

CTS Multi-Zone Alarm V4

Battery Operated



SWS4000 Series

**UK
CA**

MADE IN UK

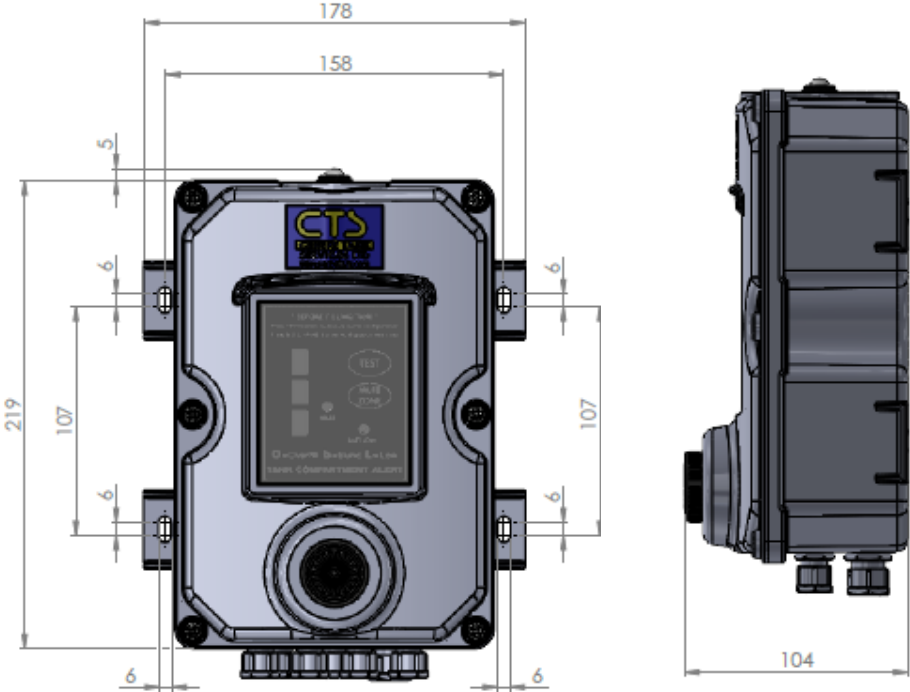
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PLEASE USE TOOLS WITH CAUTION.
MISUSE OF HAND/POWER TOOLS
CAN CAUSE SERIOUS HARM!



INSTALLATION

This unit is designed for installation in outdoor locations. **DO NOT** damage the front panel seal, failure to do so could result in water ingress. If fitted outdoors – please ensure a rain & sun deflector is installed above the unit if located in extreme exposed conditions.

157mm x 107mm

1. Mark the fixing position for the external mounting lugs.
2. Use four non-countersunk screws for mounting.



DO NOT OVERTIGHTEN!

BASE MUST BE FLAT. DISTORTION CAN RESULT IN WATER INGRESS.

When ready to wire up the alarm—remove the front face by unscrewing the 6 captive screws. Push the ribbon cable into the front panel—support the board whilst inserting ribbon cable and make sure its pushed in completely.



DO NOT ALLOW THE FRONT PANEL TO HANG UNSUPPORTED ON THE CONNECTING CABLES.

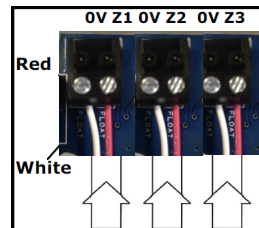
4. Feed the probe cable through the gland and connect to the probe screw terminal. Repeat the step for the second and third probes.

Typical system setting:

Zone 1 - Overfill / High probe

Zone 2 - Bund Probe

Zone 3 - Low Level Probe



INSTALLATION

5. Fit the 6 x AA batteries

(High Capacity Alkaline, 1.5v size supplied with unit), make sure the polarity is the correct for each fitted.

