Installation and Operating Manual

(Translation of the original installation and operating manual)

MTS

Mechanical Thermal Switch Unit

including design in accordance with Directive 2014/34/EU (ATEX directive)

Version 11, 2025-08-20
TCR3626011800EN, Protection Class 0: public

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TCR3626011800EN

This document describes the state of design of the product at the time of the editorial deadline.

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1 Possible Applications, MTS Characteristics

The mechanical thermal switch unit (MTS) is a monitoring system for Voith turbo couplings.

- The MTS provides easy monitoring of the turbo coupling temperature.
- **In case of excess temperature, dependent on the application,**
  - the operator can be warned,
  - the drive motor shutdown can be initiated,
- If excess temperature is recognized in time, the discharge or loss of coupling filling through the fusible plugs can be avoided.
  Downtimes are reduced.
- After the switching element of the MTS has tripped, it has to be replaced.

⚠ WARNING

Explosion hazard
When the permissible surface temperature is exceeded, there is the risk of explosion.

- The thermal switch unit MTS can be used in potentially explosive atmospheres to monitor the temperature. The signals serve for pre-warning. The MTS does not limit the maximum surface temperature.



2 MTS Functioning

The mechanical thermal switch unit (MTS) consists of two components:

- **Switching element**
- **Switch**

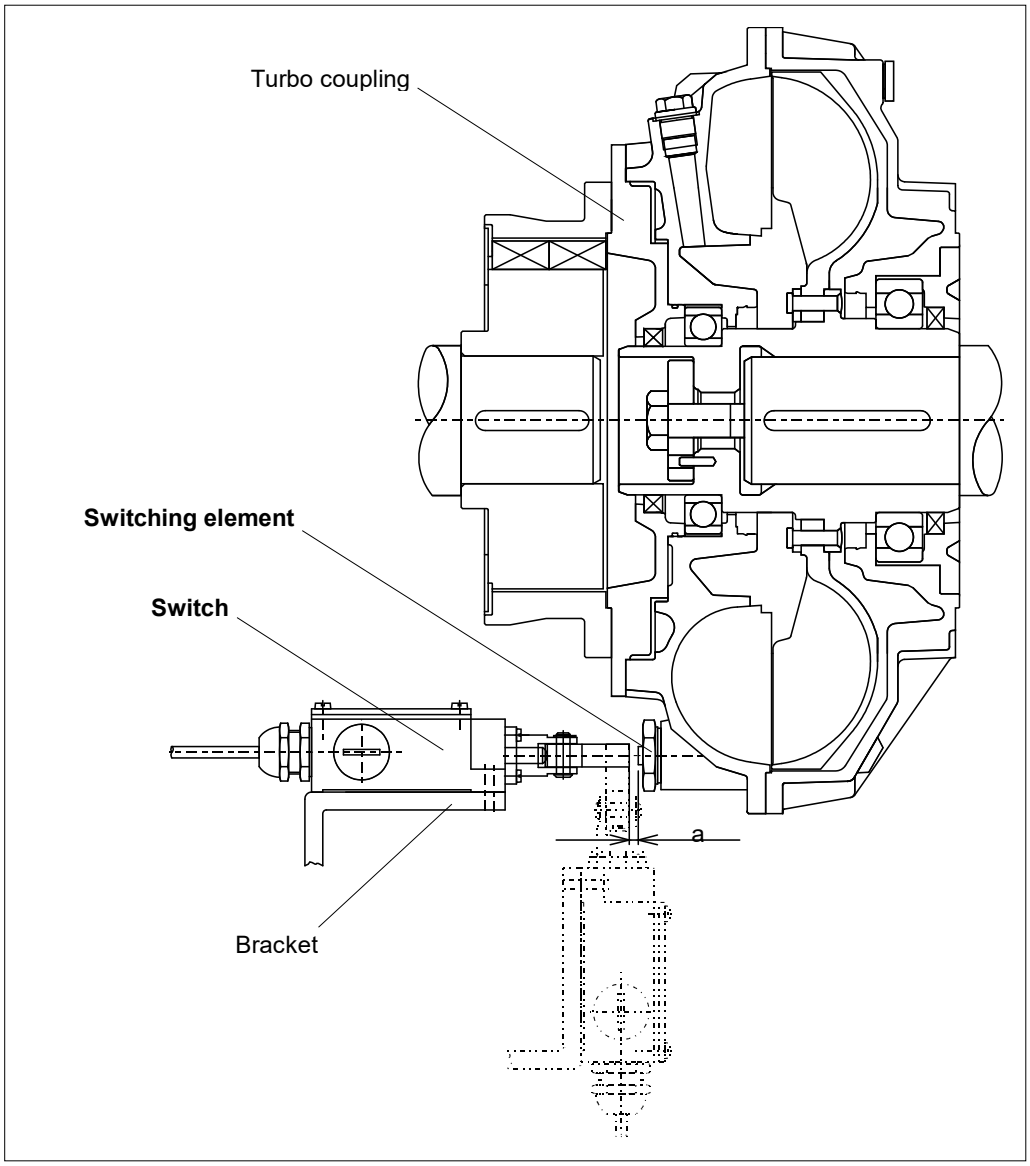


Fig. 1

2.1 Switching element

Instead of a blind screw, the switching element is screwed into the outer wheel of the turbo coupling. The result is a thermal contact between the switching element and the operating fluid.
In rare exceptional cases, when space is limited, the installation of the switching element into the shell of the coupling is permissible. Please consult Voith.
A spring-loaded pin and a chamber filled with solder are integrated in the switching element. The response temperature of the switching element corresponds to the melting temperature of the solder.
Below the response temperature, the solder keeps the pin in its initial position. On reaching the nominal response temperature, the solder releases the pin, and a compression spring presses the pin toward the outside.
Once the MTS switching element has responded, it is no longer usable and needs to be replaced.

2.2 Switch

Dependent on the space available, the switch is fitted parallel or in radial position to the turbo coupling axis. The switch is provided with a pivotable switching finger.
The switch is wired as snap-action connection with a make-and-break contact.

2.3 Interaction of MTS components

If the turbo coupling with screwed in switching element rotates, the switching element will permanently pass the switch.
The pin of the released switching element actuates the switching finger when the coupling rotates causing the switch to switch over.

Maximum permissible temperature
→ Operating manual of turbo coupling

⚠ WARNING

Risk of personal injuries and damage to property
Following the shutdown, the control system has to be locked in a way that prevents automatic re-start.

- Switch off the unit in which the turbo coupling is installed and secure the switch against inadvertent switch-on.
- For all work performed on the turbo coupling and MTS ensure that both the drive motor and the driven machine have stopped running and that a re-start is absolutely impossible!
- The coupling may only be restarted if the triggered MTS switching element was replaced and the turbo coupling temperature is below the maximum permissible temperature allowed when switching on the motor!

In case of inner wheel drive and blocking of driven machine, the MTS functioning is no longer guaranteed!

3 Technical Data

3.1 Switching element

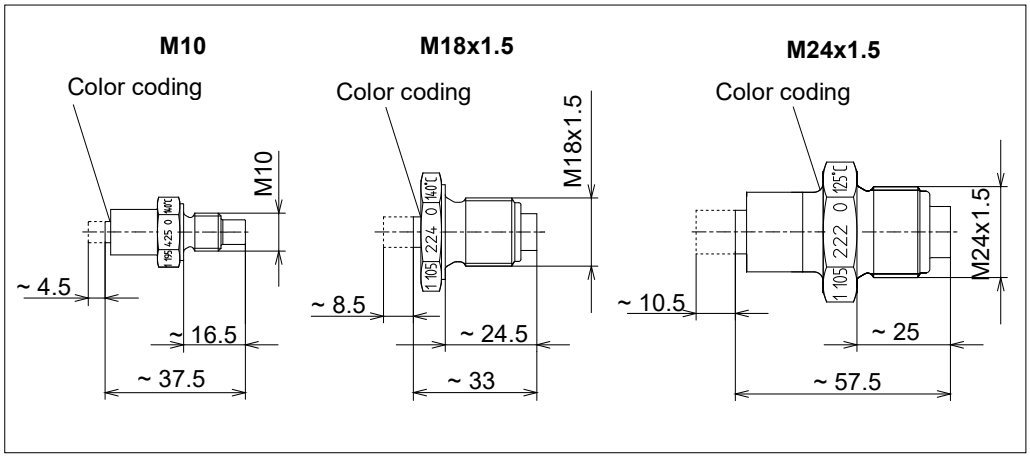


Fig. 2

The following switching elements are available for the different turbo coupling sizes:

Dimension of thread	M10	M18x1.5	M24x1.5
Nominal response temperature	140 °C	95 / 110 / 125 / 140 /160 °C	110 / 125 / 140 /160 °C
Suitable for coupling sizes ...	154 – 274	366 – 650	750 – 1330
Response tolerance	± 5 °C at 110 °C: -10 °C		
Peripheral speed	max. 50.5 ms^{-1}	max. 72 ms^{-1}	max. 72 ms^{-1}
Width across flats	16	27	32
Tightening torque	22 Nm	60 Nm	144 Nm

Table 1

- The switching element is marked with the article number and response temperature on the housing.
- The nominal response temperature of the switching element is determined in connection with the the coupling design.
- In addition, the response temperature can be identified by a color coding.

Response temperature	Color coding
95 °C	no color coding (tinned)
110 °C	yellow
125 °C	brown
140 °C	red
160 °C	green

Table 2

3.2 Switch

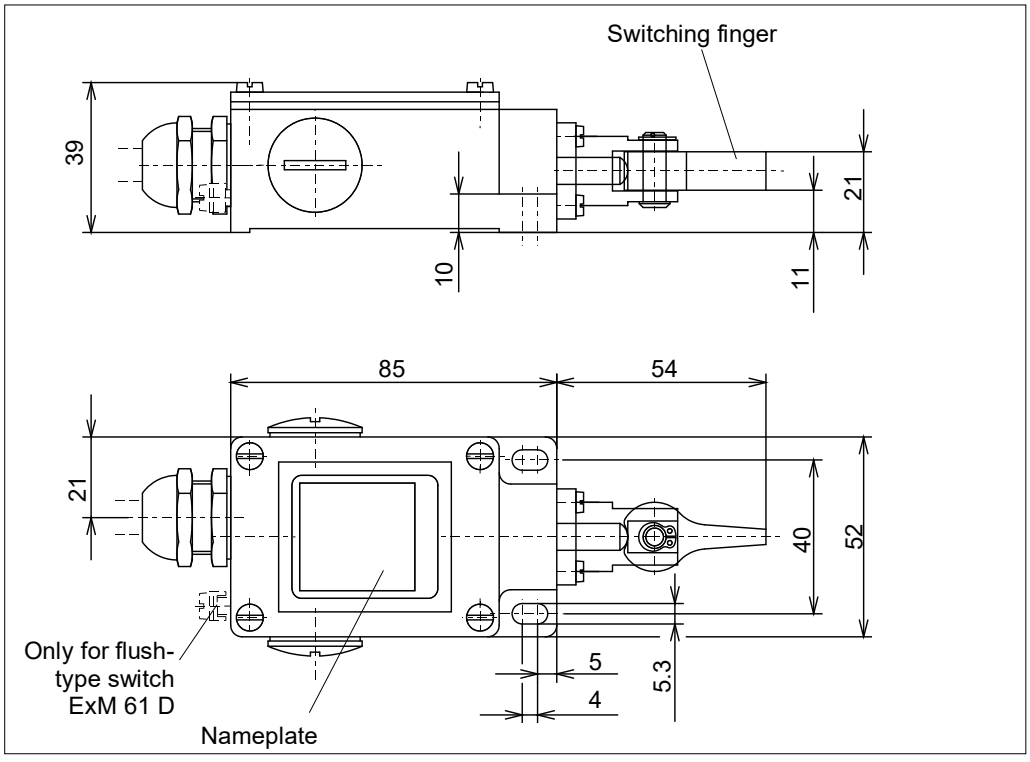
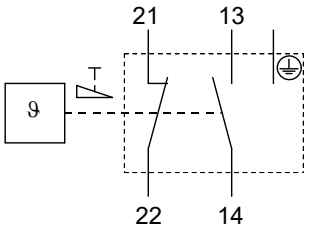
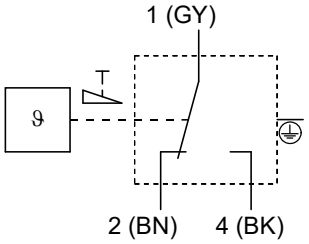


Fig. 3

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Switch, type	EM 61 D	ExM 61 D
Switching capacity	400 V AC, 6 A 230 V DC, 0.25 A 24 V DC, 4.0 A	250 V AC - 5 A (AC 15) 230 V DC - 0.16 A (DC 13)
Minimum load	24 V, 20 mA	20 V, 100 mA
Permissible ambient temperature	-40 °C…80 °C	-20 °C…60 °C
Protection to DIN EN 60529	IP65	IP65
Short-circuit protection	16 A gL/gG D-fuse	5 A (slow-blow)
Certificates / type of protection	CSA - LR 85005 - 6 UL File E 57648 A 300 P 300 Project 98 ME 41537 A 300 P 300 CCC-2010010305418204	Ⓔx II 2G Ex d IIC T6 Gb (PTB 03 ATEX 1069 X). Ⓔx II 2D Ex tb IIIC T80°C Db IP65 (PTB 03 ATEX 1069 X).
Connection	Cable entry: M20 x 1.5 (cable gland for cable diameter 5…13 mm and two plugs)	3-core PVC cable H05 VV-F 0.75 mm² length: 5 m
Wiring diagram		

BN: **brown**
BK: **black**
GY: **gray**

Table 3

→ Annex Type: EM 61 D
ExM 61 D

3.2.1 Switch ExM 61 D

Design / functioning:
Switch ExM 61 D contains an explosion-proof contact unit (switch insert) of type: ExM 14.
The contact unit is provided with cast-in cable.
The contact unit contains a single-pole double-throw switch (SPDT switch).

4 User information

This manual will support you in using the mechanical thermal switch unit (**MTS**) in a safe, proper and economical way.

If you observe the information contained in this manual, you will
- increase the reliability and lifetime of the unit,
- avoid any risks,
- reduce repairs and downtimes.

This manual must
- always be available at the MTS place of use,
- be read and used by every person who works on the unit or commissions the same.

The mechanical thermal switch unit has been manufactured to the latest design standard and approved safety regulations. Nevertheless, the user's or third party's life may be endangered or the unit or other property impaired in case of improper handling or unintended use.

Spare parts:
Spare parts must comply with the requirements determined by Voith. This is guaranteed when original spare parts are used.
Installation and/or use of non-original spare parts may negatively change the characteristics of the **MTS** and may thus impair safety.
Voith is not liable for any damages resulting from the use of non-original spare parts.

Use only appropriate workshop equipment for maintenance. Professional maintenance and/or repair can only be guaranteed by the manufacturer or an authorized specialist workshop.

This manual has been issued with the utmost care. However, should you need any further information, please contact:

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5 Safety

5.1 Safety information

Safety information indicating the descriptions and symbols as described in the following are used in the operating manual.

5.1.1 Structure of safety information

⚠ DANGER WORD
Hazard consequences Source of hazard • Warding off of danger

Danger word
The danger word divides the severity of the danger in several levels:

Danger word	Severity of danger
⚠ DANGER	Death or serious injury (irreversible personal injury)
⚠ WARNING	Death or serious injury possible
⚠ CAUTION	Minor or moderate injury possible
NOTICE	Possibly damage to property of - the product - its environment
i INFORMATION	For useful additional information on proper handling of the product only

Table 4

Hazard consequences
Hazard consequences indicate the kind of hazard.

Source of hazard
The source of hazard indicates the cause of hazard.

Warding off of danger
Warding off of danger describes the measures to be taken to ward off a danger.

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5.1.2 Definition of safety symbols

Symbol	Definition
	Danger of explosion Marking with the Ex-symbol indicates possible hazards which have to be observed for the use in potentially explosive atmospheres.

Table 5

5.2 Intended use

- The mechanical thermal switch units for pre-warning (**MTS**) serves for monitoring the temperature of Voith turbo couplings. Any use beyond that described herein, e.g. for operating or application conditions that have not been agreed upon, is deemed unintended.
- Intended use also includes observing this installation and operating manual.
- The manufacturer is **not** liable for any damages resulting from unintended use. The risk has to be borne solely by the user.

5.3 Unintended use

Design range
→ Operating manual of turbo coupling

- Design range is not met.
- Any use beyond that described herein, e.g. for higher powers, higher speeds, or operating conditions that have not been agreed upon, is deemed unintended.
- Moreover, it is not permitted to use MTS mechanical thermal switch units from third parties.

5.4 General information as to dangerous situations

For all work performed on the mechanical thermal switch unit, please observe the local regulations for the prevention of accidents as well as the regulations for installation of electrical equipment!

⚠ WARNING



Explosion hazard
In case of non-compliance with the regulations or impermissible change, there is the danger of explosion.

- When using the mechanical thermal switch unit in potentially explosive atmospheres (switch type ExM 61 D), observe the local regulations applicable to electrical equipment in potentially explosive atmospheres! It is not permitted to do any modifications on the switch, including the connecting line.

Hazards while working on the mechanical thermal switch unit.

DANGER

Electric shock
On account of incorrectly mounted or incorrectly connected electrical components, and disconnected electric connections, persons could get an electric shock and be severely injured, possibly with fatal consequences.
Incorrectly mounted or incorrectly connected electrical components and disconnected electric connections may cause damages to the machine.

- A qualified electrician has to properly carry out the connection to the electric supply network considering the system voltage and the maximum power consumption!
- The system voltage has to be in conformity with the system voltage indicated on the nameplate!
- There has to be a corresponding electrical protection by a fuse on the network side!

Electric shock:

DANGER

Electrostatic processes
Electrostatic charging may injure persons by an electric shock.

- Allow only a qualified electrician to install the equipment into which the turbo coupling is installed.
- Machine and electric installation are provided with grounding connections.

Working on the turbo coupling:

⚠ WARNING

Risk of injury
While working on the turbo coupling, there is the risk of injury through cutting, crushing, burns and cold burns in case of minus degrees.

- Please observe the installation and operating manual of the turbo coupling!
- Never touch the turbo coupling without wearing protective gloves.
- Start to work on the turbo coupling only after it has cooled down.
- Ensure that there is sufficient light, a sufficiently large working space and good ventilation when working on the turbo coupling.
- Switch off the unit in which the turbo coupling is installed and secure the switch against inadvertent switch-on.
- For all work performed on the turbo coupling ensure that both the drive motor and the driven machine have stopped running and that a re-start is absolutely impossible!

Noise:

⚠ WARNING

Hearing loss, permanent impairment of hearing
The turbo coupling generates noise during operation. If the A-classified equivalent sound pressure level $L_{PA,\ 1m}$ exceeds 80 dB(A), this may cause impairment of hearing!

- Wear ear protection.

Sound pressure level
→ cover sheet of operating manual of turbo coupling

Operating fluid which sprays off or leaks out:

Unintended use
→ Chapter 5.3

⚠ WARNING

Risk of losing sight due to operating fluid spraying off, risk of burning
In case of thermal overload of the turbo coupling, the fusible plugs respond. Operating fluid leaks out through these fusible plugs.
This may happen only in case of unintended use.

- Persons close to the turbo coupling must wear safety goggles.
- Please make sure that the spraying-off operating fluid cannot get in contact with persons.
- If the fusible plugs spray off, switch off the drive immediately.
- Electrical devices located near the turbo coupling need to be splash-guarded.

⚠ WARNING

Fire hazard
After the fusible plugs responded, spraying off oil may ignite on hot surfaces causing fire, as well as releasing toxic gases and vapor.

- Make sure that spraying off operating fluid cannot get into contact with hot machine parts, heaters, sparks or open flames.
- Immediately switch off the driving machine when the fusible plugs respond.
- Please pay attention to the information contained in the safety data sheets.

⚠ CAUTION

Danger of slipping
Slipping hazard due to spraying off solder of fusible plugs and leaking out operating fluid.

- Please provide a catch pan of sufficient size.
- Immediately remove any leaking out solder and operating fluid.
- Please pay attention to the information contained in the safety data sheets.

