A***-280**-***<br>E***-280**-*** | 1PS*28*-*****-**** | BVS 11 ATEX E 125 | NB 0158 [2] |
| | | BVS 12 ATEX E 113 | NB 0158 [2] |
| D***-280**-** | 1PS*28*-*****-****<br>1MD*28*-*****-**** | BVS 11 ATEX E 051 X | NB 0158 [2] |
| | | BVS 12 ATEX E 029 X | NB 0158 [2] |
| A***-315**-***<br>E***-315**-*** | 1PS*31*-*****-**** | BVS 11 ATEX E 123 | NB 0158 [2] |
| D***-315**-*** | 1PS*31*-*****-****<br>1MD*31*-*****-**** | BVS 11 ATEX E 025 X | NB 0158 [2] |
| | | BVS 12 ATEX E 051 X | NB 0158 [2] |
| A***-355**-***<br>E***-355**-*** | 1PS*35*-*****-****<br>1MV*35*-*****-**** | BVS 10 ATEX E 077 | NB 0158 [2] |
| D***-355**-** | 1PS*35*-*****-****<br>1MD*35*-*****-****<br>1MV*35*-*****-**** | BVS 11 ATEX E 003 X | NB 0158 [2] |
| | | BVS 13 ATEX E 120 X | NB 0158 [2] |
| A***-400**-***<br>E***-400**-*** | 1PS*40*-*****-****<br>1MV*40*-*****-**** | BVS 10 ATEX E 078 | NB 0158 [2] |
| D***-400**-*** | 1PS*40*-*****-****<br>1MV*40*-*****-**** | BVS 11 ATEX E 162 X | NB 0158 [2] |
| D***-450**-*** | 1PS*45*-*****-****<br>1MV*45*-*****-**** | BVS 11 ATEX E 084 X | NB 0158 [2] |
| A***-500**-***<br>E***-500**-*** | 1PS*50*-*****-****<br>1MV*50*-*****-**** | BVS 13 ATEX E 114 | NB 0158 [2] |

Die Bewertung des Qualitätssicherungssystems erfolgte durch die Benannte Stelle: NB 0102 [1]
*The assessment of our quality system was done by the following notified body:*

[1] NB 0102: PTB, Physikalisch-Technische Bundesanstalt,
Bundesallee 100, D-38116 Braunschweig

[2] NB 0158 DEKRA EXAM GmbH,
Dinnendahlstraße 9, D-44809 Bochum

Ende des Anhangs / End of Annex

SIEMENS

## EG/EU-Konformitätserklärung

(nach Anhang VIII der EG-Richtlinie 94/9/EG bzw. EU-Richtlinie 2014/34/EU)

*Nr. A5E35855418A*

| | |
|---|---|
| Hersteller: | Siemens Aktiengesellschaft<br>Division Process Industries and Drives, Large Drives, PD LD |
| Anschrift: | Hans-Loher-Straße 32<br>D-94099 Ruhstorf a. d. Rott |
| Produktbezeichnung: | Drehstrom-Asynchronmaschinen<br>Zündschutzart Geräte-Staubexplosionsschutz durch Gehäuse „tc"<br>Typ: A . . . 071 . . . bis / to A . . . 800 . . .<br>E . . . 071 . . . bis / to E . . . 800 . . .<br>D . . . 071 . . . bis / to D . . . 910 . . .<br>Alternative Typbezeichnung:<br>1PS.07. - . . . . - . . . . bis / to 1PS.91. - . . . . - . . . .<br>1MD.07. - . . . . - . . . . bis / to 1MD.35. - . . . . - . . . .<br>1MV.35. - . . . . - . . . . bis / to 1MV.91. - . . . . - . . . .<br>Gerätegruppe II<br>Gerätekategorie 3D |

**Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union:**

**bis 19.04.2016 EG-Richtlinie 94/9/EG:**
Richtlinie des Europäischen Parlaments und des Rates vom 23 März 1994 zur Angleichung der Rechtsvorschriften der Mitgliedsstaaten für Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen

**ab 20.04.2016 EU-Richtlinie 2014/34/EU:**
Richtlinie des Europäischen Parlaments und des Rates vom 26. Februar 2014 zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten für Geräte und Schutzsysteme zur bestimmungs-gemäßen Verwendung in explosionsgefährdeten Bereichen. Amtsblatt der EU L96, 29.03.2014, S. 309-356

**Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.**

**Wir bestätigen die Konformität des oben genannten Produktes mit den Normen:**

| Referenznummer | Ausgabedatum | Referenznummer | Ausgabedatum |
|---|---|---|---|
| *EN 60079-0+A11* | *2013* | *EN 60079-31* | *2014* |

Das bezeichnete Produkt ist bestimmt zum Einbau in eine andere Maschine für den Einsatz in explosionsgefährdeten Bereichen der Zone 22 nach EN 60079-10-2 und Richtlinie 1999/92/EG.

Siemens Aktiengesellschaft
Ruhstorf, den 08.04.2016

i.V. .....
Fritz Winkler Unterschrift/Signature
Werksleiter/Head of Manufacturing

i.V. .....
Dr. Hartmut Vogel Unterschrift/Signature
Produktsicherheitsbeauftragter / Product safety officer

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinie(n), ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie.
Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.

Siemens Aktiengesellschaft: Vorsitzender des Aufsichtsrats: Gerhard Cromme; Vorstand: Joe Kaeser, Vorsitzender; Roland Busch, Lisa Davis, Klaus Helmrich, Janina Kugel, Siegfried Russwurm, Ralf P. Thomas; Sitz der Gesellschaft: Berlin und München, Deutschland; Registergericht: Berlin Charlottenburg, HRB 12300, München, HRB 6684; WEEE-Reg.-Nr. DE 23691322

SIEMENS

**Englisch / English**

## EC/EU Declaration of Conformity (according to Annex VII of EC Directive 94/9/EC, 2014/34/EU)

Manufacturer: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**The object of the declaration described above is in conformity with the relevant Union harmonization legislation:**

≤ 19.04.2016 94/9/EC:
Directive of the European Parliament and the Council on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres.

≥ 20.04.2016 2014/34/EU:
Directive of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres. Official Journal of the EU, L96 29.03.2014, p. 309-356

**This declaration of conformity is issued under the sole responsibility of the manufacturer.**
**We confirm conformity of the product indicated above with the standards:** see page 1 and annex

The product indicated is intended to be installed in another machine for use in hazardous areas of zone 22 in accordance with EN 60079-10-2 and Directive 1999/92/EC.

