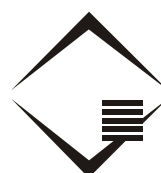
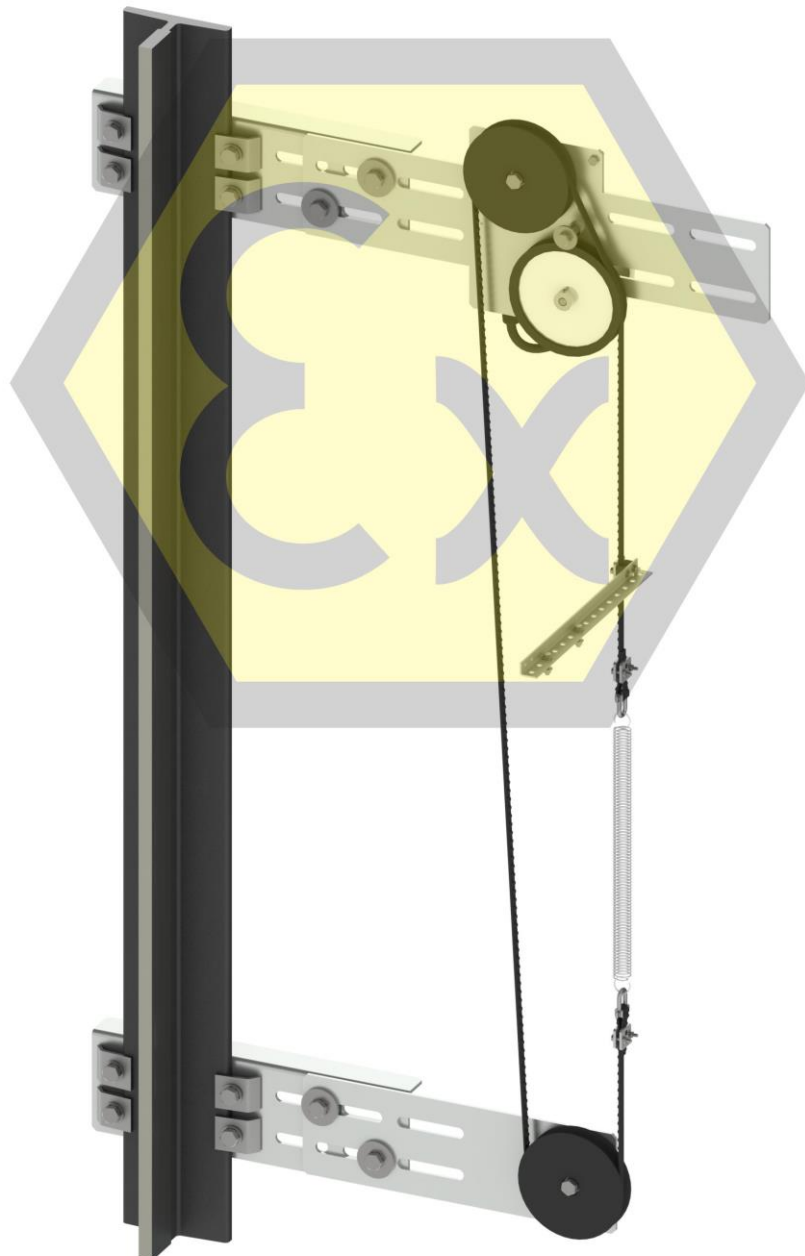


Disk-10A-Ex

Absolute encoder shaft copying with nubbed belt
for lifts in potentially explosive areas

Installation instructions

Status 2.5.2024



STRACK
LIFT AUTOMATION



Safety instructions

1. The nobbed belt mechanism must not be put into operation without a roller safety device.
2. In the event of replacement, the encoder roller may only be removed from the absolute encoder with great care. Improper removal of the reel will destroy the encoder.
3. The absolute encoder is a measuring instrument: DO NOT throw, DO NOT hit.
4. Make sure the spring preload is correct.
5. Make sure that the encoder roller and the deflection roller are installed in the correct position (top/bottom) and vertically.
6. Ground the encoder mounting plate with at least 2.5 mm² on the screw provided.

Explosion protection

The Disk-10A-Ex shaft copying corresponds to Directive 2014/34/EU

Device group II

Device category 2G

Explosion group IIC

Temperature class T6

and can be used in **zones 1 and 2**,

and

Device group II

Device category 2D

Explosion group IIIC

Temperature class T85°C

and can be used in **zones 21 and 22**.

This shaft copying bears the CE mark and can therefore be used in all member states of the European Union (note the partially different installation regulations for electrical systems in potentially explosive areas of the individual states).

Assembly description

In the case of greater travel heights, assembly should be carried out by two people. Installation may only be carried out by specialist lift fitters.

Installation on the car guide rail is described below. Alternatively, the mechanism set can also be dowelled to the shaft wall. This requires additional dowels and dowel screws, which are not included in the scope of delivery.

Drive on the cabin ceiling into the **shaft head**, press the emergency stop and mount the first extension bracket (see detailed drawing below) as high as possible in the shaft head. **If the machine room is at the top, the absolute encoder with plate is to be mounted, and if the machine room is at the bottom, the deflection pulley with plate is to be mounted.** Fasten the encoder or deflection pulley plate to the extension bracket according to the drawing according to the local conditions. Make sure that the mechanics in this area are not obstructed by suspension cables, safety gear, speed limiters, cabin terminal boxes or other attachments. Also ensure that all mounting plates are installed vertically.

Lower one half of the nobbed belt into the pit. As an assembly aid, the end of the belt can be weighed down with a ring spanner, for example, before lowering. When the nobbed belt has reached the pit, open the pulley lock, loop the belt around the pulley, and temporarily secure the belt and pulley with a cable tie. Screw the roller lock tight again!

Lower the other end of the belt into the slot. When the entire belt is deflated, remove the zip tie again.

Now slowly drive down on the car roof and guide both halves of the nubbed belt downwards with your fingers without twisting. Drive to the lowest stop position. However, make sure that the shaft pit remains accessible. Press the emergency stop.

The one fitter remains on the car to continue to hold the nobbed belt in place. Alternatively, the nobbed belt can be temporarily locked on the car with a cable tie. The other fitter climbs into the shaft pit for assembly. Before entering, please observe the relevant safety regulations.

First mount the second extension bracket in the shaft pit according to the detailed drawing (see below). Make sure that the attachment is aligned with the encoder attachment in the shaft head. The attachment must be deep enough so that the mechanics are not damaged even when the car is placed on the buffers.

Fasten the encoder or deflection pulley plate according to the drawing.

Assemble the spring according to the drawing. Then put the nobbed belt around the pulley and tension the spring by moving the extension bracket.



Important! Pay attention to the correct spring tension:

280 mm $\pm$ 10 mm measured without eyelets!

This corresponds to a tensile force of approx. 8 kg (78 N)

Now the nobbed belt must be connected to the lift car according to the drawing. It may be necessary to drill 6.5 mm holes for attachment to the supporting frame, to the cabin ceiling or under the cabin floor. If large buffers are used between the cabin and the supporting frame and the lift has the control function "relevelling" or "readjustment", the installation should be on the cabin ceiling or under the cabin floor, in all other cases on the supporting frame.



Important! If the absolute encoder is mounted in the shaft head, the spring must be attached **under** the car attachment. If the encoder is mounted in the shaft pit, the spring must be attached **above** the car attachment.



Important! The side of the belt that is attached to the car must be perpendicular. The other side may run at an angle (see picture assembly overview).



Important! Check again whether the belt runs smoothly over the belt rollers even when driving over the bottom and top floor and is not obstructed by the tension spring or belt attachment, for example.



Important! When assembly is complete, recheck the exact spring tension. If this is too weak, the belt can jump over the nubs, if it is too strong, the service life of the encoder, the pulleys and the belt is reduced.

