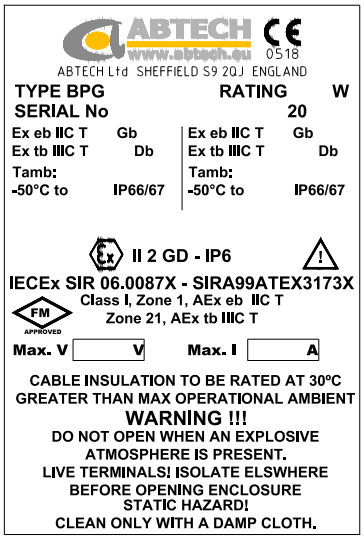
# INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS FOR ABTECH 'BPG' RANGE TERMINAL BOXES

## IECEx SIR 06.0087X - Sira 99ATEX3173X and FM 3049212




Marking

The marking shown is for an apparatus certified terminal box. When 'Type BPG' is followed by a suffix C the box will be black with anti-static properties and the 'STATIC HAZARD' warning may be missing. Only black, anti-static, boxes may be used for portable equipment.

The maximum power dissipation permitted in this terminal box is marked on the label and identified by RATING_____W.

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

The T rating is variable depending on ambient temperature range and power dissipation. Alternative markings for temperature ratings , below, for details.

Note: The symbol ⚠ is not always present. When it is present the installer must take particular note of these instructions.

Alternative markings for temperature ratings:

T6 with $T_{amb}$ range of -50ºC ≤ Ta ≤ +55ºC and T85ºC for dust
T6 with $T_{amb}$ range of -50ºC ≤ Ta ≤ +60ºC and T85ºC for dust
T6 with $T_{amb}$ range of -50ºC ≤ Ta ≤ +65ºC and T85ºC for dust
T5 with $T_{amb}$ range of -50ºC ≤ Ta ≤ +55ºC and T100ºC for dust
T4 with $T_{amb}$ range of -50ºC ≤ Ta ≤ +90ºC and T100ºC 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 ('T' rating).

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 in accordance with their manufacturer's instructions.

**Static hazard**

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

A box constructed from glass reinforced polyester resin which is not black has a surface resistance greater than 10E9 Ohms. They can present a hazard from static electricity so CLEAN ONLY WITH A DAMP CLOTH. **These boxes must not be used for portable equipment.**

**Installation**

These instructions assume that the required cable entries have been pre-drilled. Cable entries may be threaded. Entries may be drilled on site by a competent person.

**Before installation** check the permitted operating temperature range of the terminals against the minimum ambient temperature of the box and the T rating of the box. Unsuitable terminals must be replaced prior to cable termination.

1) Using the mounting dimensions 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 a thread into mounting holes if required.



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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 any polymeric or metallic slotted trunking may be used. For other T classifications 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; for cables carrying instrumentation currents of no more than 1A no more than 50% of the trunking internal area shall be occupied by conductors. All cabling used must be capable of carrying a minimum of 3A.
10) When laying cables into trunking; for cables carrying more than 1A no more than 25% of the trunking internal area shall be occupied by conductors, which 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) Terminate the cables in the terminals provided in accordance with the requirements of IEC 60079-14. Consideration must be given to any use limitations or special conditions detailed on the certificates for the terminals fitted.
12) 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 internal earth/ground connection. If such a connection is provided it must be connected to the appropriate earth/ground bonding circuit inside the enclosure before electrical power is connected to the contents of the enclosure. **External earth/ground connections are not permitted**, regardless of whether the material is anti-static.

## 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.

## 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: -

| Activity | | Frequency |
|---|---|---|
| 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 that internal earthing/grounding connections are secure | Every 3 years |
| 7 | 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),
Silicone rubber,
316 stainless steel

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. Other materials may be used internally but are not exposed to the external environment during operation.

## 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 and maintained, there should be no foreseeable faults.



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**Specific Conditions of Use**

1) Clean Only with Damp Cloth
2) Only Certified Suitably Rated NRTL Listed AEx Terminals may be used
3) The BPG range of Junction boxes utilize a BPG Enclosure fitted with suitably rated NRTL Listed AEx terminals. The total dissipated power for the particular application will be calculated in accordance with ANSI/ISA 60079-7:2013 Appendix E and will not exceed the values given in the table below.

| **BPG Ref** | **Max Power Dissipation (W) Temperature Class, Max Surface Temperature for Gas and Dust and Ta Max.** | | | | |
|---|---|---|---|---|---|
| ***Maximum Surface Temperature** | **T6/T85°C** | | | | **T4/T100°C** |
| ****Maximum Ambient** | **+40°C** | **+55°C** | **+60°C** | **+65°C** | **+90°C** |
| 1 | 8.390 | 2.23 | 1.73 | 1.45 | 8.390 |
| 2 | 8.551 | 2.00 | 1.70 | 1.45 | 8.551 |
| 3 | 8.833 | 2.00 | 1.70 | 1.45 | 8.833 |
| 4 | 9.012 | 2.07 | 1.80 | 1.29 | 9.012 |
| 5 | 9.260 | 2.00 | 1.70 | 1.10 | 9.260 |
| 6 | 9.378 | 2.00 | 1.70 | 1.45 | 9.378 |
| 7 | 10.500 | 2.30 | 1.70 | 1.10 | 10.500 |
| 8 | 10.348 | 2.00 | 1.70 | 1.10 | 10.348 |
| 9 | 11.933 | 2.30 | 1.70 | 1.10 | 11.933 |
| 10 | 13.793 | 4.50 | 3.29 | 2.10 | 13.793 |
| 11 | 19.338 | 6.68 | 5.20 | 4.00 | 18.338 |
| 12 | 15.474 | 2.30 | 1.70 | 1.10 | 15.474 |
| 13 | 20.867 | 5.20 | 4.00 | 3.00 | 20.867 |
| 13.5 | 20.867 | 5.20 | 4.00 | 3.00 | 20.867 |
| 14 | 30.384 | 7.97 | 6.59 | 4.79 | 30.384 |
| 15 | 31.350 | 8.26 | 6.00 | 4.40 | 31.350 |



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