

# INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS FOR ABTECH 'BPG' Range Enclosures SIRA99ATEX3173X and IECEX SIR06.0087X



## Marking

The marking shown is for an apparatus certified terminal box. When 'Type' reads BPGC the box will be black and anti-static.

The maximum power dissipation permitted in this terminal box is marked on the label and identified by RATING \_\_\_\_\_ Watts.

The ambient temperature range for which this product is suitable is marked on the label and identified by Tamb: \_\_\_\_\_ (°C).

The label may be dual rated -50°C to +40°C T6 (T85°C for dust) and -50°C to +55°C T5 (T100°C for dust) or to any single T rating and ambient as per the alternate markings stated below.

The Ex e marking may be replaced by Ex ib. Enclosures marked Ex ib may only be used for terminating intrinsically safe circuits.

When the box is black it is anti-static and the 'STATIC HAZARD' warning may be missing.

Only black, anti-static, boxes may be used for portable equipment.



The marking left shows the alternative marking for Ex ia rated enclosures. These may only be used for terminating intrinsically safe circuits.

## Special condition of safe use

When used in an EPL ta (Da) application the power supply to the equipment is to be rated for a prospective short circuit current of not more than 10kA.

Alternative markings for temperature ratings as follows:

T6 with max Tamb range of  $-65^{\circ}\text{C} \leq T_a \leq +65^{\circ}\text{C}$  and T85°C for dust

T5 with max Tamb range of  $-65^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$  and T100°C for dust

T4 with max Tamb range of  $-65^{\circ}\text{C} \leq T_a \leq +90^{\circ}\text{C}$  and T100°C for dust

## Note

The ambient temperature range identified on the certification label refers to the enclosure and the terminals fitted within. It does not necessarily refer to the permitted temperature range of any cable entry devices that may be fitted. The user must check that the cable entry devices fitted are suitable for the lowest ambient temperature marked on the certification label and for the maximum permitted operating temperature.

The IP rating identified on the certification label refers only to the enclosure. The user must ensure that the cable entry devices fitted provide an equivalent degree of protection when installed with their manufacturer's instructions.

## **Static hazard**

Glass reinforced polyester resin has a surface resistance greater than 10E9 Ohms. They can present a hazard from static electricity. **CLEAN ONLY WITH A DAMP CLOTH. These boxes may not be used for portable equipment.**

Carbon loaded glass reinforced polyester, coloured black and identified by the suffix 'C', (e.g. BPGC9), have a surface resistance between 10E6 and 10E9 Ohms. They do not present a hazard from static electricity and **these boxes may be used for portable equipment.**

## **Installation**

These instructions assume that the required cable entries have been pre-drilled. Cable entries may be threaded.

