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

Marking

Cable Glands, Metal, for flexible conduits CG.CO.*
ATEX certificate: IMQ 14 ATEX 012X ATEX marking: Ⓔx II 2 GD Ex db IIC Gb Ex eb IIC Gb Ex tb IIIC Db
IECEx certificate: IECEx IMQ 14.0004X CCC certificate: 2021312313000344

The *-marked letters of the type code are placeholders for versions of the device.

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Target Group, Personnel

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

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

Reference to Further Documentation

Observe directives, standards, and national laws applicable to the intended use and the operating location.

The corresponding datasheets, manuals, declarations of conformity, EU-type examination certificates, certificates, and control drawings if applicable (see datasheet) are an integral part of this document. You can find this information under www.pepperl-fuchs.com.

For specific device information such as the year of construction, scan the QR code on the device. As an alternative, enter the serial number in the serial number search at www.pepperl-fuchs.com/device-information.

Intended Use

The device is only approved for appropriate and intended use. Ignoring these instructions will void any warranty and absolve the manufacturer from any liability.

The cable glands of the CG.CO* series are made of metal.

The device can be used indoors.

The device can be used outdoors.

The device can be used in Zone 1.

The device can be used in Zone 21.

The device can be used in Zone 2.

The device can be used in Zone 22.

The device can be used with intrinsically safe circuits.

Only use the device in fixed installations.

The cable glands can be used with non-armored elastomer and plastic insulated cables.

The cable glands are intended for use with non-armored cables which are protected in flexible metallic conduits.

Improper Use

Protection of personnel and the plant is not ensured if the device is not used according to its intended use.

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.

Observe the instruction manuals for the associated components.

Refer to the corresponding technical data of the installed components for the actual type of protection or any possible restrictions.

Ensure that the degree of protection is maintained by the entire installation.

Ensure that the surface of the enclosure is smooth enough to achieve the required degree of protection.

Ensure that the enclosure entries are perpendicular, circular and free of burrs.

Requirements for Cable Glands

Only use cable glands that are suitably certified for the application.

Only use cable glands with a temperature range appropriate to the application.

Use seals that are suitable for the specified application.

Ensure that the degree of protection is not violated by the cable glands.

Install cables and cable glands in a way that they are not exposed to mechanical hazards.

The cables and connection lines must be free from mechanical stress. Use appropriate strain relief, which must be fitted outside of the enclosure.

Ensure that all cable glands are in good condition and are securely tightened.

Tighten all cable glands with the appropriate torque.

Installation Sequence

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.

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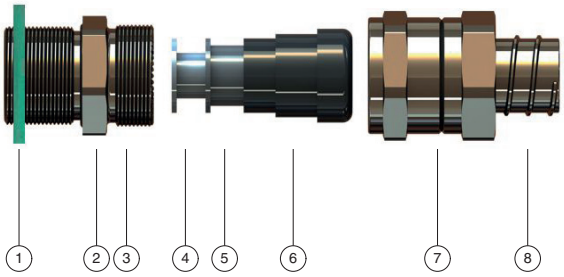
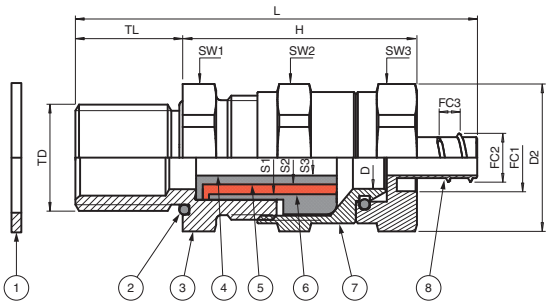
Dimensions and Assembly





Legend	
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

Requirements in Relation to Flameproof Enclosure

Install the cables and connection lines through tapped holes.

Requirements in Relation to Tapered Threads

Ensure that the enclosure wall is thick enough to engage at least 5 full thread turns.

To ensure the degree of protection use a thread sealant. Apply the thread sealant to at least 2 full thread turns before installing the stuffing gland in the cable gland.

Ensure electrical conductivity.

Requirements in Relation to Metric Threads

Ensure that the enclosure wall is thick enough to engage at least 5 full thread turns.