5.5 Remaining risks

⚠ WARNING

Risk of personal injuries and damage to property
Unintended use or incorrect operation may cause death, serious injuries or minor injuries as well as damage to property and the environment.

- Only persons who are sufficiently qualified, trained and authorized are allowed to work on or with the turbo coupling and the mechanical thermal switch unit.
- Please observe the warnings and safety information.

5.6 What to do in case of accidents

In case of accidents, please observe the local regulations, the operating manuals and the operator's safety measures.

5.7 Information with regard to operation

If irregularities are found during operation, immediately switch off the drive unit.

5.8 Qualification of staff

Only qualified and authorized professional staff are allowed to perform work, such as transportation, storage, installation, electrical connection, commissioning, operation, maintenance, servicing and repair.

Qualified professional staff in the sense of this operating manual are persons who are familiar with transportation, storage, installation, electrical connection, commissioning, maintenance, servicing and repair and who have got the necessary qualifications relevant to their job performed. Qualification has to be ensured by performing training and giving instructions.

This staff must be trained, instructed and authorized to:
- operate and service machines in a professional manner in accordance with the technical safety standards.
- use lifting appliances, slings (ropes, chains, etc.) and lifting points in a professional manner.
- properly dispose of media and their components, e.g. lubricating grease.
- service and use safety devices in a manner that ensures compliance with safety standards.
- prevent accidents and provide first aid.

Staff to be trained may only perform work on the turbo coupling and the mechanical thermal switch unit under the supervision of a qualified and authorized person.

The staff in charge of any work to be done on the mechanical thermal switch unit must
- be reliable,
- have the legal age,
- be trained, instructed and authorized with regard to the intended work.
- if the unit is installed in potentially explosive atmospheres. Use only tools which are approved for use in potentially explosive areas. Avoid formation of sparks.



5.9 Product monitoring

We are under legal obligation to keep the performance of our products under observation, even after shipment.
Therefore, please inform us about anything that might be of interest to us. For example:
- Change in operating data,
- experience gained with the machine,
- recurring problems,
- problems experienced with this installation and operating manual.

Our address,
→ Page 2

6 Installation

⚠ WARNING

Risk of injury
Please observe, in particular, → Chapter 5 (Safety) when working on the mechanical thermal switch unit!

- Before beginning with the installation, ensure that an isolation of all components is guaranteed.
- The fusible plugs protect the turbo coupling against damage due to thermal overload.
  Even when the MTS is used, it is not allowed to replace the fusible plugs by blind screws or by fusible plugs with different nominal response temperatures!
- Never operate the turbo coupling without fusible plugs!

6.1 As delivered condition

– Normally, the switching element with sealing ring,
– the switch

are supplied as loose parts together with the turbo coupling.

6.2 scope of supply

Standard combinations of switching elements and fusible plugs:

Nominal response temperatures		
Switching element	**Fusible plugs**	**Color coding**
160 °C	180 °C	blue
140 °C	160 °C	green
125 °C	160 °C	green
110 °C	140 °C	red

Table 6

The correlation between switching element and fusible plug may vary dependent on the project design. Differing nominal response temperatures of the switching element (95 °C, 110 °C, 125 °C, 140 °C and 160 °C) are also available (→ Chapter 11).

Please consult Voith → order documents

6.3 Mounting - switching element and switch

NOTICE

Damage to property
Non-compliance with mounting instructions.
- To avoid any damages, switching element and switch should be mounted after installation and prior to filling the turbo coupling.

- Screw in the switching element with sealing ring into the outer wheel [1)] of the turbo coupling instead of a blind screw (→ for input side connecting coupling type **ERK** and sizes **206** and **274,** first screw in the **intermediate piece**).

1) In rare exceptional cases, in case of restricted space conditions, the installation of the switching element into the shell of the turbo coupling is permitted! Please consult Voith.

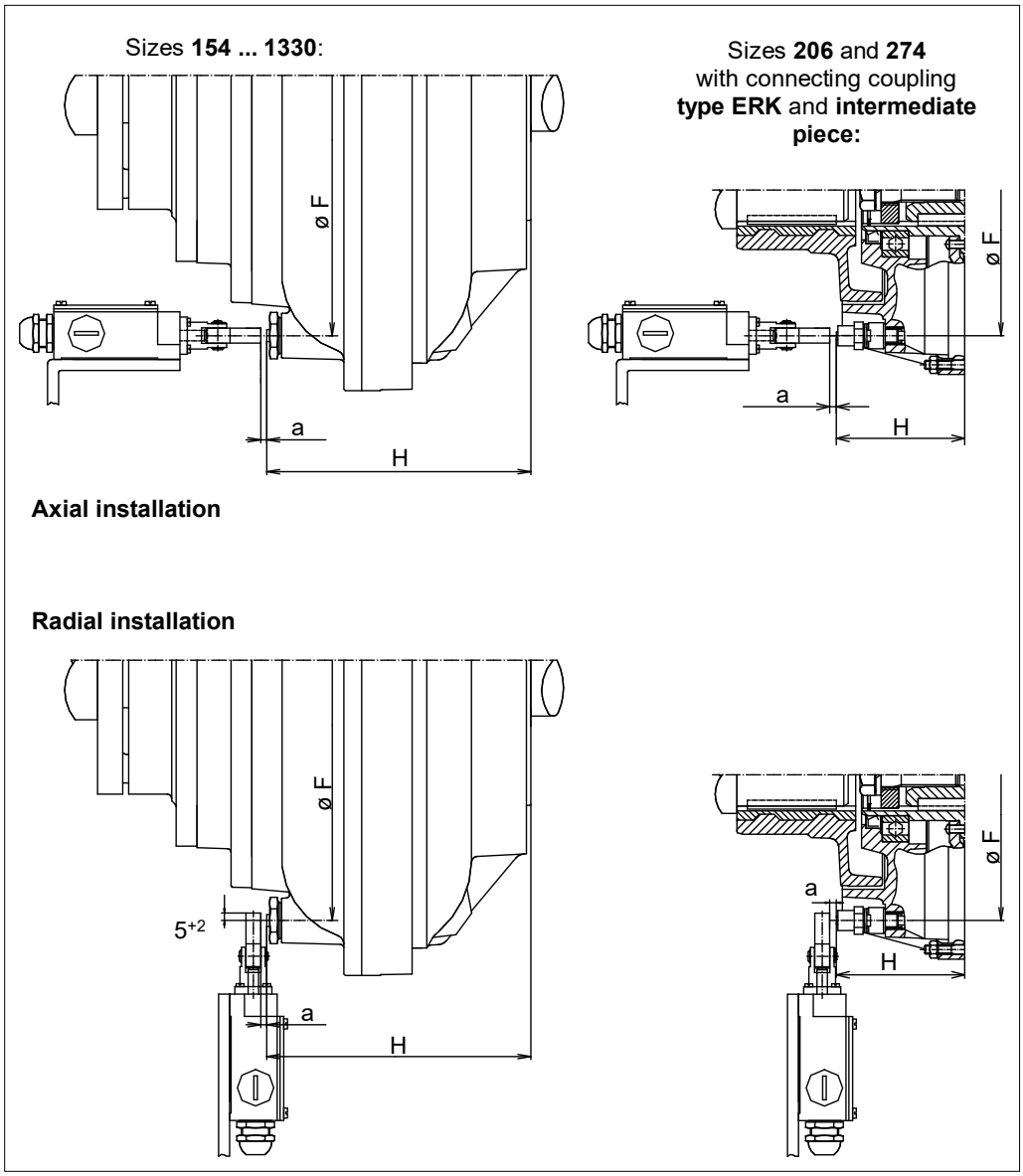


Fig. 4

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Installation dimensions for switching element and switch.

Turbo coupling type	Pitch circle diameter Ø F [mm]	Distance ~ H [mm]	Mounting distance a [mm]	Distance ~ H [mm] for connecting coupling type ERK
154 T	147	92.5	$2_{-0.5}$	92.5
154 DT	147	114.5	$2_{-0.5}$	114.5
206 T	196	106.0	$2_{-0.5}$	129.0
206 DT	196	146.0	$2_{-0.5}$	169.0
274 T	268	146.5	$2_{-0.5}$	169.5
274 DT	268	184.5	$2_{-0.5}$	207.5
366 T	350	178.0	4_{-1}	-
422 T	396	191.0	4_{-1}	-
487 T	470	213.0	4_{-1}	-
562 T	548	233.0	4_{-1}	-
650 T	630	274.0	4_{-1}	-
750 T	729	325.5	4_{-1}	-
866 T	840	363.5	4_{-1}	-
866 DT	840	607.5	4_{-1}	-
1000 T	972	376.5	4_{-1}	-
1000 DT	972	679.5	4_{-1}	-
1150 T	1128	465.5	4_{-1}	-
1150 DT	1128	790.5	4_{-1}	-
1330 DT	1302	919.5	4_{-1}	-

Table 7

NOTICE

Damage to property

Non-compliance with mounting instructions.

- Do not mount the switch with lateral or angular offset, neither in case of parallel mounting with the axis nor in case of radial mounting!
- Proper switching function is not guaranteed in case of faulty alignment!
- Ensure that the bracket is of sufficient stability (not included in Voith's scope of supply)!

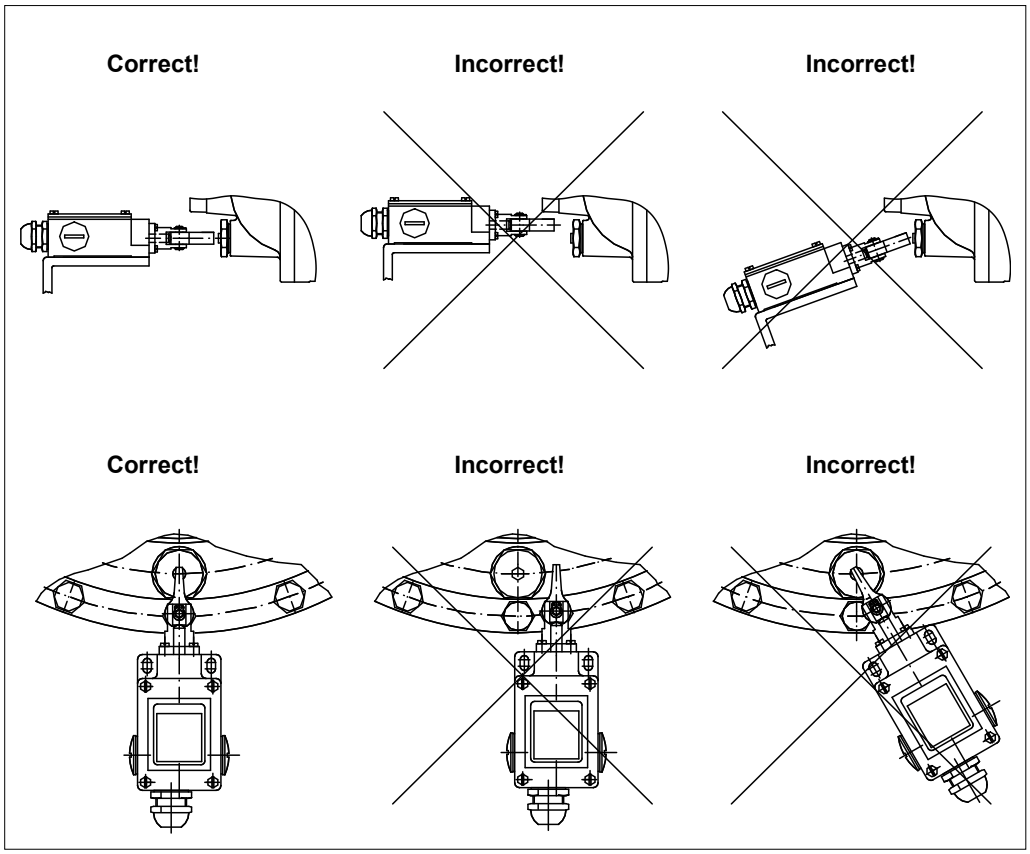


Fig. 5

- Mount the switch on the pitch-circle diameter of the switching element, on a bracket, parallel or radial to the turbo coupling axis.
- Set the distance between switching finger and switching element to mounting distance **a** (→ Table 7 installation dimensions)!
- Put the switching finger into the correct position.

6.4 Connection

NOTICE

Damage to property
Damage to the system by electric components not connected properly.

- Wiring of the MTS is not included in the scope of supply!
- Only authorized qualified staff is allowed to perform electrical connection.
- We recommend designing the switch connection so that excessive temperature as well as also cable break result in an excess temperature warning (connect break contact).
- In case that the switching element and the fusible plugs are installed in the same outer part, we basically recommend switching off the drive when the MTS responses!

- Connect the switch, observe the switching capacity. Protect the connecting lines against damage due to environmental influences!
- Fix and lay the connecting cable of the switch so that it is sufficiently protected against mechanical damage.

Switch
→ Chapter 3.2

6.4.1 Connection of the ExM 61 D switch (additional notes)

Switch ExM 61 D is insulated by a metal housing. The housing is provided with an outer protective earth terminal for max. 4 mm². Connection is made via a wire potted into the housing of the contact unit. Fix and lay the connecting cable of this switch so that it is protected against mechanical damage.
It is not allowed to do any conversions and alternations on the switch which might affect the explosion protection.

For proper functioning, the switch is to be fixed so that that the contact travel necessary for switching can safely be reached. Please ensure that even in case of failure, the switch cannot be moved from its position. Under no circumstances must the switch be actuated beyond its inner mechanical stop as this may damage the switch. The switch housing must not be used as an end stop. The switch can be mounted in any desired position.

7 Maintenance, Servicing

⚠ WARNING

Risk of injury
Please observe, in particular, → Chapter 5 (Safety) when working on the mechanical thermal switch unit!

- Please always keep access paths free to the turbo coupling!

- Switch off the unit in which the turbo coupling is installed and secure the switch against inadvertent switch-on.
- For all work performed on the turbo coupling ensure that both the drive motor and the driven machine have stopped running and that a re-start is absolutely impossible!
- Components may only be replaced by original spare parts.

Re-mount all protective covers and safety devices in their original position immediately after completion of the maintenance work. Check them for proper functioning.

Maintenance schedule:

Time	Maintenance work
After response of switching element	Replace switching element and then put switching finger into correct position.
Regularly (maintenance interval depends on dust content in the ambient air of the switch)	We recommend performing maintenance in regular intervals as per the following steps: 1. Check the actuator for easy movement. 2. Remove all debris or particles. 3. Put the switching finger into correct position.

Table 8

- Record any maintenance work carried out in a maintenance log.

8 Disposal

Disposal of the packaging
Dispose of packaging material according to the local regulations.

How to dispose of operating fluids
On disposal, please observe the applicable laws and the producer's or supplier's instructions.

How to dispose of the MTS
Dispose of the MTS according to the local regulations.

For special information on the disposal of the substances and materials used, please see the following table:

	Kind of disposal		
Material / substance	**Reuse**	**Residual waste**	**Special waste**
Metals	x	-	-
Cables	x	-	-
Seals	-	x	-
Plastics	x [1)]	(x)	-
Operating media	-	-	x [1), 2)]
Packaging	x	-	-

Table 9

1) If possible
2) Disposal according to the safety data sheet or the manufacturer's instructions

9 Malfunctions - Remedial Actions

⚠ WARNING

Risk of injury
Please observe, in particular, → Chapter 5 (Safety) when working on the mechanical thermal switch unit!



⚠ WARNING

Explosion hazard
It is not allowed to modify anything on apparatus/devices which are operated in potentially explosive atmospheres.

- Repairs are not permitted; repair the device.

The following table is intended to help finding the cause of malfunctions or problems quickly and to take remedial action, if necessary.

Malfunction	Possible cause(s)	Remedial action	See
Operating fluid is lost through the fusible plug during operation; the MTS switching element did not respond.	Response temperatures of switching element and fusible plugs do not match.	Please consult Voith.	Chapter 6.1 and Chapter 10
	The switching finger was not in correct position.	Move the switching finger into correct position.	Chapter 6.2
	The switch is not properly connected.	Check the wiring, correct it, if necessary.	Chapter 6.3
Please consult Voith (→ Chapter 10), in case of a malfunction which is not included in this table.			

Table 10

10 Queries, Orders Placed for Service Engineers and Spare Parts

For

- Queries
- Ordering a service engineer
- Spare parts orders
- Commissionings

we need:

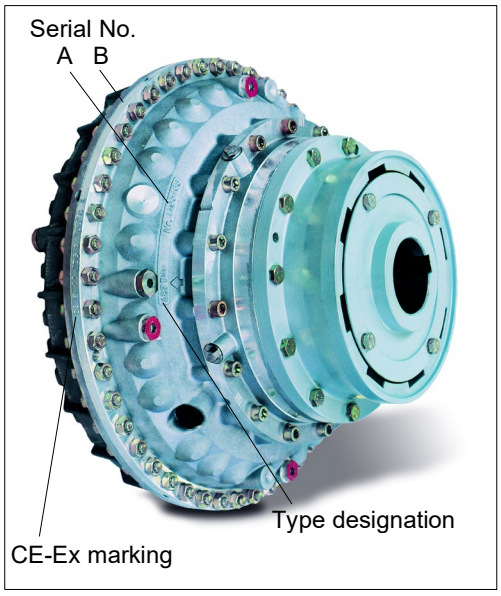


Fig. 6

the **Serial No.** and **type designation** of the turbo coupling on which the MTS is used.

→ You will find the serial number and type designation either on the outer wheel / coupling shell (A) or on the turbo coupling periphery (B).
→ The serial number is stamped in with figure stamps.
→ For turbo couplings, intended for the use in potentially explosive atmospheres, you will find the CE-Ex marking on the turbo coupling periphery.

When placing an order for a **service engineer**, **commissioning** or a **service**, we need, in addition

- the turbo coupling installation site,
- the name and address of a contact person,
- details of the malfunction/problem occurred.

When placing a **spare parts order**, we need, in addition,

- the destination for the spare parts shipment.

Contact
→ Page 2

11 Spare parts information

NOTICE

Unauthorized changes or retrofits are not allowed to be performed on the coupling!
Do not retrofit accessories or equipment originating from other manufacturers!
Any changes or conversions performed without the prior written consent of Voith Turbo will result in the loss of any warranty! Any claims will forfeit!

- Professional maintenance or repair can only be guaranteed by the manufacturer!

11.1 Switching elements

MTS switching elements					Sealing ring
Use for turbo coupling size	**Dimension of thread**	**Nominal response temperature**	**Color**	**Material No.**	**Material No.**
154 – 274 T / DT	M10	140 °C	red	TCR.11954250	TCR.03658010
366 – 650 T	M18x1.5	95 °C	-	TCR.11978290	TCR.03658018
		110 °C	yellow	TCR.11052260	
		125 °C	brown	TCR.11052270	
		140 °C	red	TCR.11052240	
		160 °C	green	TCR.10671780	
750 – 1330 T / DT	M24x1.5	110 °C	yellow	TCR.12390160	TCR.03658024
		125 °C	brown	TCR.11052220	
		140 °C	red	TCR.10474190	
		160 °C	green	TCR.11952190	

Table 11

11.2 Intermediate piece

The intermediate piece is required only for connecting coupling type ERK and for sizes 206 and 274.

Material No. TCR.11959520

11.3 Switch

Switch type	Material No.
EM 61 D	TCR.11960720
ExM 61 D	TCR.11974010

Table 12

12 Annex

12.1 Switch EM 61 D

Voith Material No.: TCR.11960720

Operating Instructions	Steute
Technical Data	Steute
Declaration of Conformity	Steute
Manufacturer´s declaration	Steute

ES 61 / EM 61

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Deutsch (Originalbetriebsanleitung)

Nutzung der Montage- und Anschlussanleitung

Sämtliche in dieser Montageanleitung beschriebenen Handhabungen dürfen nur durch ausgebildetes und vom Anlagenbetreiber autorisiertes Fachpersonal durchgeführt werden.
1. Montage- und Anschlussanleitung lesen und verstehen.
2. Geltende Vorschriften über Arbeitssicherheit und Unfallverhütung einhalten.
3. Gerät installieren und in Betrieb nehmen.

