SIEMENS

Operating Manual

Three-phase servo motors
for potentially explosive areas

1FS6074 - 1FS6134

Edition October 2012

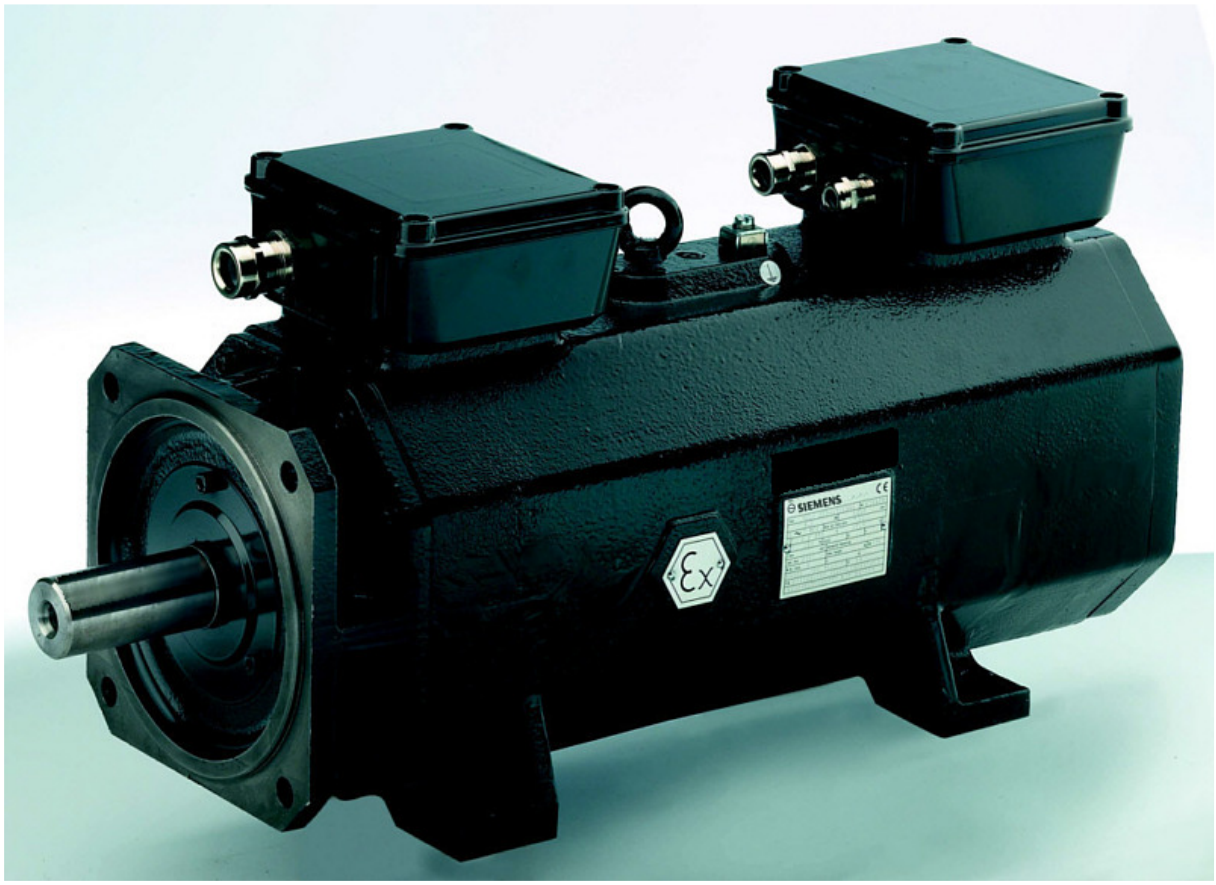


Table of contents

This operating manual contains information that you should observe in order to ensure your own personal safety, as well to prevent damage to equipment. Information relating to your personal safety are highlighted by a warning triangle. Information solely relating to damage to equipment do not have an accompanying triangle. They are shown as follows depending upon the degree of danger involved:

DANGER	
	**indicates that death, serious injury or substantial damage to equipment will occur if the appropriate precautionary measures are not taken.**

WARNING	
	**indicates that death, serious injury or substantial damage to equipment could occur if the appropriate precautionary measures are not taken.**

CAUTION	
	**together with a warning triangle indicates that slight injury can occur if the appropriate precautionary measures are not taken.**

CAUTION
without a warning triangle indicates that damage to equipment can occur if the appropriate precautionary measures are not taken.

ATTENTION
indicates that an undesirable event or condition may occur if the information is not observed.

Qualified personnel

The device may only be commissioned and operated by qualified personnel. Qualified personnel within the context of the safety instructions of this operating manual are persons who are authorised to commission, earth, and label devices, systems and circuits in accordance with the established safety standards.

Intended use

Please observe the following:
The device may only be used for the applications as stipulated in the catalogue and only in connection with devices and components that have been recommended or authorised by Siemens. This product can only be operated properly and safely provided that it is transported, stored, set-up and installed correctly and provided that it is operated carefully.

Disclaimer

We have checked the content of this manual. However, it is not possible to rule out deviations, meaning that we cannot provide any guarantee of full compliance. However, the data contained in this manual is reviewed regularly and any necessary corrections are included in subsequent editions. We welcome any suggestions for improvement.

Siemens AG
Industry Sector
Drive Technologies Division
Motion Control Systems
D-97616 Bad Neustadt an der Saale, Germany

1 General safety information

The three-phase servo motors correspond to the harmonized standards of the EN 60034-1*, EN 60204-1 and EN 60079-0* range
* with all relevant parts

The three-phase servo motors 1FS6 conform with the following European Directive: 94/9/EC Equipment and protective systems intended for use in potentially explosive atmospheres (ATEX)

Ensure that your end product complies with all currently valid legal regulations.
Observe the binding national, local and plant-specific regulations.

Three-phase servo motors are exclusively intended for installation into another machine/other machines.

These motors may not be commissioned until it has been established that the end product conforms to the valid directives.

All safety information must be observed for the transport, storage, assembly, disassembly and operation of the servo motors.

Failure to observe the information can lead to serious injuries or cause damage to property.

