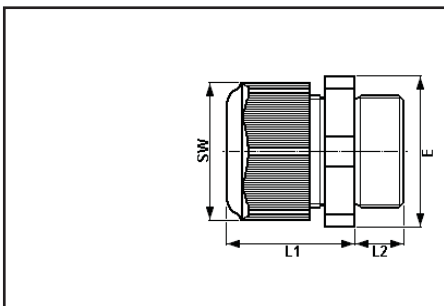
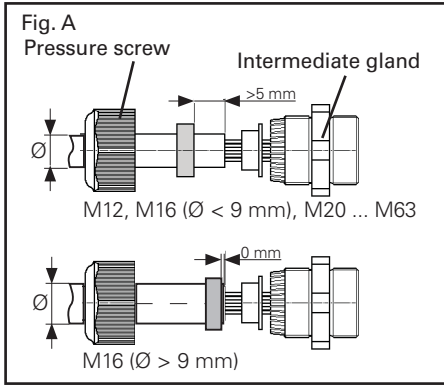


Dimension drawings and dimensions in mm



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<sup>(A)</sup>

Marking acc. to 2014/34/EU and standard:

EN 60079-0 II 2 G Ex eb IIC Gb

II 2 D Ex tb IIIC Db

IECEx type examination certificate: IECEx PTB 14.0027X<sup>(A)</sup>

Category of application: IEC60079-0 Ex eb IIC Gb

Ex tb IIIC Db

<sup>(A)</sup>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 (when fully assembled)

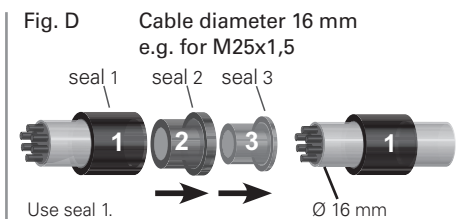
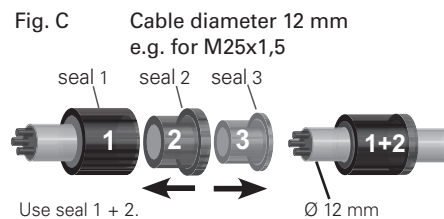
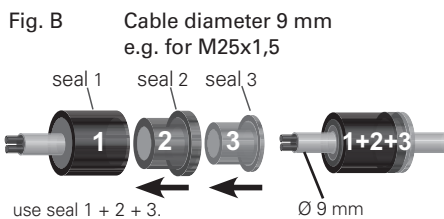
Type	SW	L1	L2	E	weight app.
M12x1,5	15 mm	19,3 mm	12 / 8 mm	16,2 mm	3,4 g
M16x1,5	20 mm	23,0 mm	12 / 8 mm	22,0 mm	6,5 g
M20x1,5	24 mm	25,0 mm	13 / 8 mm	26,5 mm	10,1 g
M25x1,5	29 mm	29,5 mm	13 / 8 mm	32,0 mm	16,9 g
M32x1,5	36 mm	35,5 mm	15 / 10 mm	40,0 mm	27,6 g
M40x1,5	46 mm	39,5 mm	15 / 10 mm	50,5 mm	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 <sup>1 2 3</sup>						Seal 1+2 <sup>1 2</sup>				Seal 1 <sup>1</sup>			
			min.		max.		min.		max.		min.		max.			
	°C	Joule	Ø	Nm**	Ø <sup>(1)(2)</sup>	Nm**	Ø	Nm**	Ø <sup>(1)(2)</sup>	Nm**	Ø	Nm**	Ø <sup>(2)</sup>	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

<sup>(1)</sup> 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.

