Peppers Cable Glands Ltd. Stanhope Road Camberley GU15 3BT UK.

EC2-S*F / EC2-S*M Eclipse Compound-Filled Conduit Stopper Box - ASSEMBLY INSTRUCTIONS

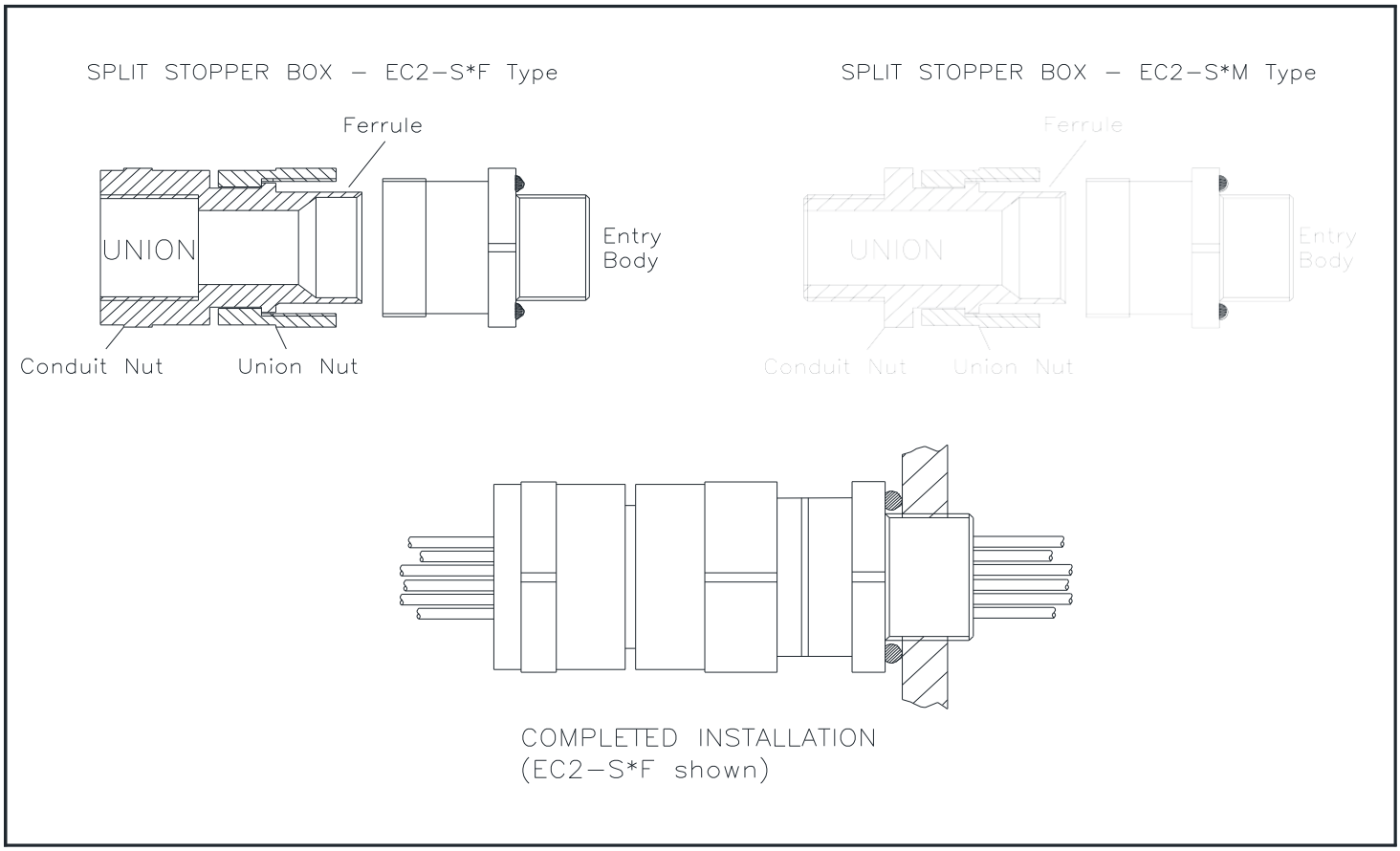
概要信息 Brief Description

Peppers EC2- S*F 和 EC2-S*M 型穿线管胶泥填充式接头适用于户外适当的危险区域使用的带穿线管导管，导管中带有导线，提供进入外壳的防火屏障，并作为线套管，用于终止飞线或直接连接相关外壳。他们达到防护等级 IP66、 IP68 (100 米 7 天)，IP69 和防洪涌的效果。 该接头的铠装电缆可以制作适合 EMC 保护的终端。The Peppers EC2-S*F and EC2-S*M compound filled 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.

Warning

请仔细阅读这些说明。除非在我们这里的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。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℃和 30° 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 a dry area at temperatures between 5°C and 30°C.

STEP-BY-STEP FITTING INSTRUCTIONS



安装步骤分解 STEP-BY-STEP FITTING INSTRUCTIONS

1 如图所示分开胶泥填充式接头。把棉花填充物放到一边。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. Put cotton filling to one side. 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 如图所示滑动短接组件到电缆上 Slide Union Assembly onto cable as shown.

3 对于 EC2-S*F 接头，在穿线管螺纹上涂抹适当的密封/密封剂，以保持进入保护。将短接头拧到穿线管上。对于 EC2-S*F 和 EC2-S*M 接头-准备导线以适合安装并穿过短接组件组件 For EC2-S*F glands apply suitable seal / sealant to conduit threads to maintain ingress protection. Screw Union onto conduit. For both EC2-S*F and EC2-S*M glands - prepare the conductors to suit the installation and pass through the union assembly.

