

CR-*** Type Cable Glands featuring CROCLOCK® – ASSEMBLY INSTRUCTIONS CR-***型具有

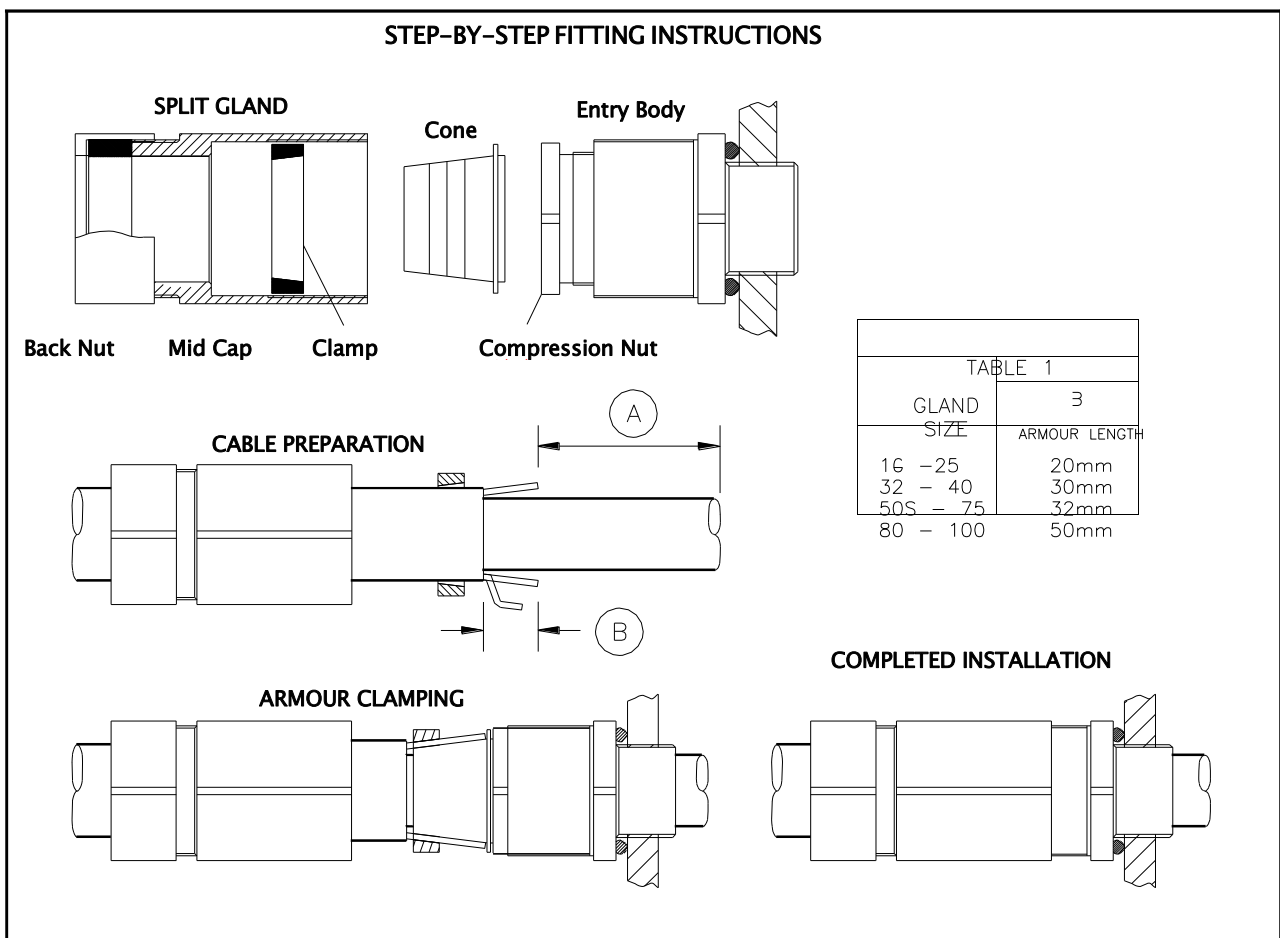
CROCLOCK 特性的电缆密封接头 装配说明

概要信息

Peppers 采用 Croclock -***型号电缆密封接头通用铠装夹环适用于在室外适当的危险区域使用圆形铠装、非铠装、编织和屏蔽电缆。它在内护套上提供位移密封件，以达到防护等级 IP66/67/68 (50 米, 7 天) 和防洪涌的效果。它还可以使铅包电缆保持电流持续性。该接头的铠装电缆可以制作适合 EMC 保护的终端。*** type cable gland featuring Croclock® universal armour clamping is for outdoor use in the appropriate Hazardous Areas with circular armoured, unarmoured, braided and screened cable. It provides a displacement seal on the inner sheath and gives environmental protection to IP66/67/68 (50 metres for 7 days) and Deluge. A variant giving electrical continuity to a lead sheath is available. A termination suitable for EMC protection can be made using armoured cables with this gland.

Warning 警告

请仔细阅读这些说明。除非在我们这里的数据表中有详细说明，或经 Peppers 书面确认，否则这些产品不应在其它应用中使用。Peppers 对未按照本说明书安装或使用产品所造成的任何损坏、伤害或其他间接损失概不负责。本说明书并非针对产品的选择提供建议。进一步的指导可在背页列出的标准或现行操作规程中找到。Please read these instructions carefully. These products should not be used in applications except as detailed here or in our datasheets, unless confirmed in writing by Peppers. Peppers take no responsibility for any damage, injury or other consequential loss caused where products are not installed or used according to these instructions. This leaflet is not intended to advise on the selection of product. Further guidance can be found in the standards listed overleaf or the prevailing code of practice.



STEP-BY-STEP FITTING INSTRUCTIONS

