User Manual
Zone 1, 2, 21, 22
PressurEx Enclosure
Class I/II Division 1/2

Purge & Pressurization Configurable Enclosure Range

Simplifying Complexity. Delivering Safety.

expo Technologies

ML672v1 I 13 May 2025

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SECTION 1: SAFETY

This manual contains important information required for the safe installation and operation of the PressurEx enclosure system. Keep this manual in an easily accessible and safe location close to the system for future reference.

Only trained and authorized personnel should install, commission, and maintain the system. Before proceeding with any work related to the system the installer/operator should:

- Be knowledgeable about safe working practices within the hazardous area where the system is to be installed and operated.
- Be familiar with and competent in interpreting any relevant national laws and local legislation, applying them correctly to specific situations.
- Carefully read and understand the contents of this manual, adhering to all instructions and warnings.

WARNING! Installation, commissioning, maintenance, and troubleshooting must only be performed by qualified and authorized personnel in accordance with local and site regulations.

1.1: GENERAL SAFETY

These safety instructions are intended to prevent equipment damage and/or personal injury:

- The system is to be used only in areas defined in this manual.
- The system must only be operated under the conditions specified in this manual.
- The system must only be used for the purpose described in this manual.
- Before commencing any installation or maintenance work, always ensure the complete system, supply air and electrical supplies are switched OFF, following safe isolation procedures.
- The system must be installed as specified in this manual, adhering to all safety warnings and recommendations.
- The system must be inspected, maintained, and cleaned regularly as described in this manual.
- No unauthorised modifications to the equipment should be made.
- It is the responsibility of the installer/operator to ensure settings are configured correctly.
- Purging and pressurization must be carried out in accordance with the relevant standards for the specific hazardous area.

This document contains specific safety information for all stages of the product's use, including installation, commissioning, operation, maintenance and troubleshooting.

WARNING! Failure to follow these instructions may compromise the functionality and operation of the equipment, cause personal injury and/or result in an explosion.

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1.2: TRANSPORTATION, STORAGE AND HANDLING SAFETY

The system must be protected against impacts and adverse environmental conditions. It should only be transported and stored under the conditions specified in this manual.

Safe handling / lifting procedures should be applied. Expo recommends personnel wear PPE while handling the system.

Storage Temperature Range	-40°C to +60°C (-40°F to +140°F)
Relative Humidity	5 to 85%, non condensing
Weight	Refer to model table for empty enclosure weights

WARNING! Incorrect handling of the system may cause severe personal injury and/or damage to the system.

- Never stand under suspended loads.
- Secure the load before transporting.
- Use lifting equipment suitable for the system's weight or the correct number of personnel for manual handling.

If the system is fitted and lifted with eye bolts:

- Each eye bolt should face the same direction (ideally no more than 5 degrees difference).

Maximum Lifting Weight According to BS 4278:1984 (Four Equally Loaded M12 Eye Bolts)	
Angle of Lifting α	**Maximum Lifting Weight**
0^o (Vertical)	1600 kg
$0^o < \alpha < 30^o$	1000 kg
$30^o < \alpha < 60^o$	640 kg
$60^o < \alpha$	Not Permitted

1.3: DISPOSAL

Do not dispose of the system in general waste. The battery (if fitted), electrical and electronic components and other parts must be recycled in accordance with local regulations and directives.

1.4: MARKINGS IN THE MANUAL

CAUTION! This symbol indicates a hazard that may cause injury or damage to the system if not avoided.

WARNING! This symbol indicates a hazard that may cause serious injury or damage to the system if not avoided.

Note: This indicates important notes, information, or advice.

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1.5: SPECIFIC CONDITIONS OF USE

1.5.1: Zone 1 Installation

- The correct installation of intrinsically safe apparatus within the enclosure has not been assessed as part of this certification, and this certificate is not to be used as evidence that enclosures including intrinsically safe apparatus or associated apparatus meet all the relevant requirements for intrinsically safe systems.
- In an event of loss of enclosure pressure, the user shall ensure that power is isolated to the enclosure by implementing an automatic power isolation method as per IEC/EN 60079-14 and any other local code of practice. The user shall verify that the protected apparatus within the enclosure cannot be powered until the purge cycle has completed.
- If automatic power isolation would introduce a more dangerous condition, the user shall implement a safety system to isolate the enclosure power using the “purge complete signal” from the purge control system as per EN 60079-14 and other local code of practice.

1.5.2: Zone 2 Installation

- Where the power to the pressurized enclosure is not automatically controlled by the purging control system, it is responsibility of the user to provide an appropriately certified means of isolation adjacent to the enclosure, marked with appropriate operating instructions. Alternatively, another equally effective means of isolation and associated operating procedure shall be provided.
- The correct installation of intrinsically safe apparatus within the enclosure has not been assessed as part of this certification, and this certificate is not to be used as evidence that enclosures including intrinsically safe apparatus or associated apparatus meet all the relevant requirements for intrinsically safe systems.

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SECTION 2: APPLICATION SUITABILITY

This device from Expo has been designed and tested to operate safely in explosive environments when used strictly in accordance with the operating instructions.

The PressurEx Enclosures are designed for use where the hazardous area is non-mining (above ground) with explosive gases and vapours in the atmosphere. The Enclosures can be used in different environments depending on the purge system fitted to the enclosure:

- SmartPurge 2: ATEX Zone 1 - Category 2 Gas groups IIA, IIB, IIIC*
  IECEx Zone 1 Gas groups IIA, IIB, IIIC*
- SmartPurge Z: ATEX Zone 2 – Category 3 Gas groups IIA, IIB, IIC*
  IECEx Zone 2 Gas groups IIA, IIB, IIC*
  NEC Class I Div 2 Gas groups A, B, C & D*
- MiniPurge X: NEC Class I Div 1 Gas groups A, B, C & D*

*Depending on the Ex-certified devices installed within the enclosure.

Although the Enclosures are certified to be used for hazards of any gas group, apparatus associated with the enclosure or installed within the enclosure, such as intrinsically safe signalling circuits or flameproof enclosures containing switching devices may be limited in their gas group. It is the engineer's responsibility to ensure that such devices are suitable for the application and to mark the system accordingly.

Expo must be aware of all the equipment to be installed within the enclosure before final certification. Ex-certified devices may be installed within the enclosure, consult Expo for limitations.

The enclosures are made from materials suitable for the most common hazardous locations and designed for use under normal industrial conditions of ambient temperature, humidity and vibration.

Construction Materials

- Stainless Steel 316L
- Zinc Coated Steel
- Silicon Seals
- Laminated Glass (If window fitted)

Note: For purge system construction materials, refer to the relevant manual.

Note: Please consult Expo for further guidance, if industrial conditions or the hazardous location may cause abnormal stresses or adversely affect the system.

SECTION 3: INTRODUCTION

3.1: DESCRIPTION

The PressurEx Enclosures are specifically designed low-leakage Ex p enclosures to offer robust protection and safe operation of electrical equipment in hazardous areas of explosive gases.

Each enclosure is supplied with a tailored Expo Purge System, ensuring effective purge and pressurization to maintain a safe internal atmosphere. This system is configured specifically for the client's application, delivering precise and reliable performance.

The PressurEx range offers tailored solutions with 20 different sizes and a variety of configurable options to fit your needs making it ideal for a range of industrial applications:

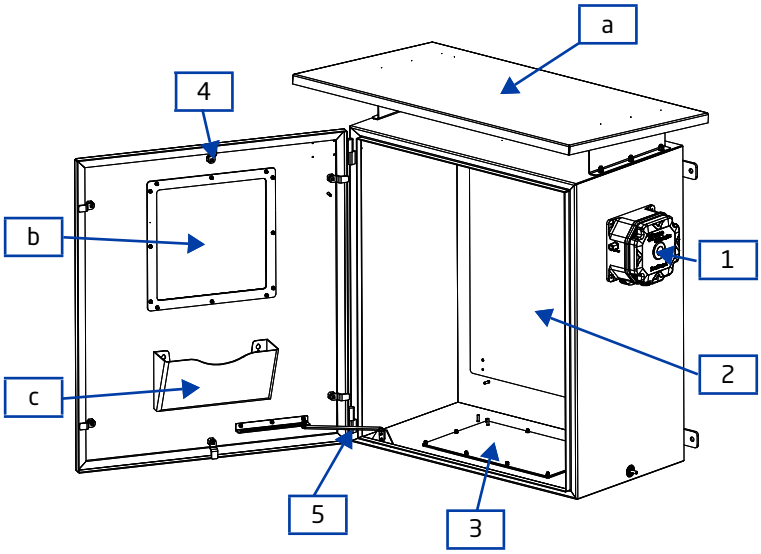
- Laminated Glass Windows: Allow easy equipment monitoring without compromising safety.
- Sunshade: Provides additional protection from excessive temperature rise due to sunlight, enhancing performance in outdoor environments.
- Document Pocket: Convenient storage for essential documents or tools.
- 19" Rack Mounting: Bosses fitted to allow 19" racking systems to be fitted (not supplied).

Providing the population complies with the schedule of limitations, Expo will certify the completed enclosure, issuing compliance documents that meet the requirements of relevant standards and regulations, including ATEX, IECEx, or NFPA496 depending on the end-user's needs.