Auswahl und Einbau der Geräte sowie ihre steuerungstechnische Einbindung sind an eine qualifizierte Kenntnis der einschlägigen Gesetze und normativen Anforderungen durch den Maschinenhersteller geknüpft.
Im Zweifelsfall ist die deutsche Sprachversion dieser Anleitung maßgeblich.

Lieferumfang

Gerät, Montage- und Anschlussanleitung, Kartonage.

Bestimmungsgemäßer Gebrauch

Das Gerät dient dem Einsatz in Sicherheitsstromkreisen zur Stellungsüberwachung beweglicher Schutzeinrichtungen nach EN ISO 14119 (EN 1088) Bauart 1 und EN 60947-5-1.

Befestigung und Anschluss

Das Gerät auf einer ebenen Fläche befestigen. Bei der Montage beachten, dass ein Verschieben des Geräts auch im Fehlerfall verhindert wird. Gerät gegen unbefugte Manipulation sichern, z.B. mit Einweg-Sicherheitsschrauben. Sie sind optional erhältlich. **Bei der Montage des Geräts die Anforderungen nach EN ISO 14119, insbesondere die Punkte 5.1 bis 5.4, berücksichtigen!** Beachten Sie die Hinweise der Normen EN ISO 12100 und EN ISO 14120.

Hinweise

Das Gerät nicht als mechanischen Anschlag verwenden. Die Gebrauchslage ist beliebig. Umbauten und Veränderungen am Gerät sind nicht gestattet. Die hier beschriebenen Produkte wurden entwickelt, um als Teil einer Gesamtanlage oder Maschine sicherheitsgerichtete Funktionen zu übernehmen. Ein komplettes sicherheitsgerichtetes System enthält in der Regel Sensoren, Auswerteeinheiten, Meldegeräte und Konzepte für sichere Abschaltungen. Hierzu ist auch eine Validierung nach EN ISO 13849-2 bzw. nach EN 62061 erforderlich. **Desweiteren kann der Performance-Level nach EN ISO 13849-1 bzw. SIL-CL-Level nach EN 62061 durch Verkettung von mehreren Sicherheitsbauteilen und anderen sicherheitsgerichteten Geräten, z.B. Reihenschaltung von Sensoren, niedriger ausfallen als die Einzellevel.** Es liegt im Verantwortungsbereich des Herstellers einer Anlage oder Maschine, die korrekte Gesamtfunktion sicherzustellen. Technische Änderungen vorbehalten.

Wartung

Bei rauen Betriebsbedingungen empfehlen wir eine regelmäßige Wartung mit folgenden Schritten:
1. Betätiger auf Leichtgängigkeit prüfen.
2. Schmutzreste entfernen.
3. Prüfen der Leitungseinführung und -anschlüsse.

Reinigung

- Bei feuchter Reinigung: Wasser oder milde, nicht-scheuernde, nicht-kratzende Reinigungsmittel verwenden.
- Keine aggressiven Reinigungs- oder Lösungsmittel verwenden.

Entsorgung

- Nationale, lokale und gesetzliche Bestimmungen zur Entsorgung beachten.
- Materialien getrennt dem Recycling zuführen.

English

Use of the mounting and wiring instructions

All actions described in these instructions may only be performed by qualified persons who have been trained and authorised by the operating company.
1. Read and understand these mounting and wiring instructions.
2. Comply with the valid occupational safety and accident prevention regulations.
3. Install and operate the device.

Selection and installation of devices and their integration in control systems demand qualified knowledge of all the relevant laws, as well as the normative requirements of the machine manufacturer.
In case of doubt, the German language version of these instructions shall prevail.

Scope of delivery

Device, mounting and wiring instructions, packaging.

Intended use

The device is used in safety circuits to monitor the position of moving safety guards to EN ISO 14119 (EN 1088) type 1 and EN 60947-5-1.

Mounting and wiring

Mount the device on an even surface. Ensure that the device cannot be moved from its position. Ensure this in case of failure, too. For protection against unauthorized manipulation, use e.g. one way safety screws. These are optionally available. **When mounting the device, observe the requirements of EN ISO 14119, especially the paragraphs 5.1 to 5.4!** Observe the instructions in the standards EN ISO 12100 and EN ISO 14120.

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English

N.B.

Do not use the device as mechanical endstop. Any mounting position is possible. Reconstruction and alterations at the device are not allowed. The described products were developed in order to assume safety functions as part of an entire plant or machine. A complete safety system normally covers sensors, monitoring modules, indicator switches and concepts for safe disconnection. Therefore, a validation according to EN ISO 13849-2 or EN 62061 is necessary. **Furthermore, the Performance Level according to EN ISO 13849-1 and SIL CL Level according to EN 62061 can be lower than the single level because of the combination of several safety components and other safety-related devices, e.g. by serial connection of sensors.** It is the responsibility of the manufacturer of a plant or machine to guarantee the correct general function. Subject to technical modifications.

Maintenance

With rough conditions, we recommend routine maintenance as follows:
1. Check actuator for easy operation.
2. Remove all dirt particles.
3. Check sealing of the cable or conduit connections.

Cleaning

- In case of damp cleaning: use water or mild, non-scratching, non-chafing cleaners.
- Do not use aggressive cleaners or solvents.

Disposal

- Observe national, local and legal regulations concerning disposal.
- Recycle each material separately.

Français

Utilisation des instructions de montage et de câblage

Toutes les manipulations décrites dans cette notice d'installation ne doivent être effectuées que par du personnel formé et autorisé par la société exploitante.
1. Lire et comprendre les instructions de montage et de câblage.
2. Respecter les règles de sécurité et de prévention des accidents en vigueur.
3. Installer l'appareil et le mettre en service.

La sélection et l'installation des appareils et leurs intégrations dans les systèmes de commande exigent une connaissance approfondie de toutes les lois pertinentes, ainsi que des exigences normatives du fabricant de la machine.
En cas de doute, la version allemande fait référence.

Volume de livraison

Appareil, instruction de montage et de câblage, carton.

Utilisation conforme

L'appareil est prévu pour l'utilisation dans les circuits de sécurité destinés à la surveillance de la position des dispositifs de protection mobiles selon EN ISO 14119 (EN 1088) type de construction 1 et EN 60947-5-1.

Montage et raccordement

Fixer l'appareil sur une surface plane. Observer pour le montage qu'une fois l'appareil mis en place, il n'est plus possible de le déplacer, même en cas de défaillance. Sécuriser l'appareil contre toute manipulation non autorisée, par ex. avec des vis de sécurité indémontables. Elles sont disponibles en option. **Lors du montage de l'appareil, respecter les exigences selon EN ISO 14119, en particulier les points 5.1 à 5.4!** Respecter également les indications des normes EN ISO 12100 et EN ISO 14120.

Remarques

L'appareil ne peut pas servir de butée mécanique. La position de montage est indifférente. Des transformations et modifications de l'appareil ne sont pas autorisées. Les produits décrits dans ces instructions de montage ont été développés pour effectuer des fonctions de sécurité comme éléments d'une machine ou installation complète. Un système de sécurité se compose généralement de multiples capteurs, modules de sécurité, dispositifs de signalisation et concepts assurant un déclenchement sûr. Pour ce faire, une validation selon EN ISO 13849-2 ou selon EN 62061 est nécessaire. **De plus, le niveau de perfomance PL selon EN ISO 13849-1 ou niveau d'intégrité de sécurité SIL selon EN 62061 peut être inférieur au niveau des composant de sécurité pris individuellement, dans le cas d'une mise-en-série, par exemple.** Il appartient au fabricant d'une installation ou d'une machine d'assurer le bon fonctionnement général. Sous réserve de modifications techniques.

Entretien

En cas de fonctionnement dans un environnement difficile, il est recommandé d'effectuer un entretien régulier qui consiste à:
1. Vérifier la souplesse d'utilisation de l'actionneur.
2. Enlever toute saleté restante.
3. Contrôler les entrées de câble et les raccordements.

Nettoyage

- Pour un nettoyage humide: utiliser de l'eau ou un nettoyant doux, non abrasif, qui ne raye pas.
- Ne pas utiliser de nettoyants ou solvants agressifs.

Elimination des déchets

- Observer les dispositions nationales, locales et légales pour l'élimination.
- Trier les déchets pour le recyclage.

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Italiano

Utilizzo delle istruzioni di montaggio e collegamento

Tutte le azioni descritte nelle presenti istruzioni possono essere eseguite esclusivamente da personale qualificato, addestrato e autorizzato dall'azienda di gestione.
1. Leggere e comprendere le presenti istruzioni di montaggio e collegamento.
2. Rispettare le norme vigenti in materia di sicurezza sul lavoro e prevenzione dagli infortuni.
3. Installare e mettere in funzione il dispositivo.

La scelta e l'installazione dei dispositivi e la loro integrazione nei sistemi di controllo richiedono una conoscenza specifica di tutte le relative leggi e dei requisiti normativi del costruttore della macchina.
In caso di dubbi, fa fede la versione in lingua tedesca di queste istruzioni.

Volume di consegna

Dispositivo, istruzioni di montaggio e collegamento, imballo.

Destinazione d'uso

Il dispositivo è utilizzato nei circuiti di sicurezza per monitorare la posizione dei dispositivi di protezione mobili secondo EN ISO 14119 (EN 1088) tipo 1 e EN 60947-5-1.

Montaggio e collegamenti

Montare il dispositivo su una superficie piana. Durante il montaggio, assicurarsi che il finecorsa non possa essere spostato, anche in caso di guasto. Proteggere il dispositivo da eventuali manipolazioni, ad esempio utilizzando viti di sicurezza monouso, disponibili come accessori. **Nel montaggio del dispositivo, osservare i requisiti della normativa EN ISO 14119, in particolare i punti 5.1 a 5.4!** Rispettare le istruzioni secondo le normative EN ISO 12100 e EN ISO 14120.

Indicazioni

Non usare il dispositivo come mezzo meccanico di arresto. Ogni posizione di montaggio è possibile. Ricostruzioni e modifiche al dispositivo non sono permesse. I prodotti descritti sono stati sviluppati con l'intento di svolgere funzioni di sicurezza come una parte di un intero impianto oppure macchinario. Di norma un completo sistema di sicurezza comprende sensori, unità di valorizzazione, apparecchi di segnalazione nonché sistemi per uno spegnimento sicuro. A tal fine è richiesta anche una convalida secondo EN ISO 13849-2 oppure EN 62061. **Inoltre, il Performance Level secondo EN ISO 13849-1 e SIL CL Level secondo EN 62061 può essere inferiore rispetto al singolo livello, a causa della combinazione di diversi componenti di sicurezza ed altri dispositivi di sicurezza, come ad esempio il collegamento in serie di sensori.** Il produttore di un impianto o macchinario si assume la responsabilità della sua corretta funzione globale. Soggetta a modifiche tecniche.

Manutenzione

In condizioni di impiego in ambienti gravosi si consiglia una manutenzione periodica come segue:
1. Verificare la scorrevolezza dell'azionatore.
2. Rimuovere i residui di sporco.
3. Verificare le entrare e i collegamenti dei cavi.

Pulizia

- Per la pulizia a umido: utilizzare acqua oppure detergenti delicati, non abrasivi, non graffianti.
- Non utilizzare detergenti oppure solventi aggressivi.

Smaltimento

- Osservare le norme nazionali, locali e legali per lo smaltimento.
- Riciclare ciascun materiale separatamente.

Português

Utilização das instruções de montagem e instalação

Todas as ações descritas neste manual somente podem ser realizadas por pessoal qualificado, os quais tenham sido treinados e autorizados pela empresa.
1. Ler e compreender estas instruções de montagem e instalação.
2. Seguir as normas e regulamentos válidos para segurança ocupacional e prevenção de acidentes.
3. Instalar e operar o dispositivo.

Seleção e instalação dos dispositivos e sua intregração no sistema de controle demanda conhecimento qualificado de todas as leis relevantes, assim como dos requerimentos norminativos do fabricante da máquina.
No caso de dúvidas, prevalecerá a versão em alemão dessas instruções.

Escopo de entrega

Dispositivo, instruções de montagem e instalação, caixa em papelão.

Uso pretendido

O dispositivo é usado nos circuitos de segurança para monitorar a posição dos dispositivos de segurança móveis para a EN ISO 14119 (EN 1088) tipo 1 e EN 60947-5-1.

Montagem e conexão

Montar o dispositivo em uma superfície plana. Assegure-se de que o dispositivo não possa ser deslocado, mesmo em caso da ocorrência de falha. Para proteção contra manipulação não autorizada use parafusos de segurança que estão disponíveis opcionalmente. **Quando da montagem do dispositivo, observar os requerimentos da norma EN ISO 14119, especialmente os parágrafos 5.1 até 5.4!** Observar as instruções nas normas EN ISO 12100 e EN ISO 14120.

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Português

Observações

O dispositivo não pode ser utilizado como batente mecânico. O posicionamento de uso é livre. Modificações e alterações no dispositivo não são permitidas. Os produtos aqui descritos foram desenvolvidos para assumir as funções de segurança, parcial e/ou total de um equipamento/instalação ou máquina. Um completo sistema de segurança normalmente abrange os sensores, módulos de monitoramento e chaves indicadoras para um desconexão segura. Além disso, é necessária validação de acordo com EN ISO 13849-2 ou EN 62061. **Além disto o Performance Level de acordo com EN ISO 13849-1 ou SIL CL Level de acordo com EN 62061 pode ser reduzido quando encadeados diversos componentes de segurança ou outros dispositivos relacionados a segurança, como por exemplo conectando diversos sensores em série.** É de responsabilidade do fabricante da instalação ou máquina assegurar o perfeito funcionamento de todas as funções. Sujeito a alterações técnicas.

Manutenção

Nos casos em que os equipamentos estiverem instalados em condições ambientes adversas é recomendado que seja realizada a conservação obedecendo os passos seguintes:
1. Verificar a liberdade de movimentos do atuador.
2. Remova todas as partículas de sujeira.
3. Verificar o estado da vedação do prensa cabos.

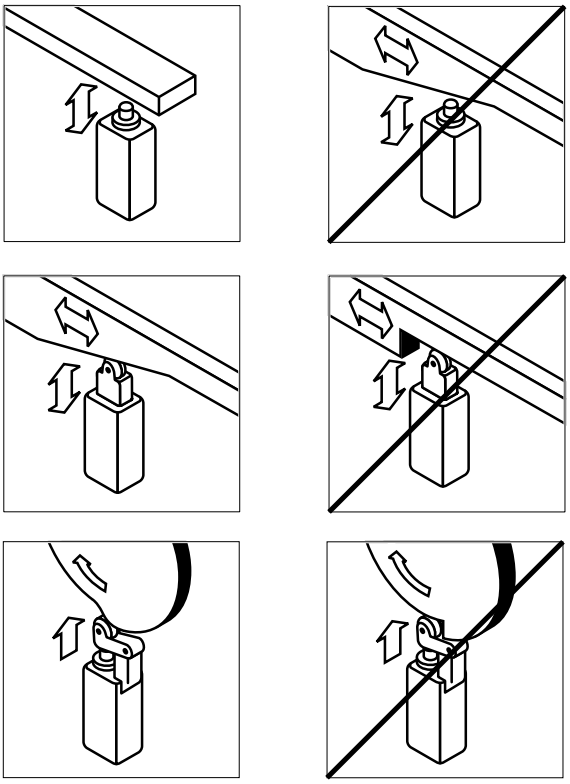
Limpeza

- Em caso de limpeza úmida: Use água e produtos de limpeza não abrasivos.
- Não utilize produtos de limpeza agressivos e solventes.

Descarte

- Observe as disposições legais locais a referente ao descarte.
- Separar materiais recicláveis.

Montagehinweise
Mounting notes
Montage correct
Montaggio corretto
Observações de montagem

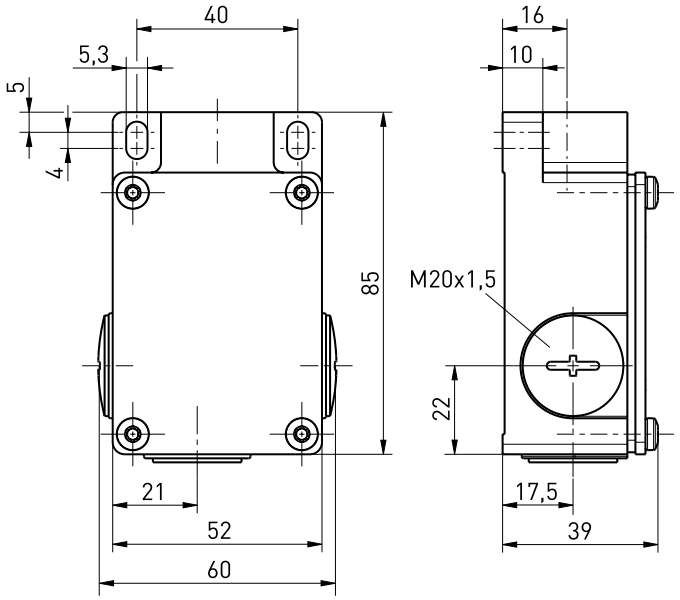


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Abmessungen
Dimensions
Dimensions
Dimensioni
Dimensões



Kontakte
Contacts
Contacts
Contatti
Contatos

ES 61 ... 1Ö/1S	⊖	Zb	11 12 / 23 24
EM 61 ... 1Ö/1S		Zb	13 14 / 21 22
ES 61 ... 1S/1Ö UE	⊖	Zb	15 16 / 23 24
ES 61 ... 2Ö	⊖	Zb	11 12 / 21 22

Die dargestellten Schaltsymbole beziehen sich auf den unbetätigten Zustand.
Contact symbols are shown for the not actuated switch.
Interrupteurs représentés contacts au repos, pas actionnés.
I simboli grafici dei contatti si riferiscono allo stato inattivo dell'interruttore.
Os símbolos de comutação representam o estado inativo.

