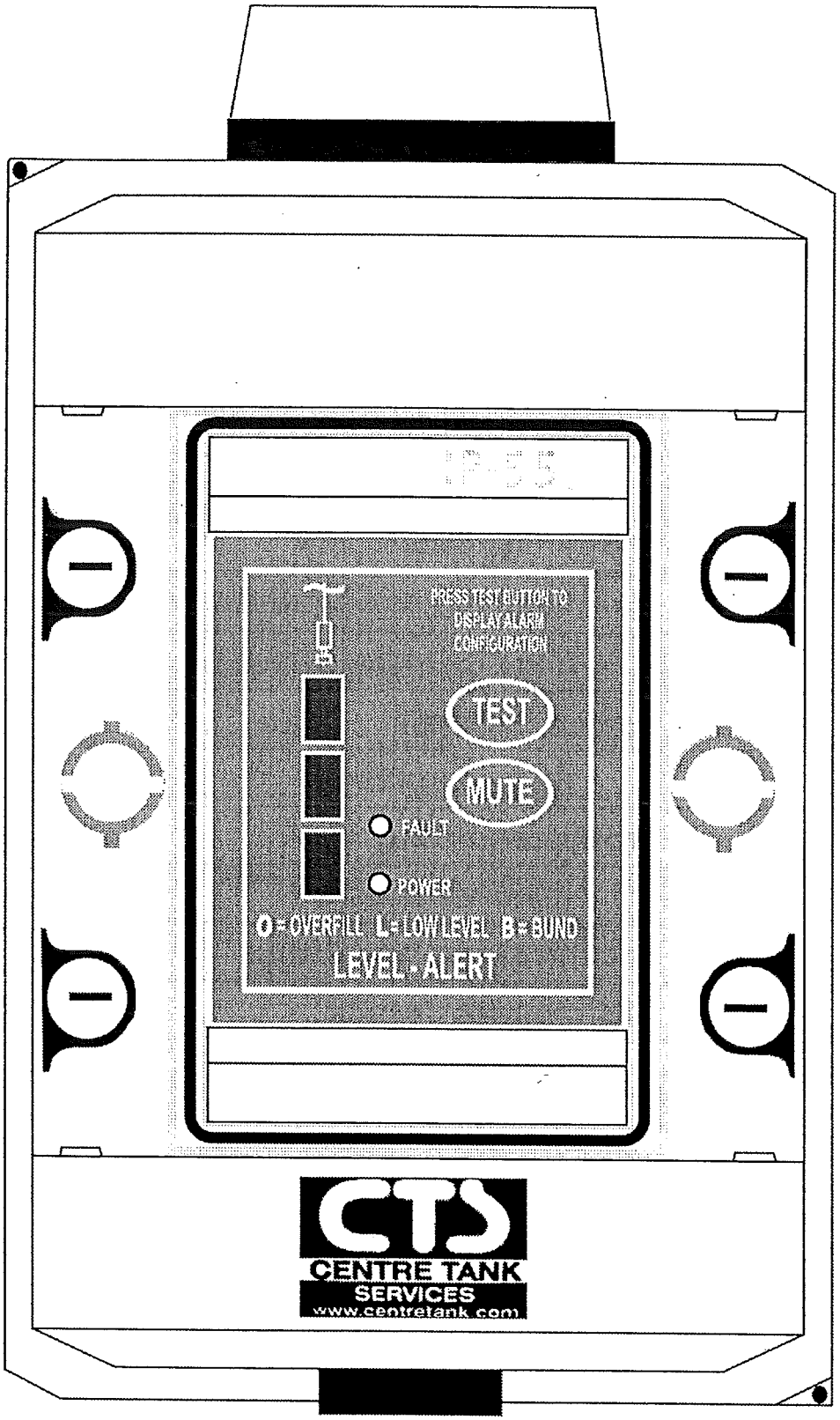
Instructions

Mains Operated Alarm



Model: Powered Level - Alert

Index

⚠ WARNING: Electricity Can Kill

Before connecting the alarm

always disconnect the supply at the consumer unit.

If in **any** doubt consult a qualified electrician.

