

## E\*U\*\*F\* / D\*U\*\*F Cable Glands for armoured cable – ASSEMBLY INSTRUCTIONS

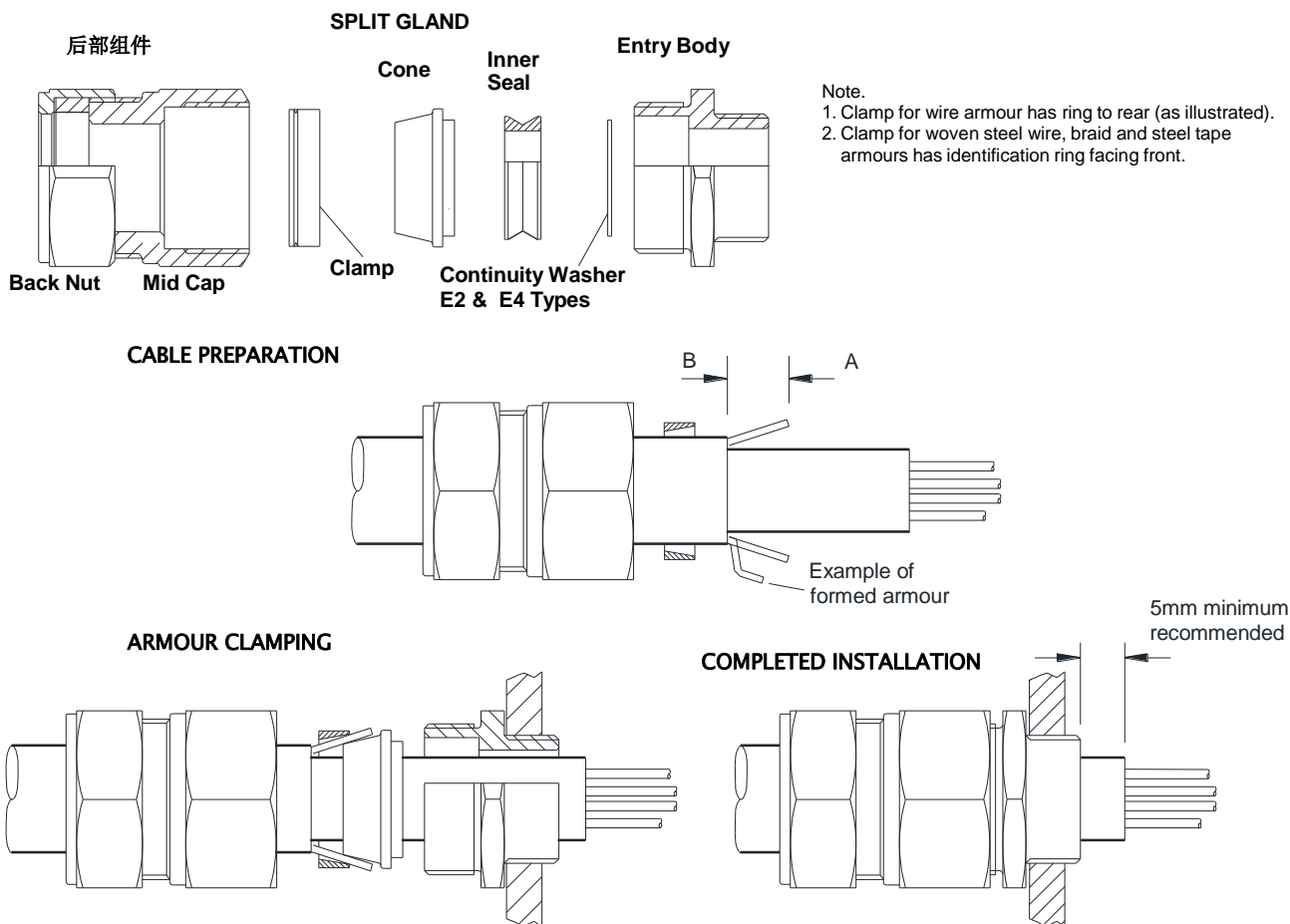
### 概要信息 Brief Description

Peppers E\*U\*\*F\*型电缆接头适用于户外适当的危险区域使用的铠装电缆。他们达到防护等级 IP66/67/68 (50 米 7 天) 的效果。IE 型选项在入口主体上有一个接地螺栓。D\*U\*\*F 型接头适用于室内使用，并提供相同的防护等级。该接头的铠装电缆可以制作适合 EMC 保护的终端。夹环选项允许钢丝铠装，编织和钢带铠装。它还可以使铅包电缆保持电流持续性。The Peppers E\*U\*\*F\* type cable gland is for outdoor use in the appropriate Hazardous Areas with armoured cable. They give environmental protection to IP66/67/68 (50 metres for 7 days). The type IE option has an earth stud on the entry body. D\*U\*\*F type glands are for indoor use and offer the same level of environmental protection. A termination suitable for EMC protection can be made using armoured cables with these glands. Clamp options allow wire armour, braid and steel tape armours. A variant giving electrical continuity to a lead sheath cable is available.

### 警告 Warning

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 (Note: No Back Nut & Outer Sheath Seal in D\*U\*\*F glands)



### 装配步骤分解 STEP-BY-STEP FITTING INSTRUCTIONS

- 1 如图所示分开接头 Split gland as shown.
- 2 拆下内密封件。必须将其移除，以有效夹紧铠装。E2 和 E4 类型：-拆下垫片。Remove the Inner Seal. This must be removed to effectively clamp armour. E2 & E4 types: - remove Continuity Washer.
- 3 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，然后用扳手适当加固。Fit Entry Body, allowing for any installation accessories, and fully engage the thread into the equipment. Hand-tighten, then suitably secure with a wrench.
- 4 如图所示，滑动后部组件（护套，如果需要）到接头上 Slide Rear Assembly (and shroud if required) onto cable as shown.
- 5 如图所示准备电缆 Prepare cable as shown in diagram.
