SCAN FOR INSTALLATION VIDEOS

INSTALLATION INSTRUCTIONS FOR CMP CABLE GLAND TYPE TMC2X WITH EPOXY COMPOUND EP2122

CMP TYPE TMC2X CABLE GLAND FOR USE WITH INTERLOCKED & CORRUGATED CONTINUOUSLY WELDED METAL CLAD (TYPE MC OR MC-HL) OR TECK ARMORED (CANADA ONLY) AND ARMORED & JACKETED CABLES IN ORDINARY, WET & HAZARDOUS LOCATIONS.

INCORPORATING EU DECLARATION OF CONFORMITY TO DIRECTIVE 2014/34/EU AND UK STATUTORY REQUIREMENTS SI 2016 No. 1107 (AS AMENDED)

TECHNICAL DATA

CABLE GLAND TYPE : TMC2X
INGRESS PROTECTION : IP66, NEMA 4X
PROCESS CONTROL SYSTEM : ISO 9001
: ISO/IEC 80079-34:2011

EXPLOSIVE ATMOSPHERES CLASSIFICATION

ATEX CERTIFICATION No : CML 18ATEX1336X
ATEX CERTIFICATION CODE : Ⓔx II 2G 1D, Ex db IIC Gb, Ex eb IIC Gb, Ex ta IIIC Da
UKEX CERTIFICATION No : CML 21UKEX1263X
UKEX CERTIFICATION CODE : Ⓔx II 2G 1D, Ex db IIC Gb, Ex eb IIC Gb, Ex ta IIIC Da
IECEx CERTIFICATION No : IECEx CML 18.0193X
IECEx CERTIFICATION CODE : Ex db IIC Gb / Ex eb IIC Gb, Ex ta IIIC Da
c-CSA-us CERTIFICATION No : 2194053
c-CSA-us CERTIFICATION CODE : Class I Div 1 and 2 Groups A, B, C and D; Class II, Div 1 and 2 Groups E, F and G; Class III, Div 1 and 2; Encl Type 4X
: Ex d IIC; Ex e II: Class I, Zone 1, AEx d IIC; AExe II; AEx ta IIC
cULus CERTIFICATION NO : E161256
cULus CERTIFICATION CODE : Class I Div 1 & 2 Groups A, B, C, and D; Class II Div 1 & 2 Groups E, F, and G; Class III; Enclosure type 4X
Class 1 Zone 1, AEx d II AEx e II

INSTALLATION INSTRUCTIONS

Installation should only be performed by a competent person using the correct tools. Read all instructions before beginning installation.

INSTALLATION GUIDANCE NOTES

1. In accordance with NEC requirements, glands with NPT and Metric entry threads are suitable for Divisions.
2. In accordance with CEC requirements, glands with NPT threads are suitable for both Divisions and Zones. Glands with Metric threads are only suitable for Zones fitted with an approved Metric to NPT thread conversion adaptor.
3. For IEC and/or ATEX installations:
   - All tapes/shields/foils must be removed and any twisted pairs/triples unwound to form individual conductors.
   - Drain Wires: Pass sleeving/heat shrink tube over the drain, making sure it is positioned within the resin Tube/Resin Dam area. If required, shrink the tube by applying heat, then treat the drain wire as a conductor.
4. For NEC Class 1 Div 1 and Zone 1 see article 501.15 of the NEC.
5. 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. 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 on TMC2X will automatically provide an ingress protection rating of IP66.
6. 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).
7. 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 Cl 3.2 for external threads. For details of other thread types refer to IECEx certificate.
8. 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.
9. 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.
10. 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.