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



Dimension drawings and dimensions in mm

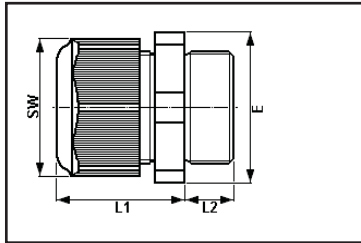
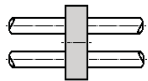


Fig. D/1 Seal insert



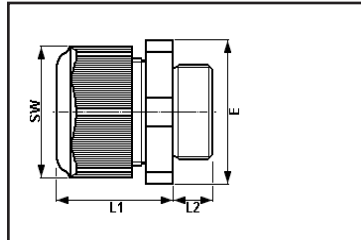
for multiple gland

### 1.2 Multiple glands

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			
			min.		max.	
	°C	Joule	Ø	Nm	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						Seal 1+2				Seal 1		
			min.		max.		min.		max.		min.		max.		
	°C	Joule	Ø	Nm**	Ø <sup>(1)(2)</sup>	Nm**	Ø	Nm**	Ø <sup>(1)(2)</sup>	Nm**	Ø	Nm**	Ø <sup>(1)</sup>	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

<sup>(1)</sup> 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.

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

Dimension drawings and dimensions in mm

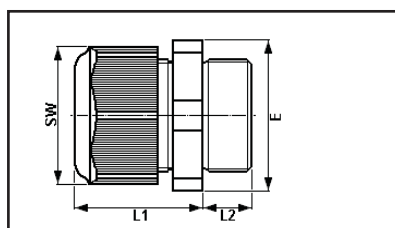
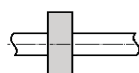


Fig. D/2 Seal insert



for gland for flat cables

#### 1.4 Cable entries in special versions

Type	SW	L1	L2	E	weight app.
M20 with seal Ø 2 mm	24 mm	25,0 mm	13 / 8 mm	26,5 mm	10,1 g
M20 with slotted seal Ø 7,0- 13 mm	24 mm	25,0 mm	13 / 8 mm	26,5 mm	10,1 g
M25 flat cable	29 mm	29,5 mm	13 / 8 mm	32,0 mm	16,9 g
M25 with PG 16 thread	36 mm	35,5 mm	15 / 10 mm	40,0 mm	27,6 g

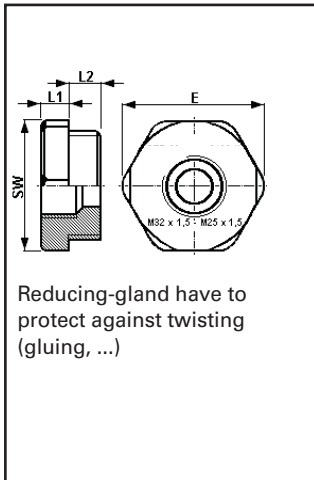
Type	Operating temperature	Impact resistant	Cable-diameter								Screw-in thread in enclosure
			Seal 1+2				Seal 2				
	°C	Joule	min. Ø	max. Nm**	min. Ø <sup>(1)(2)</sup>	max. Nm**	min. Ø	max. Nm**	min. Ø <sup>(1)(2)</sup>	max. Nm**	
M20 with seal Ø 2 mm	-20 - 60	< 7	2,0	3,5						2,7	
M20x1,5 with slotted seal Ø 7,0- 13 mm	-5 - 45		Breakout-Innenkabel Typ: orange								2,7
	-20 - 60		Ultra-Fox Plus Typ: 903 AG 621 02 709								2,7
	-20 - 60		Ehret / ICS 24 Typ: 84 305 ... ..								2,7
M25x1,5 with PG 16 thread	-20 - 70	< 7	10,0	2,3	13,0	2,6	13,5	1,3	17,5	2,3	3,0
	-55 - 70	< 7	10,0	2,3	13,0	2,6	13,5	1,5	15,0	2,3	3,0
M25x1,5 flat cable	-55 - 70 (110)	< 7	G18 = 5-8x9-12,5 flat cable			5,0					3,0
M25x1,5 flat cable	-55 - 70 (110)	< 7	G26 = 6-8x11-14 flat cable			3,5					3,0
	Cable type		Seal dimensions				Cable dimensions				
M25 flat cable	Raychem XTV-4XTV 2 ...		8,0	x	11,0	mm	7,5	x	11,0	mm	3,0
M25 flat cable	Raychem VPL-5VPL 2 ...		8,0	x	11,0	mm	7,5	x	11,5	mm	3,0
M25 flat cable	Raychem BTV-3BTV 2 ...		8,0	x	11,0	mm	6,0	x	11,0	mm	3,0
M25 flat cable	Raychem QTV-10QTVR2		8,0	x	11,0	mm	5,0	x	12,5	mm	3,0
M25 flat cable Raychem	Raychem BTV-10BTV 2 ...		8,0	x	14,0	mm	6,0	x	14,0	mm	3,0
M25 flat cable	Raychem KTV-5KTV 2 ...		8,0	x	14,0	mm	7,5	x	13,5	mm	3,0

\*\* 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 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.