3.2: PRESSUREX FEATURES

3.2.1: Enclosure Features

Single Door Enclosure



Standard Features	
1	Purge System
2	Chassis Plate
3	Gland Plate
4	Door with Compression Locks
5	Multi Angle Door Stay
Optional Features	
a	Sunshade
b	Laminated Glass Windows
c	A4 Document Pocket

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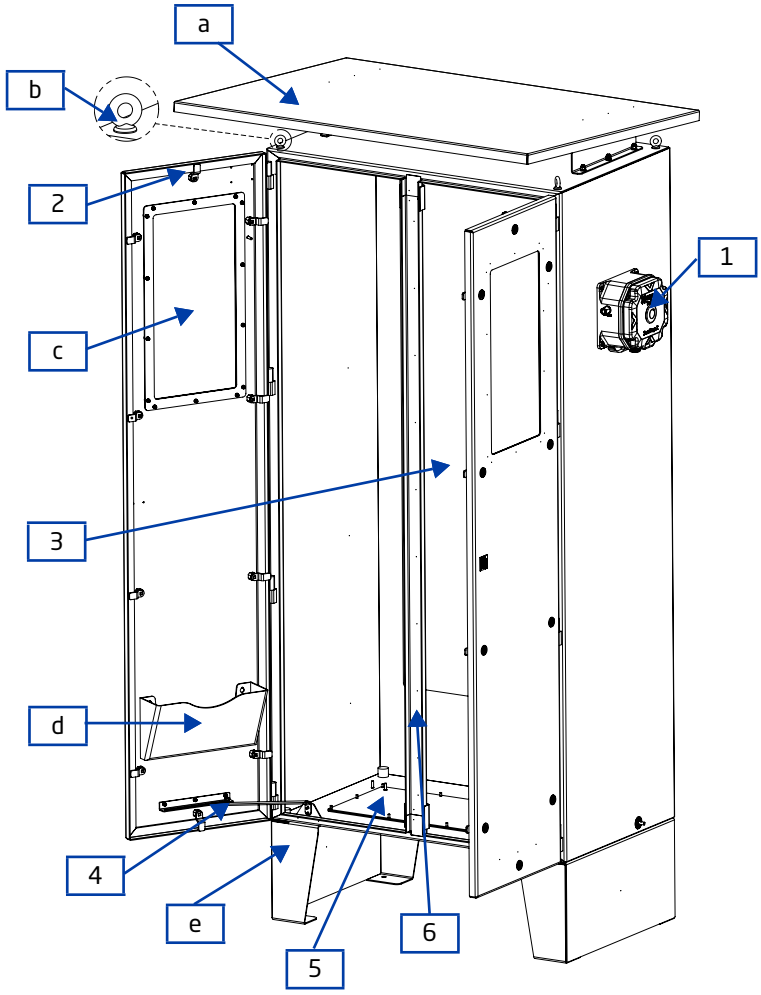
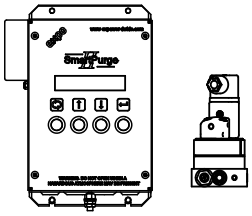
Double Door Enclosures



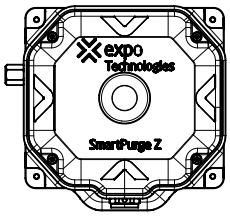
Standard Features	
1	Purge System
2	Doors with Compression Locks
3	Chassis Plate
4	Multi Angle Door Stay
5	Gland Plate
6	Removable Centre Post
Optional Features	
a	Sunshade
b	Lifting Eye Bolts
c	Laminated Glass Windows
d	A4 Document Pocket
e	Plinth Legs

3.2.2: Purge Systems

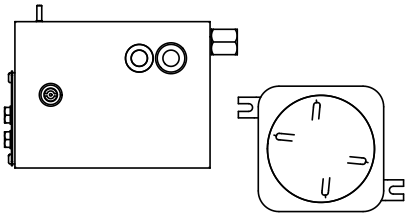
SmartPurge 2 + SP2-DV



SmartPurge Z



MiniPurge XLC + MIU/d



Note: Purge position and ancillaries fitted will vary depending on the purge system fitted and the size or enclosure. Refer to Installation for more details.

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SECTION 4: ENCLOSURE MODIFICATION GUIDELINES

Modifications to the enclosure are allowed only under the following conditions to ensure continued compliance with certification:

- Any modifications to the enclosure walls must be documented and reflected in the customer's controlled engineering drawings.
- Additional entries or holes into the enclosure are permitted for the following components:
  - Visual indicators
  - Control devices (e.g., push buttons, switches)
  - Actuators
  - Cable glands and cable management systems
  - Vortex coolers
  - Fixing holes for labels
- All modifications, sealing methods and components must preserve the original ingress protection rating of the enclosure, IP66 or UL Type 4X, depending on the model.
- Additional earth bonding points may be installed if necessary to maintain proper electrical continuity.

Note: Any modifications outside the scope defined above may void certifications and should be approved by the manufacturer or a qualified authority.

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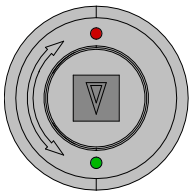
SECTION 5: OPERATION

5.1: OPERATION OF THE DOORS

CAUTION! Doors must NOT be opened when the system is energised.

5.1.1: Lock/unlock the door(s)

The door(s) are secured with compression locks fitted around the door perimeter to ensure maximum sealing when locked.



1. Insert the provided key into the required compression lock.
2. Rotate the key 180° to unlock/lock. When the All locks turn clockwise to lock. Locks have a visual mark to show when in the unlocked/locked position. When the mark aligns to the red dot, the lock is locked, when aligned to the green dot, the lock is unlocked.

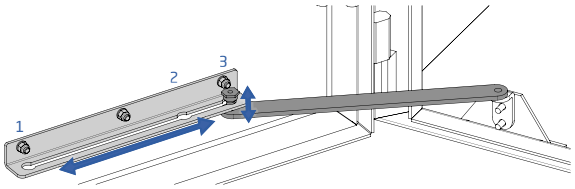
Note: Locks on the hinge side must be unlocked first.

3. Once all locks are released the door will open.

5.1.2: Adjust the door opening angle

The door(s) are fitted with a multi-angle door stay:

- First Position: Closed
- Second Position: 90° door opening
- Third Position: 120° door opening.



To open or close the door from any position lift the door stay slightly and open/close the door as required.

5.2: PURGE AND PRESSURIZATION

Purge and pressurization is a two-step process completed before electrical equipment inside the enclosure can be safely energised.

During the purge cycle, the purge system flushes the enclosure with clean compressed air/inert gas to displace any hazardous gas that has accumulated within the system while not pressurized.

To ensure all areas of the enclosure are purged and only the clean purge air is left in the enclosure, the purge cycle must be set to allow multiple volume changes following local regulations for the hazardous area rating and region.

CAUTION! It is the user's responsibility to ensure the system purges for an adequate time to "clean" the internal enclosure atmosphere.

Required Purge Time

(Enclosure Internal volume (L / ft.3) x No. Volume changes) / Purge Flow Rate (Nl/min / SCFM)

Note: The Number of volume changes depends on certification requirements and the type of equipment contained within the enclosure. Refer to the pressurised enclosure certification.

At the end of the purge cycle, the purge system will automatically switch to leakage compensation mode, adjusting the flow rate to compensate for any leakage to maintain an overpressure within the enclosure, preventing hazardous gas from the atmosphere from re-entering the enclosure.

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- Zone 1 and Class I Div 1 applications: The System automatically switches power ON/OFF to the enclosure equipment depending on enclosure pressure.
- Zone 2 and Class I Div 2 applications: The user manually switches power ON/OFF to the enclosure equipment depending on enclosure pressure.

Note: Refer to the relevant purge system manual for full operational instructions.

5.3: THERMOSTATIC SWITCH

The enclosure is equipped with a dual thermostat system, designed for enhanced reliability. The two thermostats are connected in series to maintain functionality even if one switch fails.

Note: It is the user's responsibility to integrate and utilize the thermostat switch circuit appropriately.

Operation by Zone Classification:

- ATEX/IECEx Zone 1: On over temperature, the system must be disconnected automatically.
- ATEX/IECEx Zone 2: On over-temperature, the system should either disconnect power or trigger a remote alarm.

Thermostat Set Points:

- Opens at 50°C (122°F): disconnects power or sends an over-temperature alarm.
- Closes at 35°C (95°F): Reconnects power or cancels the alarm.

The thermostat can also be used to initiate cooling systems or remote alarm systems as required.

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SECTION 6: INSTALLATION

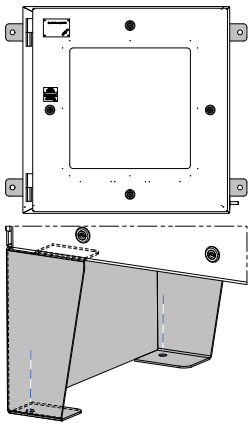
- The enclosures shall be installed in accordance with relevant standards, such as EN/IEC 60079-14, NEC 500 and any local codes of practice that are in force.
- Enclosures are intended for permanent installation on a fixed structure.

6.1: SELECT A LOCATION

- The wall/structure or floor where the system is to be mounted, must be solid, level and of sufficient size and load-bearing capacity.
- The area where the system will be located must include adequate space to open and access the door(s) and for any connection work to be carried out.

WARNING! When moving the enclosure, safe handling practices should be observed.

1. Position the enclosure into the required location.
2. The enclosure must be secured into position.
   - Up to size 13 Enclosures: Supplied with wall mounting lugs for wall/structure mounting.
   - Size 14 to 20 Enclosures: Supplied with Plinth Bosses
     - If the Plinth legs are supplied by Expo, they will be supplied with mounting holes for floor mounting.
     - If the plinth is not supplied by Expo, the enclosure must be fitted to a suitable plinth/legs via M12 fixings to the plinth bosses. The enclosure must be then secured in place accordingly.
   - Mounting holes are 14mm in diameter suitable for a M12 or ½" fixing.

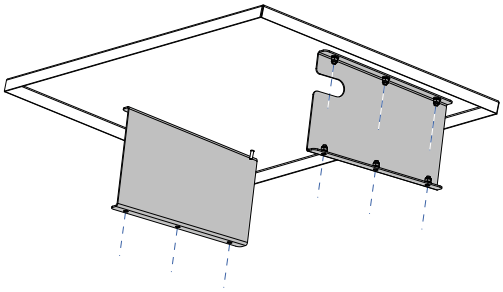


Note: Fixings not supplied. Suitable fixings for the mounting surface and to support the enclosure weight shall be used.

6.2: SUNSHADE (IF SUPPLIED)

6.2.1: Assemble the Sunshade

1. Align the bracket to the top of the sunshade
2. Secure the bracket in place with the supplied fittings.
3. Repeat for the other bracket



6.2.2: Fix the Sunshade to the Enclosure

1. Lift the sunshade on to the top the enclosure.

CAUTION! Observe safe lifting practices when lifting the sunshade.

2. Align the sunshade into position.
3. Secure in place with the fittings provided.

Note: Additional shading locally to the enclosure may be required if internal temperatures exceed the maximum operating temperatures.

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6.3: PURGE SYSTEM

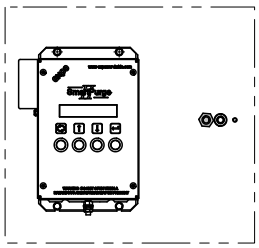
The purge controller is supplied fitted to the enclosure and all related components installed and connected.

CAUTION!

- The air supply must be: clean, non-flammable and from a non-hazardous location. The air should be of Instrument Air Quality, free from water and oil in accordance to BS ISO 8573-1: 2010.
- When handling compressed air precautions and safe working practices shall be observed.
- All pipework/tubing and fittings shall be suitable for the area and the hazardous area.

Note: Refer to the relevant Purge system manual for more detailed requirements and instructions.

6.3.1: SP2

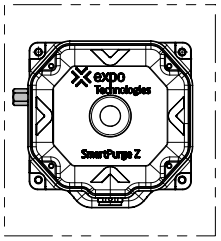


The SP2 controller is fitted to the right-hand side of the enclosure.

The air into the enclosure is controlled via the SP2-DV digital valve which is fitted to the right-hand side of the enclosure next to the SP2 controller.