SPECIFIC CONDITIONS FOR USE

1. The glands shall only be fitted to enclosures where the temperature, at the point of mounting, is below 85°C.
2. The cable shall be effectively clamped as close as possible to the gland.
3. When used for increased safety (Ex e) or dust protection by enclosure (Ex t) applications, the user shall provide a suitable interface seal between the gland and associated enclosure to maintain the appropriate level of ingress protection of IP54 for increased safety and IP6X for dust protection by enclosure.
4. The TMC2X cable glands comprise a flameproof labyrinth joint having length and gap dimensions which are other than those specified in IEC 60079-1 and are not intended to be repaired in service.
5. 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.
6. 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.
7. 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 (50°F)
8. For Metric threads, the installer shall follow guidance from the NEC or CEC to ensure that the enclosure entry meets the requirements for thread engagement.
9. When the connector is supplied with metric entry threads, a CMP Entry Thread seal should be fitted between the connector and the enclosure to prevent the ingress of moisture or dust into the enclosure. Thread tape must not be applied to the entry threads.
10. Before installing the connector, ensure that the connector thread form and enclosure thread form are compatible.

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

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 UK statutory requirements SI 2016 No. 1107 (as amended). This is shown in the following harmonised/designated standards;
EN 60079-0:2018, EN 60079-1:2014, EN 60079-7:2015 + A1:2018, EN 60079-31:2014, BS 6121:1989, EN 62444:2013

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17th March 2020

CE 2776
UK CA 2503

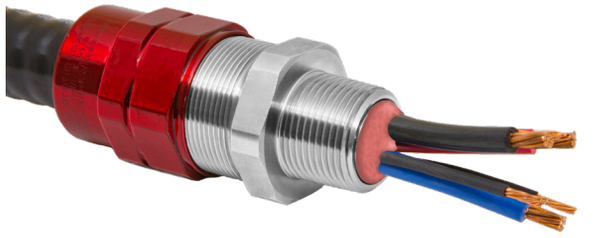
Notified Body: CML B.V., Koopvaardijweg 32, 4906CV Oosterhout, The Netherlands

Approved Body: Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ

UL approved glands in sizes 075 to 162 to be tightened to the values specified in the following table:

Number of turns	TMC2 UL Tightening Guide Gland Size 75	99	118	137	162	
3.50	19.1	25.1	-	-	-	CABLE DIAMETER, mm
4.00	18.4	24.4	-	-	41.1	
4.50	17.7	23.7	30.0	34.8	40.5	
5.00	16.9	23.0	29.2	34.1	39.9	
5.50	16.3	22.4	28.4	33.4	39.2	
6.00	15.6	21.7	27.5	32.8	38.6	
6.50	14.9	21.0	26.7	32.1	38.0	
7.00	14.1	20.3	25.9	31.4	37.4	
7.50	13.4	19.6	25.0	30.7	36.8	
8.00	12.7	18.9	24.2	30.0	36.1	
8.50	-	18.2	23.4	29.3	35.5	
9.00	-	17.5	22.5	28.6	34.9	
9.25	-	-	22.1	28.3	34.6	
9.50	-	-	-	28.0	34.3	
10.00	-	-	-	27.3	33.6	
10.50	-	-	-	26.6	33.0	
11.00	-	-	-	25.9	-	

Number of turns	TMC2 UL Tightening Guide Gland Size 75	99	118	137	162	
3.50	0.75	0.99	-	-	-	CABLE DIAMETER, inches
4.00	0.72	0.96	-	-	1.62	
4.50	0.70	0.93	1.18	1.37	1.59	
5.00	0.67	0.91	1.15	1.34	1.57	
5.50	0.64	0.88	1.12	1.31	1.54	
6.00	0.61	0.85	1.08	1.29	1.52	
6.50	0.59	0.83	1.05	1.26	1.50	
7.00	0.56	0.80	1.02	1.24	1.47	
7.50	0.53	0.77	0.98	1.21	1.45	
8.00	0.50	0.74	0.95	1.18	1.42	
8.50	-	0.72	0.92	1.15	1.40	
9.00	-	0.69	0.89	1.13	1.37	
9.25	-	-	0.87	1.11	1.36	
9.50	-	-	-	1.10	1.35	
10.00	-	-	-	1.07	1.32	
10.50	-	-	-	1.05	1.30	
11.00	-	-	-	1.02	-	



TYPE MC CABLE FITTING FOR USE IN HAZARDOUS LOCATIONS 5P07
Gland sizes up to and including size 162 only are UL Listed

