

# OPERATING AND INSTALLATION INSTRUCTIONS FOR THE SERIES 600WD WATER DETECTION ALARM CONTROL PANEL



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## **INTRODUCTION**

The Series 600 Water Detection Alarm Control Panel have been designed to offer high integrity protection in premises requiring up to two zones. Available as a 2 zone with internal power supply of 1 amp with space for Sealed Lead Acid Batteries.

The fascia is equipped with high intensity LED's, System control push buttons and a Controls On key switch. Concise user Operation Instructions are screen printed onto the fascia. Each control panel can be surface or flush (via bezel) wall mounted.

## **CONSTRUCTION**

The cabinet enclosure and front fascia are constructed from sheet steel and finished in Grey White (Standard). The motherboard with the power supply is mounted at the rear of the enclosure. The front panel fascia display PCB is connected to the main motherboard by a pluggable IDT connection cable.

All external connections are by means of screw terminals fitted to the motherboard capable of accepting cables up to 2.5mm<sup>2</sup>. Knockout cable entries are provided at the top of the panel.

## **METHOD OF OPERATION**

### **USER WARNING**

The equipment operates from 240v AC Mains.

***Only authorised and qualified personnel should have access to the internals of the panel.***

### **PANEL OPERATION**

NOTE –all panel push button controls are normally inoperative. Insert the key provided into the “Controls On” switch and turn clockwise (key is trapped in this position). All push button switches are now operative.

#### **NORMAL CONDITION**

The unit will normally be in its quiescent mode with the Green “Supply Healthy” LED illuminated

#### **WATER ALARM CONDITION**

In the event of any Water alarm signal - The appropriate Alarm Zone Red LED's will illuminate, the alarm sounders will sound, the Alarm auxiliary contacts will operate and the appropriate Zone repeat output will switch +VE 24v

##### **ALARM SILENCING**

The alarm sounders can be silenced by operating the “Alarm Silence” button momentary, an internal Fault buzzer will sound. Should the second zone go into Alarm condition whilst the panel is it's silenced mode the alarm sounders will automatically resound. The internal buzzer will stop.

Note - The internal buzzer cannot be silenced in the Alarm silenced mode.

##### **ALARM RESET**

Once the cause of the alarm has been identified and the condition removed, the panel can be restored to its normal mode by operating the “Reset” button momentary.

### **FAULT CONDITION**

In the event of a fault occurring within the Water alarm system – The appropriate Fault Yellow LED will illuminate, the internal buzzer will sound, any appropriate internal LED will illuminate, the common fault auxiliary contacts will operate, and the common Fault output will switch +VE 24v

#### **FAULT BUZZER SILENCE**

The internal fault buzzer can be silenced by operating the “Silence Sounders” button momentary.

Should another fault occur the buzzer will automatically resound.

#### **FAULT RESET**

The Fault condition will automatically reset when the fault has been cleared.

### **FRONT FASCIA INDICATIONS**

The following front fascia indicators are provided to give the following functions:

#### **ZONAL ALARM**

This indicates which Zone is in Water Alarm condition (Dual Red)

#### **ZONAL FAULT**

This indicates that there is a external cable fault or a cable has been disconnected in a zone (Yellow)

#### **SUPPLY HEALTHY**

Under normal conditions this indicator is normally illuminated (Green)

#### **SUPPLY FAULT**

In the event of the following supply faults – Mains failure, Charger failure, Battery disconnection and Auxiliary 24v DC output fuse failure the Supply Fault LED will illuminate (Yellow). The Supply Healthy indication will extinguish.

