

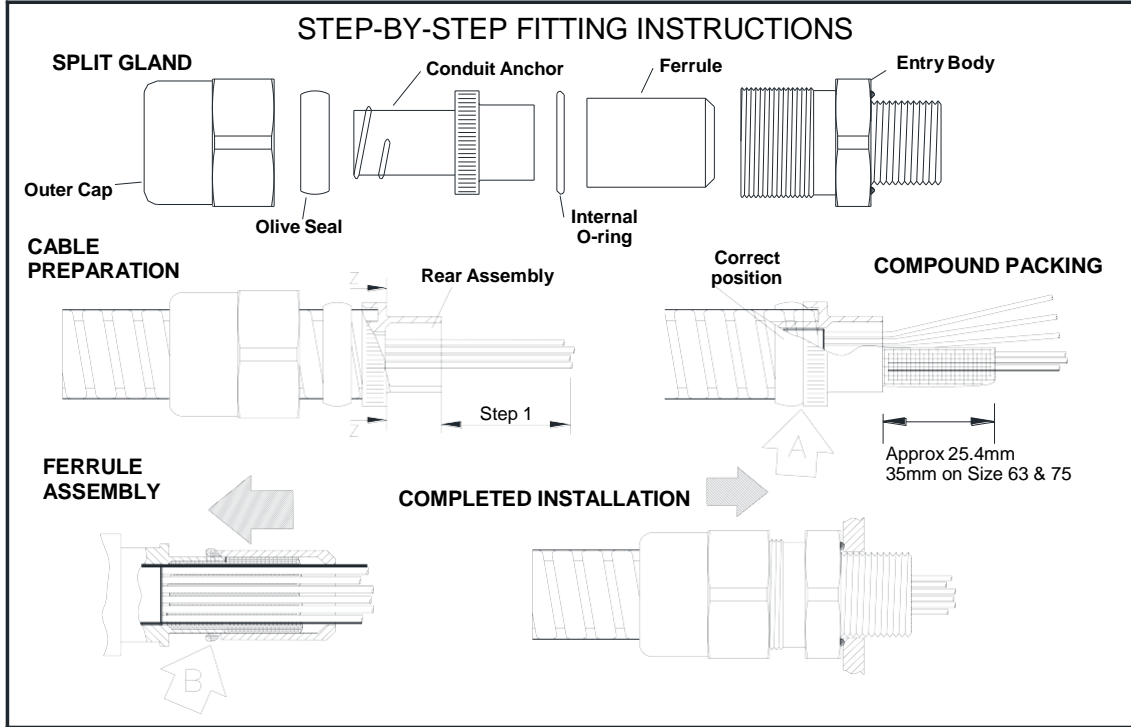
LT-C* Barrier Gland for Liquid Tight Conduit – ASSEMBLY INSTRUCTIONS FOR SAFE USE

概要信息 Brief Description

胶泥填充电缆接头适用于室内和室外适当危险场所使用非铠装结构，带或不带穿过胶泥的编织或屏蔽电缆。它们为一系列液体密封柔性金属导管提供锚固连接，同时确保 IP66 和 IP68 的环境保护等级的效果。Peppers LT-C* Compound-filled cable glands are for indoor or outdoor use in the appropriate Hazardous Locations with any unarmoured cable construction, with or without braids or screens, where the braids or screens pass through the compound. They provide an anchored connection for a range of liquid tight flexible metallic conduit whilst ensuring environmental protection to IP66 and IP68.

Warning 警告

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。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.



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

1 穿线管和电缆准备 Conduit and Cable Preparation

使用每英寸至少 30 齿的钢锯切割方形穿线管方形导管。剥下电缆外护套，使芯线完全暴露，长度适合安装。取下芯线周围的保护箔和所有绳索/填充物，使其与修剪过的外护套平齐。注意不要割断芯线的绝缘套管。使用列出的套管、尾光纤和套管，将任何滤网穿过胶泥和入口主体。Cut conduit square using a hacksaw with a minimum of 30 teeth per inch. Strip cable outer sheath so that the cores are fully exposed and to a length suitable for the installation. Remove protective foils and any cords/fillers from around the cores to level with the trimmed outer sleeve any screens to be passed through compound and Entry Body.

2 分体式接头如图所示 Split gland as shown.

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。Fit Entry Body, allowing for any installation accessories, and fully engage the thread into the equipment. Hand-tighten, then suitably secure with a wrench.