Dimension drawings and dimensions in mm



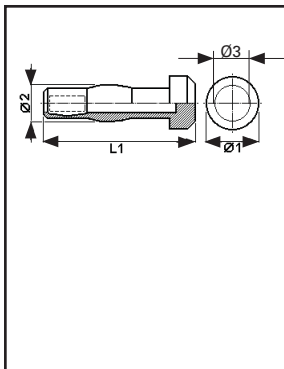
### 1.5 Reducing glands

Type	Operating temperature / °C	SW	L1	L2	E	Screw-in thread in enclosure / Nm	weight app.
M16x1,5 / M12x1,5	-55 - 70					3,3 Nm	
M20x1,5 / M12x1,5	-55 - 70	24 mm	6,0 mm	8 mm	26,5 mm	2,7 Nm	9,0 g
M20x1,5 / M16x1,5	-55 - 70	24 mm	6,0 mm	8 mm	26,5 mm	2,7 Nm	9,0 g
M25x1,5 / M12x1,5	-55 - 70	29 mm	6,0 mm	8 mm	32,0 mm	3,0 Nm	12,5 g
M25x1,5 / M16x1,5	-55 - 70	29 mm	6,0 mm	8 mm	32,0 mm	3,0 Nm	12,5 g
M25x1,5 / M20x1,5	-55 - 70	29 mm	6,0 mm	8 mm	32,0 mm	3,0 Nm	12,5 g
M32x1,5 / M12x1,5	-55 - 70	36 mm	6,0 mm	10 mm	40,0 mm	5,0 Nm	13,5 g
M32x1,5 / M16x1,5	-55 - 70	36 mm	6,0 mm	10 mm	40,0 mm	5,0 Nm	13,5 g
M32x1,5 / M20x1,5	-55 - 70	36 mm	6,0 mm	10 mm	40,0 mm	5,0 Nm	13,5 g
M32x1,5 / M25x1,5	-55 - 70	36 mm	6,0 mm	10 mm	40,0 mm	5,0 Nm	13,0 g
M40x1,5 / M16x1,5	-55 - 70	46 mm	6,0 mm	10 mm	50,5 mm	7,5 Nm	21,0 g
M40x1,5 / M20x1,5	-55 - 70	46 mm	6,0 mm	10 mm	50,5 mm	7,5 Nm	21,0 g
M40x1,5 / M25x1,5	-55 - 70	46 mm	6,0 mm	10 mm	50,5 mm	7,5 Nm	23,0 g
M40x1,5 / M32x1,5	-55 - 70	46 mm	6,0 mm	10 mm	50,5 mm	7,5 Nm	21,0 g
M50x1,5 / M20x1,5	-55 - 70	55 mm	6,0 mm	12 mm	60,0 mm	7,5 Nm	72,0 g
M50x1,5 / M25x1,5	-55 - 70	55 mm	6,0 mm	12 mm	60,0 mm	7,5 Nm	72,0 g
M50x1,5 / M32x1,5	-55 - 70	55 mm	6,0 mm	12 mm	60,0 mm	7,5 Nm	72,0 g
M50x1,5 / M40x1,5	-55 - 70	55 mm	6,0 mm	12 mm	60,0 mm	7,5 Nm	65,0 g
M63x1,5 / M25x1,5	-55 - 70	68 mm	6,0 mm	12 mm	75,0 mm	7,5 Nm	40,0 g
M63x1,5 / M32x1,5	-55 - 70	68 mm	6,0 mm	12 mm	75,0 mm	7,5 Nm	40,0 g
M63x1,5 / M40x1,5	-55 - 70	68 mm	6,0 mm	12 mm	75,0 mm	7,5 Nm	40,0 g
M63x1,5 / M50x1,5	-55 - 70	68 mm	6,0 mm	12 mm	75,0 mm	7,5 Nm	30,0 g