6. Fix the front panel to the base—tighten the 6 captive screws—making sure the lip is in the seal groove.

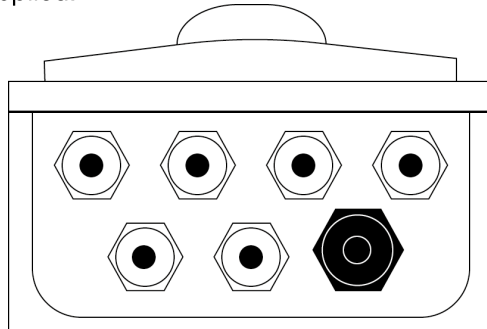
Check the front panel to ensure there is no gap around the seal. If there is a gap present, unscrew the captive screws a couple of turns and re-seat.

+	-
-	+
+	-
-	+
+	-
-	+



CABLE ENTRY

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



ZONE & OPTION SWITCHES

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

To change the display adjust the Zone switches:

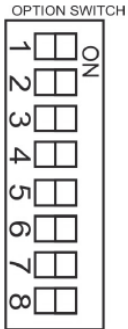
O - Overfill / High - Switches 1, 2 & 3 ON

b - Bund - Switches 1 & 2 OFF, 3 & 4 ON

L - Low - All switches OFF

INSTALLATION

The following functions can be set via the option switches:



1 -	ON - O,L,b	n/c low (swap float)	3 Zones active
1 & 2	ON - O,L,b	n/o low (**default)	3 Zones active
1 & 2 & 3	ON - L	n/c low (swap float)	Bottom Z3 active
3	ON - O		Top Z1 active
1 & 3	ON - O, B		Top & Middle Z1 & Z2 active
2 & 3	ON - O, L		Top & Bottom Z1 & Z3 active
4	ON	Battery alarm, LED zone off & relay off when mute pressed to save power. (**default)	
5 ON-	Pump Driver Z3 Relay ON when Zone 3 activated, OFF when Zone 1 activated (Switches 1, 2, 3, 7 to be on)		
6 ON -	No sounder on Zone 1 (muted)		
7 ON -	No sounder on Zone 1 & Zone 3 (muted)		
8 ON -	No sounder on Zone 3 (muted)		

SETTING UP THE ALARM

POWER

The power LED should be illuminated. Press the **TEST** button for 2 seconds to ensure the alarm is operational. If no zones are active, the lights and sounder will stop when the button is released.

PROBES

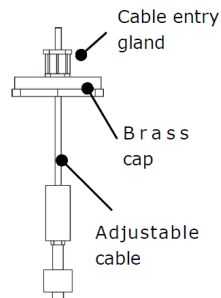
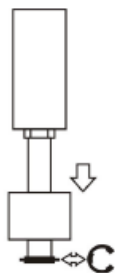
Before installing the probes into the tank, manually move the float by hand.

The **HIGH** and **BUND** alarms will sound when the floats are moved to the top of the shaft and the corresponding LED should illuminate.

The **LOW** level alarm will sound when the float is moved to the bottom of the shaft.

If the **HIGH** or **BUND** alarms sound when the float is moved to the bottom of the shaft or the **LOW** level float moves to the top of the shaft then remove the float by taking off the cir-clip, rotating the float 180°, refitting to the shaft and putting the cir-clip back to where it was removed from. (see diagram)

The probe position can be adjusted to the required height by loosening the cable gland on the brass cap. The cap can then be moved up or down the cable until the required height is achieved. Retighten the cable gland and secure the cap to the tank.



ALARM OPERATION

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 the lights and sounder will stop when the button is released.

To mute an active alarm, press the **MUTE** button. The strobe & sounder will stop but the active zone LED will remain illuminated for 5 seconds or until the zone is cleared.

The 3 displays can be configured as any of the following:

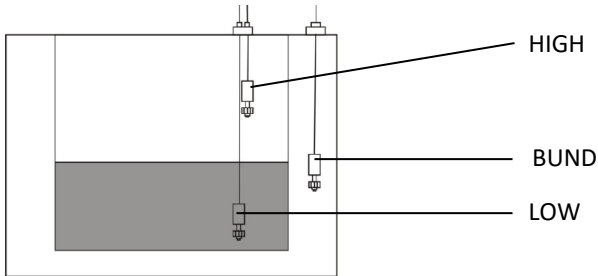
Overfill - O Bund - b or Low Level - L

Alarm configuration is displayed when the **TEST** button is pressed & held.



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.

