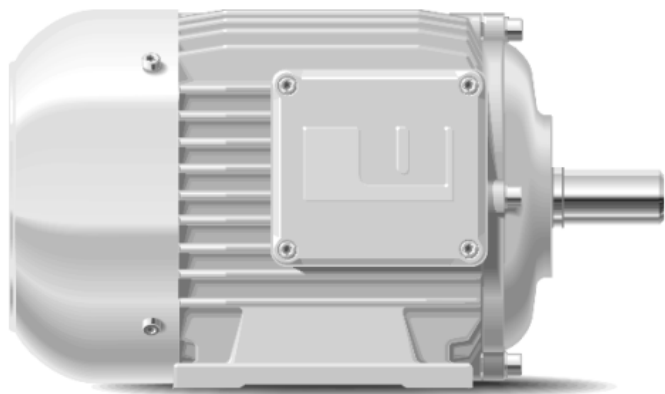


Operating Instructions

Induction motors



for your own safety



Leumann & Uhlmann AG

Elektromotorenbau / Industrie-Elektronik

1 Declaration of conformity

Declarations of conformity in accordance with Low-voltage Directive 2014/35/EU (Directive of European Parliament and of the Council from February 26th 2014) on the harmonisation of the legislation of member states concerning electrical apparatus for use within defined voltage limits.

2 Area of application

The operating instructions cover the following motor series, constructed in accordance with EN 60034:

E

D

with shaft heights of 56 to 450

3 Use

The electrical machines are intended for driving equipment such as fans, mixing machines, pumps and similar machinery, and to a limited extent for braking such equipment. Any legal restrictions must be considered. Operation without attached equipment, machines or the like is not permitted, since the necessary protection against physical contact during operation is not ensured.

4 Montage

4.1 General

The live and rotating parts of electrical machines can cause serious or fatal injuries. Setting up, starting and maintenance may only be carried out by authorised staff. The manufacturer's instructions and the relevant local legal provisions, regulations and the like must be observed during setting up, starting, use and maintenance.

The motor is to be mounted on a solid and vibration-rigid base. The base surface must be flat, to avoid any distortion of the electrical machine.

The motor is designed for a surrounding temperature of -20 °C to +40 °C. The protection class of the electrical apparatus must be appropriate to the situation in which it is to be installed.

The performance data of the machine relate to a maximum installation height of 1000 m above sea-level.



Installations at over 1000 m require a reduction in power, respectively a lower current value to be set on the thermal-delay overcurrent trip. Aufstellungen über 1000 m bedürfen einer

It must be ensured that the machine receives the required flow of cooling air, without obstruction. When fixing the motor in position, care must be taken that any condensate drainholes are placed at the lowest point.



Obstruction of the cooling air, for example by an unsuitable sound-insulation casing, can damage the machine by overheating. Fire danger.

4.2 *Coupling arrangements*

In motors built up to 30.04.98 the rotor is dynamically balanced together with the whole adapter-key. From 01.05.98 onward the motors are constructed with half-key balancing, in accordance with EN 60 034-14. In order to avoid confusion, the motors are marked on the end as follows:

F (full)	for full-key balancing
H (half)	for half-key balancing



Non-observance of the type of balancing used leads to vibration, which can damage bearings and machine components.

4.2.1 *Belt pulleys*



The conductivity of belts for use in areas subject to the risk of explosion must be such as to avoid an electrostatic charge



Explosion risk..

Assembly of couplings or belt pulleys must be carried out using a suitable fitting device. The motor shaft and the driven shaft must be aligned with each other accurately. Alignment errors cause vibration or indeed bearing damage. Where belt pulleys are used, care must be taken that no excessive radial forces act on the bearings. Where the drive uses several drive-belts, motors with strengthened bearings must be used if necessary.

Excessive drive-belt tension leads to early bearing failures, and may cause the belt to rupture or the shaft to break



Danger of injury from flying parts.

4.3 *Lifting device*

The mechanical design of lifting devices such as lifting eyes is adequate only for lifting the motor itself. Machines attached to the motor must not be lifted in this way.



Danger of injury by a falling load.

4.4 *Climbing onto electrical machines*

The mechanical design of mounting flanges and other attachment parts does not allow for any additional load, such as that caused by climbing onto the machine.



Danger of breakage and injury.

4.5 Special machines

For special machines supplementary documentation is issued if necessary.

5. Setting to work

When setting machines to work local regulations and instructions must be observed.



In Ex areas, supplementary regulations and instructions apply.



Danger of explosion.

5.1 Motor insulation resistance

Before putting a machine into operation it is advisable to check its insulation resistance. Particularly with an electrical machine which has been stored for a long period, there is a risk that as a result of atmospheric effects or even condensed water the stator winding has become humid.

It is advisable to measure the insulation resistance using an insulation tester such as a hand-cranked generator with a measurement voltage of 500 V DC. At an ambient temperature of 25 °C, the measured value should not be less than the following value:

$$R_{\text{isol.}} [\text{M}\Omega] \geq \frac{20 \cdot U_B [\text{V}]}{1000 + 2 P_2 [\text{kW}] U_B}$$

$R_{\text{isol.}}$ insulation resistance
design voltage
 P_2 Power

For higher ambient temperatures, the value of resistance determined should be halved for every 10 °C of temperature difference.



The measurement may only be carried out by authorised staff. On completion of the measurement the winding must be discharged to earth, to avoid possible electric shock on touching the winding.

If the values measured are too low, further action should be agreed with the manufacturer or an authorised service centre..