TMC2X - Corrugated & Interlocked Metal Clad Armor (MC) or TECK90 (Canada Only), Continuously Welded Metal Clad Armor (MCHL), ACIC-HL, ACWU90-HL, RC90-HL, RA90-HL

Cable Gland Selection Table

Order Reference (NPT) Aluminium	Nickel Plated Brass	Stainless Steel	Brass	Entry Thread NPT	NPT Option	Minimum Thread Length	Cable Armour Diameter Armour Stop In Min	Armour Stop In Max	Armour Stop Out Min	Armour Stop Out Max	Cable Jacket Diameter Min	Cable Jacket Diameter Max	Max Over Conductors	Across Flats Max	Across Corners Max	Nominal Assembly Length	Shroud	Approx Weight Aluminium (oz)
TMC2X-050A075	TMC2X-050NB075	TMC2X-050SS075	TMC2X-050B075	½"	-	0.78	0.42	0.55	0.55	0.63	0.500	0.750	0.51	1.20	1.32	2.44	PVC06	2.29
TMC2X-075A075	TMC2X-075NB075	TMC2X-075SS075	TMC2X-075B075	-	¾"	0.80	0.42	0.55	0.55	0.63			0.51				PVC09	
TMC2X-050A099	TMC2X-050NB099	TMC2X-050SS099	TMC2X-050B099	½"	-	0.78	0.60	0.65	0.65	0.89	0.690	0.990	0.51	1.48	1.63	2.96	PVC09	3.00
TMC2X-075A099	TMC2X-075NB099	TMC2X-075SS099	TMC2X-075B099	-	¾"	0.80	0.60	0.78	0.78	0.89			0.71					
TMC2X-075A118	TMC2X-075NB118	TMC2X-075SS118	TMC2X-075B118	¾"	-	0.80	0.79	0.86	0.86	1.10	0.870	1.180	0.71	1.81	1.99	3.15	PVC11	5.11
TMC2X-100A118	TMC2X-100NB118	TMC2X-100SS118	TMC2X-100B118	-	1"	0.98	0.79	0.98	0.98	1.10			0.94					
TMC2X-100A137	TMC2X-100NB137	TMC2X-100SS137	TMC2X-100B137	1"	-	0.98	0.94	1.08	1.08	1.28	1.020	1.370	0.94	2.05	2.26	3.55	PVC15	6.70
TMC2X-125A137	TMC2X-125NB137	TMC2X-125SS137	TMC2X-125B137	-	1 ¼"	1.01	0.94	1.18	1.18	1.28			1.20					
TMC2X-125A162	TMC2X-125NB162	TMC2X-125SS162	TMC2X-125B162	1 ¼"	-	1.01	1.22	1.35	1.35	1.50	1.300	1.620	1.20	2.36	2.60	3.59	PVC18	8.82
TMC2X-150A162	TMC2X-150NB162	TMC2X-150SS162	TMC2X-150B162	-	1 ½"	1.03	1.22	1.42	1.42	1.50			1.46					
TMC2X-125A190	TMC2X-125NB190	TMC2X-125SS190	TMC2X-125B190	1 ¼"	-	1.01	-	-	1.51	1.72	1.570	1.900	1.20	2.56	2.82	3.59	PVC37	9.45
TMC2X-150A190	TMC2X-150NB190	TMC2X-150SS190	TMC2X-150B190	-	1 ½"	1.03	-	-	1.51	1.72			1.46					
TMC2X-150A200	TMC2X-150NB200	TMC2X-150SS200	TMC2X-150B200	1 ½"	-	1.03	1.57	1.70	1.70	1.88	1.650	2.000	1.46	2.75	3.03	3.76	PVC21	11.06
TMC2X-200A200	TMC2X-200NB200	TMC2X-200SS200	TMC2X-200B200	-	2"	1.06	1.57	1.70	1.70	1.88			1.63					
TMC2X-150A233	TMC2X-150NB233	TMC2X-150SS233	TMC2X-150B233	-	1 ½"	1.03	-	-	1.81	2.21	1.910	2.330	1.46	2.95	3.25	3.97	PVC23	12.77
TMC2X-200A233	TMC2X-200NB233	TMC2X-200SS233	TMC2X-200B233	2"	-	1.06	-	-	1.81	2.21			1.90					
TMC2X-250A233	TMC2X-250NB233	TMC2X-250SS233	TMC2X-250B233	-	2 ½"	1.57	-	-	1.81	2.21			2.13	3.54	3.89		PVC28	
TMC2X-200A272	TMC2X-200NB272	TMC2X-200SS272	TMC2X-200B272	-	2"	1.06	2.14	2.46	2.17	2.61	2.270	2.720	1.90	3.54	3.89	4.10	PVC28	24.69
TMC2X-250A272	TMC2X-250NB272	TMC2X-250SS272	TMC2X-250B272	2 ½"	-	1.57	2.14	2.46	2.46	2.61			2.13					
TMC2X-300A272	TMC2X-300NB272	TMC2X-300SS272	TMC2X-300B272	-	3"	1.63	2.14	2.46	2.46	2.61			2.55	4.33	4.76		PVC31	
TMC2X-300A325	TMC2X-300NB325	TMC2X-300SS325	TMC2X-300B325	3"	-	1.63	2.49	2.78	2.78	2.97	2.620	3.250	2.98	4.33	4.76	4.67	PVC31	42.68
TMC2X-350A325	TMC2X-350NB325	TMC2X-350SS325	TMC2X-350B325	-	3 ½"	1.69	2.49	2.78	2.78	2.97			2.98					
TMC2X-350A376	TMC2X-350NB376	TMC2X-350SS376	TMC2X-350B376	3 ½"	-	1.69	2.95	3.45	3.45	3.54	3.160	3.760	3.38	4.84	5.32	4.95	LSF33	53.44
TMC2X-400A376	TMC2X-400NB376	TMC2X-400SS376	TMC2X-400B376	-	4"	1.73	2.95	3.45	3.45	3.54			3.38					
TMC2X-400A425	TMC2X-400NB425	TMC2X-400SS425	TMC2X-400B425	4"	-	1.73	-	-	3.56	3.94	3.700	4.250	3.38	5.23	5.75	5.16	LSF34	59.19

