

Documentation

about
Ex i ... 8 V DC limit switch boxes
with
2 - 6 Pepperl+Fuchs sensors SJ 3,5 - ...
for
rotary- and linear actuators
acc to
Guideline 2014/34/EU, IExU 04 ATEX 1211

 II 2G Ex ia/ib IIC/IIB T6 Gb  II 2D Ex ia/ib IIIC T 80 °C Db

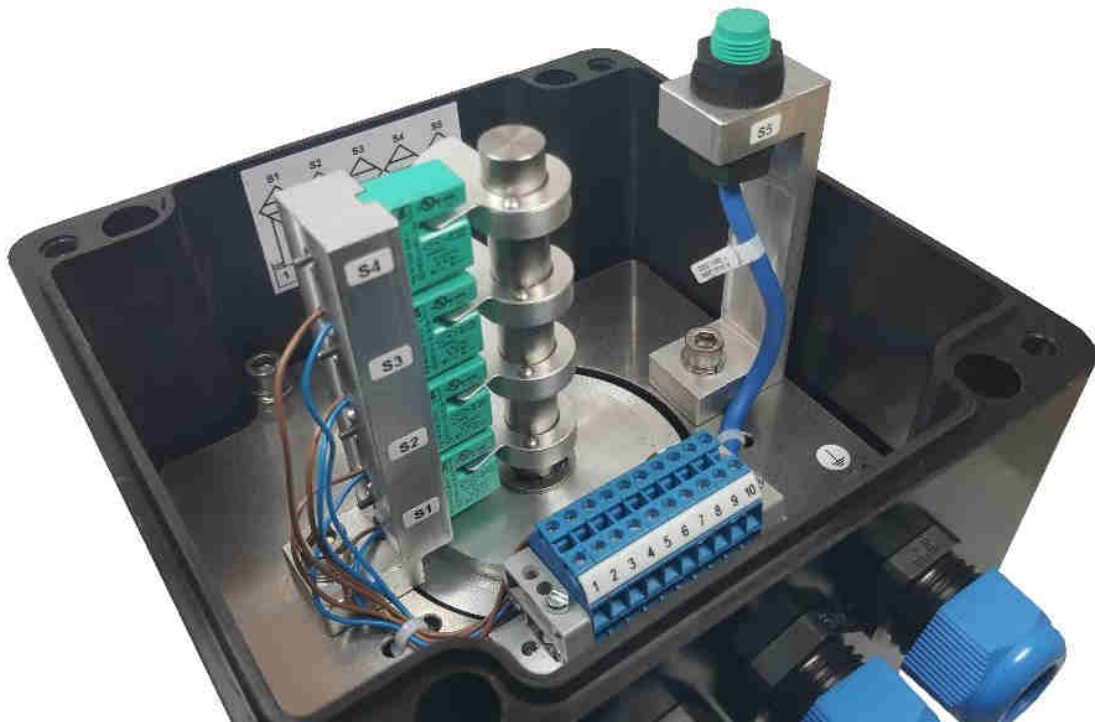


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1. Objectives and practical use

The positions of industrial valves represent an important piece of information for the course of action of a production. These valves are actuated with rotary- and linear actuators which the end position of the valve like **open** and **closed** or for example **45°** is reported back to a control system. This is done via mounted with limit switch boxes which are placed at or above the actuators, see images 1-4 and images 5-12, page 5+6. With this limit switch boxes you can save for example one position with 3 sensors.

Use of the above mentioned limit switch boxes can be found in endangered explosive areas as in the chemicals industry, equipment group II, category 2G, zones 1, 2 or 2D, zones 21, 22.

Another possibility also can be found the low temperature limit switch boxes, image 4 below and image 9+10, page 6, in explosive areas as the extremely cold zones in Siberia, equipment group II, category 2G, zones 1, 2 or 2D, zones 21, 22.

