Room Under and Over Temperature Alarm Installation and Operation

Manual

Contents

1) Display and Control

Zone Status
Display

Temperature
Alarm Set Point
Buttons (see item
5 below)

Mute Alarm Push
Button

Sensor power
fuse

Removable Terminal Block for
connection to room sensors (see
item 4 below)
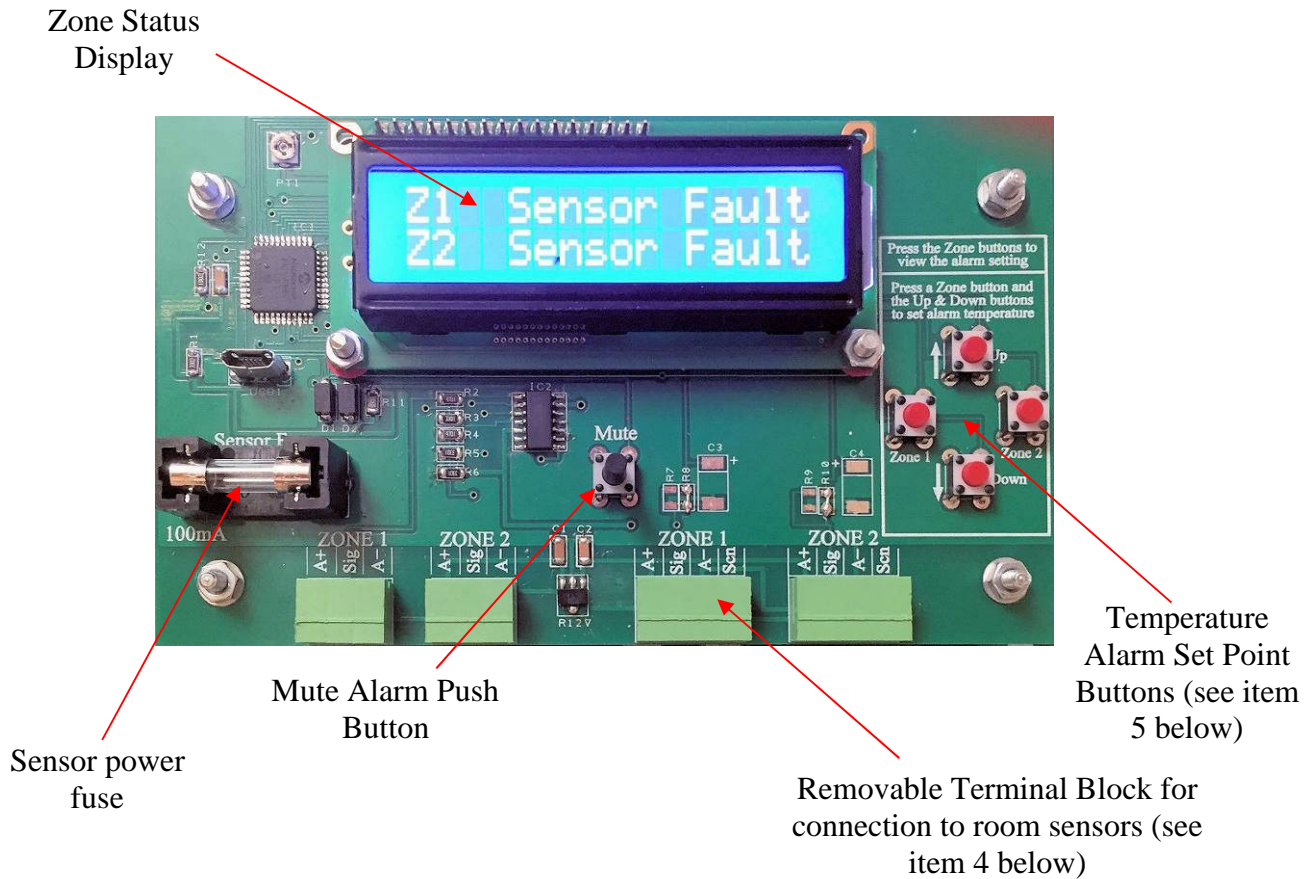
2) Operation

In normal operation with no alarms or faults, the audible warning device will be OFF and the display will be showing screen 2 below. The alarm trip point (setpoint) can be adjusted using the three red buttons on the top board, see "Setting the alarm trip setpoint".

