



INSTALLATION INSTRUCTIONS FOR CMP CABLE GLAND TYPES PX2K, PX2KW, PX2KX & PB VARIANTS

FOR TERMINATION OF CABLES WITH WIRE BRAID, TAPE ARMOUR (STA/DSTA), STRIP ARMOUR & SINGLE WIRE ARMOUR (SWA) (WITH LEAD INNER SHEATH ON PB VARIANTS). FOR USE IN HAZARDOUS LOCATIONS.

INCORPORATING EU DECLARATION OF CONFORMITY TO DIRECTIVE [2014/34/EU]



UL LISTED SHIPBOARD CABLE SEALING FITTING FOR USE IN HAZARDOUS LOCATIONS 46ZM

UL LISTED TYPE TC CABLE SEALING FITTING FOR USE IN HAZARDOUS LOCATIONS 5PO7

Number of turns to tighten	GLAND SIZE												
	20516	205	20	255	25	32	40	50S	50	63S	63	75S	75
	CABLE DIAMETER												
0.5	13.2	15.9	20.9	22.0	26.2	33.9							
1	12.5	15.3	20.0	21.2	25.4	32.9	40.4	46.7	52.8	59.2	65.9	72.1	78.5
1.5	11.9	14.7	19.0	20.4	24.6	31.9	39.0	45.4	51.4	57.7	64.6	70.6	77.2
2	11.2	14.2	18.1	19.6	23.8	30.8	37.6	44.1	50.0	56.2	63.4	69.2	75.9
2.5	10.5	13.6	17.2	18.8	23.0	29.8	36.2	42.9	48.7	54.7	62.1	67.7	74.6
3	9.8	13.0	16.2	18.0	22.2	28.8	34.8	41.6	47.3	53.2	60.9	66.3	73.3
3.5	9.2	12.4	15.3	17.2	21.4	27.8	33.5	40.3	45.9	51.6	59.6	64.8	71.9
4	8.5	11.8	14.4	16.4	20.6	26.8	32.1	39.0	44.5	50.1	58.4	63.4	70.6
4.5	7.8	11.2	13.4	15.6	19.8	25.7	30.7	37.8	43.2	48.6	57.1	61.9	69.3
5	7.1	10.7	12.5	14.8	19.0	24.7	29.3	36.5	41.8	47.1	55.9	60.5	68.0
5.5	6.5	10.1	12.0	14.0	18.2	23.7	27.9	35.2	40.4	45.6	54.6	59.0	66.7
6	5.8	9.5											