Betätiger geeignet für Sicherheitsaufgaben
Actuators suitable for safety applications
Actionneurs applicable pour fonctions de sécurité
Azionatore idoneo per funzioni di sicurezza
Atuadores apropriados para aplicações de segurança

ES 61 ...	W, WH, WHL, WPH

Herstellungsdatum 3K5 ➡ KW 35 / 2025
Production date CW 35 / 2025
Date de fabrication semaine 35 / 2025
Data di produzione settimana 35 / 2025
Data de fabricação semana 35 / 2025

K	2025	L	2026	M	2027
N	2028	O	2029	P	2030

Lieferbar mit folgenden Betätigern
Available with the following actuators
Livrable avec les actionneurs suivants
Disponibile con i seguenti azionatori
Disponível com os seguintes atuadores

ES / EM 61	W, WH, WHL, WHK, WPH, D, DL, DS, TL, TF, TFL, TK

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Deutsch (Originalbetriebsanleitung)

Technische Daten

Angewandte Normen	EN 60947-5-1; EN ISO 13849-1; EN ISO 14119
Gehäuse	Aluminium-Druckguss, pulverbeschichtet
Schaltertyp	Bauart 1
Kodierungsstufe	keine Kodierung
Schaltelemente	1 Öffner/1 Schließer oder 2 Öffner, Form Zb
Schaltsystem	Schleich- oder Sprungschaltung Schleichschaltung: Öffner zwangsöffnend ⊖
Schutzart	IP65 nach IEC/EN 60529
Anschlussart	Schraubanschlussklemmen
Anschlussquerschnitt	max. 2,5 mm² (einschl. Aderendhülsen)
Leitungseinführung	3 x M20 x 1,5 (nur für Kabelverschraubungen)
B_{10d} (10% Nennlast)	2 Millionen
T_M	max. 20 Jahre
U_{imp}	6 kV
U_i	400 V
I_{the}	6 A
Gebrauchskategorie	AC-15
Bemessungsbetriebs-strom/-spannung	ES 61: 16 A/400 VAC; ES 61 2Ö, EM 61: 6 A/400 VAC
Kurzschlussschutz	ES 61: 16 A gG/gN-Sicherung; ES 61 2Ö, EM 61: 6 A gG/gN-Sicherung
Schalthäufigkeit	max. 3.600/h
Mechan. Lebensdauer	1 Million Schaltspiele
Umgebungstemperatur	-20 °C ... +80 °C
Schaltpunktwieder-holgenauigkeit bei wiederholtem Schalten	± 0,1 mm
Kennzeichnung	UK CA

English

Technical data

Applied standards	EN 60947-5-1; EN ISO 13849-1; EN ISO 14119
Enclosure	aluminium die-cast, powder-coated
Switch type	type 1
Coding level	no coding
Switching elements	1 NC/1 NO or 2 NC, type Zb
Switching system	slow or snap action slow action: positive break NC contacts ⊖
Degree of protection	IP65 to IEC/EN 60529
Connection	screw connection terminals
Cable cross-section	max. 2.5 mm² (incl. conductor ferrules)
Cable entry	3 x M20 x 1.5 (for cable glands only)
B_{10d} (10% nominal load)	2 million
T_M	max. 20 years
U_{imp}	6 kV
U_i	400 V
I_{the}	6 A
Utilisation category	AC-15
Rated operating current/voltage	ES 61: 16 A/400 VAC; ES 61 2Ö, EM 61: 6 A/400 VAC
Short-circuit protection	ES 61: 16 A gG/gN fuse; ES 61 2Ö, EM 61: 6 A gG/gN fuse
Operation cycles	max. 3,600/h
Mechanical life	1 million operations
Ambient temperature	-20°C ... +80°C
Repeat accuracy of switching points	± 0.1 mm
Marking	UK CA

Français

Données techniques

Normes appliquées	EN 60947-5-1; EN ISO 13849-1; EN ISO 14119
Boîtier	fonte d'aluminium, revêtu par poudre
Type d'interrupteur	type de construction 1
Niveau de codage	aucun codage
Eléments de commutation	1 NF/1 NO ou 2 NF, type Zb
Système de commutation	action dépendante ou rupture brusque action dépendante: contacts NF à ouverture positive ⊖
Etanchéité	IP65 selon IEC/EN 60529
Raccordement	bornes à vis
Diamètre du câble de raccordement	max. 2,5 mm² (y compris embouts de câble)
Entrée de câble	3 x M20 x 1,5 (pour presse-étoupes uniquement)
B_{10d} (10% charge nominal)	2 millions
T_M	max. 20 ans
U_{imp}	6 kV
U_i	400 V
I_{the}	6 A
Catégorie d'utilisation	AC-15
Courant/tension assigné d'emploi	ES 61: 16 A/400 VAC; ES 61 2Ö, EM 61: 6 A/400 VAC
Protection contre les courts-circuits	ES 61: fusible 16 A gG/gN; ES 61 2Ö, EM 61: fusible 6 A gG/gN
Fréquence de manoeuvre	max. 3.600/h
Durée de vie mécanique	1 million manoeuvres
Température ambiante	-20 °C ... +80 °C
Répétabilité du point de commutation	± 0,1 mm
Marquage	UK CA

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Brückenstraße 91, 32584 Löhne, Germany, www.steute.com

ES 61 / EM 61

Montage- und Anschlussanleitung / Positionsschalter
Mounting and wiring instructions / Position switch
Instructions de montage et de câblage / Interrupteur de position
Istruzioni di montaggio e collegamento / Interruttore di posizione
Instruções de montagem e instalação / Chave fim de curso

Italiano

Dati tecnici

Norme applicate	EN 60947-5-1; EN ISO 13849-1; EN ISO 14119
Custodia	alluminio pressofuso, verniciato a polvere
Tipo di interruttore	tipo 1
Livello di codifica	no codifica
Elementi di commutazione	1 NC/1 NA oppure 2 NC, tipo Zb
Sistema di commutazione	commutazione lenta oppure rapida commutazione lenta: contatti NC ad apertura obbligata ⊖
Grado di protezione	IP65 secondo IEC/EN 60529
Collegamento	morsetti a vite
Sezione di collegamento	max. 2,5 mm² (compreso capocorda)
Passacavo	3 x M20 x 1,5 (solo per pressacavi)
B_{10d} (10% carico nominale)	2 milioni
T_M	max. 20 anni
U_{imp}	6 kV
U_i	400 V
I_{the}	6 A
Categoria d'impiego	AC-15
Corrente/tensione d'esercizio nominale	ES 61: 16 A/400 VAC; ES 61 2Ö, EM 61: 6 A/400 VAC
Protezione da cortocircuito	ES 61: 16 A gG/gN fusibile; ES 61 2Ö, EM 61: 6 A gG/gN fusibile
Frequenza di commutazioni	max. 3.600/h
Durata meccanica	1 milione di manovre
Temperatura circostante	-20 °C ... +80 °C
Precisione del punto di commutazione con commutazioni ripetute	± 0,1 mm
Marcatura	UK CA

Português

Dados técnicos

Normas aplicáveis	EN 60947-5-1; EN ISO 13849-1; EN ISO 14119
Invólucro	alumínio fundido sob pressão, pintadas com tinta em pó
Tipo de fim de curso	tipo 1
Nível de codificação	não codificação
Elementos de comutação	1 NF/1 NA ou 2 NF, tipo Zb
Sistema de comutação	ação lenta ou rápida ação lenta: contatos NF de ruptura forçada ⊖
Grau de proteção	IP65 conforme IEC/EN 60529
Conexão	bornes a parafuso
Seção máx. cabo	máx. 2,5 mm² (incl. terminal)
Entrada de cabo	3 x M20 x 1,5 (para prensa-cabos apenas)
B_{10d} (10% carga nominal)	2 milhões
T_M	máx. 20 anos
U_{imp}	6 kV
U_i	400 V
I_{the}	6 A
Categoria de utilização	AC-15
Dimensionamento da tensão/voltagem de operação	ES 61: 16 A/400 VAC; ES 61 2Ö, EM 61: 6 A/400 VAC
Proteção contra curto-circuito	ES 61: fusível 16 A gG/gN; ES 61 2Ö, EM 61: fusível 6 A gG/gN
Frequéncia de comutação	máx. 3.600/h
Durabilidade mecânica	1 milhão de operações
Temperatura ambiente	-20 °C ... +80 °C
Repetibilidade do ponto de atuação	± 0,1 mm
Marcação	UK CA

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EU-KONFORMITÄTSERKLÄRUNG
EU DECLARATION OF CONFORMITY

Art und Bezeichnung der Betriebsmittel / Type and name of equipment: ES / EM 61 ...

Beschreibung des Betriebsmittels / Description of the component: Positionsschalter (mit Sicherheitsfunktion) / position switch (with safety function)

Hiermit erklären wir, dass die oben aufgeführten elektrischen Betriebsmittel aufgrund der Konzipierung und Bauart der genannten Richtlinie entsprechen. /
We hereby declare that the above mentioned electrical equipment conforms to the named directive.

Relevante EG-Richtlinie / Relevant EC directive	Angewandte harmonisierte Normen / Applied harmonised standards	Anmerkungen / Comments
2006/42/EG Maschinenrichtlinie / 2006/42/EC Machinery Directive	EN 60947-5-1:2017; EN ISO 14119:2013	Geräte mit Zwangsöffnung ⊖ Devices with a positive break ⊖
2014/35/EU Niederspannungsrichtlinie / 2014/35/EU Low Voltage Directive	EN 60947-5-1:2017	Geräte ohne Zwangsöffnung Devices without a positive break

Weitere angewandte EU-Richtlinien / Additionally applied EU directives	Harmonisierte Normen / Harmonised standards
2014/30/EU EMV-Richtlinie / 2014/30/EU EMC Directive	nicht anwendbar nach EN IEC 60947-1:2021 / not applicable to EN IEC 60947-1:2021
2011/65/EU RoHS-Richtlinie / 2011/65/EU RoHS Directive	EN IEC 63000:2018

Verantwortlich technische Dokumentation / Responsible for technical documentation: Marc Stanesby (Geschäftsführer / Managing Director)

Marc Stanesby

Löhne, 27. November 2024 / 27 November, 2024
Ort und Datum der Ausstellung / Place and date of issue

Rechtsverbindliche Unterschrift,
Marc Stanesby (Geschäftsführer) /
Legally binding signature,
Marc Stanesby (Managing Director)

steute Technologies GmbH & Co KG, Brückenstr. 91, 32584 Löhne, Germany

Zusatzinformation zu Montage- und Anschlussanleitungen
Additional information on mounting and wiring instructions
Information complémentaire aux instructions de montage et de câblage
Ulteriori informazioni sulle istruzioni di collegamento e montaggio
Informação adicional para as instruções de montagem

[bg] При поискване Вие ще получите тази асамблея, а също и връзката ръчно майчиния си език.

[cs] Na požádání obdržíte tento návod na montáž a připojení také v jazyce vaší země.

[da] På anmodning kan De også rekvirere denne montage- og tilslutningsvejledning på deres eget sprog.

[de] Auf Anfrage erhalten Sie diese Montage- und Anschlussanleitung auch in Ihrer Landessprache.

[el] Εφόσον το ζητήσετε λαμβάνετε αυτές τις οδηγίες τοποθέτησης και σύνδεσης και στην γλώσσα της χώρας σας.

[en] This mounting and wiring instruction is also available in your national language on request.

[es] Estas instrucciones de montaje y conexionado se pueden solicitar en su idioma.

[et] Soovi korral on see installimis- ja ühendusjuhend saadaval ka teie riigikeeles.

[fi] Pyydettäessä asennus- ja kytkentäohjeet on saatavana myös sinun omalla äidinkielellä.

[fr] Ces instructions de montage et de câblage sont disponibles sur demande, dans votre langue nationale.

[ga] Arna iarraidh sin gheobhaidh tú na treoracha tionóil agus na treorach seo i do theanga féin.

[hr] Na zahtjev ćete dobiti ova uputstva za montažu i priključenje i na svom jeziku.

[hu] Egyeztetés után, kérésére, ezt a szerelési- és csatlakoztatási leírást, biztosítjuk az ön anyanyelvén is.

[it] Questa istruzione di collegamento e montaggio e'inoltre disponibile nella vostra lingua su richiesta.

[lt] Jei jums reikėtų šios įdiegimo ir pajungimo instrukcijos valstybine kalba, teiraukitės pardavėjo.

[lv] Šo montāžas un pieslēgšanas instrukciju pēc pieprasījuma varat saņemt arī savas valsts valodā.

[mt] Dan il-manwal dwar il-muntaġġ u konnessjonijiet huwa disponibbli wkoll fil-lingwa tiegħek.

[nl] Op aanvraag kunt u deze montage- en installatiehandleiding ook in uw taal verkrijgen.

[pl] Niniejsza instrukcja montażu i podłączenia jest dostępna na życzenie w języku polskim.

[pt] Instruções de ligação e montagem podem ser disponibilizadas em outros idiomas também - consulte-nos.

[ro] La cererea dumneavoastră, vă trimitem instrucțiunile de folosire și instrucțiunile de montaj și în limba romana.

[sk] Na vyžiadanie obdržíte tento návod na montáž a pripojenie takisto v jazyku vašej krajiny.

[sl] Na zahtevo boste dobili ta navodila za montažo in priklop tudi v vašem domačem jeziku.

[sv] Den här monterings- och elinstallation instruktionen finns även tillgänglig på ditt nationella språk efter förfrågan.

Importer for United Kingdom

forTop Automation & Energy Control UK Ltd

Malvern Hills Science Park

Geraldine Road

WR14 3SZ Malvern, Worcestershire

United Kingdom

www.4top.co.uk

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Brückenstraße 91, 32584 Löhne, Germany, www.steute.com

ES 61 / EM 61

Montage- und Anschlussanleitung / Positionsschalter
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Raum für Notizen
Space for notes
Feuille de notes
Blocco note
Bloco de notas

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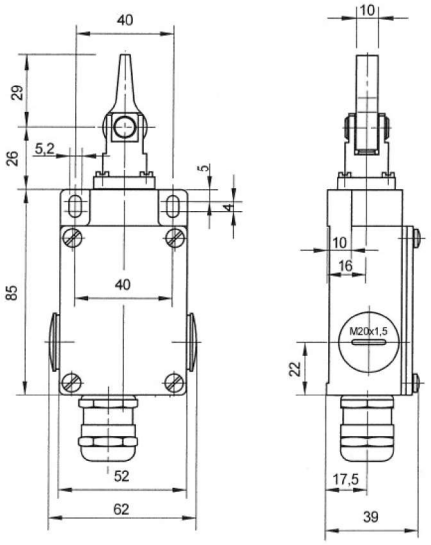
01.26.0530 / 118 41 95 / 11.2024 / 147828.Index i / 1000 wd

EM 61 D 1Ö/1S CSA

Material number: 1052314 (Material number (old): 61121904)

Voith-material number: TCR.11960720

Dimensions



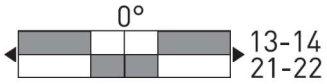
Technical data

Regulations	IEC 60947-5-1; EN 60947-5-1; EN 60529:2000-09
Housing	die casting Al alloy, colour painted RAL7016
Contact material	fine silver
Protection	IP65 as per EN 60529
Switching element	1 NC / 1 NO snapaction (EM 232)
Mounting connection	M3,5 screwed connection, self-lifting clamps
Actuation	Roller lever (Shift finger VOITH-TURBO) plunger (stainless), axis (stainless), guiding top piece (CuZn37), sealing (silicone), collar (silicone) for switching insert up -40 °C
Distance of fixing	40 mm – M5
Cable input	M20x1,5; PERFECT cable connection Art.-Nr.: 50.013
Electrical design	IEC 60947-5-1, contact elements electrically insulated against each other
Electrical load	400 V AC / 6 A cos j 0,3 AC 15 230 V DC / 0,25 A 24 V DC / 4 A
Minimum load	24 V / 20mA
Short circuit protection	6 A gL/gG D-fuse
Mechanical life	> 1 million operations
Switching frequency	max. 1800 operations / h
Approbationen	c SA US CSA – LR 85005-6 UL – File E 57648 A300 P300

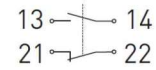
"Terminal tightening torque 150 Ncm"

Errors and omissions exepted.

Switching diagram

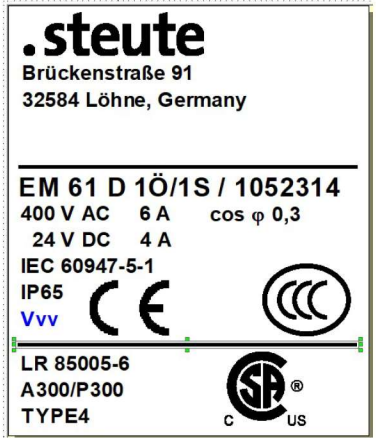


Contact diagram



Grounding

Type label



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EU-KONFORMITÄTSERKLÄRUNG
EU DECLARATION OF CONFORMITY

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2011/65/EU RoHS-Richtlinie / 2011/65/EU RoHS Directive	EN IEC 63000:2018

Verantwortlich technische Dokumentation / Responsible for technical documentation: Marc Stanesby (Geschäftsführer / Managing Director)

Marc Stanesby

Löhne, 27. November 2024 / 27 November, 2024
Ort und Datum der Ausstellung / Place and date of issue

Rechtsverbindliche Unterschrift,
Marc Stanesby (Geschäftsführer) /
Legally binding signature,
Marc Stanesby (Managing Director)

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Löhne, 04.03.2025
ger-bk

Declaration on REACH Regulation (EU) No. 1907/2006

Updated Candidate List: 21 January 2025

Dear Sir or Madam,

As a matter of principle steute products do not contain any substances from the candidate list (so-called „SVHC substances") or exceed the permissible threshold values in the REACH Regulation. Our suppliers are obliged to inform us immediately if components/products do not meet the REACH requirements.

The sole exception is lead in quantities of more than 0.1Ma% in some copper and aluminium alloys used by steute. This means that we are obliged to notify our customers of the products concerned.

We hereby inform you that the products supplied by steute contain components in which lead (CAS number 7439-92-1) can be present in concentrations exceeding 0.1Ma% in accordance with Article 33 of the REACH Regulation.

The candidate list is regularly checked by steute for additions and amendments. If at any time we should find that our products require additional notification because of other SVHC substances in accordance with Art. 33, we will inform you concurrently.

If you have detailed questions on RoHS or REACH issues, please contact:

MaterialCompliance@steute.com

Kind regards

steute Technologies GmbH & Co. KG

Christof Gerhardy
Managing Director

steute Technologies GmbH & Co. KG
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32584 Löhne

Telefon +49 5731 745-0
Telefax +49 5731 745-200
UST-ID-Nummer DE170026749

Amtsgericht Bad Oeynhausen
HRA 2125
Gerichtsstand Bad Oeynhausen

Persönlich haftende Gesellschafterin: steute Schmersal GmbH Melle
Amtsgericht Osnabrück
HRB 204703

Geschäftsführer
Marc Stanesby
B.Eng. M.Sc.
Christof Gerhardy
Dr.-Ing.
Dipl.-Wirt.-Ing.

www.steute.com
info@steute.com

12.2 Switch ExM 61 D

Voith Material No.: TCR.11974010

Operating Instructions	Steute
Technical Data	Steute
Declaration of Conformity	Steute
Manufacturer´s declaration	Steute

Ex 61 / ExM 61 / Ex ST 61

Montage- und Anschlussanleitung / Positions- und Sicherheitsschalter
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Deutsch (Originalbetriebsanleitung)

Nutzung der Montage- und Anschlussanleitung

Zielgruppe: autorisiertes Fachpersonal.
Sämtliche in dieser Montageanleitung beschriebenen Handhabungen dürfen nur durch ausgebildetes und vom Anlagenbetreiber autorisiertes Fachpersonal durchgeführt werden.
1. Montage- und Anschlussanleitung lesen und verstehen.
2. Geltende Vorschriften über Arbeitssicherheit und Unfallverhütung einhalten.
3. Gerät installieren und in Betrieb nehmen.

Auswahl und Einbau der Geräte sowie ihre steuerungstechnische Einbindung sind an eine qualifizierte Kenntnis der einschlägigen Gesetze und normativen Anforderungen durch den Maschinenhersteller geknüpft.
Im Zweifelsfall ist die deutsche Sprachversion dieser Anleitung maßgeblich.

Lieferumfang

Gerät, Montage- und Anschlussanleitung, Kartonage.

Sicherheitshinweise

In diesem Dokument wird das Warndreieck zusammen mit einem Signalwort verwendet, um auf gefährliche Situationen hinzuweisen.

Die Signalwörter haben folgende Bedeutungen:

HINWEIS zeigt eine Situation an, die einen Sachschaden zur Folge haben könnte.	VORSICHT zeigt eine Situation an, die eine geringfügige oder mäßige Verletzung zur Folge haben könnte.
WARNUNG zeigt eine Situation an, die den Tod oder eine schwere Verletzung zur Folge haben könnte.	GEFAHR zeigt eine Situation an, die eine schwere Verletzung oder den Tod zur Folge hat.

Bestimmungsgemäßer Gebrauch

GEFAHR
Zweckentfremdete Verwendung und explosionsfähige Einsatzumgebung! **Explosionsgefahr**! **Verbrennungsgefahr!** Darf nicht in Kategorie 1/Zone 0 und Zone 20 eingesetzt werden. Nur in zulässigen Kategorien/Zonen einsetzen. Gerät nur entsprechend der in dieser Montage- und Anschlussanleitung festgelegten Betriebsbedingungen verwenden. Gerät nur entsprechend dem in dieser Montage- und Anschlussanleitung genannten Einsatzzweck verwenden.

Das Gerät entspricht den Europäischen Normen für den Explosionsschutz EN 60079-0, EN 60079-1 und EN 60079-31. Es ist für den Einsatz in explosionsgefährdeten Bereichen der Zonen 1 und 2 sowie Zonen 21 und 22 nach EN 60079-14 vorgesehen. Die Anforderungen der EN 60079-14, z.B. in Bezug auf Staubablagerungen und Temperaturgrenzen, einhalten. Geräte mit Zwangsöffnung ⊖ dienen dem Einsatz in Sicherheitsstromkreisen zur Stellungsüberwachung beweglicher Schutzeinrichtungen nach EN ISO 14119 (EN 1088) Bauart 1 bzw. 2 und EN 60947-5-1.

Besondere Bedingungen und »X«-Kennzeichnung

Anschlussleitung fest verlegen und vor mechanischer Beschädigung hinreichend geschützt errichten.