L1 = Screw-in thread in enclosure

L2 = Reducing thread

### 1.6 Blanking plug for multiple glands

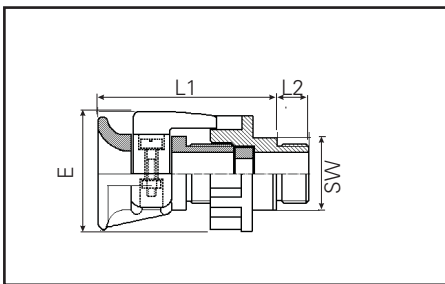


Type	Operating temperature / °C	Ø 1	Ø 2	L1	Ø 3	weight app.
M12x1,5*	-55 / +70	7,0 mm	6,0 mm	30,3 mm	5,0 mm	1,0 g
M16x1,5	-55 / +70	8,0 mm	7,0 mm	33,0 mm	6,0 mm	1,3 g
M20x1,5	-55 / +70	12,0 mm	8,5 mm	34,5 mm	7,0 mm	6,6 g
M25x1,5	-55 / +70	16,0 mm	11,0 mm	36,0 mm	10,0 mm	2,8 g
M32x1,5	-55 / +70	20,0 mm	14,0 mm	39,5 mm	13,0 mm	4,6 g
M40x1,5	-55 / +70	24,0 mm	20,0 mm	42,0 mm	19,0 mm	7,0 g
M50x1,5	-55 / +70	32,0 mm	26,0 mm	44,0 mm	25,0 mm	8,0 g
M63x1,5	-55 / +70	39,0 mm	34,0 mm	45,0 mm	32,0 mm	9,0 g

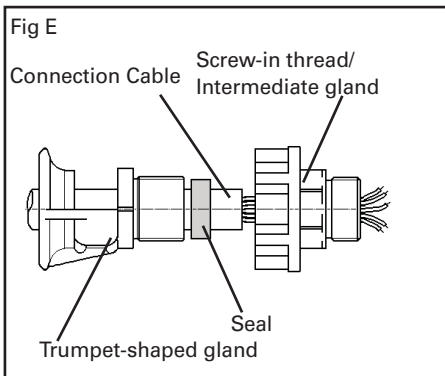
\* for multiple glands M25x1,5 and M32x1,5

Dimension drawings and dimensions in mm **1.7 Trumpet-shaped glands M20 to M63**

ATEX type examination certificate:	PTB 00 ATEX 3121	
Marking acc. to 2014/34/EU and standard:	EN 60079-0	
	⊕ II 2 G Ex e II	⊕ II 2 D Ex tD A21 IP66
IECEX type examination certificate:	IECEX BK1 08.0007	
Category of application:	IEC60079-0 Ex e II	
	Ex tD A21 T85°C IP66	
Perm. storage temperature in original packing:	-20° C +40° C	
Degree of protection to IEC/EN 60529:	IP 66 (fully assembled)	



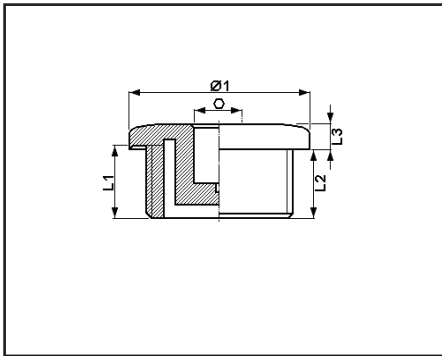
Type	SW	L1	L2	E width across corners	weight app.
M20x1.5	27 mm	64 mm	15 mm	47 mm	57 g
M25x1.5	32 mm	65 mm	15 mm	51 mm	68 g
M32x1.5	41 mm	80 mm	15 mm	68 mm	138 g
M40x1.5	50 mm	86 mm	15 mm	81 mm	191 g
M50x1.5	60 mm	95 mm	16 mm	96 mm	325 g
M63x1.5	75 mm	105 mm	16 mm	107 mm	757 g