5.2 Preparation

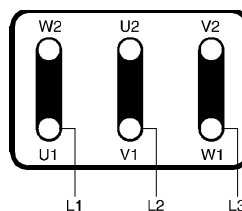
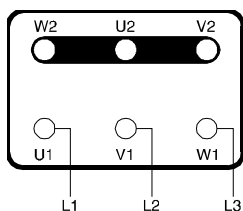


The junction box may not be opened under voltage (danger to life).

5.2.1 Schaltung

Star connection

Delta connection



5.2.2 Other forms of connection

For forms of connection such as "Dahlander" connection, two separate windings etc., an appropriate circuit diagram is provided in the junction box of the motor.

5.2.3 *Star/delta starting*

For star/delta starting, the motor must be of suitable design. Only motors in which the winding is designed for the rated voltage in the delta connection and a star connection is possible, may be used for star/delta starting.

Star/delta starting possible

Mains voltage 400 V

Motor rating, star/delta 400/690 V

Star/delta starting not possible

Mains voltage 400 V

Motor rating, star/delta 230/400 V

After checking the information given on the data-plate and inserting the correct connecting links on the terminal plate in accordance with the circuit inside the junction box, the motor is ready to be connected.

Connection to the mains may only be carried out by an authorised technician.

5.3 *Installation*



The installation must be performed, as required by National and Local Installation Standards. It is essential to differ between flammable gases and flammable dusts concerning installation requirements.



When installing mains-operated motors in Ex areas, the supplementary information for apparatus in explosion-risk areas given in Section 7 must be observed, and for motors fed by a frequency converter that in Section 8 also.



Electrical installations may only be carried out by authorised technical staff.



When determining the correct size of motor supply cable and the circuit protection devices, the relevant installation instructions must be strictly observed (fire risk).



Incorrect installation can lead to a fatal electric shock or set off a fire.



The surface temperature of the machine can cause burns to the skin even in normal use.

5.3.1 *Kable entries generally*

The openings in the terminal box are closed with a blind plug and with an a cable cland. The cable cland may not be used as a blind plug.

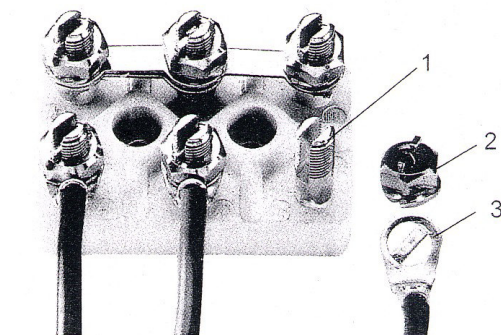
5.3.2 *Kable entries for motors in explosive atmospheres*

When using other cable clands and locking components, only ATEX certified are to be used.

5.3.3 Ex-connection terminals



Motors with a connection terminal equipped with slotted bolts (1) according to 94/9/EG may only use cable lugs (3) approved by DIN 46295. The cable lugs (3) are attached with a pressure nut with an integrated spring washer.



Alternatively, a round wire can also be used, the diameter of the wire must be suitable for the slot width of the slotted bolt. (see table below)

Motor frame size	Terminal Board	slot width of the slotted bolt (mm)	tightening torque pressure nut (Nm)
56-71	KB 0	2.5	4
80-112	KB 02	3.1	4
132	KB 3	4.3	6
160-225	KB 4	6.3	10
250-280	KB 5	9.2	12.5

5.4 Direction of rotation

When the mains connections L1, L2, L3 are connected correctly to the connection terminals U1, V1, W1, the motor runs to the right, that is to say clockwise when looking at the front end of the drive shaft.



Checking the direction of rotation may only be carried out by authorised technical staff. When doing so, the necessary protection against physical contact must be considered, and the key or belt pulley, and any other loose parts must be properly secured.

5.5 Motor protection

Electrical machines must be protected against excessive heating caused by an overload. Motors which are able to withstand their starting current at the rated voltage and rated frequency continuously, or similarly generators which support their short-circuit current without excessive heating, do not require overload protection.

The following protection devices may be considered:

a) Overcurrent protection devices with current-dependent delayed tripping, e.g. motor starters conforming to the standards of the DIN VDE 0660 series in all external conductors, which are to be set to no more than the nominal current of the machine. If in the case of delta connection trip devices or relays are connected in series with the winding phases, then the choice and setting of the trip devices must be based on the rated value of the phase current, i.e. 0.58 times the rated motor current.

b) Devices for direct temperature monitoring, using temperature sensors.

c) Other devices which provide the required protection against excessive heating as the devices referred to above.



If the value is set too high, the machine may become excessively hot and cause a fire. The relevant installation instructions must be observed.



For machines of the protection class Increased Safety "eb", supplementary specifications apply in Zone 1.



The relevant national regulations must be strictly observed.

5.5.1 Thermal motor protection with sensors

Motors with thermal motor protection are fitted with temperature sensors incorporated in the stator winding, such as PTC resistors, Pt 100, bi-metallic switches etc. The connection of the sensors avoids largely to exceed the permissible maximum winding temperature. The relevant instructions concerning connection of one of these monitoring systems must be strictly observed.



When connecting explosion-protected machines, the relevant instructions concerning installation and the monitoring devices which may be used must be strictly observed.



Explosion risk from thermal or electrical ignition sources.



The effectiveness of these monitoring arrangements must be checked by an authorised person when the machine is being put into operation.

6 Maintenance

Maintenance work may not be carried out under voltage. Before opening the junction box, the machine must be disconnected from the mains supply.



Touching under voltage standing bright conductors may be lethal.