  - A 剥离外护套和铠装，以适合安装。对于铅护套电缆，安装完成后，铅护套必须穿过垫片 when installation is complete. Strip the outer sheath and armour to suit the installation. For lead sheathed cable the lead sheath must pass through the Continuity Washer when installation is complete.
  - B 露出约 20mm 长的铠装，并将夹环滑动到露出的铠装上。将锥形体滑到内护套上，并在锥形体上铺开铠装。当护套尺寸接近最小值时，形成铠装以便于夹紧，如图所示。确保夹环方向正确。夹环的位置应使识别环远离锥形体。Expose armour approx. 20mm long and slide the Clamp over the exposed armour. Slide cone on to inner sheath and spread armour over the cone. Where sheath sizes are near minimum, form armour to facilitate clamping as shown. Ensure the Clamp is in the correct orientation for armour type. The clamp should be positioned so that the identification ring is away from the cone for wire armour and towards the cone for woven wire, braid or tape.
- 6 通过入口主体插入电缆。不要重新安装密封件或垫片。向前推动电缆以保持铠装接触。确保铠装与锥形体表面接触。Insert cable through Entry Body. Do not re-fit seal or continuity washer. Push cable forward to maintain armour contact. Ensure the armour is in contact with the face of the cone.
- 7 支起电缆以防其扭曲。用手将中部螺母拧紧到入口主体上，以锁定铠装。拧紧后，用扳手将中部螺母进一步拧紧 1 整圈。具有最大直径钢丝铠装的电缆可能需要额外再拧的 1/2 到 1 圈。Support the cable to prevent it from twisting. Hand tighten Mid Cap to Entry Body to lock onto armour. When tight, further tighten Mid Cap 1 full turn with wrench. Cable with maximum diameter wire armour may require an additional 1/2 to 1 turn.
- 8 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。Loosen off Mid Cap to visually check armour is securely locked. If armour has not clamped repeat the clamping process.
- 9 从入口主体拉出电缆。重新安装内部密封件（以及 E2 和 E4 型上的垫片）。将电缆重新插入密封件（和垫片，如已安装）和入口主体。对于铅护

