

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

## ACDP Range Breather Drain – INSTALLATION INSTRUCTIONS

### Warning

PLEASE STUDY THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION. These products should not be used in any application other than those mentioned here or in our Data Sheets unless Peppers states in writing that the product is suitable for such application. Peppers can take no responsibility for any damage, injury or other consequential loss caused where the products are not installed or used according to these instructions. This leaflet is not intended to advise on the selection of the products. Further guidance can be found in the standards listed below.

### Brief Description

Peppers ACDP range of Breather Drains are intended for indoor or outdoor use in the appropriate hazardous area locations. The Breather Drain is primarily designed to allow an enclosure to breathe with its surrounding atmosphere to effectively prevent moisture build up inside the enclosure. The Breather Drain will also efficiently drain water from an enclosure to prevent damage to internal equipment. It gives environmental protection to IP66 and is suitable for both mining and surface applications.

### Installation

In order to maintain an Ingress protection of IP66, Breather Drains should be hand-tightened and then suitably secured with a wrench. For threaded entries the entry thread should be fully engaged prior to tightening. For clearance holes the castellated locknut shall be used. See below for installation torques.

### Installation Guidance

Point	Advice
1	BS/EN/IEC 60079-10      BS/EN/IEC 60079-14      National Electrical Code (NEC 500 – 505)      Canadian Electrical Code (CSA C22.1)
2	Installation should only be carried out by a competent electrician, skilled in cable gland and appropriate electrical installations.
3	Comprehensive details of the compliance standards can be found on the product certificates which are available for download from our website
4	<b>NO INSTALLATION SHOULD BE CARRIED OUT UNDER LIVE CONDITIONS.</b>
5	Threaded entries: Product can be installed directly into threaded entries however it must NOT be used for Ex d applications. 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. Products with tapered threads and drain holes located in the thread should not be installed into threaded entries where the ingress protection of the enclosure may be compromised. Contact Peppers for further advice.
6	Clearance holes: these shall be no larger than 0.7mm above the nominal diameter of the external entry thread. The product should be secured with a castellated lock nut and the threads tightened as detailed. The nut must be attached with castellation facing the enclosure wall.
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 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 Peppers website. It is the user's/installer's responsibility to ensure that the interface between the enclosure and breather drain is suitably sealed for the required application.
8	Aluminium variants may not be used in Group I (Mining) applications
9	Peppers external metric entry threads comply with ISO 965-1 & ISO 965-3 with a 6g tolerance fit. The 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 comply 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	Once installed do not dismantle except for routine inspection. An inspection should be conducted as per IEC 60079-17.

### Product Ingress Protection

When installed in accordance with these instructions the ACDP Breather Drains have a rating of IP66.

### Product Installation Torque

Installation Type	Installation Torque (Nm)
Parallel or tapered thread in clearance hole	5
Parallel thread in threaded entry	5
Tapered thread in threaded entry	32.5

### Interpretation of Markings

Markings on the outside of this product carry the following meanings:

Product Type & Size ACDP-**aaa**, where **aaa** is the male thread size.

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### Limitations on Usage

- Breather Drains are only to be fitted on the bottom surface of the enclosure, aligned vertically with the thread upwards, and at the lowest point to permit proper drainage.
- Products are approved for a temperature range at their point of mounting based upon the interface seal as detailed below:

Seal Option	Temperature Range
No Seal	-100°C to +400°C
Nitrile O-Ring	-30°C to +100°C
Neoprene O-Ring (not UL approved)	-35°C to +95°C
Silicone O-Ring	-60°C to +200°C
Fluorosilicone O-Ring (not UL approved)	-55°C to +200°C
Viton O-Ring (not UL approved)	-20°C to +180°C
EPDM O-Ring (not UL approved)	-50°C to +110°C

- Breather Drains shall not be used in any CSA application where the operating temperature is below -50°C.

### Approvals & Certification

Approval	Certificate Number	Protection Concept
ATEX (2014/34/EU)	CML 19ATEX3347X	⊕ I M2 II 1D 2G Ex eb I Mb / Ex eb IIC Gb / Ex ta IIIC Da
UKCA (SI 2016 No. 1107)	CML 21UKEX3029X	
IECEX	IECEX CML 19.0105X	Ex eb I Mb / Ex eb IIC Gb / Ex ta IIIC Da
CSA - Canada	2310046	Ex eb IIC Gb / Ex ta IIIC Da IP66
CSA - US	2310046	Class I Zone 1 AEx eb IIC Gb / Zone 20 AEx ta IIIC Da IP66
UL	E340660	Class I Zone 1 AEx eb IIC Gb / Zone 20 AEx ta IIIC Da
INMETRO	NCC 13.2191 X	Ex eb I Mb / Ex eb IIC Gb / Ex ta IIIC Da IP66
EAC	ПРОММАШ ТЕСТ RU C-GB.AX58.B.05106	PB Ex eb I Mb X / 1Ex eb IIC Gb X / Ex ta IIIC Da X
UKRAINE	CU 18.0319 X	I M2 Ex eb I Mb / II 2G Ex eb IIC Gb / II 1D Ex ta IIIC Da
SAC - China	CNEX 21.5374X	Ex eb I Mb / Ex eb IIC Gb / Ex ta IIIC Da IP66
CCoE (PESO)	P494321/11	Ex eb I Mb / Ex eb IIC Gb / Ex ta IIIC Da
ECASEx	25-06-153223/E25-06-159811/NB0007	Ex eb I Mb / Ex eb IIC Gb / Ex ta IIIC Da
ABS	25-0158110-PDA	Specified ABS Rules – See certificate
Lloyds Register	LR2124442TA	Ex eb I Mb / Ex eb IIC Gb / Ex ta IIIC Da
DNV	TAE00004XK	Ex eb I Mb / Ex eb IIC Gb / Ex ta IIIC Da

### Specific Conditions of Use

- The ACDP Breather Drains are only suitable for bottom entry applications within associated Ex eb and Ex ta enclosures.
- ACDP Breather Drains are approved for a temperature range at their point of mounting based upon the interface seal and material combinations of construction. See above.
- When no seal is fitted and the ACDP Breather Drains is installed in an increased safety (Ex eb) enclosure, the user shall ensure that a minimum degree of protection IP54 is maintained.
- When used in explosive dust atmospheres, ACDP Breather Drains shall be fitted with a sealing ring except when installed into a tapered threaded hole. In this case the short-threaded versions 10 mm (¼" NPT ⅜" NPT) or 13 mm (½" NPT, ¾" NPT) shall be used to ensure that a minimum of 3 full threads of contact will be maintained. This is in accordance with clause 5.3.2 of IEC 60079-31 & IEC 60079-14.
- The M12 and ¼" NPT threaded ACDP Breather Drains made of brass and intended for mining (Group I) applications shall be installed in areas where they are subject to low risk of mechanical impact or are protected from mechanical damage.