Maintenance of electrical machines for areas with explosion-risk may only be carried out by authorised technical staff. The requirements for attaining this status are regulated at national level.

In the case of machines in protection class the "Flameproof Enclosure" , if air-gaps or the flameproof enclosure are damaged or modified, the production equipment may no longer be used in Ex areas. All "Ex" markings must imperatively be removed. If necessary the apparatus must in addition be marked "Not for areas with explosion-risk".

6.1 Lubrication of antifriction bearings



If unusual bearing noises occur, a technician must be brought in to investigate.

For the initial lubrication of bearings, DIN 51825-KL3K grease with lithium soap as thickening agent and with mineral oil as base oil, Type SKF LGMT3, is normally used.

If when the machines were ordered special operating conditions were known which make a different grease necessary, then the grease type is given on the data plate. For machines equipped with a lubrication device, in addition to specifying the grease to be used, the lubrication interval and the quantity of grease required are also stated on the data-plate.

It is advisable to adhere strictly to the lubrication instructions. Mixing greases with different thickening agents and base oils reduces the quality of the grease and should therefore be avoided. Only in special cases should be deviated from the normal lubrication data. The lubrication intervals should be reduced if the machines are operated at coolant temperatures higher than those on which the intervals were originally based, or if hostile vapours or extremely severe contamination are present

6.1.1 Long-term lubrication

Where no relubrication device is provided, the grease filled into the bearings lasts for several years under normal operating conditions. If the operating conditions allows it, on machines of up to size 250 running at speeds of up to 1800 rpm, the bearings should be cleaned and repacked with grease after 20,000 running hours or 3 years, whichever occurs sooner. These grease-change intervals apply under normal load conditions (coupling drive), operation at low vibration levels, approximately neutral ambient air and the use of high-quality ball-bearing grease. On larger motors, higher speeds and other unfavourable operating conditions, correspondingly shorter intervals should be planned. No more than one third of the space within the bearing cap should be filled with grease.

Changing the bearings or replacing the grease as a rule requires the armature to be taken out of the machine. Before doing so always ensure that all mains supply conductors are disconnected from the machine. This can be achieved by means of a security switch with a padlock (provided locally) or other organisational measures. The local regulations must in addition be observed.



During the warranty period the armature may be taken out only with the prior agreement of the manufacturer, or of a person or company authorised by the manufacturer.



In the case of motors for explosion-risk areas, only bearings with original dimensions and bearing clearance may be used.



A greater bearing clearance may cause a too small air gap, or in motors in flameproof enclosure, a too large gap width. Explosion risk.

6.2 *General cleaning*

Depending on the operating conditions, the motor is to be cleaned as required on standstill. In particular, the cooling-air channels must be kept free from dirt and dust. Take care that no dirt gets into the bearings during cleaning.



Cleaning work and in particular removal of covers such as the protective guards around the fan, coupling and the like may only be carried out with the machine disconnected from the mains supply at all conductors, as described at section 3.1.

Any contact protection which suffers damage must be replaced. The machine may be put back into operation only after all protections have been fitted correctly

6.3 *Replacement parts*

Damaged parts should only be replaced by original parts.



The use of foreign parts can lead to accidents. Fans may not have a sufficient air flow and lead to the machine overheating. Fire danger !

At high speeds, foreign makes of fan may burst, endangering equipment and people.



Only original parts may be used. Replacement must be carried out by specialized staff (see Maintenance).



Foreign parts, such as fans with a higher surface resistance, can lead to electrostatic discharges, etc.



Explosion risk.

6.4 *Changes and modifications*



If changes and modifications are made to the machine without the manufacturer's consent, all warranty claims become invalid.



Changes and modifications may only be carried out by the manufacturer or by service centres authorised by the manufacturer.

Improper insertion of drill-holes, adaptation of parts, application of seals etc. may breach the relevant safety standards.



Improper changes and modifications can be the cause of an explosion or cause the propagation of an explosion.

6.5 Faults

The following table makes it possible to locate the faults which most frequently occur in AC motors and to correct these by the local specialized staff. Within the warranty period, all work under warranty which it is intended that third parties shall carry out must be agreed in writing with the manufacturer in advance. In case of doubt, please apply directly to our factory in MuttENZ.



The junction box must not be opened when the circuits are under voltage. Lethal risk!



None of the parts which provide physical protection, such as the fan casing or coupling guard, may be removed during operation. Before putting the machine into operation all parts which serve as guards must be fitted. Rotating parts can cause serious or fatal injuries.

Electrical fault	Incorrect connection Δ instead of Y Y instead of Δ	Poor contact at one of the connections	Phase dis- connection	Inadequate connecting cable	Over- load	Shorted wire in the stator winding	Mains voltage too low	Winding short circuited
1 On no load, motor does not start or runs very slowly								
2 Stator winding is too hot in places								
3 Motor speed drops when load is applied								
4 No current in one of the phases								
5 Stator winding excessively hot								
6 Motor hums								
7 Safety-cutout trips on switching on								

Mechanical fault	Too much grease in the bearing	Sealing-ring pressing on the shaft	Foreign body in the bearing	Bearing clearance too small	Bearing clearance too great	Fault on the bearing surfaces	Fitting error, bearing misaligned	Lack of lubrication	Faulty sealing	Misalignment caused by excessive belt tension
1 Bearing too hot										
2 Bearing knocks										
3 Bearing whistles										
4 Bearing wears										

7 Supplementary information for production equipment in areas subject to the risk of explosion

7.1 Marking (examples) in accordance with ATEX directive

Leumann & Uhlmann AG Hofackerstrasse 10 / CH-4132 Muttenz Tel. 061 467 98 98 / www.leumann.ch 

