

POWERLOCK BOX

OPERATION AND MAINTAINENCE GUIDE



PART NUMBER BREAKDOWN

<u>Product Description</u>	<u>Contact Type</u>	<u>Box Type</u>	<u>Region Colour Code</u>	<u>Maximum Current Rating</u>
PBX	PS Power Source	SL Sealed Lid	EU – European	400
	PD Power Drain	NL No Lid	US – United States	660
			AU – Australia	

Part number example: PBX-PD-SL-US-400 is a 400 amp unit with drain contacts and lid, colour coded for the USA

COLOUR CODING

Region	Earth	Neutral	L1	L2	L3
Europe	Green	Blue	Brown	Black	Grey
United States	Green	White	Black	Red	Blue
Australia	Green	Black	Red	White	Blue

UN-PACKING

Ensure the unit is up the correct way before un-packing. The carton and its packing are recyclable and should be disposed of according to national or local authority guidelines.

CONTENTS

After un-packing, the part number of the PowerLock Box should be checked against your order and that on the carton. Also check that the current rating label on the unit matches your requirements. The carton should contain the following:-

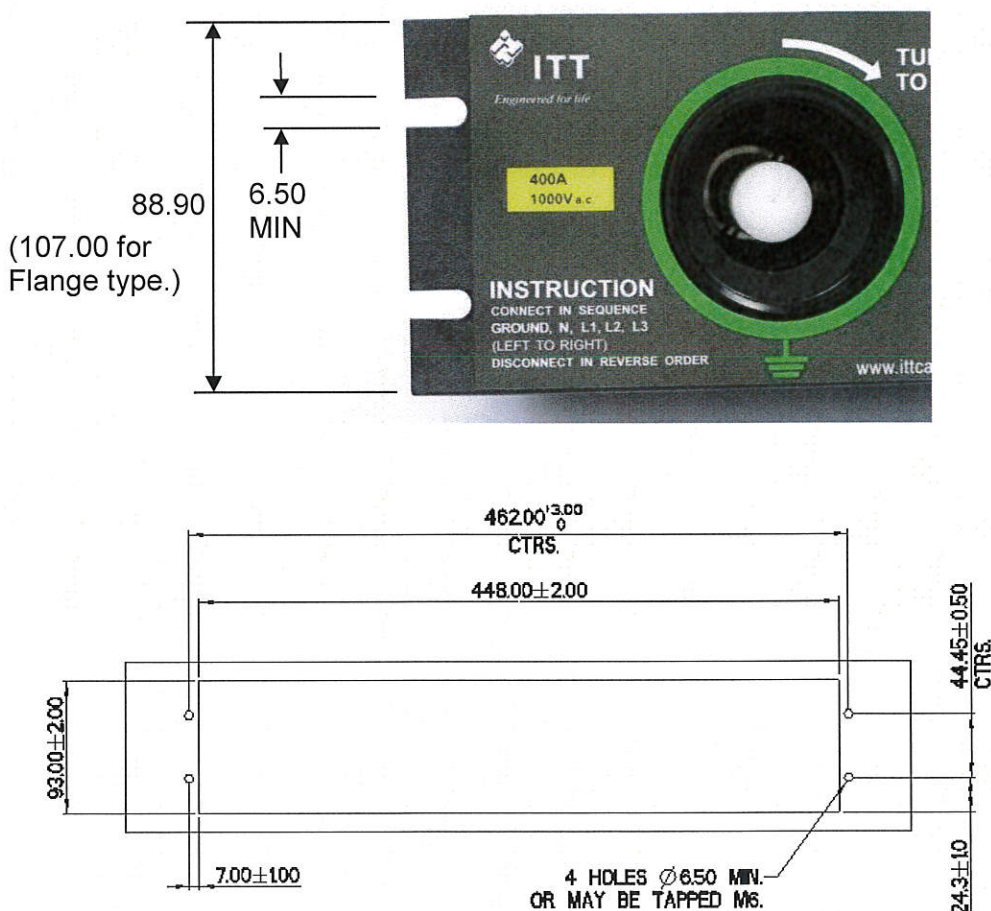
Qty	Description
1	PowerLock Box
1	6mm square drive key
1	3 pole cable connector for remote sensing
1	Operating / Maintenance guide

If any parts are missing or the unit's description does not match, you should contact your supplier.