*Note: *order code example: TMC2X-050A075 - 'TMC2X' (Gland Type) - '050' (1/2" NPT Thread) - 'A' (Material Aluminium) - '075" (Max Cable Diameter 0.75")*
Dimensions are displayed in inches unless otherwise stated

FI466		
Certificate	Revision	Date
UKEX	0	04/21
IFS	13	01/23
ATEX / IECEx	7	10/20
CSA	5	12/18
UL	1	11/20

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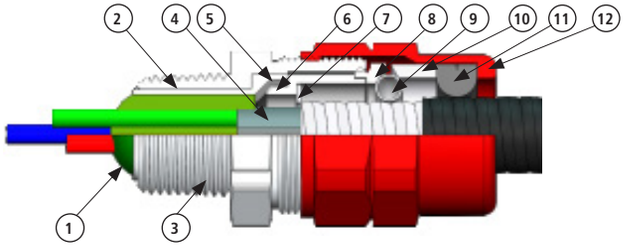
INSTALLATION INSTRUCTIONS FOR CMP TMC2X

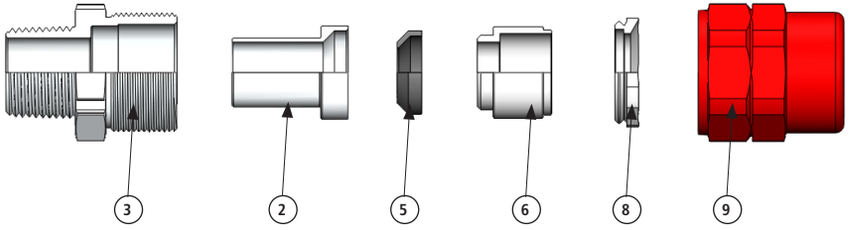
CABLE GLAND COMPONENTS

1. Compound
2. Compound Tube
3. Entry Item
4. Sealant Tape or Inner Jacket
5. Resin Dam (RapidEx Resin Only)
6. Tube Spacer
7. End Stop
8. Spacer Nut
9. Grounding Spring
10. Angled Spacer
11. Jacket Seal
12. Outer Nut



PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE BEGINNING THE INSTALLATION

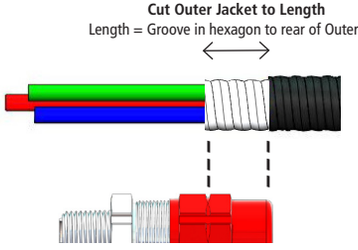
1. Disassemble the gland by unscrewing the entry item (3) from the rest of the gland and then unscrewing the spacer nut (8) from the entry component.