4 将棉花填充物包裹在电缆周围，推入套圈前部，确保锥形截面清晰。注意，棉花填充物应填充电缆护套和金属部件之间的任何间隙，以防止注入时胶泥从电缆上经过，见表二。Pack cotton filling around the cable and push inside front of Ferrule ensuring taper section is clear. Note, the cotton filling should fill any gaps between the cable sheath and the metal component to prevent the compound from travelling past the cable when injected. This will ensure a full fill and correct form, see Figure 2.

5 将短接组件接合到入口主体中。将后部组件旋转 7 整圈。Engage Union assembly into Entry Body. Rotate Rear Assembly 7 full turns.

健康和安全警告胶泥中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

6 检查胶泥未超过其"使用日期"。从阀芯上取下盖子并组装喷嘴. Check compound has not passed its "Use By" date. Remove cap from cartridge and assemble nozzle.

7 推动柱塞并分配少量胶泥以填充喷嘴。这样可以清除喷嘴中的空气。否则会影响固化。Push plunger and dispense a small amount of compound to fill the nozzle. This clears the nozzle of air. **Failure to do so can affect cure.**

8 支起电缆和后部接头组件。保持电缆大致同心。把芯线展开。从中间开始，在芯线之间注入胶泥，大约在内孔的一半。重新拉直芯线，并用芯线或胶带捆扎（见图 1），使其不受干扰。继续在外芯线周围注入胶泥，使其刚好低于入口主体表面。如果电缆有大量芯线，应确保将其捆扎在接头入口螺纹附近，以便在固化后抽出 Support the cable and rear gland assembly. Hold the cable roughly concentric. Splay out the cores. Starting at the middle, inject the compound between the cores approximately halfway up internal bore. Re-straighten the cores and bundle with cord or tape (see Figure 1) so they are not disturbed. Continue to inject the compound around the outer cores to just below the Entry Body face. Where cable has large quantity of cores ensure they are bundled near to the gland entry thread to allow withdrawal after cure.

9 如果在胶泥固化前发生过多填充，则清除入口主体螺纹上多余的胶泥。胶泥在 23° C（68）°F 时固化时间为 60 分钟。Clean off any excess compound from Entry Body thread if overfill has occurred before compound cures. Compound will cure from 60 minutes @ 23°C (68°F).