1. Connect the supply line to the air supply inlet connector in the SP2-DV. The purge Inlet is a 1/4" BSPP fitting.
2. The supply gas outlet will be supplied pre-piped and routed within the enclosure.
3. The SP2-DV will be supplied wired to the SP2 controller.

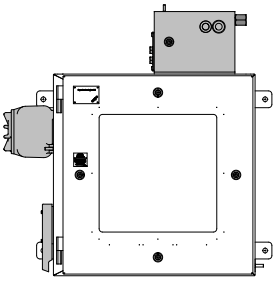
6.3.2: SPZ



The SPZ controller is fitted to the right-hand side of the enclosure.

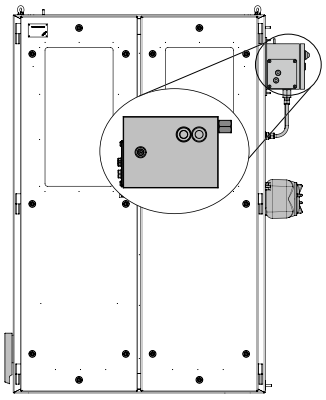
1. Connect the supply line to the purge inlet connector on the side of the SPZ. The purge Inlet is a 1/4" NPT fitting. Minimum pipe inner diameter of 9mm must be used.
2. The purge gas outlet will be supplied with the 12mm tube pre-installed and routed within the enclosure.

6.3.3: MiniPurge X



The MiniPurge X controller and MIU/d's mounting position is dependant on the enclosure size:

Enclosure Size 1 to 13:	Controller: Top mounted
	MIU/d: Left-hand side mounted
Enclosure Size 14 to 20:	Controller: Right-hand side mounted
	MIU/d: Right-hand side mounted



The Relief Valve (RLV) is fitted to the left-hand side of the enclosure on all enclosure sizes.

1. Connect the supply line to the air supply connector on the side of the MiniPurge X controller. The air supply connector is a 1/2" NPTF fitting.
2. All required connection between the purge controller, RLV, MIU/d and to the enclosure (if side mounted) will be supplied pre-installed.

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6.4: ELECTRICAL CONNECTION

WARNING! Installations shall comply with instructions in this manual, relevant regulations, and local codes of practices for electrical installations.

WARNING! Always observe safe working practices for electrical systems.
- Disconnect power and secure from re-connection.
- Ensure the absence of voltage before commencing work.

WARNING! The power and signal shall have a means of isolation. The isolating switch must be approved for the location or located in a non-classified area.

WARNING! Ensure cables are suitably rated for the installation area and all connections are correct, fully secure, with no bare wires protruding.

6.4.1: Electrical Consideration

Power to Enclosure Equipment

- Zone 1 and Class I Div 1: The power supply and signal lines to the enclosure equipment must be controlled by the purge system for automatic control depending on the enclosure pressure.
- Zone 2 and Class 1 Div 2: The power supply and signal lines to the enclosure equipment shall have a means of isolation for manual switching depending on the enclosure pressure. It is the responsibility of the user to switch off the supply as soon as possible in the event of pressure loss.

Thermostatic Switch

- The thermostatic switch and terminal blocks are a Din Rail assembly fitted to the top of the enclosure.
- It is the user's responsibility to make use of the thermostatic switch according to local regulations and codes of practice.

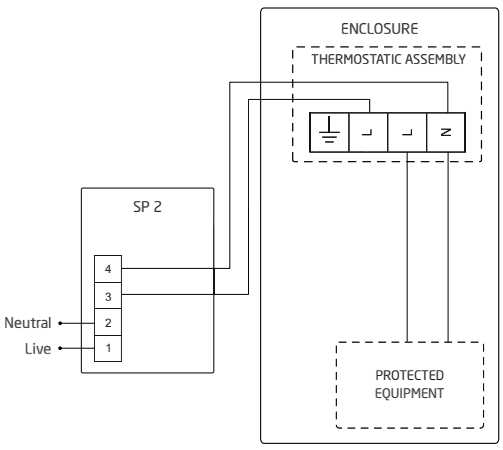
Note: Refer to the relevant purge system manual for more details on system hook-up and wiring.

6.4.2: Direct Wiring

WARNING! The thermostatic assembly is limited to 5 Amps. When directly wiring the system the enclosure equipment fitted to the thermostatic switch shall not exceed this rating.

SmartPurge 2

1. Loosen the lid screws and remove from the SP 2.
2. Insert cables through the cable entries.
3. Connect wires to terminals, tightening screws to 0.4–0.8 Nm:
   - Mains Power to terminal 1 (Live) and 2 (Neutral).
   - Connect power to the enclosure to terminal 3 (Live) and 4 (neutral) in the SP 2.
   - Route the cable into the enclosure and connect SP 2 Live and Neutral to the thermostatic assembly terminal L and N.
   - Connect the protected equipment inside the enclosure to the thermostatic assembly terminal L and N.
4. Replace and secure the SP 2 lid.



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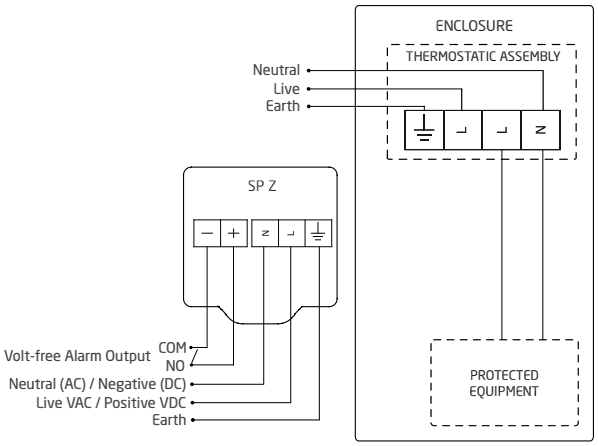
SmartPurge Z

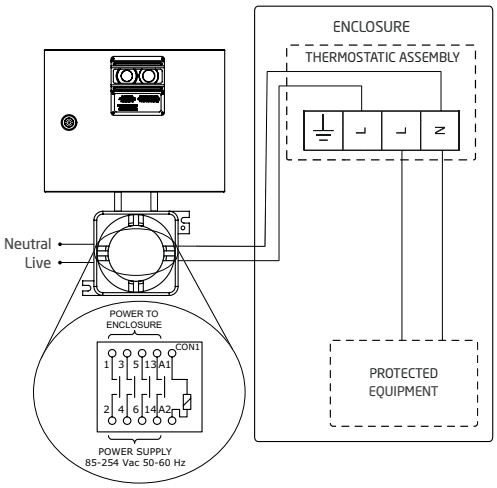
WARNING! The power to the enclosure shall have a means of isolation.

1. Route the mains supply cable into the enclosure.
2. Connect the mains supply to the thermostatic assembly tightening terminal screws to 0.4–0.8 Nm:
   - Live to L, Neutral to N, Earth to Earth
   - Connect the protected equipment inside the enclosure to the thermostatic assembly terminal L and N.
3. Loosen the SP Z lid screws and remove the lid.
4. Route the power cable through the back cable gland.
5. Connect the mains supply to the SP Z push-in terminals
   - Live to L, Neutral to N, Earth to Earth.
6. Replace and secure the SP Z lid.



MiniPurge X with MIU/d Terminal Box

1. Loosen the lid locking screw, unscrew and remove the lid from the MIU/d box.
2. Insert cables through certified cable entries into the MIU/d box.
3. Connect wires to terminals, tightening screws to 0.4–0.8 Nm:
   - Mains Power to terminal 2, 4, 6, 14 as required.
   - Connect enclosure power to the corresponding Live and Neutral terminal in the MIU/d.
   - Route the cable into the enclosure and connect MIU/d Live and Neutral to the thermostatic assembly terminal L and N.
   - Connect the protected equipment inside the enclosure to the thermostatic assembly terminal L and N.
4. Replace and secure the MIU/d lid.



6.4.3: Indirect Wiring

If equipment inside the enclosure exceeds 5 Amps, alternative wiring solutions can be made where the signal from the thermostatic switch can be used to control the power connection/disconnection.

Note: Please consult Expo if alternative wiring advice is required.

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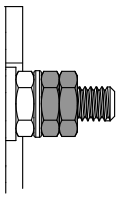
6.5: EARTH CONNECTION

WARNING! The PressurEx enclosure must be earthed to the ground accordingly.

6.5.1: External Earth



An M8 earth connection is provided on the external surface of the Enclosures. This connection must be used to connect the enclosure metalwork to the Equi-potential Bonding System/Earth. This is in addition to any protective earth terminals provided inside the enclosure.

- The external earth wire must be protected so that it cannot become accidentally loosened or damaged by twisting. The contact pressure on the electrical connections shall be maintained and not be affected by dimensional changes of insulating materials in service due to factors such as temperature or humidity.
- The external earth wire must be sized in accordance with local rules for electrical installations and shall not be smaller than 4 mm^2. The earth connection shall be located in a position that facilitates maintenance. The external earth connections shall be protected against corrosion.

6.5.2: Internal Earth

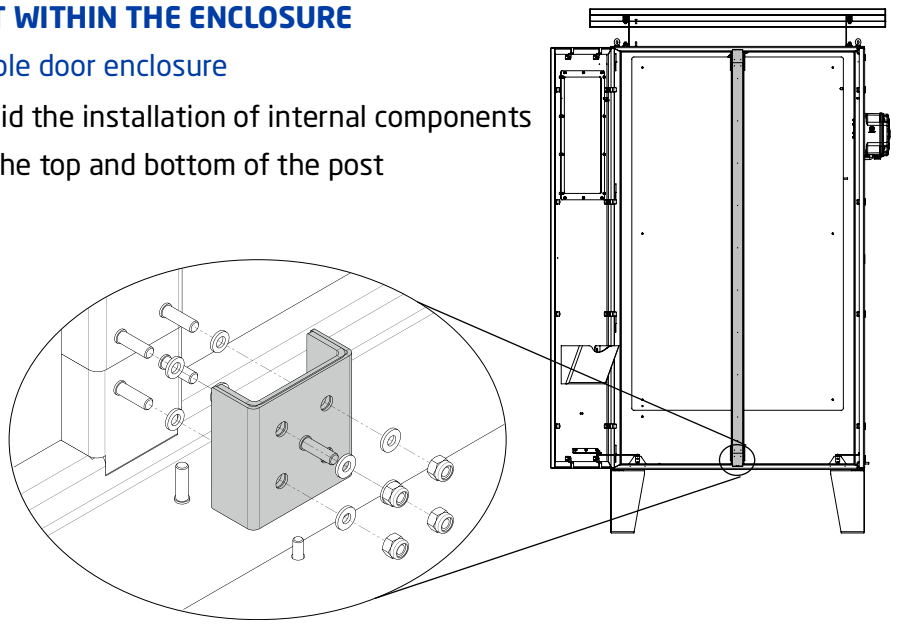
- Components such as the door(s) and gland plates which are mounted with seals and gaskets require internal earth connection to the enclosure. These components are supplied pre-connected and must be reconnected if disconnected for the component to be removed for repair, replacement or modification.
- The enclosure and any additional options, such as the sunshade, window and plinths, are designed to be electrically bonded through metal to metal contact and via metal fasteners to maintain earth continuity across all parts when properly installed. Additional separate earth connections for each component is not required. The user must verify earth continuity across each components to the enclosure after installation, and whenever a component is removed for repair, replacement or modification.