Mounting and Basic Installation

This alarm is designed to be installed in exposed locations. Care must be taken at all times to ensure that the front panel integral seal is not damaged resulting in water ingress.

1. Remove the Perspex door. Open the door by turning the white tab 90º anticlockwise.
2. Remove the front panel by turning the four plastic screws anticlockwise half a turn.
3. When all four screw slots are vertical the front panel can be lifted free from its base. **(N.B. Do not allow the front panel to hang unsupported on its cables.)**
4. Carefully drill out the four mounting holes in the base.
5. Use the holes as a template to mark the mounting surface.
6. Cable entry grommets must be positioned at the bottom.
7. Screw the base to the mounting surface and insert the four sealing caps into the screw recesses to prevent water ingress. **(N.B. When mounting ensure the base is flat and not distorted as this may result in water ingress.)**
8. Pass the sensor probe cable through the grommet and connect to the probe screw terminal. Repeat the procedure for the second probe. (See page 9 for more detail.)
9. Ensure the power supply is not live then connect the power cable. (See page 8 for more detail.)
10. Refit the front panel and door, ensuring that all integral seals are undamaged.

Setting Up The Alarm
Preliminary Checks

Now the alarm has been successfully mounted it is worth doing a few preliminary checks to ensure that the installation will run smoothly. It is particularly important to check the probe as an error found after installation is much more time-consuming.

Checking the Power

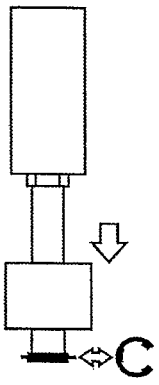
Power LED should be illuminated. Press the 'test' button for 2 seconds to ensure the alarm is operational. If no zones are active all lights and the sounder will stop when the button is released.

Checking the probe

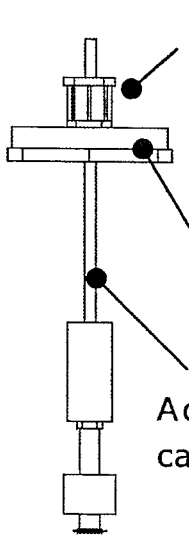
Before installing the probe sensors in the tank, manually move the float.

On the Overfill and Bund probes the alarm should sound and the correct lamp illuminate when the float is moved to the top of its shaft.

The Low level probe should sound when the float is positioned at the bottom of the shaft.



If on the Overfill or Bund the alarm sounds when the float moves to the bottom of the shaft or if the Low Level float sounds at the top of the shaft then remove the float by taking off the cir-clip (see diagram). Next rotate the float through 180°, push it back onto the shaft and reinstate the cir-clip.

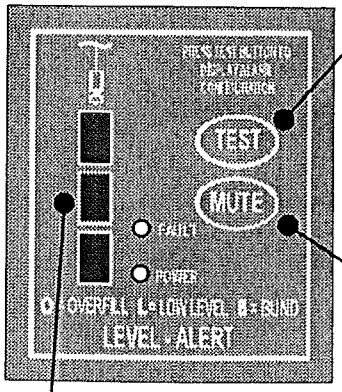


The position of the float can be adjusted to the required height by loosening the cable entry gland on the brass cap.

The cap can then be moved up or down the cable until the required height is achieved (see page 9: 'Probe connections' for more detail on positioning the probes in the tanks).

Retighten the cable entry gland and secure the cap to the tank.

Setting Up The Alarm
Operation



To test the alarm press and hold the 'test' button, whilst the button is pressed all the configured zones, fault, strobe and sounder will activate. If no zones are active all lights and the sounder will stop when the button is released.