Provide the tapped hole with an O-ring on the thread outside of the enclosure.

Requirements in Relation to Increased Safety

Requirements in Relation to Non-Threaded Enclosures

The minimum wall thickness of the enclosure has to be 1.5 mm.

If the enclosure has no threads, use locknuts for tightening.

Use washer gaskets between the screw-in parts and the enclosure for sealing.

During mounting, it may be necessary to rotate the locknut or the cable gland. If it is necessary to rotate the cable gland, use an O-ring for sealing.

Adhere to the required hole diameters.

Requirements in Relation to Tapered Threads

The minimum wall thickness of the enclosure has to be 1.5 mm.

When mounting on the enclosure, at least 3 thread turns has to be mechanically connected to the enclosure. If this is not possible, use a locknut.

To ensure the degree of protection use a thread sealant. Apply the thread sealant to at least 2 full thread turns before installing the stuffing gland in the cable gland.

Ensure electrical conductivity.

Tighten the locknut inside and the washer gasket on the thread outside of the enclosure.

If necessary, mount an O-ring between the washer gasket and the screw head.

Requirements in Relation to Metric Threads

The minimum wall thickness of the enclosure has to be 1.5 mm.

When mounting on the enclosure, at least 3 thread turns has to be mechanically connected to the enclosure. If this is not possible, use a locknut.

Tighten the locknut inside and the washer gasket on the thread outside of the enclosure.

If necessary, mount an O-ring between the washer gasket and the screw head.

Operation, Maintenance, Repair

Do not use a damaged or polluted device.

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

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

Do not modify or manipulate the device.

Only use spare parts specified by the manufacturer.

Ensure that the device is de-energized before maintain or repair the device.

Dissimilar metals will corrode when placed against each other in an assembly.

When selecting the enclosure material, observe the possible effects of galvanic corrosion.

Delivery, Transport, Disposal

Check the packaging and contents for damage.

Check if you have received every item and if the items received are the ones you ordered.

The device, built-in components, packaging, and any batteries contained within must be disposed in compliance with the applicable laws and guidelines of the respective country.

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Technical Data

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 data table
Material	
Cable gland	brass nickel-plated or stainless steel AISI 316 (1.4401)
Finish	inherent color silver
O-Ring	chloroprene / neoprene or silicone
Washer gasket	aramid fibers bonded with NBR
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.
Conformity	
Degree of protection	EN 60529
CE marking	0102

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Type Code / Model Number

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

Example: CG.CO.M20.BN.C.16.K01

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

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Variant-Specific Data

Dimensions Metric - Brass Nickel-plated

Type	Thread size	Clamping range [mm] seal insert combinations				Dimensions [mm]						
	TD	D	S1+S2+S3	S1+S2	S1	H	L	TL	D2	SW1	SW2	SW3
CG.CO.M16S.BN.C.16.*	M16	3 ... 9	-	3 ... 6	6 ... 9	36	61	16	22	20	20	20
CG.CO.M16.BN.C.16.*	M16	4 ... 12	4 ... 6	6 ... 9	9 ... 12	43	72	16	26.5	22	24	24
CG.CO.M20.BN.C.16.*	M20	4 ... 12	4 ... 6	6 ... 9	9 ... 12	39	68	16	26.5	22	24	24
CG.CO.M25.BN.C.16.*	M25	10 ... 18	10 ... 12	12 ... 14.5	14.5 ... 18	42	73	16	31.5	28	29	29
CG.CO.M32.BN.C.16.*	M32	14 ... 24	14 ... 17	17 ... 20	20 ... 24	46	82	16	39.8	35	36	36
CG.CO.M40.BN.C.18.*	M40	22 ... 32	22 ... 24	24 ... 27	27 ... 32	54	92	18	50	45	45	45
CG.CO.M50.BN.C.18.*	M50	26 ... 35	26 ... 28	28 ... 31	31 ... 35	59.5	98	18	61	55	52	52
CG.CO.M63.BN.C.18.*	M63	35 ... 45	35 ... 38	38 ... 41	41 ... 45	58.5	96.5	18	75	68	65	65
CG.CO.M75.BN.C.20.*	M75	46 ... 59	46 ... 51	51 ... 57	57 ... 59	69	111	20	89	80	80	80