DANGER	
	**Disassembling motors is strictly forbidden.** **All repair and service work will be performed <u>exclusively</u> by the manufacturer.**

Thermal hazard

The surface temperature of the motors can reach up to 140 °C (284 °F).

Do not touch hot surfaces.

Temperature-sensitive components (electric lines, electronic components) may not rest upon hot surfaces.

An overheating of the motors may destroy the windings and bearings, thus demagnetising the permanent magnets.

Only operate the motors with an effective temperature control.

WARNING	
	**For operation, the installed temperature sensors (PTC DIN 44082) must be connected to an external and authorised trigger unit.**

Intended use
Observing all provisions of the operating manual forms part of intended use.

2 Product information

2.1. Product description

The motors are designed for operation in potentially explosive areas. They conform to ignition protection class II 2G Ex de IIC T3 Gb.
The engine compartment is located in a pressure-proof casing (Ex d) and the connection compartments (terminal boxes) are designed with increased safety (Ex e).
Motors belonging to the 1FS6 range are permanent magnet, three-phase synchronous motors (three-phase servo motors) for operation with motor-controlled pulse-controlled inverters in accordance with the sinusoidal current principle.

The motors are intended for driving and positioning machine tools and production machines as well as robots and handling devices.

2.2. Scope of delivery

The drive systems are individually assembled. Immediately check whether the scope of delivery corresponds to the consignment notes upon delivery. SIEMENS cannot accept any liability for faults reported at a later date.

Method of complaint:
- The supplier must be immediately notified of detectable transport damage.
- The responsible SIEMENS representative must be immediately notified of any detectable defects / incomplete delivery.

The operating manual is part of the scope of delivery and shall therefore be kept in an accessible place.

3 Technical data

3.1. Type plate

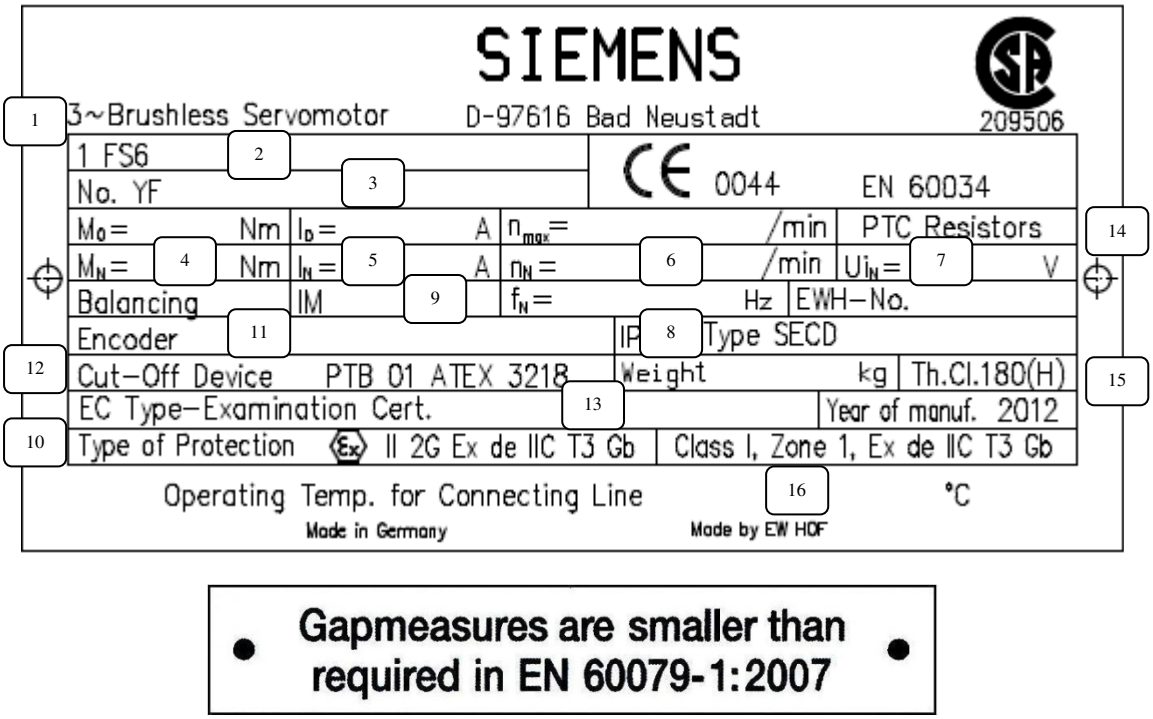


Fig. 1 Type plate

1	Motor type: Three-phase servo motor	9	IM construction
2	SIEMENS motor type / description	10	Ignition protection class
3	Iden. No., production number	11	Encoder type
4	Rated torque M_N[Nm]	12	Ex. certification of the PTC trigger device
5	Rated current I_N[A]	13	EC type examination certificate no.
6	Rated speed n_N[1/min]	14	Temperature sensor label
7	Rated voltage U_N[V] ***)**	15	Thermal class
8	Protection class	16	Temp. resistance of the conn. cable

***) CAUTION**
Warning against motor damage. The rated voltage as stated is the motor terminal voltage that is provided by the output side of the converter. **Connecting the motor directly to the three-phase network will destroy the motor.** Motors may only be driven using suitable converters as planned. Observe the correct phase sequence.