Type	Operating temperature	Impact re-sistant	Cable diameter		strain Relief (screws)		Screw-in thread
			min.	max.	Nm	Nm	
	°C	Joule	Ø	Ø	Nm	Nm	Nm
M20x1,5	-40 - 85	< 7	8.0	13.0	3.0	1.5	3.5
M25x1,5	-40 - 85	< 7	11.0	16.0	3.0	2.0	4.0
M32x1,5	-40 - 85	< 7	15.0	20.0	6.0	4.0	7.5
M40x1,5	-40 - 85	< 7	19.0	27.0	10.0	6.0	12.0
M50x1,5	-40 - 85	< 7	26.0	34.0	30.0	10.0	35.0
M63x1,5	-40 - 85	< 7	35.0	46.0	40.0	15.0	45.0

## Dimension drawings and dimensions in mm

## 1.8 Screw plugs

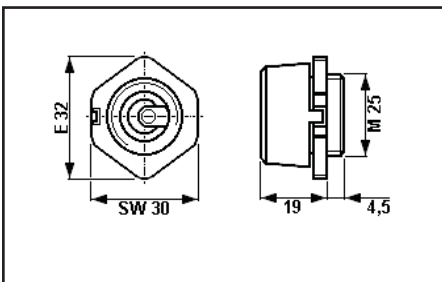


ATEX type examination certificate:	PTB 98 ATEX 3130	
Marking acc. to 2014/34/EU and standard:	EN 60079-0	
	⊕ II 2 G Ex IIC Gb	
	⊕ II 2 D Ex tb IIIC Db IP66 (not for M63x1,5)	
IECEX type examination certificate:	IECEX PTB 03.0000	
Category of application:	IEC60079-0	
	Ex IIC Gb	(not for M63x1,5)
	Ex tb IIIC Db IP 66	(not for M63x1,5)
Perm. storage temperature in original packing:	-20° C +40° C	
Degree of protection to IEC/EN 60529:	(fully assembled)	
	M12- M50	IP 66
	M63	IP 54

Type	Operating temperature / °C	Ø 1	L1	L2	L3	Screw-in thread in enclosure / Nm	weight app.
M16x1,5	-55 / +95	21 mm	12 mm	11 mm	4,0 mm	3,3	2,4 g
M20x1,5	-55 / +95	25 mm	13 mm	12 mm	4,0 mm	2,7	4,3 g
M25x1,5	-55 / +95	30 mm	13 mm	12 mm	4,0 mm	3,0	6,6 g
M32x1,5	-55 / +95	37 mm	15 mm	14 mm	5,5 mm	5,0	12,0 g
M40x1,5	-55 / +95	45 mm	15 mm	14 mm	5,5 mm	7,5	36,6 g
M50x1,5	-55 / +95	55 mm	16 mm	15 mm	5,5 mm	7,5	56,6 g
M63x1,5	-20 / +80	72 mm	/ mm	12 mm	11,0 mm	7,5	64,5 g

⊕ = Socket head spanner or screw driver, size 8 mm

## 1.9 Drain plug



ATEX type examination certificate:	PTB 01 ATEX 1128 X	
Marking acc. to 2014/34/EU and standard:	EN 60079-0	
	⊕ II 2 G Ex e II	
Einsatztemperaturbereich:	-20° C +40° C	
Perm. storage temperature in original packing:	-20° C +40° C	
Degree of protection to IEC/EN 60529:	IP 66 (fully assembled)	
Einschraubgewinde in Gehäuse:	M25x1,5	
Prüfdrehmoment:	5,0 Nm	

## 2 Legende

### Caution

***This symbol warns of a possible failure. Failure to observe this caution may result in the total failure of the device or the system or plant to which it is connected.***



Special conditions:  
This symbol indicates that special conditions apply for a safe operation in accordance with the EC Type Examination Certificate / IECEx Certificate of Conformity.

