

Brief Instructions

ENG

Cable Glands, Metal, for flexible conduits CG.CO.*

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Validity

Specific processes and instructions in this instruction manual require special provisions to guarantee the safety of the operating personnel.

Target Group, Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismantling lies with the plant operator.

The personnel must be appropriately trained and qualified in order to carry out mounting, installation, commissioning, operation, maintenance, and dismantling of the device. The trained and qualified personnel must have read and understood the instruction manual.

Reference to Further Documentation

Observe laws, standards, and directives applicable to the intended use and the operating location. Observe Directive 1999/92/EC in relation to hazardous areas.

The corresponding datasheets, manuals, declarations of conformity, EC-type-examination certificates, certificates, and control drawings if applicable support this document. You can find this information under www.pepperl-fuchs.com.

Intended Use

The metal cable glands type CG.CO.* can be used indoor and outdoor in Zone 1, Zone 2, Zone 21 and Zone 22 hazardous areas. They are intended for use with non-armored cables which are protected in flexible metallic conduits.

Remarks on Assembly

For non-threaded enclosures it is recommended to use flat washer gaskets (e.g. fiber washer of Klingersil type C-4400 or similar, or chloroprene or silicone washer gaskets) between screw-in component and the enclosure.

For threaded enclosures both fiber washers or O-rings can be used.

Metric metal cable glands or screw-in components when supplied as single components are equipped with washer gasket, O-ring and further accessories. Variants for ambient temperatures below -50 °C are available. Please refer to the individual datasheets for details.

Requirements for Cables and Connection Lines

In order to guarantee the mechanical characteristics of the glands, an additional clamping of the cables has to be ensured by appropriate clamping outside of the gland and of the enclosure.

Mounting and Installation

Observe the installation instructions according to IEC/EN 60079-14.

If you intend to install the device or enclosure in areas that may be exposed to aggressive substances, ensure that the stated surface materials are compatible with these substances. If required, contact Pepperl+Fuchs for further information.

Disassemble the parts of the cable gland.

Choose the optimal seal insert combination (S*) according to the cable diameter. Use the outer seal insert S1 (6) for cables with large diameter. Use a combination of up to 3 seal inserts (4) ... (6) for cables with smaller diameter.

Fit the seal insert combination into the gland body basis (3).

Install the gland body basis (3) in the entry of the enclosure.

Use washer gasket (1) and O-Ring (2) when appropriate.

Push the connection body (7) onto the cable.

Push the cable through the seal inserts (4) ... (6).

Tighten the connection body (7) to the gland body basis (3).

Tighten all screw threads with the appropriate torque.

IP Protection Method Mode for Ex d / Ex e

Tapered NPT threads:

In order to guarantee the specified IP66 / IP68 rating when using NPT threads, sealant agent (Loctite 577 or similar) shall be applied on at least two full threads before fitting the gland to the box. In any case pay attention to guarantee the metallic continuity.

Ex d enclosures and tapered NPT threads:

Assemble through a threaded hole. The enclosure wall has to be thick enough to engage at least 5 full threads.

Ex d enclosures and metric threads:

Assemble through a threaded hole with O-ring on the thread outside of the enclosure. The enclosure wall has to be thick enough to engage at least 5 full threads.

Ex e enclosures, metric threads and tapered NPT threads:

Tighten with locknut inside and fiber washer gasket on the thread outside of the enclosure. In case of O-ring it has to be positioned between fiber washer and screw head. An enclosure wall thickness of minimum 1.5 mm has to be respected.

Operation, Maintenance, Repair

Observe IEC/EN 60079-17 for maintenance and inspection.

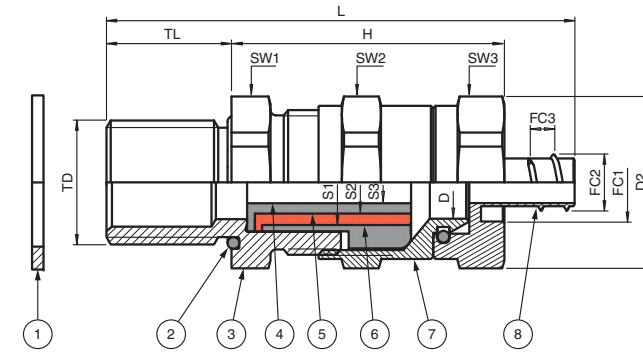
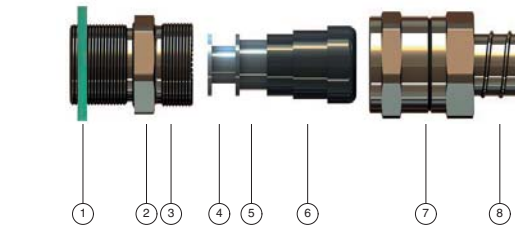
If there is a defect, always replace the device with an original device.