MOUNTING INSTRUCTIONS

The unit may be mounted into standard 19" rack systems or to dedicated panel mounts within buildings or remote cabinets. It is recommended that M6 screws / bolts and flat washers are used, and tightened to a **torque of 2.94NM min. to 3.43NM max.**

Caution – Tighten screws / bolts evenly and ensure the unit is adequately supported during mounting.



If fitting to a 19" rack that does not support all IEC 60297 fixing holes it may be necessary to use additional mounting plates. ITT part number 003-7586-000 available on request.

ELECTRICAL INSTALLATION

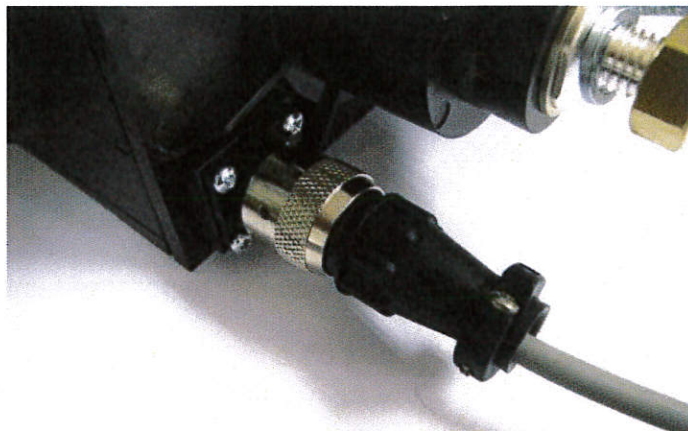
Caution – Electrical installations should only be carried out by a suitably qualified electrical engineer. It is the responsibility of the installer and user to ensure that safe practices are adopted.

Power cable connections – M12 threaded posts on the rear of the unit are for connecting power cables fitted with cable lugs. Each position is marked on the back of the box, E (Ground), N, L1, L2 & L3. The threaded posts have a spring washer and nut that should be tightened to a ***torque of 27.5NM min. to 31.4NM max.***

It is recommended that insulated spanners are used when making these connections.

REMOTE SENSING CONNECTOR

A 3 pole ITT Cannon Trident connector is located on the rear of the unit to provide a remote sensing function.



The 3 pole connector mounted on the rear is connected to a micro-switch inside the unit that is activated only when all connectors are in place and the unit is locked.

A Trident cable connector is provided with 2 loose contacts and an endbell strain relief. The connector body has 4 cavities with 3 contacts wired to the switch. Using the 3 loose contacts that are provided, the cable connector can be wired to suit your requirements, either 'Normally Open' or 'Normally Closed' or both.

Contact Position	
A	Common
B	Normally Open
C	Normally Closed
D	Not used

Full assembly instructions for this connector are shown in the Appendix.



POWERLOCK BOX OPERATING INSTRUCTIONS

Note - This box should only be operated by suitably qualified persons

Only original ITT Veam PowerLock connectors should be used with this unit. The use of non approved connectors may cause damage to the box and will invalidate any warranty.

On versions with the sealed lid, it will be necessary to open this using the square drive key before connections can be made.

Ensure that the current rating of the cables and connectors being used are suitable for the current rating of the PowerLock Box and connected supply.

Do not connect live cables.

Ensure that power is switched off before connection / disconnection

Connection of PowerLock connectors is made sequentially, starting with the Ground / Earth connection (Green) and working to the right.

1. Insert the Ground (Green) connector, aligning the 'PUSH' arrow on the label of the connector in a 12 o'clock position. Fully insert the connector until it bottoms in the cavity and turn through 45 degrees clockwise until the connector stops.
2. Repeat the above process for the Neutral connector, followed in order by L1, L2, and L3. (If at any time a connector does not rotate fully, check that the previous connector is fully turned)
3. Lock the box as indicated on the front panel, using the square drive key provided, the lock is situated adjacent to the L3 connection
4. Remove the key. All connectors are now locked in place and can not be removed until the box is unlocked.
5. To remove the connectors, ensure that the power is turned off and reverse the above procedure.