3.2. Characteristics

Design (EN 60034-7) for 1FS6074 / 1FS6096 for 1FS6115 / 1FS6134	 IM B5 (IM V1, IM V3) IM B35 (IM V15, IM V36)
Protection class (EN 60034-5)	IP64
Cooling (EN 60034-6)	Self-cooling
Terminal markings, direction of rotation (EN 60034-8)	
A-grade sound power level (EN 60034-9) for speed range up to 3000 min^{-1}	 < 70 dB(A)
Thermal motor protection (EN 60034-11)	Temperature sensor KTY84 in the stator winding and three PTCs connected in series for shut off
Shaft end (DIN 748-3; IEC 60072-1)	Cylindrical, without keyway Tolerance field k6
Concentricity, coaxiality, axial-run out (DIN 42955; IEC 60072-1)	Tolerance N
Vibration level (EN 60034-14)	Level A (up to rated speed)
Bearing	Anti-friction bearing with permanent grease lubrication (Lifetime lubrication) Fixed bearing on A-side
Bearing service life (guideline)	20000 h
Winding insulation (EN 60034-1)	Thermal class 180 (H)
Ambient temperatures	-20°C to +40°C Otherwise rated data is reduced up to 50°C: Reduction factor 0.92 up to 60°C: Reduction factor 0.82
Set-up height (EN 60034-1)	≤ 1000 m above sea level 2000 m: Reduction factor 0.94 2500 m: Reduction factor 0.9
Magnet material	Rare-earth material
Encoder system	Installed encoder - Speed recording - Rotor position recording - Indirect position recording

Options/expansions:

Protection class (EN 60034-5)	IP 65 incl. radial shaft seal
Fixture and fittings	- Planetary gearset
Encoder system	- Incremental encoder sin/cos 1 V_{pp} - Absolute encoder EnDat
Concentricity, coaxiality, axial-run out (DIN 42955; IEC 60072-1)	Tolerance R
Shaft end (DIN 748-3; IEC 60072-1)	Cylindrical with keyway and feather key Tolerance field k6 (Balancing with half feather key)

Further technical details, e.g. motor dimensions, can be found in the catalogue.

4 Set-up, assembly

4.1 Transport, storage

WARNING	
	**Danger during lifting and transporting procedures.** **Improper execution, unsuitable or defective devices and auxiliary equipment can cause injuries and/or damage to property.** **Lifting devices, industrial trucks and load suspension devices must correspond to the valid regulations.**

Use suitable load suspension devices for transport and assembly.

Use lifting lugs for the transport of the motors as intended by the manufacturer.

Load suspension devices according to the 98/37/EC Directive for machines, Appendix I.

The motors have a mass of up to 150 kg. For precise information, please refer to the catalogue, data sheet or rating plate.

Observe the country-specific regulations during transport.

Store in a dry, dust-free and low-vibration place (v_{eff} < 0.2 mms^{-1})
Interior space at room temperature (20°C)

4.2 Set-up

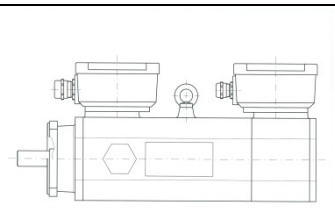
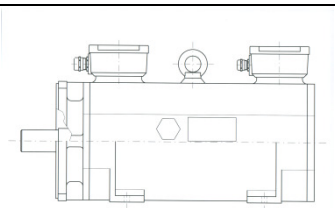
1FS6074 1FS6096	 B5	(IM V1, IM V3)
1FS6115 1FS6134	 B35	(IM V15, IM V36)

Fig. 2 Designs

- Observe the information contained on the rating plate as well as on the warning and information signs.
- Observe the permitted transverse forces (**see Appendix 1**).
- Check compliance with the technical data (e.g. temperatures, set-up height) at the assembly site (see 3.2).
- Thoroughly remove all anti-corrosion agents from the shaft end (use commercially available solvent).
- Ensure sufficient discharge of the dissipation heat.
  It is recommended to observe a clearance of 100 mm to adjacent parts on at least three sides.
- Observe an equal support of the flange, avoid distortion when tightening the fixing screws. Tighten crosswise.
Use hexagon socket head cap screws with a strength class of at least 8.8.
- In the event of vertical installation with the shaft end at the top, ensure that no fluid can penetrate into the upper bearing. Attach splash protection where necessary.
- Rotate the drive elements by hand. In the event of possible grinding noises, rectify the cause or consult the manufacturer.

Explosion protection preliminary test:

After examining all data in the technical standard documentation, it is advisable to examine the data in terms of the explosion protection standards e.g.

a) Gas group

Industry	Gas group	Gas type (examples)
Potentially explosive areas, excluding use in mines	IIA IIB IIC	Propane gas Ethylene gas Hydrogen / acetylene gas

b) Temperature classes

Temperature class	T1	T2	T3	T4	T5	T6
Maximum temperature °C	450	300	200	135	100	85
Max. temperature increase Surface K	155	155	155	90	55	40

It must be noted that the motors are classified and issued with a certificate according to their group. The respective group is derived from the ambient gas and the temperature class, calculated as a function of the ambient temperature of 40 °C.

Imitated vibrations, balances:

Motors with a keyway are balanced by the manufacturer with a half feather key.

The vibration behaviour of the system at the location is influenced by the output elements, mounting conditions, alignment, set-up and external vibrations. This may cause a change to the motor vibration values.

The imitated vibrations in the fitted state may not exceed accelerations of 5 g.

Output elements:

ATTENTION
Do not strike the shaft or bearing of the motors. **Do not exceed the permissible axial and radial forces on the shaft end according to the planning regulation.**

Only push on or pull off the output elements (e.g. coupler, gear wheel, belt pulley) using suitable equipment (Fig. 4).
- Use the tapped hole in the shaft end.
- Heat the output elements if necessary.
- Use a shim to protect the centring in the shaft end when pulling output elements off.
- If necessary, fully balance the motor with output elements according to ISO 1940.

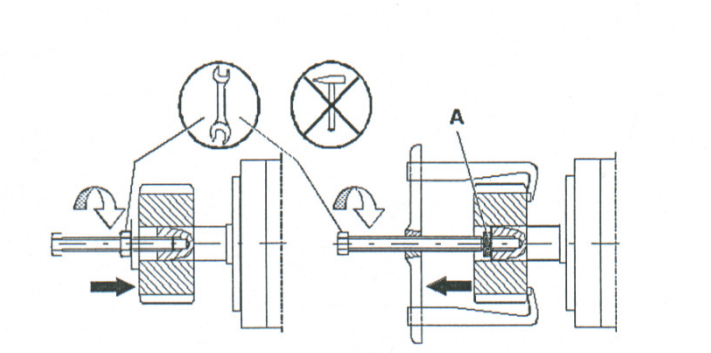


Fig. 3 Putting on and pulling off output elements
A Shim (protection of the centring in the shaft end)

5 Electrical connection

5.1 Important information

DANGER	
	**Electric shock hazard.** **Whilst the rotor is rotating, the motor terminals carry a voltage of approx. 300V.** **Electrical work may only be performed provided that the motor is stationary.** **Only deploy qualified specialist staff to carry out assembly work on the converters and plugs / terminal box.** **Observe the regulations for working in electrotechnical plants and for explosion protection.**

Safety rules for working in electrical plants according to EN 50110-1 (DIN VDE 0105-100):

- Only work provided that the equipment is not live.
- Isolate.
- Secure against restart.
- Determine that the equipment is not live.
- Earth and short-circuit.
- Cover or cordon off adjacent parts that are live.
- Release for work.