Do not modify or manipulate the device.

Delivery, Transport, Disposal

Disposing of device and packaging must be in compliance with the applicable laws and guidelines of the respective country.

Dimensions and Assembly



Legend - details and values see data table	
1	Washer gasket (accessory)
2	O-Ring
3	Gland body basis
4	Seal insert S3
5	Seal insert S2
6	Seal insert S1
7	Connection body
8	Connection for flexible conduit
D	Clamping range, cable sheath diameter
D2	Width across corners
FC1	Flexible conduit, max. outer diameter
FC2	Flexible conduit, inner diameter
FC3	Flexible conduit, corrugation size
H	Length outside enclosure
L	Total length
S*	Clamping range, seal insert combinations
SW*	Width across flats
TD	Thread size
TL	Thread length


Type Code / Model Number

1	2	3	4	5	6	7						
CG	.	**	.	***	.	**	.	*	.	**	.	K**
CG	.	CO	.	M20	.	BN	.	C	.	16	.	K01

Example: Cable gland metal, for flexible metallic conduits, thread size M20, body brass nickel-plated, chloroprene seals for -40 °C ... 80 °C, installation thread length 16 mm, one piece

1	Series
CG	cable glands
2	Type
CO	metal, for non-armored cables in flexible metallic conduits
3	Thread, type and size
M*	metric ISO pitch 1.5; sizes see dimensions data table
NPT	NPT ANSI ASME B1.20.1; sizes see dimensions data table
4	Material
BN	brass nickel-plated
SS	stainless steel
5	Material seals / O-Ring
C	chloroprene / neoprene
S	silicone
6	Thread length for installation in enclosure
**	length in mm
7	Packaging unit
	units not packaged, for use in Pepperl+Fuchs Solution Engineering Centers
K**	units quantity per package

Technical Specifications

General	
Types and variants	CG.CO* - see type code table
Mechanical specifications	
Dimensions and torques	see data table
Cable type	non-armored cables in flexible conduit
Clamping range (D)	see data table
Thread type	metric ISO pitch 1.5 mm or NPT ANSI ASME B1.20.1
Thread size (TD)	see data table
Degree of protection	IP66 / IP68
Mass	see datasheets
Material	
Finish	inherent color silver
Cable gland	brass nickel-plated or AISI 316 (1.4401) stainless steel
Washer gasket	aramid fibers bonded with NBR
O-Ring	chloroprene / neoprene or silicone
Seal insert	chloroprene / neoprene or silicone
Ambient conditions	
Ambient temperature	Ex eb and Ex tb versions: chloroprene seal: -40 ... 80 °C (-40 ... 176 °F) silicone seal: -60 ... 140 °C (-76 ... 284 °F) washer gasket: -50 ... 80 °C (-58 ... 176 °F) Ex db versions: chloroprene seal: -40 ... 80 °C (-40 ... 176 °F) silicone seal: -60 ... 80 °C (-76 ... 176 °F) washer gasket: -50 ... 80 °C (-58 ... 176 °F) Service temperature might be limited by the use of sealing plugs or washer gaskets.
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	IMQ 14 ATEX 012X
Marking	 II 2 GD Ex db IIC Gb Ex eb IIC Gb Ex tb IIIC Db
International approvals	
IECEX approval	IECEX IMQ 14.0004X
UKCA approval	CML 21 UKEX 11380X
INMETRO approval	DNV 20.0029 X
EAC approval	RU C-DE.AA87.B.00459/20
CCC approval	2021312313000344
Conformity	
Degree of protection	EN 60529
CE marking	0102
Standards	IEC/EN 60079-0: 2012 IEC/EN 60079-1: 2014 IEC/EN 60079-7: 2015 IEC/EN 60079-31: 2014