Maintenance instructions

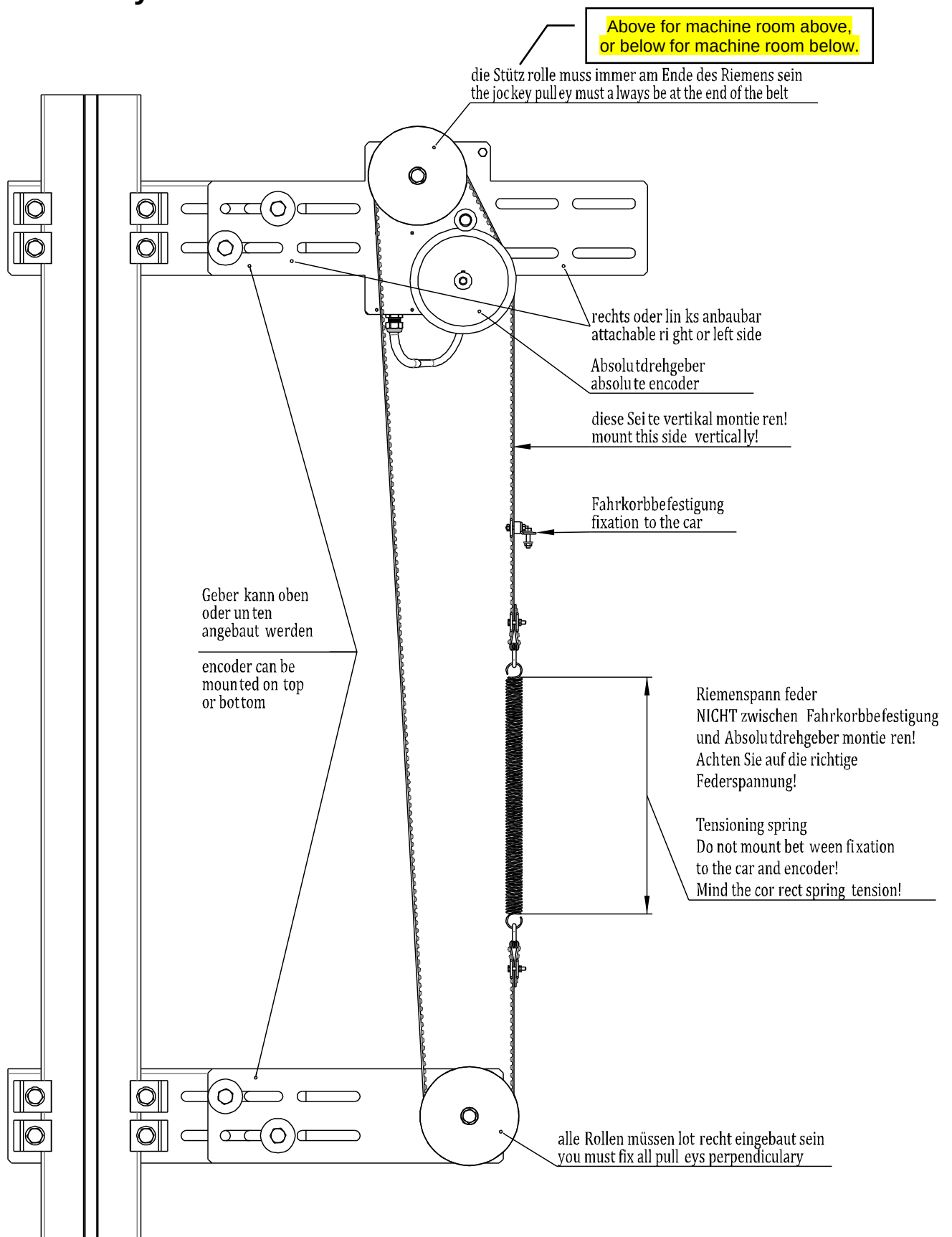
Do not use fat, oil or talc!

The mechanism and the nobbed belt are maintenance-free.

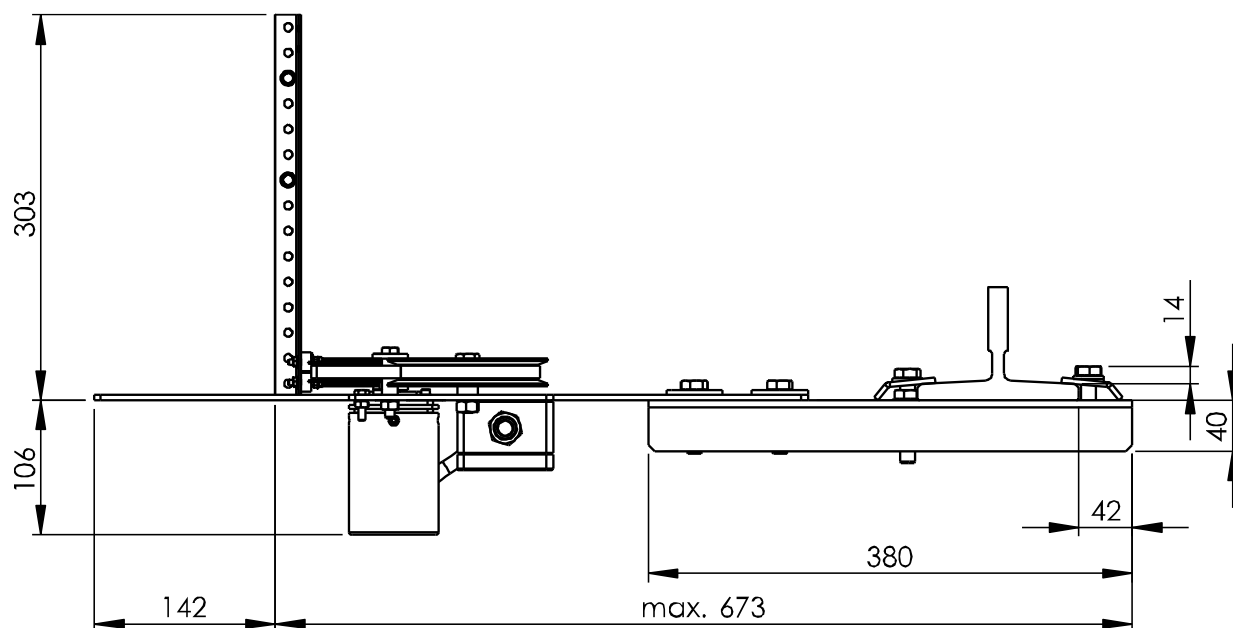
To be on the safe side, the spring tension should be checked once a year.

If the belt's service life limit has been reached, the belt, encoder roller and deflection rollers must always be replaced together. Be particularly careful when changing roles (e.g. do not hit).