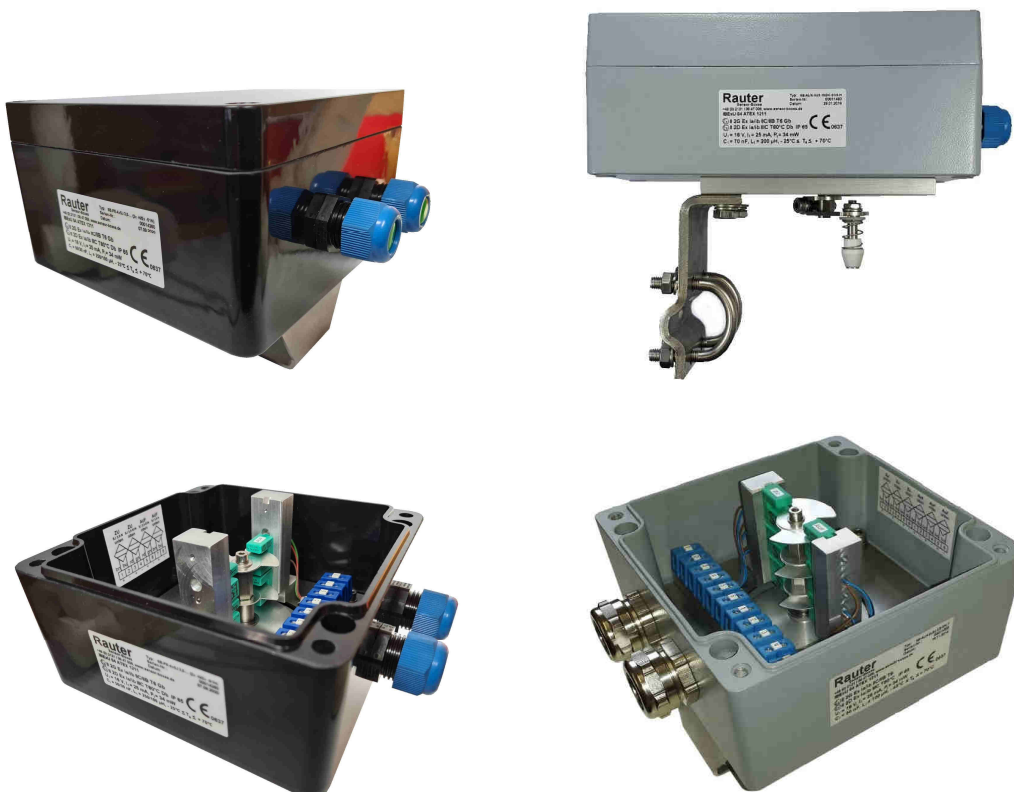




Image 1-4: left above and left below: Polyester limit switch box, 160x160x90 mm for rotary actuators with stainless steel bracket, right above: aluminium limit switch box, 220x120x90 mm for linear actuators with aluminium-mounting plate and stainless steel mounting set, right below: -45 °C low temperature aluminium limit switch box, 160x160x90 mm for rotary actuators with stainless steel bracket

2. Technical specifications

Table 1: Technical specifications as well as conditions of use for the limit switch boxes for rotary- and linear actuators equipment group II, category 2G, zones 1, 2 or 2D, zones 21, 22

Term / Identifier:	Technical specifications:
Materials and dimensions housings	<p>Polyester housings, black:surface resistance < 10⁹ Ohm</p> <ul style="list-style-type: none"> - 160x160x90 mm - 160x160x120 mm - 220x120x90 mm <p>Aluminium housings, grey:</p> <ul style="list-style-type: none"> - 160x160x90 mm - 220x120x90 mm
Connection limit switch box to bracket	4x M6-winding at the bottom hole circle Ø 50 mm, F05-slot
Connection limit switch box to bracket for rotary- or linear actuator	<ul style="list-style-type: none"> - acc. to VDI/VDE 3845, shaft height 20, 30 and 50 mm, hole spacing 80x30 mm and 130x30 mm - mounting set f. linear actuators acc to IEC 534
Ambient temperature range from the complete limit switch box	-25 °C ≤ T _a ≤ +70 °C
Ambient temperature range from the complete low temperature limit switch box	-45 °C ≤ T _a ≤ +70 °C
Protection class	IP 65
ATEX identification	 II 2G Ex ia/ib IIC/IIB T6 Gb  II 2D Ex ia/ib IIIC T 80 °C Db
Temperature class	T6
<ul style="list-style-type: none"> • Nominal voltage • Nominal current • Power 	<p>U_i = 16 V</p> <p>I_i = 25 mA</p> <p>P_i = 34 mW</p>
Cable glands	<ul style="list-style-type: none"> - M20x1,5 mm clamp range Ø 11-9,5 mm, Ø 9-7 mm, Ø 7-5,5 mm, polyamide - special for low temperature limit switch box: Ø 14-9 mm and Ø 9-5 mm, nickel-plated or stainless steel
Mini-terminals	2-pole and 3-pole, maximum 2,5 mm ²
<ul style="list-style-type: none"> - Weight limit switch boxes without brackets/without aluminium-plate and mounting set 	<ul style="list-style-type: none"> - Polyester limit switch box: 160x160x90 mm = 1,65 kg - Polyester limit switch box: 220x120x90 mm = 1,65 kg - Aluminium limit switch box: 160x160x90 mm = 2,1 kg - Aluminium limit switch box: 220x120x90 mm = 2,1 kg
<ul style="list-style-type: none"> - Weight standard brackets - Weight aluminium-plate and mounting set 	<ul style="list-style-type: none"> - 0,3 kg - 1,1 kg
Display and switching range	0° and 90° or adjustable 0° up to 360°

3. Variations of limit switch boxes

Ambient temperature range from the complete limit switch boxes:
 $-25\text{ °C} \leq T_a \leq +70\text{ °C}$

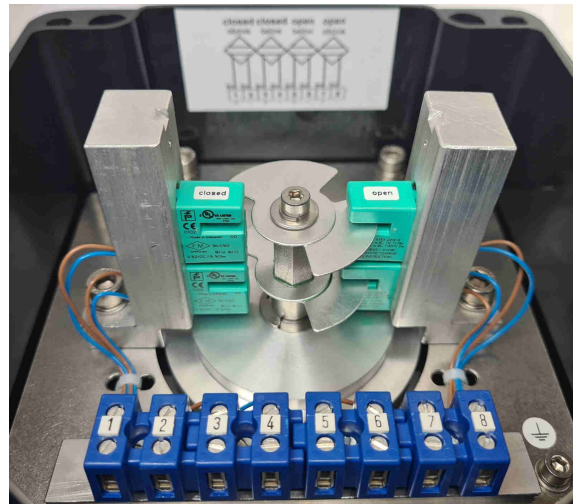
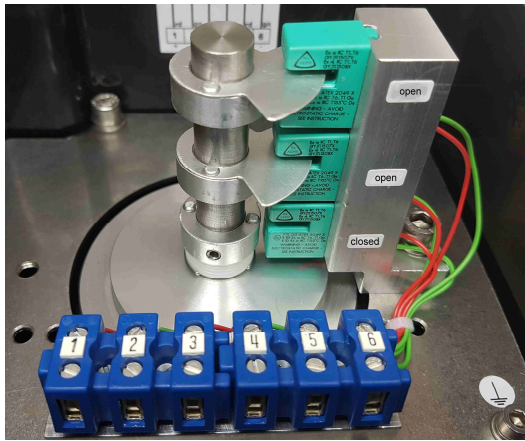