- 1) Using the mounting dimensions data provided, either in the product catalogue data sheets or on the drawings supplied, (as part of the project documentation), mark out the positions for the mounting holes on the surface where installation is required.
- 2) Drill the mounting holes for M4 fixing studs (for size BPG1 to BPG5) or for M6 fixing studs (for size BPG6 to BPG15) as applicable.
- 3) Tap thread into mounting holes if required.
- 4) Place a mounting screw through one mounting hole in the box so that the thread of the screw protrudes from the back of the box. Lift the box into place, using such assistance as may be necessary to avoid personal injury and:
  - a) If clearance mounting holes are used, insert the protruding thread through the appropriate clearance hole and secure with a nut on the other side of the mounting surface.  
Or
  - b) If threaded holes are used, locate the end of the mounting screw over the threaded hole and, using an appropriate screwdriver tighten the screw.
- 5) Rotate the box to line up the remaining mountings and repeat (4) above until all mounting screws have been fitted.
- 6) Install and secure the cable entry devices, cable glands and blanking plugs in accordance with the manufacturer's instructions. Ensure that the torque applied during the installation of these devices does not exceed 20 Nm.
- 7) Pull the cables into the box, leaving trailing leads of a length specified by site practice or the site engineer and secure any cable armour in accordance with site practice.
- 8) Where slotted trunking has been supplied (solid trunking is not permitted) ensure that it is suitable for the proposed T classification of the final certified product. Where the T6 is the proposed rating and no windows are fitted any polymeric or metallic slotted trunking may be used. For other T classifications and where a window is fitted metallic slotted trunking must be used. Trunking may be mounted in any orientation in the box, vertically, horizontally or diagonally.
- 9) When laying cables into trunking; No more than 50% of the trunking internal area shall be occupied by conductors, when instrumentation currents of 1A or less are carried. All cabling used must be capable of carrying a minimum of 3A.
- 10) For cables carrying more than 1A - No more than 25% of the trunking internal area shall be occupied by conductors, these shall be de-rated to a maximum of 4A /sq mm. All cabling used must be capable of carrying a minimum of 10% higher current than the rating required.
- 11) No more than 50% of the trunking internal area shall be occupied by conductors, when instrumentation currents of 1A or less are carried. All cabling used must be capable of carrying a minimum of 3A.
- 12) For cables carrying more than 1A - No more than 25% of the trunking internal area shall be occupied by conductors, these shall be de-rated to a maximum of 4A /sq mm. All cabling used must be capable of carrying a minimum of 10% higher current than the rating required.
- 13) Terminate the cables in the terminals provided in accordance with the requirements of BS EN 60079-14. Consideration must be given to any use limitations or special conditions detailed on the certificates for the terminals fitted.
- 14) Secure the lid by closing the lid and tightening the lid fixing screws.

NOTE: If the terminals provided with the enclosure are changed either in type or in quantity the terminal box certification may become invalid. Advice from ABTECH is recommended before any changes are made.

### Earthing/Grounding

The enclosure may be provided with an external earth/ground connection. If such a connection is provided it must be connected to the appropriate earth bonding circuit before electrical power is connected to the contents of the enclosure.

When the box is provided with an internal earth continuity plate any metal cable glands must be secured using a vibration resistant washer and a locknut.

### Operation

1. The lid must be secured using all of the lid screws provided in order to maintain the IP rating.
2. No attempt must be made to remove the enclosure lid whilst electrical power is connected to the contents of the enclosure.
3. If the enclosure is fitted with an external earth/ground facility it must be connected to the earth bonding circuit at all times when power is connected to the enclosure contents.

### Maintenance

Routine maintenance is likely to be a requirement of local Health and Safety legislation. The laws of the applicable country must be considered and maintenance checks carried out accordingly.

Additional periodic checks that are advisable to ensure the efficiency of ABTECH range enclosures are: -

<u>Activity</u>	<u>Frequency</u>
1 Check that the lid seal is in place and not damaged	Each time the enclosure is opened
2 Check that all lid fixing screws are in place and secured	Each time the enclosure is closed
3 Check that the mounting bolts are tight and free of corrosion	Every 3 years
4 Check the security of all cable glands and entry devices	Every 3 years
5 Check that all screw clamp terminals are secure	As manufacturers recommendations
6 Check enclosure for damage	Every 3 years

### Chemical attack

The ABTECH BPG range of enclosures are manufactured using the following materials: -

Glass reinforced polyester resin (with or without carbon loading),

Neoprene or silicone rubber,

316 stainless steel,

Brass.

Consideration should be given to the environment in which these enclosures are to be used to determine the suitability of these materials to withstand any corrosive agents that may be present.

### Static hazard

Glass reinforced polyester resin has a surface resistance greater than 10E9 Ohms. They can present a hazard from static electricity and may not be cleaned except with a damp cloth. **These boxes may not be used for portable equipment.**

Carbon loaded glass reinforced, identified by the suffix 'C', (e.g. BPGC9), have a surface resistance between 10E6 and 10E9 Ohms. They do not present a hazard from static electricity. **These boxes may be used for portable equipment.**

### Vibration

BPG range terminal boxes are designed for use in areas subject to normal industrial levels of vibration. They are not designed for use in areas subject to intentional or extreme conditions of vibration.

### Protection from Foreseeable Faults

Circuits connected in the enclosure must be externally protected using suitable circuit interruption devices to prevent overloading. Provided the enclosure is correctly installed, there should be no foreseeable faults.