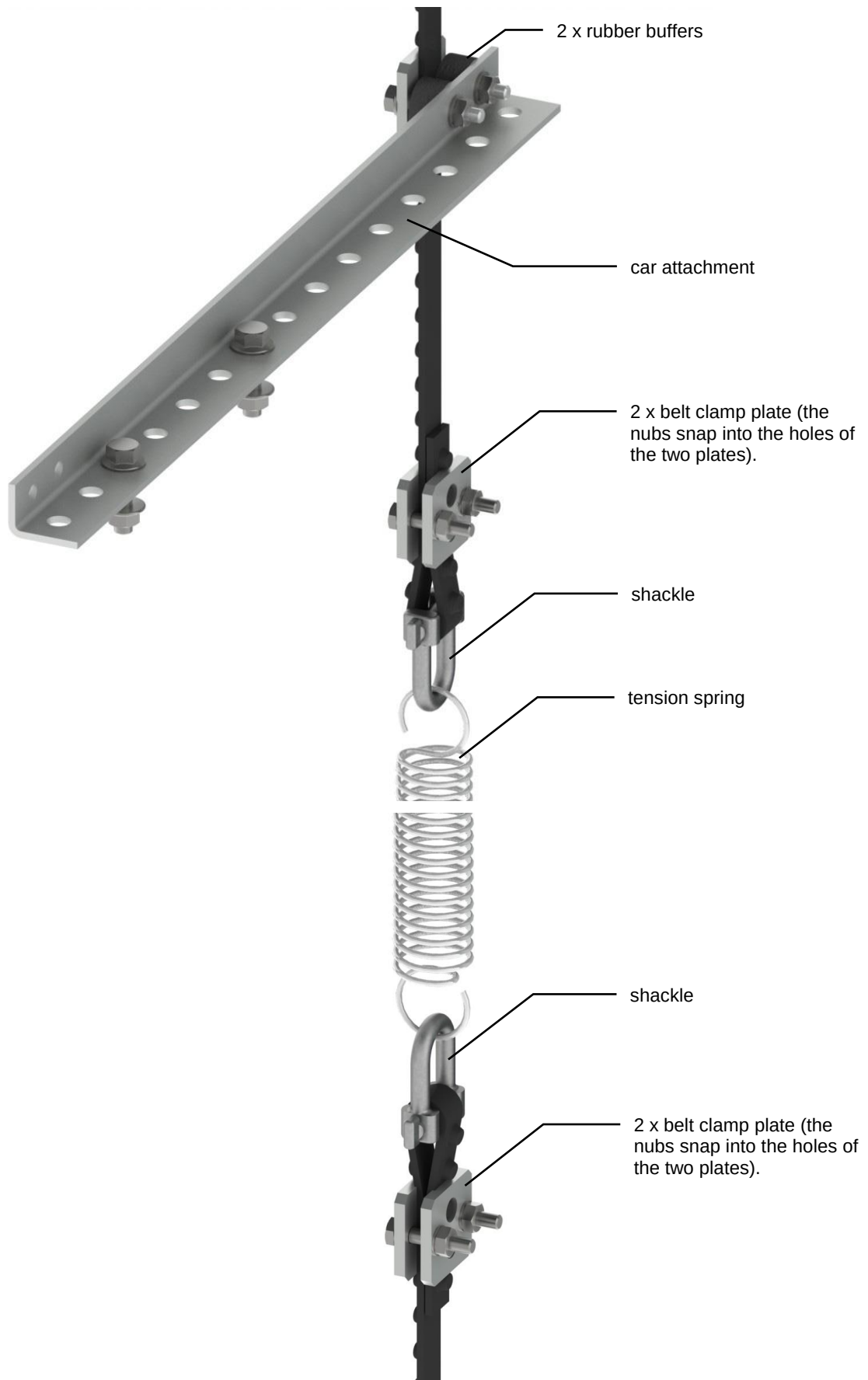
Assembly overview



Installation dimensions



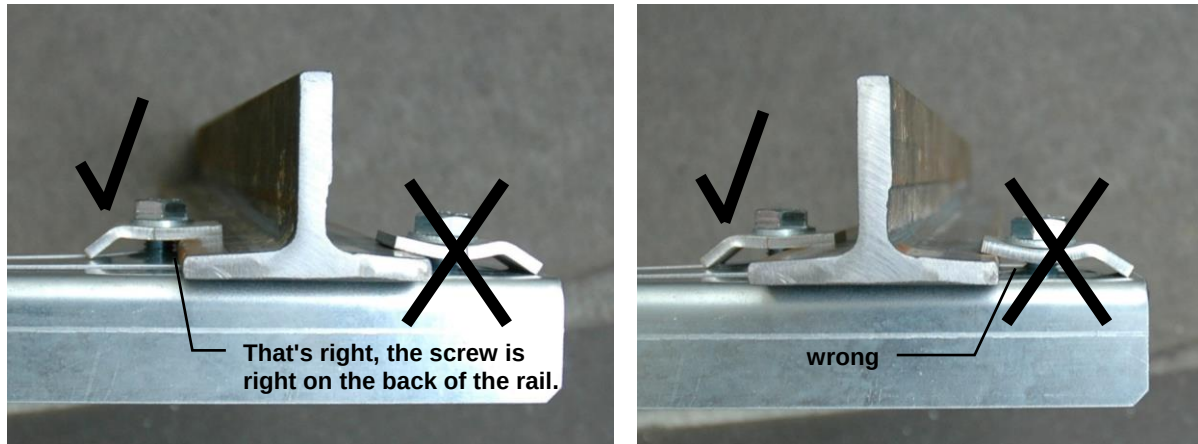
Detail of car and tension spring attachment



Mount the rail clamping plates correctly

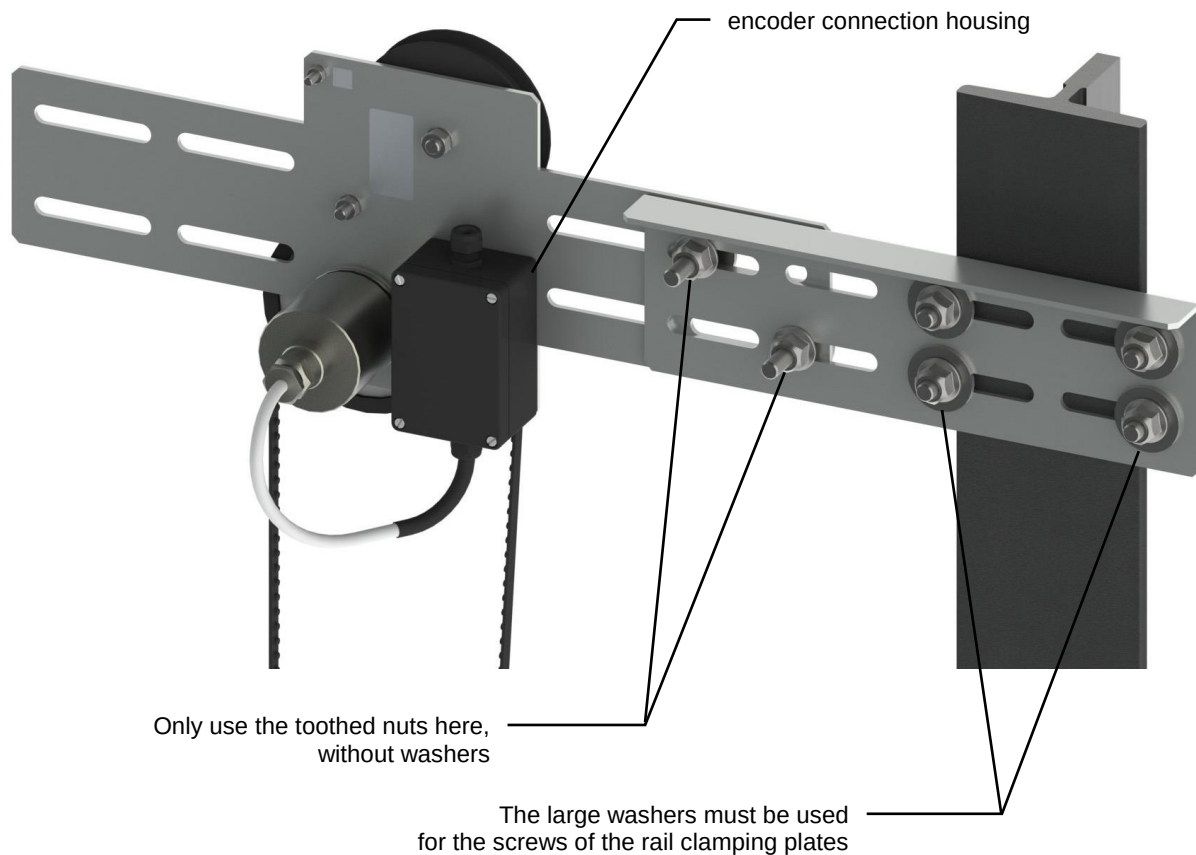
Push the screws of the rail clamping plates directly onto the back of the car rails so that the clamping plates do not bend too much and so that the entire mechanism cannot twist.