Image 5+6: 3x SJ 3,5-S1N for position 2x open and 1x closed or adjustable from 0° up to 360°, 4x SJ 3,5-N for position 2x open and 2x closed, 0° and 90°

Ambient temperature range from the complete limit switch boxes:
 $-25\text{ °C} \leq T_a \leq +70\text{ °C}$

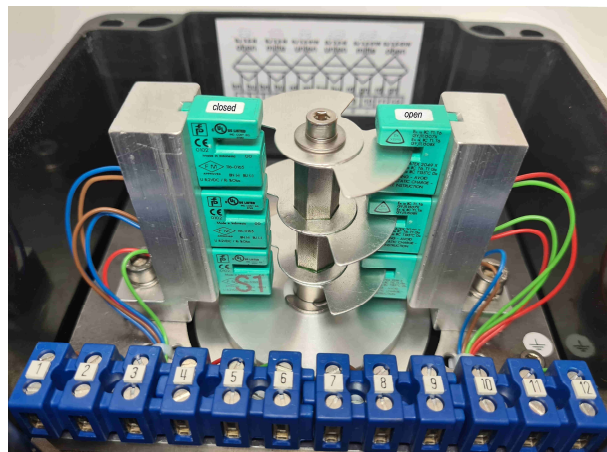
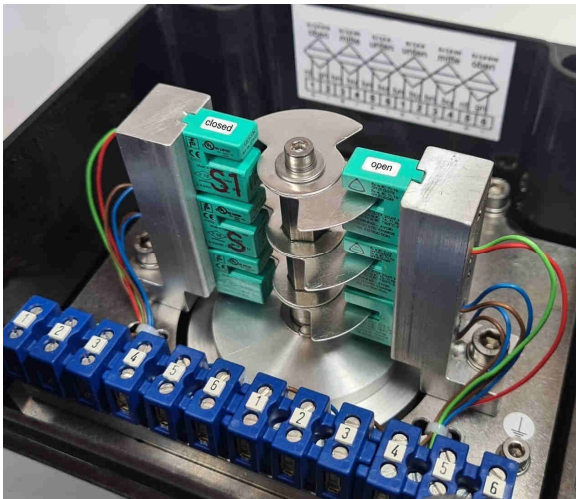


Image 7+8: 2x SJ 3,5-S1N for position open and closed, 0° and 90°, 2x SJ 3,5-SN for position open and closed, 0° and 90°, 2x SJ 3,5-N for position open and closed, 0° and 90°, 3x SJ 3,5-N for 1x position open and 2x closed, 0° and 90°, 3x SJ 3,5-S1N for position 2x open and 1x closed, 0° and 90°

Ambient temperature range from the complete limit switch boxes:
 $-45\text{ °C} \leq T_a \leq +70\text{ °C}$

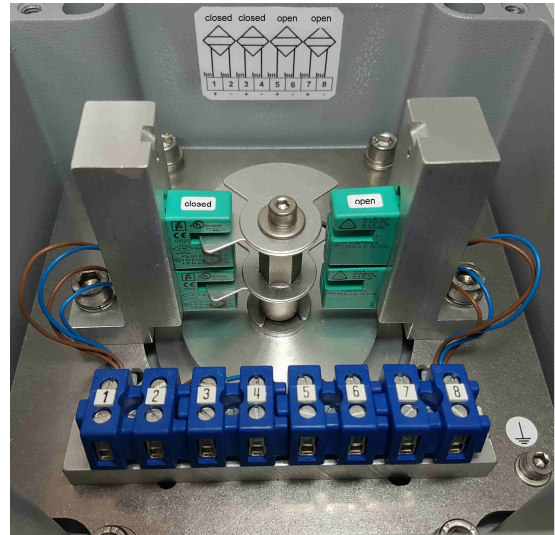
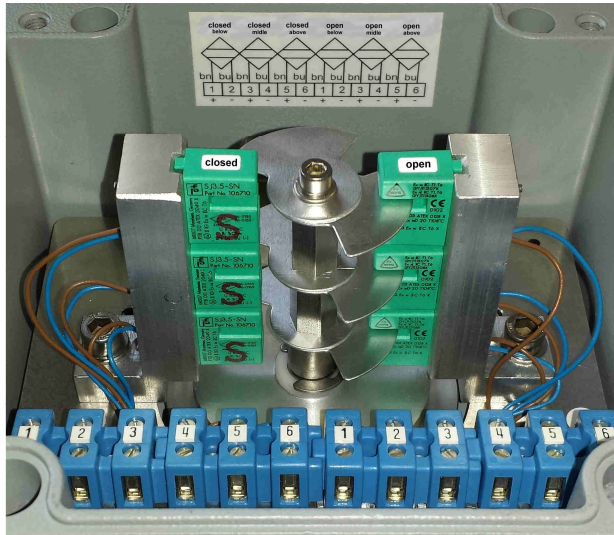


Image 9+10: 6x SJ 3,5-SN for 3x position open and 3x position closed, 0° and 90°, 4x SJ 3,5-SN for 2x position open and 2x position open, 0° and 90°

Ambient temperature range from the complete limit switch boxes:
 $-25\text{ °C} \leq T_a \leq +70\text{ °C}$