10 释放检查前，测试胶泥的边缘，以确认不再粘着。在进行释放检查前，胶泥必须坚硬且无粘性。Before releasing for inspection test the edge of the compound to confirm no longer tacky. Compound must be hard and non-tacky before release for inspection is performed.

11 松开并回拉接口进行检查，拧下短接螺母同时从入口主体上拉开。这将从入口主体中释放胶泥。不要过度旋转，否则会损坏电缆导体。拉出套圈和胶泥进行检查。胶泥应如图 2 所示，没有间隙、孔或裂缝。To release and pull back the joint for inspection, unscrew Union Nut and pull 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 Ferrule and compound out for inspection. The compound should appear as in Figure 2 with no gaps, holes or cracks.

12 要在 EC2-S*F 接头安装上重新制作接头，请握住短接螺母并用手拧紧穿线管螺母。然后参考下表，用扳手拧紧到给定的量。要在 EC2-S*M 接头安装上重新制作接头，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。握住短接螺母并用手拧紧穿线管螺母。然后参考下表 2，用扳手拧紧到给定的量。To re-make the joint on an EC2-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 EC2-S*M gland installation screw the Union Nut into 2nd 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.

13 安装入口主体。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。设备现在可以通电。Fit Entry Body. 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. The equipment can now be energised.

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Figure 1

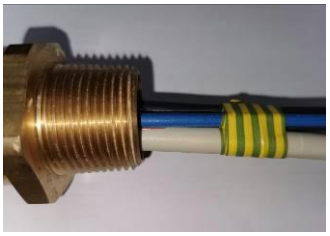

Figure 2

Table 2. Tightening information (Instruction 12), and permitted cores

Stopper Box Size	Entry Body Tightening Torque Point 13	Tighten Union Nut using wrench up to	Inner Sheath Min	Maximum Cable Size	Max Diameter Over Cores	Max No. of Cores
16S	5Nm	½-turn	4.0	10.0	8.9	12
20	5Nm	½-turn	4.0	14.0	12.5	20
25	5Nm	½-turn	8.0	18.5	16.5	30
32	5Nm	½-turn	14.0	26.3	23.5	50
40	5Nm	½-turn	16.0	32.2	28.8	65
50S	10Nm	½-turn	20.0	38.2	34.2	100
50	10Nm	½-turn	20.0	44.1	39.4	100
63S	10Nm	½-turn	30.0	50.1	44.8	130
63	10Nm	½-turn	30.0	56.0	50.0	130

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	CML 19ATEX1113X	Ⓔx 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	Ⓔx 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

安装指引 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 available for
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, IP68 & IP69. 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	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，因此入口螺纹应具有适当的引入倾倒角，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 interface between the enclosure and cable gland is suitably sealed for the required application.
7	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.
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 mid cap and back nut are correctly tightened to ensure the cable is secure.
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。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.
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 ensure no lubricant comes into contact with
12	有关耐化学性信息，请参阅 Peppers T2000 胶泥数据表。可根据要求提供。For chemical resistance information please refer to Peppers T2000 Compound data sheet. Available on request.

Interpretation of Markings. Markings on the outside of this gland carry the following meanings:

Cable Gland Type & Size EC2-S-a-b-ccc-ddd-eee-nn; where: -

a =	Main component material B = brass S = stainless steel	ddd =	Entry thread type and size
b =	Back End Configuration F = female M = male	eee =	Back End Connection Thread type and size
ccc =	Gland size	nn =	Year of manufacture

具体安全使用条件 Special Conditions for Safe Use

1. 对于 Peppers T2000 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+120°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 +120°C for Peppers T2000 Compound.
2. 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 user's responsibility to ensure that the appropriate ingress protection level is maintained at these interfaces.

3. 平行螺纹入口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 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 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 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.
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.

CE 2776