Top view

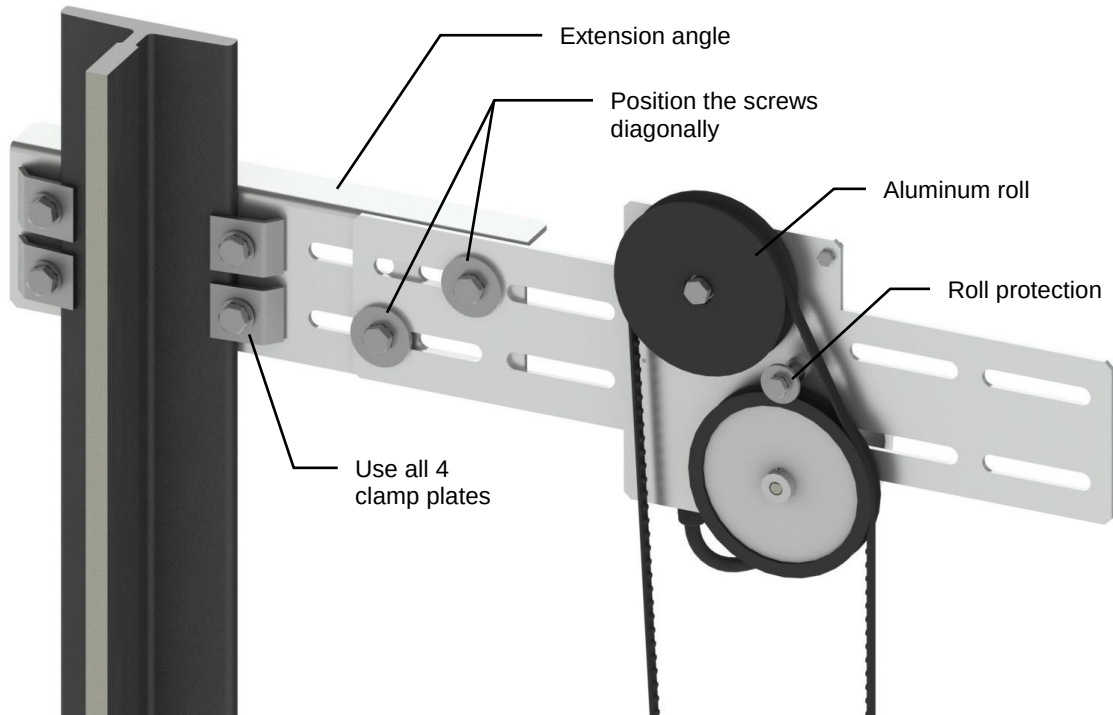


Install washers correctly

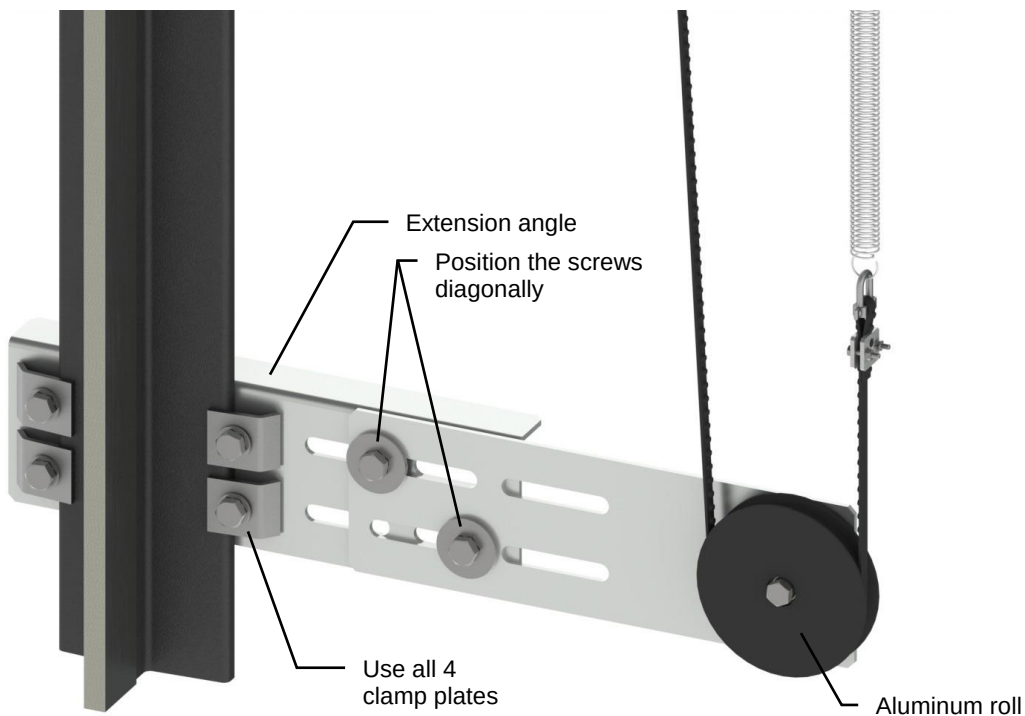
Rear view



Details encoder and pulley



For level adjustment, several of the large washers can be placed between the extension bracket and the transmitter or deflection pulley plate.



Technical data

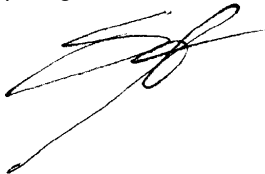
Description	Value
Absolute encoder	
Supply voltage absolute encoder	10-30 V DC
Current consumption	45 mA
Degree of protection EN 60529	IP 67
Material housing and flange	Aluminium, seawater resistant
Relative humidity	95% non-condensing
Vibration resistance EN 60068-2-6	100 m/s ² , 55 - 2000 Hz
Resistance to shock EN 60068-2-27	2500 m/s ² , 6 ms
Connection	Connection cable with plug on the control, length depends on the order, can be separated using Ex terminals directly on the encoder mounting plate
Overall system	
Travel speed max.	4 m/s
Travel height max.	70 m
Ambient temperature	0 bis +60 °C
Environmental conditions	Do not expose to aggressive media (acids), direct UV rays or weather
Hazardous area	 II 2G IIC T6 II 2D IP66 T85°
Ex-protection	Absolute encoder = d Junction box = e

EU Declaration of Conformity

We hereby declare that the devices described below comply with the relevant essential protection requirements of the named directives due to their conception and components as well as the version we have put on the market while adhering to our circuit and assembly suggestions. The devices corresponding to this declaration are provided with the CE mark. If the device is modified without our agreement, this declaration loses its validity.

Type designation	Disk-10A-Ex
Construction year	2024 / 2025 / 2026 / 2027 / 2028
Brief description	Absolute encoder shaft copying with nubbed belts for lifts in potentially explosive areas
Guidelines used as a basis	Lift Directive 2014/33/EU ATEX Directive 2014/34/EU EMC Directive 2014/30/EU
Applied standards	EN 81-20:2020 EN 81-50:2020 EN 60079-0:2012+A11:2013 EN 60079-1:2014 EN 60079-31:2009
	

This declaration becomes responsible for the manufacturer
STRACK LIFT AUTOMATION GmbH
issued on
May 2nd, 2024
by
Dipl.-Ing. Dirk Strack, Managing Director



Remark

The STRACK products mentioned above are exclusively intended for installation in lifts or assembly with other lift parts. Commissioning or placing on the market within the European Union is only permitted if the conformity of the end product corresponds to the relevant harmonized EU directives.

Test certificates



DEKRA EXAM GmbH · Postfach 10 27 48 · 44727 Bochum

STRACK LIFT AUTOMATION GmbH
Herrn Dirk Strack
Lieversfeld 8
42551 Velbert

DEKRA EXAM GmbH
Fachstelle für
Explosionsschutz -
Bergbau-Versuchsstrecke
Dinnendahlstraße 9
44809 Bochum
Telefon (0234) 3696 180
Telefax (0234) 3696 150

Kontakt Dr. Carsten Blum
Tel. direkt (0234) 3696 173
Fax direkt (0234) 3696 150
E-Mail carsten.blum@dekra.com
Datum 25.04.2008

Ihr Zeichen:
Ihre Nachricht vom 03.04.2008
Unser Zeichen: 100/001e/08 BVS-BI

Kurzstellungnahme: Zündgefahren der mechanischen Teile der Schachtkopierung Disk-10-Ex

Sehr geehrter Herr Strack,

Bezug nehmend auf Ihre E-Mail vom 03.04.2008 möchten wir wie folgt antworten:

Mit dem Auftreten von Zündgefahren ist an den mechanischen Teilen der Schachtkopierung Disk-10-Ex für den vorgesehenen Einsatz in explosionsgefährdeten Bereichen der Zonen 1 und 2, bei Anwesenheit von Gasen der Explosionsgruppe IIA und IIB sowie in staubexplosionsgefährdeten Bereichen der Zonen 21 und 22 nicht zu rechnen.

Zu den einzelnen potenziellen Zündquellen lassen sich folgende Aussagen treffen:

Elektrostatik:

Alle leitfähigen Teile der Schachtkopierung sind elektrisch leitend miteinander verbunden. Bei Einbindung der Schachtkopierung in den betrieblich vorhandenen Potenzialausgleich ist eine ausreichende elektrostatische Erdung gegeben.

Mit einer gefährlichen Aufladung von Kunststoffteilen ist nicht zu rechnen.