Cable Gland Size	Available Entry Threads (Alternate Metric Thread Lengths Available)					Number of Cores	Diameter Over Conductors	Cable Bedding Diameter	Overall Cable Diameter	Armour Range †				Across Flats	Across Corners	Protrusion Length	Combined Ordering Reference (*Brass Metric)			Shroud	Cable Gland Weight (Kgs)	
	Standard		Option							Grooved Cone (X)		Stepped Cone (W)					Size	Type	Ordering Suffix			
	Metric	Thread Length (Metric)	NPT	Thread Length (NPT)	NPT					Max	Max	Min	Max									Min
205/16	M20	15.0	1/2"	19.9	3/4"	21	11.7	11.7	6.1	13.1	0.3	1.0	0.8	1.25	30.5	33.6	62.0	20516	PX2K	1RA	PVC06	0.24
205	M20	15.0	1/2"	19.9	3/4"	21	11.7	11.7	9.5	15.9	0.3	1.0	0.8	1.25	30.5	33.6	62.0	205	PX2K	1RA	PVC06	0.23
20	M20	15.0	1/2"	19.9	3/4"	21	12.6	12.9	12.5	20.9	0.4	1.0	0.8	1.25	30.5	33.6	63.0	20	PX2K	1RA	PVC06	0.24
25S	M25	15.0	3/4"	20.2	1"	30	17.5	17.9	14.0	22.0	0.4	1.2	1.25	1.6	37.5	41.3	69.5	25S	PX2K	1RA	PVC09	0.37
25	M25	15.0	3/4"	20.2	1"	30	17.5	17.9	18.2	26.2	0.4	1.2	1.25	1.6	37.5	41.3	69.5	25	PX2K	1RA	PVC09	0.37
32	M32	15.0	1"	25.0	1 1/4"	38	23.6	23.9	23.7	33.9	0.4	1.2	1.6	2.0	46.0	50.6	75.0	32	PX2K	1RA	PVC11	0.57
40	M40	15.0	1 1/4"	25.6	1 1/2"	59	30.0	30.3	27.9	40.4	0.4	1.6	1.6	2.0	55.0	60.5	75.0	40	PX2K	1RA	PVC15	0.80
50S	M50	15.0	1 1/2"	26.1	2"	89	36.6	36.9	35.2	46.7	0.4	1.6	2.0	2.5	60.0	66.0	77.0	50S	PX2K	1RA	PVC18	0.90
50	M50	15.0	2"	26.9	2 1/2"	115	41.0	41.3	40.4	53.0	0.6	1.6	2.0	2.5	70.0	77.0	77.0	50	PX2K	1RA	PVC21	1.19
63S	M63	15.0	2"	26.9	2 1/2"	115	47.9	48.4	45.6	59.4	0.6	1.6	2.0	2.5	79.7	82.5	79.7	63S	PX2K	1RA	PVC23	1.39
63	M63	15.0	2 1/2"	39.9	3"	115	53.7	54.0	54.6	65.8	0.6	1.6	2.0	2.5	80.0	88.0	80.0	63	PX2K	1RA	PVC25	1.41
75S	M75	15.0	2 1/2"	39.9	3"	140	59.9	60.2	59.0	72.0	0.6	1.6	2.0	2.5	90.0	99.0	86.8	75S	PX2K	1RA	PVC28	2.09
75	M75	15.0	3"	41.5	3 1/2"	140	64.2	64.2	66.7	78.4	0.6	1.6	2.5	3.0	100.0	110.0	88.3	75	PX2K	1RA	PVC30	2.54
90	M90	24.0	3 1/2"	42.8	4"	140	75.3	75.6	76.2	90.3	0.8	1.6	3.15	4.0	115.0	126.5	102.1	90	PX2K	1RA	PVC32	3.71
100	M100	24.0	3 1/2"	42.8	4"	200	85.6	85.9	86.1	101.4	0.8	1.6	3.15	4.0	127.0	139.7	114.0	100	PX2K	1RA	LSF33	4.31

*Please note that the overall maximum cable bedding diameter for "PB" variants should be reduced by 1mm to allow for the inner lead sheath. Stepped cone is for single wire armour and grooved cone is for all other armours.
** Codes shown are for PX2K glands; for PX2KW or PX2KX add "W" or "X" respectively, e.g. 20PX2KW1RA, 20PX2KX1RA

F1400		
Certificate	Revision	Date
IFS	21	03/20
ATEX / IECEx	12	04/19
CSA / cCSAus	12	-
UL	12	03/20

TECHNICAL DATA

CABLE GLAND TYPE : PX
INGRESS PROTECTION : IP66, IP67, IP68
PROCESS CONTROL SYSTEM : ISO 9001
: ISO/IEC 80079-34:2011

EXPLOSIVE ATMOSPHERES CLASSIFICATION

ATEX CERTIFICATION No. : CML 18ATEX1325X, CML 18ATEX4317X
ATEX CERTIFICATION CODE : Ex II 2G I D, Ex db IIC Gb, Ex eb IIC Gb, Ex ta IIIC Da, Ex II 3G Ex nR IIC Gc, Ex II M2 Ex db I Mb, Ex eb I Mb
IECEx CERTIFICATION No. : IECEx CML 18.0182X
IECEx CERTIFICATION CODE : Ex db IIC Gb, Ex eb IIC Gb, Ex nR IIC Gc, Ex ta IIIC Da, Ex db I Mb, Ex eb I Mb
cCSAus CERTIFICATION No. : 2288626
: Class I Div 1 & 2, Groups A, B, C, D; Class II, Div 1, 2, Groups E, F, G; Class III, Div 1, 2; Class I Zone 1, NEMA 4X, Oil Resistant II AEx d IIC Gb, AEx e IIC Gb, Class I, Zone 2 AEx nR IIC Gc, Class I, Zone 20 AEx ta IIIC Da
cULus CERTIFICATION NO: : E201187, E161256 (Divisions)
UL CERTIFICATION CODE: : Class I Div 1 & 2 Groups A, B, C, and D; Class II Div 1 & 2 Groups F, and G; (Code details depends upon application, please see certificate)
UL CERTIFICATION NO: : E256367B (Zones)
UL CERTIFICATION CODE: : Class 1 Zone 1, AEx d IIAEx e II