WARNING	
	**In accordance with explosion protection regulations, the grounding conductor in the terminal box and the earth terminal on the housing must be connected.**

Assembly requirements:

CAUTION
Warning against motor damage. **Connecting the motor directly to the three-phase network will destroy the motor.** **Motors may only be driven using suitable converters as planned.** **Observe the correct phase sequence.**

CAUTION	
	**Encoder systems and the temperature sensor are electrostatically endangered components.** **Do not touch the connections with hands or tools that could be electrostatically charged.**

The manufacturer of the plant / machine is responsible for proper installation according to EN 60079-14.

- Connection lines, cable bushes and screw connections with releases for potentially explosive areas belonging to Category 2G must be used.
- Observe the data on the rating plate (Chapter 3.1) and the information contained in the circuit diagrams (Fig. 4 and 5).
- Implement protection class IP67 according to EN 60529 on terminal boxes and cable bushes.
- Adjust connecting lines to meet the occurring voltages and current strength.
- Use flame retardant, flexible connecting lines with a sustained temperature resistance of 100 °C. The SIEMENS MOTION-CONNECT 6FX5002-5X and 6FX5002-2X power and signal lines fulfil these requirements.
- Lay connecting lines where they are protected against thermal overload, mechanical damage, corrosion and chemical effects (e.g. solvents).
- Avoid protruding line ends.
- Only operate provided that the temperature sensor (PTC according to DIN 44082 (EN60738)) installed in the motor is connected to an external and authorised trigger unit.

In case of loss of the original screw connections and bushings, only approved spare parts that have been issued with a certificate may be used. Electromagnetic interference is emitted if the motor is supplied via a converter. In order to prevent unauthorised electromagnetic interference, shielded power and signal lines must be used and the EMC instructions belonging to the converter manufacturer must be observed. The SIEMENS MOTION-CONNECT power and signal lines with the PVC / PUR outer casing fulfil these requirements.

Power connection:

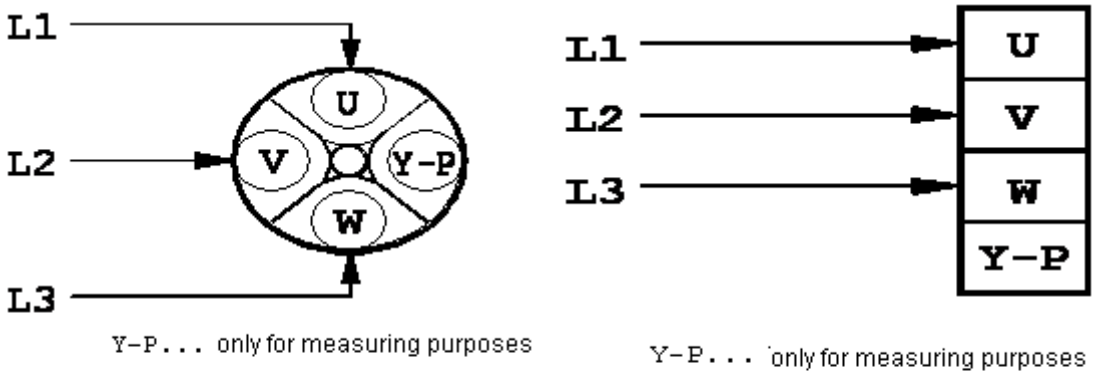


Fig. 4: **Terminal assignment of the power terminal box for: 1FS6074,1FS6096, 1FS6115, 1FS6134**

Signal connection:

CAUTION
The minimum cross-section of the terminals in the signal box is 0.5 mm². However, the standard signal line only has a cross-section of 0.14 mm² => Take suitable measures, e.g. use core end sleeves.

