

**EC1-S\*F / EC1-S\*M Eclipse Compound-Filled Conduit Stopper Box – ASSEMBLY INSTRUCTIONS**

**概要信息 Brief Description**

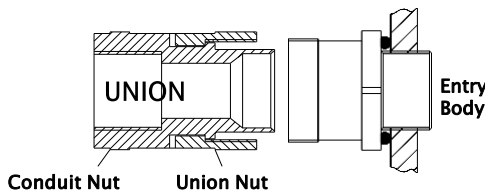
Peppers EC1-S\*F and EC1-S\*M 型穿线管胶泥填充式接头适用于户外适当危险区域，穿线管中带有导线，提供进入外壳的防爆屏障，并用作终止飞线或直接连接相关外壳的线路套管，它达到防护等级 IP66、IP68 (100 米 7 天)，IP69 和防洪水的效果。The Peppers EC1-S\*F and EC1-S\*M type Conduit Stopper Box is for outdoor use in the appropriate Hazardous Areas with conductors carried in conduit, providing a flameproof barrier entry into enclosures and as a line bushing for terminating flying leads or for the direct inter-connection of associated enclosures. It gives environmental protection to IP66, IP68 (100 metres for 7 days), IP69 and Deluge.

**警告 Warning**

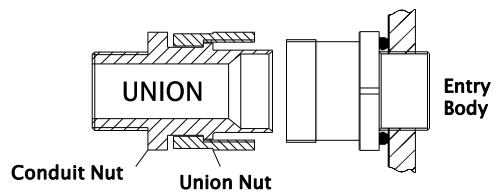
仔细阅读这些说明。除非在我们这里的数据表中有详细说明，或经 Peppers 书面确认，否则这些产品不应在其它应用中使用。Peppers 对未按照本说明书安装或使用产品所造成的任何损坏、伤害或其他间接损失概不负责。本说明书并非针对产品的选择提供建议。进一步的指导可在网页列出的标准或现行操作规程中找到。电缆接头中使用的胶泥有应用限制，可能会受到某些溶剂蒸汽的不利影响。如果电缆接头运行时可能存在此类蒸汽，则应采取必要的预防措施。Peppers 技术数据表可从我们的网站下载，以获得进一步指导。使用前，应将储存在原包装中的胶泥存放在温度为 5°C 和 21°C 的干燥区域中。Please read these 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 advice on the selection of product. Further guidance can be found in the standards listed overleaf or the prevailing code of practice. The compound used within this cable gland has application limitations and may be adversely affected by some solvent vapours. If such vapours are likely to be present when the cable gland is in service, necessary precautions should be taken. Peppers Technical Datasheet can be downloaded from our website for further guidance. Prior to use the compound should be stored in its original packaging in a dry area at temperatures between 5°C and 21°C.

**STEP-BY-STEP FITTING INSTRUCTIONS**

**SPLIT STOPPER BOX – EC1-S\*F Type**

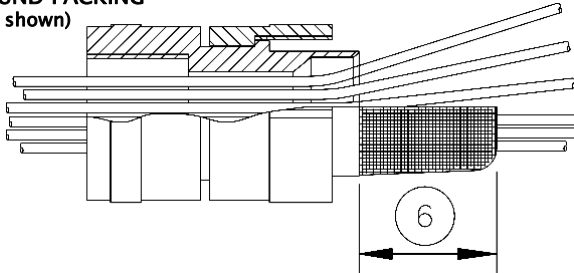


**SPLIT STOPPER BOX – EC1-S\*M Type**

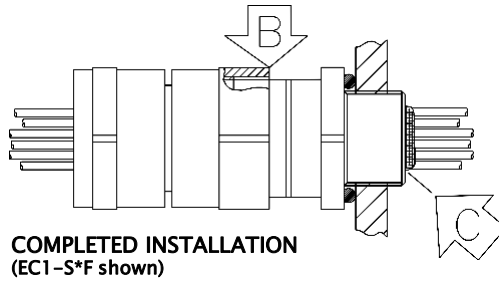
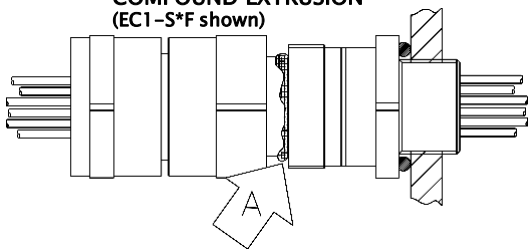