3-Motor	Typ	Nr.	IEC 60034
P ₂	kW	min ⁻¹	Hz
CE 1	II 2	3	4
I _A /I _N	PTC DIN 44081/82-	cos φ	PTC Relais
Th.cl	IC	Bauj.	

mains-operated

Leumann & Uhlmann AG Hofackerstrasse 10 / CH-4132 Muttenz Tel. 061 467 98 98 / www.leumann.ch 

3-Motor	Typ	Nr.	IEC 60034
Umrichter	Typ	Motorendaten bei 50 Hz	S
P ₂	kW	min ⁻¹	Hz
CE 1	II 2	3	4
I _A /I _N	PTC DIN 44081/82-	cos φ	PTC Relais
Th.cl	IC	Bauj.	
M	Nm	min ⁻¹	Hz
M	Nm	min ⁻¹	Hz
P ₂	kW	min ⁻¹	Hz

frequency converter operation

7.1.1 Non sparking «Ex ec» in accordance with EN 60079-7 Category 3 for Zone 2

1 ____ **2** 3G **3** Ex ec IIC T3 Gc **4** LU 16 ATEX 0000

7.1.2 Increased safety «Ex eb» in accordance with EN60079-7 Category 2 for Zone 1 and 2

1 1258 **2** 2G **3** Ex eb IIC T3 Gb **4** XXX 16 ATEX 0000

7.1.3 Flameproof enclosure «Ex db eb» in accordance with EN 60079-1/7 Category 2 for Zone 1 and 2

1 1258 **2** 2G **3** Ex db eb IIC T4 Gb **4** XXX 16 ATEX 0000

7.1.4 Protection by enclosure «Ex tc» EN 60079-31 Category 3 for Zone 22

1 ____ **2** 3D **3** Ex tc IIIC T125°C Dc IP55 **4** LU 16 ATEX 0000

7.1.5 Protection by enclosure «Ex tb» EN 60079-31 Category 2 for Zone 21 and 22

1 ____ **2** 2D **3** Ex tb IIIC T125°C Db IP65 **4** XXX 16 ATEX 0000

7.1.6 Non sparking «Ex ec» and Protection by enclosure «Ex tc» (as combination) Category 3 for Zone 2 and 22

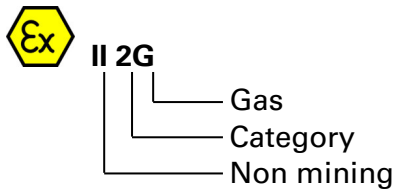
1 ____ **2** 3GD **3** Ex ec IIC T3 Gc **4** LU 16 ATEX 0000
5 Ex tc IIIC T125°C Dc **6** LU 16 ATEX 0000

7.1.7 Potentially explosive atmospheres

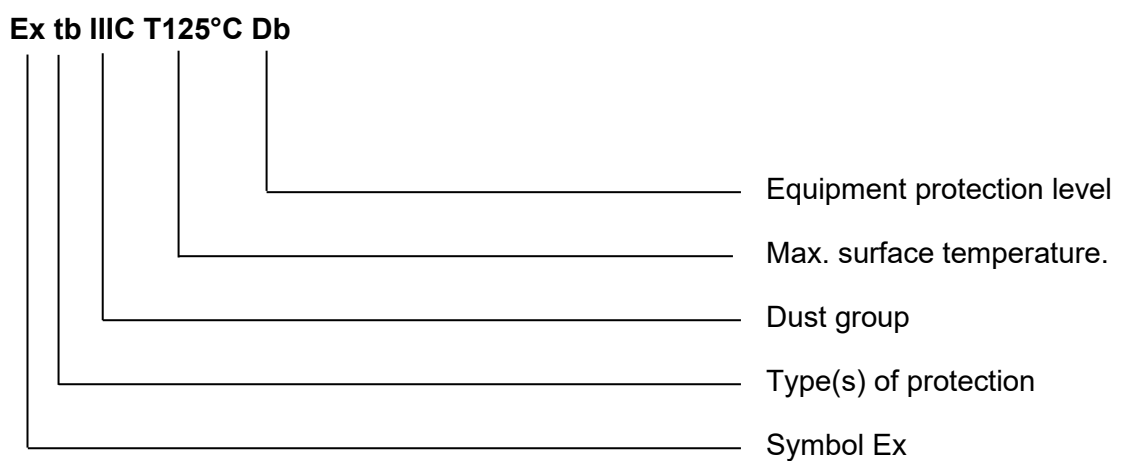
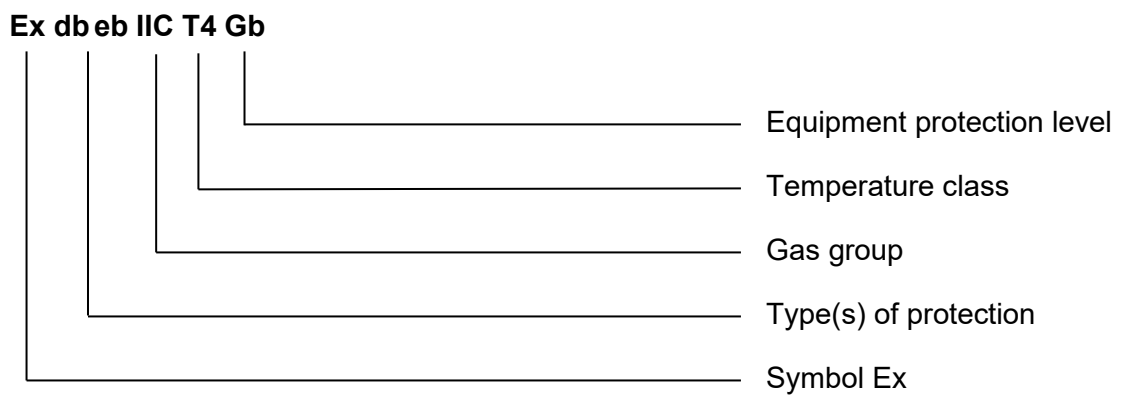
The areas where the explosive atmospheres are present are divided into Gas (G) and Dust (D)

