



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

EX COMPONENT CERTIFICATE

Certificate No.: IECEx EXV 19.0010U Issue No: 0 Certificate history:
Issue No. 0 (2019-05-14)

Status: **Current** Page 1 of 5

Date of Issue: **2019-05-14**

Applicant: **Expo Technologies Ltd**
Unit 2, The Summit
Hanworth Road
Sunbury on Thames
Surrey, TW16 5DB
United Kingdom

Ex Component: **Pressurised Enclosure PEx and PExE**

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

Type of Protection: **Pressurization, Increased Safety, Protection by Enclosure**

Marking:

Ex p*b IIC Gb

Ex eb IIC Gb

EX tb IIIC Db

Ex p*b IIIC Db see description for Tamb & *

Approved for issue on behalf of the IECEx
Certification Body:

Sean Clarke CEng MSc MIET

Position:

Certification Manager

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

ExVeritas Limited
Units 16-18 Abenbury Way
Wrexham Ind. Est.
Wrexham LL 139UZ
United Kingdom





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Manufacturer: **Expo Technologies Ltd**
Unit 2, The Summit
Hanworth Road
Sunbury on Thames
Surrey, TW16 5DB
United Kingdom

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex Component covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended.

STANDARDS:

The Ex Component and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2017 Edition:7.0	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-2 : 2014-07 Edition:6	Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure "p"
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2015 Edition:5.0	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the Ex Component listed has successfully met the examination and test requirements as recorded in

Test Report:

GB/EXV/ExTR19.0010/00	GB/ITS/ExTR08.0051/00	GB/ITS/ExTR08.0051/01
GB/ITS/ExTR08.0051/02	GB/ITS/ExTR08.0051/03	GB/ITS/ExTR13.0018/00

Quality Assessment Report:

[GB/SIR/QAR07.0012/13](#)



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Schedule

Ex Component(s) covered by this certificate is described below:

The Expo Technologies Ltd. PEx and PExE range of enclosures are stainless steel or painted mild steel electrical enclosures designed for use with purge and pressurization or increased safety protection concepts when used in explosive gas atmospheres. When used in explosive dust atmospheres purge and pressurization or protection by enclosure protection concepts are employed.

Enclosure types PEx are suitable for purge and pressurization (gas & dust) only, and PExE types for purge and pressurization (gas & dust) and increased safety (gas) and protection by enclosure (dust).

An enclosure may be suitable for more than one protection concept, in which case the marking for each protection concept shall be marked separately.

The final equipment certification will assign the applicable x/y/z coding, denoted by *

Ambient Range:

$-20^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$

For extended upper ambient versions: $-20^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$

For reduced lower ambient versions (pressurization versions only): $-50^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$

SCHEDULE OF LIMITATIONS:

The enclosures are available in a range of standard sizes and each type is denoted by the type number PEx or PExE where the "x" is replaced by a type number then followed by a unique design specific number.

PExE Enclosures are also available in a number of small "Terminal Box" sizes, detailed on drawing SD8377.

Maximum Enclosure Dimensions:

PEx & PExE Types: 2100h x 1800w x 1000d

For PEx types only, up to 3 enclosure sections may be connected side by side to give a multisection enclosure, as detailed in drawing SD8394. Each section is limited to the construction features (including individual door width) of the stand-alone PEx enclosure.

For PExE types, two enclosure sections, each 1600mm wide, each with up to 1200mm wide doors may be joined together by a joint facilitated by a continuous weld, as detailed in drawing SD8399.

Enclosures may be fitted with doors with tool operated latches with maximum door size 1200 x 2100mm.



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Windows may be fitted to the enclosure walls and doors, either Glass or Lexan MRE5

Polycarbonate. Window construction varies depending on protection concept and ambient temperature range.

Ambient temperature range is the standard range -20°C to +40°C or extended to +55°C upper limit, depending on the features incorporated.

A number of accessories may be fitted to the enclosure, such as gland plates, windows, pushbutton and rotary operators, keyboards, trackballs, switches and lamps. The type of enclosure, protection concept and ambient temperature range to which any specific accessory may be fitted is defined on drawing SD8404.