This declaration is an attestation of conformity with the indicated Directive(s) but does not imply any guarantee of quality or durability.
The safety instructions of the accompanying product documentation shall be observed.

**Tschechisch / český jazyk**

## Prohlášení o shodě s předpisy ES/EU (podle dodatku VII směrnice EU 94/9/ES, 2014/34/EU)

Výrobce: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Výše uvedený výrobek se shoduje s předpisy následujících harmonizovaných předpisů Evropské unie:**

≤ 19.04.2016 94/9/ES:
směrnice Evropského parlamentu a Rady o sjednocení legislativy členských států EU týkající se přístrojů a ochranných systémů za účelem jejich správného používání v oblastech ohrožených explozí.

≥ 20.04.2016 2014/34/EU:
směrnice Evropského parlamentu a Rady ze dne 26. února 2014 o harmonizaci legislativy členských států EU týkající se zařízení a ochranných systémů za účelem jejich správného používání v oblastech ohrožených nebezpečím výbuchu. Oficiální tisk EU, L96 29.03.204, str. 309-356.

**Veškerou odpovědnost za vystavení tohoto Prohlášení o shodě nese výrobce produktu.**
**Potvrzujeme tímto, že se výše uvedený výrobek shoduje s normami:** viz strana 1 a příloha

Uvedený výrobek je určen pro instalaci do jiných strojů pro použití v nebezpečných oblastech zóny 22 podle normy EN 60079-10-2 a směrnice 1999/92/EG.

Toto prohlášení potvrzuje shodu s uvedenými směrnicemi, neznamená však záruku jakosti nebo trvanlivosti.
Musí být dodržovány bezpečnostní pokyny uvedené v doprovodné dokumentaci tohoto produktu.

SIEMENS

**Dänisch / dansk**

## EF-overensstemmelseserklæring (i henhold til bilag VII I EF-direktivet 94/9/EF, 2014/34/EU)

Fabrikant: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Genstanden for erklæringen, som beskrevet ovenfor, er i overensstemmelse med den relevante EU-harmoniseringslovgivning:**

≤ 19.04.2016 94/9/EF:
Directive of the European Parliament and the Council on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres.

≥ 20.04.2016 2014/34/EU:
Europa-Parlamentets og Rådets direktiv 2014/34/EU af 26. februar 2014 om harmonisering af medlemsstaternes love om materiel og sikringssystemer til anvendelse i en potentielt eksplosiv atmosfære.
Den Europæiske Unions Tidende EU, L96 29.03.2014, s. 309-356

**Denne overensstemmelseserklæring udstedes på fabrikantens ansvar.**
**Vi bekræfter det ovennævnte produkts overensstemmelse med standarderne:** se side 1 og bilag

Det beskrevne produkt er bestemt til indbygning i en anden maskine til indsats i eksplosive områder i zone 22 i overensstemmelse med EN 60079-10-2 og direktiv 1999/92/EF.

Denne erklæring gælder som dokumentation for overensstemmelse med de nævnte direktiver men er dog ingen beskaffenheds- eller holdbarhedsgaranti. Sikkerhedshenvisningerne i den medleverede produktinformation skal overholdes.

**Estnisch / eesti keel**

## ELi vastavusdeklaratsioon (vastavalt EÜ direktiivi 94/9/EÜ, 2014/34/EL lisale VII)

Tootja: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Deklaratsiooni ülalkirjeldatud ese on kooskõlas Liidu asjaomase harmoniseeritud seadusandlusega:**

≤ 19.04.2016 94/9/EÜ:
Euroopa Parlamendi ja Nõukogu direktiiv plahvatusohtlikus keskkonnas kasutatavaid seadmeid ja kaitsesüsteeme käsitlevate liikmesriikide õigusaktide ühtlustamise kohta.

≥ 20.04.2016 2014/34/EL:
Euroopa Parlamendi ja nõukogu direktiiv 26. veebruarist 2014 liikmesriikide seaduste harmoniseerimise kohta varustuse ja kaitsesüsteemide kohta, mis on ette nähtud kasutamiseks potentsiaalselt plahvatusohtlikes atmosfäärides. ELi ametlikud aktid, L96 29.03.2014, lk 309-356

**Käesolev vastavusdeklaratsioon on välja antud tootja ainuisikulisel vastutusel.**
**Me deklareerime ülalnimetatud toote vastavust järgmistele standarditele:** vt lk 1 ja lisa

Mainitud toode on ette nähtud teise masinasse installeerimiseks kasutuseesmärgiga EN 60079-10-2 ja direktiivi 1999/92/EÜ kohase tsooni 22 ohtlikes piirkondades.

Käesolev deklaratsioon on vastavuse tõend mainitud direktiivi(de)ga, kuid ei hõlma mitte mingisugust garantiid ega vastupidavuskvaliteeti. Tuleb järgida tootega kaasapandud dokumentatsioonis esitatud ohutusjuhiseid.

SIEMENS

**Griechisch / ελληνική γλώσσα**

## Δήλωση συμμόρφωσης ΕΚ/ΕΕ (σύμφωνα με το Παράρτημα VII της Κοινοτικής Οδηγίας 94/9/ΕΚ, 2014/34/ΕΕ)

Κατασκευαστής: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Το αντικείμενο της δήλωσης που περιγράφεται παραπάνω συμμορφώνεται με τη σχετική Κοινοτική νομοθεσία περί εναρμόνισης:**

≤ 19.04.2016 94/9/ΕΚ:
Οδηγία του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου για την προσέγγιση των νομικών διατάξεων των χωρών μελών που αφορούν εξοπλισμό και συστήματα προστασίας που προορίζονται για χρήση σε περιοχές με κίνδυνο έκρηξης.