Once the ambient temperature exceeds the alarm setpoint, the audible warning will start pulsing, the display will show the type of alarm *(see screen 3 below),* the common alarm BMS contact will operate. The following optional features will also operate if fitted:

     Zone BMS relay
     Remote beacon/beacon sounder
     SMS system will send an Alarm message

The unit will remain in this mode until the "Mute" button has been pressed when the display will change to show the type of alarm and the ambient temperature *(see screen 4 below),* the audible warning will stop and if fitted the remote sounder will stop.

Once the temperature drops below (high) or above (low) the setpoint by 2ºC, the system will automatically reset to normal operation.

If a sensor becomes disconnected or damaged, the audible warning will sound and the display will show screen 5 *(see below).* The unit will remain in this mode until the "Mute" button is pressed. Once the sensor fault has been rectified, the system will automatically revert to normal running provided the "mute" button has been operated.

If the sensor power fuse blows or is removed, the audible warning will sound and the display will show screen 6 *(see below).* The unit will remain in this mode until the "Mute" button is pressed. Once the fuse has been replaced, the system will automatically revert to normal running provided the "mute" button has been operated.

If the temperature falls below -50ºC or above +50ºC, the audible warning device will sound, and the display will change to screen 8 *(see below).*

3) Display Screens

System Reset
Please Wait
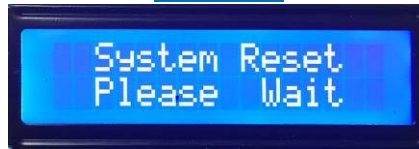
The unit will display this for a few seconds after powering up

Screen 2

Temperature
24.0°C

The unit has no reason to alarm and is showing the temperature in each area

Screen 3

HIGH Temp ALARM
24.0°C

Over or under temperature; this statement will flash until the "Mute" button is pressed

Screen 4

HIGH Temp ALARM
24.0°C

After "Muting" an alarm the display will show the status and current temperature

Screen 5

Sensor Faulty
or Disconnected

The sensor on zone 1 has become disconnected or is faulty

Screen 6

The Sensor Fuse
Has Blown

The sensor power fuse has blown

Screen 7

High Setpoint
23°C

Low Setpoint
21°C

Alarm setpoint adjustment

Screen 8

Temperature
Over Range

Over range, temperature is below -50 or above +50C

4) Positioning the temperature sensor

Care should be taken when positioning the sensor. Remember, hot air rises and forms hot spots, cold air falls causing cold spots i.e., in a room, the left hand corner away from any heat source could be 21ºC, whereas the right-hand corner next to the heat source could be 25ºC. Also, positioning the sensor one metre from the floor when the bulk of the heat source being at two meters, could lead to damage to sensitive equipment because the sensor is measuring the lower ground floor temperature.   Therefore, it is important to mount the sensor on a wall or column in a position where it would reflect the average temperature of the room. If the location and type of heat source are unknown at the time of installation, try positioning the sensor between 1.8 and 2.5 metres (depending on room height) from the floor in the centre of the room.