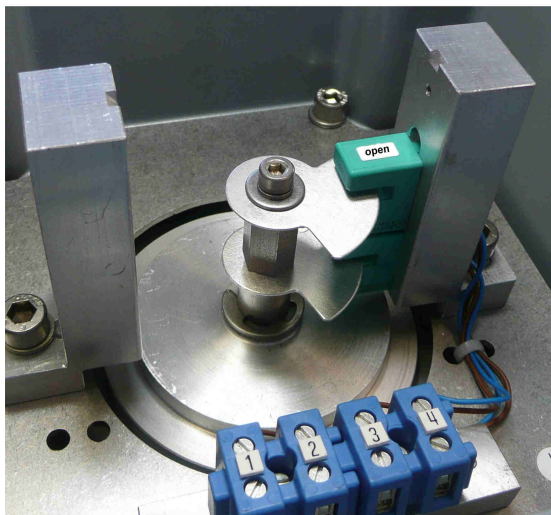


Image 11+12: 2x SJ 3,5-N for 2x position open, 3x SJ 3,5-N for position 0°, 120° and 240°

4. Mounting on/at the rotary- or linear actuators

4.1 Mechanical mounting: The limit switch boxes with the mounted brackets or the mounted aluminium-plates (via F05-slot) with the mounting sets are placed on/at the actuators and screwed together.

4.2 Electrical mounting: The limit switch boxes are connected to the mini-terminals using the cable glands. Connection to the mini-terminals acc to the following wiring diagrams, see images 13-18. The tightening torques for the cable glands see operating instructions page 10.

Metal parts have to be grounded or the metal housing has to be connected to the equipotential bonding.

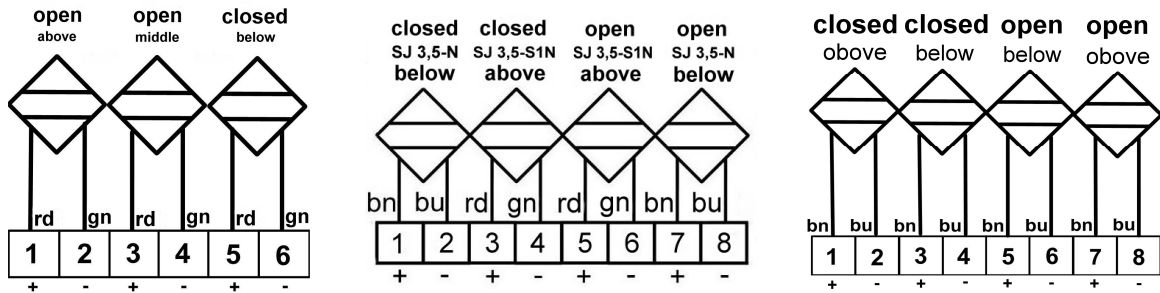


Image 13, 14 + 14a: Wiring diagram P+F sensors acc to image 5+6, page 5, rd = red, gn = green, bn = brown, bu = blue

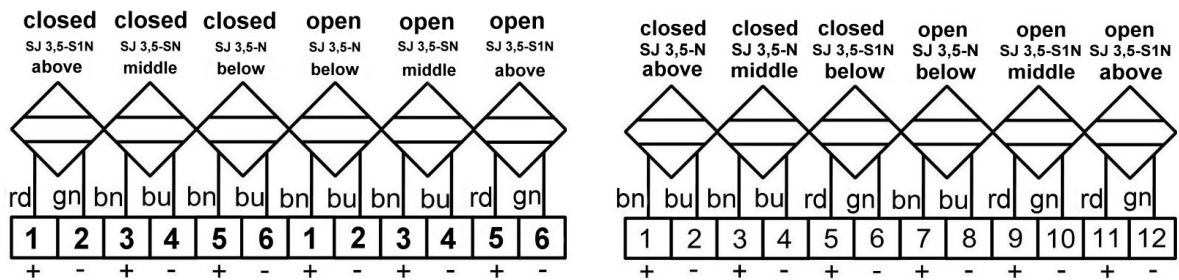


Image 15+16: Wiring diagram der P+F sensors acc to image 7+8, page 5

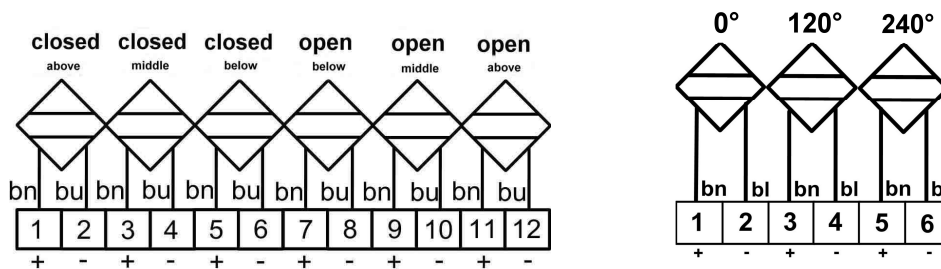


Image 17+18: Wiring diagram P+F sensors acc to image 9+12, page 6

5. Mounting and Adjustment of the switching cams

Mounting and adjusting of the switching cams acc to image 6-11, page 5+6. The lower switching cams are attached to the shaft part above with M4 thread pin tightened with a 10 mm wrench. The middle switching cams are also marked with the overlying shaft part with M4 threaded pin tightened with a 10 mm wrench. The top switching cams are then ultimately with an M4 hexagon socket screw washer and lock washer with an allen key

All M4 threaded studs of the shaft parts are tightened with Loctite 270 screw high-strength fuse glued in.