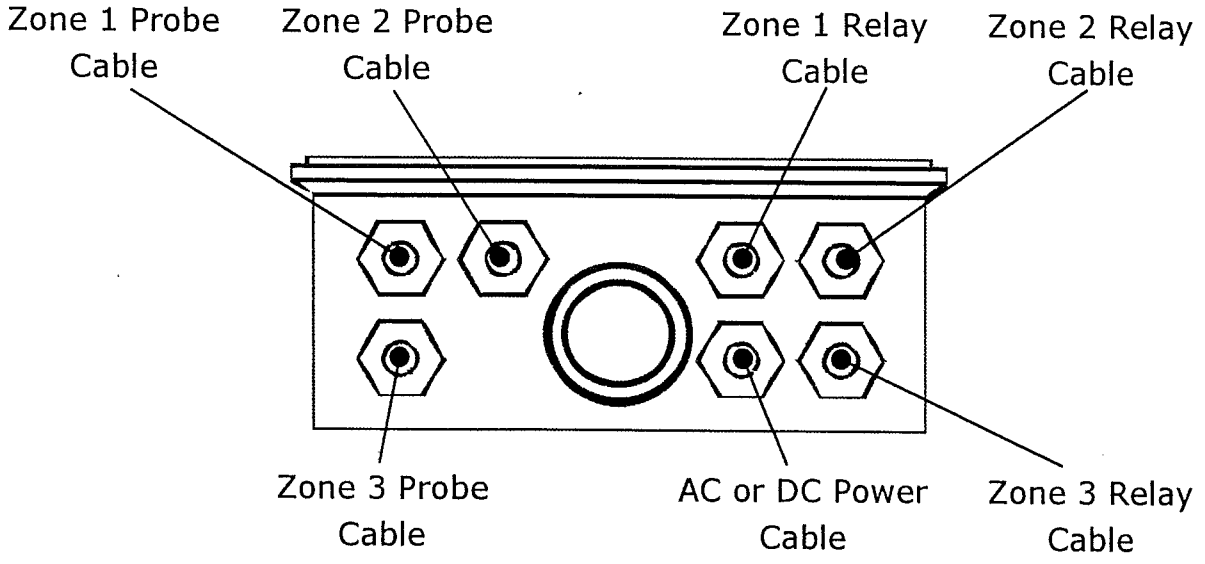
To mute an active alarm press the 'mute' button, the strobe and the sounder will stop but the active zone will remain illuminated until the zone is cleared.

The 3 displays can be configured as any of the follows: Overfill 'O', Bund 'L' or Low-Level 'L'. The alarm configuration is displayed