### 2.1 Safety instructions



***The operations must be carried out by electrical suitably trained in hazardous area with knowledge of increased safety explosion protection IEC/EN 60079-14.***

***All the entries and components listed in these operating and mounting instructions are not suited for use in Zone 0 and Zone 20.***

***In addition, they may not be used as direct cable entries or seals for flameproof enclosures in potentially explosive atmospheres in Zone 1, Zone 2 and Zone 21, Zone 22.***

***They shall be used for their intended purpose and shall be in a perfect and clean state.***

***Prior to mounting, check the entries and components, as well as the screw-in threads of the apparatus into which they are to be mounted to ensure that they are in a perfect state.***

***The requirements of the IEC/EN 60079-0 and EN/IEC 60079-31 regarding excessive dust deposits and temperature to be considered from the user.***

***The national safety rules and regulations for the prevention of accidents, as well as the safety instructions included in these operating instructions, that, like this text, are set in italics, shall be observed!***

## 3 Conformity with standards

They have been designed, manufactured and tested according to the state of the art and to DIN EN ISO 9001:2015 and EN ISO/IEC 80079-34:2011.

The apparatus are conform to the standards specified in the EC-Declaration of conformity, enclosed separately.

## 4 Field of application

The entries and components covered by these instructions (see Technical Data) are suited for mounting in potentially explosive atmospheres in Zone 1, Zone 2 and Zone 21, Zone 22 accordance with IEC/EN 60079-10-1 and IEC/EN 60079-10-2!

The materials used, including the exterior metal parts, are high quality materials that ensure a corrosion resistance and resistance to chemical substances according to the requirements for use in a "normal industrial atmosphere":


- impact resistant polyamide
- stainless steel

In case of use in an extremely aggressive atmosphere, please refer to manufacturer

## 5 Application / Properties

All the cable entries and components covered by these operating and mounting instructions are suited for use in enclosures and apparatus in the type of protection "Increased Safety".

Trumpet-shaped cable glands are used for feeding flexible cables into enclosures and apparatus.


*** The fitting of seal inserts one inside the other or the interchanging of seal inserts of different entries to reduce the cable opening is not permitted.***

Reducing glands can be used to reduce the size of threaded or through holes in enclosures to a smaller thread size.


Blanking plugs are used to seal metric COOPER CROUSE-HINDS cable entries and COOPER CROUSE-HINDS multiple entries.


Screw glands are used to seal unused through and threaded holes.

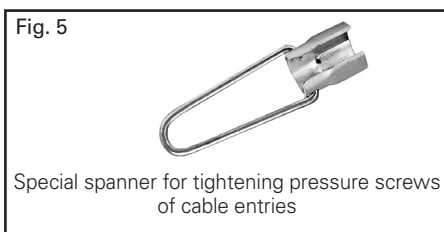
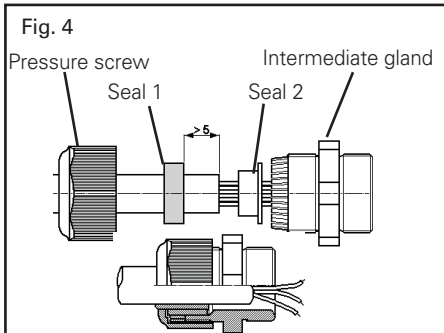
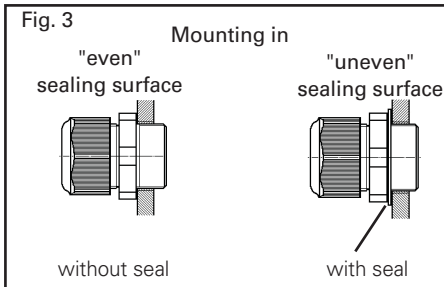
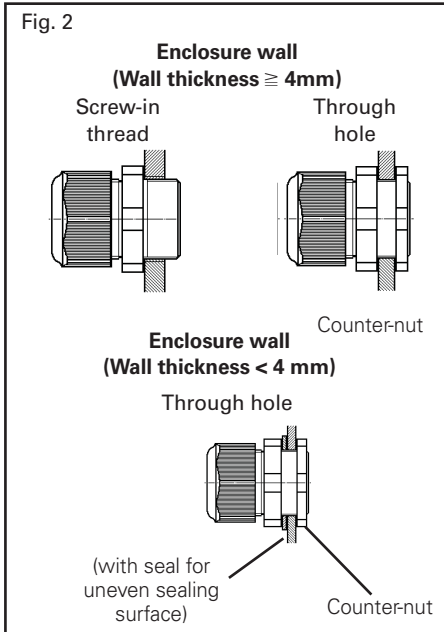
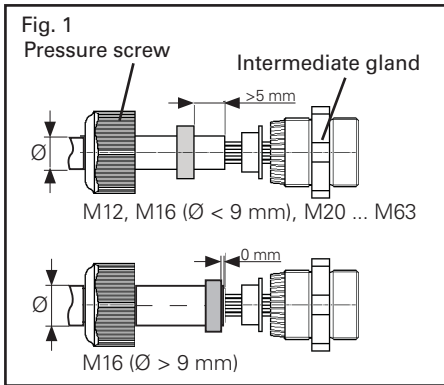
Any condensation in the apparatus can escape via drain plugs (see 6.1, Mounting).