- 1 Split gland as shown 如图所示分体式接头
- 2 Fit Entry Body, allowing for any installation accessories, and fully engage the thread into the equipment. Hand-tighten, then suitably secure with a wrench. 安装入口主体，允许安装任何附件，并将螺纹完全啮合到设备中。用手拧紧，然后用扳手适当紧固。
- 3 Slide Rear Assembly (and shroud if required) onto cable as shown. 如图所示，将后部组件（和套管，如果需要）拉到电缆上。
- 4 **Prepare Cable 准备电缆**
 - A Strip outer jacket and armour length to suit installation. On CR-2**/CR-4** options (lead sheathed cable) the lead sheath must pass through the Continuity Washer when installation is complete (the Continuity Washer is fitted under the Compression Nut) 剥离外层护套和铠装直至适合安装。在 CR-2**/CR-4** 选项（铅包电缆）上，安装完成后，铅套必须穿过连续垫圈（连续垫圈安装在压紧螺母下）
 - B Expose armour. For approximate lengths see Table 1 column B. Where sheath sizes are near minimum, form armour to facilitate clamping as shown. 露出铠装层。近似长度见表 1 B 列。在护套尺寸接近最小值时，形成铠装层，以便于夹紧，如图所示
- 5 Slide the Clamp over the exposed armour. Ensure the Clamp is in the correct orientation. 将铠装环滑动到裸露的铠装层上，确保铠装环方向正确。
- 6 Slide Cone onto inner sheath and under armour. Slide Clamp onto exposed armour 将锥形体移到内护套和铠装层下，将铠装环移到裸露的铠装层上。
- 7 **For lead sheathed cable -** Unscrew the Compression Nut, remove the Continuity Washer and replace the Nut. **For all cables** Insert cable through Entry Body. Push cable forward to maintain armour contact. 对于铅护套电缆-拧下压紧螺母，拆下导电性垫圈并更换螺母。对于所有电缆，通过入口主体插入电缆。向前推动电缆以保持铠装层接触。
- 8 To clamp armour/braid onto Cone, hand-tighten Mid Cap to Entry Body. For cable with maximum diameter wire armour it may be