PROBE CONNECTIONS

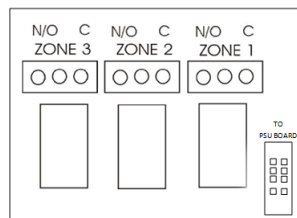


The probe wired to the **HIGH** connection is positioned at the topmost part of the tank and is used to alert that an overfill has occurred. The probe wired to the **LOW** connection should be positioned near the bottom of the tank to indicate a low-level. The **BUND** probe is placed between the two tank 'skins' and is used to quickly alert of any leaks.

When shipping a tank by road, make sure the probes are stored at the top of the tank to prevent any damage caused from swinging.

RELAY OUTPUTS

The volt free relay outputs allow switching of external equipment when either High, Bund or Low-level zones are activated e.g. an external sounder can be activated in the event of an overfill.



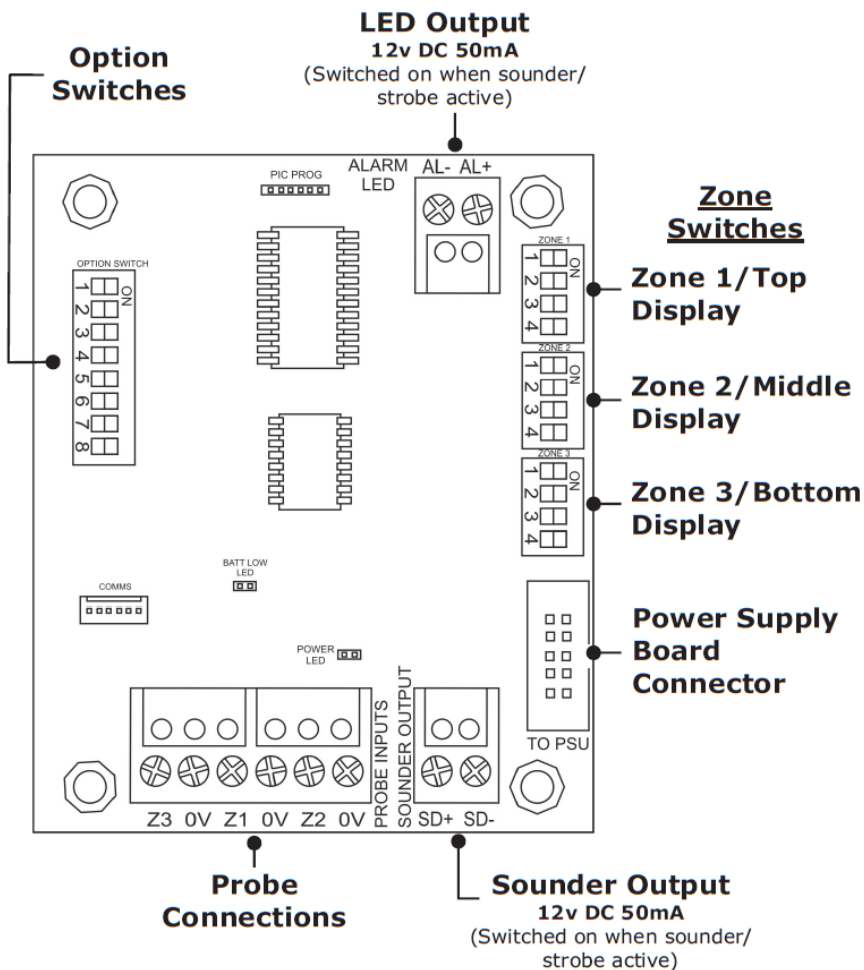
'C' and 'N/O' are printed on the boards for 'Common', 'Normally Open', Normally Closed (N/C) is not available.

Maximum switch voltage is 250v and maximum switch current is 8 Amps.

Using relays will deplete batteries quicker.