≥ 20.04.2016 2014/34/ΕΕ:
Οδηγία της 26ης Φεβρουαρίου 2014 του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου για την για την εναρμόνιση των νομοθεσιών των κρατών μελών σχετικά με τις συσκευές και τα συστήματα προστασίας που προορίζονται για χρήση σε εκρήξιμες ατμόσφαιρες. Επίσημη Εφημερίδα της ΕΕ, L96 29.03.2014, σελ. 309-356

**Την αποκλειστική ευθύνη για την έκδοση την παρούσας Δήλωσης συμμόρφωσης την φέρει ο κατασκευαστής**
**Με το παρόν πιστοποιούμε τη συμμόρφωση του ανωτέρω αναφερόμενου προϊόντος με τα πρότυπα:** βλ. σελίδα 1 και παράρτημα

Το αναφερόμενο προϊόν προορίζεται για εγκατάσταση σε άλλη μηχανή για χρήση σε περιοχές με κίνδυνο έκρηξης της ζώνης 22 σύμφωνα με το EN 60079-10-2 και την Οδηγία 1999/92/ΕΚ.

Αυτή η δήλωση πιστοποιεί τη συμμόρφωση με την αναφερόμενη Οδηγία, ωστόσο δεν αποτελεί εγγύηση καλής κατάστασης ή διάρκειας ζωής. Πρέπει να τηρούνται οι οδηγίες ασφαλείας της συνοδευτικής τεκμηρίωσης προϊόντος

**Spanisch / español**

## Declaración CE/UE de conformidad (según el Anexo VII de la Directiva 94/9/CE, 2014/34/UE)

Fabricante: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**El producto arriba mencionado es conforme a la legislación de armonización de la Unión pertinente:**

≤ 19.4.2016 94/9/CE:
Directiva del Parlamento Europeo y del Consejo para la armonización de las leyes de los estados miembros relativa a aparatos y sistemas de protección para uso conforme en atmósferas potencialmente explosivas.

≥ 20.04.2016 2014/34/UE:
Directiva del Parlamento Europeo y del Consejo de 26 de febrero de 2014 sobre la armonización de las legislaciones de los Estados miembros en materia de aparatos y sistemas de protección para uso en atmósferas potencialmente explosivas. Diario Oficial de la Unión Europea EU, L96 29.03.2014, págs. 309-356

**La presente declaración de conformidad se expide bajo la exclusiva responsabilidad del fabricante.**
**Confirmamos que el producto arriba mencionado cumple las siguientes normas:** véase la página 1 y el anexo

El producto mencionado está previsto para su montaje en otra máquina prevista para su instalación en atmósferas potencialmente explosivas de la zona 22 conforme a EN 60079-10-2 y la directiva 1999/92/CE.

Esta declaración certifica el cumplimiento de las directivas mencionadas pero no garantiza las características ni la durabilidad.
Deben observarse las consignas de seguridad de la documentación de producto suministrada.

SIEMENS

**Französisch / français**

## Déclaration CE de conformité (selon annexe VII de la directive 94/9/CE, 2014/34/UE)

Constructeur : *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Le produit sus-mentionné est conforme à la législation communautaire d'harmonisation pertinente:**

≤ 19.04.2016 94/9/CE:
Directive du parlement européen et du conseil concernant le rapprochement des législations des États membres pour les appareils et les systèmes de protection destinés à être utilisés en atmosphères explosibles.

≥ 20.04.2016 2014/34/UE:
Directive du Parlement européen et du Conseil du 26 février 2014 relative à l'harmonisation des législations des États membres concernant les appareils et les systèmes de protection destinés à être utilisés en atmosphères explosibles. Journal officiel de l'UE L96, 29.03.2014, p. 309-356

**Le fabricant est seul responsable de l'établissement de cette déclaration de conformité.**
**Nous certifions la conformité du produit susmentionné avec les normes suivantes :** voir page 1 et annexe

Le produit désigné est destiné à l'implantation dans une autre machine pour l'utilisation en atmosphère explosible, zone 22 selon la norme EN 60079-10-2 et la directive 1999/92/EG.

Ce certificat atteste la conformité aux directives mentionnées, mais ne tient pas lieu de garantie de qualité ni de longévité.
Respecter les consignes de sécurité figurant dans la documentation produit fournie.

**Italienisch / italiano**

## Dichiarazione di conformità CE/UE (secondo l'allegato VII della Direttiva Europea 94/9/CE, 2014/34/UE)

Costruttore: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**L'oggetto della dichiarazione sopra descritto è conforme alle prescrizioni di armonizzazione pertinenti dell'Unione**

≤ 19.04.2016 94/9/CE:
Direttiva del Parlamento Europeo e del Consiglio concernente il ravvicinamento delle legislazioni degli Stati membri relativa agli apparecchi e sistemi di protezione destinati ad essere utilizzati in atmosfera potenzialmente esplosiva.

≥ 20.04.2016 2014/34/UE:
Direttiva del Parlamento Europeo e del Consiglio del 26 Febbraio 2014 concernente l'armonizzazione delle legislazioni degli Stati membri relative agli apparecchi e sistemi di protezione destinati a essere utilizzati in atmosfera potenzialmente esplosiva. Gazzetta Ufficiale della UE, L96 29.03.2014, p. 309-356

**Questa dichiarazione di conformità è rilasciata sotto la sola responsabilità del costruttore.**
**Confermiamo la conformità del prodotto sopra designato alle norme:** vedi pagina 1 e allegato

Il prodotto designato è destinato a essere installato in un'altra macchina per l'impiego in aree a rischio di esplosione della Zona 22 secondo la norma EN 60079-10-2 e la Direttiva 1999/92/CE.

Questa dichiarazione certifica la conformità con le Direttive citate, non costituisce però alcuna garanzia di caratteristiche di prodotto oppure di durata. Le avvertenze di sicurezza riportate nella documentazione di prodotto allegata devono essere rispettate.

SIEMENS

**Lettisch / latviešu**

## EK/ES atbilstības deklarācija **(saskaņā ar EK Direktīvas 94/9/EK, 2014/34/ES pielikumu VII)**

Ražotājs: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf*

**Iepriekš aprakstītās deklarācijas objekts atbilst attiecīgajiem Savienības saskaņotajiem tiesību aktiem:**

≤ 19.04.2016 94/9/EK:
Eiropas parlamenta un padomes direktīva, saskaņā ar dalībvalstu likumiem, attiecībā uz ieceri izmantot ierīces un aizsardzības sistēmas iespējami sprādzienbīstamā vidē.

≥ 20.04.2016 2014/34/ES:
Eiropas Parlamenta un Padomes 2014. gada 26. februāra Direktīva par dalībvalstu tiesību aktu saskaņošanu attiecībā uz iekārtām un aizsardzības sistēmām, kas paredzētas lietošanai sprādzienbīstamā vidē. ES Oficiālais vēstnesis, L96 29.03.2014, 309.-356. lpp.