necessary to remove the internal skid washer (located under nut) first. Support the cable to prevent it from twisting then, using wrench, tighten a further 1 turn. Cable with maximum diameter wire armour may require an additional ½ to 1 turn. 将铠装层/编织层夹在锥形体上，用手将中部螺母拧紧到接口。对于有最大直径钢丝铠装的电缆，可能需要首先拆除内部垫圈（位于螺母下方）。支起电缆防止其扭曲，然后用扳手再拧紧一圈。具有最大直径钢丝铠装的电缆可能需要额外再拧二分之一到一圈。

- 9** Loosen off Mid Cap to visually check armour is securely locked. If armour has not clamped repeat the clamping process.

For lead sheathed cable - Replace Continuity Washer and Nut. Reinsert cable.

For all cables (If removed replace internal skid washer) Tighten Compression Nut so that seal makes full contact with cable sheath and then tighten the Compression Nut by the additional turns detailed in Table 2.

松开中部螺母，肉眼检查铠装层是否已经牢固锁定。如果铠装层没有夹紧，重复夹紧的过程。对于铅护套电缆—更换垫圈和螺母。重新插入电缆。对于所有电缆（如果已经拆下，则更换内部防滑垫圈），拧紧压紧螺母，使密封件与电缆护套完全接触，然后按表 2 中详细说明书的附加圈数拧紧压紧螺母。

- 10** Re-tighten Mid Cap by hand until tight. For cable with wire armour turn Mid Cap a further 1 turn with a wrench.

For cable with all other armour types turn Mid Cap a further ¼ turn with a wrench after hand tight. 用手重新拧紧中部螺母直到拧紧。对于带钢丝铠装的电缆，用扳手将中部螺母再转动 1 圈。对于所有其他铠装类型的电缆，用手拧紧后，用扳手将中部螺母再转动¼圈

- 11** Hold Mid Cap with wrench and tighten the Back Nut onto cable. Ensure the seal makes full contact with cable outer sheath and then tighten the back nut by the additional turns detailed in Table 2. If fitted, pull shroud over gland assembly. 用扳手握住中部螺母并将尾部螺母拧紧到电缆上。确保密封件与电缆外护套完全接触，然后按表 2 中详细说明书的附加圈数拧紧尾部螺母。如有必要，可以在格兰外加装护套。

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Table 2 - Installation Data, Cable Sizes and Armour Acceptance (mm)

Gland Size	Compression Nut Turns – Step 9	Back Nut Turns – Step 11	Inner Sheath		Outer Sheath		Reduced Bore		Armour Acceptance Ranges	
			Min	Max	Min	Max	Min	Max	Min	Max
16	1	1	3.4	8.4	8.4	13.5	6.7	10.3	0.15	1.25
16H	1	1	3.4	8.4	11.5	16.0	9.4	12.5	0.15	1.25
20S	1	1	7.2	11.7	11.5	16.0	9.4	12.5	0.15	1.25
20	1	1	9.4	14.0	15.5	21.1	12.0	17.6	0.15	1.25
25	1	1	13.5	20.0	20.3	27.4	16.8	23.9	0.15	1.6
32	1	2	19.5	26.3	26.7	34.0	23.2	30.5	0.15	2.0
40	1	1	23.0	32.2	33.0	40.6	28.6	36.2	0.2	2.0
50S	1	1	28.1	38.2	39.4	46.7	34.8	42.4	0.2	2.5
50H	1	2	28.1	38.2	45.7	53.2	41.1	48.5	0.2	2.5
50	1	2	33.1	44.1	45.7	53.2	41.1	48.5	0.3	2.5
63S	1	1	39.2	50.1	52.1	59.5	47.5	54.8	0.3	2.5
63H	1	1	39.2	50.1	58.4	65.8	53.8	61.2	0.3	2.5
63	1	1	46.7	56.0	58.4	65.8	53.8	61.2	0.3	2.5
75S	1 ¼	1	52.1	62.0	64.8	72.2	60.2	68.0	0.3	2.5
75H	1 ¼	1	52.1	62.0	71.1	78.0	66.5	73.4	0.3	2.5
75	1 ¼	1	58.0	68.0	71.1	78.0	66.5	73.4	0.3	2.5
80	1 ½	1	62.2	72.0	77.0	84.0	71.9	79.4	0.45	3.15
80H	1 ½	1	62.2	72.0	79.6	90.0	75.0	85.4	0.45	3.15
85	1 ½	1	69.0	78.0	79.6	90.0	75.0	85.4	0.45	3.15
90	1	3	74.0	84.0	88.0	96.0	82.0	91.4	0.45	3.15
90H	1	1	74.0	84.0	92.0	102.0	87.4	97.4	0.45	3.15
100	1	1	82.0	90.0	92.0	102.0	87.4	97.4	0.45	3.15