6.6: INSTALLATION OF EQUIPMENT WITHIN THE ENCLOSURE

6.6.1: Remove the Centre post – Double door enclosure

The centre post can be removed to aid the installation of internal components

- Loosen the retaining bolts from the top and bottom of the post
- Slide the post out of position



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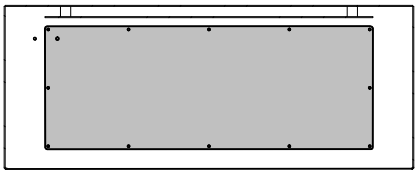
6.6.2: Gland Plate

Entry into the enclosure can be made via the gland plate located in the bottom of the enclosure. The gland plate can be removed for making the required entries.

WARNING! Cable Entry into the enclosure must be via Ex-certified cable glands and maintain the enclosure IP rating. Cable glands must be suitable for the cables being used and used and installed correctly in accordance with the manufacturer's instructions

1. Loosen and remove all retaining Nyloc nuts and washers from around the plate.
2. When replacing the gland plate, insert each Nyloc nut and washer and tighten to a torque of 6Nm.

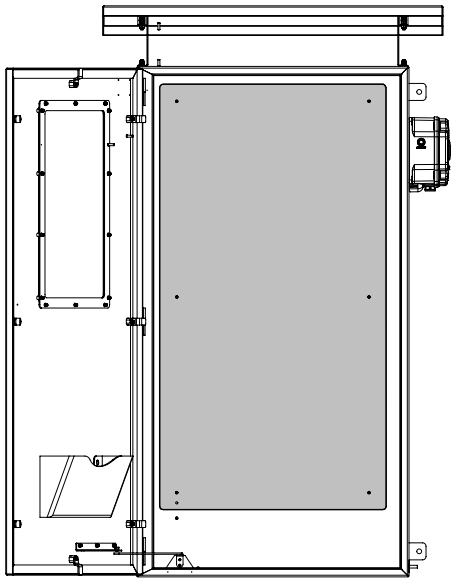
3 mm (0.12") thick stainless steel	
Enclosure Size	**Gland Plate Dimensions (W x D)**
Enclosure sizes 1 to 13	500 mm x 300 mm (19.5" x 12")
Enclosure sizes 14 to 20	800 mm x 300 mm (31.5" x 12")



6.6.3: Chassis Plate

The chassis plate provides an easy and secure installation of equipment and electronics into the enclosure.

Enclosure Size	Chassis Plate Dimensions (H x W)
Size 1	500 mm x 500 mm (19.5" x 19.5")
Size 2	665 mm x 500 mm (26.18" x 19.69")
Size 3	665 mm x 665 mm (26.18" x 26.18")
Size 4 & 5	830 mm x 500 mm (32.68" x 19.69")
Size 6 & 7	830 mm x 665 mm (32.68" x 26.18")
Size 8	830 mm x 750 mm (32.68" x 29.53")
Size 9	1050 mm x 500 mm (41.34" x 19.69")
Size 10 & 11	1050 mm x 665 mm (41.34" x 26.18")
Size 12 & 13	1250 mm x 665 mm (49.21" x 26.18")
Size 14	1250 mm x 800 mm (49.21" x 31.50")
Size 15	1670 mm x 1000 mm (65.75" x 39.37")
Size 16 & 17	1670 mm x 665 mm (65.75" x 26.18")
Size 18 & 19	1670 mm x 800 mm (65.75" x 31.50")
Size 20	1670 mm x 1000 mm (65.75" x 39.37")



6.6.4: Equipment Installation

- All equipment shall be mounted on the supplied chassis plate, covering no more than 70% of its cross-sectional area. Please consult Expo if equipment is to be mounted off the chassis plate.
- Internal parts with enclosed volumes shall be ventilated. Factory-sealed or potted devices are permitted closed items.
- Unventilated items are permitted up to a total volume <1% of the enclosure internal volume.
- Any Ex-rated equipment used on the enclosure shall be approved to the relevant application scheme.
- Fans are permitted up to 400l/s (14.125ft^3/s) with a minimum distance of 200mm (7.8") between the fan and potential air ingress points.
- Only approved batteries for memory retention or RTC shall be used within the enclosure.
- Devices or components through the enclosure wall shall maintain the IP rating of the enclosure and be metallic or Ex rated to the relevant application scheme.

Note: Consult Expo or refer to PressurEx Schedule of Limitations for a full list of requirements.

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SECTION 7: COMMISSIONING

WARNING! Never turn the power ON to the system while the enclosure door(s) are open/ unlocked unless the atmosphere is confirmed to be free of hazardous gases.

- Check the system has been installed in accordance with these instructions and local regulations.
- Warning labels may be present in various positions on the enclosure. The instructions given on these labels must be strictly adhered to for safe operation of the system.
- Verify earth grounding and electrical continuity between the enclosure and any attached components.
- The purge system is shipped preconfigured for the enclosure and application.

Note: Refer to the relevant purge manual for more operation and commissioning information if required.

SECTION 8: MAINTENANCE

WARNING! Disconnect the power and shut off the airflow before accessing the enclosure.

8.1: 6-MONTH MAINTENANCE

Routine preventive maintenance is crucial for reliable system operation. The following schedule serves as a guideline and should be supplemented by any national or local regulations.

- Check the purge and pressurization system is functioning correctly as described in the relevant instruction manual.
- Check that all labels are legible and undamaged; replace if necessary.
- Inspect all system components and pipework for security and damage; repair or replace if necessary.
- Inspect the door, gland plate, and window (if fitted) seals for leaks; replace if necessary.
- Check all compression locks are functioning properly.
- Clean and inspect the relief valve, removing debris or corrosion.
- Verify earth grounding and electrical continuity between the enclosure and any attached components.
- Ensure no unauthorised modifications have been made.

Note: Any repairs, modifications or additions must be carried out in consultation with Expo, and revised approved certification and/or documentation obtained.

8.2: CLEANING

WARNING! Use cleaning substances compatible with the system's construction materials. Avoid solvents or abrasives that could compromise the enclosure's performance.

- For general cleaning, use a damp cloth or cotton pad.
- For stubborn spots, use water or a diluted household cleaning solution.
- Clean all non-metallic surfaces, including plastic parts and viewing windows, with a damp cloth only.

SECTION 9: TROUBLESHOOTING

- Check the air supply pressure to the purge system is as specified in the relevant purge system manual.
- Check the air is clean, free from water, oil or dirt as these can cause several issues within the system.

Refer to the relevant purge system manual for the specific guide to system issues and solutions.

SECTION 10: TECHNICAL SPECIFICATION

10.1: GENERAL SPECIFICATION

Material of Construction	316L stainless steel
Ingress Protection	IP66 or Type 4X
Ambient Temperature Range	-20°C to +55°C (-4°F to +131°F)
Door Fasteners	Tool operated 1/4 turn. 316L stainless steel.
Chassis Plate	Corrosion resistant zinc coated steel
Gland Plate	Base mounted. Fully gasketed
Temperature Sensors	Thermostats for over temperature alarm and/or power isolation
Pressurization System	MiniPurge or SmartPurge, dependent on hazardous area requirements
Options	Glass Window in door(s) Stainless steel Sunshade 300 mm (12") Plinth Legs for size 14 and above enclosures A4 Document pocket. Installed inside door. Rack mounting bosses for standard 19" rack. (Rack not supplied)

10.2: SYSTEM SPECIFICATION

Size	Enclosure Dimensions H x W x D	Door Quantity	Mounting Method	Material Thickness	Weight*	Heat Dissipated*
01	600 x 600 x 400 mm 23.5 x 23.5 x 15.75"	Single	Wall Lugs	2 mm 0.08"	32 kg 70.5 lb	105 W 358 BTU/hr
02	800 x 600 x 400 mm 31.5 x 23.5 x 15.75"	Single	Wall Lugs	2 mm 0.08"	39 kg 86 lb	128 W 437 BTU/hr
03	800 x 800 x 400 mm 31.5 x 31.5 x 15.75"	Single	Wall Lugs	2 mm 0.08"	47 kg 103.6 lb	154 W 525 BTU/hr
04	1000 x 600 x 400 mm 39.5 x 23.5 x 15.75"	Single	Wall Lugs	2.5 mm 0.1"	57 kg 125.6 lb	150 W 512 BTU/hr
05	1000 x 600 x 500 mm 39.5 x 23.5 x 19.75"	Single	Wall Lugs	2.5 mm 0.1"	63 kg 139 lb	176 W 600 BTU/hr
06	1000 x 800 x 400 mm 39.5 x 31.5 x 15.75"	Single	Wall Lugs	2.5 mm 0.1"	69 kg 152 lb	179 W 611 BTU/hr
07	1000 x 800 x 500 mm 39.5 x 31.5 x 19.75"	Single	Wall Lugs	2.5 mm 0.1"	76 kg 167.5 lb	208 W 710 BTU/hr
08	1000 x 900 x 500 mm 39.5 x 35.5 x 19.75"	Single	Wall Lugs	2.5 mm 0.1"	83 kg 183	224 W 764 BTU/hr
09	1300 x 600 x 500 mm 51 x 23.5 x 19.75"	Single	Wall Lugs	2.5 mm 0.1"	78 kg 172 lb	214 W 730 BTU/hr
10	1300 x 800 x 400 mm 51 x 31.5 x 15.75"	Single	Wall Lugs	2.5 mm 0.1"	84 kg 185 lb	218 W 744 BTU/hr

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11	1300 x 800 x 500 mm 51 x 31.5 x 19.75"	Single	Wall Lugs	2.5 mm 0.1"	93 kg 205 lb	251 W 856 BTU/hr
12	1500 x 800 x 400 mm 59 x 31.5 x 15.75"	Single	Wall Lugs	2.5 mm 0.1"	94 kg 207 lb	243 W 829 BTU/hr
13	1500 x 800 x 500 mm 59 x 31.5 x 19.75"	Single	Wall Lugs	2.5 mm 0.1"	104 kg 229 lb	280 W 955 BTU/hr
14	1500 x 1000 x 400 mm 59 x 39.5 x 15.75"	Double	Plinth Bosses	2.5 mm 0.1"	110 kg 242.5 lb	400 W 1365 BTU/hr
15	1800 x 1200 x 500 mm 71 x 47 x 19.75"	Double	Plinth Bosses	3 mm 0.12"	158 kg 348 lb	586 W 2000 BTU/hr
16	2000 x 800 x 500 mm 78.75 x 31.5 x 19.75"	Single	Plinth Bosses	3 mm 0.12"	157kg 346 lb	480 W 1638 BTU/hr
17	2000 x 800 x 800 mm 78.75 x 31.5 x 31.5"	Single	Plinth Bosses	3 mm 0.12"	198 kg 436 lb	614 W 2095 BTU/hr
18	2000 x 1000 x 400 mm 78.75 x 39.5 x 15.75"	Double	Plinth Bosses	3 mm 0.12"	168 kg 370 lb	512 W 1747 BTU/hr
19	2000 x 1000 x 600 mm 78.75 x 39.5 x 23.5"	Double	Plinth Bosses	3 mm 0.12"	197 kg 433 lb	704 W 2402 BTU/hr
20	2000 x 1200 x 500 mm 78.75 x 47 x 19.75"	Double	Plinth Bosses	3 mm 0.12"	207 kg 456 lb	640 W 2184 BTU/hr

*Weights are of unpopulated enclosure and excludes options and purge system.
*Estimated heat dissipation with 15°C differential. Wall-mount - excludes heat dissipation from back side. Plinth-mount - includes dissipation from all 6 sides.