*** Applications other than those described are not permissible without a written declaration of consent from Messrs. COOPER CROUSE-HINDS.***

*** The instructions according to section 7 of the operating instructions shall be observed during operation.***

*** The sole responsibility with respect to the suitability and proper use of these entry components with regard to the basic conditions of these instructions (see Technical Data) lies with the operator.***

*** 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.***



## 6 Installation

The relevant national regulations and the generally recognized rules of engineering apply for the installation and operation. (IEC/EN 60079-14).

**⚠ The improper installation and operation of enclosures can result in the invalidation of the guarantee.**

**⚠ Observe the special operational conditions accordance to IEC/EN 60069-14.**

**⚠ Only fixed cables may be used.** The operator shall ensure that an appropriate strain relief is provided. This is not required for trumpet-shaped glands.

**⚠ The degree of protection IP66 is only attained if the seals and cable entries are installed correctly.**

**⚠ Cable entries that are only suited for a low impact energy shall be built into an enclosure in such a way as to protect them from a mechanical impact energy.**

### 6.1 Mounting

**⚠ Prior to mounting, ensure that the threads of the entry components match the threads of the apparatus or enclosure.**

**⚠ If the entries and components are to be screwed directly into the walls, the wall thickness of the apparatus shall be at least 4 mm.**

**⚠ Counter-nuts shall be used if enclosure walls are less than 4 mm thick. The minimum thickness of the enclosure wall shall be 1.5 mm.**

**⚠ The use of entry elements with damaged or dirty threads can impair the IP degree of protection.**

**⚠ Imported Cables and wiring shall be relieved of tensile forces (eg with a cable clamp).**

#### 6.1.1 Cable entries (KLE)

The intermediate gland (see Fig. 1) of the cable entries shall be fitted with a suitable tool, e.g. fork, ring or box spanner.

It is mounted directly in the threaded hole or via the through hole of the enclosure (see Fig. 2).

If the sealing surfaces are uneven, seals shall be used between the enclosure wall and the intermediate gland (see Fig. 3).

Counter-nuts shall be used for walls with a thickness of less than 4 mm (see Fig. 2).

Cables are fed in as shown in Fig. 4.

The seal inserts shall be chosen to suit the respective cable diameter (Page 13 Figs. A, B, C and D).

Use COOPER CROUSE-HINDS spanners with a side opening can be used to facilitate the tightening of the pressure screw when the cable entry has been mounted (see Fig. 5).

Order No. GHG 960 1951 R0001 for Set 1 (M12, 16, 20, 25, 32 and 40)

Order No. GHG 960 1951 R0002 for Set 2 (M50 and M63)