Approvals and Certification

Approval	Certificate Number	Protection Concept / Type
ATEX (2014/34/EU)	CML 19ATEX1348X	II 1D 2G Ex db IIC Gb / Ex eb IIC Gb / Ex ta IIIC Da
	CML 19ATEX4109X	II 3G Ex nR IIC Gc
IECEX	IECEX CML 19.0106X	Ex db IIC Gb / Ex eb IIC Gb / Ex nR IIC Gc / Ex ta IIIC Da
CCC	2021312313000409	Ex db IIC Gb / Ex eb IIC Gb / Ex nR IIC Gc / Ex ta IIIC Da IP66

Installation Guidance

Point	Advice
1	EN/IEC 60079-10 EN/IEC 60079-14
2	Installation should only be carried out by a competent electrician, skilled in cable gland installation. 只能由精通电缆接头安装的合格电工进行安装
3	Comprehensive details of the compliance standards can be found in the product certificates which are available for download from our website. 有关合规标准的全面详情, 请参阅产品证书, 该证书可从我们的网站下载
4	NO INSTALLATION SHOULD BE CARRIED OUT UNDER LIVE CONDITIONS. 不得在带电的条件下进行安装。
5	Threaded entries: the product can be installed directly into threaded entries. Threaded entries should comply with the relevant applicable standards and have a lead-in chamfer to allow for full engagement of the threads. Failure to provide a sufficient lead-in chamfer may lead to ingress sealing issues. For Ex db applications a minimum of 5 fully engaged parallel threads is required. Metric threads are supplied with an o-ring and will maintain IP66 and IP68. Other parallel entry threads will maintain an IP rating of IP64. A Peppers sealing washer should be used to maintain all IP ratings greater than IP64. Any thread sealant used should be non-hardening. Whilst Peppers products with tapered threads, when installed into a threaded entry, have been tested to maintain IP66 without any additional sealant, due to the differing gauging tolerances associated with the use of tapered threads it is recommended to use a non-hardening thread sealant if an IP rating higher than IP64 is required. 螺纹孔: 产品可以直接安装到螺纹孔中。螺纹孔应符合相关适用标准, 并具有引入倒角, 以允许螺纹完全啮合。未能提供足够的引入倒角可能导致入口密封有问题。对于 Ex db 应用, 至少需要使用 5 个完全啮合的平行螺纹。公制螺纹配有 o 形圈, 可保持 IP66 和 IP68。其他并行接头螺纹将保持 IP64 的 IP 等级。使用 Peppers 密封垫圈以保持所有 IP 额定值大于 IP64。使用的任何螺纹密封剂应为不可硬化型。虽然带锥形螺纹的 Peppers 产品在安装到接头螺纹时, 经测试证明无需任何额外的密封剂即可保持 IP66, 但由于锥形螺纹使用的计量公差不同, 如果要求 IP 等级高于 IP64, 建议使用不可硬化螺纹密封剂。
6	Clearance holes: these shall be 0.5mm (+/-0.2mm) larger than the nominal diameter of the external entry thread. The product should be secured with a Peppers locknut and the threads tightened to ensure the cable gland is secure. A Peppers sealing washer should be used to maintain IP ratings. A Peppers serrated washer should be used for additional installation protection. 光孔 (即非螺纹孔): 应大于外螺纹公称直径 0.5mm (+/-0.2mm)。产品应使用 Peppers 锁紧螺母固定, 并拧紧螺纹, 以确保电缆接头压盖牢固。应使用 Peppers 密封垫圈来保持 IP 额定值。应使用 Peppers 锯齿垫圈进行额外的安装保护。