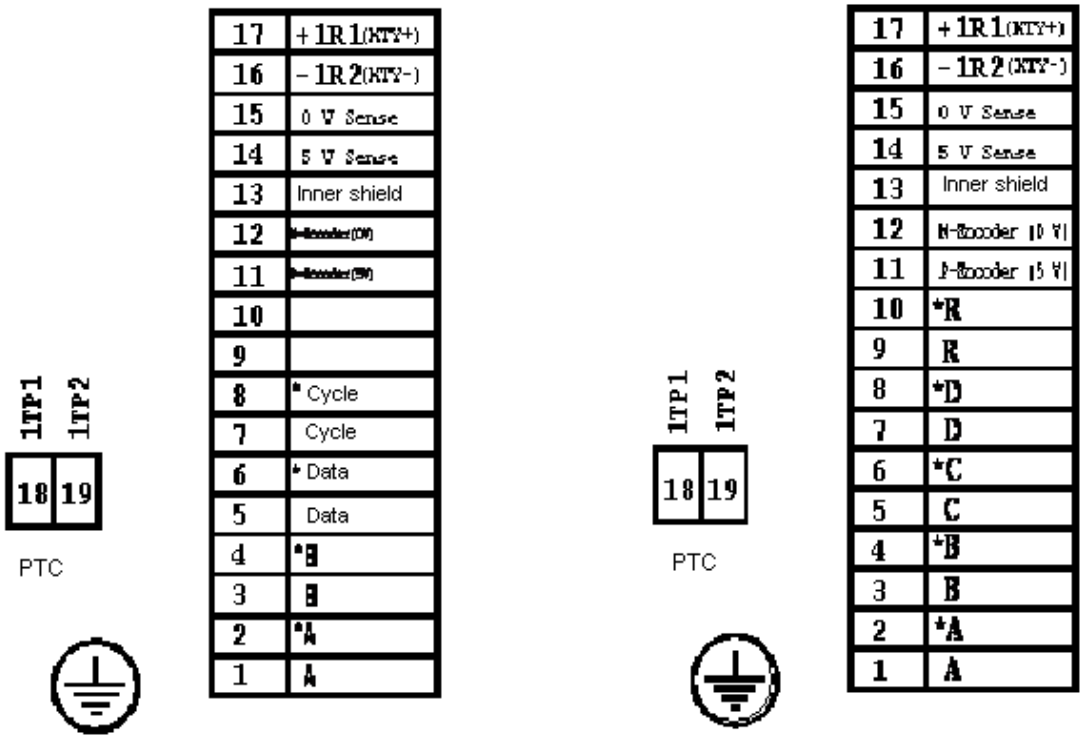


Fig. 5 **Terminal assignment Absolute encoder (EnDat) 2048 S/R**

Terminal assignment Incremental encoder sin/cos 1 V_{pp}

5.2 Connection technology

Terminal boxes:

Same size for signal and power terminal boxes for all types 130 mm (axis) * 145 mm (with axial cable design)

Power connection:

The thread of the cable entry is executed with a metric thread in accordance with DIN EN 60423.

Type	Screw connection	Max. cross-section
1FS6074	M25 * 1.5	4 * 1.5 mm^2
1FS6096	M25 * 1.5	4 * 4 mm^2
1FS6115	M32 * 1.5	4 * 6 mm^2
1FS6134	M32 * 1.5	4 * 10 mm^2

⚠ WARNING	
	**For operation, the installed temperature sensors (PTC DIN 44082) must be connected to an external and authorised trigger unit.** **In accordance with the explosion protection regulations, the grounding conductor in the terminal box and the earth terminal on the housing must be connected.**

Signal connection:

The encoder signals, the PTC and the temperature sensor KTY will be connected in a second, separate terminal box.

M12 * 1.5 PTC
M20 * 1.5 encoder and temperature sensor KTY

Both terminal boxes can be retrospectively rotated by 4 x 90°.

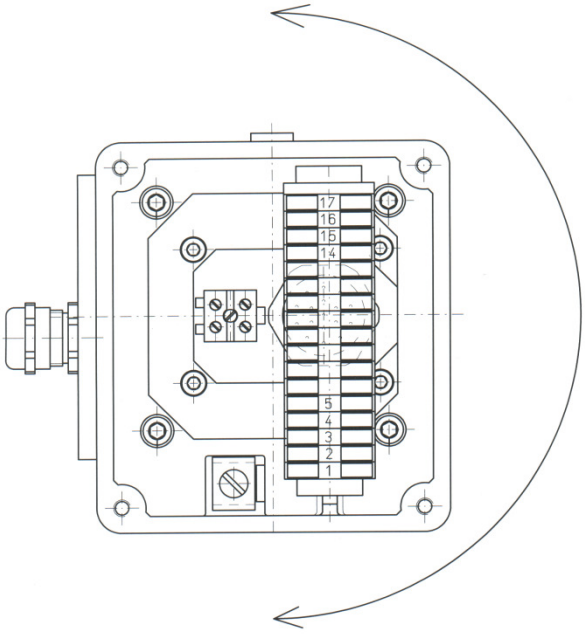


Fig. 6 Rotatability of the terminal boxes

Tightening torques for terminal board connections:

Thread-Ø	M4	M5	M6	M8	M10
Tightening torque [Nm]	0.8...1.2	1.8...2.5	2.7...4	5.5...8	9...13

6 Commissioning

CAUTION	
	**Thermal hazard due to hot surfaces.** **The surface temperature of the motors can reach up to 140 °C.** **Do not touch hot surfaces.** **Provide protection against contact if required.** **Temperature-sensitive components (electric lines, electronic components) may not rest upon hot surfaces.**

6.1 Tests prior to commissioning

Prior to commissioning, ensure that
- all explosion protection regulations are observed
- all connections have been properly executed and the connectors are secured against release
- all motor protection equipment is active
- the drive is not blocked
- no other sources of danger are present
- the drive is not damaged (no damage caused by transport/storage)
- the feather keys in the shaft end (where present) are secured against ejection

6.2 Commissioning

WARNING	
	**Hazard posed by rotating rotor.** **Protect the output elements with contact guard.** **Secure feather key (where present) against ejection.**

The output elements must be connected to the shaft end in a force-locking manner (risk of slip in the event of shaft end without feather key).

Observe the converter commissioning instructions (e.g. MASTERDRIVES MC) and check the direction of rotation of the motor.

Installation may only be performed by qualified personnel.

7 Information in the event of faults

In the event of deviations from normal operation or in the event of faults, first proceed in accordance with the following list.
For this purpose, please also observe the respective chapter in the operating manual for the components of the entire drive system.
Do not disable the protective devices, even during trial operation.

When required, consult:
- SIEMENS
  Service and Support
  http://www.siemens.com/automation/service&support

Fault	Cause	Remedy
Irregular running	Insufficient screening of the motor or encoder line	Check the screening and earthing (see Chap. 5.1)
	Amplification of the drive controller too high	Adjust controller (see converter operating manual)
Vibrations	Coupling elements or working machine poorly balanced	Rebalancing of the coupling elements
	Lack of alignment of the drive train Fixing screws are loose	Re-align the machine unit Check and tighten screw connections
Running noises	Foreign bodies inside the motor	Repair by the manufacturer
	Bearing damage	Repair by the manufacturer
Motor becomes too warm (surface temperature > 140°C) Temperature monitoring activates	Drive overload	Check load (see type plate)
	Heat discharge impaired by deposits	Clean surface of drives Ensure that the cooling air can flow freely in and out

8 Inspection, maintenance

Clean according to the degree of local contamination in order to ensure sufficient discharge of the dissipation heat.

As the operating conditions vary greatly, it is only possible to state general intervals in the case of fault-free operation.

Guidelines:
- Bearing service life 20,000 hours
- Radial shaft seals approx. 5,000 hours with oil lubrication

DANGER	
	**Disassembling the motor is strictly forbidden.** **All repair and service work will be performed exclusively by the manufacturer.**

9 Decommissioning and disposal

9.1 Decommissioning

Preparation for disassembly

The disassembly of the motor from the machine / plant must be performed or supervised by qualified personnel who possess an appropriate level of specialist knowledge.