STOPPER BOX SIZE	COMPOUND LENGTH
20 – 25	40mm
32 – 40	45mm
50S – 75	50mm
80 – 100	60mm

**COMPOUND PACKING (EC1-S\*F shown)**



**COMPOUND EXTRUSION (EC1-S\*F shown)**



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

- 1 如图所示分开胶泥填充盒。警告。该电缆接头的入口主体涂有脱模剂，以确保固化后可以检查胶泥形式。入口主体不应使用任何润滑剂处理或暴露于任何溶剂中。不得损坏入口主体的内孔。正常安装过程中的任何操作都不会影响脱模剂的功能。Split Stopper Box as shown. Warning. The entry body of this cable gland is coated with a releasing agent to ensure the compound form can be inspected after curing. The entry body should not be treated with any lubricant or be exposed to any solvents. The internal bore of the entry body must not be damaged. Any handling during the course of normal installation will not affect the operation of the releasing agent.
- 2 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。有关 O 形圈的入口主体安装扭矩，请参考表 2。锥形螺纹应采用扳手拧紧。有关进一步的密封和扭矩信息，请访问我们的网站。Fit Entry Body, allowing for any installation accessories, and fully engage the thread into the equipment. For Entry Body installation torque for O-rings please refer to Table 2. Tapered threads shall be made up wrench tight. For further sealing and torque information please refer to our website.
- 3 对于 EC1-S\*F 接头，在穿线管螺纹上涂抹适当的密封/密封胶，以保持进入保护。将接头拧到穿线管上。对于 EC1-S\*F 和 EC1-S\*M 接头-准备导线以适合安装并穿过短接组件。For EC1-S\*F glands apply suitable seal / sealant to conduit threads to maintain ingress protection. Screw Union onto conduit. For both EC1-S\*F and EC1-S\*M glands - prepare the conductors to suit the installation and pass through the union assembly.

**健康和安警告胶泥中使用的树脂会引起眼睛和皮肤刺激。为保护您的人身安全，请在接触胶泥时戴上提供的手套。全面的安全数据表可从我们的网站下载。**

**HEALTH AND SAFETY WARNING** The compound can cause eye and skin irritation. For your personal protection, wear the gloves supplied whilst in contact