套电缆，垫片必须与铅护套接触，并且必须在密封件的前面。Pull out cable from Entry Body. Re-fit the inner seal (and continuity washer on E2 & E4 Types). Re-insert cable through the seal, (and continuity washer if fitted) and Entry Body. For lead sheath cable the Continuity Washer must be in contact with the lead sheath & must be in front of the seal.

- 10 将中部螺母重新拧紧到入口主体上。确保密封件与电缆内护套完全接触，然后再将中部螺母如图一所示拧紧 1 圈 Re-tighten Mid Cap to the entry body. Ensure the seal makes full contact with cable inner sheath and then tighten the Mid Cap by the additional turns detailed in Table 1
- 11 用扳手固定中部螺母，并将尾部螺母拧紧到电缆上。确保密封件与电缆外套完全接触，然后按表 1 中详细说明了的附加圈数拧紧尾部螺母。如已安装，将护套拉到接头组件上。Hold Mid Cap with wrench and tighten 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 1. If fitted, pull shroud over gland assembly.
- 12 (E\*U\*IEF\*/D\*U\*IEF 选项) 对于整体式接地电缆接头，将接地电缆连接至接地螺栓上。(E\*U\*IEF\* / D\*U\*IEF options) For Integral Earth cable glands, connect the earth cable to the earth stud.

E\*U\*\*F\* / D\*U\*\*F Cable Glands for armoured cable – ASSEMBLY INSTRUCTIONS

Table 1 - Installation Data, Cable Sizes and Armour Acceptance (mm) Minimum stated ranges for Braid and Tape are for double layer braid and single layer tape.

Gland Size	Cable Sizes (mm), Armour Acceptance (mm) & Assembly Data										NOTE:- * Type 3 & 4 (silicone) seals only to 9.3 mm diameter	
	Mid Cap Turns – Step 10	Back Nut Turns – Step 11	Inner Sheath		Outer Sheath		Reduced Bore		Armour Acceptance Ranges			
			Min	Max	Min	Max	Min	Max	Wire	Braid & Tape		
16	1	1	3.5	8.4	8.4	13.5	4.9	10.0	0.8 – 1.25	0.2 – 0.8		
20S	1	1	8.0	11.7	11.5	16.0	9.4	12.5	0.8 – 1.25	0.2 – 0.8		
20	1	1	6.7*	14.0	15.5	21.1	12.0	17.6	0.8 – 1.25	0.2 – 0.8		
25	1	1	13.0	20.0	20.3	27.4	16.8	23.9	1.25 – 1.6	0.2 – 0.8		
32	1	2	19.0	26.3	26.7	34.0	23.2	30.5	1.6 – 2.0	0.3 – 1.2		
40	1	1	25.0	32.2	33.0	40.6	28.6	36.2	1.6 – 2.0	0.3 – 1.2		
50S	1	1	31.5	38.2	39.4	46.7	34.8	42.4	2.0 – 2.5	0.3 – 1.6		
50H	1	2	31.5	38.2	45.7	53.2	34.8	42.4	2.0 – 2.5	0.3 – 1.6		
50	1	2	36.5	44.1	45.7	53.2	41.1	48.5	2.0 – 2.5	0.3 – 1.6		
63S	1	1	42.5	50.1	52.1	59.5	47.5	54.8	2.0 – 2.5	0.3 – 1.6		
63H	1	1	42.5	50.1	58.4	65.8	47.5	54.8	2.0 – 2.5	0.3 – 1.6		
63	1	1	49.5	56.0	58.4	65.8	53.8	61.2	2.0 – 2.5	0.3 – 1.6		
75S	1 ¼	1	54.5	62.0	64.8	72.2	60.2	68.0	2.0 – 2.5	0.5 – 1.6		
75H	1 ¼	1	54.5	62.0	71.1	78.0	66.5	73.4	2.0 – 2.5	0.5 – 1.6		
75	1 ¼	1	60.5	68.0	71.1	78.0	66.5	73.4	2.0 – 2.5	0.5 – 1.6		
80	1 ¼	1	62.2	72.0	77.0	84.0	71.9	79.4	3.15 – 4.0	0.5 – 1.6		
80H	1 ¼	1	62.2	72.0	79.6	90.0	75.0	85.4	3.15 – 4.0	0.5 – 1.6		
85	1 ¼	1	69.0	78.0	79.6	90.0	75.0	85.4	3.15 – 4.0	0.5 – 1.6		
90	1	3	74.0	84.0	88.0	96.0	82.0	91.4	3.15 – 4.0	0.5 – 1.6		
90H	1	1	74.0	84.0	92.0	102.0	87.4	97.4	3.15 – 4.0	0.5 – 1.6		
100	1	1	82.0	90.0	92.0	102.0	87.4	97.4	3.15 – 4.0	0.5 – 1.6		