1. Contact a local waste disposal company. Clarify the quality to which the motor disassembly / component provision must be executed.
2. Follow the five safety rules for working on electrical plants.
3. Remove all electrical connections.
4. Remove all cables.

WARNING	
	**Injuries caused by suspended loads** The motor can cause injury during disassembly and transport as a result of movements. *Only use intact lifting devices and load suspension devices that are designed for the load of the motor. *Pay attention to imminent movements when releasing the engine. *Never remain beneath or in the swivelling range of suspended loads.

5. Release the motor fastenings.
6. Transport the motor to a location that is suitable for storage and disassembly.

Dismantling the motor

Information: Removing the rotor of a motor with permanent magnets may only be performed by the manufacturer.
Independent dismantling of the motor can lead to a threat to / injury of people or the pollution of the environment.

If you wish to disassemble the motor yourself, you must observe the following sequence of steps:

1. Demagnetise the permanent magnets.

WARNING	
	**The independent dismantling of the motor may lead to an impact upon the functionality of pacemakers, metallic prostheses and electronic data carriers.** The rotors of the motors contain permanent magnets with high flux densities and severe attraction forces to ferromagnetic bodies. Persons wearing pacemakers and metallic prostheses are at risk when in close proximity to an independently disassembled rotor. Data stored on electronic data carriers can be destroyed. *Persons with pacemakers and metallic prosthesis may not remain in close proximity to the motors. The recommended distance should be at least 500 mm. *Do not store electronic data carriers in close proximity to motors.

The permanent magnets must be demagnetised prior to disposal.
Information: A removed rotor that has not been demagnetised is not suitable for transport.
Permanent magnets are demagnetised by heating them up.

- Arrange for the entire motor to be thermally treated by a specialist disposal company.
- Handover the entire motor to the manufacturer.

2. Dismantle the motor.

WARNING	
	**Motor parts can fall.** The motor consists of heavy parts. These parts can fall during dismantling, causing death, severe injury and damage to property. Secure the motors and motor parts to be released against falling.

WARNING	
	**Injuries caused by suspended loads** The motor can cause injury during disassembly and transport through movements. *Only use intact lifting devices and load suspension devices that are designed for the load of the motor. *Pay attention to imminent movements when releasing the engine. *Never remain beneath or in the swivelling range of suspended loads.

3. Dispose of the motor parts or return the motor parts to the manufacturer.
Dispose of the motor parts in accordance with the information contained in the "Disposal" chapter.

9.2 Disposal

You will find recommendation for an environmentally-friendly disposal of the motor and its components in the following chapter.
Follow the local regulations during disposal or return the motor to the manufacturer.

Components

Separate the components to be recycled into the following categories:

- Electronic scrap
- Iron scrap
- Aluminium
- Non-ferrous metal
- Insulating materials

Auxiliary materials and chemicals

Separate the auxiliary materials and chemicals to be recycled according to:

- Oil
- Grease

ATTENTION
Damage to the environment caused by independent and improper disposal If disposed of improperly, auxiliary materials, chemicals and insulating materials can injure persons or pollute the environment.