Der isolierende Noppenriemen wird nicht als Antriebsriemen eingesetzt. Die Höchstgeschwindigkeit liegt bei nur 4 m/s. Mit einer Breite von 1 cm unterschreitet der Noppenriemen den Grenzwert von 3 cm für die höchstzulässige Breite lang gestreckter isolierender Gegenstände (gem. BG Regel „Vermeidung von Zündgefahren infolge elektrostatischer Aufladungen (BGR 132)“, März 2003, Kap 3.1.2.1 des Hauptverbandes der gewerblichen Berufsgenossenschaften) Durch diese Maßnahmen wird die Entstehung von zündfähigen elektrostatischen Entladungen gegenüber Brennstoff/Luft-Gemischen verhindert.

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Geschäftsführer:
Jochen Tilze

EXAM – seit 2007 ein DEKRA Unternehmen



Mechanische Funken:

Mit dem Auftreten zündwirksamer mechanischer Funken ist aufgrund der geringen kinetischen Energien, die an der Schachtkopierung auftreten, nicht zu rechnen. Der Grenzwert für die maximal zulässige kinetische Energie von 40 Nm (gemäß prEN 13463-1) wird nicht überschritten. Ein Bruch der Feder stellt einen seltenen Fehler dar, und muss daher nicht berücksichtigt werden.

Heiße Oberflächen:

Die maximal zulässige Oberflächentemperatur von 85 °C wird im Normalbetrieb und beim Auftreten vorhersehbarer Störungen nicht überschritten. Es werden nur geringe Energien in der Schachtkopierung umgewandelt. Darüber hinaus wird die Schachtkopierung nur im Taktbetrieb eingesetzt. Bei einem abgerutschten Riemen können evtl. auftretende Reibvorgänge keine hohen Temperaturen erzeugen.

Weitere Zündquellen:

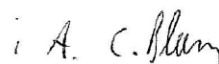
Weitere Zündquellen, wie chemische Reaktionen, Ultraschall, Ionisierende Strahlung etc. treten an der Schachtkopierung nicht auf.

Für weitere Fragen und Informationen stehen wir Ihnen gern zur Verfügung.

Mit freundlichen Grüßen
DEKRA EXAM GmbH



(Dr. Hesener)



(Dr. Blum)

(Translation)

Brief statement: Risk of ignition of the mechanical parts of the shaft copying Disk-10-Ex

Dear Mr Strack,

Referring to your e-mail of April 3rd, 2008, we would like to reply as follows:

The occurrence of ignition hazards on the mechanical parts of the shaft copying is not to be expected when the intended use is in hazardous areas of zones 1 and 2, in the presence of gases of explosion groups IIA and IIB and in dust-hazardous areas of zones 21 and 22.

The following statements can be made about the individual potential sources of ignition:

Electrostatic:

All conductive parts of the shaft copying are electrically connected to each other. Sufficient electrostatic grounding is provided when the shaft copying is integrated into the operational equipotential bonding.

A dangerous charging of plastic parts is not to be expected.

The insulating nubbed belt is not used as a drive belt. The maximum speed is only 4 m/s. With a width of 1 cm, the nubbed belt falls below the limit of 3 cm for the maximum permissible width of elongated insulating objects (according to BG rule "Avoidance of ignition hazards due to electrostatic charges (BGB 132)", March 2003, Chapter 3.1.2.1 of the Main Association of commercial professional associations).

These measures prevent the formation of ignitable electrostatic discharges in relation to fuel/air mixtures.

Mechanical sparks:

The occurrence of igniting mechanical sparks is not to be expected due to the low kinetic energies that occur at the shaft copying. The limit value for the maximum permissible kinetic energy of 40 Nm (according to prEN 13463-1) is not exceeded.

Spring breakage is a rare fault and therefore does not need to be considered.

Hot surfaces:

The maximum permissible surface temperature of 85 °C is not exceeded in normal operation and when foreseeable faults occur. Only low energies are converted in the shaft copying. In addition, shaft copying is only used in cycle operation. If a belt has slipped, any friction processes that may occur cannot generate high temperatures.

Other sources of ignition:

Other sources of ignition, such as chemical reactions, ultrasound, ionizing radiation, etc. do not occur at the shaft copying.

We are at your disposal for further questions and information.

Best regards
DEKRA EXAM GmbH

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin



(1) **EC-TYPE-EXAMINATION CERTIFICATE** (Translation)

(2) Equipment and Protective Systems Intended for Use in
Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 09 ATEX 1106 X



- (4) Equipment: Incremental encoder, types 8.7053..., 8.7063..., 8.7058...
and 8.7068...
- (5) Manufacturer: Fritz Kübler GmbH
- (6) Address: Schubertstraße 47, 78054 Villingen-Schwenningen, Germany
- (7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
- (8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
- The examination and test results are recorded in the confidential assessment and test report PTB Ex 09-18330.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2006 EN 60079-1:2007 EN 61241-0:2006 EN 61241-1:2004
- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment shall include the following:

 **II 2 G Ex d IIC T6 resp. II 2 D Ex tD A21 IP6X T85 °C**

Zertifizierungssektor Explosionsschutz

Braunschweig, November 10, 2009

By order
(signature)

Dr.-Ing. M. Thedens
Oberregierungsrat

3 pages, correct and complete as regards content.

By order:

Dipl.-Phys. U. Völkel

Braunschweig, June 2, 2010

sheet 1/3

Normal.dot

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 09 ATEX 1106 X**

(15) Description of equipment

The incremental encoders of types 8.7053..., 8.7063..., 8.7058... and 8.7068... are used for the conversion of a rotary motion into equivalent electric or digital pulses. They are designed to Flameproof Enclosure "d" type of protection. The plane cylindrical enclosure is of aluminium- or stainless steel design.

The shaft rotates in rolling bearings. Together with the flange and the cap, the shaft forms a flameproof shaft joint on one side.

Provided the Technical Rules for Flammable Liquids are considered, the incremental encoders can be used in filling and dispensing stations for flammable liquids.

Electrical connection is realized by an integrated connecting cable (open ended line) which is brought-out by means of a separately certified cable gland in compliance with Directive 94/9/EG.

The range of ambient temperatures is 40 °C down to -20 °C. This temperature range may be extended to 60 °C down to -40 °C with a special electrical or thermal design in which suitable materials or components are used.

For incremental encoders that are designed for ambient temperatures down to -40 °C suitable materials and components are used, which have been separately certified or tested.

Electrical data

Rated voltage, max.	30	V _{DC}
Rated current, max.	130	mA
Power dissipation, max.	4	W
Rated conductor cross-section, max.	12 x 2 x 0.25	mm ²
Ambient temperature	60 to -40	°C

(16) Assessment and test report PTB Ex 09-18330

(17) Special conditions for safe use

The gap widths remain below those specified in EN 60079-1:2007, table 2. They are documented in the descriptive documents (see test report PTB Ex 09-18330). A note to this effect is included in the operating instructions.

sheet 2/3

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
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Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 09 ATEX 1106 X

For repair of the flameproof joints due regard must be given to the structural specifications provided by the manufacturer. Repair in compliance with the values in table 2 of EN 60079-1 is not permissible.

Notes for manufacturing and operation

Measures must be taken to ensure that the temperatures permissible for the components used will not be exceeded.

The connecting cable shall be of a quality that meets the thermal and mechanical requirements under field service conditions.

When used in petrol pumps, the connecting cable shall be permanently installed outside the drop affected area. It shall be protected sufficiently against mechanical damage.

Equipotential bonding/earthing shall be safeguarded by the way the incremental encoder is connected with the complete system.

Any components mounted or installed (terminal compartments, bushings, cable entries, connectors) shall be of a technical standard that complies with the specifications on the cover sheet. They shall be suited for the operating conditions and be covered by a separate examination certificate. Any special conditions specified for the components shall be considered, and the components may have to be included into the type test.

(18) Essential health and safety requirements

Met by compliance with the afore-mentioned Standards.

Zertifizierungssektor Explosionsschutz
By order:

Braunschweig, November 10, 2009

(signature)

Dr.-Ing. M. Thedens
Oberregierungsrat

3 pages, correct and complete as regards content.

By order:



Dipl.-Phys. U. Völkel

Braunschweig, June 2, 2010



sheet 3/3

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin



1st SUPPLEMENT
according to Directive 94/9/EC Annex III.6
to EC-TYPE-EXAMINATION CERTIFICATE PTB 09 ATEX 1106 X
(Translation)

Equipment: Incremental encoder, type
8.7000..., 8.7014..., 8.7053..., 8.7063..., 8.7058... and 8.7068...