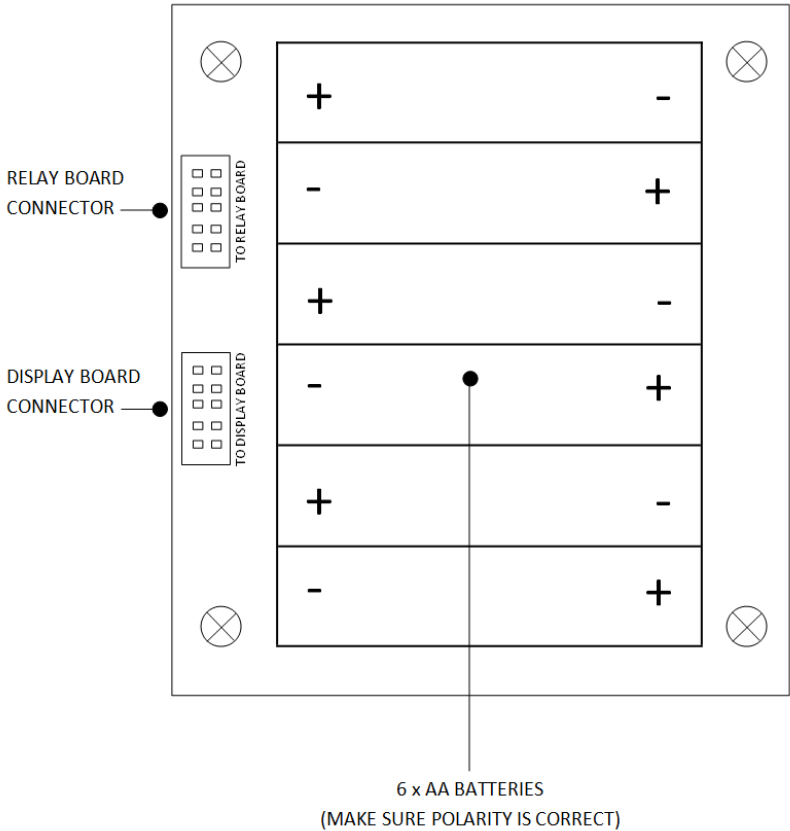
DISPLAY BOARD DIAGRAM

INTERNAL LAYOUT DIAGRAM (DISPLAY BOARD)



BATTERY BOARD DIAGRAM

INTERNAL LAYOUT DIAGRAM (BATTERY BOARD)



TROUBLESHOOTING

TROUBLESHOOTING

If the battery low indicator illuminates or sounder fails to respond then replace the batteries.

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 correctly positioned and not lying horizontally on the bottom of the tank.

If the probe does not register as supplied, then please check the zone conditions carefully.

TROUBLESHOOTING (ALARM CONDITIONS)

The unit is designed so that all the zones emit a sound, enabling you to take rapid action to the alarm condition.

The Overfill Alarm will only re-activate when the tank has been partially emptied and then refilled.

The Bund Alarm indicated leakage from the tank. The outer cavity should be checked and drained if containing fluid.

The Low Level Alarm will only activate when the tank has been partially filled then the fuel drained below the low position.

MAINTENANCE

It is recommended to service the Alarm annually.

If the unit is in “Alarm” state (sounder and beacon active) for 7 days or more it is recommended to test the unit and replace the batteries.

To replace batteries remove front panel. Batteries are located in rear compartment. The unit takes 6 x AA (1.5v) batteries. Make sure the polarities are correct.

To check all the zones are working as they should, press and hold the test button and all zones should light up.

To check all probes are working as they should, remove the probes from the tank compartments and lift/lower the floats. The High and Bund zones should activate when the floats are lifted and the Low Level zone should activate when the float is lowered.

Remove front cover to check there is no water ingress.

TECHNICAL SPECIFICATIONS

Supply voltage (D.C.)	9v DC
Battery Type	6 x AA (1.5v)
Installation environment	Pollution Degree 3, Installation Cat II
Operating Temperature	-20°C to +50°C
Ambient Temperature Storage	-30°C to +60°C
Maximum Altitude	2000 Meters
Humidity (Operating)	5 to 100% RH, Non-condensing
Enclosure	
Dimensions (H x W x D)	240 x 180 x 104 (mm)
Colour	Light Grey RAL 7035
IP Rating	IP 55
Material	UV stabilised ABS
Sounder	
Frequency	2600 Hz
Sound Output @12v	85 dB

Centre Tank Services Ltd

Model: Battery 3 Zone

Input: 9v DC x 1.5v AA

**UK
CA**

MADE IN UK



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Fuel Dispensing, Storage Tank, AdBlue® and Lubrication Equipment