GENERAL

- Fitting and maintenance should only be carried out by suitably qualified persons.
- Mating cable connectors are not supplied with the PowerLock Box .
- Recommended cross section area of wire for connection to back of the unit is -
120mm² – 400 amp
240mm² – 660 amp
- The use of insulated spanners is recommended when connecting or disconnecting this box.
- The PowerLock Box is CE marked and complies with the relevant regulatory requirements.
- It is the responsibility of the installer to ensure that the PowerLock Box is located in a safe location.
- PowerLock connectors used to make connections with the PowerLock Box should be checked for damage and excessive wear, damaged or worn connectors may not function correctly.
- The Connector and wiring should be checked before making live, to have no damage to metal parts or insulators, loose strands, conducting lubricants, scarf or any other undesired conducting particles.
- Circuit resistance and continuity check should be made to make certain that there are no high resistance joints or spurious conducting paths.
- Always use the correct tools as specified in the data sheet/catalogue.
- Do not permit untrained personnel to wire, assemble or tamper with connectors. For operating voltage, please see appropriate national regulations.

HANDLING:

Care must be taken to avoid damage to any component parts of electrical connectors during installation and use. Although there are normally no sharp edges, care must be taken when handling certain components to avoid injury to fingers.

CHARACTERISTICS

Current rating	400 amp or 660 amp (check label for rating)
Voltage rating	1000V AC / 1500 DC
Dielectric strength	9.5Kv dc
Micro-switch operating voltage	125Vac max.
Micro-switch current rating	5 amp
Operating temperature	-30°C to +85°C
Environmental protection	IP65 – Environmental protection applies to the ‘power connector ports’ only when connectors are mated or the lid is closed and locked.
PowerLock Box weight	Unit with lid – 3.75Kg. approx Unit without lid – 3.25Kg. approx
Flammability rating	UL94-V0
Endurance	500 connection cycles

MAINTAINENCE

1. Periodic greasing of the O ring seals on the connector ports with Molykote® 3451 is recommended
2. The PowerLock Box should regularly be inspected for damage, including a visual inspection of the contacts on PS (Power Source) versions
3. Periodic retention testing of PS (Power Source) contacts using ITT Veam tool T4907 is recommended to confirm that contact life has not been exceeded

Note – Molykote® is a registered trade name of Dow Corning Corporation

DISPOSAL

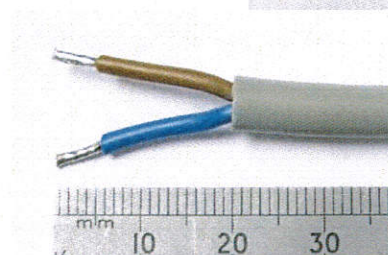
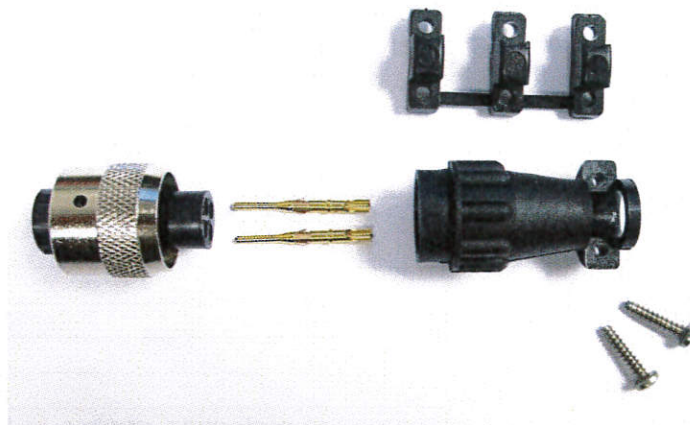
After use, the device should be disposed of in accordance with national or local authority guidelines

MANUFACTURE INFORMATION

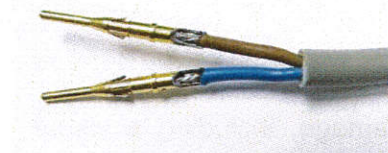
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Appendix

Cannon Trident Connector assembly instructions



1. Contacts will accept wire of between 14 and 26 AWG
2. Strip back insulation on wires by 6 mm twist together stranded wires, and pre-tin contacts and wire



3. Solder wire to contact



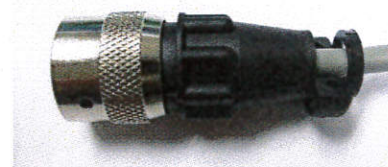
4. Separate the endbell clamping parts
5. Pass the wires / cable through the endbell



6. Insert the insulator into the coupling nut



7. Insert contacts into cavities of the connector
Cavities A & B connects to the switch 'Normally Open'
Cavities A & C connects to the switch 'Normally Closed'



8. Screw the endbell to the connector, and hand tighten



9. Select and fit a suitable clamp bar for your wire / cable and tighten screws