**Par šīs atbilstības deklarācijas sastādīšanu ir atbildīgs vienīgi ražotājs.**
**Mēs apstiprinām iepriekš minētā izstrādājuma atbilstību standartiem:** skatiet 1. lappusi un pielikumu

Norādītais izstrādājums ir paredzēts uzstādīšanai citā iekārtā un izmantošanai zonas 22 bīstamajās vietās saskaņā ar standartu EN 60079-10-2 un Direktīvu 1999/92/EK.

Ar šo deklarāciju tiek apliecināta atbilstība norādītajai(-ām) direktīvai(-ām), bet tā neietver nekādu kvalitātes vai ilgmūžīguma garantiju.
Jāievēro pievienotās izstrādājuma dokumentācijas drošības instrukcijas.

**Litauisch / lietuvių**

## EB/ES atitikties deklaracija **(pagal EB direktyvos 94/9/EB, 2014/34/ES VII priedą)**

Gamintojas: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Pirmiau aprašytas deklaruojamas dalykas atitinka atitinkamus Sąjungos derinamuosius teisės aktus:**

≤ 19.4.2016 94/9/EB:
Europos Parlamento ir Tarybos direktyva dėl valstybių narių įstatymų, susijusių su potencialiai sprogioje aplinkoje naudojama įranga ir apsaugos sistemomis, suderinimo

≥ 20.04.2016 2014/34/ES
2014 m. vasario 26 d. Europos Parlamento ir Tarybos direktyva dėl valstybių narių įstatymų, susijusių su potencialiai sprogioje aplinkoje naudojama įranga ir apsaugos sistemomis, suderinimo
Europos Sąjungos oficialusis leidinys, L96 2014.03.29, p. 309–356

**Ši atitikties deklaracija išduota tik gamintojo atsakomybe.**
**Tvirtiname, kad pirmiau nurodytas gaminys atitinka standartus:** žr. 1 p. ir priedą

Nurodytas produktas skirtas montuoti į kitą mašiną ir naudoti pavojingoje 22 zonos aplinkoje pagal EN 60079-10-2 ir direktyvą 1999/92/EB.

Ši deklaracija patvirtina atitikimą nurodytai (-oms) direktyvai (-oms), tačiau negarantuoja kokybės ar atsparumo.

Būtina laikytis pridedamoje gaminio dokumentacijoje pateiktų saugos nurodymų.

SIEMENS

**Ungarisch / magyar nyelv**

## EK/EU megfelelőségi nyilatkozat **(a 94/9/EK, 2014/34/EU irányelv VII függeléke szerint)**

Gyártó: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**A fentiekben leírt nyilatkozat tárgya megfelel a vonatkozó uniós harmonizálási jogszabálynak:**

≤ 19.04.2016 94/9/EK:
Az Európai Parlament és az Európa Tanács irányelve a tagállamok készülékekre és védelmi rendszerekre vonatkozó jogi előírásainak harmonizálásáról a robbanásveszélyes területeken való rendeltetésszerű használathoz.

≥ 20.4.2016 2014/34/EU:
Az Európai Parlament és a Tanács irányelve (2014. február 26.) a robbanásveszélyes légkörben való használatra szánt felszerelésekre és védelmi rendszerekre vonatkozó tagállami jogszabályok harmonizációjáról. Az Európai Unió Hivatalos Lapja, L96 2014.03.29., 309-356 o.

**Ez a megfelelőségi nyilatkozat a gyártó kizárólagos felelőssége alatt lett kiadva.**
**Megerősítjük a fent jelezett termékek szabványok szerinti megfelelőségét:** lásd 1. oldal és melléklet

A jelzett termék 22 veszélyes zónaterületeken használatos másik gépbe lesz beszerelve az EN 60079-10-2 és az 1999/92/EK irányelv szerint.

Ez a nyilatkozat tanúsítja a jelzett irányelv(ek) szerinti megfelelőséget, de nem jelent garanciát a minőségre vagy tartósságra nézve.
A kísérő termékdokumentáció biztonsági utasításait figyelembe kell venni.

**Maltesisch/ Malti**

## Dikjarazzjoni ta' Konformità tal-UE **(skont l-Anness VII tad-Direttiva 94/9/KE, 2014/34/UE tal-KE)**

Manifattur: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Il-prodott indikat fid-dikjarazzjoni msemmija hawn fuq huwa f'konformità mal-leġiżlazzjoni rilevanti tal-Unjoni dwar l-armonizzazzjoni:**

≤ 19.04.2016 94/9/KE:
Direttiva tal-parlament Ewropew u tal-Kunsill dwar l-approssimazzjoni tal-liġijiet ta'l-Istati Membri li jirrigwardaw tagħmir u sistemi ta' sigurtà għal użu skond ir-regolamenti f' żoni fejn hemm periklu ta' splużżjonijiet.

≥ 20.04.2016 2014/34/UE:
Direttiva tal-Parlament Ewropew u tal-Kunsill tas-26 ta' Frar 2014 dwar l-armonizzazzjoni tal-liġijiet tal-Istati Membri relattivament għal tagħmir u sistemi ta' protezzjoni maħsuba għall-użu f'atmosferi potenzjalment esplużivi. Ġurnal Uffiċjali tal-UE, L96 29.03.2014, p. 309-356

**Din id-dikjarazzjoni ta' konformità hija maħruġa bir-responsabilità unika tal-manifattur.**
**Nikkonfermaw il-konformità tal-prodott indikat hawn fuq mal-istandards:** ara paġna 1 u l-anness

Il-prodott indikat huwa maħsub biex jiġi mmuntat f'magna oħra għall-użu f'żoni ta' periklu taż-żona 22 f'konformità ma' EN 60079-10-2 u mad-Direttiva 1999/92/KE.

Din id-dikjarazzjoni tiċċertifika l-konformità mad-Direttiva/i indikat/i iżda ma tiggarantix il-kwalità tal-prodott jew kemm idum iservi.
L-istruzzjonijiet tas-sikurezza fid-dokumentazzjoni tal-prodott għandhom jiġu osservati.

