Cable Glands, Metal, for amored cables CG.AR.*

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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 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 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

Intended Use

The metal cable glands type CG.AR.* can be used indoor and outdoor in Zone 1, Zone 2, Zone 21 and Zone 22 hazardous areas. They are intended for use with armored cables providing a combined flameproof seal and environmental seal on the outer and inner sheath of the cable.

Typical armors which can be clamped are steel wire armor (SWA), steel wire braided (SWB), steel tape armor (STA), pliable wire armor (PWA) and aluminum wire armor (AWA).

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.

Please refer to below cable preparation drawing for details on dismantling and preparing steel wire armored, braided and tape shielded cables for installation.

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.

Prepare the cables as shown in the picture below.

Disassemble the gland body (10) including parts (7) ... (11) from the gland body basis (3) and push it onto the outer sheath of the cable.

Install the gland body basis (3) including parts (4) \dots (6) in the entry of the enclosure.

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

Push the cable without armor through armor cone (6) and inner seal insert (4) into the enclosure.

Push the dismantled armor onto the armor cone (6). Make sure it does not overlap the O-Ring (5).

Push the armor tightening ring (7) over the armor and tighten it by screwing the gland body (10) onto the gland body basis (3).

Ensure the outer cable sheath fits into the sealing insert (9). Clamp it by screwing the pressure nut (11) into the gland body (10).

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 quarantee 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 respected

Operation, Maintenance, Repair

Observe IEC/EN 60079-17 for maintenance and inspection

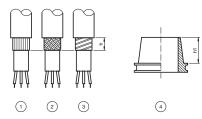
If there is a defect, always replace the device with an original device.

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.

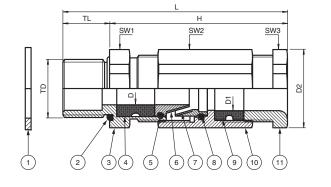
Preparation of Cable for Installation



Legend	
1	Steel wire armor
2	Braided shield
3	Metal tape shield
4	Armor cone (CG.BA)
h	Length of armor unsheathing = h1 + 2 mm max.
h1	Height of armor cone, see (6) in dimensions drawing

Dimensions and Assembly





Legend - d	etails and values see data table
1	Washer gasket (accessory)
2	O-Ring
3	Gland body basis
4	Inner seal insert for cable without armor
5	O-ring
6	Armor cone
7	Armor tightening ring
8	O-ring
9	Outer seal insert for cable including armor
10	Gland body
11	Pressure nut
D	Clamping range, cable diameter without armor at inner seal insert
	Clamping range, cable sheath diameter with armor
D1	at outer seal insert
D2	Width across corners
DT	Diameter thru-hole in enclosure
Н	Length outside enclosure
L	Total length
SW*	Width across flats
TD	Thread size
TL	Thread length

Type Code / Model Number

1	2	3	4	5	6	7
CG	**	***	**	*	**	K**
CG	AR	M20	SS	С	16	K01

Example: Cable gland metal, for armored cables, thread size M20, body stainless steel, chloroprene seals for -40 °C ... 80 °C, installation thread length 16 mm, one piece

1	Series
CG	cable glands
2	Type
AR	metal, for armored cables
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
С	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.AR* - see type code table									
Mechanical specification	s									
Dimensions and torques	see data table									
Cable type	armored cables									
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, UL Type 4X									
Mass	see datasheets									
Material										
Cable gland	brass nickel-plated or AISI 316 (1.4401) stainless steel									
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	chloroprene seal: -40 80 °C (-40 176 °F) silicone seal: -60 140 °C (-76 284 °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 co	nnection with hazardous areas									
EU-Type Examination Certificate	CESI 18 ATEX 033 X									
Marking	Ex db IIC Gb Ex eb IIC Gb Ex tb IIIC Db									
International approvals										
UL approval cULus	E490324 tested to UL 514B E490962 tested to UL 2225									
CSA approval	CSA 60079-7, CSA 60079-31									
IECEx approval	IECEx IMQ 14.0022X									
UKCA approval	CML 22 UKEX 1266X									
INMETRO approval	DNV 20.0028 X									
EAC approval	RU C-DE.AA87.B.00459/20									
CCoE approval	PESO A/P/HQ/KA/104/5575 (P418742)									
CCC approval	2021312313000346									
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