Marking:  **II 2 G Ex d IIC T4 - T6 Gb /**
II 2 D Ex tb IIIC T 135 °C - T 85 °C Db IP6X

Manufacturer: Fritz Kübler GmbH

Address: Schubertstraße 47, 78054 Villingen-Schwenningen, Germany

Description of supplements and modifications

The above incremental encoders conform with the requirements set forth in the EN 60079 series of standards and their marking requirements.

The incremental encoder series is extended to include the types 8.7000... and 8.7014...

The maximum conductor size is increased to 12 x 0.5 mm².

Special conditions for safe use

The gap widths and lengths remained below/exceeded those specified in EN 60079 1:2007, table 2. They are documented in the descriptive documents (see test report PTB Ex 09-18330). A note to this effect is included in the instructions for operation.

Repairs on the flameproof joints may only be made in accordance with the manufacturer's structural specifications. Repair on the basis of the values in tables 1 and 2 of EN 60079-1 is not permitted.

Notes for manufacturing and operation

The incremental encoders are exempted from the routine test requirements according to 60079-1, section 16, because they passed the static overpressure test at four times the reference pressure.

Parts that are attached or installed (e.g. bushings, cable glands, connectors) shall be of a technical standard that complies with the specifications on the cover sheet. They must be suited for the operating conditions and come with a separate examination certificate. The special conditions have to be observed and included in the type test, if necessary.

ZSEx10101e.d01m

Sheet 1/2

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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Physikalisch-Technische Bundesanstalt



Braunschweig und Berlin

1st SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 09 ATEX 1106 X

For incremental encoders with speeds of up to 2,000 rpm, and when using a shaft sealing ring at the same time, a temperature rise of 26 K and the max. ambient temperature must be considered to ensure that the temperature class and the maximum surface temperature are complied with.

For incremental encoders with speeds of up to 6,000 rpm, and when using a shaft sealing ring at the same time, a temperature rise of 60 K and the max. ambient temperature must be considered to ensure that the temperature class and the maximum surface temperature are complied with.

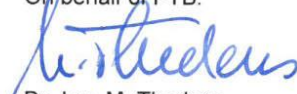
In the case of intermediate speed values, a repeat type test can be made with suitable measuring instruments to ensure that the temperature class and the max. surface temperature are complied with. The results of this type test must be filed internally.

Applied standards

EN 60079-0:2009, EN 60079-1:2007, EN 60079-31:2009

Test report: PTB Ex 13-13003

Zertifizierungssektor Explosionsschutz
On behalf of PTB:


Dr.-Ing. M. Thedens
Oberregierungsrat

Braunschweig, September 05, 2013



Sheet 2/2

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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2nd SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 09 ATEX 1106 X (Translation)

Equipment: Incremental decoder, types 8.7000***, 8.7014***, 8.7053***, 8.7063***, 8.7058*** and 8.7068***

Marking:  II 2 G Ex d IIC T4 - T6 Gb or
 II 2 D Ex tb IIC T135°C - T85°C Db

Manufacturer: Fritz Kübler GmbH

Address: Schubertstraße 47, 78054 Villingen-Schwenningen, Deutschland/Germany

Description of supplements and modifications

The incremental decoder of types 8.7000***, 8.7014***, 8.7053***, 8.7063***, 8.7058*** and 8.7068*** meets the requirements of standards EN 60079-0 et seqq. and their marking has been adjusted.

The range of ambient temperatures is 40 °C down to -20 °C. This temperature range may be extended to 90 °C down to -40 °C with a special electrical or thermal design in which suitable materials and components are used.

Notes for manufacture and operation

Due care shall be taken to make sure that the admissible temperatures of the components used will not be exceeded.

In particular at ambient temperatures greater than +40 °C, the maximum service temperature of the materials, components and seals shall be duly considered in the electro-thermal tests.

Components attached or installed (e.g. terminal compartments, bushings, cable glands, connectors) must be of a technical standard that complies with the specifications on the cover sheet. They must be suited for the operating conditions and be covered by a separate examination certificate. The special conditions specified for the components must be complied with, and the components have to be included in the type test, if necessary.

ZSEx10101e b

Sheet 1/2

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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2nd SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 09 ATEX 1106 X

Applied standards

EN 60079-0:2012, EN 60079-1:2014, EN 60079-31:2009

Test report: PTB Ex 16-16002

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB

Braunschweig, April 15, 2016


Dr.-Ing. D. Markus
Oberregierungsrat



Sheet 2/2

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig • GERMANY

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin



(1) **EC-TYPE-EXAMINATION CERTIFICATE**
(Translation)

- (2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**
(3) EC-type-examination Certificate Number:



PTB 00 ATEX 1002

- (4) Equipment: Power distribution, switchgear and controlgear assembly type Polyester-KE 06... .. and Polyester-KE 16
(5) Manufacturer: ROSE Elektrotechnik GmbH + Co. KG
(6) Address: D-32457 Porta Westfalica
(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
The examination and test results are recorded in the confidential report PTB Ex 99-19274.
(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50014:1997 EN 50018:1994 EN 50019:1994 EN 50020:1994
(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.
(11) This EC-type-examination Certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.
(12) The marking of the equipment shall include the following:

 **II 2 G EEx e II T6 resp. EEx ed IIC T6 resp.**
EEx e [ia] IIC T6 resp. EEx ia IIC T6



Braunschweig, March 22, 2000

sheet 1/3

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- (13) **SCHEDULE**
- (14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002**
- (15) Description of equipment

The power distribution, switchgear and controlgear assembly of type Polyester-KE 06 and Polyester-KE 16 consists of – separately certified – terminal housings of glass fibre reinforced polyester resin of the Increased Safety "e" type of protection which are provided for stationary assembly.

They are optionally used as terminal housings for circuits of the Increased Safety "e" type of protection or of the Intrinsic Safety "i" type of protection or combinations of intrinsically safe and non-intrinsically safe circuits in the types of protection Increased Safety "e" and Intrinsic Safety "i".

In the Increased Safety "e" type of protection, the terminal housings can also be equipped with – separately certified – control and signaling units and fuses in the Flameproof Enclosure "d" type of protection.

The connection is from outside via separately certified cable and conduit entries. The housing area for intrinsically safe circuits is marked, e.g. in light blue. The maximum permissible ambient temperature range of the terminal housing can be limited by the maximum permissible ambient temperature ranges of the separately certified equipment.

Technical data

Rated voltage:* up to 690 V
Rated current:* max. 400 A
Rated wire range:* max. 240 mm²
Protective conductor section:* max. 120 mm²

*) according to terminal type and ex-components used

Ambient temperature range -20 °C up to +80 °C with CR, NBR and PU Fermapor seal
 -55 °C up to +100 °C with silicon and HF seal

The rated values are maximum values, the actual electrical values depend on the electrical equipment incorporated. Within the scope of these maximum permissible values and with due regard to the standards, the manufacturer specifies the final rated values dependent on the system conditions, mode of operation, utilization category, etc. The characteristic values of the intrinsically safe circuits are to be given by the manufacturer on his own responsibility. Further technical details have been specified in the test documents.

The composition of the symbol specifying the type of protection depends on the types of protection of the components used.

sheet 2/3

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SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002

(16) Test report PTB Ex 99-19274

(17) Special conditions for safe use

none;

Hints for installation and operation

The maximum number of conductors for the housing size in dependence on the section and the permissible continuous current rating are to be taken from the specifications.

If the distances required according to EN 50020 for connection facilities are not ensured by the installation, cables of increased safety "e" quality of fail-safe cables are to be used.

When more than one intrinsically safe circuit is used, the rules for interconnection are to be observed.

(18) Essential health and safety requirements

The tests carried out and their results show that the power distribution, switchgear and controlgear assembly of type Polyester-KE 06 and Polyester-KE 16 meets the requirements of Directive 94/9/EC and of the standards given on the cover sheet.