Remove and discard the resin dam (5).
(This part is only needed when the gland is used with the RapidEx resin system.)

2. In order to prepare the cable, strip back the jacket and armor to suit the equipment geometry removing all fillers, tapes and the inner jacket.

3. Using the armor measure guide, expose the armor further by stripping back the cable jacket.



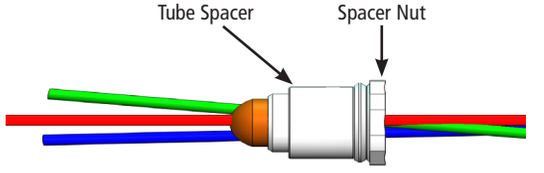
NOTE: When the outer jacket is at its maximum, cut distance may have to be increased by up to 10%.

4. Slide the outer nut assembly (9,10,11,12) down the cable. Pass the space nut (8) and tube spacer (6) with nylon end stop (7) over the conductors until the end stop engages the end of the cable armor. (If the nylon end stop will not pass over the conductors, then it should be discarded as it is not needed.)

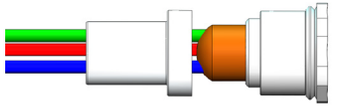
At this stage it should be possible to access the tube spacer nut (8). If this is not possible, trim the outer jacket further up to the "L" +10% until access is possible.

5.1 Wearing the protective gloves supplied, thoroughly mix the two-part compound until the colour is uniform.
(The compound should not be mixed or applied at temperatures below 50°F/10°C.)

Separate the cores of the conductor and pack the compound between and around the conductors as shown below:

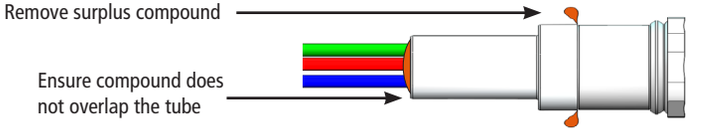


5.2 Bring the cores together again and pack more compound around them to a length and diameter sufficient to fill the compound tube, ending in a taper.



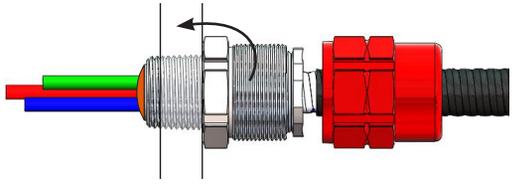
Note: For instrumentation cable utilising shielded cable or industrial / overall drain wires, see installation guidance notes on the back page.

6. Pass the compound tube (2) over the conductors until the stepped end is fully located with the tube spacer (6).
Pack more compound into place until the compound tube is fully filled.

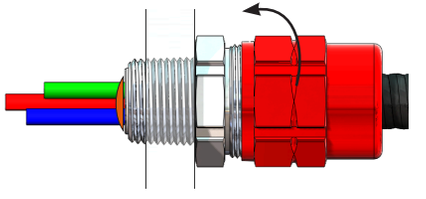


7. Reinstall the cable assembly into the Entry Item (3) and tighten the Spacer Nut (8), finger-tight. Leave for the compound to cure.

8. Once the compound has cured, loosen the Tube Spacer Nut from the Entry Component. Screw the Entry Component into the enclosure. Re-tighten the Tube Spacer Nut when the entry component is fully tightened into the enclosure.



9. Finally, holding the cable central in the gland, tighten the Outer Nut to compress the Grounding Spring to secure the armor and the seal to engage the cable jacket. Do not over tighten the Outer Nut. The Entry Component and Outer Nut do not have to close face-to-face.



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