

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

The 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	NO INSTALLATION SHOULD BE CARRIED OUT UNDER LIVE CONDITIONS.
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 and ISO 965-3 with a 6g tolerance fit. Peppers standard metric thread pitch is 1.5mm. 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. 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/EN 60079-17.

Product Ingress Protection / Enclosure Ratings

Range	IP Protection
ACDP	IP66

Product Installation Torque

Installation Type	Torque (Nm)
Parallel or Tapered Thread in Clearance Hole	5
Parallel Thread in a Threaded Entry	5
Tapered Thread in a Threaded Entry	32.5

Interpretation of Markings

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

Product Type & Size ACDP-aaa

aaa =	Male Thread Size
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Limitations on Usage Be sure your installation complies with the following:-

Feature	Comment			
Positioning in the Enclosure	The Breather Drain is 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.			
Temperature Limitations	Products are approved for a temperature range at their point of mounting based upon the interface seal and material combinations of construction as detailed below: -			
	Seal Material	Temperature Range	Seal Material	Temperature Range
	No Seal	-100°C to +400°C	Fluorosilicone O-Ring	-55°C to +200°C
	Nitrile O-Ring	-30°C to +100°C	Viton O-Ring	-20°C to +180°C
	Neoprene O-Ring	-35°C to +95°C	EPDM O-Ring	-50°C to +110°C
Silicone O-Ring	-60°C to +200°C			
CSA Approval	Breather Drains shall not be used in any application where the operating temperature is below -50°C			

Approvals

Approval	Certificate Number	Protection Concept / Type
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	TC RU C-GB.BH02.B.00693	PT1 Ex e I Mc X, 1Ex e 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 e I Mb / Ex e IIC Gb / Ex tD A20 IP66
CcCoE / PESO	P494321/11	Ex eb I Mb / Ex eb IIC Gb / Ex ta IIIC Da
ABS	20-LD1944057-PDA	Specified ABS Rules – See certificate
Lloyds Register	LR2124442TA	Ex eb I Mb / Ex eb IIC Gb / Ex ta IIIC Da
Russian Maritime	19.00189.278	Ex e I Mb / Ex e IIC Gb / Ex ta IIIC

Specific Conditions of Use

- The breather drains are only suitable for bottom entry applications within associated Ex eb and Ex ta enclosures.
- The products 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 breather drain is installed in an increased safety (Ex e) enclosure, the user shall ensure that a minimum degree of protection IP54 is maintained.
- When used in explosive dust atmospheres, the breather drain shall be fitted with sealing ring except when installed into a tapered threaded hole. In this case the short threaded versions 10 mm (1/4" NPT, 3/8" NPT) or 13 mm (1/2" NPT, 3/4" 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 EN 60079-31: 2014 / IEC 60079-14 Ed 2.
- The M12 and 1/4" NPT threaded 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.