For this component certification, only the enclosure strength with respect to impact, material suitability, non-metallic components, enclosure strength under maximum overpressure and ingress protection are considered.

PEX Enclosures provide ingress protection IP 40 as a minimum, PEXE types provide IP 66.

The PEX and PEXE enclosures may be operated at an ambient temperature of -50°C and may incorporate a MiniPurge purge controller certified for a minimum -20°C ambient, when the low temperature design features are incorporated, as detailed on drawing SD8398.

The low temperature enclosure can be fitted with a double-glazed window made from Lexan material. The enclosure walls are internally insulated to assist with keeping the internal temperatures within acceptable limits, typically -20°C to 55°C.

The purge air inlet which could source protective gas at temperatures down to and including -50°C makes several passes through convoluted pipework in an internal enclosure which is heated by an appropriately certified electrical heater. A thermal isolation valve opens when the purge medium temperature is greater than 4°C and closes when it falls to -1°C.

The enclosure, including door and rotary lock only, have been assessed as providing adequate ingress protection at temperatures down to and including -50°C. All other operators have only been assessed at a minimum of -20°C, and therefore excluded from the low temperature design.

Ambient temperature range for low temperature versions -50°C to +40°C or extended to +55°C.



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All other aspects are to be considered under the final apparatus certification.

An enclosure may be suitable for more than one protection concept, in which case the marking for each protection concept shall be marked separately.

Annex:

[ExV19.0010U - IECEx Certificate Annex Template.pdf](#)

Manufacturer's documents:				
Title:	Drawing No.:	Rev	Sheets	Date:
PEx / PExE ATEX / IECEx Certification Label	SD8375	2	2 of 2	04/04/2019
PEx and PExE Enclosure GA	SD8376	2	2 of 2	11/04/2019
Alternative PExE Boxes	SD8377	1	1 of 1	08/02/2019
PEx Seals and Door Fasteners	SD8378	1	1 of 1	08/02/2019
PExE Seals and Door Fasteners	SD8379	2	1 of 1	11/04/2019
PEx Typical Hinges	SD8380	1	1 of 1	08/02/2019
PExE Typical Hinges	SD8381	1	1 of 1	08/02/2019
Mounting Details	SD8382	1	1 of 1	08/02/2019
Accessory/Gland Plates Details	SD8383	2	1 of 1	11/04/2019
"Sloping" Accessory/Gland Plate	SD8384	2	1 of 1	11/04/2019
Windows and Seals	SD8385	2	2 of 2	11/04/2019
Typical Control and Indication Device	SD8386	1	1 of 1	08/02/2019
Close Coupled Keyboards	SD8387	1	1 of 1	08/02/2019
Expo Moving Key Membrane	SD8388	1	1 of 1	08/02/2019
Expo Extended Pushrod Keyboard	SD8389	1	1 of 1	08/02/2019
Indicator Window	SD8390	1	1 of 1	08/02/2019
50mm Stainless Steel Trackball	SD8391	1	1 of 1	08/02/2019
Feedthrough Devices	SD8392	1	1 of 1	08/02/2019
Feedthrough Devices Switch/Shafts	SD8393	1	1 of 1	08/02/2019
PEx Multi-Section Enclosures	SD8394	1	2 of 2	08/02/2019
IP66 Indicator Cover	SD8395	1	1 of 1	08/02/2019
MiniPurge Accessory – SAU	SD8396	1	1 of 1	08/02/2019
MiniPurge Accessory - RLV	SD8397	1	1 of 1	08/02/2019
Low Temperature Enclosure	SD8398	1	1 of 1	08/02/2019
PExE Multi-Section Enclosures	SD8399	1	1 of 1	08/02/2019
PEx / PExE Approved Wall Mounted Devices	SD8404	1	5 of 5	07/02/2019
PEx / PExE APPROVED SEAL AND GASKET MATERIALS	SD8405	2	3 of 3	04/04/2019
PEx / PExE APPROVED O-RING MATERIALS	SD8406	2	2 of 2	04/04/2019
Guide to PEx and PExE Enclosure Manual (Component)	SD8407	2	6 of 6	04/04/2019