SIEMENS

**Niederländisch / Nederlandse**

## EG/EU-conformiteitsverklaring (volgens bijlage VII van de EU-richtlijn 94/9/EG, 2014/34/EU)

Fabrikant: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Het omschreven product stemt overeen met de voorschriften van de volgende Europese richtlijn:**

≤ 19.4.2016 94/9/EG
Richtlijn van het Europees Parlement en de Raad inzake de onderlinge aanpassing van de wetgevingen van de lidstaten betreffende apparaten en beveiligingssystemen bedoeld voor gebruik op plaatsen waar ontploffingsgevaar kan heersen.

≥ 20.4.2016 2014/34/EU
Richtlijn van het Europees Parlement en de Raad d.d. 26 februari 2014 inzake de onderlinge aanpassing van de wetgevingen van de lidstaten betreffende apparaten en beveiligingssystemen bedoeld voor gebruik op plaatsen waar ontploffingsgevaar kan heersen. Publicatieblad van de EU, L96 29-03-2014, p. 309-356

**Deze conformiteitsverklaring wordt verstrekt onder volledige verantwoordelijkheid van de fabrikant.**
**Wij bevestigen de conformiteit van bovengenoemd product met de normen:** zie pagina 1 en de bijlage

Het omschreven product is bedoeld voor inbouw in een andere machine voor gebruik op explosiegevaarlijke plaatsen van zone 22 volgens EN 60079-10-2 en richtlijn 1999/92/EC.

Deze verklaring bevestigt de conformiteit met de genoemde richtlijn(en), maar geeft geen garantie betreffende de gesteldheid of de houdbaarheid. De veiligheidsaanwijzingen in de meegeleverde productdocumentatie dienen te worden nageleefd

**Norwegisch / Norsk**

## EU-konformitetserklæring (i henhold til vedlegg VII til EUs direktiv 94/9/EU, 2014/34/EU)

Produsent: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Objektet for erklæringen overfor er i overensstemmelse med forskriftene i følgende EU-direktiv angående tilpasning:**

≤ 19.4.2016 94/9/EU:
Direktiv fra EU-parlamentet og rådet for tilpasning av medlemsstatenes rettslige forskrifter for utstyr og beskyttelsessystemer for forskriftemessig bruk i eksplosjonsfarlige områder.

≥ 20.4.2016 2014/34/EU:
Direktiv fra Europaparlamentet og Rådet for tilpasning av 26 februar 2014 av medlemsstatenes lover for utstyr og beskyttelsessystemer ment for bruk i eksplosjonsfarlige omgivelser. Official Journal of the EU, L96 29.03.2014, p 309-356

**Produsenten har det hele og fulle ansvar for utstedelsen av denne konformitetserklæringen.**
**Vi bekrefter at det ovennevnte produktet er i overensstemmelse med standardene** (se side 1 og vedlegg)

Det omtalte produktet er ment for innbygging i en annen maskin for bruk i eksplosjonsfarlige områder i sone 22 i henhold til EN 60079-10-2 og direktiv 1999/92/EF.

Denne erklæringen bekrefter at produktet er i overensstemmelse med det angitte direktivet (de angitte direktivene), men er ingen garanti for kvalitet eller levetid. Sikkerhetshenvisningene i den medfølgende produktdokumentasjonen må følges.

SIEMENS

**Polnisch / polszczyzna**

## Deklaracja zgodności UE (zgodnie z załącznikiem VII do Dyrektywy 94/9/WE, 2014/34/UE)

Producent: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße*
*D-94099 Ruhstorf a. d. Rott*

**Przedmiot deklaracji opisany powyżej jest zgodny z właściwymi przepisami zharmonizowanymi Unii Europejskiej:**

≤ 19.4.2016 94/9/WE:
Dyrektywa Parlamentu Europejskiego i Rady ds. Harmonizacji Przepisów Prawnych Państw Członkowskich dla Urządzeń i Systemów Ochronnych w celu ich użytkowania zgodnego z przeznaczeniem w obszarach zagrożonych wybuchami.

≥ 20.4.2016 2014/34/UE:
Dyrektywą Parlamentu Europejskiego i Rady z dnia 26 lutego 2014 w sprawie harmonizacji ustawodawstw państw członkowskich odnoszących się do urządzeń i systemów ochronnych przeznaczonych do użytku w atmosferze potencjalnie wybuchowej. Dz. U. UE, L96 29.03.2014, str. 309-356

**Niniejsza deklaracja zgodności wydawana jest na wyłączną odpowiedzialność producenta. Potwierdzamy zgodność produktu wskazanego powyżej z następującymi normami:** patrz strona 1 oraz załącznik

Wskazany produkt przeznaczony jest do instalacji w innej maszynie przeznaczonej do użytkowania w obszarach niebezpiecznych strefy 22 zgodnie z normą EN 60079-10-2 oraz Dyrektywą 1999/92/WE.

Niniejsza deklaracja stanowi zaświadczenie zgodności ze wskazanymi Dyrektywami, jednak nie implikuje żadnej gwarancji jakości lub trwałości. Należy przestrzegać instrukcji bezpieczeństwa zawartych w dokumentacji dołączonej do produktu.

**Portugiesisch / português**

## Declaração de conformidade CE/UE (segundo Anexo VII da Diretiva 94/9/CE, 2014/34/UE)

Fabricante: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**O produto acima especificado está em conformidade com a legislação de harmonização da União Europeia relevante:**

≤ 19.4.2016 94/9/CE:
Directiva do Parlamento Europeu e do Conselho relativa à aproximação das legislações dos Estados-Membros sobre aparelhos e sistemas de protecção destinados a serem utilizados em conformidade com as especificações em atmosferas potencialmente explosivas

≥ 20.4.2016 2014/34/UE:
Diretiva do Parlamento Europeu e do Conselho de 26 de fevereiro de 2014 relativa à harmonização das leis dos Estados-Membros sobre aparelhos e sistemas de proteção destinados a serem utilizados em atmosferas potencialmente explosivas. Jornal Oficial da UE, L96 29.03.2014, p. 309-356

**A presente declaração de conformidade é emitida sob a exclusiva responsabilidade do fabricante. Certificamos a conformidade do produto supracitado com as seguintes normas:** consulte a página 1 e anexo

O produto supracitado destina-se à instalação noutra máquina para a utilização em atmosferas potencialmente explosivas da zona 22 em conformidade com a Norma EN 60079-10-2 e Diretiva 1999/92/CE.

A presente declaração atesta a conformidade com a(s) Diretiva(s) mencionada(s), no entanto, não constitui uma garantia de qualidade ou durabilidade. Respeitar as indicações de segurança da documentação do produto juntamente fornecida.