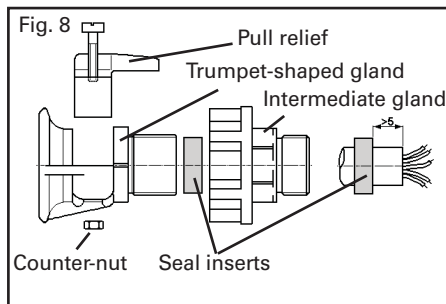
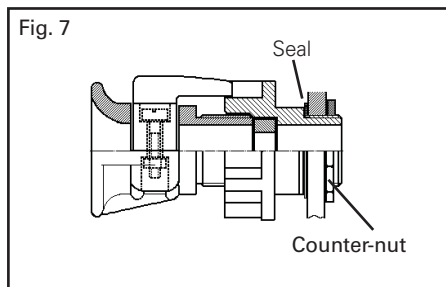
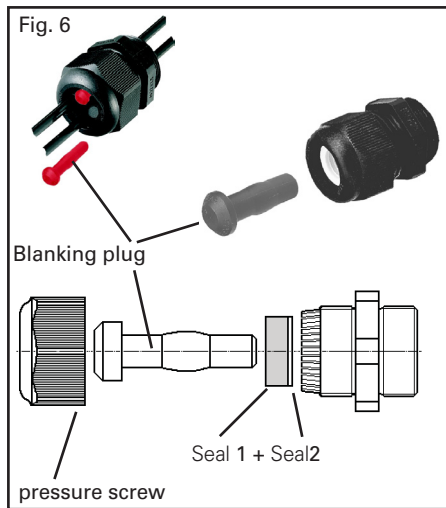
To ensure the required minimum degree of protection, the gland body and the pressure cap shall be tightened with the given test torques (see Technical Data).

When tightening the pressure cap, the gland body shall be prevented from turning with a suitable tool, e.g. a spanner.

**⚠ Overtightening can impair the degree of protection.**

Optionally, cable entries with colour-coded (light blue) pressure screws can be used for intrinsically safe circuits (see main COOPER CROUSE-HINDS catalogue for order numbers).





### 6.1.2 Blanking plugs

**⚠** Blanking plugs of the types GGH 960 6107 P\*\*\*\* or GHG 960 1944 R\*\*\*\* may only be used in conjunction with cable entries of the types GHG 960 92\*\* P\*\*\*\* or GHG 960 19\*\* R\*\*\*\*.

The following shall be observed when mounting blanking plugs for COOPER CROUSE-HINDS metric cable entries (see Fig. 6):

1. Only the blanking plug associated to the KLE shall be used.
2. The head of the blanking plug shall, as shown in Fig. 5, be on the outside.
3. The head of the blanking plug shall, as shown in Fig. 5, be on the outside.
4. The blanking plug shall be pushed into the KLE until it reaches the stop.
5. The pressure screw of the KLE shall be tightened down as described in 6.1.1.

### 6.1.3 Screw plug

The screw plug shall be screwed tightly into the threaded hole in the enclosure using a suitable tool, e.g. 8 mm socket head spanner or a suitable screw driver.

A counter-nut shall be used for through holes or enclosures that are less than 4 mm thick.

An additional seal shall be used for uneven sealing surfaces.

**⚠** In general, the M50 screw plug shall be mounted together with the seal supplied.

### 6.1.4 Trumpet-shaped gland

A suitable tool, e.g. a fork spanner, shall be used for mounting the intermediate gland in the trumpet-shaped gland in such a way that it cannot twist.

It is necessary to ensure that the gland cannot twist once the cable has been fed in and the trumpet-shaped gland mounted (e.g. by using a counter-nut, see Figs. 7 + 8). A counter-nut shall be used for through holes or enclosures that are less than 4 mm thick. When mounting, a seal shall always be used between the enclosure wall and intermediate gland (see Fig. 7).

The following describes the mounting of the cable in the trumpet-shaped gland, as shown in Fig. 8:

1. Cut out the individual rings of the "onion ring" seal insert to match the respective cable diameter.
2. After feeding in the cable, that has been cut to length and has the seal mounted, into the intermediate gland, screw the trumpet-shaped gland tightly into the intermediate gland to seal off the cable.
3. Then mount the pull relief on the trumpet-shaped gland.

**⚠** It is necessary to ensure that there is sufficient pull relief, that damage to the cable is not possible and that the trumpet-shaped gland cannot twist.

### 6.1.5 Reducing gland

A suitable tool, e.g. a fork, ring or box spanner, shall be used for screwing the reducing gland tightly into the threaded hole in the enclosure.

A counter-nut shall be used for through holes or enclosures that are less than 4 mm thick.

An additional seal shall be used for uneven sealing surfaces.

**⚠** Screwing several reducing glands one inside the other to reduce the size of the entry thread is not permitted.