10.3: OPTION SPECIFICATION

10.3.1: Window in door

6.4 mm (0.25") thick laminated glass		
Size (H x W)	Enclosure sizes 1 to 8	350 mm x 350 mm (14" x 14")
	Enclosure sizes 9-13, 15-17, 20	550 mm x 350 mm (21.5" x 14")
	Enclosure size 14, 18, 19	550 mm x 270 mm (21.5" x 10.5")

10.3.2: Purge System

System Reference	Purge System	Purge Part Number	Suitability
01	SmartPurge 2	SP2-PM-SS + SP2-DV	Zone 1
02	SmartPurge Z	SPZ-1ALG-M111	Zone 2 & Class I, Div. 2
03	MiniPurge X	4X 1XLC/SS/ET/PO + MIU/d	Class I, Division 1

10.4: CERTIFICATION

Component (Enclosure) Certificate	ATEX	EXV 19ATEX0454U
	IECEx	EXV 19.0010U
	UL50E	Type 4X 20151230-E477372
Populated Certificate	ATEX	Zone 1: EXV 19ATEX0469X Zone 2: EXV 19ATEX0470X
	IECEx	Zone 1: EXV 19.0024X Zone 2: EXV 19.0025X
	Class I Div 1 & 2	Expo MDOC to NFPA496

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10.5: MODEL NUMBERS

	IP Rating	Size	Hinge Position	Plinth Legs	Window	Lifting	Doc Pocket	Sun Shade	Rack Bosses	Purge System
		01	LH/RH	XX	WS/XX	XX	XX	SU/XX	RM/XX	
		02	LH/RH	XX	WS/XX	XX	XX	SU/XX	RM/XX	
		03	LH/RH	XX	WS/XX	XX	XX	SU/XX	XX	
		04	LH/RH	XX	WS/XX	XX	DP/XX	SU/XX	RM/XX	
		05	LH/RH	XX	WS/XX	XX	DP/XX	SU/XX	RM/XX	
		06	LH/RH	XX	WS/XX	XX	DP/XX	SU/XX	XX	
		07	LH/RH	XX	WS/XX	XX	DP/XX	SU/XX	XX	
		08	LH/RH	XX	WS/XX	XX	DP/XX	SU/XX	XX	
		09	LH/RH	XX	WS/XX	XX	DP/XX	SU/XX	RM/XX	
	2E	10	LH/RH	XX	WS/XX	XX	DP/XX	SU/XX	XX	01
PE	3E	11	LH/RH	XX	WS/XX	XX	DP/XX	SU/XX	XX	02
	4E	12	LH/RH	XX	WS/XX	XX	DP/XX	SU/XX	XX	03
		13	LH/RH	XX	WS/XX	XX	DP/XX	SU/XX	XX	
		14	DD	PL/XX	WL/WR/W2/XX	LE/XX	DP/XX	SU/XX	XX	
		15	DD	PL/XX	WL/WR/W2/XX	LE/XX	DP/XX	SU/XX	XX	
		16	LH/RH	XX	WS/XX	XX	DP/XX	SU/XX	XX	
		17	LH/RH	XX	WS/XX	XX	DP/XX	SU/XX	XX	
		18	DD	PL/XX	WL/WR/W2/XX	LE/XX	DP/XX	SU/XX	XX	
		19	DD	PL/XX	WL/WR/W2/XX	LE/XX	DP/XX	SU/XX	XX	
		20	DD	PL/XX	WL/WR/W2/XX	LE/XX	DP/XX	SU/XX	XX	

XX = Not fitted or Not available for model

1. Ingress Protection: 2E = Zone 1 - IP66 ; 3E = Zone 2 - IP66 ; 4E = Class/Div UL50E Type 4X
2. Hinge Position: LH = Left-hand ; RH = Right-hand ; DD = Double Door
3. Plinth Legs: PL = Plinth Legs fitted
4. Window: WS = Single door Window ; WL = Left-hand Door ; WR = Right-hand Door ; W2 = Both Doors
5. Lifting: LE = M12 Lifting Eye Bolt fitted
6. Document Pocket: DP = Document Pocket Fitted
7. Sunshade: SU = Sunshade Fitted
8. Rack Bosses: Bossed fitted for 19" Rack mounting systems
9. Purge System: 01 = SmartPurge 2 ; 02 = SmartPurge Z ; 03 = MiniPurge X

Note: Dimensions throughout this manual originate in metric units, and are converted to imperial units.

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ExVeritas®

1 ATEX CAT 3 Conformity Certificate

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: ExVeritas 19 ATEX 0470X Issue: 2

4 Equipment: PE3 and PE3E Range of Enclosures

5 Manufacturer: Expo Technologies Ltd

6 Address: Unit 2, The Summit, Hanworth Road, Sunbury on Thames, Surrey, TW16 5DB, UK

7 This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to. The assessments are recorded in ExVeritas project file number EXVNNNA.

8 The equipment has been assessed against the following Standards and found to comply:

EN IEC 60079-0: 2018 EN 60079-2: 2014 EN 60079-31: 2014

9 If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

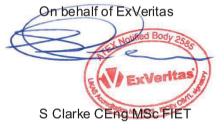
10 ExVeritas takes no responsibility for the validity of any information or data supplied by the manufacturer on which parts of the assessment may be based upon.

11 The marking of the equipment shall include the following:

II 3 G Ex pzc IIC T4 Gc
II 3 D Ex tc IIIC T135°C Dc Ex pzc IIIC T135°C Dc

UKAS PRODUCT CERTIFICATION
No. 8613

On behalf of ExVeritas



S Clarke CEng MSc FIET
Managing Director

FO-CB-24 V6

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Schedule

12 Description of Equipment or Protective System

The Expo Technologies PE3 and PE3E range of Enclosures consisting of the PE2 or PE2E enclosure and accessory range as identified on component certificate number ExVeritas19ATEX0454U, fitted with internal apparatus as defined in this schedule.

For use in explosive gas atmospheres or in explosive dust atmospheres where the equipment is marked for pressurization, each enclosure will be fitted with a purge controller providing pressurization type "pzc" as appropriate, suitably ATEX certified as apparatus.

Selection of the purge controller, purge flow rate, and purge time are identified by reference to the enclosure volume as defined on drawing SD7952.

Components as defined in Expo Technologies drawings SD7960 "Contents for PE3 and PE3E Enclosures" and / or SD7961 "PE3 & PE3E Enclosures with Dust Protection" may be installed.

Both internal and external earthing facilities are provided.

Standard temperature range -20°C to +40°C with alternative increased range -20°C to +55°C marked when appropriate.

Alternative marking:

Enclosure may be manufactured containing intrinsically safe associated apparatus, in which case they shall be marked to include the appropriate intrinsic safety marking as appropriate, for example:

II 3 (1) G Ex pzc [ia Ga] IIC T4 Gc

Where certified apparatus incorporating protection types flameproof, increased safety, intrinsic safety, encapsulation or Type "n" is incorporated onto or into the enclosure, the protection concepts may as an alternative to the marking of individual certified items on a label on the exterior of the enclosure, be incorporated into the pressurized enclosure overall marking code, in accordance with drawing SD7947.

Where apparatus is incorporated with a temperature class giving a higher surface temperature than T4 (i.e. T3, T2 or T 1) for Gas atmospheres or T135°C for Dust atmospheres, the temperature class shall be amended from T4 or T135°C to match the highest surface temperature class of the certified apparatus installed on or in the enclosure.

Where certified apparatus is incorporated that requires marking of the gas group other than IIC or dust group other than IIIC, the overall marking code shall be modified to reflect the most restrictive gas or dust group of the incorporated apparatus.

Where enclosures are manufactured that simultaneously comply with the requirements for explosive gas atmospheres and explosive dust atmospheres, the appropriate markings shall be listed separately as required by EN 60079-0:2018 Clause 29.6.

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Schedule

12.1 Details of change

Issue 1

The following changes are incorporated in issue 1 of this certificate:

- To allow the installation of a separately certified air conditioner manufactured by Ice Qube Inc. (QPS16ATEX0002X-03) as shown in drawing SD 8473 v1.
- Introduction of an additional Condition of Manufacture (Routine Tests - No. 4).

Issue 2

- The following changes are introduced in issue 1 of the certificate: Introduction of new drawing (SD8591) – to allow the optional use of component Ex eb (tb) certified enclosures.