#### **SOUNDER FAULT**

Should a fault occur in any monitored Sounder circuit the Sounder Fault Led will illuminate (Yellow)

#### **AUXILIARY ISOLATED**

The Auxiliary Isolated LED will illuminate to show that the Alarm Auxiliary contacts have been isolated during alarm conditions. Under this condition the internal buzzer will sound which cannot be silenced

## **FRONT PANEL CONTROLS**

The following front fascia controls are provided to give the following functions:

### **SILENCE SOUNDERS**

Operating this push button will silence the Water alarm sounders

Operating this switch will also silence the Fault Buzzer under Fault Conditions

(Buzzer cannot be muted under Alarm Silence or Auxiliary Isolated modes)

### **ALARM TEST**

Operating this push button **at any time** will operate the Water alarm sounders. To silence the water Alarm sounders depress the "Reset" switch

### **AUXILIARY ISOLATE**

To Isolate the Alarm Auxiliary contacts operate the "Auxiliary Isolate" push button momentarily.

To return the system to normal press and hold the "Auxiliary Isolate" button until the LED goes out.

### **LAMP TEST**

To test all Front LED indications together with the internal buzzer press "Lamp Test" push button.

The LED's and buzzer will operate until the button is returned to its normal condition

### **RESET**

To reset the control panel to normal after a Water Alarm condition press the "Reset" push button

## **INTERNAL LED INDICATORS**

There are a number of LED's fitted to the internal PCB to give the more detail of the status of the system

### **ZONE FAULT**

LED's are provided for both Open & Short circuit for each zone.

### **SOUNDER FAULT**

The Two Common sounder circuits have LED's for Open & Short circuit.

### **POWER SUPPLY FAULT**

LED's are provided to indicate either Mains Supply or Battery Fault

### **AUXILIARY 24V OUTPUT FAULT**

LED to provide indication of 24v DC Output fuse failure

## **TECHNICAL SPECIFICATION**

The following information applies only to a standard control panel

### **POWER SUPPLY**

AC Supply input	.....	240v AC 50/60 HZ 100VA maximum
Nominal supply voltage	.....	24v DC
Battery float voltage	.....	27.5v DC
Power supply type	.....	Constant Voltage with current limit back and thermal shutdown
Low battery cut-off	.....	18v +/- 5%

### **PANEL POWER CONSUMPTION**

Quiescent condition	.....	35ma (Zones & common functions)
Alarm condition	.....	130ma

### **ZONE CIRCUITS**

Line output voltage	.....	20v +/- 5% Stabilised
End of line device	.....	5K6 ½ Watt Resistor
Alarm Detector current	.....	1ma maximum
Alarm trip current	.....	25ma
Monitoring	.....	Both open & short circuit with internal LED's per zone

### **ALARM OUTPUTS**

Sounder monitoring	.....	Reverse polarity type, fully monitored for open and short circuit with internal LED's
Maximum Load – Common	.....	0.75 amps. Shared between 2 circuits each fused @ 1.00 amp

### **AUXILIARY OUTPUTS**

Alarm	.....	2 sets CHO rated @ 1amp 50v DC
Fault	.....	1 set CHO rated @ 1amp 50v (normally energised)
Zonal Water Alarm	.....	Solid state output, switched +ve rated 100ma @ 24v
Common Fault	.....	Solid state output, switched +ve rated 100ma @ 24v

### **24v DC AUXILIARY OUTPUT**

Maximum output	.....	0.5amp fused and monitored with internal fault LED
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### **REMOTE CONTROL INPUTS**

Alarm Sound	.....	N/O Alarm Sound (operates alarm sounders)
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## **INSTALLATION**

The unit is wall mounted with a hinged front door. Connection from the Front Facia to the motherboard is via a pluggable ribbon cable. The front door can be removed for ease of installation by removing the screws (LHS) fixing the hinged door to the back box.

### **FIXING OF ENCLOSURE**

The back box is hinged to the front door on the left- hand side. The top of the box has 20mm diameter knockouts. The unit is fixed to the wall via 3 off dished fixing holes located at the Top centre and 2 the bottom corners. The mains supply entry is preferred to located at the last knockout on the right hand side.