Adjustment of the switching cams acc to image 5, page 5 and image 12, page 6. These switching cams can be variably set independently of each other. Festive pulled or released, these are each engaged with one in the switch cam screwed hexagon socket screw M4, SW 2 mm.

6. Components and parts lists

Table 2: Components and parts as well as conditions of use for the limit switch boxes for rotary- and linear actuators equipment group II, category 2G, zones 1, 2 or 2D, zones 21, 22

Term / Identifier:	Article-No.	Material	Technical specifications, dimensions, drawing-No. ...
Polyester empty housing with closed cover with sealing and 4x cover screws	PE-160L PE-220L PE-220L120	Polyester Polyester Polyester	160x160x90 mm, Bartec or Quintex 160x160x120 mm, Bartec or Quintex 220x120x90 mm, Bartec or Quintex
Aluminium empty housing with closed cover with sealing and 4x cover screws	AL-160L AL-220L	Aluminium-Si 12 Aluminium-Si 12	160x160x90 mm, Bartec or Quintex 220x120x90 mm, Bartec or Quintex
Aluminium shaft bearing body, F05-slot with 4x screw M3	SB-AL-E	Aluminium	Ø 75x25 mm, drawing-No 020
Cable cland, blue-black	SB-Cg-20	Polyamide	M20x1,5 mm, clamp range: Ø 11-9,5 mm, Ø 9-7 mm, Ø 7-5,5 mm, Cooper Crouse-Hinds-type: GHG9601955R0109
Cable cland metal with silicone O-ring	SB-Cg-Ms	Brass Nickel-plated	M20x1,5 mm, clamping range for cables Ø 14-9 mm and Ø 9-5 mm Pflitsch-type: bg 220msHTex -55 °C up to +160 °C
Cable cland metal with silicone O-ring	SB-Cg-VA	Brass and Stainless steel	M20x1,5 mm, clamping range for cables Ø 14-9 mm and Ø 9-5 mm Pflitsch-type: bg 220VAHTex -55 °C up to +160 °C
Mini-terminals 2-pole and 3-pole with clamp indicators	SB-V	Thermoplastic and copper alloy	Maximum, 2,5 mm ² , blue, Bartec: 07-9702-0220/2 and 07-9702-0320/2
Clamp block	KB	Aluminium	15x10x70/100 mm
Ground-plates: PE-160L, PE-220L, PE-220L120 and AL-160L, AL-220L	PL-160L, PL-220L PE-220L120	Stainless steel	2x143x132 mm, drawing-No.: 113 and 207x107x1,5 mm, drawing-No.: 115
4x screw with spring ring for ground plates	B-Sch, B-F	Stainless steel	M6x10 mm, Ø 6 mm
Shaft insert PE-160L, PE-220L and AL-160L, AL-220L	WA-2	Aluminium	Ø 74x12,5 mm, drawing-No.: 0030
O-Ring for shaft insert	O-WA	NBR 70	Ø 62x3 mm
Shafts	WO	Stainless steel	Ø 12x64/77/117 mm, drawing-No.: 005/008
O-Ring for shaft	O-WE	NBR 70	Ø 9x1,5 mm
2x Washer for shaft	U	Polyamide or stainless steel	Ø 18 / Ø 12x1,2 mm
2x Lock Washer for shaft	S	Stainless steel	DIN 6799-9
Switching cams	Sch	Aluminium	drawing-No.: 0017a
Switching cams independently adjustable with M4 hexagon socket screw SW = 2mm	Sch-ue	Aluminium	drawing-No.: 0017a revieted with aluminium rifle Ø 20/ Ø 12x7 mm
Sensor attachment with M6 screw	SH	Aluminium	68x30x20 mm
Cable ties	SB-C	Nylon	99x2,5 mm
Wiring diagram/ sensor indication	Sch-S	Polyvinylchlorid self-adhesive	30x30 mm and 8x4 mm
Type label	SB-type	Aluminium foil self-adhesive	70x32 mm
Pepperl+Fuchs sensors	SJ 3,5-...	Plastic PTB	10x15x19 mm
Stainless steel brackets standard for rotary actuators	SB-VA-K	Stainless steel	70x130x45/55 mm, for actuators acc. to VDI/VDE 3845
Stainless steel mounting set for linear actuators	SB-VA-A	Stainless steel and plastic	acc. to Namur IEC 534
Aluminium mounting plate for linear actuators with 4x fastening-screws	SB.-AL-P	Aluminium	135x80x10 mm, drawing-No.: 061

7. Operation instructions cable glands

7.1 Cable glands plastic operating instruction

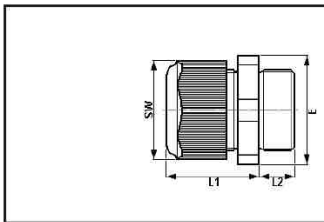
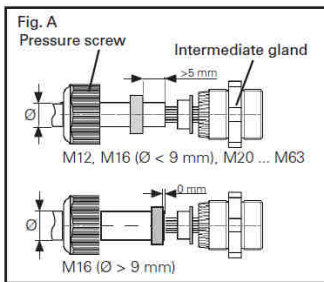
Tightening torque **M20x1,5 mm = 4 Nm**

Extract from the Cooper-Crouse-Hinds operation instruction, page 13+14

Cable entries, blanking plugs, screw plugs, trumpet-shaped cable glands, reducing glands and drain plugs