13 Descriptive Documents

13.1 Associated Report and Certificate History:

Report Number	Cert Issue Date	Issue	Comment
R2000/A/2	18 Jul 2019	0	Initial issue of the Prime Certificate
R2686/A/1	22 Jul 2020	1	Variation One
R3465/A/1	04 Nov 2022	1	Variation Two

13.2 Compliance Drawings:

Issue 1

Title:	Drawing No	Issue	Sheets	Date
Internal Configuration - Fans	SD7632	1	1 of 1	16/12/09
Protruding Sections	SD7633	1	1 of 1	16/12/09
Chassis Sizes	SD7634	1	1 of 1	1/3/10
Heat Dissipation — Configuration	SD7636	1	1 of 1	1/3/10
PE3 & PE3E Enclosure Labels	SD7946	5	11 of 11	15/07/19
Alternative marking PE3 and PE3E Enclosures	SD7947	4	1 of 1	15/07/19
Purge Test with no Internal Source of Release	SD7948	2	2 of 2	04/08/11
PE3 Battery Testing Procedure	SD7949	3	1 of 1	15/07/19
PE3 Approved Batteries	SD7950	3	1 of 1	15/07/19
Connection Facilities for PE3 and PE3E Enclosures	SD7951	3	1 of 1	15/07/19
Purging Conditions	SD7952	2	1 of 1	15/07/19
Thermostatic Heat Source Control	SD7956	3	1 of 1	15/07/19
Radio Sources for PE3 and PE3E Enclosures	SD7958	2	1 of 1	15/07/19
PE3 & PE3E Enclosed Volumes EV	SD7959	1	2 of 2	17/03/11
Contents for PE3 & PE3E Enclosures	SD7960	4	1 of 1	15/07/19
PE3 & PE3E Enclosures with Dust Protection	SD7961	4	2 of 2	15/07/19
PE3 & PE3E Enclosures with Dust Protection	SD7961	4	2	15/07/19
PE3 and PE3E Populated Guide to Manual	SD7970	4	7	15/07/19
Alternative Component certified enclosures for PE# and PE#E range of enclosures	SD8591	1	2 of 2	18/10/2022

Schedule

14 Conditions of Certification

14.1 Special Conditions for Safe Use

- Where the power to the pressurized enclosure is not automatically controlled by the purging control system, it is responsibility of the user to provide an appropriately certified means of isolation adjacent to the enclosure, marked with appropriate operating instructions. Alternatively, another equally effective means of isolation and associated operating procedure shall be provided.
- The correct installation of intrinsically safe apparatus within the enclosure has not been assessed as part of this certification, and this certificate is not to be used as evidence that enclosures including intrinsically safe apparatus or associated apparatus meet all the relevant requirements for intrinsically safe systems.

14.2 Conditions for Use (Manufacturers Responsibility)

- Enclosures shall be fitted with over-temperature limitation devices as shown on drawing SD7956.
- Internal components must be installed in accordance with drawing SD7960 and SD7961 as appropriate.
- Where associated intrinsically safe apparatus is fitted within the enclosure it must have a maximum ambient temperature rating of at least 55°C.
- This certificate shall be accompanied by a document, endorsed by Expo Technologies Ltd, defining the build of the enclosure and including a list of any certified equipment incorporated into the enclosure (including Item description, manufacturer, certificate number and ratings) and specification of the modifications (if any) performed to any internal components in order to fulfil the requirements laid out in the certified documents.
- The special conditions of safe use or conditions of certification listed on the certificate of any piece of installed apparatus shall be conveyed to the user in an appropriate manner.

(Routine Tests)

For enclosures incorporating purge and pressurization control systems:

1 The pressurized enclosure shall be pressure tested at the pressures specified in the certified drawings.

2 The enclosure Leakage Rate shall be measured.

3 The manufacturer shall verify that opening the door during operation of the apparatus results in the pressure within the enclosure falling below the minimum specified overpressure, thus causing the appropriate alarm indication to be made.

4 Interior suction pressure shall be measured at the closest gasket seal to the heat exchanger mounting, and the pressurization system minimum pressure setting shall be increased by an amount equivalent to detected suction pressure (if greater than 0.1mBar).

15 Essential Health and Safety Requirements

Essential Health and Safety Requirements are addressed by the standards listed in section 8 and where required the report listed in section 13.1

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx EXV 19.0024X**	Page 1 of 5	Certificate history:
Status:	**Current**	Issue No: 3	Issue 2 (2022-11-08) Issue 1 (2020-06-12) Issue 0 (2019-06-24)
Date of Issue:	2024-04-24		
Applicant:	**Expo Technologies Ltd** Unit 2, The Summit Hanworth Road Sunbury on Thames Surrey, TW16 5DB **United Kingdom**		
Equipment:	**PE2 and PE2E Range of Enclosures**		
Optional accessory:			
Type of Protection:	**Ex p & tb**		
Marking:	Ex pxb IIC T4 Gb Ex pxb IIIC T135°C Db Ex tb IIIC T135°C Db		

Approved for issue on behalf of the IECEx Certification Body: **Sean Clarke CEng MSc FIET**

Position: **Certification Manager**

Signature:
(for printed version)

Date:
(for printed version)

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IECEx Certificate of Conformity

Certificate No.:	**IECEx EXV 19.0024X**	Page 2 of 5
Date of issue:	2024-04-24	Issue No: 3

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

Manufacturing locations:

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 products 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 equipment 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 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"

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

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

GB/EXV/ExTR19.0030/00 GB/EXV/ExTR20.0047/00 GB/EXV/ExTR22.0098/00

Quality Assessment Report:

GB/EXV/QAR24.0002/00

UK: +44 20 8398 8011 US: +1 440 247 5314 CN: +86 532 8906 9858

IECEx Certificate of Conformity

Certificate No.: **IECEx EXV 19.0024X** Page 3 of 5

Date of issue: 2024-04-24 Issue No: 3

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The Expo Technologies PE2 and PE2E range of ENCLOSURES consisting of the PE2 or PE2E enclosure and accessory range as identified on component certificate number ExVeritas19ATEX0454U. For use in explosive gas atmospheres, or in explosive dust atmospheres where pressurization is required, each enclosure will be fitted with an automatic purge controller as identified on certificate Sira 01ATEX1295X or other purge and pressurization control system, suitably ATEX certified as apparatus. The enclosures are rated for ingress protection to a level of IP40 or IP66

Selection of the purge controller, purge flow rate, and purge time are identified by reference to the enclosure volume as defined on drawing SD7631.

Components as defined in Expo Technologies Pressurized Enclosure Type PE2 Specification of Defined Contents drawing SD7639 may be fitted into the enclosures.

Both internal and external earthing facilities are provided.

Alternative marking:

Enclosure may be manufactured containing intrinsically safe associated apparatus, in which case they shall be marked: Ex pxb [ia Ga] IIC Gb T4

Where certified apparatus incorporating protection types flameproof, increased safety, intrinsic safety or encapsulation is incorporated onto or into the enclosure, the protection concepts may as an alternative to the marking of individual certified items on a label on the exterior of the enclosure, be incorporated into the pressurized enclosure overall marking code, in accordance with drawing SD7626.

Where apparatus is incorporated with a temperature class giving a higher surface temperature than T4 (i.e. T3, T2 or T1) for Gas atmospheres or T135°C for Dust atmospheres, the temperature class shall be amended from T4 or T135°C to match the highest surface temperature class of the certified apparatus installed on or in the enclosure.

Where certified apparatus is incorporated that requires marking of the gas group other than IIC or dust group other than IIIC, the overall marking code shall be modified to reflect the most restrictive gas or dust group of the incorporated apparatus.

Where enclosures are manufactured that simultaneously comply with the requirements for explosive gas atmospheres and explosive dust atmospheres, the appropriate markings shall be listed separately as required by IEC 60079-0 (Clause 29.6).

The apparatus is suitable for ambient temperature range -20°C to +40°C as standard, which may be extended up to +55°C provided that any incorporated certified apparatus is also suitable certified to the increased ambient range.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The correct installation of intrinsically safe apparatus within the enclosure has not been assessed as part of this certification, and this certificate is not to be used as evidence that enclosures including intrinsically safe apparatus or associated apparatus meet all the relevant requirements for intrinsically safe systems.
- In an event of loss of enclosure pressure, the user shall ensure that power is isolated to the enclosure by implementing an automatic power isolation method as per IEC/EN 60079-14 and any other local code of practice. The user shall verify that the protected apparatus within the enclosure cannot be powered until the purge cycle has completed.
- If automatic power isolation would introduce a more dangerous condition, the user shall implement a safety system to isolate the enclosure power using the “purge complete signal” from the purge control system as per IEC/EN 60079-14 and other local code of practice.

Conditions for Use (Manufacturers responsibility)

- Enclosures shall be fitted with over-temperature limitation devices as shown on drawing SD7635.
- Internal components must be installed in accordance with drawing SD7639
- Where associated intrinsically safe apparatus is fitted within the enclosure it must have a maximum ambient temperature rating of at least 55°C.
- This certificate shall be accompanied by a document, endorsed by Expo Technologies Ltd, defining the build of the enclosure and including a list of any certified equipment incorporated into the enclosure (including Item description, manufacturer, certificate number and ratings) and specification of the modifications (if any) performed to any internal components in order to fulfil the requirements laid out in the certified documents.
- The special conditions of safe use or conditions of certification listed on the certificate of any piece of installed apparatus shall be conveyed to the user in an appropriate manner
- Any batteries and associated protection circuits shall be considered in respect of the requirements of the latest edition of IEC/EN 60079-2:2014 (or later) and they must be mechanically protected to a level equivalent to IP30 (min) when the purge cabinet doors are open

IECEx Certificate of Conformity

Certificate No.: **IECEx EXV 19.0024X** Page 4 of 5

Date of issue: 2024-04-24 Issue No: 3

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
This new issue of the certificate is issued to show that the ExCB responsible for the QAR has now been changed.

IECEx Certificate of Conformity

Certificate No.: **IECEx EXV 19.0024X** Page 5 of 5

Date of issue: 2024-04-24 Issue No: 3

Additional information:
Routine Tests

For enclosures incorporating purge and pressurization control systems:

1. The pressurized enclosure shall be pressure tested at the pressures specified in the certified drawings.
2. The enclosure Leakage Rate shall be measured.
3. The manufacturer shall verify the performance of the pressure sensor, flow sensor and timing device of the purge controller.

Annex:

ExV 19.0024X IECEx Annex iss2.pdf

Annex to: **IECEx EXV 19.0024X Issue 2**

Manufacturer's documents:				
Title:	Drawing No.:	Rev	Sheets	Date:
PE2 & PE2E Enclosure Labels	SD7625	3	10 of 10	03/06/19
Alternative Marking PE2 & PE2E Enclosures	SD7626	2	1 of 1	17/05/19
Purge Test with no internal source of release	SD7627	1	2 of 2	15/02/10
PE2 Approved Batteries	SD7629	2	1 of 1	03/06/19
Connection Facilities for PE2 and PE2E Enclosures	SD7630	1	1 of 1	15/02/10
Purging Conditions	SD7631	2	1 of 1	17/05/19
Internal Configuration – Fans	SD7632	1	1 of 1	16/12/09
Protruding Configurations	SD7633	1	1 of 1	16/12/09
Chassis Sizes	SD7634	1	1 of 1	1/3/10
Themostatic heat Source Control	SD7635	2	1 of 1	20/05/19
Heat Dissipation – Configuration	SD7636	1	1 of 1	1/3/10
Radio Sources for PE2 and PE2E Enclosures	SD7637	2	1 of 1	17/05/19
PE2 & PE2E Enclosed Volumes (EV)	SD7638	1	2 of 2	15/02/10
Contents for PE2 & PE2E Enclosures	SD7639	2	1 of 1	17/05/19
PE2 & PE2E Enclosures with dust protection	SD7640	2	2 of 2	17/05/19
*Alternative Component certified enclosures for PE# and PE#E range of enclosures	SD8591	1	2 of 2	18/10/2022

*Note: An * is included before the title of documents that are new or revised.*

ExVeritas, Units 16-18, Abenbury Way, Wrexham Industrial Estate, Wrexham, United Kingdom LL13 9UZ.