Details and Accessories Metric - Brass Nickel-plated

Type	Thread size	Mass approx.		Diameter thru-hole [mm]	Flexible conduit [mm]			Nut torques [Nm] seal insert combinations				Delivery quantity
	TD	Component	Packaging unit	DT	FC1	FC2	FC3	SW1	SW2 S1+S2+S3	SW2 S1+S2	SW2 S1	
CG.CO.M16S.BN.C.16.K01	M16	64 g	86 g	16 ... 16.2	14	9.3	3.5	4	-	25	18	1
CG.CO.M16.BN.C.16.K01	M16	70 g	95 g	16 ... 16.2	22.2	15	4.5	4	20	18	16	1
CG.CO.M16.BN.C.16.K15	M16	70 g	1.16 kg	16 ... 16.2	22.2	15	4.5	4	20	18	16	15
CG.CO.M20.BN.C.16.K01	M20	88 g	112 g	20 ... 20.2	22.2	15	4.5	5.5	20	18	16	1
CG.CO.M20.BN.C.16.K15	M20	88 g	1.45 kg	20 ... 20.2	22.2	15	4.5	5.5	20	18	16	15
CG.CO.M25.BN.C.16.K01	M25	100 g	145 g	25 ... 25.2	27.5	20	4.5	6	25	22	18	1
CG.CO.M25.BN.C.16.K10	M25	100 g	1.1 kg	25 ... 25.2	27.5	20	4.5	6	25	22	18	10
CG.CO.M32.BN.C.16.K01	M32	126 g	170 g	32 ... 32.3	34.5	25.7	6	6	35	23	20	1
CG.CO.M32.BN.C.16.K10	M32	126 g	1.39 kg	32 ... 32.3	34.5	25.7	6	6	35	23	20	10
CG.CO.M40.BN.C.18.K01	M40	141 g	190 g	40 ... 40.3	43	34.2	6	15	56	50	45	1
CG.CO.M40.BN.C.18.K05	M40	141 g	780 g	40 ... 40.3	43	34.2	6	15	56	50	45	5
CG.CO.M50.BN.C.18.K01	M50	352 g	475 g	50 ... 50.3	49.5	39.2	6	18	57	55	52	1
CG.CO.M50.BN.C.18.K02	M50	352 g	770 g	50 ... 50.3	49.5	39.2	6	18	57	55	52	2
CG.CO.M63.BN.C.18.K01	M63	468 g	632 g	63 ... 63.3	62.5	50	6	25	190	155	140	1
CG.CO.M63.BN.C.18.K02	M63	468 g	1.03 kg	63 ... 63.3	62.5	50	6	25	190	155	140	2

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Type	Thread size	Mass approx.		Diameter thru-hole [mm]	Flexible conduit [mm]			Nut torques [Nm] seal insert combinations				Delivery quantity
	TD	Component	Packaging unit	DT	FC1	FC2	FC3	SW1	SW2 S1+S2+S3	SW2 S1+S2	SW2 S1	
CG.CO.M75.BN.C.20.K01	M75	885 g	1.19 kg	75 ... 75.3	75	61.6	6.5	30	185	175	150	1
CG.CO.M75.BN.C.20.K02	M75	885 g	1.95 g	75 ... 75.3	75	61.6	6.5	30	185	175	150	2