SIEMENS

**Russisch / русский язык**

## Декларация о соответствии стандартам ЕС (согласно приложению VII Директивы 94/9/EG, 2014/34/EU)

Производитель: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Описанный выше объект декларации отвечает требованиям соответствующего законодательства ЕС по гармонизации:**

≤ 19.4.2016 94/9/EG:
Директива Европейского Парламента и Совета по адаптации правовых предписаний стран-участниц на устройства и системы защиты, применяемые во взрывоопасных помещениях.

≥ 20.4.2016 2014/34/EU:
Директива Европейского парламента и Совета от 26 февраля 2014 по гармонизации законов стран ЕС об оборудовании и защитных системах, предназначенных для использования в потенциально взрывоопасной атмосфере. Официальный журнал ЕС, L96 29.03.2014, с. 309-356

**Эта декларация о соответствии выдана под исключительную ответственность производителя.**
**Подтверждаем соответствие вышеназванного изделия следующим стандартам:** см. с. 1 и приложение

Названное изделие предназначено для встраивания в другой механизм для применения во взрывоопасных помещениях зоны 22 согласно EN 60079-10-2 и Директиве 1999/92/EG.

Данная декларация подтверждает соответствие названным Директивам, но не является гарантией качества или долговечности.
Необходимо соблюдать указания по технике безопасности в документации из комплекта поставки изделия.

**Slowakisch / slovenský jazyk**

## Prehlásenie o zhode s normami EÚ (v súlade s prílohou VII Smernice 94/9/ES, 2014/34/EÚ)

Výrobca: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Vyššie popísaný predmet prehlásenia je v súlade s príslušnými harmonizačnými právnymi predpismi Únie:**

≤ 19.4.2016 94/9/ES:
Smernica Európskeho parlamentu a Rady o zosúladení zákonných požiadaviek členských štátov týkajúcich sa prístrojov a ochranných systémov, ktoré sú určené na použitie v rámci stanovených predpisov v prostrediach s nebezpečím výbuchu.

≥ 20.4.2016 2014/34/EÚ:
Smernica Európskeho parlamentu a Rady 2014/34/EÚ z 26. februára 2014 o harmonizácii právnych predpisov členských štátov týkajúcich sa zariadení a ochranných systémov určených na použitie v potenciálne výbušnej atmosfére. Úradný vestník EÚ, L96 29.03.2014, s. 309-356

**Toto prehlásenie o zhode sa vydáva na výhradnú zodpovednosť výrobcu**
**Potvrdzujeme zhodu horeuvedeného výrobku s normami:** pozri strana 1 a príloha

Uvedený výrobok je určený na zabudovanie do iného stroja pre použitie v prostredí s nebezpečenstvom výbuchu v zóne 22 v súlade s EN 60079-10-2 a smernicou 1999/92/ES.

Toto prehlásenie osvedčuje zhodu s uvedenými smernicami, neznamená však záruku vlastností alebo trvanlivosti.
Dodržiavajte bezpečnostné pokyny podľa dodanej dokumentácie k výrobku.

SIEMENS

**Slowenisch / slovenščina**

## ES/EU izjava o skladnosti (skladno z dodatkom VII Direktive 94/9/ES, 2014/34/EU)

Izdelovalec: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Predmet izjave, ki je opisan zgoraj, je skladen z ustrezno usklajevalno zakonodajo unije:**

≤ 19.4.2016 94/9/ES:
Smernice Evropskega parlametna in sveta za zakonsko prilagajanje predpisov držav članic za naprave in varovalne sisteme.V eksplozijsko ogroženih področjih velja uporaba ustreznih določil.

≥ 20.4.2016 2014/34/EU:
Direktiva Evropskega Parlamenta in Sveta z dne 26. februarja 2014 o usklajevanju zakonov držav članic, ki se navezujejo na opremo in zaščitne sisteme, namenjene za uporabo v potencialno eksplozivnih ozračjih.
Uradni list EU, L96 29.03.2014, str. 309-356

**Ta izjava o skladnosti je izdana na izključno odgovornost izdelovalca.**
**Potrjujemo skladnost izdelka, ki je imenovan zgoraj, s standardi:** glejte stran 1 in dodatek

Navedeni izdelek je namenjen za namestitev v drug stroj, ki se uporablja v nevarnih območjih cone 22 v skladu s standardom EN 60079-10-2 in Direktivo 1999/92/ES.

Ta izjava je potrdilo skladnosti z navedenimi direktivami, vendar ne predstavlja jamstva za kakovost ali rok uporabnosti.
Upoštevajte varnostna navodila iz spremne dokumentacije izdelka.

**Finnisch / suomi**

## EU-vaatimustenmukaisuusvakuutus (EY-direktiivin 94/9/EY, 2014/34/EU liitteen VII mukaan)

Valmistaja: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Edellä kuvattu vakuutuksen kohde on unionin sovellettavan yhdenmukaistamislainsäädännön mukainen:**

≤ 19.4.2016 94/9/EY
Euroopan Parlamentin ja Neuvoston direktiivi räjähdysvaarallisissa tiloissa käytettäväksi tarkoitettuja laitteita ja suojajärjestelmiä koskevan jäsenvaltioiden lainsäädännön lähentämisestä..

≥ 20.4.2016 2014/34/EU
Euroopan parlamentin ja neuvoston direktiivi 2014/34/EU, annettu 26. päivänä helmikuuta 2014, räjähdysvaarallisissa tiloissa käytettäviksi tarkoitettuja laitteita ja suojajärjestelmiä koskevan jäsenvaltioiden lainsäädännön yhdenmukaistamisesta. EU:n virallinen lehti, L96 29.03.2014, s. 309-356

**Vastuu tämän vaatimustenmukaisuusvakuutuksen laadinnasta on yksinomaan valmistajalla.**
**Vakuutamme, että edellä mainittu tuote vastaa seuraavia standardeja:** ks. sivu 1 ja liite

Mainittu tuote on tarkoitettu asennettavaksi toiseen koneeseen, jota käytetään tilaluokan 22 vaarallisissa tiloissa standardin EN 60079-10-2 ja direktiivin 1999/92/EY mukaisesti.