Variant-Specific Data

Typ	Thread size	Clamping range [mm] seal insert combinations				Dimensions [mm]							Flexible conduit [mm]			Nut torques [Nm] seal insert combinations				
	TD	D	S1+S2+S3	S1+S2	S1	H	L	TL	D2	SW1	SW2	SW3	DT	FC1	FC2	FC3	SW1	SW2 S1+S2+S3	SW2 S1+S2	SW2 S1
CG.CO.M16S.*.16.*	M16	3 ... 9	-	3 ... 6	6 ... 9	36	61	16	22	20	20	20	16 ... 16.2	10	6.1	3.3	4	-	28	18
CG.CO.M16.*.16.*	M16	4 ... 12	4 ... 6	6 ... 9	9 ... 12	43	72	16	26.5	22	24	24	16 ... 16.2	22.2	15	4.5	4	20	18	15
CG.CO.M20.*.16.*	M20	4 ... 12	4 ... 6	6 ... 9	9 ... 12	39	68	16	26.5	22	24	24	20 ... 20.2	22.2	15	4.5	5.5	20	18	15
CG.CO.M25.*.16.*	M25	10 ... 18	10 ... 12	12 ... 14.5	14.5 ... 18	42	73	16	31.5	28	29	29	25 ... 25.2	27.5	20	4.5	6	25	20	18
CG.CO.M32.*.16.*	M32	14 ... 24	14 ... 17	17 ... 20	20 ... 24	46	82	16	39.8	35	36	36	32 ... 32.3	34.5	25.7	6	6	28	23	20
CG.CO.M40.*.18.*	M40	22 ... 32	22 ... 24	24 ... 27	27 ... 32	54	92	18	50	45	45	45	40 ... 40.3	43	34.2	6	12	56	35	45
CG.CO.M50.*.18.*	M50	26 ... 35	26 ... 28	28 ... 31	31 ... 35	59.5	98	18	61	55	52	52	50 ... 50.3	49.5	39.2	6	18	56	54	50
CG.CO.M63.*.18.*	M63	35 ... 45	35 ... 38	38 ... 41	41 ... 45	58.5	96.5	18	75	68	65	65	63 ... 63.3	62.5	50	6	25	190	125	140
CG.CO.M75.*.20.*	M75	46 ... 59	46 ... 51	51 ... 57	57 ... 59	69	111	20	89	80	80	80	75 ... 75.3	75	61.6	6.5	30	130	125	120

Typ	Thread size	Clamping range [mm] seal insert combinations				Dimensions [mm]							Flexible conduit [mm]			Nut torques [Nm] seal insert combinations				
	TD	D	S1+S2+S3	S1+S2	S1	H	L	TL	D2	SW1	SW2	SW3	DT	FC1	FC2	FC3	SW1	SW2 S1+S2+S3	SW2 S1+S2	SW2 S1
CG.CO.NPT3/8.*.16.*	NPT 3/8"	4 ... 12	4 ... 6	6 ... 9	9 ... 12	43	72	16	26.5	22	24	24	17.2 ... 17.4	22.2	15	4.5	3	20	18	15
CG.CO.NPT1/2.*.16.*	NPT 1/2"	4 ... 12	4 ... 6	6 ... 9	9 ... 12	39	68	16	26.5	24	24	24	21.4 ... 21.6	22.2	15	4.5	4	20	18	15
CG.CO.NPT3/4.*.16.*	NPT 3/4"	10 ... 18	10 ... 12	12 ... 14.5	14.5 ... 18	41.5	72.5	16	31.5	28	29	29	26.7 ... 26.9	27.5	20	4.5	5.5	25	20	18
CG.CO.NPT1.*.20.*	NPT 1"	14 ... 24	14 ... 17	17 ... 20	20 ... 24	46	86	20	39.8	35	36	36	33.5 ... 33.7	34.5	25.7	6	8	28	23	20
CG.CO.NPT1-1/4.*.20.*	NPT 1-1/4"	22 ... 32	22 ... 24	24 ... 27	27 ... 32	54	94	20	50	45	45	45	42.2 ... 42.4	43	34.2	6	9	56	35	45
CG.CO.NPT1-1/2.*.20.*	NPT 1-1/2"	26 ... 35	26 ... 28	28 ... 31	31 ... 35	59.5	100	20	61	55	52	52	48.3 ... 48.5	49.5	39.2	6	10	56	54	50
CG.CO.NPT2.*.20.*	NPT 2"	35 ... 45	35 ... 38	38 ... 41	41 ... 45	58.5	98.5	20	75	68	65	65	60.4 ... 60.7	62.5	50	6	16	190	125	140