5) Sensor wiring

Using the pluggable 4 way terminals as shown in Item 1 above, connect the sensor to the alarm unit as follows using a 3 core 0.22mm screened cable such as RS 8124725. The sensor cable should not exceed 100m in length, and should not be run in parallel to, or near, any power cables, bus-bars or any source of electrical or radio interference.

| Alarm unit terminal reference	Cable colour	Sensor terminal reference
A+	Red	A+
Sig	White	Sig
A-	Black	A-
Scn	Screen	No connection

Do NOT connect the screen to any terminal or earth at the sensor box end

6) Setting the alarm trip setpoint

Please note, the system will automatically leave setup mode after 5 minutes and will not allow overlapping alarm trip point temperatures i.e., Low 18 ºC, High 16 ºC. Three buttons have been provided to allow both High and Low alarm trip points to be adjusted. The adjustable temperature range is between 0 and 50ºC, however the low temperature set point can not exceed the high set point and vice versa. To set the desired high alarm trip point, first press the "Zone 1" button until the display changes to screen 7a, then repeatedly press the "Up" or "Down" buttons until the desired alarm temperature is displayed. Once the required temperature is reached, press the "Zone 1" button again to enter the Low temperature setup screen 7b. Again, repeatedly press the "Up" or "Down" buttons until the desired alarm temperature is displayed. When finished, press the "Zone 1" button again to leave setup mode. If you fail to press the "Zone 1" button after reaching the desired temperature, the new set point will not be saved when automatic exit from setup mode occurs. The alarm trip point is held into non-volatile memory, so no further adjustments will be needed unless a new alarm temperature setpoint is required.

Warning: setting the alarm to -50 or +50ºC will setup an alarm but the display will change to screen 8 once the temperature drops below -50ºC or above +50ºC. The unit is factory set to Low 15ºC, High 25 ºC

7) Power, BMS, beacon and SMS connections
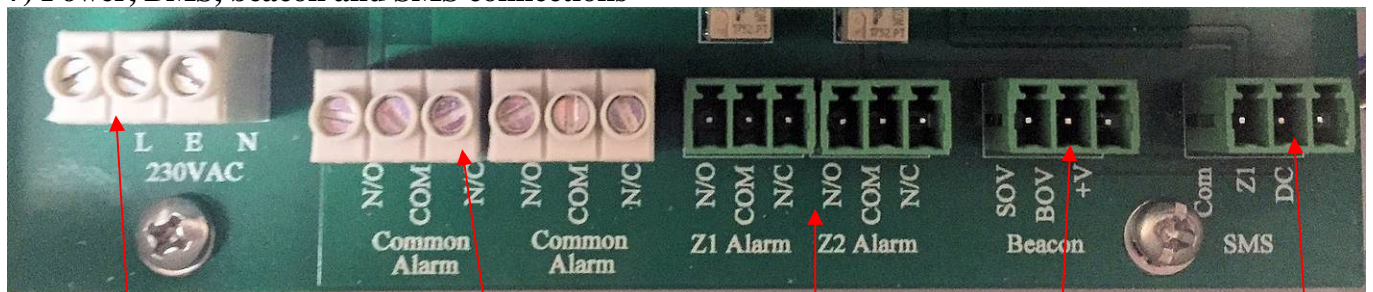
90 to 265VAC Input power

2 x common alarm and power fault volt free BMS contacts

Optional feature Individual zone alarm contacts to BMS

Optional feature 12VDC output to Beacon or Beacon Sounder

Optional feature Output to SMS

The Common alarm relay is normally energised, de-energised in alarm or power fault, therefore both "Common Alarm" contacts are identified correctly when the unit is powered and has no current alarms.

Output Volt Free contacts for use by a Building Management System.

Function Required	Fitted as Standard	Relay Output Terminals
Zone 1 alarm	No	Z1 Alarm
Zone 2 alarm	No	Z2 Alarm
Over temp alarm contact 1 any zone & power fault	Yes	Common Alarm & power fault
Over temp alarm contact 2 any zone & power fault	Yes	Common Alarm & power fault

BMS relays do not operate for blown fuse or sensor fault

8) Beacon and beacon sounder

If a beacon or beacon sounder is supplied, connect to the three terminals identified as "Beacon" as follows.