- 4 检查胶泥未超过其“使用日期”。它在 16-27°C (60-80°F) 时的工作寿命约为 30 分钟，在这段时间内，它可以被加工和整形，然后才开始固化。完全固化需要保持 16-27°C (60-80°F) 24 小时。温度越低，固化时间越长。例如，在 3°C (37°F) 完全固化大约需要 7 天。建议混合油灰，并在 20°C (68°F) 时装配填充。最低混合/包装温度为 10°C。最低固化温度为 3°C。Check compound has not passed its "Use By" date. It has a work life of about 30 minutes at 16-27°C (60-80°F), during which time it can be worked and shaped before it begins to cure. Full cure takes 24 hours at 16-27°C (60-80°F). Lower temperatures will give a longer cure time. E.g. at 3°C (37°F) full cure takes about seven days. It is recommended to mix the putty and pack the fitting at 20°C (68°F). Minimum mixing/packing temperature is 10°C. Minimum curing temperature is 3°C.
- 5 胶泥棒末端修剪任何硬化的部分。通过滚动、折叠和粉碎混合胶泥。把胶泥棒切成两半以便于混合。完全混合的胶泥呈均匀的黄色并且无条纹。正确的胶泥见图 1。Trim any hardened pieces from ends of stick. Mix the compound by rolling, folding and breaking. Ease mixing by cutting large sticks in half. Fully mixed compound has a uniform yellow colour with no streaks See Figure 1 for correctly mixed compound.
- 6 支起穿线管和短接组件。从中间开始，在芯线之间包上少量的卷出的化合物。每个芯线的所有间隙都要填满。用绳索或胶带捆扎芯线（见图 2），以防干扰。用绳索或胶带捆扎芯线（见图 2），以防干扰。将胶泥包裹在芯线束外侧，然后将胶泥和芯线放入短接杯中。确保杯子完全装满。在芯线束外侧裹上胶泥，略微变细，胶泥长度近似值如图和表 1 第 6 列所示。如果电缆有大量芯线，应确保将其捆扎在接头螺纹孔附近。Support the conduit/union assembly. Starting at the middle, pack small amounts of rolled-out compound between the cores. Work outwards until all gaps are filled. Bundle the cores with cord or tape (see figure 2) so they are not disturbed. Wrap compound around the outside of the core bundle, then locate the compound & cores into the Union cup. Ensure that the cup is completely filled. Build up compound around the outside of the cores, with a slight taper and to approximate compound length shown in diagram and Table 1 column 6. Where cable has large quantity of cores ensure they are bundled near to the gland entry thread.

- 7 将芯线穿过并将胶泥推入入口主体，直到与短接杯接合。去除箭头 A 处挤出的胶泥。将短接螺母拧 7 个整圈到入口主体上（箭头 B）。Pass cores through & push compound into Entry Body until Union cup engages. Remove squeezed out compound at arrow A. Screw Union Nut 7 full turns onto Entry Body (arrow B).
- 8 清除入口主体上多余的胶泥，以便固化后取出（箭头 C）。芯线可能在 1 小时后受到干扰。21°C 时固化时间为 4 个小时。Clean off excess compound from Entry Body to allow withdrawal when cured (arrow C). Cores may be disturbed after 1 hour. Leave to cure for at least 4 hours when working at 21° C.
- 9 松开并回拉接口进行检查，拧下短接螺母。用扳手前后转动短接螺母，同时将后部组件从入口主体上拉开。这将从入口主体中释放胶泥。不要过度旋转，否则会损坏电缆导管。拉出短接螺母和胶泥进行检查。胶泥应如图 3 所示，没有间隙、孔或裂缝。To release and pull back the joint for inspection, unscrew Union Nut. Using a wrench on the Conduit Nut, rotate back and forth whilst pulling the rear assembly away from the entry body. This will release the compound from the entry body. Do not over rotate as this may damage cable conductors. Pull the Conduit Nut and compound out for inspection. The compound should appear as in Figure 3 with no gaps, holes or cracks.
- 10 在 EC1-S\*F 接头安装上重新制作接口，请握住穿线管螺母并用手拧紧短接螺母。然后参考下表，用扳手拧紧到给定的量。在 EC1-S\*M 接头安装上重新制作接口，请将短接螺母拧入第二个外壳/设备。用手拧紧，然后用扳手适当固定。握住穿线管螺母并用手拧紧短接螺母。然后参考下表 2，用扳手拧紧到给定的量 To re-make the joint on an EC1-S\*F gland installation hold Conduit Nut and hand-tighten Union Nut. Then refer to table below and tighten using wrench to the given amount. To re-make the joint on an EC1-S\*M gland installation screw the Union Nut into 2<sup>nd</sup> enclosure/equipment. Hand-tighten, then suitably secure with a wrench. Hold Conduit Nut and hand-tighten Union Nut. Then refer to Table 2 below and tighten using wrench to the given amount.
- 11 当在 21° C 作业时，在胶泥固化至少 4 小时之前，不得对设备进行通电。请参阅图表“通电时间与温度”以获取更多指导。The equipment should not be energised until the compound has been left to cure for at least 4 hours when working at 21° C. See chart 'Energising Time vs. Temperature' for further guidance.