G	Gas
D	Dust

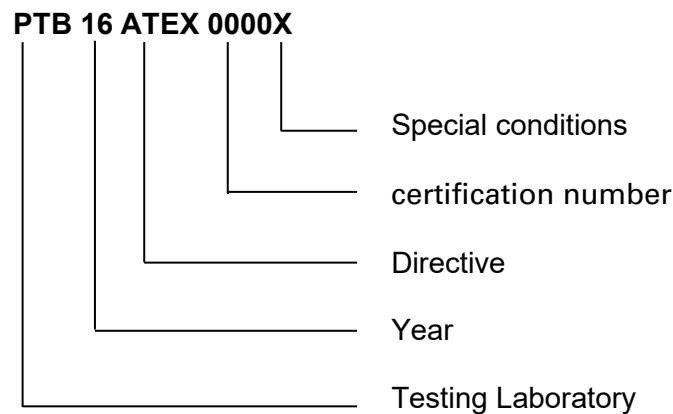
7.1.7.1 Marking



7.1.7.2 Marking



7.1.7.3 Testnumber according to ATEX.94/9/EG



7.1.8 Notes



If the symbol "X" appears at the end of the certification number, reference is made to special conditions for the safe use of the apparatus in the annex to this certification. The planer, installer and the operator must inform himself about these special conditions before the installation and before putting it into service.



These conditions must be strictly observed.



If the symbol "U" appears at the end of the certification number, the document concerns an incomplete apparatus.

8. Operation by frequency convertor for the continuously variable speed control

8.1 Ex e - Motors

Motors of the protection class Increased Safety «eb» and «ec» may be operated by means of a frequency converter only if the conditions laid down in EN 60079-7:2015 Art.5.2.8.4 are fulfilled.

5.2.8.4 Operation with a converter or a non-sinusoidal supply

To prove that the limiting temperature (5.2.8) is not exceeded throughout the operational speed range, two methods may be used: a type test or verification by calculation.

5.2.8.4.1 Type test with a converter

Machines intended to be operated with a converter shall be tested with the specified converter or with a comparable converter with respect to the output voltage, output current, and switching frequency specifications to confirm that the machine limiting temperatures (5.2.8) are not exceeded. The descriptive documentation for the machine shall include the necessary parameters and conditions required for use with a converter.

- For "eb" machines of duty type S1 to S10, the test conditions shall include normal operation at rated conditions, continuous overload, and starting.
- For "ec" machines of duty type S1, S2, S6, or S9; the test conditions shall include normal operation at rated conditions.

- c) For “ec” machines of duty type S3, S4, S5, S7, S8, or S10, the test conditions shall include normal operation at rated conditions and starting.

NOTE Additional information on the operation of motors with a converter can be found in IEC TS 60034-17 and IEC TS 60034-25. At the time of publication of IEC 60079-7, development of updated editions of both of these Technical Specifications is underway to reflect the current state of the art. [check at time of publication] Major concerns include over-temperature, high frequency and over-voltage effects, bearing currents and requirements for high frequency earthing. There are currently no IEC standards specifically dealing with the operation 1435 of permanent magnet motors with a converter.

5.2.8.4.2 Alternative type verification by calculation

The limiting temperature is not to be exceeded under the following conditions. This may be confirmed by calculation which shall be based on previously established representative test data.

- a) For “eb” machines of duty type S1 to S10, the conditions shall include normal operation at rated conditions, continuous overload, and starting.
- b) For “ec” machines of duty type S1, S2, S6, or S9; the conditions shall include normal operation at rated conditions.
- c) For “ec” machines of duty type S3, S4, S5, S7, S8, or S10, the conditions shall include normal operation at rated conditions and starting.

8.2 Ex d - Motors

Motors of the protection class Flameproof Enclosure "db" may be operated by means of a frequency convertor only if the conditions laid down in EN 60079-0:2012 Art.26.5 are fulfilled.

Art. 26.5.1.2 Service temperature

The test to determine service temperatures shall be made at the rated voltage of the electrical equipment but without considering malfunctions.

The temperature of the hottest point of any non-metallic enclosures or non-metallic part of enclosure upon which the type of protection depends (see 7.1) shall be determined. Where the input voltage does not directly affect the temperature rise of the equipment or Ex Component, such as a terminal or a switch, the test current shall be 100 % of the rated current.

Art. 26.5.1.3 Maximum surface temperature

The test to determine maximum surface temperature shall be performed under the most adverse ratings with an input voltage between 90 % and 110 % of the rated voltage of the electrical equipment that gives the maximum surface temperature.

For electrical machines, determination of the maximum surface temperature may alternatively be conducted at the worst case test voltage within “Zone A” per IEC 60034-1. In this case, the equipment shall be marked with the symbol “X” in accordance with item e) of 29.3 and the specific condition of use shall include the information that the surface

temperature determination was based on operation within "Zone A" (IEC 60034-1), typically $\pm 5\%$ of rated voltage.