GB

Dimension drawings and dimensions in mm



1 Technical data

1.1 Technical details for: Cable entries (KLE) M12x1,5 to M63x1,5

ATEX type examination certificate:	PTB 14 ATEX 1015 X ^(A)
Marking acc. to 2014/34/EU and standard:	EN 60079-0
	II 2 G Ex e IIC Gb
	II 2 D Ex tb IIIC Db
IECEX type examination certificate:	IECEX PTB 14.0027X ^(A)
Category of application:	Ex e IIC Gb
	Ex tb IIIC Db

^(A) The EC-Type Examination Certificate and any future supplements thereto shall, at the same time, be regarded as supplements to the EC-Type Examination Certificates PTB 99 ATEX 3128 X and PTB 99 ATEX 3101 X

Perm. storage temperature in original packing: -20° C to +70° C

Degree of protection to IEC/EN 60529: IP 66*¹⁾ (when fully assembled)

*¹⁾ M40, M50 und M63 with suitable flange seal

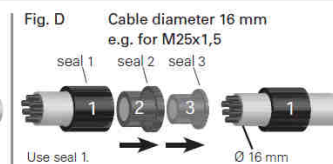
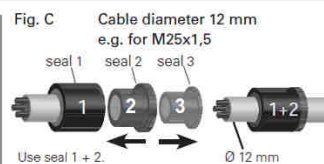
Type	SW	L1	L2	E	weight app.
M12x1,5	15 mm	19,3 mm	12 / 8 mm	16,2 mm	3,4 g
M16x1,5	20 mm	23,0 mm	12 / 8 mm	22,0 mm	6,5 g
M20x1,5	24 mm	25,0 mm	13 / 8 mm	26,5 mm	10,1 g
M25x1,5	29 mm	29,5 mm	13 / 8 mm	32,0 mm	16,9 g
M32x1,5	36 mm	35,5 mm	15 / 10 mm	40,0 mm	27,6 g
M40x1,5	46 mm	39,5 mm	15 / 10 mm	50,5 mm	50,3 g
M50x1,5	55 mm	44,0 mm	16 / 12 mm	60,0 mm	75,9 g
M63x1,5	68 mm	47,0 mm	16 / 12 mm	75,0 mm	117,6 g

Type	operating temperature	impact resistance	Cable diameter										Screw-in thread in enclosure	Colour of dust protection cover		
			Seal 1+2+3 ¹⁾²⁾³⁾		Seal 1+2 ¹⁾²⁾			Seal 1 ¹⁾								
	°C	Joule	min. Ø	Nm**	max. Ø ⁽¹⁾⁽²⁾	Nm**	min. Ø	Nm**	max. Ø ⁽¹⁾⁽²⁾	Nm**	min. Ø	Nm**	max. Ø ⁽²⁾	Nm**	Nm**	
M12x1,5	-20 - 70	4									5,0	0,8	7,0	1,0	1,2	white
M16x1,5	-20 - 70	4					5,5	1,0	7,0	1,0	7,0	1,0	10,0	1,4	3,3	white
M20x1,5	-20 - 70	7	5,5	1,5	7,0	1,0	7,0	1,5	9,0	1,4	9,5	1,0	13,0	1,7	2,7	white
M20x1,5	-40 - 70	4	5,5	1,5	7,0	1,0	7,0	1,5	9,0	1,4	9,5	1,0	11,0	1,7	2,7	green
M25x1,5	-20 - 70	7	8,0	1,5	10,0	2,0	10,0	2,3	13,0	2,6	13,5	1,3	17,5	2,3	3,0	white
M25x1,5	-55 - 70	7	8,0	1,5	10,0	2,0	10,0	2,3	13,0	2,6	13,5	1,5	15,0	2,3	3,0	green
M32x1,5	-20 - 70	7					14,0	3,0	17,0	4,0	17,5	1,5	21,0	1,3	5,0	white
M32x1,5	-55 - 70	7					14,0	3,0	17,0	4,0	17,5	1,5	21,0	1,3	5,0	green
M40x1,5	-55 - 70	7					19,0	3,3	22,0	5,5	22,0	3,3	28,0	6,7	7,5	green
M50x1,5	-55 - 70	7					24,0	6,0	28,0	7,0	28,0	5,0	35,0	7,0	7,5	green
M63x1,5	-55 - 70	7					29,0	12,0	35,0	12,0	36,0	12,0	41,0	13,0	7,5	green
additional seal							41,0	13,0	48,0	7,8						

** Test torques at 20°C

⁽¹⁾ The tests of clamping ranges and torque values were performed with metal mandrel. The clamping range can vary by using cables with different manufacturing tolerances and material properties. Please use the combination of sealing 1 + 2 + 3 for the intermediate region.

⁽²⁾ When selecting the seal rubber, ensure that the cap nut can be tightened when carrying out any future maintenance work on the cable entry.



E-T-O-N

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Cable entries, blanking plugs, screw plugs, trumpet-shaped cable glands, reducing glands and drain plugs

Dimension drawings and dimensions in mm

1.2 Multiple glands

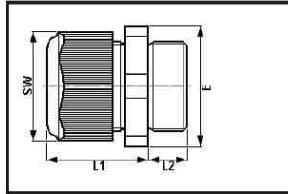
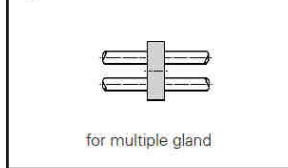


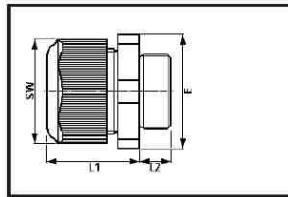
Fig. D/1 Seal insert



Type	SW	L1	L2	E	weight app.
M25x1,5 2- times	29 mm	29,5 mm	13 / 8 mm	32,0 mm	16,9 g
M32x1,5 4- times	36 mm	35,5 mm	15 / 10 mm	40,0 mm	27,6 g