3 将内部 O 形圈放到一边。将穿线管锚栓穿过各个芯线并拧入穿线管。将各个芯线穿过套圈和入口主体。将外盖接合到入口主体上，直至用手拧紧。橄榄应固定在穿线管锚和套圈组件之间的适当位置。参考下表 1，用扳手将外部螺母拧紧到进口阀体上至规定扭矩，确保至少达到规定的圈数。拆卸外部螺母以检查橄榄状密封。部件之间不应有间隙（如箭头 A 所示）。夹紧后，拆下套圈。Put the Internal O-ring to one side. Pass the Conduit Anchor over the individual cores and screw into the conduit. Pass the individual cores through Ferrule and Entry Body. Engage the Outer Cap on to the Entry Body until hand-tight. The Olive should be secured in place between the Conduit Anchor and the Ferrule components. Refer to Table 1 below and tighten Outer Cap on to the Entry Body using a wrench to the specified torque ensuring that at least the stated number of turns has been achieved. Disassemble Outer Cap to inspect Olive Seal. There should be no gap (indicated at arrow A) between the components. Once clamped remove ferrule.

4 如图所示滑动后部组件（外螺母和橄榄状封条）导穿线管上。Slide Rear Assembly (Outer Cap and Olive Seal) onto conduit as shown.

5 将内部 O 形圈放到一边。将穿线管锚栓穿过各个芯线并拧入穿线管。将各个芯线穿过套圈和入口主体。将外盖接合到入口主体上，直至用手拧紧。橄榄应固定在穿线管锚和套圈组件之间的适当位置。参考下表 1，用扳手将外部螺母拧紧到进口阀体上至规定扭矩，确保至少达到规定的圈数。拆卸外部螺母以检查橄榄状密封。部件之间不应有间隙（如箭头 A 所示）。夹紧后，拆下套圈。Put the Internal O-ring to one side. Pass the Conduit Anchor over the individual cores and screw into the conduit. Pass the individual cores through Ferrule and Entry Body. Engage the Outer Cap on to the Entry Body until hand-tight. The Olive should be secured in place between the Conduit Anchor and the Ferrule components. Refer to Table 1 below and tighten Outer Cap on to the Entry Body using a wrench to the specified torque ensuring that at least the stated number of turns has been achieved. Disassemble Outer Cap to inspect Olive Seal. There should be no gap (indicated at arrow A) between the components. Once clamped remove ferrule.

健康和安全隐患警告化合物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，请在接触化合物时戴上提供的手套。全面的安全数据表可从我们的网站下载。

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

6 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 45 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 45 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.

7 修剪胶泥棒末端的任何硬化件。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。完全混合的胶泥颜色均匀无条纹。正确混合后的胶泥见图 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 colour with no streaks. See Figure 1 for correctly mixed compound.

8 支起穿线管和电缆组件。确保穿线管锚的位置正确使电缆外护套正好位于后部组件杯的后面，如 Z 所示。把芯线分开 Support the conduit and cable assembly. Ensure that the Conduit Anchor is positioned so that the cable outer sheath is positioned at the bottom of the Rear Assembly Cup as indicated at Z - Z. Splay out the cores.

9 从中间开始，通过在芯线周围和芯之间填充少量卷出的胶泥来填充后装部组件杯。重新拉直每个芯线直到所有的间隙填满。包裹外芯的外面。向下推胶泥，确保后部组件杯充满 Starting at the middle, fill the Rear Assembly Cup by packing small amounts of rolled-out compound around and between the cores. Re-straighten each core and work outwards until all gaps are filled. Pack around the outside of the outer cores. Push compound down to make sure the Rear Assembly Cup is completely filled.

10 类似地在突出的芯线周围和周围堆上胶泥。尽可能将胶泥涂沫在轧制带中，以便形成未破裂的涂层。如果填料中出现结块或存在可疑孔，则继续混合胶泥以确保密封不透气的密封。胶泥的气缸应突出约 1 in/25mm (或 1% in/35mm, 尺寸 63 和 75-见图)。Similarly build up compound in and around the protruding cores. Apply the compound in rolled-out strips wherever possible so that unbroken layers are formed. Where joints occur in the fill or where there are suspected holes, work the compound together to ensure a gas-tight seal. The cylinder of compound should project approx 25mm (1") (or 35mm (1 3/8") for sizes 63 & 75) - see diagram.