Tämä vakuutus todistaa yhdenmukaisuuden mainittujen direktiivien kanssa, mutta se ei anna takuuta ominaisuuksista tai kestävyydestä.
Tuotteen mukana toimitettavan dokumentaation turvallisuusohjeita on noudatettava.

SIEMENS

**Schwedisch / svenska**

## EG/EU-försäkran om överensstämmelse **(enligt bilaga VII till EG-direktiv 94/9/EG, 2014/34/EU)**

Tillverkare: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Den märkta produkten stämmer överens med föreskrifterna i följande europeiska direktiv:**

≤ 19.4.2016 94/9/EG:
Direktiv från det europeiska parlamentet och rådet för anpassning av medlemsstaternas rättsliga föreskrifter angående apparater och skyddssystem för användning inom bestämda områden med explosionsrisk.

≥ 20.4.2016 2014/34/EU:
Direktiv från det europeiska parlamentet och rådet från den 26 februari 2014 för anpassning av medlemsstaternas rättsliga föreskrifter angående apparater och skyddssystem för användning inom bestämda områden med explosionsrisk. Officiell EU-handling, L96 29.03.2014, s. 309-356

**Denna försäkran om överensstämmelse är endast utfärdad under tillverkarens ansvar.**
**Vi bekräftar att produkten som anges ovan överensstämmer med normerna:** se sida 1 och bilagan

Den märkta produkten är avsedd att byggas in i en annan maskin för användning i områden med explosionsrisk i zon 22 i enlighet med EN 60079-10-2 och direktiv 1999/92/EC.

Denna förklaring garanterar överensstämmelse med nämnda standarder, men gäller inte som garanti av något slag.
Beakta säkerhetsanvisningarna i den medföljande produktdokumentationen

**Rumänisch / România**

## Declaraţie de conformitate CE/UE **(în conformitate cu anexa VII a Directivei CE 94/9/CE, 2014/34/UE)**

Producător: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Obiectul declaraţiei descrise mai sus este conform cu legislaţia armonizată relevantă a Uniunii:**

bis ≤ 19.4.2016 94/9/CE:
Directiva Parlamentului European şi a Consiliului cu privire la uniformizarea legislaţiei statelor membre pentru aparate şi sisteme de protecţie cu privire la utilizarea conformă cu scopul de fabricaţie în zone cu pericol de explozie.

ab ≥ 20.4.2016 2014/34/UE:
Directiva Parlamentului European şi a Consiliului din 26 februarie 2014 privind armonizarea legislaţiilor statelor membre referitoare la echipamentele şi sistemele de protecţie destinate utilizării în atmosfere potenţial explozive. Jurnalul Oficial al UE, L96 29.03.2014, p. 309-356

**Această declaraţie de conformitate este emisă pe responsabilitatea unică a producătorului.**
**Confirmăm conformitatea produsului indicat mai sus cu standardele:** consultaţi pagina 1 şi anexa

Produsul indicat este destinat instalării într-o altă maşină prevăzută pentru utilizarea în spaţii periculoase din zona 22 în conformitate cu EN 60079-10-2 şi Directiva 1999/92/CE.

Această declaraţie atestă conformitatea cu directiva sau directivele menţionate, însă nu implică o garanţie a calităţii sau durabilităţii.
Se vor respecta instrucţiunile de siguranţă din documentaţia care însoţeşte produsul.

SIEMENS

**Bulgarisch / български език**

## ЕС Декларация за съответствие (съгласно приложение VII на Директива на ЕС 94/9/ЕО, 2014/34/ЕС)

Производител: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Обозначеният продукт съответства на предписанията на следната хармонизирана европейска директива:**

≤ 19.4.2016 94/9/ЕО:
Директива на Европейския парламент и съвет за правно уеднаквяване на нормативните актове на държавите членки за уреди и защитни системи за употреба съгласно предназначението във взривоопасни области.

≥ 20.4.2016 2014/34/ЕС:
Директива на Европейския парламент и на Съвета от 26 февруари 2014 за хармонизиране на законодателствата на държавите членки относно съоръженията и системите за защита, предназначени за използване в потенциално експлозивна атмосфера. Официален вестник на ЕС, L96 29.03.2014, стр. 309-356

**Тази декларация е изготвена на собствена отговорност на производителя.**
**Ние потвърждаваме съответствието на гореспоменатия продукт със стандартите:** виж страница 1 и Приложението

Обозначеният продукт е предназначен за вграждане в друга машина за използване в опасни области от зона 22 в съответствие с EN 60079-10-2 и Директива 1999/92/ЕС.

Тази декларация удостоверява съответствието с посочените директива (и), но не е гаранция за качество или трайност.
Да се спазват указанията за безопасност от придружаващата продукта документация.

**Kroatisch / hrvatski jezik**

## Izjava o usklađenosti EU-a (u skladu s Prilogom VII Direktive EZ-a 94/9/EZ, 2014/34/EU)

Proizvođač: *Siemens Aktiengesellschaft*
*Hans-Loher-Straße 32*
*D-94099 Ruhstorf a. d. Rott*

**Predmet gore opisane izjave je usklađenost s relevantnim harmoniziranim zakonima Unije:**

≤ 19.4.2016 94/9/EZ:
Direktiva Europskog parlamenta i Vijeća o usklađivanju zakonodavstava država članica u odnosu na opremu i zaštitne sustave namijenjene za uporabu u potencijalno eksplozivnim atmosferama.

ab ≥ 20.4.2016 2014/34/EU:
Direktiva Europskog parlamenta i Vijeća od 26. veljače 2014. o harmonizaciji zakona zemalja članica u pogledu opreme i zaštitnih sustava namijenjenih uporabi u potencijalno eksplozivnim atmosferama. Službeni list EU-a, L96 29.03.2014., str. 309.-356.

**Ova izjava o usklađenosti izdaje se na vlastitu odgovornost proizvođača.**
**Potvrđujemo usklađenost gore navedenog proizvoda s normama:** vidi stranicu 1. i prilog

Navedeni proizvod namijenjen je ugradnji u drugi stroj za uporabu u opasnim područjima zone 22 u skladu s normom EN 60079-10-2 i Direktivom 1999/92/EZ.

Ova je izjava potvrda o usklađenosti s navedenim Direktivama, ali ne znači jamstvo kvalitete ili trajnosti.
Morate se pridržavati sigurnosnih uputa u pripadajućoj dokumentaciji o proizvodu.