EC1-S\*F / EC1-S\*M Eclipse Compound-Filled Conduit Stopper Box – ASSEMBLY INSTRUCTIONS

Figure 1



Figure 2

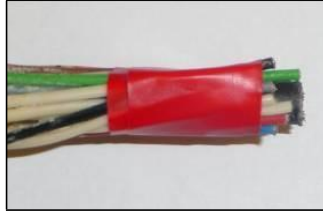
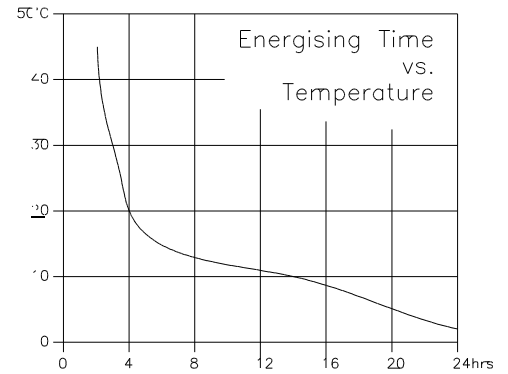


Figure 3



Table 2. Tightening information (Instruction 10), and permitted cores

Stopper Box Size	Entry Body Tightening Torque Point 2	Tighten Union Nut using wrench up to	Maximum Cable Size	Max Diameter Over Cores	Max No. of Cores
16S	5Nm	½-turn	10.0	8.9	12
20	5Nm	½-turn	14.0	12.5	40
25	5Nm	½-turn	18.5	16.5	60
32	5Nm	½-turn	26.3	23.5	80
40	5Nm	½-turn	32.2	28.8	130
50S	10Nm	½-turn	38.2	34.2	200
50	10Nm	½-turn	44.1	39.4	400
63S	10Nm	½-turn	50.1	44.8	400
63	10Nm	½-turn	56.0	50.0	425
75S	10Nm	½-turn	62.0	55.4	425
75	10Nm	½-turn	68.0	60.8	425
80	25Nm	¾-turn	72.0	64.4	425
85	25Nm	¾-turn	78.0	69.8	425
90	30Nm	¾-turn	84.0	75.1	425
100	40Nm	¾-turn	90.0	80.5	425



Approvals and Certification

Approval	Certificate Number	Protection Concept / Type
ATEX	CML 19ATEX1113X	Ⓔ I M2 II 1D 2G Ex db I Mb / Ex db IIC Gb / Ex eb I Mb / Ex eb IIC Gb / Ex ta IIIC Da
	CML 19ATEX4114X	Ⓔ II 3G Ex nR IIC Gc
IECEX	IECEX CML 19.0035X	Ex db I Mb / Ex db IIC Gb / Ex eb I Mb / Ex eb IIC Gb / Ex ta IIIC Da / Ex nR IIC Gc
CCC	2022312313000470	Ex db I Mb / Ex eb I Mb / 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	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.
3	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 on the product certificates which are
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“防火”和“防尘”应用，如果不使用密封方法，则至少需要 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 和 IP69。其他并行接头螺纹将保持 IP64 的 IP 等级。使用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并遵守现行操作规程。 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 'flameproof' and 'dust' applications, where no sealing method is used, a minimum of 5 fully engaged parallel threads is required. Metric threads are supplied with an o-ring and will maintain IP66, IP68 & IP69. Other parallel entry threads will maintain an IP rating of IP64. A sealing washer should be used to maintain all IP ratings greater than IP64. Any thread sealant used should be non-hardening and comply with the prevailing code of practice.
6	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。表面必须干净干燥。根据一般机器加工技术，该产品包含一圈螺纹旋出，整个长度上没有完整的螺纹，因此螺纹孔应具有适当的引入倾角，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 make the IP joint. The surface must be clean and dry. 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 on our website. It is the users/installers responsibility to ensure that the interface between the enclosure and breather drain is suitably sealed for the required application.
7	虽然带锥形螺纹的 Peppers 产品在安装到螺纹孔时，经过测试可保持 IP66 的保护等级，无需任何额外的密封剂，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，建议使用非硬化螺纹密封剂。使用的任何密封剂都应符合现行规范。 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. Any sealant used should comply with the prevailing code of practice.
8	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，应按照规定重新组装压盖，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 mid cap and back nut are correctly tightened to ensure the cable is secure.
9	安装在套圈外径上的 o 形圈（如图 2 所示）用于防止胶泥在装配过程中进入接头内部。它没有其他功能，也不影响电缆密封套的保护概念或进入保护等级。 The o-ring that is fitted to the outer diameter of the Ferrule (visible on figure 2) is to prevent compound from travelling inside the gland during the assembly process. It has no other function and does not contribute to the protection concept or ingress protection rating of the cable gland.
10	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 ensure no
11	有关耐化学性信息，请参阅 Peppers T1000 胶泥数据表。可根据要求提供。 For chemical resistance information please refer to Peppers T1000 Compound data sheet. Available on