8a) Non-mutable beacon or beacon sounder

If the beacon or the beacon sounder is to be active (on all the time) until the water leak alarm has cleared, connect as follows:

Terminal reference	Connect beacon / beacon sounder terminals to the following terminals
+V	Beacon +V or Strobe/Tone + terminal
BOV	Beacon -V or Strobe/Tone - terminal
SOV	NO connection to this terminal

8b) Mutable beacon or beacon sounder

If the beacon or the beacon sounder is to turn off when the "Mute" push button is pressed, connect as follows.

Terminal reference	Connect Beacon / beacon sounder terminals to the following terminals
+V	Beacon +V or Strobe /Tone + terminal
BOV	NO connection to this terminal
SOV	Beacon -V or Strobe /Tone - terminal

8c) Mutable sounder beacon, on all the time

If the beacon is to remain alight, all the time an alarm is current but the sounder is to be turned off when the "Mute" push button is pressed, connect as follows.

Terminal reference	Connect Beacon / beacon sounder terminals to the following terminals
+V	Strobe and Tone + terminal
BOV	Strobe - terminal
SOV	Tone - terminal

Warning; if the above option "8c" is required, **<u>remove</u>** the electrical link connected between the second (Strobe -) & third terminals (Tone -) within the sounder.

9) Fitting an SMS / Email messaging system

If an SMS text messaging or Email messaging unit is supplied connect it as follows to the 3 way terminal block identified as "SMS".

Terminal reference	Cable wire colours fitted to the messaging system
Z1	**BLUE**
COM	**BLACK**
DC	**RED**

10) Commissioning

    a)   Once the unit has been connected as described above, turn on the mains power to the unit. The display should illuminate display screen 1 and after a few seconds display screen 2, note the current temperature before carrying out the high temperature alarm test.

    b)   Press the internal red "Zone 1" push button, screen 7a should appear. Now repeatedly push and release the "Down" button until the temperature on display is below the noted ambient temperature. Finally press the "Zone 1" push button again to save the changes.

    c)   The audible warning should start pulsing, screen 3 should appear and flash in the display, the "common alarm" contact should change state and if fitted, the beacon / beacon sounder should start, if fitted the "Zone 1 Alarm" relay should operate and if fitted the SMS messaging system should activate. Pressing the "Mute" button will stop the sounder, change the display to screen 4 and if fitted and connected as shown in (7c), the sounder in the remote beacon sounder will stop.

    d)   Once muted, clear the alarm by repeating procedure (b) again, this time using the "Up" button to set the unit to the desired high temperature set point. With the unit displaying screen 2, press the "Zone 1" button until screen 7a appears. Press the "Zone 1" button again, screen 7b should appear. Repeat procedure (b) using the "up" button to set the alarm trip point above the ambient temperature, and the "down" button to set the system to the desired low temperature trip point.

11) Fault Diagnosis

Fault		Possible Reason
Display is OFF and the unit appears dead		1) No power to the control unit. *Test with a meter* 2) The power fuse has blown. *Test the fuse with a meter*
Screen 1 remains on display all the time		1) Power down the unit and turn on after 1 minute 2) System fault. *Return to manufacturer*
Sensor fault, Screen 5		1) Check the sensor cable for bad terminations or crossed wiring. 2) Remove the sensor and using 3 short lengths of cable, re-terminate the sensor at the alarm unit to illuminate the field wiring. If the sensor is found to function correctly, the sensor cable is either too long, faulty or being subjected to electrical interference. 3) Crossover the zones to see if the fault transfers to the healthy zone i.e. fault on zone 1, after crossing over fault on zone 2. 4) Faulty sensor. *Return to manufacturer*
Screen 6 appears in the display		1) The internal sensor fuse has blown due to over current. Remove both 4 way sensor terminal connections and check the sensor wiring for short circuits. Before re-connecting the sensors, replace the 100mA fuse, the display should change to display zone 1 and 2 as faulty (screen 5). If this screen does not appear, *Return unit to manufacturer.* If it does appear, plug each zone sensor back in, one at a time, noting if the fuse blows again and on what zone.
Horn not working		1) System fault. *Return to manufacturer*

12) Installation Drawings
Not all the shown devices may be available on your system