For electrical machines operated from a converter, the test voltage variation, for maximum surface temperature determination shall be applied to the motor-converter system as a whole, i.e. applied to the converter input, not the motor input. See Annex E for additional information on the temperature rise testing of electric machines. Where the input voltage does not directly affect the temperature rise of the equipment or Ex Component, such as a terminal or a switch, the test current shall be increased to 110 % of the rated current.

The tests to determine maximum surface temperature shall be performed without consideration of malfunctions unless specific malfunctions are specified by the requirements for the specific type of protection.

Explanation

By "least favourable conditions" is understood for example overload operation, mechanical blockage etc.

By "least favourable supply voltage" is understood for example the voltage waveform, the pulse frequency, the effective value of the voltage, the frequency (speed of rotation), etc. i.e. the frequency converter parameters relevant to safety laid down by the person adding the proof.

Proof of suitable thermal performance for frequency converter operation does not form part of standard contractual provision. It can be offered as an option for a limited number of converter makes and model series.

The company Leumann & Uhlmann AG confirms in a separate document the thermal proof carried out with the respective converters and the parameters relevant for safety laid down accordingly.

Where a different make or type of converter is used, or where set parameters relevant to safety differ from those specified in the relevant document, there the user is responsible for providing the thermal proof.



An incorrect design can lead to an explosion.

8.3 *Ex ec* - Motors

Motors of the protection class increased safety protection level “ec” (formerly non sparking “nA”) may be operated by means of a frequency convertor only if the conditions laid down in EN 60079-7:2015 Art. 5.2.8.4 are fulfilled.

5.2.8.4 Operation with a converter or a non-sinusoidal supply

To prove that the limiting temperature (5.2.8) is not exceeded throughout the operational speed range, two methods may be used: a type test or verification by calculation.

5.2.8.4.1 Type test with a converter

Machines intended to be operated with a converter shall be tested with the specified converter or with a comparable converter with respect to the output voltage, output current, and switching frequency specifications to confirm that the machine limiting temperatures (5.2.8) are not exceeded. The descriptive documentation for the machine shall include the necessary parameters and conditions required for use with a converter.

- a) For “eb” machines of duty type S1 to S10, the test conditions shall include normal operation at rated conditions, continuous overload, and starting.
- b) For “ec” machines of duty type S1, S2, S6, or S9; the test conditions shall include normal operation at rated conditions.
- c) For “ec” machines of duty type S3, S4, S5, S7, S8, or S10, the test conditions shall include normal operation at rated conditions and starting.

NOTE Additional information on the operation of motors with a converter can be found in IEC TS 60034-17 and IEC TS 60034-25. At the time of publication of IEC 60079-7, development of updated editions of both of these Technical Specifications is underway to reflect the current state of the art. [check at time of publication] Major concerns include over-temperature, high frequency and over-voltage effects, bearing currents and requirements for high frequency earthing. There are currently no IEC standards specifically dealing with the operation 1435 of permanent magnet motors with a converter.

5.2.8.4.2 Alternative type verification by calculation

The limiting temperature is not to be exceeded under the following conditions. This may be confirmed by calculation which shall be based on previously established representative test data.

- a) For “eb” machines of duty type S1 to S10, the conditions shall include normal operation at rated conditions, continuous overload, and starting.
- b) For “ec” machines of duty type S1, S2, S6, or S9; the conditions shall include normal operation at rated conditions.
- c) For “ec” machines of duty type S3, S4, S5, S7, S8, or S10, the conditions shall include normal operation at rated conditions and starting.



Herstellererklärung **Declaration by the manufacturer** **Déclaration de fabricant**

Wir Leumann & Uhlmann AG
We Wölferstrasse 24
Nous CH 4414 Füllinsdorf

erklären in alleiniger Verantwortung, dass das Produkt
bearing sole responsibility, hereby declare that the product
déclarons de notre seule responsabilité que le produit

Objekt	Drehstrommotor mit Käfiganker	Typ D	056... 063... 071... 080... 090...	NG
Unit	3-phase Induction motors	Type D	100... 112... 132... 160... 180...	
Objet	Moteurs asynchrone triphasés	Type D	200... 225... 250... 280... 315...	

auf das sich diese Erklärung bezieht, mit der Nachfolgenden Norm oder normativen Dokumente übereinstimmt

referred to by this declaration with the following standards or normative documents.

auquel se rapporte la présente déclaration est conforme aux normes ou aux documents normatifs suivants.

Bestimmungen der Richtlinie <i>Provisions of the directive</i> <i>Désignation de la directive</i>	Nummer sowie Ausgabedatum <i>No. and date of issue</i> <i>No. ainsi que date d'émission</i>
2014/35/EU Elektrische Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen (Niederspannungsrichtlinie) <i>2014/35/EU Electrical equipment designed for use within certain voltage limits (Low Voltage Directive)</i> <i>2014/35/UE Matériel électrique destiné à être employé dans certaines limites de tension (Directive Basse Tension)</i>	EN 60034-1:2010 EN 60034-2:2024 EN 60034-5:2020 EN 60034-6:1993 EN 60034-7:2022 EN 60034-8:2007/A1:2014 EN 60034-9:2005/A1:2007 EN 60034-12:2024 EN 60034-14:2018 EN 60034-30:2014 EN 60034-31:2012
2014/30/EU Elektromagnetische Verträglichkeit <i>2014/30/EU Electromagnetic compatibility</i> <i>2014/30/UE Compatibilité électromagnétique</i>	EN 61000-6-2:2019 EN 61000-6-4:2018