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

电缆接头类型和尺寸 Cable Gland Type & Size EC1-S-a-b-ccc-ddd-eee-nn; where: -

a =	主要部件材质 B = 黄铜 S = 不锈钢 Main component material B = brass	ddd =	螺纹孔类型和尺寸 Entry thread type and size
b =	后端连接 F = 内 M = 外 Back End Configuration F = female M = male	eee =	后端连接螺纹类型和尺寸 Back End Connection
ccc =	Gland size 电缆尺寸	nn =	制造年份 Year of manufacture

安全使用具体条件 Special Conditions for Safe Use

- 对于 Peppers T1000 胶泥电缆接头/胶泥填充式接头不得用于入口/安装点温度超出-60°C 至+135°C 范围的外壳中。 The cable glands/stopper boxes shall not be used in enclosures where the temperature, at the point of entry/mounting, is outside of the range of -60°C to +135°C for Peppers T1000 Compound.
- 当电缆接头安装在具有光滑平坦安装表面的代表性外壳上时，接口密封件符合本报告所列标准的要求。实际上，接头外螺纹与其相关外壳之间的接口无法确定，因此，用户有责任确保在这些接口处保持适当的入口保护等级。 The interface seals comply with the requirements of the standards listed in this report when the cable glands are fitted to a representative enclosure having a smooth flat mounting surface. In practice the interface between the male thread of the glands and their associated enclosure cannot be defined, therefore it is the users' responsibility to ensure that the appropriate ingress protection level is maintained at these interfaces.
- 平行螺纹孔部件螺纹将采用适用于将连接接头的相关设备的方法进行适当密封。这将符合相关的安装实践规范，并将确保保持任何进入保护和限制呼吸密封要求 The parallel threaded entry component threads will be suitably sealed using a method that is applicable to the associated equipment to which the gland will be attached. This will be in

- accordance with the relevant installation code of practice and will ensure that any ingress protection and restricted breathing sealing requirements are maintained.
4. 安装在粉尘爆炸中的螺纹孔部件螺纹无接口 O 形密封圈，螺纹孔内，应仅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
  - 锥形入口，确保至少保持 3/4 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 1/4 full threads of contact will be maintained, this is in accordance with clause 5.1.2 of EN 60079-31:2014
5. 尺寸为 16S、20S 和 20 的电缆接头不得用于 I 组 EPL Mb 应用中存在“高”机械损坏风险的地方 Cable glands with sizes 16S, 20S and 20 shall not be used for Group I, EPL Mb applications where there is a 'high' risk of mechanical damage.