INSTALLATION INSTRUCTIONS

- Installation should only be performed by a competent person using the correct tools. Read all instructions before beginning installation.
- The interface between a cable entry device and its associated enclosure / cable entry will require additional sealing to achieve ingress protection (IP) ratings higher than IP54. The minimum protection level is IP54 for explosive gas atmospheres and IP6X for explosive dust atmospheres. Parallel threads (and tapered threads when using a non-threaded entry) require a CMP sealing washer or integral O-ring face seal (where available) to maintain IP66, 67 and 68 (when applicable). It is the installer's responsibility to ensure the IP rating is maintained at the interface.
Note: When fitted to a threaded entry, all tapered threads will automatically provide an ingress protection rating of IP68.
- A CMP earth tag should be used when it is necessary to provide an earth bond connection. CMP earth tags have been independently tested to comply with Category B rating specified in IEC 62444 (there are no ratings stated in IEC 60079-0). Ratings are shown in the associated table. CMP earth tags slip over the cable gland or accessory entry thread from inside/outside the enclosure and must be secured with a locknut (if fitted internally).
- Metric entry threads comply with ISO 965-1 and ISO 965-3 with a 6g tolerance as required by IEC 60079-1:2014. The CMP standard metric thread pitch is 1.5mm for threads up to M75, and 2.0mm from M90 and above. Special thread pitches between 0.7 – 2.0mm are available on all products on request. See certificate for details of other thread types. NPT threads are in accordance with ASME B1.20.1-2013 gauging to CI 3.2 for external threads. For details of other thread types refer to IECEx certificate.
- Enclosures must be strong enough to support the cable and cable gland assembly. The enclosure surface finish must be smooth and flat to facilitate sealing with an O-ring or Entry Thread Sealing Washer for the required IP rating.
- Enclosure walls must be sufficiently strong enough to support the cable and cable gland assembly. Enclosure entries shall be perpendicular. Any draft angles from the casting/moulding process should have a perpendicular flat spot machined to facilitate sealing with an O-ring or Entry Thread Sealing Washer.
- CMP Products recommends that when using the cable gland with a through-hole, the hole must be circular, free of burrs and the diameter no larger than 0.7mm above the thread major diameter. A suitable CMP Products locknut shall be used to secure the product. See CMP Products catalogue for locknut options
- Cable glands do not have any serviceable parts and are therefore not intended to be repaired.

SPECIAL CONDITIONS FOR SAFE USE

- The glands when used for terminating braided cables are only suitable for fixed installations.
- Cables must be effectively clamped to prevent pulling or twisting. The PXB2K, PXB2KX and PXB2KW glands are to be protected from hydraulic fluids, oils, and greases when applied for Group I use.
- The PX range of cable glands with entry threads smaller than a M25 (or equivalent) size shall not be used for Group I, EPL Mb applications where there is a 'high' risk of mechanical damage.
- Connectors with metric entry threads are only suitable for Areas Classified in ZONES unless fitted with an approved Metric to NPT thread conversion adaptor.
- Installation must be according to CEC wiring method for the types of cables that can be used in Class I, Div. 1 and 2 and Class I, Zone 1 and 2 Classified Areas, according to 60079-14 installation wiring method restrictions.
- Installation must be according to US (NEC) wiring method for the types of cables that can be used in Class I, Div. 1 and 2 and Class I, Zone 1 and 2 Classified Areas, according to 60079-14 installation wiring method restrictions.
- Shipboard Cables are for use on Marine Platform and or shipboards only and are subject to local authorities having jurisdiction on the installation.
- Prior to commissioning or operation of electrical equipment in the presence of flammable materials, the sealing compound must be cured for 24 hours at a temperature of no less than 10°C (50F)
- For Metric and NPT threads, the installer shall follow guidance from the NEC or CEC to ensure that the enclosure entry meets the requirements for thread engagement.
- When the connector is supplied with metric entry threads, a CMP Entry Thread Washer should be fitted between the connector and the enclosure to prevent the ingress of moisture or dust into the enclosure. Thread tap must not be applied to the entry threads.
- Before installing the connector, ensure that the connector thread form and enclosure thread form are compatible.
- Class I, Div 1, Groups ABCD is only applicable to TC-ER-HL type cables