Installation, Montage, Demontage

GEFAHR
Spannungsführende Teile. Explosionsfähige Atmosphäre. **Stromschlaggefahr! Explosionsgefahr!** Gerät vor der Inbetriebnahme auf korrekte Installation prüfen. Nationale Bestimmungen einhalten.

GEFAHR
Spannungsführende Teile. Explosionsfähige Atmosphäre. **Stromschlaggefahr! Verbrennungsgefahr!** Anschluss und Abklemmen nur durch qualifiziertes und autorisiertes Fachpersonal. Anschluss und Abklemmen nur in nicht-explosionsfähiger Umgebung.

Das Gerät auf einer ebenen Fläche befestigen.
Ex ST 61: Gerät und Betätiger auf einer ebenen Fläche befestigen.
Bei der Montage darauf achten, dass ein Verschieben des Geräts nicht möglich ist. Dies gilt auch im Fehlerfall. Gerät gegen unbefugte Manipulation sichern, z.B. mit Einweg-Sicherheitsschrauben. Sie sind optional erhältlich. Schrauben auf beiden Seiten mit einem Schraubendreher und derselben Anzahl Drehungen festdrehen.
Ex ST 61: Bei anderer Befestigung, z.B. Nieten oder Schweißen, darauf achten, dass sich die Eintauchtiefe des codierten Betätigungsbügels nicht ändert.
Bei der Montage des Geräts die Anforderungen nach EN 14119, insbesondere die Punkte 5.1 bis 5.7, berücksichtigen! Beachten Sie die Hinweise der Normen EN ISO 12100 und EN ISO 14120. Das Gerät nicht als mechanischen Anschlag verwenden. Die Gebrauchslage ist beliebig.

Verwendung und Betrieb

- Gerät nur innerhalb der zulässigen elektrischen Belastungsgrenzen betreiben (siehe Technische Daten).
- Für Kurzschlussschutz entsprechende Sicherungsgröße verwenden (siehe Technische Daten).
- Gerät nur innerhalb der zulässigen Umgebungstemperaturbereiche verwenden (siehe Typenschild und Technische Daten).

Hinweise

Für das Errichten von elektrischen Betriebsmitteln in explosionsgefährdeten Bereichen gilt die EN 60079-14. Die ATEX-Prüfbescheini-

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Ex 61 / ExM 61 / Ex ST 61

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Deutsch (Originalbetriebsanleitung)

gung und die darin enthaltenen besonderen Bedingungen beachten. Für die Verschaltung des Geräts in das Gesamtsystem: die in der Risikoanalyse festgelegte Steuerungskategorie durchgehend einhalten. Hierzu ist auch eine Validierung nach EN ISO 13849-2 bzw. nach EN 62061 erforderlich. **Desweiteren kann der Performance-Level nach EN ISO 13849-1 bzw. SIL-CL-Level nach EN 62061 durch Verkettung von mehreren Sicherheitsbauteilen und anderen sicherheitsgerichteten Geräten, z.B. Reihenschaltung von Sensoren, niedriger ausfallen als die Einzellevel.** Es liegt im Verantwortungsbereich des Herstellers einer Anlage oder Maschine, die korrekte Gesamtfunktion sicherzustellen. Technische Änderungen vorbehalten.

Instandhaltung, Wartung, Reparatur

GEFAHR
Spannungsführende Teile. Explosionsfähige Atmosphäre. **Stromschlaggefahr! Explosionsgefahr! Verbrennungsgefahr!** Beschädigte und defekte Geräte nicht reparieren, sondern ersetzen. Umbauten und Veränderungen am Gerät unterlassen.

Bei rauen Betriebsbedingungen empfehlen wir eine regelmäßige Wartung mit folgenden Schritten:
1. Prüfen des Betätigers auf Leichtgängigkeit.
2. Schmutzreste entfernen.
3. Prüfen der Leitungseinführung und -anschlüsse.

Reinigung

- Zur Vermeidung elektrostatischer Aufladung darf das Gerät in explosionsgefährdeten Bereichen nur mit einem feuchten Tuch gereinigt werden.
- Bei feuchter Reinigung: Wasser oder milde, nicht-scheuernde, nicht-kratzende Reinigungsmittel verwenden.
- Keine aggressiven Reinigungs- oder Lösungsmittel verwenden.

Entsorgung

- Nationale, lokale und gesetzliche Bestimmungen zur Entsorgung beachten.
- Materialien getrennt dem Recycling zuführen.

English

Use of the mounting and wiring instructions

Target group: authorised and qualified staff.
All actions described in these instructions may only be performed by qualified persons who have been trained and authorised by the operating company.
1. Read and understand these mounting and wiring instructions.
2. Comply with the valid occupational safety and accident prevention regulations.
3. Install and operate the device.

Selection and installation of devices and their integration in control systems demand qualified knowledge of all the relevant laws, as well as the normative requirements of the machine manufacturer.
In case of doubt, the German language version of these instructions shall prevail.

Scope of delivery

Device, mounting and wiring instructions, carton.

Safety information

In this document, the warning triangle is used together with a signal word to indicate a hazardous situation.

The signal words have the following meanings:

NOTICE indicates a situation which may result in material damage.	**CAUTION** indicates a situation which may result in minor or moderate injury.
WARNING indicates a situation which may result in serious injury or death.	**DANGER** indicates a situation which will result in serious injury or death.

Intended use

DANGER
Misuse and explosive environment. **Explosion hazard! Risk of burns!** Not for use in category 1/ zone 0 and zone 20. Only for use in permitted categories/zones. Use device only in accordance with the operating conditions defined in the mounting and wiring instructions. Use device only in accordance with the intended purpose defined in the mounting and wiring instructions.

The device complies with the European standards for explosion protection EN 60079-0, EN 60079-1 and EN 60079-31. It is intended for use in hazardous areas of zones 1 and 2 as well as zones 21 and 22 according to EN 60079-14. Comply with the requirements of EN 60079-14, e.g. with regard to dust deposits and temperature limits. Devices with a positive break ⊖ are used in safety circuits to monitor the position of mobile safety guards to EN ISO 14119 (EN 1088) type 1 or 2 and EN 60947-5-1.

Special conditions and »X« marking

The cable of the device must have a fixed installation and be set up in a manner that protects it from mechanical damages.

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Ex 61 / ExM 61 / Ex ST 61

Montage- und Anschlussanleitung / Positions- und Sicherheitsschalter
Mounting and wiring instructions / Position and safety switch
Instructions de montage et de câblage / Interrupteur de position et de sécurité
Istruzioni di montaggio e collegamento / Interruttore di posizione e di sicurezza
Instruções de montagem e instalação / Chave fim de curso e de segurança

English

Installation, mounting, dismantling

DANGER
Live parts. Explosive atmosphere. **Electric shock hazard! Explosion hazard!** Before commissioning, check device for correct installation. Comply with national regulations.

DANGER
Live parts. Explosive atmosphere. **Electric shock hazard! Risk of burns!** Connecting and disconnecting only to be performed by qualified and authorised personnel. Connecting and disconnecting only in non-explosive environment.

Mount the device on an even surface.
Ex ST 61: Mount the device and actuator on an even surface.
Ensure that the device cannot be moved from its position. Ensure this in case of failure, too. For protection against unauthorized manipulation, use e.g. one-way safety screws. These are optionally available. Please adjust screws at both sides with the same number of turns with a screwdriver. Adjust screws on both sides using a screwdriver with the same number of turns.
Ex ST 61: With other fastening, e.g. riveting or welding, ensure that the immersion depth of the coded actuating bracket does not change.
When mounting the device, observe the requirements of EN 14119, especially the sections 5.1 to 5.7! Observe the instructions in the standards EN ISO 12100 and EN ISO 14120. Do not use the device as a mechanical endstop. Any mounting position is possible.

Application and operation

- Use device only within the permitted electrical load limits (see technical data).
- For short-circuit protection use appropriate fuse size (see technical data.
- Use device only within the permitted ambient temperature range (see product label and technical data).

N.B.

Furthermore, EN 60079-14 has to be applied for the installation of electrical equipment in hazardous areas. Moreover, the ATEX test certificate and the enclosed special conditions have to be observed. For the integration of the device in the entire system: strictly observe and respect the control category determined in the risk assessment. Therefore, a validation according to EN ISO 13849-2 or EN 62061 is necessary. **Furthermore, the Performance Level according to EN ISO 13849-1 and SIL CL Level according to EN 62061 can be lower than the single level because of the combination of several safety components and other safety-related devices, e.g. by serial connection of sensors.** It is the responsibility of the manufacturer of a plant or machine to guarantee the correct general function. Subject to technical modifications.

Service, maintenance, repair

DANGER
Live parts. Explosive atmosphere. **Electric shock hazard! Explosion hazard! Risk of burns!** Do not repair defective or damaged devices. Replace them. Do not rebuild or modify the device in any way.

With rough conditions, we recommend routine maintenance as follows:
1. Check actuator for easy operation.
2. Remove all dirt particles.
3. Check sealing of the cable or conduit connections.

Cleaning

- Use a damp cloth to clean devices in hazardous areas. This prevents electrostatic charge.
- In case of damp cleaning: use water or mild, non-scratching, non-chafing cleaners.
- Do not use aggressive cleaners or solvents.

Disposal

- Observe national, local and legal regulations concerning disposal.
- Recycle each material separately.

Français

Utilisation des instructions de montage et de câblage

Groupe cible: personnel autorisé et compétent.
Toutes les manipulations décrites dans cette notice d'installation ne doivent être effectuées que par du personnel formé et autorisé par la société exploitante.
1. Lire et comprendre les instructions de montage et de câblage.
2. Respecter les règles de sécurité et de prévention des accidents en vigueur.
3. Installer l'appareil et le mettre en service.

La sélection et l'installation des appareils et leurs intégrations dans les systèmes de commande exigent une connaissance approfondie de toutes les lois pertinentes, ainsi que des exigences normatives du fabricant de la machine.
En cas de doute, la version allemande fait référence.

Volume de livraison

Appareil, instruction de montage et de câblage, carton.

Instructions de sécurité

Dans ce document, le triangle de présignalisation est utilisé avec un mot-clé pour signaler les situations dangereuses.

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Français

Les mots-clés ont les significations suivantes:

NOTICE indique une situation qui pourrait entraîner un dommage matériel.	ATTENTION indique une situation qui pourrait entraîner une blessure légère ou gravité modérée.
AVERTISSEMENT indique une situation qui pourrait entraîner la mort ou une blessure grave.	DANGER indique une situation qui entraîne une blessure grave ou la mort.

Utilisation conforme

DANGER
D'utilisations non conformes et un environnement potentiellement explosif. **Risque d'explosion! Risque de brûlure!** Ne doit pas être utilisé dans la catégorie 1/zone 0 et zone 20. Utiliser uniquement dans les catégories/zones autorisées. A n'utiliser qu'en conformité avec les conditions de fonctionnement stipulées dans ces instructions de montage et de câblage. Utiliser uniquement en conformité avec les applications stipulées dans ces instructions de montage et de câblage.

L'appareil est conforme aux normes européennes pour la protection contre les explosions EN 60079-0, EN 60079-1 et EN 60079-31. Il est prévu pour l'utilisation en environnements à risque d'explosion des zones 1 et 2 et des zones 21 et 22 selon EN 60079-14. Observer les exigences de EN 60079-14, par ex. en rapport avec les dépôts de poussières et limites de températures. Les appareils à ouverture forcée ⊖ sont utilisés dans les circuits de sécurité pour surveiller la position des protecteurs mobiles selon EN ISO 14119 (EN 1088) type de construction 1 ou 2 et EN 60947-5-1.

Conditions particulières et marquage «X»

Poser et fixer le câble de raccordement et le protéger suffisamment contre tout dommage mécanique.

Installation, montage, démontage

DANGER
Pièces sous tension. Atmosphère potentiellement explosive. **Risque d'électrocution! Risque d'explosion!** Contrôler l'installation correcte de l'appareil avant sa mise en service. Se conformer aux dispositions en vigueur dans le pays.

DANGER
Pièces sous tension. Atmosphère potentiellement explosive. **Risque d'électrocution! Risque de brûlure!** Raccordement et débranchement que par du personnel qualifié et autorisé. Raccordement et débranchement uniquement dans un environnement non explosif.

Fixer l'appareil sur une surface plane.
Ex ST 61: Fixer l'appareil et l'actionneur sur une surface plane. Observer pour le montage qu'une fois l'appareil mis en place, il n'est plus possible de le déplacer, même en cas de défaillance. Sécuriser l'appareil contre toute manipulation non autorisée, par ex. avec des vis de sécurité indémontables. Elles sont disponibles en option. Serrer les vis des deux côtés avec un tournevis et le même nombre de tours.
Ex ST 61: Pour d'autres fixations, par ex. rivage ou soudage, observer que la profondeur d'insertion de l'actionneur codé ne change pas.
Lors du montage de l'appareil, respecter les exigences selon EN 14119, en particulier les points 5.1 à 5.7! Respecter également les indications des normes EN ISO 12100 et EN ISO 14120. L'appareil ne peut pas servir de butée mécanique. La position de montage est indifférente.

Utilisation et opération

- N'utiliser l'appareil que dans les limites des charges électriques autorisées (voir données techniques).
- Pour la protection contre les courts-circuits, utilisez la taille de fusible appropriée (voir données techniques).
- N'utiliser l'appareil que dans la plage de température ambiante autorisée (voir plaque d'identification et données techniques).

Remarques

L'installation d'équipements électriques dans des atmosphères potentiellement explosives est soumise à la norme EN 60079-14. Il faut également observer le certificat d'essai ATEX et les conditions particulières qui y figurent. Pour l'intégration de l'appareil dans l'ensemble du système: respecter scrupuleusement la catégorie de commande définie dans l'évaluation des risques. Pour ce faire, une validation selon EN ISO 13849-2 ou selon EN 62061 est nécessaire. **De plus, le niveau de perfomance PL selon EN ISO 13849-1 ou niveau d'intégrité de sécurité SIL selon EN 62061 peut être inférieur au niveau des composant de sécurité pris individuellement, dans le cas d'une mise-en-série, par exemple.** Il appartient au fabricant d'une installation ou d'une machine d'assurer le bon fonctionnement général. Sous réserve de modifications techniques.

Entretien, maintenance, réparation

DANGER
Pièces sous tension. Atmosphère potentiellement explosive. **Risque d'électrocution! Risque d'explosion! Risque de brûlure!** Ne pas réparer les appareils endommagés ou défectueux, mais les remplacer. S'abstenir de faire des modifications ou changements de l'appareil.

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Français

En cas de fonctionnement dans un environnement difficile, il est recommandé d'effectuer un entretien régulier qui consiste à:
1. Vérifier la souplesse d'utilisation de l'actionneur.
2. Enlever toute saleté restante.
3. Contrôler les entrées de câble et les raccordements.

Nettoyage

- Pour éviter une charge électrostatique, l'appareil ne doit être nettoyé qu'avec un chiffon humide dans des environnements à risque d'explosion.
- Pour un nettoyage humide: utiliser de l'eau ou un nettoyant doux, non abrasif, qui ne raye pas.
- Ne pas utiliser de nettoyants ou solvants agressifs.

Elimination des déchets

- Observer les dispositions nationales, locales et légales pour l'élimination.
- Trier les déchets pour le recyclage.

Italiano

Utilizzo delle istruzioni di montaggio e collegamento

Gruppo target: personale autorizzato e qualificato.
Tutte le azioni descritte nelle presenti istruzioni possono essere eseguite esclusivamente da personale qualificato, addestrato e autorizzato dall'azienda di gestione.
1. Leggere e comprendere le presenti istruzioni di montaggio e collegamento.
2. Rispettare le norme vigenti in materia di sicurezza sul lavoro e prevenzione dagli infortuni.
3. Installare e mettere in funzione il dispositivo.

La scelta e l'installazione dei dispositivi e la loro integrazione nei sistemi di controllo richiedono una conoscenza specifica di tutte le relative leggi e dei requisiti normativi del costruttore della macchina.
In caso di dubbi, fa fede la versione in lingua tedesca di queste istruzioni.

Volume di consegna

Dispositivo, istruzioni di montaggio e collegamento, imballo.

Informazioni di sicurezza

In questo documento, il triangolo di emergenza viene utilizzato insieme a una parola di segnalazione per indicare una situazione pericolosa.

Le parole di segnalazione hanno i seguenti significati:

AVVISO indica una situazione che può causare danni materiali.	ATTENZIONE indica una situazione che può causare lesioni lievi o moderate.
AVVERTIMENTO indica una situazione che può causare lesioni gravi o morte.	PERICOLO indica una situazione che causa lesioni gravi o morte.

Destinazione d'uso

PERICOLO
Uso improprio ed ambiente esplosivo. **Pericolo di esplosione! Rischio di ustione!** Non deve essere utilizzato in categoria 1/zona 0 e zona 20. Utilizzare esclusivamente nelle categorie/zone consentite. Utilizzare il dispositivo soltanto in conformità con le condizioni operative definite nelle istruzioni di montaggio e collegamento. Utilizzare il dispositivo soltanto ai fini definiti nelle istruzioni di montaggio e collegamento.

Il dispositivo è conforme agli standard europei per la protezione dalle esplosioni EN 60079-0, EN 60079-1 e EN 60079-31. È destinato all'uso in aree a rischio di esplosione zone 1 - 2 e 21 - 22 secondo EN 60079-14. Rispettare i requisiti della EN 60079-14, ad es. per quanto riguarda i depositi di polvere e i limiti di temperatura. I dispositivi con apertura forzata ⊖ sono utilizzati nei circuiti di sicurezza per monitorare la posizione delle protezioni mobili di sicurezza secondo EN ISO 14119 (EN 1088) tipo 1 oppure 2 e EN 60947-5-1.

Condizioni speciali e marcatura »X«

Posare in maniera sicura il cavo di collegamento, in modo da proteggerlo da danni meccanici.

Installazione, montaggio, smontaggio

PERICOLO
Componenti sotto tensione. Atmosfera esplosiva. **Pericolo di scossa elettrica! Rischio di esplosione!** Prima della messa in funzione, verificare che il dispositivo sia stato installato correttamente. Osservare le disposizioni nazionali.

PERICOLO
Componenti sotto tensione. Atmosfera esplosiva. **Pericolo di scossa elettrica! Rischio di ustione!** Connessione e disconnessione soltanto da parte di personale qualificato ed autorizzato. Connessione e disconnessione soltanto in ambienti non esplosivi.

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Italiano

Montare il dispositivo su una superficie piana.
Ex St 61: Montare il dispositivo e l'azionatore su una superficie piana. Durante il montaggio, assicurarsi che il finecorsa non possa essere spostato, anche in caso di guasto. Proteggere il dispositivo da eventuali manipolazioni, ad esempio utilizzando viti di sicurezza monouso, disponibili come accessori. Serrare le viti su entrambi i lati con un cacciavite e con lo stesso numero di giri.
Ex ST 61: Per altri tipi di fissaggio, ad esempio rivettatura o saldatura, assicurarsi che la profondità di inserimento della staffa di azionamento codificata non sia variata.
Nel montaggio del dispositivo, osservare i requisiti della normativa EN 14119, in particolare i punti 5.1 a 5.7! Rispettare le istruzioni secondo le normative EN ISO 12100 e EN ISO 14120. Non usare il dispositivo come mezzo meccanico di arresto. Ogni posizione di montaggio è possibile.

Uso e funzionamento

- Utilizzare il dispositivo soltanto entro i limiti di carico elettrico consentiti (vedere i dati tecnici).
- Per la protezione da cortocircuito, utilizzare un fusibile di dimensioni appropriate (vedere i dati tecnici).
- Utilizzare il dispositivo soltanto entro il range di temperature consentito (vedere l'etichetta del prodotto e i dati tecnici).

Indicazioni

Per la costruzione di apparecchiature elettriche in aree a rischio di esplosione si applica la EN 60079-14. Occorre inoltre osservare il certificato di prova ATEX e le particolari condizioni in esso contenute. Per l'integrazione del dispositivo nell'intero sistema: osservare rigorosamente e rispettare la categoria di controllo determinata nella valutazione del rischio. A tal fine è richiesta anche una convalida secondo EN ISO 13849-2 oppure EN 62061. **Inoltre, il Performance Level secondo EN ISO 13849-1 e SIL CL Level secondo EN 62061 può essere inferiore rispetto al singolo livello, a causa della combinazione di diversi componenti di sicurezza ed altri dispositivi di sicurezza, come ad esempio il collegamento in serie di sensori.** Il produttore di un impianto o macchinario si assume la responsabilità della sua corretta funzione globale. Soggetta a modifiche tecniche.