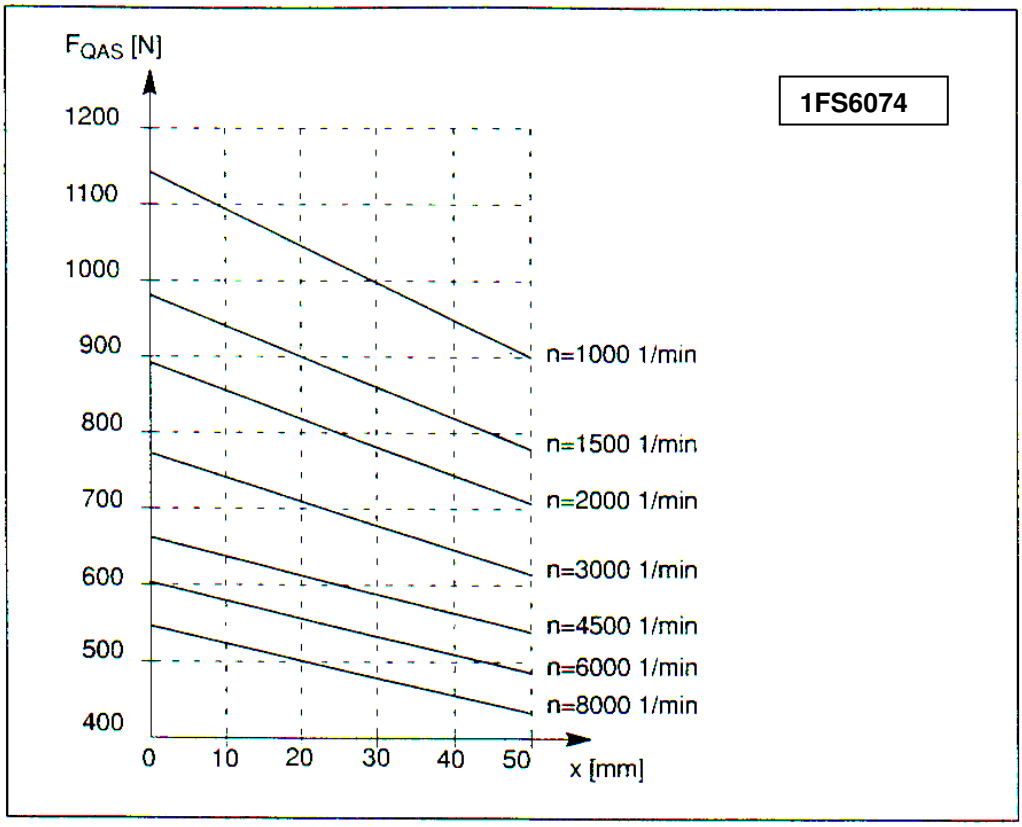
Insulating materials

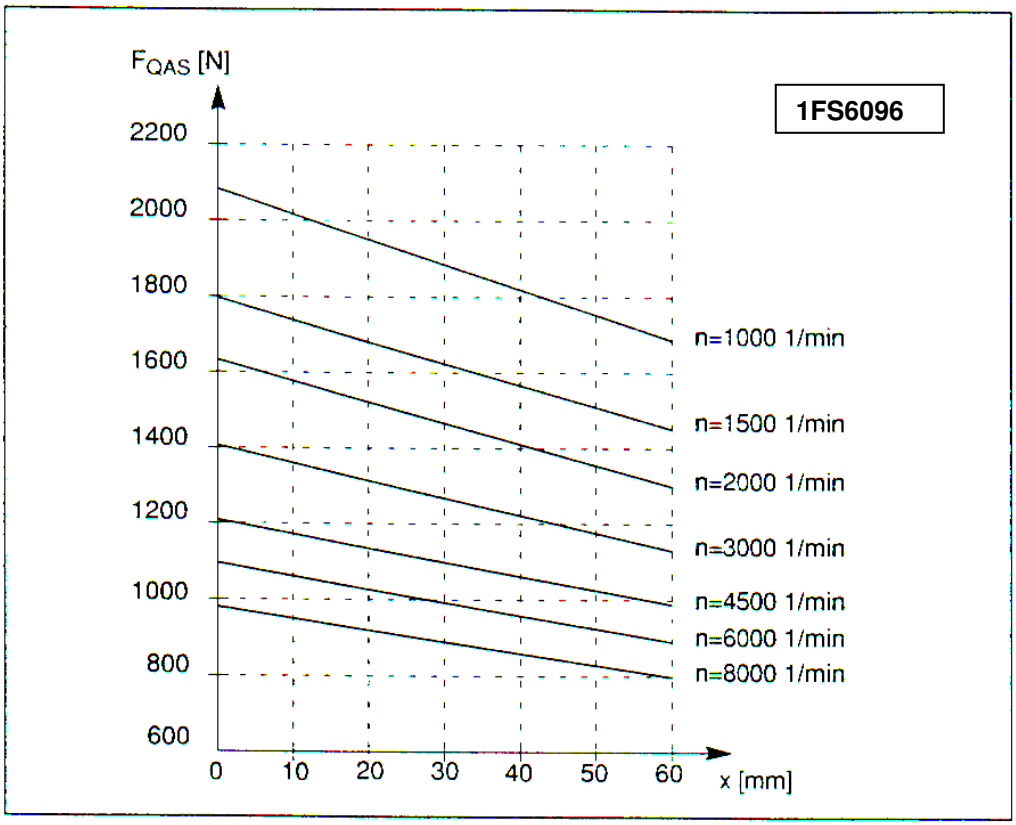
Electrical insulating materials are primarily used in stands. Some additional components are manufactured using similar materials and must therefore be treated in the same manner. This concerns the following materials:

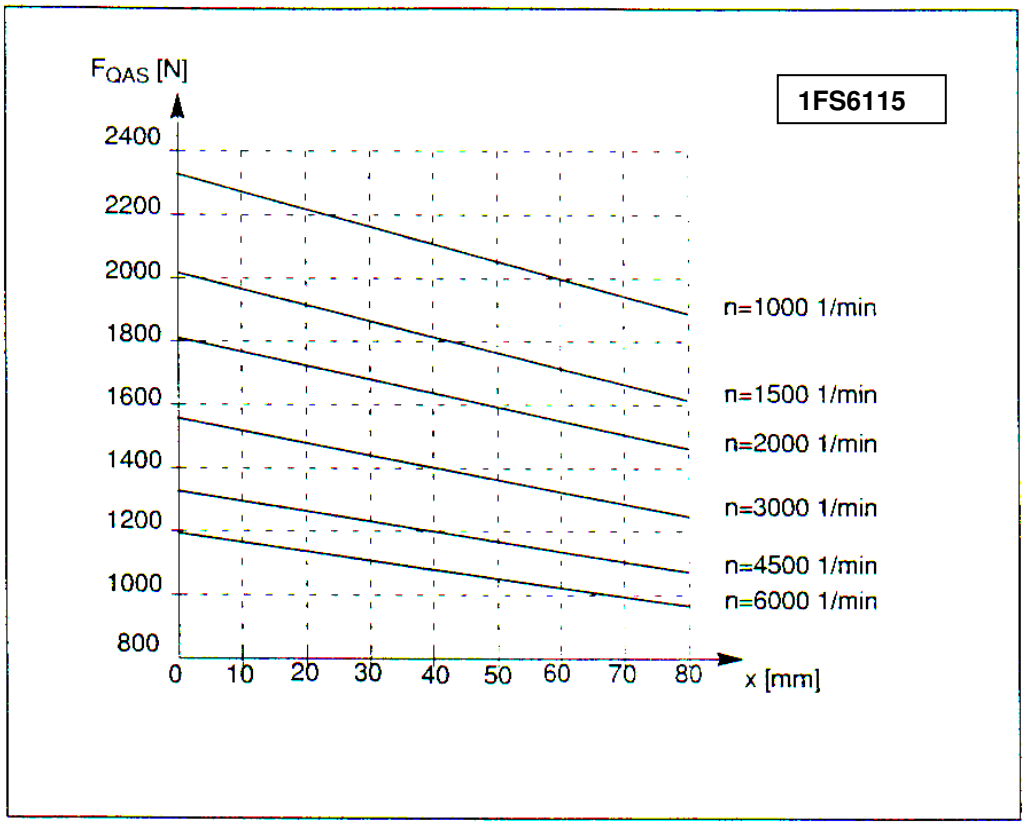
- Various insulators that are used in terminal boxes
- Power cables
- Instrument wiring

Appendix 1 – Permissible transverse forces

Lateral forces F_Q at a distance of x from the shaft shoulder at a nominal bearing service life of 20,000 h.



