Installation, Operation, Maintenance:

ZP RANGE

Installation

These instructions assume that the required cable entries have been pre-drilled. Cable entries may be threaded but a threaded entry must not be used as part of the means to secure a cable entry device.

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 threads drill 3.7mm dia., for clearance drill 4.1mm diameter.

3) Tap a M4 thread into each 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 enclosure into position and:-
a) If clearance mounting holes are used, insert the protruding thread through the appropriate clearance hole and secure using a M4 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 thread hole and, using an appropriate screwdriver tighten the screw. Back off one half turn.

5) Rotate the box to line up the remaining mountings and repeat (4) above until all mounting screws have been fitted. Now tighten all screws; recommended torque is 0.6Nm to 0.8Nm.

6) Fit cable entry devices using the appropriate method detailed below, install the cables and make the connections to the equipment mounted in the enclosure.

7) Secure the lid by closing the lid and secure using the screw fastenings or quarter turn fastenings provided, as applicable.

Cable entry devices
If cable glands are used these should be installed in accordance with the gland manufacturers instructions.

Cable entries may be clearance or threaded. If threaded entries are used the thread must not be used to secure the cable entry device. At least one additional threaded locknut must be used.

Metal parallel thread cable glands.
If the cable entry device is a cable gland provided with a flat sealing face preceding the securing thread a sealing washer must be used between the cable gland sealing face and the enclosure wall. The cable gland must then be secured using a vibration resistant washer and a locknut on the inside of the enclosure.

Tighten to the torque in Table 1, below, using a spanner to prevent the gland body from rotating. DO NOT lubricate the treads.

Table 1

Thread	Metal (Nm)
M12 x 1.5	5.0
M16 x 1.5	7.0
M20 x 1.5	8.0
M25 x 1.5	10.0
M32 x 1.5	12.0
M40 x 1.5	16.0

Polymeric parallel thread cable glands
If the cable entry device is a cable gland provided with a flat sealing face preceding the securing thread a sealing washer must be used between the cable gland sealing face and the enclosure wall. The cable gland must then be secured using a locknut on the inside of the enclosure.

Tighten to the torque in Table 2, below, using a spanner to prevent the gland body from rotating. DO NOT lubricate the threads.

Table 2

Thread	Plastic (Nm)
M12 x 1.5	2.0
M16 x 1.5	3.0
M20 x 1.5	4.0
M25 x 1.5	5.0
M32 x 1.5	6.0
M40 x 1.5	11.0

A small amount of adhesive suitable for the material type of the cable entry device may be used to secure the locknut. Where adhesive is used this should be applied to the internal threads of the locknut immediately prior to fitting.

Metal conduit and glands without a sealing face
Such cable entry devices must be provided with two securing nuts, one externally and one internally.

a) Thread the external locknut onto the conduit of cable gland entry thread until tight. (If the thread is a taper pipe thread then free running locknuts must be used).
b) Place the sealing washer onto the exposed male thread of the cable entry device then insert the thread into the appropriate entry in the enclosure wall.

If the cable entry is threaded, do not tighten more than shown in Table 3 below.

Table 3

Thread	Taper thread tightening in the box wall (Nm)
M12 x 1.5	1.0
M16 x 1.5	1.5
M20 x 1.5	2.0
M25 x 1.5	2.5
M32 x 1.5	3.0
M40 x 1.5	4.0

c) Place a vibration resistant washer onto the thread exposed inside the box.

d) Thread the internal locknut onto the cable entry device and tighten to the torque shown in Table 1.

Polymeric conduit and glands without a sealing face
Such cable entry devices must be provided with two securing nuts, one externally and one internally.

a) Thread the external locknut onto the conduit of cable gland entry thread until tight. (If the thread is a taper pipe thread then free running locknuts must be used).

b) Place the sealing washer onto the exposed male thread of the cable entry device then insert the thread into the appropriate entry in the enclosure wall.

If the cable entry is threaded, do not tighten more than shown in Table 3 above.

c) Thread the internal locknut onto the cable entry device and tighten to the torque shown in Table 2 above, using a spanner to prevent the gland body from rotating. DO NOT lubricate the threads.

A small amount of adhesive suitable for the material type of the cable entry device may be used to secure the locknut. Where adhesive is used this should be applied to the internal threads of the locknut immediately prior to fitting.

Now install the cable and make the internal electrical connections as required.

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

Operation

1. The lid must be secured using all of the lid fasteners provided in order to maintain the IP/NEMA rating.

2. No attempt must be made to remove the enclosure lid whilst electrical power is connected to the contents of the enclosure. ISOLATE ELSEWHERE BEFORE OPENING

3. The enclosure earth/ground facility must be connected to the earth bonding circuit at all times when power is connected to 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 not damaged and is in place	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 the enclosure for damage	Every 3 years
6	Check that all screw clamp terminals are secure	As manufacturers reccomendation

Chemical attack
The ABTECH ZP range of enclosures are manufactured using the following materials:-

- Acrylonytrile-butadiene-styrene or polycarbonate,
- Silicone rubber (lid gasket)
- A2 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.

Vibration
ZP 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.