许可和证书 Approvals and Certification

许可 Approval	证书号码 Certificate Number	保护概念/类型 Protection Concept / Type
ATEX (2014/34/EU)	CML 19ATEX1106X	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 19.0031X	Ex db IIC Gb / Ex eb IIC Gb / Ex nR IIC Gc / Ex ta IIIC Da
CCC	2021312313000406	Ex db IIC Gb / Ex eb IIC Gb / Ex nR IIC Gc / Ex ta IIIC Da IP66

安装指引 Installation Guidance

要点	建议 Advice
1	EN/IEC 60079-10
2	EN/IEC 60079-14
3	只能由精通电缆密封套安装的合格电工进行安装。Installation should only be carried out by a competent electrician, skilled in cable gland installation.
4	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。Comprehensive details of the compliance standards can be found in the product certificates which
4	不得在带电的条件下进行安装。NO INSTALLATION SHOULD BE CARRIED OUT UNDER LIVE CONDITIONS.
5	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。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.
6	光孔：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。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 serrated washer should be used to maintain IP ratings. A Peppers serrated washer should be used for additional installation protection.
7	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。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
8	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。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.
9	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。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.
10	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。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.
11	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。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

图示标签说明。接头外示意图标签代表如下 Interpretation of Markings. Markings on the gland carry the following meanings:

电缆接头类型和尺寸 Cable Gland Type & Size E-a-b-c-IE-F-R-ddd-eee-nn

a =	封条类型 Seal Type 1 = Neoprene (black) 2 = Neoprene with Continuity washer 3 = Silicone (white) 4 = Silicone	R =	可选减缩密封件（红色硅胶）Optional reduced bore outer
b =	铠装夹环 Armour clamping U = Multi Clamping 多个夹环	ddd =	接头尺寸 Gland size
c =	主要部件材质 B = 黄铜 S = 不锈钢 Main component material B = brass S = stainless steel	eee =	螺纹孔类型和尺寸 Entry thread type and size
IE =	整体接地螺栓选项 Integral Earth stud option	nn =	制作年份 Year of manufacture

Specific Conditions of Use

- 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，或硅胶密封-60°C至+180°C范围的外壳中。These glands must not be used with enclosures where the temperature at the point of contact exceeds -35°C to +90°C using neoprene seals, or -60°C to +180°C using silicone seals.
- 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。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)
- 如果这些电缆接头仅夹住电缆的电缆护套，而不夹住电缆铠装，或用于端接非铠装、编织或屏蔽电缆，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。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.
- 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，应安装在具有以下任一特性的外壳中：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:

- 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 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,
- 锥形入口，确保至少保持 3 $\frac{1}{2}$  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 tapered entries that will ensure that a minimum of 3  $\frac{1}{2}$  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