7	To maintain the Ingress Protection rating of the product, the entry hole must be perpendicular to the surface of the enclosure. The surface should be sufficiently flat and rigid to support the assembly and make the IP joint. The product incorporates a thread run out according to general machining techniques and will not have a full form thread for the entire length and as such entry threads should have a suitable lead-in chamfer to ensure a seal is maintained. Further guidance can be found in Peppers document CT0012 which can be found on our website. It is the user's/installer's responsibility to ensure that the interface between the enclosure and cable gland is suitably sealed for the required application. 为保持产品的防护等级, 入口孔必须垂直于外壳表面。表面应足够平整和坚硬, 以支撑组件并形成 IP 接头。根据一般机械加工技术, 该产品包含一圈螺纹旋出, 整个长度上没有完整的螺纹, 因此入口螺纹应具有适当的引入倒角, 以确保保持密封。进一步的指导可以在我们的网站上的 Peppers 文件 CT0012 中找到。用户/安装人员有责任确保外壳和电缆密封套之间的接口适当密封, 以满足应用要求。
8	Where a bonding connection to earth is required a Peppers earth tag should be used. Peppers earth tags have been independently tested to comply with the Category B values given in IEC 62444. Further guidance can be found in Peppers document CT0017 which can be found on our website. Peppers earth tags should be fitted over the external entry thread from either inside or outside the enclosure. If fitted internally they must be secured with a Peppers locknut and optionally a Peppers serrated washer. 如果需要接地连接, 应使用 Peppers 接地垫片。Peppers 接地垫片经过独立测试, 符合 IEC 62444 中给出的 B 类值。进一步的指导可以在我们的网站上的 Peppers 文件 CT0017 中找到。Peppers 接地垫片应安装在外壳内外的外部入口螺纹上。如果安装在内部, 则必须用 Peppers 锁紧螺母和可选的 Peppers 锯齿垫圈固定。
9	Peppers external metric entry threads comply with ISO 965-1 and ISO 965-3 with a 6g tolerance fit. Peppers standard metric thread pitch is 1.5mm for threads up to M75 and 2.0mm for size M80 and above. Alternative thread pitches are available upon request. Peppers external NPT threads are in accordance with ASME B1.20.1 with gauging to clause 8.1. All threads comply with the threaded joint requirements of clause 5.3 from IEC 60079-1. Information on other thread types can be found in the product certificates. Peppers 公制外螺纹符合 ISO 965-1 和 ISO 965-3 标准, 公差为 6g。Peppers 标准公制螺纹螺距为 1.5mm (适用于 M75 以下的螺纹), 2.0mm (适用于 M80 及以上的螺纹)。可根据要求提供其他螺纹螺距。Peppers 外 NPT 螺纹符合 ASME B1.20.1 的要求, 并根据第 8.1 条进行计量。所有螺纹符合 IEC 60079-1 第 5.3 条的螺纹接头要求。其他螺纹类型的信息可以在产品证书中找到。
10	Once installed do not dismantle except for routine inspection. An inspection should be conducted as per IEC/EN 60079-17. After inspection the gland should be re-assembled as instructed, ensuring the compression nut, mid cap and back nut are correctly tightened to ensure the cable is secure. 安装后, 除例行检查外, 不得拆卸。应根据 IEC/EN 60079-17 执行检查。检查后, 应按照说明重新组装压盖, 确保压紧螺母、中部螺母和尾部螺母正确拧紧, 以确保电缆牢固安全。
11	If required an anti-seize lubricant may be used to aid assembly and routine inspection. The lubricant should comply with the prevailing code of practice and care should be taken to ensure no lubricant comes into contact with the cable gland seals as this may impair performance. 如果需要, 可以使用润滑剂来辅助装配和常规检查。润滑剂应符合现行操作规程, 并应注意确保润滑剂不会与电缆接头密封条接触, 因为这可能会影响性能。