# C.3 Data

| R-Nr. 20000i | Siemens Aktiengesellschaft<br>Hans-Loher-Str. 32<br>D-94099 Ruhstorf | SIEMENS |
|---|---|---|

**INVERTER SUPPLY OF EXPLOSION-PROTECTED THREE-PHASE LOW-VOLTAGE MOTORS OF FLAME-PROOF TYPE OF ENCLOSURE Ex d AND OF PROTECTION TYPE Ex ec FOR TEMPERATURE CLASSES T1 - T4**

To operate explosion-protected three-phase motors with inverters, the following preconditions must be met:

1. The output voltage of the inverter must be adjusted in such a way that in the frequency range up to the rated frequency of the motor an almost linear dependency between the (fundamental) voltage and the (fundamental) frequency is kept, i. e. the practically constant motor flux must be kept in accordance with the rated data.

   Inverter operation is only permitted if a corresponding rating plate for inverter operation is mounted on the motor.

2. $I_{dauer}$ is the value to which the inverter control limits the current in continuous duty.
   $I_{dauer}$ is to be adjusted to the continually permitted motor rated current as a maximum in accordance with the rating plate for inverter operation attached to the motor or in conformity with the value determined in the describing documents for inverter operation (R-No.).

3. $I_{kurzz}$ is the value to which the inverter control limits the current in case of short-time overload for a period of max. $I_{kurzz}$
   $I_{kurzz}$ must be set to 1.5 x $I_{dauer}$ as a maximum.

4. $I_{kurzz}$ is the period for which the inverter allows an exceeding of $I_{dauer}$
   $I_{kurzz}$ must be set to 60 sec. as a maximum.

5. The built-in temperature sensors (PTC thermistors) which must be suitable for sole protection are to be connected to a tripping device in accordance to with Directive RL 2014/34/EU with an EC-Type-Examination Certificate.

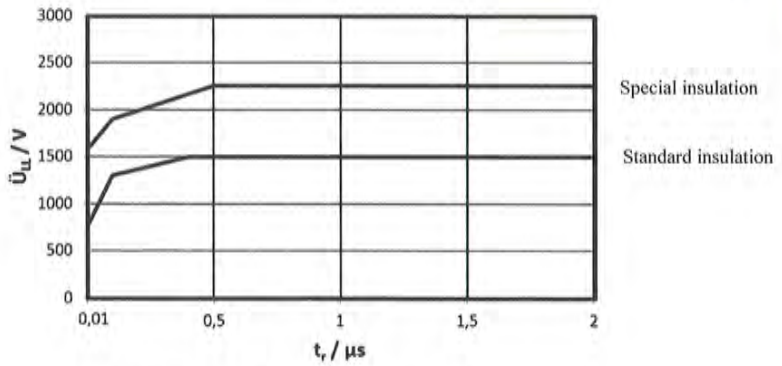
6. Voltage peaks (especially PWM inverters with long grid cable)
   a) The design of the terminal box concerning the creepage distances and clearances in air permits the inverter operation with voltage peaks ($\hat{U}_{LL}$ and $\hat{U}_{LE}$) up to $\hat{U}$ = 4600Vat terminal boxes of type Ex eb (formerly Ex e) and up to U=3000V at terminal boxes of type Ex ec (formerly Ex nA). Due to the requirements of explosion protection, it is not allowed to exceed these values.
   b) To avoid the formation of partial discharge with Ex ec (formerly Ex nA)-motors, depending on the type of insulation of the motor winding, the voltage at the motor terminals has to be limited to values below the characteristic curve of the chart "dielectric strength curve" (see below). This is recommended for Ex d motors, so that the lifetime of the winding is not delimited.

Ruhstorf, 2016-04-01

Siemens Aktiengesellschaft

i.V. i.A. MA
Dr. Klaus Neupert

i.A. Hofbauer
Karl Hofbauer




dielectric strength curve TU-IK 002- 02/08

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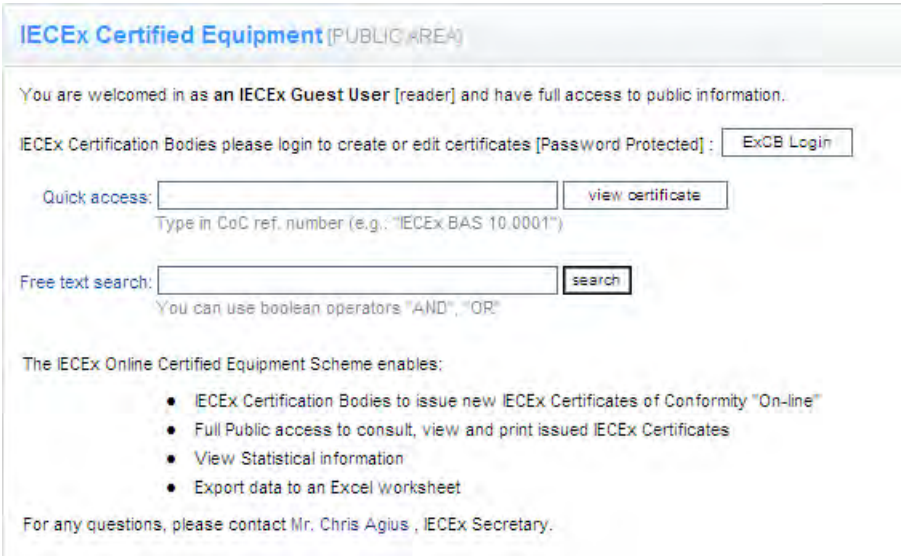
## C.4 IECEx certificate

If available, you can obtain the IECEx certificate on the Internet at the following address:

Http://iecex.iec.ch/iecex/iecexweb.nsf/home?openform (http://iecex.iec.ch/iecex/iecexweb.nsf/Home?OpenForm)




TheIECEx ID for the IECEx certificate can be found on the rating plate of the machine or on the extra plate for explosion protection.

1. Enter the IECEx ID in the "Quick access" field.
   You then have access to the certificate.
2. If you scroll down completely to the bottom of the page shown, you can open the certificate as a PDF file and download it.

# Index

## S



## T



## U



## V

AF EC-Declaration of Conformity (U161)
AE EC-Declaration of Conformity (U163)
AB R-Nr.20000i EN (U165)

Siemens AG
Process Industries and Drives
Postfach 48 48
90026 NÜRNBERG
GERMANY

www.siemens.com/drives