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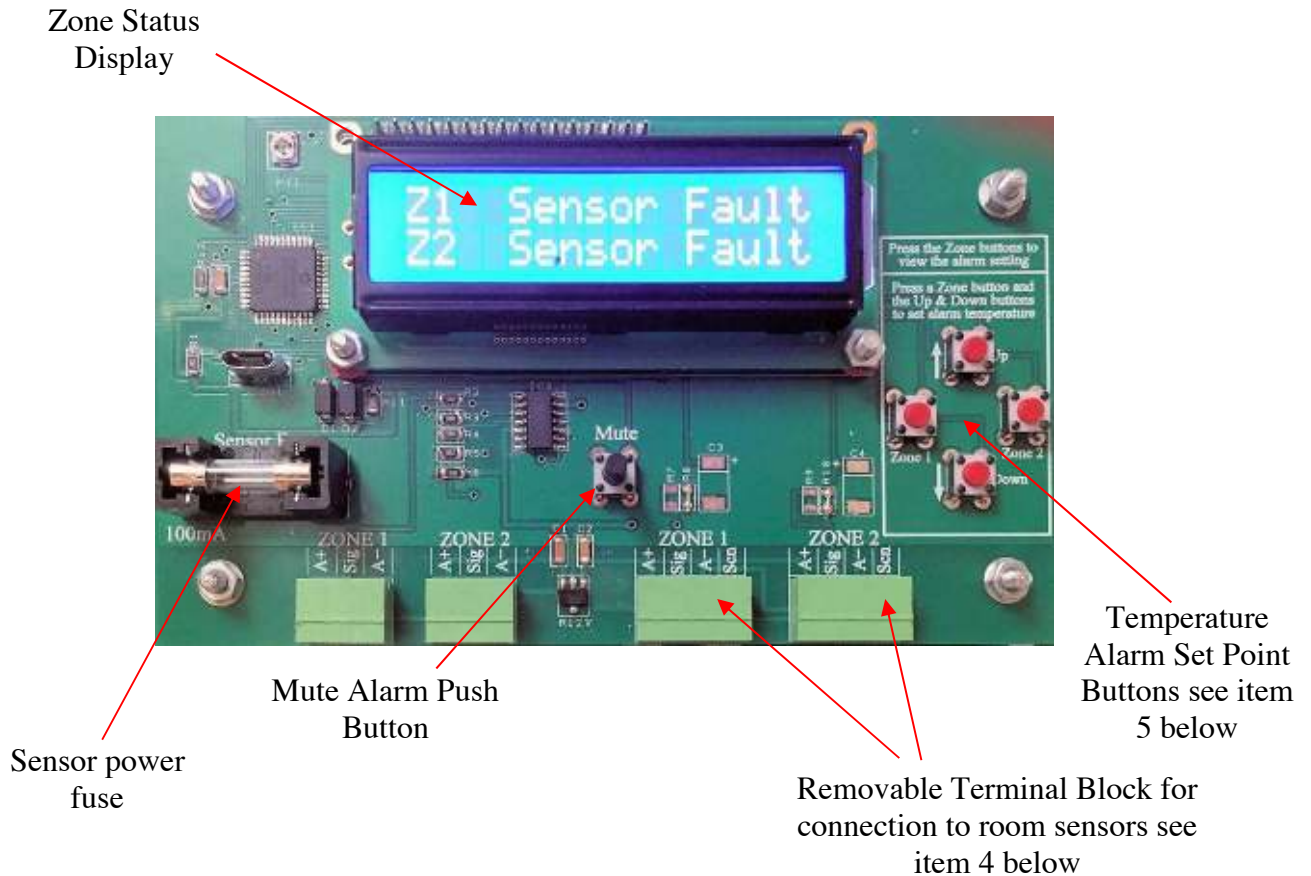
1 and 2 Zone Room Over Temperature Alarm Installation and Operation Manual



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1) Display and Control



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 for both zones using the four 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 zone in alarm, see screen 3, the common alarm BMS contact will operate, if fitted the zone BMS relay will operate, if fitted, the remote beacon/beacon sounder will operate and if fitted the SMS 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 both zones, see screen 4, the audible warning will stop and if fitted the remote sounder will stop. Once the temperature drops below the setpoint by 2°C, 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 the faulty zone, see screen 5. 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 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 0°C or above 50°C, the audible warning device will sound, and the display will change to screen 8 below.

3) Display Screens

Screen 1



The unit will display this for a few seconds after powering up

Screen 2

One zone alarm unit



Or two zone alarm unit



The unit has no alarms and is showing the temperature in each area

Screen 3

One zone alarm unit



Or two zone alarm unit



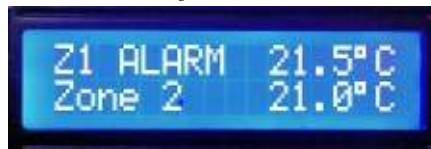
Zone is over temperature; this statement will flash until the "Mute" button is pressed

Screen 4

One zone alarm unit



Or two zone alarm unit



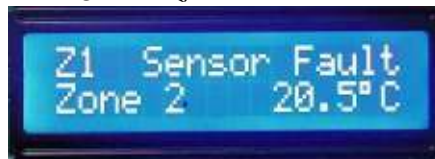
After "Muting" an alarm the display will show the status and current temperature