Assistenza, manutenzione, riparazione

PERICOLO
Componenti sotto tensione. Atmosfera esplosiva.
Pericolo di scossa elettrica! Pericolo di esplosione! Rischio di ustione! Non tentare di riparare dispositivi difettosi e danneggiati. Sostituirli. Non trasformare o modificare il dispositivo.

In condizioni di impiego in ambienti gravosi si consiglia una manutenzione periodica come segue:
1. Verificare la scorrevolezza dell'azionatore.
2. Rimuovere i residui di sporco.
3. Verificare le entrare e i collegamenti dei cavi.

Pulizia

- Utilizzare un panno umido per pulire dispositivi in aree a rischio di esplosione. In questo modo si impedisce la carica elettrostatica.
- Per la pulizia a umido: utilizzare acqua oppure detergenti delicati, non abrasivi, non graffianti.
- Non utilizzare detergenti o solventi aggressivi.

Smaltimento

- Osservare le norme nazionali, locali e legali per lo smaltimento.
- Riciclare ciascun materiale separatamente.

Português

Utilização das instruções de montagem e instalação

Público alvo: pessoal autorizado e qualificado.
Todas as ações descritas neste manual somente podem ser realizadas por pessoal qualificado, os quais tenham sido treinados e autorizados pela empresa.
1. Ler e compreender estas instruções de montagem e instalação.
2. Seguir as normas e regulamentos válidos para segurança ocupacional e prevenção de acidentes.
3. Instalar e operar o dispositivo.

Seleção e instalação dos dispositivos e sua intregração no sistema de controle demanda conhecimento qualificado de todas as leis relevantes, assim como dos requerimentos norminativos do fabricante da máquina.
No caso de dúvidas, prevalecerá a versão em alemão dessas instruções.

Escopo de entrega

Dispositivo, instruções de montagem e instalação, caixa em papelão.

Informações de segurança

Neste documento, o triângulo de advertência é usado com uma palavra para indicação de situação perigosa.

As palavras possuem os seguintes significados:

AVISO indica uma situação que pode resultar em danos materiais.	**CUIDADO** indica uma situação que pode resultar em lesão mínima ou moderada.
ADVERTÊNCIA indica uma situação que pode resultar em lesão grave ou morte.	**PERIGO** indica uma situação que resultará em lesão grave ou morte.

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Português

Uso pretendido

PERIGO
Má utilização e ambiente explosivo. **Perigo de explosão! Risco de queimaduras!** Não deve ser utilizado na categoria 1/zona 0 e zona 20. Use apenas em categorias/zonas permitidas. Use o dispositivo apenas nas condições operacionais definidas nas instruções de montagem e instalação. Use o dispositivo apenas na finalidade pretendida definida nas instruções de montagem e instalação.

O dispositivo está em conformidade com as normas européias para proteção contra explosão EN 60079-0, EN 60079-1 e EN 60079-31. Destina-se ao uso em áreas de risco de explosão nas zonas 1 e 2, bem como zonas 21 e 22, de acordo com a EN 60079-14. Atende aos requisitos da EN 60079-14, por ex. no que diz respeito a acumulo de poeira e limites de temperatura. Dispositivos com ruptura positiva ⊖ são usados nos circuitos de segurança para monitorar a posição das proteções móveis para EN ISO 14119 (EN 1088) tipo 1 ou 2 e EN 60947-5-1.

Condições especiais e marcação »X«

Os cabos de conexão do dispositivo devem ter uma instalação fixa e protegidos contra danos mecânicos.

Instalação, montagem, desmontagem

PERIGO
Partes vivas. Atmosfera explosiva. **Risco de choque elétrico! Perigo de explosão!** Antes de posicionar, cheque o dispositivo para instalação correta. Obedecer às normas nacionais.

PERIGO
Partes vivas. Atmosfera explosiva. **Risco de choque elétrico! Risco de queimaduras!** Conexão e desconexão apenas por pessoal qualificado e autorizado. Conexão e desconexão apenas em ambiente não explosivo.

Montar o dispositivo em uma superfície plana.
Ex St 61: Montar o dispositivo e o atuador em uma superfície plana. Assegure-se de que o dispositivo não possa ser deslocado, mesmo em caso da ocorrência de falha. Para proteção contra manipulação não autorizada use parafusos de segurança que estão disponíveis opcionalmente. Ajustar os parafusos em ambos os lados com o mesmo numero de voltas utilizando uma parafusadeira.
Ex St 61: Com outra fixação, por ex. rebites ou solda, assegure-se de que a profundidade do suporte de acionamento codificado não seja alterado.

Quando da montagem do dispositivo, observar os requerimentos da norma EN 14119, especialmente os parágrafos 5.1 até 5.7! Observar as instruções nas normas EN ISO 12100 e EN ISO 14120. O dispositivo não pode ser utilizado como batente mecânico. O posicionamento de uso é livre.

Aplicação e operação

- Use o dispositivo somente dentro dos limites de carga elétrica autorizada (ver dados técnicos).
- Para proteção contra curto-circuito, utilize fusível apropriado (ver dados técnicos).
- Use o dispositivo somente dentro do intervalo de temperatura ambiente permitido (ver rótulo do produto e dados técnicos).

Observações

Além disso, a EN 60079-14 (ABNT NBR IEC 60079-14) tem que ser aplicada para a instalação de equipamentos elétricos em áreas de risco de explosão. Além disso, o certificado de conformidade ATEX tem que ser observado. Para a integração do dispositivo em todo o sistema: observar e respeitar rigorosamente a categoria de controle determinada na avaliação de risco. Além disso, é necessária validação de acordo com EN ISO 132849-2 ou EN 62061. **Além disto o Performance Level de acordo com EN ISO 13849-1 ou SIL CL Level de acordo com EN 62061 pode ser reduzido quando encadeados diversos componentes de segurança ou outros dispositivos relacionados a segurança, como por exemplo conectando diversos sensores em série.** É de responsabilidade do fabricante da instalação ou máquina assegurar o perfeito funcionamento de todas as funções. Sujeito a alterações técnicas.

Serviço, manutenção, reparo

PERIGO
Partes vivas. Atmosfera explosiva. **Risco de choque elétrico! Perigo de explosão! Risco de queimaduras!** Não repare dispositivos com defeito e danos. Substitua. Não reconstruir ou alterar o dispositivo.

Nos casos em que os equipamentos estiverem instalados em condições ambientes adversas é recomendado que seja realizada a conservação obedecendo os passos seguintes:
1. Verificar a liberdade de movimentos do atuador.
2. Remova todas as partículas de sujeira.
3. Verificar o estado da vedação do prensa cabos ou da conexão dos conduítes.

Limpeza

- Use um pano úmido para limpar dispositivos em áreas de risco de explosão. Isto previne contra carga eletrostática.
- Em caso de limpeza úmida: Use água e produtos de limpeza não abrasivos.
- Não utilize produtos de limpeza agressivos e solventes.

Descarte

- Observe as disposições legais locais a referente ao descarte.
- Separar materiais recicláveis.

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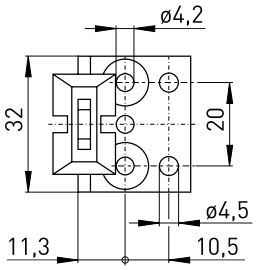
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Schaltwegdiagramm
Switching diagram
Diagramme des contacts
Diagramma di commutazione
Diagrama das comutações

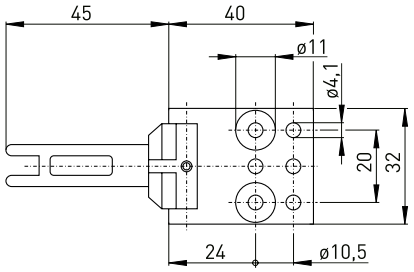
Ex 61 W 1Ö/1S	⊖	0 3,5 5,5 BK-GY BN-BU 2 3,3
ExM 61 W		0 5,5 GY- BK GY- BN 2
Ex ST 61 1Ö/1S	⊖	0 13 BK-GY BN-BU 10 12

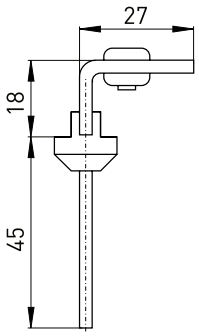
Betätiger
Actuator
Actionneur
Azionatore
Atuador

Ex ST 61-B5



Ex ST 61-B1



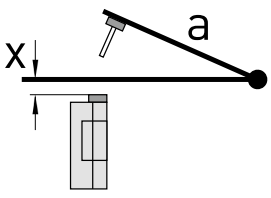


Kontakte
Contacts
Contacts
Contatti
Contatti

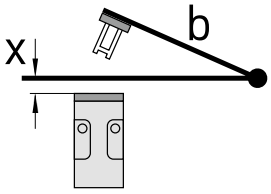
Ex 61 1Ö/1S	Zb	BN 11 12 BU BK 23 24 GY
ExM 61 1Ö/1S	Za	GY 23 24 BK BU 11 12 BN
ExM 61	C	BK 4 BN 2 1 GY
Ex ST 61	Zb	BN 11 12 BU BK 23 24 GY

Die dargestellten Schaltsymbole beziehen sich auf den unbetätigten Zustand.
Contact symbols are shown for the not actuated switch.
Interrupteurs représentés contacts au repos, pas actionnés.
I simboli grafici dei contatti si riferiscono allo stato inattivo dell'interruttore.
Os símbolos de comutação representam o estado inativo.

Betätigungsradien
Actuating radii
Rayons d'actionnement
Raggi di azionamento
Angulos de atuação



	x	a
Ex ST 61-B1	30 mm	140 mm
Ex ST 61-B5	15 mm	140 mm



	x	b
Ex ST 61-B1	30 mm	1000 mm
Ex ST 61-B5	15 mm	1000 mm

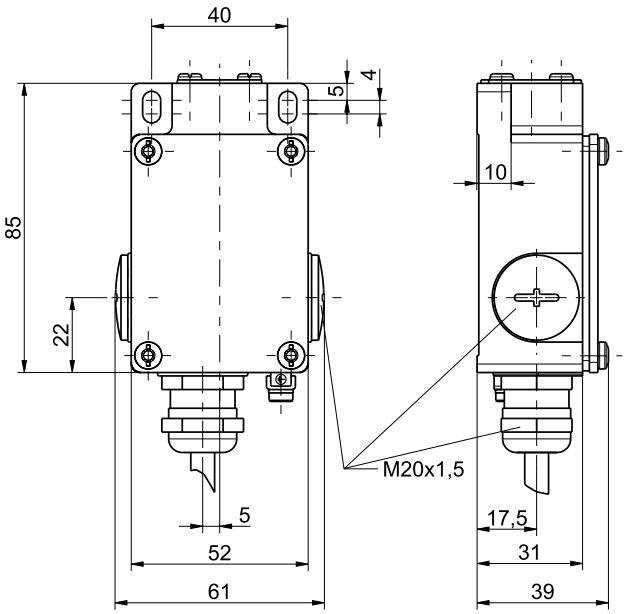
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Ex 61 / ExM 61 / Ex ST 61

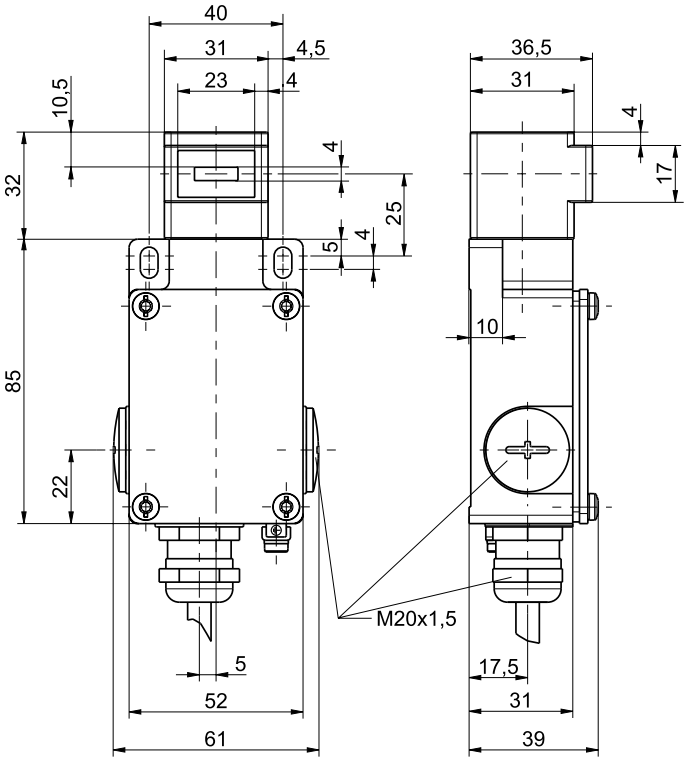
Montage- und Anschlussanleitung / Positions- und Sicherheitsschalter
Mounting and wiring instructions / Position and safety switch
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Istruzioni di montaggio e collegamento / Interruttore di posizione e di sicurezza
Instruções de montagem e instalação / Chave fim de curso e de segurança

Abmessungen
Dimensions
Dimensions
Dimensioni
Dimensões

Ex 61
ExM 61



Ex ST 61



Herstellungsdatum → 014426 → Montag KW 44/2026
Production date → 014426 → Monday CW 44/2026
Date de fabrication → 014426 → lundi semaine 44/2026
Data di produzione → 014426 → lunedi settimana 44/2026
Data de fabricação → 014426 → segunda semana 44/2026

01	Montag	Monday	lundi	lunedi	segunda
02	Dienstag	Tuesday	mardi	martedì	terça
03	Mittwoch	Wednesday	mercredi	mercoledì	quarta
04	Donnerstag	Thursday	jeudi	giovedì	quinta
05	Freitag	Friday	vendredi	venerdì	sexta

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Ex 61 / ExM 61 / Ex ST 61

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Deutsch (Originalbetriebsanleitung)

Technische Daten

Angewandte Normen	EN 60079-0, EN 60079-1, EN 60079-31, EN 60947-5-1; EN ISO 13849-1; EN ISO 14119
Gehäuse	Aluminium-Druckguss, pulverbeschichtet
Deckel	Stahl, pulverbeschichtet
Schaltertyp	Bauart 1 **Ex ST 61:** Bauart 2
Kodierungsstufe	keine Kodierung **Ex ST 61:** geringe Kodierung
Schalteinsatz	**Ex 61, Ex ST 61:** Ex 14; **ExM 61:** ExM 14, ExM 14 1Ö/1S
Schaltsystem	**Ex 61, Ex ST 61:** 1 Öffner/1 Schließer, Form Zb, Schleichschaltung, Öffner zwangsöffnend ⊖** **ExM 61:** 1 Öffner/1 Schließer, Form Za oder 1 Wechsler, Form C, Sprungschaltung
Schutzart	IP65 nach EN 60529
Anschlussart	3- oder 4-adrige PVC-Leitung H05 VV-F 0,75 mm² (einschl. Aderendhülsen)
B_{10d} (10% Nennlast)	2 Millionen
T_M	max. 20 Jahre
Gebrauchskategorie	AC-15; DC-13
Bemessungsbetriebs-strom/-spannung	**Ex 61, Ex ST 61:** 6 A/250 VAC; 0,25 A/230 VDC **ExM 61:** 5 A/250 VAC; 0,16 A/230 VDC **ExM 61 1Ö/1S:** 5 A/250 VAC; 0,2 A/230 VDC
U_{imp}	4 kV
U_i	250 V
I_{the}	**Ex 61, Ex ST 61:** T6: 6 A; T5: 3 A **ExM 61:** 5 A
Kurzschlussschutz	**Ex 61, Ex ST 61:** 6 A gG-Sicherung **ExM 61:** 5 A gG-Sicherung
Zwangsöffnungsweg	**Ex ST 61:** 12 mm
Schaltpunktgenauigkeit bei wiederholtem Schalten	± 0,1 mm
Mechan. Lebensdauer	>1 Million Schaltspiele
Umgebungstemperatur	**Ex 61, Ex ST 61:** T6: -20 °C ... +65 °C, T5: -20 °C ... +75 °C, +90 °C bei max. 3 A; **ExM 61:** T6: -20 °C ... +60 °C
Schalthäufigkeit	max. 1800/h
Kontaktöffnungsweite	max. 2 x 4,5 mm
Ex-Kennzeichnung	**Ex 61, Ex ST 61:** ⟨Ex⟩ II 2G Ex db IIC T6/T5 Gb ⟨Ex⟩ II 2D Ex tb IIIC T80°C/T95°C Db PTB 03 ATEX 1070 X* IECEx Ex db IIC T5/T6 Gb Ex tb IIIC T80°C/T95°C Db IECEx PTB 06.0098 X* **ExM 61:** ⟨Ex⟩ II 2G Ex d IIC T6 Gb ⟨Ex⟩ II 2D Ex tb IIIC T80°C Db IP65 PTB 03 ATEX 1069 X* **ExM 61 1Ö/1S:** ⟨Ex⟩ II 2G Ex db IIC T6 Gb ⟨Ex⟩ II 2D Ex tb IIIC T80°C Db PTB 00 ATEX 1006 X* IECEx Ex db IIC T6 Gb Ex tb IIIC T80°C Db IECEx PTB 13.0019 X*

* bezogen auf den Schalteinsatz
** Zwangsöffnung abhängig vom verwendeten Betätiger

English

Technical data

Applied standards	EN 60079-0, EN 60079-1, EN 60079-31, EN 60947-5-1; EN ISO 13849-1; EN ISO 14119
Enclosure	aluminium die-cast, powder-coated
Cover	steel, powder-coated
Switch type	type 1 **Ex ST 61:** type 2
Coding level	no coding **Ex ST 61:** low coding
Switch insert	**Ex 61, Ex ST 61:** Ex 14; **ExM 61:** ExM 14, ExM 14 1Ö/1S
Switching system	**Ex 61, Ex ST 61:** 1 NC/1 NO, type Zb, slow action, positive break NC contacts ⊖** **ExM 61:** 1 NC/1 NO, type Za or 1 change-over contact, type C, snap action
Degree of protection	IP65 to EN 60529
Connection	3- or 4-wire PVC-cable H05 VV-F 0.75 mm² (incl. conductor ferrules)
B_{10d} (10% nominal load)	2 millions
T_M	max. 20 years
Utilisation category	AC-15; DC-13
Rated operating current/voltage	**Ex 61, Ex ST 61:** 6 A/250 VAC; 0.25 A/230 VDC **ExM 61:** 5 A/250 VAC; 0.16 A/230 VDC **ExM 61 1Ö/1S:** 5 A/250 VAC; 0.2 A/230 VDC
U_{imp}	4 kV
U_i	250 V
I_{the}	**Ex 61, Ex ST 61:** T6: 6 A; T5: 3 A **ExM 61:** 5 A
Short-circuit protection	**Ex 61, Ex ST 61:** 6 A gG fuse **ExM 61:** 5 A gG fuse
Positive break travel	**Ex ST 61:** 12 mm
Repeat accuracy of switching points	± 0.1 mm
Mechanical life	>1 million operations

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Ex 61 / ExM 61 / Ex ST 61

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Instruções de montagem e instalação / Chave fim de curso e de segurança

English

Ambient temperature	**Ex 61, Ex ST 61:** T6: -20°C ... +65°C, T5: -20°C ... +75°C, +90°C at max. 3 A; **ExM 61:** T6: -20°C ... +60°C
Operation cycles	max. 1800/h
Contact opening	max. 2 x 4.5 mm
Ex marking	**Ex 61, Ex ST 61:** Ⓔx II 2G Ex db IIC T6/T5 Gb Ⓔx II 2D Ex tb IIIC T80°C/T95°C Db PTB 03 ATEX 1070 X* IECEx Ex db IIC T5/T6 Gb Ex tb IIIC T80°C/T95°C Db IECEx PTB 06.0098 X* **ExM 61:** Ⓔx II 2G Ex d IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db IP65 PTB 03 ATEX 1069 X* **ExM 61 1Ö/1S:** Ⓔx II 2G Ex db IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db PTB 00 ATEX 1006 X* IECEx Ex db IIC T6 Gb Ex tb IIIC T80°C Db IECEx PTB 13.0019 X*