Zertifizierungsstelle Explosionsschutz

Braunschweig, March 22, 2000

By order:



Dr.-Ing. U. Klausmeyer
Regierungsdirektor



sheet 3/3

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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1st SUPPLEMENT
according to Directive 94/9/EC Annex III.6
to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002
(Translation)

Equipment: Power distribution, switchgear and control assembly
type Polyester-KE 06 and Polyester-KE 16

Marking:  II 2 G EEx e II T6 or EEx ed IIC T6 or EEx e [ia] IIC T6
or EEx ia IIC T6

Manufacturer: ROSE Systemtechnik GmbH + Co. KG

Address: Erbeweg 13 - 15
32457 Porta Westfalica, Germany

Description of supplements and modifications

The energy distribution, switchgear and control assembly of type Polyester-KE 06 and Polyester-KE 16 may also be housed in the flange-mounted polyester housing of type Polyester-KE 26 14

Instructions for installation and use

The instructions for installation and use apply as before.

Test report: PTB Ex 01-11136

Zertifizierungsstelle Explosionsschutz

Braunschweig, 26. Juni 2001

By order:



Dr.-Ing. U. Klausmeyer
Regierungsdirektor



Sheet 1/1

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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2nd SUPPLEMENT
according to Directive 94/9/EC Annex III.6
to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002
(Translation)

Equipment: Power distribution, switch and control gear assembly
types Polyester-KE 06 ... and Polyester-KE 16 ...

Marking:  **II 2 G EEx e II T6 or EEx ed IIC T6 or EEx e [ia] IIC T6
or EEx ia IIC T6**

Manufacturer: ROSE Systemtechnik GmbH + Co. KG

Address: Erbeweg 13, 32457 Porta Westfalica, Germany

Description of supplements and modifications

Standards applied: EN 50014:1997 + A1 + A2, EN 50018:1994, EN 50019:1994,
EN 50020:1994, EN 50028:1987, EN 50281-1-1:1998

The power distribution, switch and control gear assembly, types Polyester-KE 06 ... and Polyester-KE 16 ..., may also be employed in areas in which explosive atmospheres with dust/air mixtures have to be expected to occur.

It may accommodate – separately certified – control and signalling devices and fuses designed to Flameproof Enclosure "d" and Encapsulation "m" type of protection.

The empty enclosure specified in the first supplement for PTB 01 ATEX 1061 U may be used.

The temperature class is expanded to additionally include class T5. Due consideration shall, however, be given to the maximum permissible ambient temperature of the separately certified operators.

The voltage rating is raised to 1500 V.

The marking is changed to read:

 **II 2 G/D EEx edm ia [ia] IIC T6 or T5 IP 66 T 85 °C or T 100 °C**

The composition of the protection symbol will be based on the types of protection of the components actually used.

Technical data

Rated voltage* up to 1500 V
Rated current* max. 400 A
Conductor size* max. 240 mm²
Cross section of protective conductor*.. max. 120 mm²

*) depending on type of terminal and explosion-proof components used.

Sheet 1/2

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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2nd SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002

Shock protection, protection against solid bodies,
and protection against ingress of water IP66 acc. to EN 60529:1991 as a minimum

Ambient temperatures:

- -55 °C to +55 °C, depending on sealing used
- -20 °C to +55 °C, with glass or polycarbonate window

Test report: PTB Ex 03-13296

Zertifizierungsstelle Explosionschutz

By order:


Dr.-Ing. U. Klagsmeyer
Regierungsdirektor

Braunschweig, September 23, 2003

Sheet 2/2

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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3rd SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002

(Translation)

Equipment: Power distribution, switch and control gear assembly
type Polyester-KE 06 and Polyester-KE 16

Marking:  II 2 G/D EEx edm ia [ia] IIC T6 or T5 IP 66 T 85 °C or T 100 °C

Manufacturer: ROSE Systemtechnik GmbH + Co. KG

Address: Erbeweg 13-15, D-32457 Porta Westfalica, Germany

Description of supplements and modifications

Empty enclosures, types Polyester-KE 26.122000 to 26.203000 (Minipolyglass EX enclosure) and type Polyester-KE 26.304000 to 26.406000 (Polyglass EX enclosure) may be used for the power distribution, switch and control gear assembly, types Polyester-KE 06 and Polyester-KE 16 (2nd supplement for 01 ATEX 1061 U).

The current rating is increased to 500 A.

Technical data

Rated voltage:*	 up to	1500 V
Rated current:*	 max.	500 A
Conductor size:*	 max.	240 mm ²
Protective conductor size:*	 max.	120 mm ²

*) depending on type of terminal and EX components used

Protection against contact, foreign bodies and water: IP 66 in accordance with EN 60529:1991

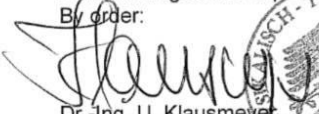
Ambient temperatures:

- 55 °C to + 55 °C depending on gasket used

- 20 °C to + 55 °C with glass or polycarbonate pane

Test report: PTB Ex Ex 03-13437

Zertifizierungsstelle Explosionsschutz
By order:


Dr.-Ing. U. Klausmeyer
Regierungsdirektor



Braunschweig, January 09, 2004

Sheet 1/1

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4th SUPPLEMENT
according to Directive 94/9/EC Annex III.6
to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002
(Translation)

Equipment: Power distribution, switchgear and control assembly
types Polyester-KE 06 ... and Polyester-KE 16 ...

Marking:  II 2 G EEx edm ia [ia] IIC T6 and T5
 II 2 D IP 66 T 85 °C and T 100 °C

Manufacturer: ROSE Systemtechnik GmbH

Address: Erbeweg 13 - 15, 32439 Porta Westfalica, Germany

Description of supplements and modifications

The energy distribution, switchgear and control assembly, types Polyester-KE 06 ... and Polyester-KE 16 ... , may also house an angle-mounted saddle terminal as protective-conductor terminal.

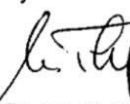
Technical data

Conductor size: 4 mm² and 6 mm²

Test report: PTB Ex 05-14297

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, December 12, 2007


Dr.-Ing. M. Theissen
Oberregierungsrat



Sheet 1/1

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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5th SUPPLEMENT
according to Directive 94/9/EC Annex III.6
to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002
(Translation)

Equipment: Power distribution, switch and control gear assembly,
type Polyester-KE 06 ... and Polyester-KE 16 ...

Marking:  II 2 G EEx edm ia [ia] IIC T6 and T5
 II 2 D IP66 T85°C and T100°C

Manufacturer: ROSE Systemtechnik GmbH

Address: Erbeweg 13 - 15, 32457 Porta Westfalica, Germany

Description of supplements and modifications

The power distribution, switch and control gear assembly, types Polyester-KE 06 ... and Polyester-KE 16 ... , has been re-inspected on the basis of Standards EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-11, and EN 60079-18. The marking will thus change to:

 II 2 G Ex edm ia [ia] IIC T6, T5 and T4

 II 2 D IP66 T 85 °C, T 100 °C and T 135 °C

The ambient temperature range is extended to – 55 °C ... + 135 °C.

Applied standards

EN 60079-0:2004

EN 60079-1:2004

EN 60079-7:2003

EN 60079-11:2007

EN 60079-18:2004

EN 50281-1-1:1999 + A1

Test report: PTB Ex 07-17130

Zertifizierungsbüro Explosionsschutz

Braunschweig, June 01, 2007

By order:

Dipl.-Phys.



Sheet 1/1

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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Braunschweig und Berlin



6th SUPPLEMENT
according to Directive 94/9/EC Annex III.6
to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002
(Translation)

Equipment: Power distribution, switch and control gear assembly,
type Polyester-KE 06 ... and Polyester-KE 16 ...

Marking:  **II 2 G Ex edm ia [ia] IIC T6, T5 and T4**
 **II 2 D IP66 T85°C, T100°C and T135°C**

Manufacturer: ROSE Systemtechnik GmbH

Address: Erbeweg 13 - 15, 32457 Porta Westfalica, Germany

Description of supplements and modifications

The power distribution, switch and control gear assembly, types Polyester-KE 06 ... and Polyester-KE 16 ... , has been re-inspected on the basis of Standards EN 61241-0 and EN 61241-1. The marking will thus change to:

 **II 2 G Ex edm ia [ia] IIC T6, T5 and T4**

 **II 2 D Ex tD A21 IP66 T 85 °C, T 100 °C and T 135 °C**

Applied standards

EN 60079-0:2006

EN 60079-1:2004

EN 60079-7:2007

EN 60079-11:2007

EN 60079-18:2004

EN 61241-0:2006

EN 61241-1:2004

Test report: PTB Ex 08-18123

Zertifizierungsstelle Explosionsschutz

By order:

Dr.-Ing. U. Klausmeyer
Direktor und Professor



Braunschweig, June 5, 2008

Sheet 1/1

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7th SUPPLEMENT
according to Directive 94/9/EC Annex III.6
to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002
(Translation)

Equipment: Power distribution, switchgear and control assembly
types Polyester-KE 06 ... and Polyester-KE 16 ...