11 取下套圈并将其穿过芯线。定位套圈并将其压到后部组件杯上，然后去除任何挤压出的胶泥（箭头 B）并确保套圈完全覆盖后部组件杯。把芯线穿过 O 型圈和入口主体。将 O 形圈安装到卡套上 - 组装完成后，O 形圈应位于卡套顶部，并紧挨着穿线管锚固件。将套圈接合到进口体中并拧上外盖。用扳手拧紧外盖以关闭组件。Retrieve the Ferrule and pass it over the cores. Locate and press Ferrule onto the Rear Assembly Cup. Remove squeezed-out compound (arrow B) and ensure the Ferrule completely covers the Rear Assembly Cup. Pass cores through the O-ring and Entry Body. Fit O-ring over Ferrule - when the assembly is complete the o-ring should be seated on top of the Ferrule and adjacent to the Conduit Anchor. Engage Ferrule in Entry Body and screw on the Outer Cap. Tighten the Outer Cap with wrench to close up the assembly

12 松开外部螺母，检查电缆单元组件。如果芯线离开套圈，突出的胶泥不得污染入口主体。透明套圈见表 2。用电缆扎带、绳索或胶带捆扎芯线，以防干扰 - 见图 3。等待其固化，21°C (70°F) 时需要 4 小时完成固化。芯线可能在 1 小时后受到干扰。Slacken off Outer Cap to inspect the Cable Unit assembly. Where the cores exit the Ferrule any protruding compound must be trimmed and cleared away to ensure the compound does not foul the Entry Body. See Figure 2 for clear Ferrule. Bundle cores with cable-tie, cord or tape so they are not disturbed - see Figure 3. Leave to cure for 4 hours when working at 21°C (70°F). Cores may be disturbed after 1 hour.

13 重新组装电缆单元至入口主体，确保 O 形圈准确地位于套圈的底部 - 如图 4。使用扳手完全拧紧外部螺母直到其达到有效止动位置。Re-assemble Cable Unit to the Entry Body ensuring the o-ring is seated correctly at the base of the ferrule - see Figure 4. Tighten Outer Cap using a wrench until it comes to an effective stop.

14 当在 21°C 作业时，胶泥必须被预留固化至少 4 小时，才可以对设备进行通电。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.

Figure 1



Figure 2



Figure 3

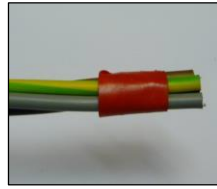


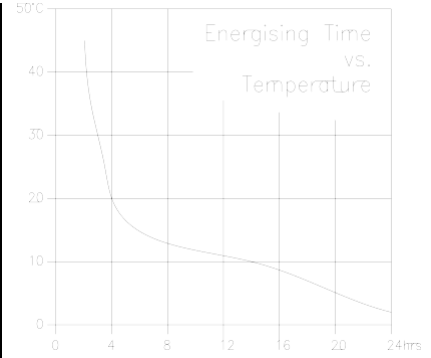
Figure 4



LT-C** Barrier Gland for Liquid Tight Conduit – ASSEMBLY INSTRUCTIONS FOR SAFE USE

Table 1 - Gland sizes, trade sizes, cable / conduit data and Energising Times

Gland Size	Standard Trade Size		Torque	Turns	Max No. of Cores	Max Cable Outer Sheath	Typical Conduit I/D	Max Conduit Outer Sheath	
	Metric	NPT							
20S-1	M20	½"	38	3	5.0	9	5.0	6.2 - 7.1	11.4 - 12.9
20S-2	M20	½"	47	2.5	7.8	20	7.8	9.8 - 10.3	14.2 - 15.6
20-1	M20	½"	38	2	10.4	35	10.4	12.1 - 13.0	17.0 - 19.1
20-2	M20	½"	32	2	12.5	40	13.3	15.8 - 16.3	20.8 - 22.3
25-1	M25	¾"	47	2	17.8	60	18.0	20.8 - 21.3	26.0 - 27.8
32-1	M32	1"	38	1.5	23.5	80	23.6	26.0 - 27.1	32.7 - 34.5
40-1	M40	1½"	121	1.5	28.8	130	31.8	34.8 - 35.8	41.1 - 43.3
50-1	M50	2"	180	1.5	37.0	200	37.0	40.0 - 40.6	47.3 - 49.4
63-1	M63	2½"	142	1.5	48.0	300	48.0	50.5 - 51.9	59.4 - 61.4
75-1	M75	3"	186	2	59.3	325	59.3	62.9 - 63.9	72.1 - 74.1
75-2	M75	3"	246	2	60.8	425	68.0	77.8 - 78.7	87.8 - 90.0