* referring to the switch insert
** positive break depends on the actuator used

Français

Données techniques

Normes appliquées	EN 60079-0, EN 60079-1, EN 60079-31, EN 60947-5-1; EN ISO 13849-1; EN ISO 14119
Boîtier	fonte d'aluminium, revêtu par poudre
Couvercle	acier, revêtu par poudre
Type d'interrupteur	type de construction 1 **Ex ST 61:** type de construction 2
Niveau de codage	aucun codage **Ex ST 61:** codage faible
Bloc contact	**Ex 61, Ex ST 61:** Ex 14; **ExM 61:** ExM 14, ExM 14 1Ö/1S
Système de commutation	**Ex 61, Ex ST 61:** 1 NF/1 NO, type Zb, action dépendante, contacts NF à ouverture positive ⊖** **ExM 61:** 1 NF/1 NO, type Za ou 1 contact inverseur, type C, rupture brusque
Etanchéité	IP65 selon EN 60529
Raccordement	câble PVC à 3 ou 4 conducteurs H05 VV-F 0,75 mm² (y compris embouts de câble)
B_{10d} (10% charge nominal)	2 millions
T_M	max. 20 ans
Catégorie d'utilisation	AC-15; DC-13
Courant/tension assigné d'emploi	**Ex 61, Ex ST 61:** 6 A/250 VAC; 0,25 A/230 VDC **ExM 61:** 5 A/250 VAC; 0,16 A/230 VDC **ExM 61 1Ö/1S:** 5 A/250 VAC; 0,2 A/230 VDC
U_{imp}	4 kV
U_i	250 V
I_{the}	**Ex 61, Ex ST 61:** T6: 6 A; T5: 3 A **ExM 61:** 5 A
Protection contre les courts-circuits	**Ex 61, Ex ST 61:** fusible 6 A gG **ExM 61:** fusible 5 A gG
Course ouverture positive	**Ex ST 61:** 12 mm
Répétabilité du point de commutation	± 0,1 mm
Durée de vie mécanique	>1 million manoeuvres
Température ambiante	**Ex 61, Ex ST 61:** T6: -20 °C ... +65 °C, T5: -20 °C ... +75 °C, +90 °C à max. 3 A; **ExM 61:** T6: -20 °C ... +60 °C
Fréquence de manoeuvre	max. 1800/h
Course d'ouverture de contact	max. 2 x 4,5 mm
Protection anti-déflagrante	**Ex 61, Ex ST 61:** Ⓔx II 2G Ex db IIC T6/T5 Gb Ⓔx II 2D Ex tb IIIC T80°C/T95°C Db PTB 03 ATEX 1070 X* IECEx Ex db IIC T5/T6 Gb Ex tb IIIC T80°C/T95°C Db IECEx PTB 06.0098 X* **ExM 61:** Ⓔx II 2G Ex d IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db IP65 PTB 03 ATEX 1069 X* **ExM 61 1Ö/1S:** Ⓔx II 2G Ex db IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db PTB 00 ATEX 1006 X* IECEx Ex db IIC T6 Gb Ex tb IIIC T80°C Db IECEx PTB 13.0019 X*

* se rapporte à bloc contact
** l'ouverture positive dépend de l'actionneur utilisé

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Ex 61 / ExM 61 / Ex ST 61

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Italiano

Dati tecnici

Norme applicate	EN 60079-0, EN 60079-1, EN 60079-31, EN 60947-5-1; EN ISO 13849-1; EN ISO 14119
Custodia	alluminio pressofuso, verniciato a polvere
Coperchio	acciaio, verniciato a polvere
Tipo di interrruttore	tipo 1 **Ex ST 61:** tipo 2
Livello di codifica	no codifica **Ex ST 61:** codifica bassa
Inserto di commutazione	**Ex 61, Ex ST 61:** Ex 14; **ExM 61:** ExM 14, ExM 14 1Ö/1S
Sistema di commutazione	**Ex 61, Ex ST 61:** 1 NC/1 NA, tipo Zb, commutazione lenta, contatti NC ad apertura obbligata ⊖** **ExM 61:** 1 NC/1 NA, tipo Za oppure 1 contatto in scambio, tipo C, commutazione rapida
Grado di protezione	IP65 secondo EN 60529
Collegamento	cavo in PVC a 3 oppure 4 fili H05 VV-F 0,75 mm² (compreso capocorda)
B_{10d} (10% carico nominale)	2 milioni
T_M	max. 20 anni
Categoria d'impiego	AC-15; DC-13
Corrente/tensione d'esercizio nominale	**Ex 61, Ex ST 61:** 6 A/250 VAC; 0,25 A/230 VDC **ExM 61:** 5 A/250 VAC; 0,16 A/230 VDC **ExM 61 1Ö/1S:** 5 A/250 VAC; 0,2 A/230 VDC
U_{imp}	4 kV
U_i	250 V
I_{the}	**Ex 61, Ex ST 61:** T6: 6 A; T5: 3 A **ExM 61:** 5 A
Protezione da cortocircuito	**Ex 61, Ex ST 61:** 6 A gG fusibile **ExM 61:** 5 A gG fusibile
Corsa di apertura obbligata	**Ex ST 61:** 12 mm
Precisione del punto di commutazione con commutazioni ripetute	± 0,1 mm
Durata meccanica	>1 milione di manovre
Temperatura circostante	**Ex 61, Ex ST 61:** T6: -20 °C ... +65 °C, T5: -20 °C ... +75 °C, +90 °C con max. 3 A; **ExM 61:** T6: -20 °C ... +60 °C
Frequenza di commutazioni	max. 1800/h
Ampiezza di apertura dei contatti	max. 2 x 4,5 mm
Protezione anti-deflagrante	**Ex 61, Ex ST 61:** Ⓔx II 2G Ex db IIC T6/T5 Gb Ⓔx II 2D Ex tb IIIC T80°C/T95°C Db PTB 03 ATEX 1070 X* IECEx Ex db IIC T5/T6 Gb Ex tb IIIC T80°C/T95°C Db IECEx PTB 06.0098 X* **ExM 61:** Ⓔx II 2G Ex d IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db IP65 PTB 03 ATEX 1069 X* **ExM 61 1Ö/1S:** Ⓔx II 2G Ex db IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db PTB 00 ATEX 1006 X* IECEx Ex db IIC T6 Gb Ex tb IIIC T80°C Db IECEx PTB 13.0019 X*

* referito a inserto di commutazione
** l'apertura obbligata dipende dall'azionatore utilizzato

Português

Dados técnicos

Normas aplicáveis	EN 60079-0, EN 60079-1, EN 60079-31, EN 60947-5-1; EN ISO 13849-1; EN ISO 14119
Invólucro	alumínio fundido sob pressão, pintadas com tinta em pó
Tampa	aço, pintadas com tinta em pó
Tipo de fim de curso	tipo 1 **Ex ST 61:** tipo 2
Nível de codificação	não codificação **Ex ST 61:** codificação reduzida
Bloco de contato	**Ex 61, Ex ST 61:** Ex 14; **ExM 61:** ExM 14, ExM 14 1Ö/1S
Sistema de comutação	**Ex 61, Ex ST 61:** 1 NF/1 NA, tipo Zb, ação lenta, contatos NF de ruptura forçada ⊖** **ExM 61:** 1 NF/1 NA, tipo Za ou 1 contato reversível, tipo C, ação rápida
Grau de proteção	IP65 conforme EN 60529
Conexão	PVC cabo de 3 ou 4 vias H05 VV-F 0,75 mm² (incl. terminal)
B_{10d} (10% carga nominal)	2 milhões
T_M	máx. 20 anos
Categoria de utilização	AC-15; DC-13

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Ex 61 / ExM 61 / Ex ST 61

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Português

Dimensionamento da tensão/voltagem de operação	**Ex 61, Ex ST 61:** 6 A/250 VAC; 0,25 A/230 VDC **ExM 61:** 5 A/250 VAC; 0,16 A/230 VDC **ExM 61 1Ö/1S:** 5 A/250 VAC; 0,2 A/230 VDC
U_{imp}	4 kV
U_i	250 V
I_{the}	**Ex 61, Ex ST 61:** T6: 6 A; T5: 3 A **ExM 61:** 5 A
Proteção contra curto-circuito	**Ex 61, Ex ST 61:** fusível 6 A gG **ExM 61:** fusível 5 A gG
Percurso para ruptura positiva	**Ex ST 61:** 12 mm
Repetibilidade do ponto de atuação	± 0,1 mm
Durabilidade mecânica	>1 milhão de operações
Temperatura ambiente	**Ex 61, Ex ST 61:** T6: -20 °C ... +65 °C, T5: -20 °C ... +75 °C, +90 °C com máx. 3 A; **ExM 61:** T6: -20 °C ... +60 °C
Frequéncia de comutação	máx. 1800/h
Capacidade de abertura do contato	máx. 2 x 4,5 mm
Classificação Ex	**Ex 61, Ex ST 61:** Ⓔx II 2G Ex db IIC T6/T5 Gb Ⓔx II 2D Ex tb IIIC T80°C/T95°C Db PTB 03 ATEX 1070 X* IECEx Ex db IIC T5/T6 Gb Ex tb IIIC T80°C/T95°C Db IECEx PTB 06.0098 X* **ExM 61:** Ⓔx II 2G Ex d IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db IP65 PTB 03 ATEX 1069 X* **ExM 61 1Ö/1S:** Ⓔx II 2G Ex db IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db PTB 00 ATEX 1006 X* IECEx Ex db IIC T6 Gb Ex tb IIIC T80°C Db IECEx PTB 13.0019 X*

* referente ao bloco de contato
** ruptura positiva depende do atuador utilizado

Betätiger geeignet für Sicherheitsaufgaben
Actuators suitable for safety applications
Actionneurs applicable pour fonctions de sécurité
Azionatore idoneo per funzioni di sicurezza
Atuadores apropriados para atribuições de segurança

Serie Series Série Serie Série		Variante Variant Variante Variante Variante
Ex 61	⊖	D, DB, DL, W, WH, WHK, WHL
Ex ST 61	⊖	ST

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EU-KONFORMITÄTSERKLÄRUNG
EU DECLARATION OF CONFORMITY

gemäß der Explosionsschutz-Richtlinie 2014/34/EU
according to Explosion Protection Directive 2014/34/EU

Als Hersteller trägt die Firma steute Technologies die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung /
As manufacturer, steute Technologies is solely responsible for issuing this Declaration of Conformity.

Art und Bezeichnung der Betriebsmittel / **Type and name of equipment:**	Ex Positionsschalter, Typen Ex 61 ..., Ex 14 ... Ex position switch, types Ex 61 ..., Ex 14 ...

Hiermit erklären wir, dass die oben aufgeführten elektrischen Betriebsmittel aufgrund der Konzipierung und Bauart den grundlegenden Sicherheits- und Gesundheitsanforderungen nach Anhang II der Richtlinie 2014/34/EU entsprechen. /
We hereby declare that, due to its design and construction, the above mentioned electrical equipment satisfies the requirements of directive 2014/34/EU in respect to basic safety and health requirements according to Annex II.

Angewandte EU-Richtlinie / Applied EU directive	Harmonisierte Normen* / Harmonised standards*
2014/34/EU Explosionsschutzrichtlinie / 2014/34/EU Explosion Protection Directive	EN IEC 60079-0:2018 EN 60079-1:2014, EN 60079-31:2014
EG-Baumusterprüfung / EU-type examination	**Ex-Kennzeichnung / Ex marking**
PTB 03 ATEX 1070 X	Ⓔx II 2G Ex db IIC T6/T5 Gb Ⓔx II 2D Ex tb IIIC T80°C/T95°C Db

Weitere angewandte EU-Richtlinien / Additionally applied EU directives	Harmonisierte Normen / Harmonised standards	Anmerkungen / Comments
2006/42/EG Maschinenrichtlinie / 2006/42/EC Machinery Directive	EN 60947-5-1:2017; EN ISO 14119:2013	Geräte mit Zwangsöffnung ⊖ Devices with a positive break ⊖
2014/35/EU Niederspannungsrichtlinie / 2014/35/EU Low Voltage Directive	EN 60947-5-1:2017	Geräte ohne Zwangsöffnung Devices without a positive break
2014/30/EU EMV-Richtlinie / 2014/30/EU EMC Directive	nicht anwendbar nach EN IEC 60947-1:2021/ AC:2023-01 not applicable to EN IEC 60947-1:2021/ AC:2023-01	-
2011/65/EU RoHS-Richtlinie / 2011/65/EU RoHS Directive	EN IEC 63000:2018	-
2012/19/EU Richtlinie über Elektro- und Elektronik-Altgeräte (EU-WEEE II) WEEE-Reg.-Nr. 35994617 / 2012/19/EU Directive on waste electrical and electronic equipment (EU-WEEE II) WEEE reg. no. 35994617		

* Hinweis gemäß Erläuterungsblatt Nr. ExNB/10/397/CS für überarbeitete Normenstände gegenüber der Normen in der Baumusterprüfbescheinigung:
Der Vergleich der Normen gemäß Baumusterprüfbescheinigung und der überarbeiteten (neuesten harmonisierten) Normen hat ergeben, dass sich für das vorliegende Produkt keine Änderung am „Stand der Technik" ergeben hat. Dadurch ist sichergestellt, dass die Grundlegenden Sicherheits- und Gesundheitsanforderungen der Richtlinie 2014/34/EU eingehalten werden.

* Note according to Clarification Sheet N° ExNB/10/397/CS for revised standards compared to the standards specified in the Type Examination Certificate:
The comparison of the standards according to the Type Examination Certificate and the revised (now harmonized) standards has shown that there has been no change to the "state of the art" for this product. This ensures that the Essential Health and Safety Requirements of Directive 2014/34/EU are met.

Benannte Stelle der EG-Baumusterprüfung / Notified body for EU-type examination:	Physikalisch-Technische Bundesanstalt Bundesallee 100 38116 Braunschweig Kenn-Nr. 0102
Überwachende Stelle nach Anhang IV/VII der Richtlinie 2014/34/EU / Notified body according to Annex IV/VII of Directive 2014/34/EU:	DEKRA Testing and Certification GmbH Dinnendahlstr. 9 44809 Bochum Kenn-Nr. 0158
Verantwortlich technische Dokumentation / Responsible for technical documentation:	Marc Stanesby (Geschäftsführer) Marc Stanesby (Managing Director)

Löhne, 08. Juli 2025 / 8 July, 2025
Ort und Datum der Ausstellung / Place and date of issue
steute Technologies GmbH & Co KG, Brückenstr. 91, 32584 Löhne, Germany

Marc Stanesby

Rechtsverbindliche Unterschrift,
Marc Stanesby (Geschäftsführer) /
Legally binding signature,
Marc Stanesby (Managing Director)

.steute

EU-KONFORMITÄTSERKLÄRUNG
EU DECLARATION OF CONFORMITY

gemäß der Explosionsschutz-Richtlinie 2014/34/EU
according to Explosion Protection Directive 2014/34/EU

Als Hersteller trägt die Firma steute Technologies die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung /
As manufacturer, steute Technologies is solely responsible for issuing this Declaration of Conformity.

Art und Bezeichnung der Betriebsmittel / Type and name of equipment:	Ex Sicherheitsschalter, Typen Ex ST 61 ..., Ex 14 ... Ex safety switch, types Ex ST 61 ..., Ex 14 ...

Hiermit erklären wir, dass die oben aufgeführten elektrischen Betriebsmittel aufgrund der Konzipierung und Bauart den grundlegenden Sicherheits- und Gesundheitsanforderungen nach Anhang II der Richtlinie 2014/34/EU entsprechen. /
We hereby declare that, due to its design and construction, the above mentioned electrical equipment satisfies the requirements of directive 2014/34/EU in respect to basic safety and health requirements according to Annex II.

Angewandte EU-Richtlinie / Applied EU directive	**Harmonisierte Normen*/ Harmonised standards***
2014/34/EU Explosionsschutzrichtlinie / 2014/34/EU Explosion Protection Directive	EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014
EG-Baumusterprüfung / EU-type examination	**Ex-Kennzeichnung / Ex marking**
PTB 03 ATEX 1070 X	Ⓔx II 2G Ex db IIC T6/T5 Gb Ⓔx II 2D Ex tb IIIC T80°C/T95°C Db

Weitere angewandte EU-Richtlinien / Additionally applied EU directives	**Harmonisierte Normen / Harmonised standards**	**Anmerkungen / Comments**
2006/42/EG Maschinenrichtlinie / 2006/42/EC Machinery Directive	EN 60947-5-1:2017; EN ISO 14119:2013	-
2014/30/EU EMV-Richtlinie / 2014/30/EU EMC Directive	nicht anwendbar nach EN IEC 60947-1:2021/ AC:2023-01 not applicable to EN IEC 60947-1:2021/ AC:2023-01	-
2011/65/EU RoHS-Richtlinie / 2011/65/EU RoHS Directive	EN IEC 63000:2018	-
2012/19/EU Richtlinie über Elektro- und Elektronik-Altgeräte (EU-WEEE II) WEEE-Reg.-Nr. 35994617 / 2012/19/EU Directive on waste electrical and electronic equipment (EU-WEEE II) WEEE reg. no. 35994617		

* Hinweis gemäß Erläuterungsblatt Nr. ExNB/10/397/CS für überarbeitete Normenstände gegenüber der Normen in der Baumusterprüfbescheinigung: Der Vergleich der Normen gemäß Baumusterprüfbescheinigung und der überarbeiteten (neuesten harmonisierten) Normen hat ergeben, dass sich für das vorliegende Produkt keine Änderung am „Stand der Technik" ergeben hat. Dadurch ist sichergestellt, dass die Grundlegenden Sicherheits- und Gesundheitsanforderungen der Richtlinie 2014/34/EU eingehalten werden.

* Note according to Clarification Sheet N° ExNB/10/397/CS for revised standards compared to the standards specified in the Type Examination Certificate: The comparison of the standards according to the Type Examination Certificate and the revised (now harmonized) standards has shown that there has been no change to the "state of the art" for this product. This ensures that the Essential Health and Safety Requirements of Directive 2014/34/EU are met.

Benannte Stelle der EG-Baumusterprüfung / Notified body for EU-type examination:	Physikalisch-Technische Bundesanstalt Bundesallee 100 38116 Braunschweig Kenn-Nr. 0102
Überwachende Stelle nach Anhang IV/VII der Richtlinie 2014/34/EU / Notified body according to Annex IV/VII of Directive 2014/34/EU:	DEKRA Testing and Certification GmbH Dinnendahlstr. 9 44809 Bochum Kenn-Nr. 0158
Verantwortlich technische Dokumentation / Responsible for technical documentation:	Marc Stanesby (Geschäftsführer) Marc Stanesby (Managing Director)

Löhne, 08. Juli 2025 / 8 July, 2025
Ort und Datum der Ausstellung / Place and date of issue

Rechtsverbindliche Unterschrift,
Marc Stanesby (Geschäftsführer) /
Legally binding signature,
Marc Stanesby (Managing Director)

.steute

EU-KONFORMITÄTSERKLÄRUNG
EU DECLARATION OF CONFORMITY

gemäß der Explosionsschutz-Richtlinie 2014/34/EU
according to Explosion Protection Directive 2014/34/EU

Als Hersteller trägt die Firma steute Technologies die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung /
As manufacturer, steute Technologies is solely responsible for issuing this Declaration of Conformity.

Art und Bezeichnung der Betriebsmittel / Type and name of equipment:	Ex Positionsschalter, Typen ExM 61 ..., ExM 14 ... Ex position switch, types ExM 61 ..., ExM 14 ...