Marking:  **II 2 G Ex edm ia [ia] IIC T6, T5 and T4**
 **II 2 D Ex tD A21 IP66 T85°C, T100°C and T135°C**

Manufacturer: ROSE Systemtechnik GmbH

Address: Erbeweg 13 - 15, 32457 Porta Westfalica, Germany

Description of supplements and modifications

The power distribution, switchgear and control assemblies of types Polyester-KE 06 ... and Polyester-KE 16 ... are supplemented to include types Polyester-KE 06.01 22 15 to 06.01 44 15 and 16.01 22 15 to 16.01 44 15 (Ex combination box enclosure).

The empty enclosures have been type approved with the 5th supplement for EC Type Examination Certificate PTB 01 ATEX 1061 U.

Bolted or riveted name plates made from stainless steel may optionally be mounted.

Technical data

Rated voltage:* up to 1500 V
Rated current:* max. 500 A
Conductor size:* max. 240 mm²
Protective conductor size:* max. 120 mm²

*) depending on type of terminal and 'Ex' components used.

Ambient temperatures

-55 °C to +135 °C with silicone sealing (suppliers: Sico, Silex and Gummi Jäger)
and HF sealing (supplier: Chomerics)
-40 °C to +100 °C with HF sealing (suppliers: Neuhaus Elektronik, Bavaria Elektronik)
-40 °C to +100 °C with PU foam (supplier: Sonderhoff)
-20 °C to +100 °C with EPDM HF sealing (supplier: Meteor)
-20 °C to +100 °C with EPDM sealing
-20 °C to + 85 °C with CR, EPDM, NBR and PU-Fermapor sealing
-20 °C to +100 °C with glass / conductive polycarbonate pane
-50 °C to + 85 °C with PC pane mono duro clear 8099, conductive

ZSEx10101e.dot

Sheet 1/2

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7th SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002

Shock protection and protection against ingress
of solid foreign bodies and water:

IP66 acc. to EN 60529

Applied standards

EN 60079-0:2006

EN 60079-1:2004

EN 60079-7:2007

EN 60079-11:2007

EN 60079-18:2004

EN 61241-0:2006

EN 61241-1:2004

Test report: PTB Ex 08-18305

Zertifizierungssektor Explosionsschutz

Braunschweig, December 15, 2008

By order:


Dr.-Ing. M. Friederichs
Oberregierungssekretär



Sheet 2/2

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8th SUPPLEMENT
according to Directive 94/9/EC Annex III.6
to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002
(Translation)

Equipment: Power distribution, switchgear and control assembly
types Polyester-KE 06 ... and Polyester-KE 16 ...

Marking:  **II 2 G Ex edm ia [ia] IIC T6, T5 and T4**
 **II 2 D Ex tD A21 IP66 T85°C, T100°C and T135°C**

Manufacturer: ROSE Systemtechnik GmbH
Address: Erbeweg 13 - 15, 32457 Porta Westfalica, Germany

Description of supplements and modifications

The power distribution, switchgear and control assemblies of types Polyester-KE 06 ... and Polyester-KE 16 ... are supplemented to include types Polyester-KE 06.88 04 00 and Polyester-KE 16.88 04 00 (Okta Box).

The empty enclosures have been type approved with the 7th supplement for EC-Type-Examination Certificate PTB 01 ATEX 1061 U.

Technical data

Rated voltage:*	 up to	1500 V
Rated current:*	 max.	500 A
Conductor size:*	 max.	240 mm ²
Protective conductor size:*	 max.	120 mm ²

*) depending on type of terminal and 'Ex' components used.

Ambient temperatures

-55 °C to +135 °C with silicone sealing (Sico, Silex and HF sealing (Chomerics)
-40 °C to +100 °C with HF sealing (Neuhaus Elektronik, Laird)
-40 °C to +100 °C with PU foam (Sonderhoff)
-20 °C to + 85 °C with CR sealing (Leeser)
-20 °C to +100 °C with glass pane
-50 °C to +100 °C with PC pane mono duro clear 8099

Protection against solid foreign
objects, water and contact: IP66 in accordance with EN 60529

Sheet 1/2

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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Braunschweig und Berlin

8th SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002

Applied standards

EN 60079-0:2006, EN 60079-1:2007, EN 60079-7:2007, EN 60079-11:2007
EN 60079-18:2004, EN 61241-0:2006, EN 61241-1:2004

Assessment and test report: PTB Ex 11-11119

Zertifizierungssektor Explosionsschutz

Braunschweig, October 26, 2011


Dr.-Ing. U. Klausmeyer
Direktor und Professor



Sheet 2/2

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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Braunschweig und Berlin



9th SUPPLEMENT
according to Directive 94/9/EC Annex III.6
to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002
(Translation)

Equipment: Power distribution, switchgear and control assembly
types Polyester-KE 06 ***** and Polyester-KE 16 *****

Marking:  **II 2 G Ex edm ia [ia] IIC T6, T5 and T4**
 **II 2 D Ex tD A21 IP66 T85°C, T100°C and T135°C**

Manufacturer: ROSE Systemtechnik GmbH

Address: Erbeweg 13 - 15, 32457 Porta Westfalica, Germany

Description of supplements and modifications

The power distribution, switchgear and control assemblies of types Polyester-KE 06 ***** and Polyester-KE 16 ***** have been re-examined on the basis of standards EN 60079-0:2009, and EN 60079-31:2009.

The marking therefore changes to:

 **II 2 G Ex d e ia [ia] mb IIC T6, T5 bzw. T4 Gb**

 **II 2 D Ex tb IIC T85 °C, T100 °C bzw. T135 °C Db IP66**

Technical data

Rated voltage:*	 up to	1500 V
Rated current:*	 max.	500 A
Terminal cross-section:*	 max.	240 mm ²
Protective conductor cross-section:*	 max.	120 mm ²

*) depending on type of terminal and 'Ex' components used.

Ambient temperatures

-55 °C to +135 °C with silicone sealing (manufacturer: Sico, Silex)
-40 °C to +100 °C with HF sealing (manufacturer: Neuhaus Elektronik, Laird)
-40 °C to +100 °C with PU foam (manufacturer: Sonderhoff)
-20 °C to + 85 °C with CR sealing (manufacturer: Leeser)
-20 °C to +100 °C with glass pane
-50 °C to +100 °C with PC pane mono duro clear 8099, conductive

Normal.dotm

Sheet 1/2

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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Braunschweig und Berlin

9th SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1002

Protection against solid foreign
objects, water and contact: IP66 in accordance with EN 60529

The rated values are maximum values, the actual electrical values depend on the electrical equipment incorporated. Within the scope of these maximum permissible values and with due regard to the standards, the manufacturer specifies the final rated values dependent on the system conditions, mode of operation, utilization category, etc. The characteristic values of the intrinsically safe circuits are to be given by the manufacturer on his own responsibility.

The composition of the symbol specifying the type of protection depends on the types of protection of the components used.

The maximum permissible ambient temperature range will be limited by the maximum permissible ambient temperature ranges of the separately certified equipment.

Notes for manufacturing and operation

The maximum number of conductors for the housing size in dependence on the section and the permissible continuous current rating are to be taken from the supplementary sheets.

If the clearance requirements for the connectors as specified in EN 60079-11 cannot be safeguarded with the system installation and layout, wiring, that meets the quality criteria Increased Safety "e" shall be used, or the wiring shall be of the fail-safe type.

When more than one intrinsically safe circuit is used, the rules for interconnection are to be observed.

Degree of protection IP66 will be safeguarded only when sealing and cable entry fittings are properly fitted. The manufacturer's instructions have to be observed.

Applied standards

EN 60079-0:2009, EN 60079-1:2007, EN 60079-7:2007, EN 60079-11:2007
EN 60079-18:2009, EN 60079-31:2009

Assessment and test report: PTB Ex 12-11167

Zertifizierungssektor Explosionsschutz
On behalf of PTB:

Dr.-Ing. U. Klausmeyer
Direktor und Professor



Braunschweig, April 18, 2012

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EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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