许可 Approvals

许可 Approval	证书号码 Certificate Number	保护概念/类型 Protection Concept / Type
ATEX	CML 19ATEX1171X	Ex 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	Ex II 3G Ex nR IIC Gc
IECEX	IECEX CML 19.0049X	Ex db I Mb / Ex db IIC Gb / Ex eb I Mb / Ex eb IIC Gb / Ex nR IIC Gc / Ex ta IIIC Da
CCC	2021312313000426	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 安装指引

Point	建议 Advice
1	<ul style="list-style-type: none"> EN/IEC 60079-10 Classification of Hazardous Areas EN/IEC 60079-14 Electrical Installations in Hazardous Areas EN/IEC 60079-31 Ignitable dust – Protection by enclosure BS 6121, Part 5 Selection, Installation & Maintenance of Cable Glands
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
4	不得在带电的条件下进行安装。NO INSTALLATION SHOULD BE CARRIED OUT UNDER LIVE CONDITIONS.
5	该胶泥具有应用限制，并且可能受到某些溶剂蒸汽的不利影响。若运行中的电缆接头附近可能存在此类蒸汽，则可能需要采取适当的预防措施。Peppers 技术数据表可从我们的网站下载，以获得进一步指导。该胶泥应在温度低于 21°C 的干燥区域中以其原始包装储存。The compound has application limitations and may be adversely affected by some solvent vapours. If such vapours are likely to be present in the vicinity of the cable gland in service, suitable precautions may be necessary. Peppers Technical Datasheet can be downloaded from our website for further guidance. The compound should be stored in its original packaging in a dry area at temperatures below 21°C
6	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
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
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部的外部入口螺纹上。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接头，确保外部螺母正确拧紧，以确保组件牢固安全。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 Outer Cap is correctly tightened to ensure the assembly is secure.
11	该胶泥具有应用限制，并且可能受到某些溶剂蒸汽的不利影响。若运行中的电缆接头附近可能存在此类蒸汽，则可能需要采取适当的预防措施。Peppers 技术数据表可从我们的网站下载，以获得进一步指导。该胶泥应在温度低于 21°C 的干燥区域中以其原始包装储存。The compound 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. The compound should be stored in its original packaging in a dry area at temperatures between 5°C and 21°C
12	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套接触，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 the cable gland seals as this may impair performance.

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 LT-C-a-bbb-ccc

a =	主要部件材质 Main component material	B = 黄铜 S = 不锈钢	bbb =	电缆尺寸 Gland size	ccc =	螺纹孔类型/尺寸 Entry thread type and size
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Specific Conditions of Use

- 电缆接头不得用于入口/安装点温度超出 -60°C 至 +135°C 范围的外壳中。These cable glands shall not be used in enclosures where the temperature, at the point of entry/mounting, is outside of the range -60°C to +135°C
- 确保符合本证书所用标准所需的入口防护等级是通过测试安装在具有光滑平坦安装表面的代表性外壳中的装置来确定的。实际上，接头外螺纹与其祥光的外壳之间的接口无法确定，因此，用户有责任确保这些接口保持适当的入口保护级别。The Ingress Protection rating that is required to ensure compliance with the standards used in this certificate was determined by testing the devices fitted into 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.
- 平行螺纹入口部件螺纹将采用适用于将连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 requirements are maintained.
- 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./IEC 60079-31:2013
- 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./IEC 60079-31:2013.

5. 这些电缆接头的入口主体和前套圈之间采用圆柱形隔爆接口。此接口不用于维修。These cable glands are manufactured with a cylindrical flameproof joint between the entry body and the front ferrule. This joint is not intended for repair.
6. 初次组装后，应松开外盖，以便检查橄榄形密封条。橄榄形密封条和套圈锚固件之间不得有间隙。这可确保所有内部部件的位置正确，并防止因释放内部点火而产生点火源的可能性。如果橄榄形密封条和套圈锚固件之间有间隙，应更换橄榄形密封件。请联系 Peppers 获得进一步建议。After initial assembly, the Outer Cap shall be released to enable inspection of the Olive Seal. There shall be no gap between the Olive Seal and the Ferrule Anchor. This ensures that all internal components are correctly sited and prevents the possibility of generating a source of ignition due to the release of an internal ignition. If there is a gap between the Olive Seal and the Ferrule Anchor, the Olive Seal shall be replaced. Contact Peppers for further advice.