CMP Earth Tag Size	Short Circuit Ratings Symmetrical Fault Current (kA) for 1 second
20	3.06
25	4.06
32	5.40
40	7.20
50	10.40
63	10.40
75	10.40

Sealing ranges for UL Marking			
Size	Min	Max	
20516	7.0	13.4	
205	9.5	15.9	
20	13.0	20.9	
25	18.0	26.3	
32	23.9	33.9	
40	27.0	40.4	
50	35.0	46.7	
63	38.0	53.1	
63S	46.6	59.4	
63	55.6	65.9	
75S	58.0	72.1	
75	66.7	78.5	
90	76.2	90.4	
90	66.6	79.3	

ACCESSORIES

The following accessories are available from CMP Products, as optional extras, to assist with fixing, sealing and earthing :- Locknut, Earth Tag, Serrated Washer, Entry Thread (I.P.) Sealing Washer, Shroud

CMP Products Limited on its sole responsibility declares that the equipment referred to herein conforms to the requirements of the ATEX Directive 2014/34/EU and the following standards:- EN 60079-0: 2018; EN 60079-1: 2014; EN 60079-7: 2015; EN 60079-15: 2010+A1:2018; EN 60079-31: 2014; EN 62444: 2013; BS 6121: 1989

J. Hichens

Jonathan Hichens - Lead Certification Engineer - (Authorised Person)

CMP Products Limited, Cramlington, NE23 1WH, UK

17th March 2020

Notified body: CML B.V, Hoogoorddreef 15, Amsterdam, 1101 BA, The Netherlands

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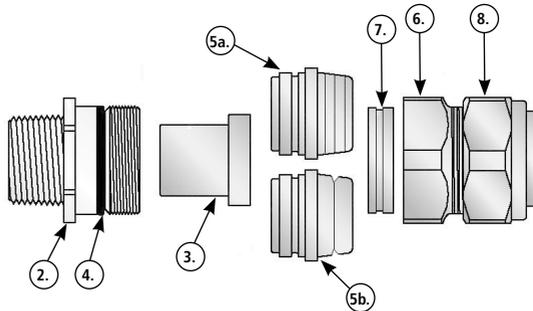
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INSTALLATION INSTRUCTIONS FOR CMP CABLE GLAND TYPES PX2K, PX2KW, & PX2KX

CABLE GLAND COMPONENTS - It is not necessary to dismantle the cable gland any further than illustrated below

- 1. Compound (not shown)
- 2. Entry Component
- 3. Compound Tube
- 4. "O" Ring
- 5a. Grooved Armour Cone (XYZ)
- 5b. Stepped Armour Cone (W)
- 6. Body
- 7. AnyWay Clamping Ring
- 8. Outer Seal Nut Assembly

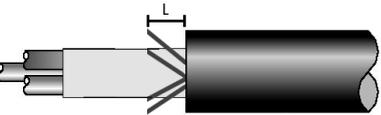


PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE BEGINNING THE INSTALLATION

1. The PX2K type cable gland is supplied as a Universal Kit with two armour cones, the grooved armour cone (5a) is suitable for Strip Armour, Tape Armour and Braided Cables, and the stepped cone (5b) is suitable for Wire Armour (SWA) cables. The PX2KX gland only has one cone (5a) and the PX2KW only has one cone (5b). (PB Variants have an earthing device for the lead sheath).