Туре	Thread size	Clamping r	ange [mm]		hickness im]				Dimen	N	UL .						
	TD	D	D1	min.	max.	Н	L	TL	D2	SW1	SW2	SW3	DT	SW1	SW2	SW3	approval
CG.AR.M16.*.*.16.*	M16	6 11	8 15	0.4	1.3	63.5	79.5	16	27	25	25	25	16 16.2	4	35	25	-
CG.AR.M20.*.*.16.*	M20	6 11	8 15	0.4	1.3	63.5	79.5	16	27	25	25	25	20 20.2	6	35	25	X
CG.AR.M20L.*.*.16.*	M20	10 15.5	13.5 21	0.4	1.3	66.5	82.5	16	33	30	30	30	20 20.2	6	45	35	X
CG.AR.M25S.*.*.16.*	M25	6 11	8 15	0.4	1.3	63.5	79	16	33	30	25	25	25 25.2	6	35	25	X
CG.AR.M25.*.*.16.*	M25	10 15.5	13.5 21	0.4	1.3	66	82	16	33	30	30	30	25 25.2	6	45	35	X
CG.AR.M25L.*.*.16.*	M25	13.5 20.5	18 27	0.4	1.6	82.5	98.5	16	44.5	40	40	40	25 25.2	6	55	30	X
CG.AR.M32.*.*.16.*	M32	13.5 21	18 27	0.4	1.6	82.5	98.5	16	44.5	40	40	40	32 32.3	6	55	30	X
CG.AR.M32L.*.*.16.*	M32	18 27	23 33	0.4	1.6	85	101	16	47	43	43	43	32 32.3	6	75	55	X
CG.AR.M40.*.*.16.*	M40	23 33	29 40	0.6	2	97	113	16	55.5	50	50	50	40 40.3	12	85	65	X
CG.AR.M50.*.*.16.*	M50	29 41	35 48	0.6	2.5	105.5	121.5	16	64	58	58	58	50 50.3	18	95	75	X
CG.AR.M63.*.*.20.*	M63	35 48	42 56	0.6	2.5	134	154	20	83	75	75	75	63 63.3	25	105	85	X

Туре	Thread size	Clamping r	ange [mm]		nickness m]				Dimen	N	UL .						
	TD	D	D1	min.	max.	Н	L	TL	D2	SW1	SW2	SW3	DT	SW1	SW2	SW3	approval
CG.AR.NPT3/8.*.*.16.*	NPT 3/8"	6 11	8 15	0.4	1.3	63.5	79.5	16	27	25	25	25	17.2 17.4	4	35	25	-
CG.AR.NPT1/2.*.*.21.*	NPT 1/2"	6 11	8 15	0.4	1.3	63.5	79.5	21	27	25	25	25	21.4 21.6	6	35	25	X
CG.AR.NPT1/2L.*.*.21.*	NPT 1/2"	10 15.5	13.5 21	0.4	1.3	66	87	21	33	30	30	30	21.4 21.6	6	45	35	X
CG.AR.NPT3/4S.*.*.21.*	NPT 3/4"	6 11	8 15	0.4	1.3	63.5	84.5	21	33	30	25	25	26.7 26.9	6	35	25	X
CG.AR.NPT3/4.*.*.21.*	NPT 3/4"	10 15.5	13.5 21	0.4	1.3	66	87	21	33	30	30	30	26.7 26.9	6	45	35	X
CG.AR.NPT3/4L.*.*.21.*	NPT 3/4"	13.5 20.5	18 27	0.4	1.6	82.5	103.5	21	44.5	40	40	40	26.7 26.9	6	55	30	Χ
CG.AR.NPT1.*.*.26.*	NPT 1"	13.5 21	18 27	0.4	1.6	82.5	108.5	26	44.5	40	40	40	33.5 33.7	6	55	30	X
CG.AR.NPT1L.*.*.26.*	NPT 1"	18 27	23 33	0.4	1.6	85	111	26	47	43	43	43	33.5 33.7	6	75	55	X
CG.AR.NPT1-1/4.*.*.28.*	NPT 1-1/4"	23 33	29 40	0.6	2	97	125	28	55.5	50	50	50	42.2 42.4	12	85	65	X
CG.AR.NPT1-1/2.*.*.28.*	NPT 1-1/2"	29 41	35 48	0.6	2.5	105.5	133.5	28	64	58	58	58	48.3 48.5	18	95	75	X
CG.AR.NPT2.*.*.28.*	NPT 2"	35 48	42 56	0.6	2.5	134	162	28	83	75	75	75	60.4 60.7	25	105	85	X