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1FS6115
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1800
1600
1400
1200
1000
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60
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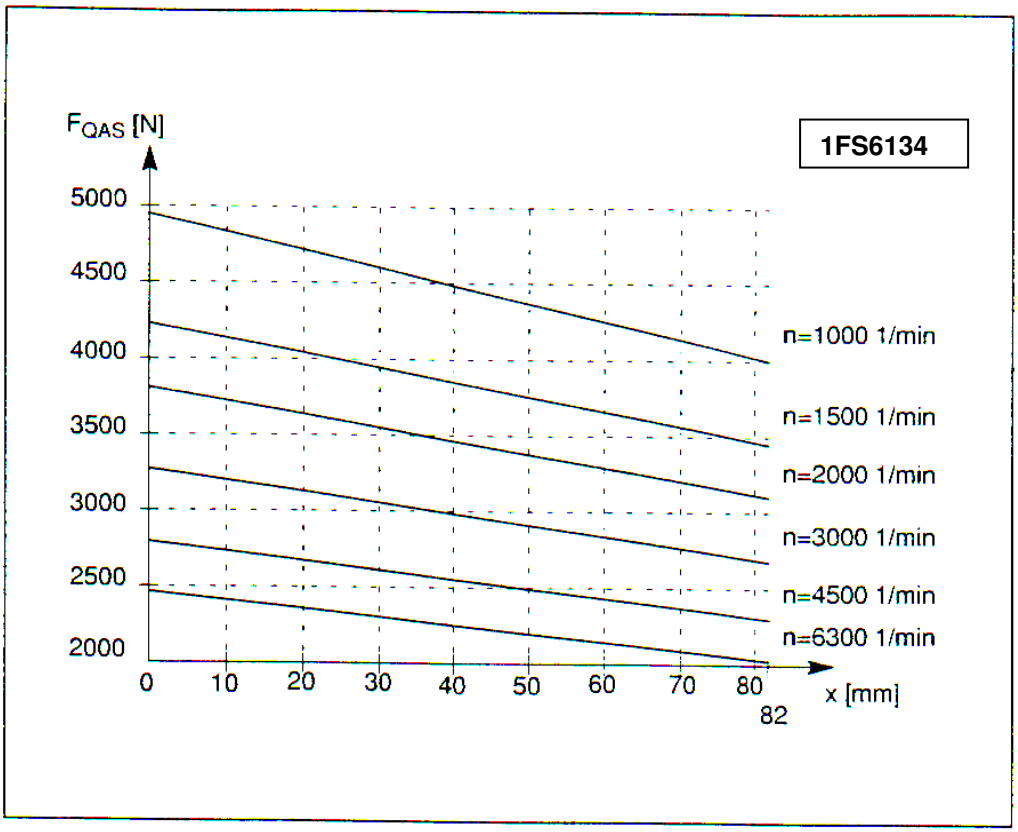
n=4500 1/min
n=6000 1/min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1FS6134
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3500
3000
2500
2000
0
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40
50
60
70
80
82
x [mm]
n=1000 1/min
n=1500 1/min
n=2000 1/min
n=3000 1/min
n=4500 1/min
n=6300 1/min

SIEMENS

EG-Konformitätserklärung

No. 664.20027.02

Hersteller: *Manufacturer:*	**Siemens AG** **Industrie Sector** **I DT MC MF-M**
Anschrift: *Address:*	Industriestraße 1 97616 Bad Neustadt a. d. Saale Germany
Produktbezeichnung:	**Drehstrom – Synchronmotoren der Zündschutzart:** **Druckfeste Kapselung „d"** **Typ 1FS6074- ..., 1FS6096- ..., 1FS6115- ..., 1FS6134- ...,** **in der Kühlart Selbstkühlung**
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Kennnummer:	0044
Zulassungsnummern:	TÜV 08 ATEX 554896X, 554888X, 554889X, 554890X
	Kennzeichnung: CE 0044 ⟨Ex⟩ II 2G Ex de IIC T3 Gb

Das bezeichnete Produkt stimmt mit den Vorschriften folgender Europäischer Richtlinie überein:

94/9/EG Richtlinie des Europäischen Parlaments und des Rates zur Angleichung der Rechtsvorschriften der Mitgliedstaaten für Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen.

Die Übereinstimmung mit den Vorschriften dieser Richtlinien wird nachgewiesen durch die vollständige Einhaltung folgender Normen:

EN 60079-0:2009, EN 60079-1:2007, EN 60079-7:2007, EN 60204-1:2006,
EN 60034-1:2010 *) mit allen relevanten Teilen

Die besonderen Bedingungen für den Betrieb, sowie die Sicherheitshinweise und Betriebsanleitungen sind zu beachten!

Das Produkt ist ein Gerät nach der EG-Richtlinie 94/9/EG und für den Einsatz in explosionsgefährdeten Bereichen bestimmt.

Eine Inbetriebnahme des Produktes in seiner bestimmungsgemäßen Umgebung (Gerät, Maschine) ist nur bei sichergestellter Einhaltung aller relevanter Richtlinien (wie z.B. 94/9/EG und 2006/42/EG) zulässig.

Bad Neustadt, den 25.9.2012
Siemens Aktiengesellschaft

i. V.
Dr. Uwe Schüller,
Head of Competence Center Motors

Thomas Winterstein,
Head of Supply Chain Management

Diese Erklärung bescheinigt die Übereinstimmung mit der genannten Richtlinie, ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie nach §443 BGB.
Ersatz für / *Substitute for* 664.20027.01 Stand / *Status*: 12/2008

Siemens AG, Bad Neustadt a. d. Saale **Stand / *Status*: 09/2012**

SIEMENS

EC declaration of conformity
No. 664.20027.02

The named products 1FS6… are in conformity with the requirements of the following European Directive:

94/9/EC **Directive of 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.**

The conformity with the requlations of this directive is proven by the complete compliance with the relevant requirements of the named standards.

The special operating conditions as well as the safety instructions and operating instuctions must be taken note of!

The named products are intended for fitting in another machine.
Commissioning is prohibited until such time as the end product has been proved to confirm to the provisions of the relevant Directives for example 2006/42/EC (Machinery) and 94/9/EC (ATEX).

This declaration certifies the compliance with the stated Directive, is however not a assurance from characteristics in the sense of product liability.
This declaration does not represent any quality or durability guarantee as per the conditions laid down in § 443 BGB (German Civil Code).