Füllinsdorf, 29. Januar 2026

Leumann & Uhlmann AG
Leiter QS

Philippe Thommen

die Geschäftsleitung

Christof Leumann



EU-Konformitätserklärung

EU Declaration of conformity

Déclaration de conformité UE

Wir Leumann & Uhlmann AG
We Wölferstrasse 24
Nous CH 4414 Füllinsdorf

erklären in alleiniger Verantwortung, dass das Produkt
bearing sole responsibility, hereby declare that the product
déclarons de notre seule responsabilité que le produit

Objekt	Drehstrommotor mit Käfiganker	Typ D	056... 063... 071... 080... 090...	II 2G Ex eb IIC T... Gb
<i>Unit</i>	<i>3-phase Induction motors</i>	<i>Type D</i>	100... 112... 132... 160... 180...	
Objet	Moteurs asynchrone triphasés	Type D	200... 225... 250... 280... 315...	

auf das sich diese Erklärung bezieht, den grundlegenden Sicherheits- und Gesundheitsschutz-
anforderungen nach Anhang II der Richtlinie 2014/34/EU entspricht.

referred to by this declaration of conformity satisfies the fundamental safety and health protection requirements according to Annex II of the directive 2014/34/EU.

auquel se rapporte la présente déclaration est conforme aux exigences de sécurité et protection sanitaires selon annexe II de la directive 2014/34/UE.

Bestimmungen der Richtlinie <i>Provisions of the directive</i> Désignation de la directive	Nummer sowie Ausgabedatum <i>No. and date of issue</i> No. ainsi que date d'émission
2014/34/EU Geräte und Schutzsysteme zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen <i>2014/34/EU Equipment and protective systems intended for use in potentially explosive atmospheres</i> 2014/34/UE Les Appareils et les systèmes de protection destinés à être utilisés en atmosphères explosibles	EN IEC 60079-0:2018 EN IEC 60079-7:2015/A1 :2018
2014/30/EU Elektromagnetische Verträglichkeit <i>2014/30/EU Electromagnetic compatibility</i> 2014/30/UE Compatibilité électromagnétique	EN 61000-6-2:2019 EN 61000-6-4:2018

Benannte Stelle PTB (0102) **und** SNCH (0499)
Notified Body Bundesallee 100, *and* 11, rue de Luxembourg B.P. 23
Organisme notifié D-38116 Braunschweig **et** L-5201 Sandweiler

Zertifizierungsnummer	PTB 99 ATEX 3220 PTB 99 ATEX 3221	SEE 01 ATEX 3223
<i>Certification number</i>	PTB 99 ATEX 3222 PTB 99 ATEX 3223	SNCH 03 ATEX 3452
Numéro de certification	PTB 99 ATEX 3224 PTB 99 ATEX 3352	SNCH 06 ATEX 4038

Hinweis Angaben über den Betrieb am Frequenzumrichter oder Softstarter siehe separates Datenblatt.

Note Instructions for use on a frequency converter or soft starter see separate data sheet.

Notice Les instructions concernant le fonctionnement au convertisseur de fréquence ou au démarreur, voir les fiches techniques en pièces jointes.

Füllinsdorf, 29. Januar 2026

Leumann & Uhlmann AG
Geschäftsführer
l'administrateur délégué
General Manager

Christof Leumann



EU-Konformitätserklärung

EU Declaration of conformity

Déclaration de conformité UE

Wir Leumann & Uhlmann AG
We Wölferstrasse 24
Nous CH 4414 Füllinsdorf

erklären in alleiniger Verantwortung, dass das Produkt

bearing sole responsibility, hereby declare that the product

déclarons de notre seule responsabilité que le produit

Objekt	Drehstrommotor mit Käfiganker	Typ D	056... 063... 071... 080... 090...	II 3G Ex ec IIC T... Gc
Unit	3-phase Induction motors	Type D	100... 112... 132... 160... 180...	
Objet	Moteurs asynchrone triphasés	Type D	200... 225... 250... 280... 315...	

auf das sich diese Erklärung bezieht, den grundlegenden Sicherheits- und Gesundheitsschutzanforderungen nach Anhang II der Richtlinie 2014/34/EU entspricht.

referred to by this declaration of conformity satisfies the fundamental safety and health protection requirements

according to Annex II of the directive 2014/34/EU.

auquel se rapporte la présente déclaration est conforme aux exigences de sécurité et protection sanitaires

selon annexe II de la directive 2014/34/UE.

Bestimmungen der Richtlinie <i>Provisions of the directive</i> Désignation de la directive	Nummer sowie Ausgabedatum No. and date of issue No. ainsi que date d'émission
2014/34/EU Geräte und Schutzsysteme zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen <i>2014/34/EU Equipment and protective systems intended for use in potentially explosive atmospheres</i> 2014/34/UE Les Appareils et les systèmes de protection destinés à être utilisés en atmosphères explosibles	EN IEC 60079-0:2018 EN IEC 60079-7:2015/A1 :2018
2014/30/EU Elektromagnetische Verträglichkeit <i>2014/30/EU Electromagnetic compatibility</i> 2014/30/UE Compatibilité électromagnétique	EN 61000-6-2:2019 EN 61000-6-4:2018

Hinweis Angaben über den Betrieb am Frequenzumrichter oder Softstarter siehe separates Datenblatt.

Note Instructions for use on a frequency converter or soft starter see separate data sheet.

Notice Les instructions concernant le fonctionnement au convertisseur de fréquence ou au démarreur,

voir les fiches techniques en pièces jointes.