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1 EU - Type Examination Certificate

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: ExVeritas 19ATEX0469X Issue: 3

4 Equipment: PE2 and PE2E Range of Enclosures

5 Manufacturer: Expo Technologies Ltd

6 Address: Unit 2, The Summit, Hanworth Road, Sunbury on Thames, Surrey, TW16 5DB, UK

7 This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 ExVeritas, Notified Body number 2804 in accordance with Article 17 of the Council Directive 2014/34/EU of 26 February 2014, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to design and construction of equipment and protective systems for use in potentially explosive atmospheres given in Annex II to the Directive

9 Compliance with the applicable Essential Health and Safety Requirements has been assured by compliance with the following Standards and section 16 of this certificate:

EN IEC 60079-0: 2018 EN 60079-2:2014 EN 60079-31:2014

10 If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design, construction, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment shall include the following:

Ex II 2 G Ex pxb IIC T4 Gb

Ex II 2 D Ex pxb IIIC T135°C Db Ex tb IIIC T135°C Db

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Member of EA MLA

On behalf of ExVeritas

Peter Lauritzen
Managing Director

ExVeritas®

Schedule

13 Description of Equipment or Protective System

The Expo Technologies PE2 and PE2E range of ENCLOSURES consisting of the PE2 or PE2E enclosure and accessory range as identified on component certificate number ExVeritas19ATEX0454U. For use in explosive gas atmospheres, or in explosive dust atmospheres where pressurization is required, each enclosure will be fitted with an automatic purge controller as identified on certificate Sira 01ATEX1295X or other purge and pressurization control system, suitably ATEX certified as apparatus. The enclosures are rated for ingress protection to a level of IP40 or IP66

Selection of the purge controller, purge flow rate, and purge time are identified by reference to the enclosure volume as defined on drawing SD7631.

Components as defined in Expo Technologies Pressurized Enclosure Type PE2 Specification of Defined Contents drawing SD7639 may be fitted into the enclosures.

Both internal and external earthing facilities are provided.

Alternative marking:

Enclosure may be manufactured containing intrinsically safe associated apparatus, in which case they shall be marked: Ex II 2 (1) G Ex pxb [ia Ga] IIC Gb T4

Where certified apparatus incorporating protection types flameproof, increased safety, intrinsic safety or encapsulation is incorporated onto or into the enclosure, the protection concepts may as an alternative to the marking of individual certified items on a label on the exterior of the enclosure, be incorporated into the pressurized enclosure overall marking code, in accordance with drawing SD7626.

Where apparatus is incorporated with a temperature class giving a higher surface temperature than T4 (i.e. T3, T2 or T1) for Gas atmospheres or T135°C for Dust atmospheres, the temperature class shall be amended from T4 or TI35°C to match the highest surface temperature class of the certified apparatus installed on or in the enclosure.

Where certified apparatus is incorporated that requires marking of the gas group other than IIC or dust group other than IIIC, the overall marking code shall be modified to reflect the most restrictive gas or dust group of the incorporated apparatus.

Where enclosures are manufactured that simultaneously comply with the requirements for explosive gas atmospheres and explosive dust atmospheres, the appropriate markings shall be listed separately as required by EN 60079-0 (Clause 29.6).

The apparatus is suitable for ambient temperature range -20°C to +40°C as standard, which may be extended up to +55°C provided that any incorporated certified apparatus is also suitable certified to the increased ambient range.

13.1 Details of change

Issue 1

The following changes are incorporated in issue 1 of the certificate:

- Revision of the "Special Conditions for Safe Use" to include reference to IEC/EN 60079-14 and local codes of practice.
- Modification of routine test 3.

Issue 2

The following changes are introduced in issue 2 of the certificate:

- Transfer of the certificate from ExVeritas UK, Notified Body number 2585 to ExVeritas Denmark, Notified Body number 2804. Certificate number remains unchanged.

Issue 3

- The following changes are introduced in issue 3 of the certificate: Introduction of new drawing (SD8591) – to allow the optional use of component certified Ex eb (tb) enclosures.

Schedule

14 Descriptive Documents

14.1 Associated Report and Certificate History:

Report Number	Cert Issue Date	Issue	Comment
R2000/A/1	19th Jun 2019	0	Initial issue of the Prime Certificate
R2492/A/1	12th June 2020	1	Issue of the first variation as detailed in 13.1
EXV3094A	12th Jan 2021	2	Issue of the second variation as detailed in 13.1
R3495/A/1	04 Nov 2022	3	Issue of the third variation as detailed in 13.1

14.2 Compliance Drawings:

Title:	Drawing No.:	Rev. Level:	Date:
PE2 & PE2E Enclosure Labels	SD7625	3	03/06/19
Alternative Marking PE2 & PE2E Enclosures	SD7626	2	17/05/19
Purge Test with no internal source of release	SD7627	1	15/02/10
PE2 Approved Batteries	SD7629	2	03/06/19
Connection Facilities for PE2 and PE2E Enclosures	SD7630	1	15/02/10
Purging Conditions	SD7631	2	17/05/19
Internal Configuration – Fans	SD7632	1	16/12/09
Protruding Configurations	SD7633	1	16/12/09
Chassis Sizes	SD7634	1	1/3/10
Themostatic heat Source Control	SD7635	2	20/05/19
Heat Dissipation – Configuration	SD7636	1	1/3/10
Radio Sources for PE2 and PE2E Enclosures	SD7637	2	17/05/19
PE2 & PE2E Enclosed Volumes (EV)	SD7638	1	15/02/10
Contents for PE2 & PE2E Enclosures	SD7639	2	17/05/19
PE2 & PE2E Enclosures with dust protection	SD7640	2	17/05/19
Alternative Component certified enclosures for PE# and PE#E range of enclosures	SD8591	1	18/10/2022

Schedule

15 Conditions of Certification

15.1 Special Conditions for Safe Use

- The correct installation of intrinsically safe apparatus within the enclosure has not been assessed as part of this certification, and this certificate is not to be used as evidence that enclosures including intrinsically safe apparatus or associated apparatus meet all the relevant requirements for intrinsically safe systems.
- In an event of loss of enclosure pressure, the user shall ensure that power is isolated to the enclosure by implementing an automatic power isolation method as per IEC/EN 60079-14 and any other local code of practice. The user shall verify that the protected apparatus within the enclosure cannot be powered until the purge cycle has completed.
- If automatic power isolation would introduce a more dangerous condition, the user shall implement a safety system to isolate the enclosure power using the “purge complete signal” from the purge control system as per EN 60079-14 and other local code of practice.

15.2 Conditions for Use (Manufacturers responsibility)

- Enclosures shall be fitted with over-temperature limitation devices as shown on drawing SD7635.
- Internal components must be installed in accordance with drawing SD7639
- Where associated intrinsically safe apparatus is fitted within the enclosure it must have a maximum ambient temperature rating of at least 55°C.
- This certificate shall be accompanied by a document, endorsed by Expo Technologies Ltd, defining the build of the enclosure and including a list of any certified equipment incorporated into the enclosure (including Item description, manufacturer, certificate number and ratings) and specification of the modifications (if any) performed to any internal components in order to fulfil the requirements laid out in the certified documents.
- The special conditions of safe use or conditions of certification listed on the certificate of any piece of installed apparatus shall be conveyed to the user in an appropriate manner.
- Any batteries and associated protection circuits shall be considered in respect of the requirements of the latest edition of IEC/EN 60079-2:2014 (or later) and they must be mechanically protected to a level equivalent to IP30 (min) when the purge cabinet doors are open.

Routine tests:

1. The pressurized enclosure shall be pressure tested at the pressures specified in the certified drawings.
2. The enclosure leakage rate shall be measured.
3. The manufacturer shall verify the performance of the pressure sensor, flow sensor and timing device of the purge controller.

16 Essential Health and Safety Requirements

Essential Health and Safety Requirements are addressed by the standards listed in section 9 and where required the report listed in section 14.1

The manufacturer shall inform the Notified Body of any modifications to the design of the product described by this schedule.

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IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx EXV 19.0025X**	Page 1 of 5	Certificate history:
Status:	**Current**	Issue No: 3	Issue 2 (2022-11-08) Issue 1 (2020-07-22) Issue 0 (2019-07-26)
Date of Issue:	2024-04-24		

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

Equipment: **PE3 and PE3E Range of Enclosures**

Optional accessory:

Type of Protection: **Pressurisation and Enclosure Ex 'pzc' & 'tc'**

Marking: Ex pzc IIC T4 Gc or Ex tc IIIC T135°C Dc or Ex pzc IIIC T135°C Dc

Approved for issue on behalf of the IECEx Certification Body: **Sean Clarke CEng MSc FIET**

Position: **Certification Manager**

Signature:
(for printed version)

Date:
(for printed version)

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 www.iecex.com or use of this QR Code.

Certificate issued by:

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

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IECEx Certificate of Conformity

Certificate No.:	**IECEx EXV 19.0025X**	Page 2 of 5
Date of issue:	2024-04-24	Issue No: 3

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

Manufacturing locations:

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 products 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 equipment 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 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"

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

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

GB/EXV/ExTR19.0048/00 GB/EXV/ExTR20.0059/00 GB/EXV/ExTR22.0098/00

Quality Assessment Report:

GB/EXV/QAR24.0002/00

IECEx Certificate of Conformity

Certificate No.: **IECEx EXV 19.0025X** Page 3 of 5

Date of issue: 2024-04-24 Issue No: 3

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The Expo Technologies PE3 and PE3E range of Enclosures consisting of the PE2 or PE2E enclosure and accessory range as identified on component certificate number IECEx EXV19.0010U, fitted with internal apparatus as defined in this schedule.

For use in explosive gas atmospheres or in explosive dust atmospheres where the equipment is marked for pressurization, each enclosure will be fitted with a purge controller providing pressurization type "pzc" as appropriate, suitably IECEx certified as apparatus.

Selection of the purge controller, purge flow rate, and purge time are identified by reference to the enclosure volume as defined on drawing SD7952.

Components as defined in Expo Technologies drawings SD7960 "Contents for PE3 and PE3E Enclosures" and / or SD7961 "PE3 & PE3E Enclosures with Dust Protection" may be installed.

Both internal and external earthing facilities are provided.

Standard temperature range -20°C to +40°C with alternative increased range -20°C to +55°C marked when appropriate.