when the test button is pressed and held, to change settings see page 10.

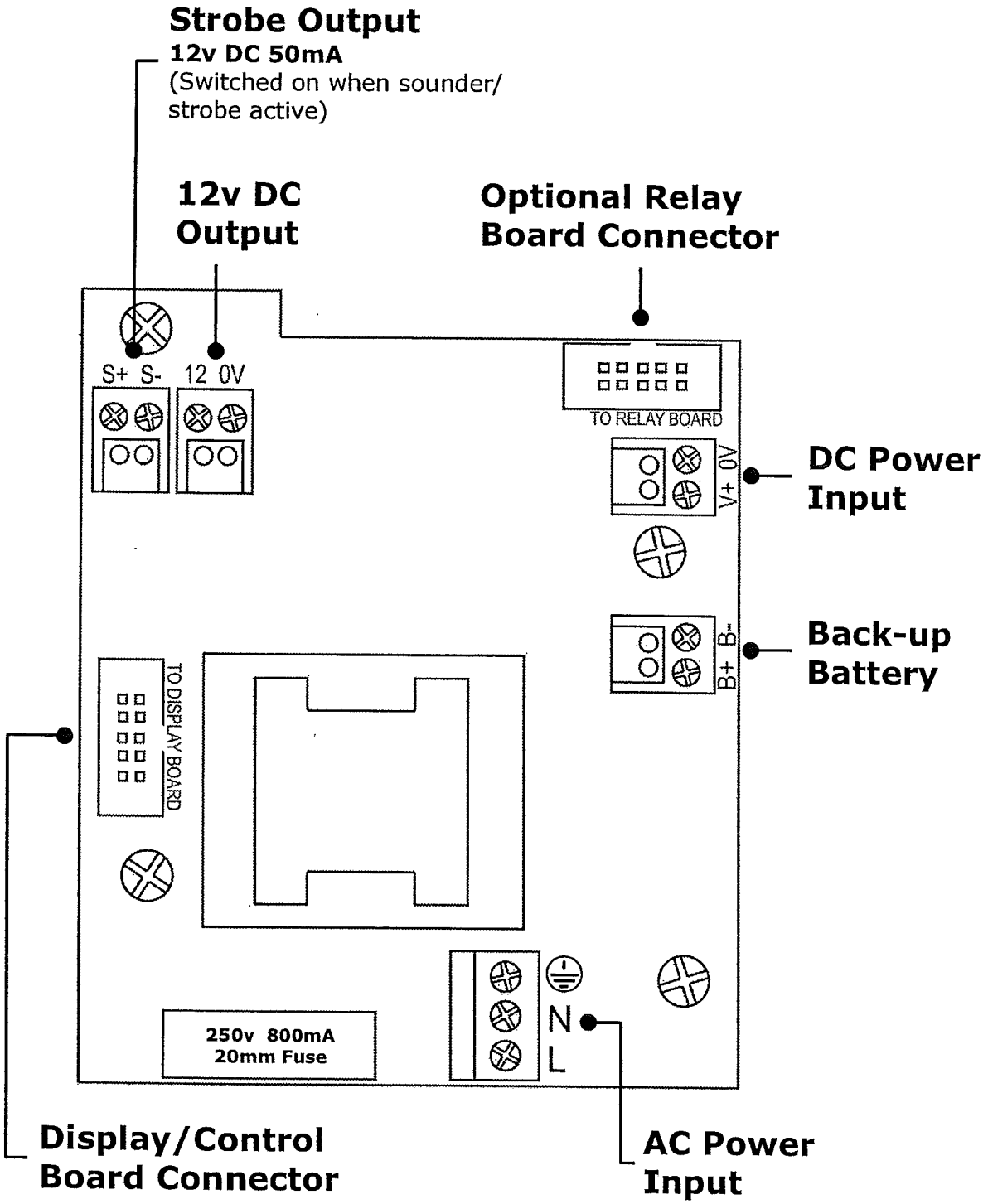
Periodically, and specifically before each filling to ensure unit has power and is operating correctly press and hold the 'test' button, all zones and the amber strobe should illuminate and the sounder should activate.