*Knn: scope of delivery see table technical data

Dimensions NPT - Brass Nickel-plated

Type	Thread size	Clamping range [mm] seal insert combinations				Dimensions [mm]						
	TD	D	S1+S2+S3	S1+S2	S1	H	L	TL	D2	SW1	SW2	SW3
CG.CO.NPT3/8.BN.C.16.*	NPT 3/8"	4 ... 12	4 ... 6	6 ... 9	9 ... 12	43	72	16	26.5	22	24	24
CG.CO.NPT1/2.BN.C.16.*	NPT 1/2"	4 ... 12	4 ... 6	6 ... 9	9 ... 12	39	68	16	26.5	24	24	24
CG.CO.NPT3/4.BN.C.16.*	NPT 3/4"	10 ... 18	10 ... 12	12 ... 14.5	14.5 ... 18	41.5	72.5	16	31.5	28	29	29
CG.CO.NPT1.BN.C.20.*	NPT 1"	14 ... 24	14 ... 17	17 ... 20	20 ... 24	46	86	20	39.8	35	36	36
CG.CO.NPT1-1/4.BN.C.20.*	NPT 1-1/4"	22 ... 32	22 ... 24	24 ... 27	27 ... 32	54	94	20	50	45	45	45
CG.CO.NPT1-1/2.BN.C.20.*	NPT 1-1/2"	26 ... 35	26 ... 28	28 ... 31	31 ... 35	59.5	100	20	61	55	52	52
CG.CO.NPT2.BN.C.20.*	NPT 2"	35 ... 45	35 ... 38	38 ... 41	41 ... 45	58.5	98.5	20	75	68	65	65

Details and Accessories NPT - Brass Nickel-plated

Type	Thread size	Mass approx.		Diameter thru-hole [mm]	Flexible conduit [mm]			Nut torques [Nm] seal insert combinations				Delivery quantity
	TD	Component	Packaging unit	DT	FC1	FC2	FC3	SW1	SW2 S1+S2+S3	SW2 S1+S2	SW2 S1	
CG.CO.NPT3/8.BN.C.16.K01	NPT 3/8"	48 g	58 g	17.2 ... 17.4	22.2	15	4.5	3	20	18	16	1
CG.CO.NPT3/8.BN.C.16.K15	NPT 3/8"	48 g	790 g	17.2 ... 17.4	22.2	15	4.5	3	20	18	16	15
CG.CO.NPT1/2.BN.C.16.K01	NPT 1/2"	90 g	108 g	21.4 ... 21.6	22.2	15	4.5	4	20	18	16	1
CG.CO.NPT1/2.BN.C.16.K15	NPT 1/2"	90 g	1.49 kg	21.4 ... 21.6	22.2	15	4.5	4	20	18	16	15
CG.CO.NPT3/4.BN.C.16.K01	NPT 3/4"	106 g	116 g	26.7 ... 26.9	27.5	20	4.5	5.5	25	22	18	1
CG.CO.NPT3/4.BN.C.16.K10	NPT 3/4"	106 g	1.17 kg	26.7 ... 26.9	27.5	20	4.5	5.5	25	22	18	10
CG.CO.NPT1.BN.C.20.K01	NPT 1"	127 g	137 g	33.5 ... 33.7	34.5	25.7	6	8	35	23	20	1
CG.CO.NPT1.BN.C.20.K10	NPT 1"	127 g	1.4 kg	33.5 ... 33.7	34.5	25.7	6	8	35	23	20	10

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Type	Thread size	Mass approx.		Diameter thru-hole [mm]	Flexible conduit [mm]			Nut torques [Nm] seal insert combinations				Delivery quantity
	TD	Component	Packaging unit	DT	FC1	FC2	FC3	SW1	SW2 S1+S2+S3	SW2 S1+S2	SW2 S1	
CG.CO.NPT1-1/4.BN.C.20.K01	NPT 1-1/4"	142 g	152 g	42.2 ... 42.4	43	34.2	6	9	56	50	45	1
CG.CO.NPT1-1/4.BN.C.20.K05	NPT 1-1/4"	142 g	780 g	42.2 ... 42.4	43	34.2	6	9	56	50	45	5
CG.CO.NPT1-1/2.BN.C.20.K01	NPT 1-1/2"	362 g	372 g	48.3 ... 48.5	49.5	39.2	6	10	57	55	52	1
CG.CO.NPT1-1/2.BN.C.20.K02	NPT 1-1/2"	362 g	800 g	48.3 ... 48.5	49.5	39.2	6	10	57	55	52	2
CG.CO.NPT2.BN.C.20.K01	NPT 2"	468 g	478 g	60.4 ... 60.7	62.5	50	6	16	190	155	140	1
CG.CO.NPT2.BN.C.20.K02	NPT 2"	436 g	1.03 kg	60.4 ... 60.7	62.5	50	6	16	190	155	140	2

*Knn: scope of delivery see table technical data

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