Alternative marking:

Enclosure may be manufactured containing intrinsically safe associated apparatus, in which case they shall be marked to include the appropriate intrinsic safety marking as appropriate, for example:

Ex pzc [ia Ga] IIC T4 Gc

Where certified apparatus incorporating protection types flameproof, increased safety, intrinsic safety, encapsulation or Type "n" is incorporated onto or into the enclosure, the protection concepts may as an alternative to the marking of individual certified items on a label on the exterior of the enclosure, be incorporated into the pressurized enclosure overall marking code, in accordance with drawing SD7947.

Where apparatus is incorporated with a temperature class giving a higher surface temperature than T4 (i.e. T3, T2 or T 1) for Gas atmospheres or T135°C for Dust atmospheres, the temperature class shall be amended from T4 or T135°C to match the highest surface temperature class of the certified apparatus installed on or in the enclosure.

Where certified apparatus is incorporated that requires marking of the gas group other than IIC or dust group other than IIIC, the overall marking code shall be modified to reflect the most restrictive gas or dust group of the incorporated apparatus.

Where enclosures are manufactured that simultaneously comply with the requirements for explosive gas atmospheres and explosive dust atmospheres, the appropriate markings shall be listed separately as required by IEC 60079-0:2017 Clause 29.6.

SPECIFIC CONDITIONS OF USE: YES as shown below:
Special Conditions for Safe Use

Where the power to the pressurized enclosure is not automatically controlled by the purging control system, it is responsibility of the user to provide an appropriately certified means of isolation adjacent to the enclosure, marked with appropriate operating instructions. Alternatively, another equally effective means of isolation and associated operating procedure shall be provided.

The correct installation of intrinsically safe apparatus within the enclosure has not been assessed as part of this certification, and this certificate is not to be used as evidence that enclosures including intrinsically safe apparatus or associated apparatus meet all the relevant requirements for intrinsically safe systems.

IECEx Certificate of Conformity

Certificate No.: **IECEx EXV 19.0025X** Page 4 of 5

Date of issue: 2024-04-24 Issue No: 3

Equipment (continued):

Conditions of Manufacture

Enclosures shall be fitted with over-temperature limitation devices as shown on drawing SD7956.

Internal components must be installed in accordance with drawing SD7960 and SD7961 as appropriate.

Where associated intrinsically safe apparatus is fitted within the enclosure it must have a maximum ambient temperature rating of at least 55°C.

This certificate shall be accompanied by a document, endorsed by Expo Technologies Ltd, defining the build of the enclosure and including a list of any certified equipment incorporated into the enclosure (including Item description, manufacturer, certificate number and ratings) and specification of the modifications (if any) performed to any internal components in order to fulfil the requirements laid out in the certified documents.

The special conditions of safe use or conditions of certification listed on the certificate of any piece of installed apparatus shall be conveyed to the user in an appropriate manner.

Routine Tests

For enclosures incorporating purge and pressurization control systems:

- The pressurized enclosure shall be pressure tested at the pressures specified in the certified drawings.
- The enclosure Leakage Rate shall be measured.
- The manufacturer shall verify that opening the door during operation of the apparatus results in the pressure within the enclosure falling below the minimum specified overpressure, thus causing the appropriate alarm indication to be made.
- Interior suction pressure shall be measured at the closest gasket seal to the heat exchanger mounting, and the pressurization system minimum pressure setting shall be increased by an amount equivalent to detected suction pressure (if greater than 0.1mBar).

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IECEx Certificate of Conformity

Certificate No.: **IECEx EXV 19.0025X** Page 5 of 5

Date of issue: 2024-04-24 Issue No: 3

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
This new issue of the certificate is issued to show that the ExCB responsible for the QAR has now been changed.

Annex:

ExV 19.0025X IECEx Annex iss2.pdf

Annex to: **IECEx EXV 19.0025X Issue 2**

Manufacturer's documents:				
Title:	Drawing No.:	Rev	Sheets	Date:
Internal Configuration - Fans	SD7632	1	1 of 1	16/12/09
Protruding Sections	SD7633	1	1 of 1	16/12/09
Chassis Sizes	SD7634	1	1 of 1	1/3/10
Heat Dissipation — Configuration	SD7636	1	1 of 1	1/3/10
PE3 & PE3E Enclosure Labels	SD7946	5	11 of 11	15/07/19
Alternative marking PE3 and PE3E Enclosures	SD7947	4	1 of 1	15/07/19
Purge Test with no Internal Source of Release	SD7948	2	2 of 2	04/08/11
PE3 Battery Testing Procedure	SD7949	3	1 of 1	15/07/19
PE3 Approved Batteries	SD7950	3	1 of 1	15/07/19
Connection Facilities for PE3 and PE3E Enclosures	SD7951	3	1 of 1	15/07/19
Purging Conditions	SD7952	2	1 of 1	15/07/19
Thermostatic Heat Source Control	SD7956	3	1 of 1	15/07/19
Radio Sources for PE3 and PE3E Enclosures	SD7958	2	1 of 1	15/07/19
PE3 & PE3E Enclosed Volumes EV	SD7959	1	2 of 2	17/03/11
Contents for PE3 & PE3E Enclosures	SD7960	4	1 of 1	15/07/19
PE3 & PE3E Enclosures with Dust Protection	SD7961	4	2 of 2	15/07/19
PE3 and PE3E Populated Guide to Manual	SD7970	4	7	15/07/19
Cooler Mounting (IceQube)	SD8473	1	1	21/07/20
*Alternative Component certified enclosures for PE# and PE#E range of enclosures	SD8591	1	2 of 2	18/10/2022

*Note: An * is included before the title of documents that are new or revised.*

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ExVeritas®

1 EU - Type Examination Certificate

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: ExVeritas 19ATEX0454U Issue: 1

4 Equipment: PEx and PExE Range of Enclosures (Component)

5 Manufacturer: Expo Technologies Ltd

6 Address: Unit 2, The Summit, Hanworth Road, Sunbury on Thames, Surrey, TW16 5DB, UK

7 This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 ExVeritas, Notified Body number 2804 in accordance with Article 17 of the Council Directive 2014/34/EU of 26 February 2014, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to design and construction of equipment and protective systems for use in potentially explosive atmospheres given in Annex II to the Directive

9 Compliance with the applicable Essential Health and Safety Requirements has been assured by compliance with the following Standards and section 16 of this certificate:

EN 60079-0: 2018 EN 60079-2: 2014 EN 60079-7:2015+A1:2018
EN 60079-31: 2014

10 If the sign "U" placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as the basis for certification of an equipment or protective system.

11 This EU-Type Examination Certificate relates only to the design, construction, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment shall include the following:

II 2 G	Ex p*b IIC Gb **
	Ex eb IIC Gb **
II 2 D	Ex tb IIIC Db **
	Ex p*b IIIC Db **

* see description for disambiguation
** see description for Tamb

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On behalf of ExVeritas

S L Clarke CEng MSc FIET
Managing Director

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13 Description of Equipment or Protective System

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.

Enclosures are designed as permanently installed on a fixed structure or may be fitted with wheels and used as transportable. 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:	For extended upper ambient versions:	For reduced lower ambient versions (pressurization versions only):
-20°C ≤ Ta ≤ +40°C	-20°C ≤ Ta ≤ +55°C	-50°C ≤ Ta ≤ +55°C

14 Descriptive Documents

14.1 Associated Report and Certificate History:

Report No.	Certificate Date	Issue No.	Comment
R1993/A/1	9 May 2019	0	Initial issue of the Prime Certificate
R2771/A/1	08 Sept 2020	1	Introduction of an optional printer slot and associated new drawings

14.2 Compliance Drawings:

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	2	5 of 5	11/08/2020
*Label Exit Compartment Assembly	SD8347	03	2 of 2	13/07/2020
*Anti Static Label Exit Compartment Assembly	SD8463	01	2 of 2	18/06/2020
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

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15 Conditions of Certification

15.1 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

1. For PEx types only, up to 3 enclosures sections may be connected side by side to give a multi section enclosure, as detailed in drawing SD8394. Each section is limited to the construction features (including individual door width) of the stand-alone PEx enclosure.
2. 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.
3. Enclosures may be fitted with doors with tool operated latches with maximum door size 1200 x 2100mm.
4. 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.
5. Ambient temperature range is the standard range -20°C to +40°C or extended to +55°C upper limit, depending on the features incorporated.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. Ambient temperature range for low temperature versions -50°C to +40°C or extended to +55°C.
13. All other aspects are to be considered under the final apparatus certification.
14. An enclosure may be suitable for more than one protection concept, in which case the marking for each protection concept shall be marked separately.

15.2 Conditions for Use (Routine tests)

None

16 Essential Health and Safety Requirements

Essential Health and Safety Requirements are addressed by the standards listed in section 9 and where required the report listed in section 14.1 The manufacturer shall inform the Notified Body of any modifications to the design of the product described by this schedule.

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com
Ex COMPONENT CERTIFICATE

Certificate No.: **IECEx EXV 19.0010U** Page 1 of 5 Certificate history:
Status: **Current** Issue No: 2 Issue 1 (2020-09-29)
Issue 0 (2019-05-14)
Date of Issue: 2024-04-24

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:
(for printed version)

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 www.iecex.com or use of this QR Code.

Certificate issued by:

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

ExVeritas®

IECEx Certificate of Conformity

Certificate No.: **IECEx EXV 19.0010U** Page 2 of 5
Date of issue: 2024-04-24 Issue No: 2

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

Manufacturing locations:

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 products 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 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 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 safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the component listed has successfully met the examination and test requirements as recorded in:

Test Reports:

GB/EXV/ExTR19.0010/00
GB/ITS/ExTR08.0051/01
GB/ITS/ExTR13.0018/00
GB/EXV/ExTR20.0055/00
GB/ITS/ExTR08.0051/02
GB/ITS/ExTR08.0051/03

Quality Assessment Report:

GB/EXV/QAR24.0002/00

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IECEx Certificate of Conformity

Certificate No.: **IECEx EXV 19.0010U** Page 3 of 5

Date of issue: 2024-04-24 Issue No: 2

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°C ≤ Ta ≤ +40°C

For extended upper ambient versions: -20°C ≤ Ta ≤ +55°C

For reduced lower ambient versions (pressurization versions only): -50°C ≤ Ta ≤ +55°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 enclosures 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.

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,

IECEx Certificate of Conformity

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Date of issue: 2024-04-24 Issue No: 2

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 -50ºC. 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.

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.

IECEx Certificate of Conformity

Certificate No.: **IECEx EXV 19.0010U** Page 5 of 5

Date of issue: 2024-04-24 Issue No: 2

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
This new issue of the certificate is issued to show that the ExCB responsible for the QAR has now been changed.

Annex:

Annex IECEx ExV19.0010U iss 1.pdf

Annex to: IECEx EXV 19.0010U Issue 1

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
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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
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Simplifying Complexity. Delivering Safety

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