Cable Entry

If the cable entry point is not used, remove gland and seal hole with blanking cap supplied.



Internal Layout Diagram
Power Supply Board

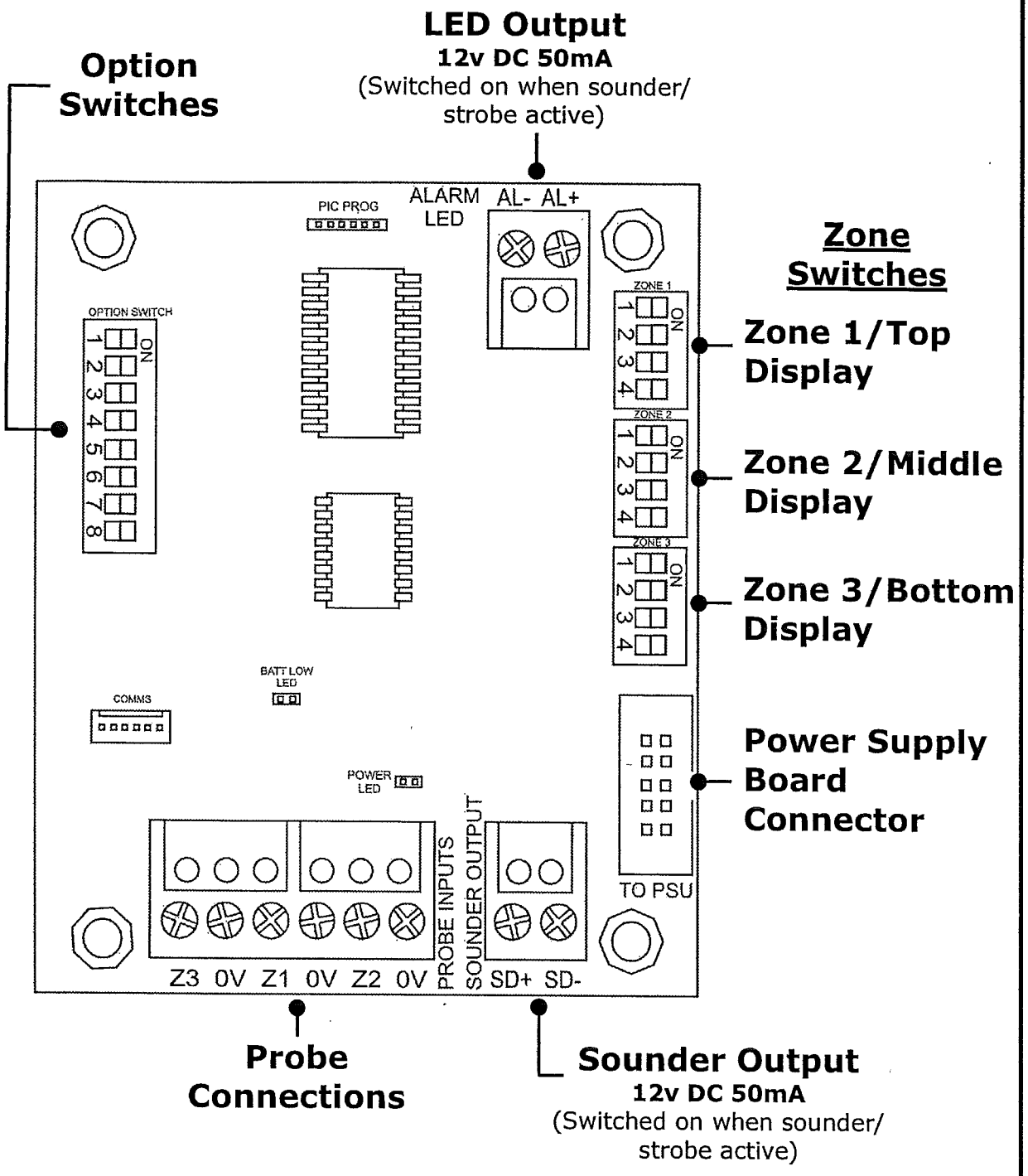


For more detail please see the following pages:

Power Input: page 8, **Optional Relays:** page 10

Internal Layout Diagram

Display / Control Board



For more detail please see the following pages:

Probe Connections: page 9,

Option & Zone Switches: page 10

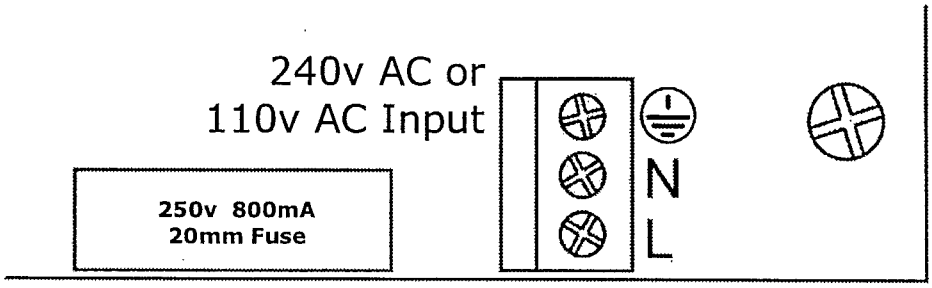
Installation Diagrams

The unit is manufactured with a supply voltage of either 240v AC, 110v AC, 24v DC or 12v DC.

Never connect both AC and DC power simultaneously to the power supply as this will damage the unit.

If in **any** doubt consult a qualified electrician.

Power Input - AC



Use 2183Y 0.5mm Round Mains Cable (Overall Diameter 5.6mm)

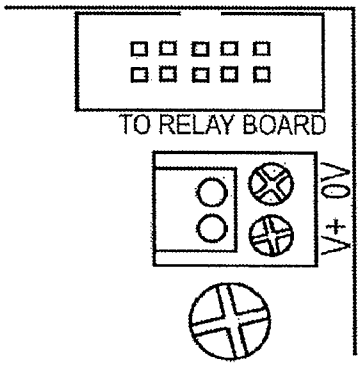
Strip back outer sheath 50mm and cut Live and Neutral cables (Blue and brown) so that they measure 30mm (leave earth cable (yellow/green) at 50mm), strip back inner sheath 5mm and wire the bare copper cables into the terminals at the bottom right of the board marked L, N and ⏚, which stands for Live, Neutral and Earth, the brown wire goes to the bottom terminal (live), blue (neutral) goes to the middle and the yellow/green or bare wire (earth) goes to the top.