Type	Operating temperature	Impact resistant	Cable diameter				
			Seal 1				
	°C	Joule	min. Ø	Nm	max. Ø	Nm	
M25x1,5 2- times	-20 - 70	< 7	2x	4,5	2,0	7,0	2,0
M32x1,5 4- times	-20 - 70	< 7	4x	4,5	3,0	7,0	3,5

1.3 Enlargement glands



Type	SW	L1	L2	E	weight app.
M16x1,5 / M20x1,5	24 mm	25,0 mm	12 mm	26,5 mm	9,2 g
M20x1,5 / M25x1,5	29 mm	29,5 mm	13 mm	32,0 mm	16,7 g
M25x1,5 / M32x1,5	36 mm	35,5 mm	15 mm	40,0 mm	27,0 g
M32x1,5 / M40x1,5	46 mm	39,5 mm	15 mm	50,5 mm	46,5 g
M40x1,5 / M50x1,5	55 mm	44,0 mm	15 mm	60,0 mm	73,5 g
M50x1,5 / M63x1,5	68 mm	47,0 mm	16 mm	75,0 mm	106,4 g

Type	Operating temperature	Impact resistant	Cable diameter												Screw-in thread in enclosure
			Seal 1+2+3 (1)(2)(3)						Seal 1+2 (1)(2)				Seal 1 (1)		
			min.		max.		min.		max.		min.		max.		
	°C	Joule	Ø	Nm**	Ø ⁽¹⁾⁽²⁾	Nm**	Ø	Nm**	Ø ⁽¹⁾⁽²⁾	Nm**	Nm**	Ø ⁽¹⁾	Nm**	Nm**	
M16x1,5 / M20x1,5	-20 - 70	< 7	5,5	1,5	7,0	1,0	7,0	1,5	9,0	1,4	9,5	1,0	13,0	1,7	3,3
	-40 - 70	< 4	5,5	1,5	7,0	1,0	7,0	1,5	9,0	1,4	9,5	1,0	11,0	1,7	3,3
M20x1,5 / M25x1,5	-20 - 70	< 7	8,0	1,5	10,0	2,0	10,0	2,3	13,0	2,6	13,5	1,3	17,5	2,3	2,7
	-40 - 70	< 4	8,0	1,5	10,0	2,0	10,0	2,3	13,0	2,6	13,5	1,5	15,0	2,3	2,7
M25x1,5 / M32x1,5	-55 - 70	< 7					14,0	3,0	17,0	4,0	17,5	1,5	21,0	1,3	3,0
M32x1,5 / M40x1,5	-55 - 70	< 7					19,0	3,3	22,0	5,5	22,0	3,3	28,0	6,7	5,0
M40x1,5 / M50x1,5	-55 - 70	< 7					24,0	6,0	28,0	7,0	28,0	5,0	35,0	7,0	7,5
M50x1,5 / M63x1,5	-55 - 70	< 7					29,0	12,0	35,0	12	36,0	12,0	41,0	13,0	7,5
additional seal							41,0	13,0	48,0	7,8					

** Test torques at 20°C

(1) The tests of clamping ranges and torque values were performed with metal mandrel. The clamping range can vary by using cables with different manufacturing tolerances and material properties. Please use the combination of sealing 1 + 2 + 3 for the intermediate region.

(2) When selecting the seal rubber, ensure that the cap nut can be tightened when carrying out any future maintenance work on the cable entry.

7.2 Cable glands metal operating instructions

Tightening torque **M20x1,5 mm = 10 Nm**

Betriebsanleitung · Operating instructions



PTB 11 ATEX 1007X

blueglobe HT Ex e

**Messing vernickelt/blank und
Edelstahl**

**Für Kabel- und Leitungseinführungen (KLE)
der Zündschutzart „Erhöhte Sicherheit – Ex „e“**

Anwendung:

Die Kabel- und Leitungseinführungen (KLEs) blueglobe HT Ex e dienen zur Einführung von fest verlegten Kabeln und Leitungen in einen Anschlussraum oder in ein Gehäuse eines explosionsgeschützten elektrischen Betriebsmittels der Gerätegruppe II und der Kategorien 2 G/D und 3 G/D.

Der Anschlussraum oder das Gehäuse muss der Zündschutzart „Erhöhte Sicherheit – Ex „e“ nach den Normen EN 60079-0:2012 + A11:2013, EN 60079-7:2015, EN 60079-31:2014 entsprechen.


Die KLE ist für Betriebsmittel mit dem Grad der mechanischen Gefahr „hoch“ nach EN 60079-0 geeignet. Bei ordnungsgemäßer Montage der KLE kann die Schutzart IP 66/68 nach IEC 529 oder EN 60529 erreicht werden.

Kennzeichnung:

Die Kabel- und Leitungseinführungen blueglobe HT Ex e entsprechen den Normen EN 60079-0:2012 + A11:2013, EN 60079-7:2015, EN 60079-31:2014. Sie sind von der Physikalisch-Technischen Bundesanstalt (PTB) einer EG-Baumusterprüfung nach EG-Richtlinie 94/9/EG unterzogen worden.