Hiermit erklären wir, dass die oben aufgeführten elektrischen Betriebsmittel aufgrund der Konzipierung und Bauart den grundlegenden Sicherheits- und Gesundheitsanforderungen nach Anhang II der Richtlinie 2014/34/EU entsprechen. /
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Angewandte EU-Richtlinie / Applied EU directive	**Harmonisierte Normen* / Harmonised standards***	
2014/34/EU Explosionsschutzrichtlinie / 2014/34/EU Explosion Protection Directive	EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014	
EG-Baumusterprüfung / EU-type examination	**Ex-Kennzeichnung / Ex marking**	
PTB 03 ATEX 1069 X	Ⓔx II 2G Ex d IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db IP65	
Weitere angewandte EU-Richtlinien / Additionally applied EU directives	**Harmonisierte Normen / Harmonised standards**	**Anmerkungen / Comments**
2014/35/EU Niederspannungsrichtlinie / 2014/35/EU Low Voltage Directive	EN 60947-5-1:2017	-
2014/30/EU EMV-Richtlinie / 2014/30/EU EMC Directive	nicht anwendbar nach EN IEC 60947-1:2021/AC:2023-01 not applicable to EN IEC 60947-1:2021/AC:2023-01	-
2011/65/EU RoHS-Richtlinie / 2011/65/EU RoHS Directive	EN IEC 63000:2018	-
2012/19/EU Richtlinie über Elektro- und Elektronik-Altgeräte (EU-WEEE II) WEEE-Reg.-Nr. 35994617 / 2012/19/EU Directive on waste electrical and electronic equipment (EU-WEEE II) WEEE reg. no. 35994617		

* Hinweis gemäß Erläuterungsblatt Nr. ExNB/10/397/CS für überarbeitete Normenstände gegenüber der Normen in der Baumusterprüfbescheinigung: Der Vergleich der Normen gemäß Baumusterprüfbescheinigung und der überarbeiteten (neuesten harmonisierten) Normen hat ergeben, dass sich für das vorliegende Produkt keine Änderung am „Stand der Technik" ergeben hat. Dadurch ist sichergestellt, dass die Grundlegenden Sicherheits- und Gesundheitsanforderungen der Richtlinie 2014/34/EU eingehalten werden.

* Note according to Clarification Sheet N° ExNB/10/397/CS for revised standards compared to the standards specified in the Type Examination Certificate: The comparison of the standards according to the Type Examination Certificate and the revised (now harmonized) standards has shown that there has been no change to the "state of the art" for this product. This ensures that the Essential Health and Safety Requirements of Directive 2014/34/EU are met.

Benannte Stelle der EG-Baumusterprüfung / Notified body for EU-type examination:	Physikalisch-Technische Bundesanstalt Bundesallee 100 38116 Braunschweig Kenn-Nr. 0102
Überwachende Stelle nach Anhang IV/VII der Richtlinie 2014/34/EU / Notified body according to Annex IV/VII of Directive 2014/34/EU:	DEKRA Testing and Certification GmbH Dinnendahlstr. 9 44809 Bochum Kenn-Nr. 0158
Verantwortlich technische Dokumentation / Responsible for technical documentation:	Marc Stanesby (Geschäftsführer) Marc Stanesby (Managing Director)

Löhne, 08. Juli 2025 / 8 July, 2025
Ort und Datum der Ausstellung / Place and date of issue

Marc Stanesby

Rechtsverbindliche Unterschrift,
Marc Stanesby (Geschäftsführer) /
Legally binding signature,
Marc Stanesby (Managing Director)

.steute

EU-KONFORMITÄTSERKLÄRUNG
EU DECLARATION OF CONFORMITY

gemäß der Explosionsschutz-Richtlinie 2014/34/EU
according to Explosion Protection Directive 2014/34/EU

Als Hersteller trägt die Firma steute Technologies die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung /
As manufacturer, steute Technologies is solely responsible for issuing this Declaration of Conformity.

Art und Bezeichnung der Betriebsmittel / **Type and name of equipment:**	Ex Positionsschalter, Typen ExM 61 ..., ExM 14 ... 1Ö/1S Ex position switch, types ExM 61 ..., ExM 14 ... 1Ö/1S

Hiermit erklären wir, dass die oben aufgeführten elektrischen Betriebsmittel aufgrund der Konzipierung und Bauart den grundlegenden Sicherheits- und Gesundheitsanforderungen nach Anhang II der Richtlinie 2014/34/EU entsprechen. /
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Angewandte EU-Richtlinie / **Applied EU directive**	**Harmonisierte Normen* /** **Harmonised standards***
2014/34/EU Explosionsschutzrichtlinie / 2014/34/EU Explosion Protection Directive	EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014
EG-Baumusterprüfung / **EU-type examination**	**Ex-Kennzeichnung /** **Ex marking**
PTB 00 ATEX 1006 X	Ⓔx II 2G Ex db IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db

Weitere angewandte EU-Richtlinien / **Additionally applied EU directives**	**Harmonisierte Normen /** **Harmonised standards**	**Anmerkungen /** **Comments**
2014/35/EU Niederspannungsrichtlinie / 2014/35/EU Low Voltage Directive	EN 60947-5-1:2017	-
2014/30/EU EMV-Richtlinie / 2014/30/EU EMC Directive	nicht anwendbar nach EN IEC 60947-1:2021/ AC:2023-01 not applicable to EN IEC 60947-1:2021/ AC:2023-01	-
2011/65/EU RoHS-Richtlinie / 2011/65/EU RoHS Directive	EN IEC 63000:2018	-
2012/19/EU Richtlinie über Elektro- und Elektronik-Altgeräte (EU-WEEE II) WEEE-Reg.-Nr. 35994617 / 2012/19/EU Directive on waste electrical and electronic equipment (EU-WEEE II) WEEE reg. no. 35994617		

* Hinweis gemäß Erläuterungsblatt Nr. ExNB/10/397/CS für überarbeitete Normenstände gegenüber der Normen in der Baumusterprüfbescheinigung:
Der Vergleich der Normen gemäß Baumusterprüfbescheinigung und der überarbeiteten (neuesten harmonisierten) Normen hat ergeben, dass sich für das vorliegende Produkt keine Änderung am „Stand der Technik" ergeben hat. Dadurch ist sichergestellt, dass die Grundlegenden Sicherheits- und Gesundheitsanforderungen der Richtlinie 2014/34/EU eingehalten werden.

* Note according to Clarification Sheet N° ExNB/10/397/CS for revised standards compared to the standards specified in the Type Examination Certificate:
The comparison of the standards according to the Type Examination Certificate and the revised (now harmonized) standards has shown that there has been no change to the "state of the art" for this product. This ensures that the Essential Health and Safety Requirements of Directive 2014/34/EU are met.

Benannte Stelle der EG-Baumusterprüfung / **Notified body for EU-type examination:**	Physikalisch-Technische Bundesanstalt Bundesallee 100 38116 Braunschweig Kenn-Nr. 0102
Überwachende Stelle nach Anhang IV/VII der Richtlinie 2014/34/EU / **Notified body according to Annex IV/VII of Directive 2014/34/EU:**	DEKRA Testing and Certification GmbH Dinnendahlstr. 9 44809 Bochum Kenn-Nr. 0158
Verantwortlich technische Dokumentation / **Responsible for technical documentation:**	Marc Stanesby (Geschäftsführer) Marc Stanesby (Managing Director)

Löhne, 08. Juli 2025 / 8 July, 2025
Ort und Datum der Ausstellung / Place and date of issue

Rechtsverbindliche Unterschrift,
Marc Stanesby (Geschäftsführer) /
Legally binding signature,
Marc Stanesby (Managing Director)

Zusatzinformation zu Montage- und Anschlussanleitungen
Additional information on mounting and wiring instructions
Information complémentaire aux instructions de montage et de câblage
Ulteriori informazioni sulle istruzioni di collegamento e montaggio
Informação adicional para as instruções de montagem

[bg] При поискване Вие ще получите тази асамблея, а също и връзката ръчно майчиния си език.

[cs] Na požádání obdržíte tento návod na montáž a připojení také v jazyce vaší země.

[da] På anmodning kan De også rekvirere denne montage- og tilslutningsvejledning på deres eget sprog.

[de] Auf Anfrage erhalten Sie diese Montage- und Anschlussanleitung auch in Ihrer Landessprache.

[el] Εφόσον το ζητήσετε λαμβάνετε αυτές τις οδηγίες τοποθέτησης και σύνδεσης και στην γλώσσα της χώρας σας.

[en] This mounting and wiring instruction is also available in your national language on request.

[es] Estas instrucciones de montaje y conexionado se pueden solicitar en su idioma.

[et] Soovi korral on see installimis- ja ühendusjuhend saadaval ka teie riigikeeles.

[fi] Pyydettäessä asennus- ja kytkentäohjeet on saatavana myös sinun omalla äidinkielellä.

[fr] Ces instructions de montage et de câblage sont disponibles sur demande, dans votre langue nationale.

[ga] Arna iarraidh sin gheobhaidh tú na treoracha tionóil agus na treorach seo i do theanga féin.

[hr] Na zahtjev ćete dobiti ova uputstva za montažu i priključenje i na svom jeziku.

[hu] Egyeztetés után, kérésére, ezt a szerelési- és csatlakoztatási leírást, biztosítjuk az ön anyanyelvén is.

[it] Questa istruzione di collegamento e montaggio e'inoltre disponibile nella vostra lingua su richiesta.

[lt] Jei jums reikėtų šios įdiegimo ir pajungimo instrukcijos valstybine kalba, teiraukitės pardavėjo.

[lv] Šo montāžas un pieslēgšanas instrukciju pēc pieprasījuma varat saņemt arī savas valsts valodā.

[mt] Dan il-manwal dwar il-muntaġġ u konnessjonijiet huwa disponibbli wkoll fil-lingwa tiegħek.

[nl] Op aanvraag kunt u deze montage- en installatiehandleiding ook in uw taal verkrijgen.

[pl] Niniejsza instrukcja montażu i podłączenia jest dostępna na życzenie w języku polskim.

[pt] Instruções de ligação e montagem podem ser disponibilizadas em outros idiomas também - consulte-nos.

[ro] La cererea dumneavoastră, vă trimitem instrucțiunile de folosire și instrucțiunile de montaj și în limba romana.

[sk] Na vyžiadanie obdržíte tento návod na montáž a pripojenie takisto v jazyku vašej krajiny.

[sl] Na zahtevo boste dobili ta navodila za montažo in priklop tudi v vašem domačem jeziku.

[sv] Den här monterings- och elinstallation instruktionen finns även tillgänglig på ditt nationella språk efter förfrågan.

Importer for United Kingdom
forTop Automation & Energy Control UK Ltd
Malvern Hills Science Park
Geraldine Road
WR14 3SZ Malvern, Worcestershire
United Kingdom
www.4top.co.uk

steute Technologies GmbH & Co. KG
Brückenstraße 91, 32584 Löhne, Germany, www.steute.com

Raum für Notizen
Space for notes
Feuille de notes
Blocco note
Bloco de notas

steute Technologies GmbH & Co. KG
Brückenstraße 91, 32584 Löhne, Germany, www.steute.com

Ex 61 / ExM 61 / Ex ST 61

Montage- und Anschlussanleitung / Positions- und Sicherheitsschalter
Mounting and wiring instructions / Position and safety switch
Instructions de montage et de câblage / Interrupteur de position et de sécurité
Istruzioni di montaggio e collegamento / Interruttore di posizione e di sicurezza
Instruções de montagem e instalação / Chave fim de curso e de segurança

Raum für Notizen
Space for notes
Feuille de notes
Blocco note
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Brückenstraße 91, 32584 Löhne, Germany, www.steute.com

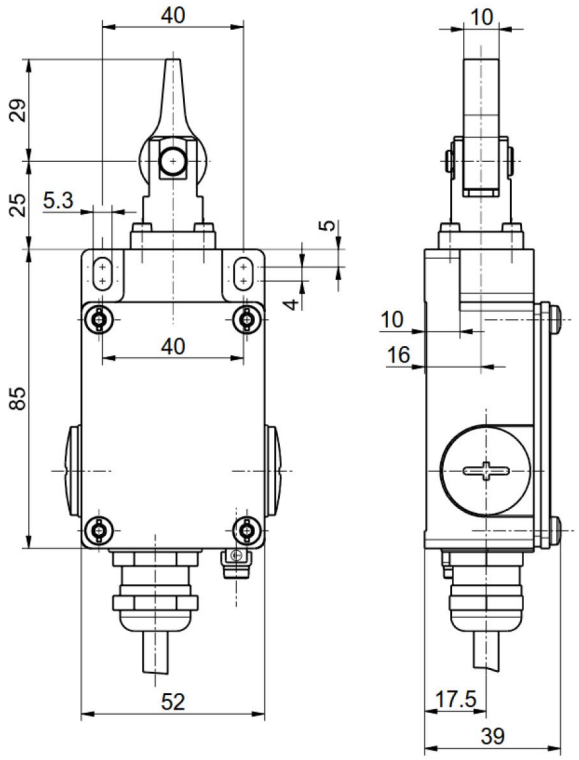
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Ex position switch
ExM 61 D - 5m spec VOITH TURBO
Material number: 1047987 (Material number old: 61721901)
Voith material number: TCR.11974010

Features/Options:

- Ex zone 1 and 21
- Metal enclosure
- With pre-wired cable
- Actuator: shift finger

Dimensions



Technical data

Applied standards	EN 60947-5-1, EN 60079-0, EN 60079-1, EN 60079-31
Enclosure	aluminium die-cast, powder-coated
Cover	steel, powder-coated
Degree of protection	IP 65 to IEC/EN 60529
Switch insert	1 x ExM 14
Contact material	silver
Switching system	snap action
Switching elements	1 change-over contact with single break, type C
Connection	pre-wired cable H05VV-F
Cable cross-section	3 x 0.75 mm² (incl. conductor ferrules)
Cable length	5 m
Rated impulse withstand voltage U_{imp}	4 kV
Rated insulation voltage U_i	250 V
Conventional thermal current I_{the}	5 A
Rated operating current/ voltage I_e/U_e	5 A/250 VAC; 0.16 A/230 VDC
Utilisation category	AC-15; DC-13
Short-circuit protection	5 A gG/gN fuse
Ambient temperature	–20 °C … +60 °C
Mechanical life	> 1 million operations
Operation cycles	max. 1800/h

Errors and omissions excepted.

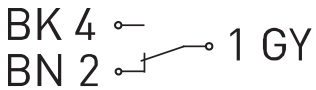
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Brückenstraße 91
32584 Löhne, Deutschland
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Telefax +49 5731 745-200
info@steute.com
www.steute.com

Ex position switch
ExM 61 D - 5m spec VOITH TURBO
Material number: 1047987 (Material number old: 61721901)
Voith material number: TCR.11974010

Technical data

Contact opening	max. 2 x 4.5 mm
Impact energy	max. 7 J
Ex marking	II 2G Ex d IIC T6 Gb, II 2D Ex tb IIIC T80 °C Db IP65
Approvals	PTB 03 ATEX 1069 X * * referring to the switch insert

Contact diagram



Switching diagram



Type label



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EU-KONFORMITÄTSERKLÄRUNG
EU DECLARATION OF CONFORMITY

gemäß der Explosionsschutz-Richtlinie 2014/34/EU
according to Explosion Protection Directive 2014/34/EU

Als Hersteller trägt die Firma steute Technologies die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung /
As manufacturer, steute Technologies is solely responsible for issuing this Declaration of Conformity.

Art und Bezeichnung der Betriebsmittel / Type and name of equipment:	Ex Positionsschalter, Typen ExM 61 ..., ExM 14 ... Ex position switch, types ExM 61 ..., ExM 14 ...

Hiermit erklären wir, dass die oben aufgeführten elektrischen Betriebsmittel aufgrund der Konzipierung und Bauart den grundlegenden Sicherheits- und Gesundheitsanforderungen nach Anhang II der Richtlinie 2014/34/EU entsprechen. /
We hereby declare that, due to its design and construction, the above mentioned electrical equipment satisfies the requirements of directive 2014/34/EU in respect to basic safety and health requirements according to Annex II.

Angewandte EU-Richtlinie / Applied EU directive	Harmonisierte Normen / Harmonised standards	Neueste harmonisierte Normen */ Latest harmonised standards *
2014/34/EU Explosionsschutzrichtlinie / 2014/34/EU Explosion Protection Directive	EN 60079-0:2009, EN 60079-1:2007, EN 60079-31:2009	EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014
EG-Baumusterprüfung / EU-type examination:	**Ex-Kennzeichnung / Ex marking**	
PTB 03 ATEX 1069 X	Ⓔx II 2G Ex d IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db IP65	
Weitere angewandte EU-Richtlinien / Additionally applied EU directives	**Harmonisierte Normen / Harmonised standards**	**Anmerkungen / Comments**
2014/35/EU Niederspannungsrichtlinie / 2014/35/EU Low Voltage Directive	EN 60947-5-1:2017	-
2014/30/EU EMV-Richtlinie / 2014/30/EU EMC Directive	nicht anwendbar nach EN 60947-1:2007 + A1:2011 + A2:2014 not applicable to EN 60947-1:2007 + A1:2011 + A2:2014	-
2011/65/EU RoHS-Richtlinie / 2011/65/EU RoHS Directive	EN IEC 63000:2018	-

* in Eigenverantwortung: Der Vergleich der Normen gemäß Baumusterprüfung und der neuesten harmonisierten Normen hat ergeben, dass sich für das vorliegende Produkt keine Änderungen ergeben haben. Dadurch ist sichergestellt, dass das Produkt dem heutigen technischen Erkenntnisstand gemäß Richtlinie 2014/34/EU entspricht.
* according to direct responsibility: A comparison of the standards as per EU-type examination and the latest harmonised standards has shown that no changes are necessary for the present product. This ensures that the product corresponds to to the current state of technical knowledge according to Directive 2014/34/EU.

Benannte Stelle der EG-Baumusterprüfung / Notified body for EU-type examination:	Physikalisch-Technische Bundesanstalt Bundesallee 100 38116 Braunschweig Kenn-Nr. 0102
Überwachende Stelle nach Anhang IV/VII der Richtlinie 2014/34/EU / Notified body according to Annex IV/VII of Directive 2014/34/EU:	Dekra Exam GmbH Dinnendahlstr. 9 44809 Bochum Kenn-Nr. 0158
Verantwortlich technische Dokumentation / Responsible for technical documentation:	Marc Stanesby (Geschäftsführer) Marc Stanesby (Managing Director)

Löhne, 11. Mai 2022 / 11 May, 2022
Ort und Datum der Ausstellung / Place and date of issue

Rechtsverbindliche Unterschrift,
Marc Stanesby (Geschäftsführer) /
Legally binding signature,
Marc Stanesby (Managing Director)

.steute

Löhne, 04.03.2025
ger-bk

Declaration on REACH Regulation (EU) No. 1907/2006

Updated Candidate List: 21 January 2025

Dear Sir or Madam,

As a matter of principle steute products do not contain any substances from the candidate list (so-called „SVHC substances") or exceed the permissible threshold values in the REACH Regulation. Our suppliers are obliged to inform us immediately if components/products do not meet the REACH requirements.

The sole exception is lead in quantities of more than 0.1Ma% in some copper and aluminium alloys used by steute. This means that we are obliged to notify our customers of the products concerned.

We hereby inform you that the products supplied by steute contain components in which lead (CAS number 7439-92-1) can be present in concentrations exceeding 0.1Ma% in accordance with Article 33 of the REACH Regulation.

The candidate list is regularly checked by steute for additions and amendments. If at any time we should find that our products require additional notification because of other SVHC substances in accordance with Art. 33, we will inform you concurrently.

If you have detailed questions on RoHS or REACH issues, please contact:

MaterialCompliance@steute.com

Kind regards

steute Technologies GmbH & Co. KG

Christof Gerhardy
Managing Director

steute Technologies GmbH & Co. KG
Brückenstr. 91
32584 Löhne

Telefon +49 5731 745-0
Telefax +49 5731 745-200
UST-ID-Nummer DE170026749

Amtsgericht Bad Oeynhausen
HRA 2125
Gerichtsstand Bad Oeynhausen

Persönlich haftende Gesellschafterin: steute Schmersal GmbH Melle
Amtsgericht Osnabrück
HRB 204703

Geschäftsführer
Marc Stanesby
B.Eng. M.Sc.
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Dr.-Ing.
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VOITH