Power Input - DC

Use 2182Y 0.5mm Round Mains Cable (Overall Diameter 5.4mm)

The DC supply, Brown wire should go to positive (V+) and Blue to negative (0V).

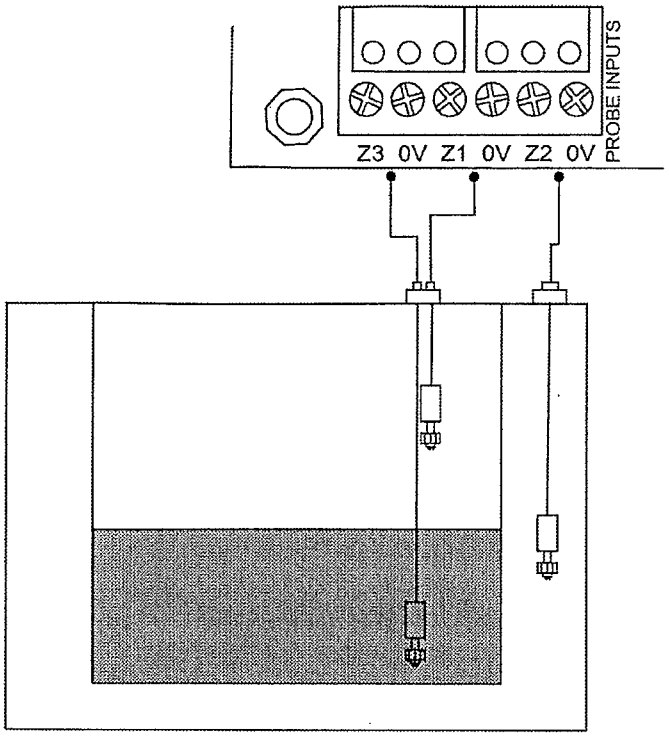
It is important to take basic safety precautions and ensure the power is off during wiring.



12v DC or
24v DC Input

Installation Diagrams

Probe Connections



There are six probe connections, which are located as shown here. The probe wired to the 'High' connection is positioned topmost in the tank, and is used to alert that an overfill has occurred. Whereas the probe in the 'Low' connection should be placed near the bottom of the tank, to indicate a low level. The 'Bund' probe is between the two tank 'skins' and is a precaution so situations such as leakage and overflow can quickly be identified.

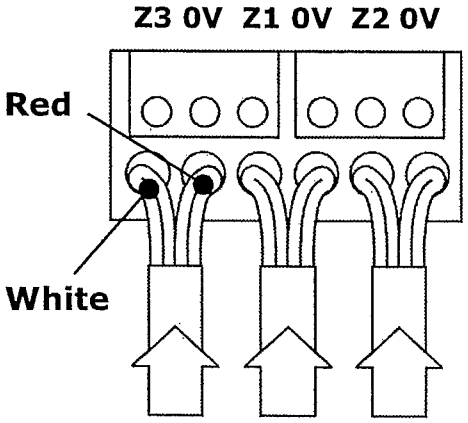
Common Probe Connection

Typical system setting:

Zone 1 - Overfill Probe

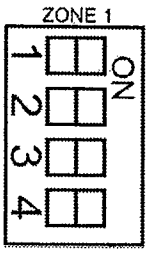
Zone 2 - Bund Probe

Zone 3 - Low-level Probe



You will notice that in the probe cable there are two wires, one red and one white. The red wire should be connected to the Z(x) terminal and the white wire to the corresponding 0V terminal. The colour is actually irrelevant but it is suggested for simplicity all wires to the '0V' connections are kept the same. For Zone set-up see page 10.