Füllinsdorf, 29. Januar 2026

Leumann & Uhlmann AG
Geschäftsführer
l'administrateur délégué
General Manager

Christof Leumann

**EU-Konformitätserklärung****EU Declaration of conformity****Déclaration de conformité UE**

Wir Leumann & Uhlmann AG
We Wölferstrasse 24
Nous CH 4414 Füllinsdorf

erklären in alleiniger Verantwortung, dass das Produkt*bearing sole responsibility, hereby declare that the product**déclarons de notre seule responsabilité que le produit*

Objekt <i>Unit</i> <i>Objet</i>	Drehstrommotor mit Käfiganker 3-phase Induction motors Moteurs asynchrone triphasés	Typ D <i>Type D</i> <i>Type D</i>	056... 063... 071... 080... 090... 100... 112... 132... 160... 180... 200... 225... 250... 280... 315...	 II 2D Ex tb IIIC T... Db
--	--	--	--	---

auf das sich diese Erklärung bezieht, den grundlegenden Sicherheits- und Gesundheitsschutzanforderungen nach Anhang II der Richtlinie 2014/34/EU entspricht.

*referred to by this declaration of conformity satisfies the fundamental safety and health protection requirements according to Annex II of the directive 2014/34/EU.**auquel se rapporte la présente déclaration est conforme aux exigences de sécurité et protection sanitaires selon annexe II de la directive 2014/34/UE.*

Bestimmungen der Richtlinie <i>Provisions of the directive</i> <i>Désignation de la directive</i>	Nummer sowie Ausgabedatum <i>No. and date of issue</i> <i>No. ainsi que date d'émission</i>
2014/34/EU Geräte und Schutzsysteme zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen <i>2014/34/EU Equipment and protective systems intended for use in potentially explosive atmospheres</i> <i>2014/34/UE Les Appareils et les systèmes de protection destinés à être utilisés en atmosphères explosibles</i>	EN IEC 60079-0:2018 EN IEC 60079-31:2024
2014/30/EU Elektromagnetische Verträglichkeit <i>2014/30/EU Electromagnetic compatibility</i> <i>2014/30/UE Compatibilité électromagnétique</i>	EN 61000-6-2:2019 EN 61000-6-4:2018

Benannte Stelle SNCH (0499)
Notified Body 11, rue de Luxembourg B.P. 23
Organisme notifié L-5201 Sandweiler

Zertifizierungsnummer <i>Certification number</i> <i>Numéro de certification</i>	SNCH 03 ATEX 3452 SNCH 06 ATEX 4038
---	--

Hinweis Angaben über den Betrieb am Frequenzumrichter oder Softstarter siehe separates Datenblatt.*Note Instructions for use on a frequency converter or soft starter see separate data sheet.**Notice Les instructions concernant le fonctionnement au convertisseur de fréquence ou au démarreur, voir les fiches techniques en pièces jointes.*

Füllinsdorf, 29. Januar 2026

Leumann & Uhlmann AG
Geschäftsführer
l'administrateur délégué
General Manager

Christof Leumann



EU-Konformitätserklärung

EU Declaration of conformity

Déclaration de conformité UE

Wir Leumann & Uhlmann AG
We Wölferstrasse 24
Nous CH 4414 Füllinsdorf

erklären in alleiniger Verantwortung, dass das Produkt
bearing sole responsibility, hereby declare that the product
déclarons de notre seule responsabilité que le produit

Objekt	Drehstrommotor mit Käfiganker	Typ D	056... 063... 071... 080... 090...	II 3D Ex tc IIIC T... Dc
<i>Unit</i>	3-phase Induction motors	<i>Type D</i>	100... 112... 132... 160... 180...	
<i>Objet</i>	Moteurs asynchrone triphasés	<i>Type D</i>	200... 225... 250... 280... 315...	

auf das sich diese Erklärung bezieht, den grundlegenden Sicherheits- und Gesundheitsschutz-
anforderungen nach Anhang II der Richtlinie 2014/34/EU entspricht.

referred to by this declaration of conformity satisfies the fundamental safety and health protection requirements according to Annex II of the directive 2014/34/EU.

auquel se rapporte la présente déclaration est conforme aux exigences de sécurité et protection sanitaires selon annexe II de la directive 2014/34/UE.

Bestimmungen der Richtlinie <i>Provisions of the directive</i> <i>Désignation de la directive</i>	Nummer sowie Ausgabedatum <i>No. and date of issue</i> <i>No. ainsi que date d'émission</i>
2014/34/EU Geräte und Schutzsysteme zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen <i>2014/34/EU Equipment and protective systems intended for use in potentially explosive atmospheres</i> <i>2014/34/UE Les Appareils et les systèmes de protection destinés à être utilisés en atmosphères explosibles</i>	EN IEC 60079-0:2018 EN IEC 60079-31:2024
2014/30/EU Elektromagnetische Verträglichkeit <i>2014/30/EU Electromagnetic compatibility</i> <i>2014/30/UE Compatibilité électromagnétique</i>	EN 61000-6-2:2019 EN 61000-6-4:2018

Hinweis **Angaben über den Betrieb am Frequenzumrichter oder Softstarter siehe separates Datenblatt.**

Note Instructions for use on a frequency converter or soft starter see separate data sheet.

Notice Les instructions concernant le fonctionnement au convertisseur de fréquence ou au démarreur, voir les fiches techniques en pièces jointes.

Füllinsdorf, 29. Januar 2026

Leumann & Uhlmann AG
Geschäftsführer
l'administrateur délégué
General Manager

Christof Leumann



Leumann & Uhlmann AG

Wölferstrasse 24
Web leumann.ch
Tel. 061 467 98 98

4414 Füllinsdorf
Mail info@leumann.ch