Screen 5

One zone alarm unit



Or two zone alarm unit



The sensor on zone 1 has become disconnected or is faulty

Screen 6



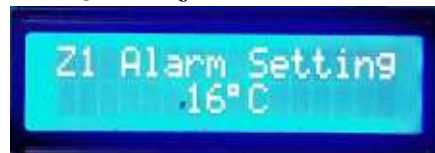
The sensor power fuse has blown

Screen 7

One zone alarm unit



Or two zone alarm unit



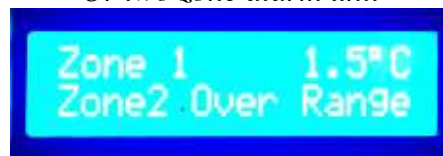
Alarm setpoint adjustment

Screen 8

One zone alarm unit



Or two zone alarm unit



Over range, temperature is below 0 or above 50C

4) Positioning the temperature sensor

Care should be taken when positioning the sensor. Remember, hot air rises and forms hot spots, i.e. a room left hand corner away from any heat source could be 21°C, whereas the right-hand corner next to the heat source could be 25°C. 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 in a position where the room is likely to get the hottest and at a height to cover the whole equipment i.e. a 2m high server rack would be best if the sensor were mounted at an approximate height of 2 or 2.5 metres on a wall or column next to the server racks. 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 4 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

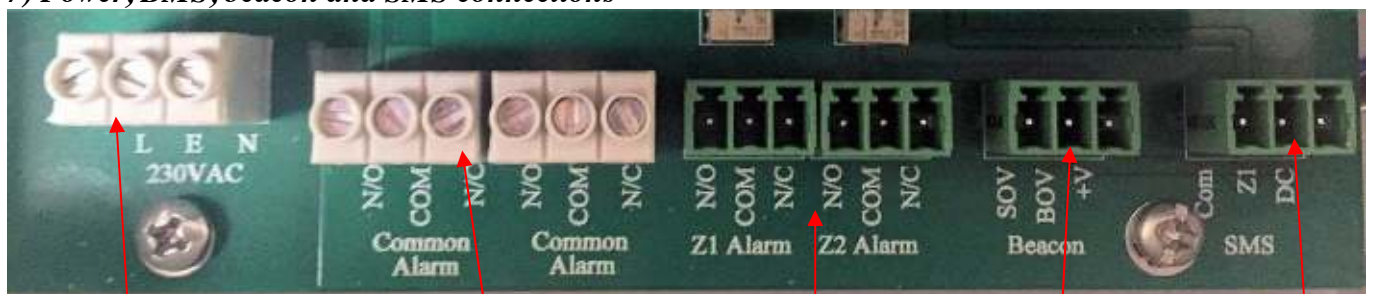
Do NOT connect the screen to any terminal or earth at the sensor box end

6) Setting the alarm trip setpoint

Four buttons have been provided to allow the alarm trip point adjustment of both zones. Each zone can be set independently between 0 and 50°C. To set the desired alarm trip point, first press the “Zone 1” or “Zone 2” button until the display changes to screen 7, the display will show the current alarm trip point. Whilst holding down the “zone” button, repeatedly press the “Up” or “Down” buttons until the desired alarm temperature is displayed in the screen. Once the desired alarm temperature is on display, release both buttons. If required, the new setpoint can be verified by pressing just the “zone” button again. 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. Please note; the unit is factory set to 25°C on both zone 1 and 2

Warning setting the alarm to 0 or 50°C will setup an alarm but the display will change to screen 8 once the temperature drops below 0°C or above 50°C.

7) Power, BMS, beacon and SMS connections



90 to 265VAC
Input power

2 x common alarm and
power fault volt free
BMS contacts

If Fitted
Individual zone
alarm contacts to
BMS

12VDC
output to
Beacon or
Beacon
Sounder

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.

<i>Function Required</i>	<i>Fitted as Standard</i>	<i>Relay Output Terminals</i>
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, **remove** the electrical link connected between the second (Strobe -) & third terminals (Tone -) terminals 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

Having connected the unit 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. Noting the current temperature, press and keep pressed, the internal red “Zone 1 push button, screen 7 should appear. Keeping the “Zone 1” button pressed, repeatedly push and release the “Down” button until the temperature on display is below the noted ambient temperature. Now release both push button, 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. Once muted, clear the alarm by pressing the “Zone 1” button only this time using the “Up” button to set the unit to the desired high temperature set point. With the unit displaying screen 2, repeat the above procedure using “Zone 2” button.

11) Fault Diagnoses

<i>Fault</i>	<i>Possible Reason</i>
Display is OFF and the unit appears dead	<ol style="list-style-type: none"> 1) No power to the control unit. <i>Test with a meter</i> 2) The power fuse has blown. <i>Test the fuse with a meter</i>
Screen 1 remains on display all the time	<ol style="list-style-type: none"> 1) Power down the unit and turn on after 1 minute 2) System fault. <i>Return to manufacturer</i>
Sensor fault, Screen 5	<ol style="list-style-type: none"> 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 <i>Return to manufacturer</i>
Screen 6 appears in the display	<ol style="list-style-type: none"> 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 and display zone 1 and 2 as faulty (screen 5). If this screen does not appear, <i>Return unit to manufacturer</i>. 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	<ol style="list-style-type: none"> 1) System fault. <i>Return to manufacture</i>

12) Installation Drawings

Not all the shown devices may be available on your system