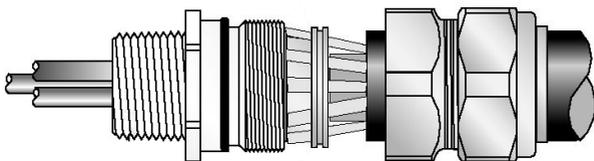
2. Separate the gland components by removing the body and outer seal nut assembly. Pass the body and outer seal nut assembly (6),(8), and the AnyWay clamping ring (7) over the cable, outer seal nut first.

3. Prepare the cable by stripping back the outer sheath and braid / armour to suit the equipment. Expose the braid or armour further so that it can be formed around the armour cone by cutting back the outer sheath by a length "L". This length varies slightly depending upon cable diameter, but typical values are shown below. The inner sheath should be long enough to just pass through the armour cone when installed. On lead sheathed cables, the lead sheath should be long enough to just pass through the armour cone when installed.



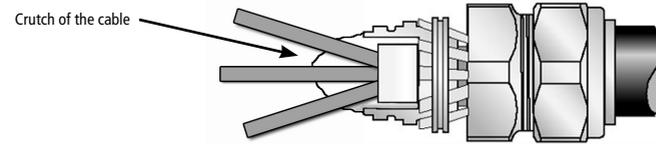
CABLE GLAND SIZE	20S/16, 20S, 20	25S, 25, 32, 40	50S, 50, 63S, 63	75S, 75, 90
CABLE STRIP LENGTH "L"	12 mm (0.472 inches)	15 mm (0.591 inches)	18 mm (0.709 inches)	20 mm (0.787 inches)

4. For direct make-off, fit the entry item to the equipment. Insert the armour cone (5a or 5b into the entry item (2) and pass the cable through them until the braid or armour contacts the cone and make sure that it is evenly spaced around it. Tighten the body (6) to lock the braid or armour and then slacken and remove the body again, withdrawing the cable with it. (On PB variants the earthing device automatically makes contact with the lead sheath).

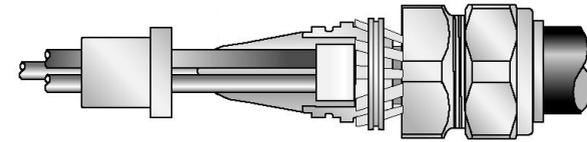


5. Remove any bedding or fillers from around the cable cores. If the cable cores have screens, these should be unravelled and then twisted together to form a single core. Wearing the protective gloves supplied, mix all of the two-part epoxy compound (1) until it is pliable and an even colour is achieved (minimum mixing temperature 10°C).

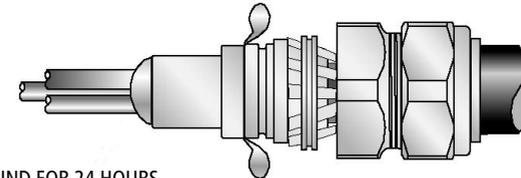
6. Separate the cores and apply the compound to the crutch of the cable for a distance of about 6mm and pack into place. If a drain wire is present then it should be sleeved using some heat shrink tubing which is pushed into the compound before shrinking with the application of some heat. If screens have been twisted together at stage 5, also be sleeved using heat shrink sleeving.



7. Bring the cores together again and pack more compound around them to a length and diameter sufficient to fill the compound tube (ensuring compound is packed between each of the cable cores) before ending in a taper.



8. Pass the compound tube (3) over the conductors until the stepped end is fully located with the armour cone (5). Pack more compound into place until the compound tube is fully filled



DO NOT DISTURB THE COMPOUND FOR 24 HOURS

9. Re-install the cable assembly into the entry item making sure that the compound is not disturbed and fully tighten the body (6) onto the entry item (2).

Only using finger pressure, tighten the outer seal nut assembly (8) until light resistance to tightening is met.

Then either use the outer seal tightening guide tape or table on the rear of the page to determine how much further to tighten the seal using a spanner (using the outer seal tightening guide is recommended).

Wrap the outer seal tightening guide tape around the cable to show the amount of spanner turns needed (as shown here). Make sure the correct side of the outer seal tightening guide tape is used depending on the cable gland size.