Zone & Option Switches



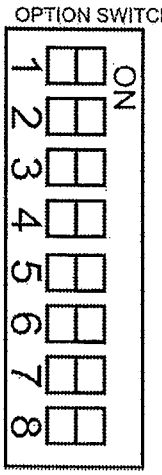
To change the display adjust the Zone switches:

'O' - Switches 1, 2 & 3 ON

'L' - All switches OFF

'B' - All switches ON

The following functions can be set via the option switches:



Switch 3 ON	Switch 3 OFF
1 & 2 OFF - Zone 1 only	1 OFF - Monitored Probes
1 ON, 2 OFF - Zones 1 & 2	1 ON - Standard Probes
1 OFF, 2 ON - Zones 1 & 3	2 OFF - Zone 3 N/O
1 & 2 ON - Zone 3 only	2 ON - Zone 3 N/C

4 ON - Battery Unit, LED off when mute pressed

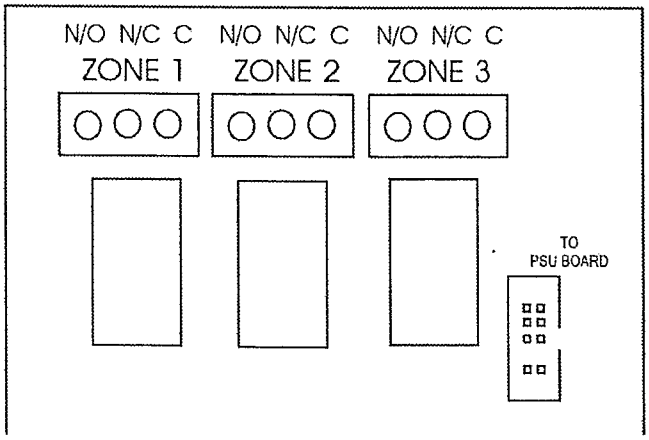
5 ON - Relay ON Zone 3 activated, OFF Zone 1 activated

6 ON - No sounder on Zone 1 (muted)

7 ON - No sounder on Zone 1 or Zone 3 (muted)

8 ON - No sounder on Zone 3 (muted)

Relay Outputs (Optional)



The relay outputs are optional and can be added to the unit at anytime. They allow switching to external equipment when either the High, Bund or Low alert is triggered. For example, a pump is activated in the event of an overfill. 'C', 'N/O' and 'N/C' are printed on the boards for 'Common', 'Normally Open / Closed'.

It is important to note the **maximum switched voltage** is **250V AC** and the maximum switched current is **10 Amps**.

Troubleshooting

1. If the **power indicator** does not illuminate or sounder fails to react, check the power input to the unit (page 8).
2. If the **alarm activates signalling an overfill condition when the tank is not being filled**, this indicates a probe fault. Check cables and the probe assembly, make sure that the probe is in the correct position and not lying horizontally on the bottom of the tank.
3. If the **probe does not register as supplied**, then repeat sequence shown on page 4 (checking the probe).

Troubleshooting (Alarm Conditions)

1. The unit is designed so that all the zones emit a different sound, enabling you to distinguish the alarm zone without having to visualize it - the top zone is the most rapid (or urgent) on the sounder and the bottom is the least.
2. The Overfill Alarm will only activate when the tank has partially emptied and then been refilled.
3. The Bund Alarm indicates leakage from the tank. The outer cavity should be checked and drained if containing fluid.
4. The Low Level Alarm will only activate when the tank has partially filled and then the fuel drained below the low position.

Technical Specifications

Supply Voltage (A.C.)	240v / 110v, 50Hz-60Hz, 0.8A
Supply Voltage (D.C.)	DC 12-30v, 0.8A
Installation environment	Pollution Degree 3
	Installation Category II
Operating Temperature	-20º C to +50º C
Ambient Temperature Storage	-30º C to +60º C
Maximum Altitude	2000 Metres
Humidity (Operating)	5 to 100% RH, Non-condensing
Enclosure	
Dimensions (L x H x D)	145 x 242 x 110 (mm)
Colour	Light Grey RAL 7035
IP Rating	IP 55
Material	Polycarbonate
Sounder	
Frequency	2600 Hz
Sound Output @12V	90 dB
Float	
Material	Nylon
Specific Gravity	0.70
Cap Mounting Thread	1.5" BSP
Cable Length	5 metres

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