Interpretation of Markings. 图式标签说明 Markings on the outside of this gland carry the following meanings 接头外示意图式标签代表如下:

Cable Gland Type & Size CR-a-b-R-ccc-ddd-nn 电缆接头类型和尺寸

a =	Seal Type 密封类型 1=氯丁橡胶 (黑色) 2=带连续性垫圈的氯丁橡胶	ccc =	Gland size 接头类型
b =	主要部件材料 B=黄铜 S=不锈钢	ddd =	接口螺纹尺寸类型
R =	可选减缩密封件 (红色硅胶)	nn =	Year of manufacture 制造年份

Specific Conditions of Use 具体使用条件

1. These glands must not be used in enclosures where the temperature at the point of contact is outside the range of -35°C to +90°C using neoprene seals, or -60°C to +180°C using silicone seals. 这些接头不得用于接触点温度超出氯丁橡胶密封-35°C至+90°C范围，或硅橡胶密封-60°C至+180°C范围的外壳中。
2. When the gland is used with increased safety and/or dust protected equipment, the entry thread shall be suitable sealed to maintain the ingress protection rating of the associated enclosure. 当接头与增强安全性和/或防尘设备一起使用时，接口螺纹应当密封，以保持相关外壳的入口防护等级。
3. If these cable glands only grip the cable sheath of the cable and do not clamp the cable armour or if they are used to terminate unarmoured, braided or screened cables, then they shall only be used for fixed installations, hence the cables shall be effectively clamped to prevent pulling or twisting. 如果这些电缆接头仅夹住电缆的电缆护套而没有夹住电缆铠装，或用于端接非铠装层、编织层或屏蔽电缆，则它们只能用于固定安装，因此应有效夹住电缆，以防止拉扯或扭曲。
4. These glands, when installed in accordance with the manufacturer's instructions and with an appropriate enclosure on which they are fixed, are capable of providing an ingress protection of IP66 and IP68 (50 metres - 7 days). 当按照制造商的说明安装这些接头并在其上安装适当的外壳时，这些接头能够提供 IP66 和 IP68 (50 米-7 天) 的进入保护。
5. The threaded entry component threads without interface o-ring seals installed in an explosive dust atmosphere, within threaded entries, shall only be fitted into enclosures that have either:
 - parallel entries that will ensure that a minimum of 5 full threads of contact will be maintained, this is in accordance with clause 5.1.2 of EN 60079-31:2014 / IEC 60079-31: 2013,
 - tapered entries that will ensure that a minimum of 3 ½ full threads of contact will be maintained, this is in accordance with clause 5.1.2 of EN 60079-31:2014 / IEC 60079-31: 2013安装在粉尘爆炸中的螺纹接口部件螺纹（无接口 o 形密封圈），螺纹入口内，应仅安装在具有以下任一特性的外壳中：

·平行引入线，确保至少保持 5 个螺纹完全、充分接触，这符合 EN 60079-31:2014/IEC 60079-31:2013 第 5.1.2 条的要求，

·锥形入口，确保至少保持 3½ 螺纹完全充分接触，这符合 EN 60079-31:2014/IEC 60079-31:2013 第 5.1.2 条的要求