Sie sind deshalb wie folgt gekennzeichnet:


Kennzeichnung Zulassungsnummer und Kennzeichen der Prüfstelle:

 PTB 11 ATEX 1007X xx CE 0102

Kennzeichnung Gas:

 II 2G Ex e IIC Gb

Kennzeichnung Staub:

 II 2D Ex tb IIIC Db IP 66/68

Kennzeichnung extrem kleiner Bauteile:*

 II 2G/II 2D CE 0102

Weitere Zertifikate:

IECEX – IECEX PTB 11.0019X

EAC – RU C-DE.MLJ06.B.00119

*Kennzeichnung auf Kabelverschraubung



PTB 11 ATEX 1007X

blueglobe HT Ex e

brass nickel-plated, brass and stainless steel

**For cable glands and cable entry systems (CG/ICES) of the
ignition protective class Ex “e”**

Application:

The cables glands and cable entry systems (CG/ICES) blueglobe HT Ex e are used to insert permanently laid lines and cables into a connection space or housing of an explosion-protected electrical operating material of the appliance group II and categories 2 G/D and 3 G/D. The connection space or housing must conform to the ignition protective class “Increased safety – Ex e” in accordance with the standards EN 60079-0:2012 + A11:2013, EN 60079-7:2015 and EN 60079-31:2014. The CG/ICES is suitable for operating material with the degree of mechanical risk “high” as per EN 60079-0. In selecting the material for the sealing insert, the ambient, surface and operating temperature at the installation point is to be observed. With proper assembly of the KLE, the protective class IP 66/68 according to IEC 529 or EN 60529 can be attained.

Designation:



The cable glands and cable entry systems (CG/ICES) blueglobe HT Ex e conform with the standards EN 60079-0:2012 + A11:2013, EN 60079-7:2015, EN 60079-31:2014. They were subjected to an EC design test in accordance with EC directive 94/9/EC by the Physical-Technical Federal Institute (PTB).

They are therefore designated as follows:



ID of approval no. and ID of testing authority:

  PTB 11 ATEX 1007X xx CE 0102



Designation gas:

  II 2G Ex e IIC Gb

Designation dust:

  II 2D Ex tb IIIC Db IP 66/68

Designation of extremely small components:*

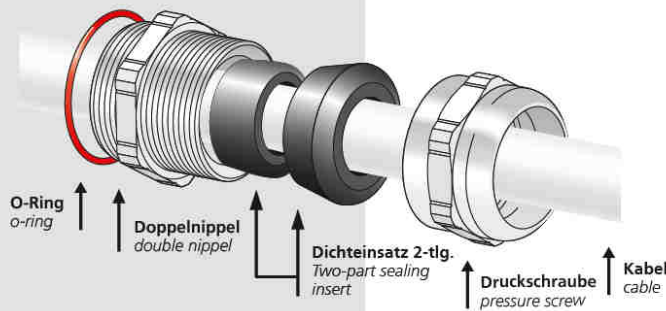
  II 2G/II 2D CE 0102

ID of Approval IECEX:

IECEX – IECEX PTB 11.0019X

EAC – RU C-DE.MLJ06.B.00119

*Designation on cable gland



Montage

Als Montagewerkzeug kann der PFLITSCH Steckschlüssel M28 verwendet werden.

Einsatztemperaturbereich:

Temperaturbereich Silikon: -55 °C bis +160 °C

Mindestwandstärken

- beim Einbau in Geräten mit Gewindebohrungen:
s = 5,0 mm (Kunststoff); 3,0 mm (Metall)
- beim Einbau in Geräten mit Durchgangsbohrungen:
s = 2,0 mm (Kunststoff); 1,0 mm (Metall)

Hinweis zur Zugentlastung der Kabelverschraubung:

Die KLE ist nur für fest verlegte Leitungen und Kabel geeignet. Der Betreiber muss in diesem Fall für geeignete Maßnahmen sorgen, um eine Zugentlastung zu gewährleisten.

Wichtig:

Dichtringe dürfen nicht mit dem Messer ausgeschnitten werden!

Demontage:

Die Demontage erfolgt in umgekehrter Reihenfolge.

Instandhaltung:

Die Blindstopfen sind in die Kontrollen bei der Inspektion und Wartung der elektrischen Betriebsmittel einzubeziehen.

Assembly

The PFLITSCH socket spanner M28 can be used as a tool

Application temperature range:

Temperature range silicone: -55 °C bis +160 °C

Minimum wall thicknesses

- for installation in appliances with threaded holes:
s = 5.0 mm (plastic); 3.0 mm (metal)
- for installation in appliances with throughholes:
s = 2.0 mm (plastic); 1.0 mm (metal)

Pointer for strain relief of the cable gland:

The CG/CES are only suitable for permanently laid lines and cables. In this case, the operator must adopt appropriate measures to ensure strain relief.

Important:

Sealing rings must not be cut out with a knife!

Disassembly:

Disassembly is carried out in the reverse order.

Maintenance:

The CG/CES are to be included in the inspection and maintenance of the electrical operating material.

Anschlussmaße für Durchgangsbohrungen:

Metrisch/metric	M12	M16	M20	M25	M32	M40			
d [mm] 0/+ 0,3	12,0	16,0	20,0	25,0	32,0	40,0			

Connection dimensions for throughholes:

Anzugsmomente:

Gewinde/Thread	M12	M16	M20	M25	M32	M40			
Nm	5	8	10	15	15	20			

Tightening torques:

Mechanische Festigkeit:

Gewinde/Thread	M12	M16	M20	M25	M32	M40			
Joule	7	7	7	7	7	7			

Mechanical strength:

2 - Betriebsanleitung 1007X bg HT Ex-e/Operating instruction 1007X bg HT Ex-e

8. Applicable standards

EN 60079-0: 2018

Explosive atmospheres - Part 0: Equipment - General requirements

EN 60079-11: 2012

Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"