### **TERMINATION TO THE CONTROL PANEL**

The connections to the control panel are all via screwed terminals located on the motherboard. The terminals will accept up to 2.5mm<sup>2</sup> cables.

### **MOTHERBOARD CONNECTIONS ( Terminals Left to Right )**

Water Zone Input 1 .....	Input 1 : +VE & 0v
Water Zone Repeat 1 .....	Input 1 Repeat output, Switched +VE
Water Zone Input 2 .....	Input 2 : +VE & 0v
Water Zone Repeat 2 .....	Input 2 Repeat output. Switched +VE
Alarm Sounder Output 1 .....	Monitored Output – EOL 4K7
Alarm Sounder Output 2 .....	Monitored Output – EOL 4K7
Alarm Auxiliary Output 1 .....	Volt-free CHO
Alarm Auxiliary Output 2 .....	Volt-free CHO
Fault Auxiliary Output .....	Volt-free CHO (failsafe)
Auxiliary 24v .....	Monitored fused 24v DC auxiliary output
Remote Alarm input .....	N/O Input
Main Supply Input .....	L – N- E , 230v AC

### **POWER SUPPLY CONNECTIONS**

The internal power supply requires the following connections-

- 1) 240v AC supply to the power supply mains terminals
- 2) 24v DC standby Sealed Lead Acid Batteries supply to the connection leads provided

### **FUSES AND RATINGS**

The following fuses are fitted to the panel. All fuses are 20mm x 5mm Type

Main Sounder Outputs 1 & 2 .....	1Amp A/S
Auxiliary 24v DC output .....	500mAmp A/S
Main Supply Input .....	1Amp HRC, Ceramic
Battery Fuse .....	2Amp A/S



## **COMMISSIONING**

IMPORTANT NOTE – CABLES SHOULD BE MEGGERED BEFORE ANY ACTIVE DEVICES SUCH AS WATER PROBES, SOUNDERS, ETC ARE FITTED. IRREPARABLE DAMAGE WILL BE DONE TO THESE DEVICES

### **SUPPLY CONNECTIONS**

- 1.1) With the Control Panel fixed in its location and all internal/facia cables reconnected, connect the 240v AC Supply to the power supply mains terminals. Ensure that other cables not yet connected are not allowed to touch the printed circuit board inside the panel.
- 1.2) Switch on the mains supply and check the following-
  - a) The Facia Supply Fault LED is illuminated
  - b) The Internal buzzer sounds
  - c) The Internal Battery Fault LED (Power Supply) is illuminated
- 1.3) If any other conditions are indicated, check that all end of line items/devices are connected
- 1.4) Connect the 24v DC Standby battery and check the following –
  - a) The Facia Supply Healthy LED is illuminated
  - b) The Facia Supply Fault LED is extinguished
  - c) All Internal Fault LED's are extinguished and the internal buzzer stops
- 1.5) Switch off the 240v Supply and check the following -
  - a) The Facia Supply Fault LED is illuminated
  - b) The Internal buzzer sounds
  - c) The Internal Supply Fault LED (Mains) is illuminated
- 1.6) Depress the Fault Buzzer Mute button (Control Key On). The internal buzzer will stop
- 1.7) Reconnect the 240v Supply – The control panel will return to its Normal mode

### **ZONE CONNECTIONS**

- 1.1) Disconnect Zone 1 End of Line and check the following –
  - a) Zone 1 Facia Fault LED is illuminated
  - b) The Internal buzzer sounds
  - c) The Internal O/C Fault LED (Z1) is illuminated
- 1.2) Reconnect Zone 1 End of Line – The control panel will return to its Normal mode
- 1.3) Short between Zone 1 +ve and –ve terminals and check the following –
  - a) Zone 1 Facia Fault LED is illuminated
  - b) The Internal buzzer sounds
  - c) The Internal S/C Fault LED (Z1) is illuminated
- 1.4) Remove the Short between Zone 1 Terminals – The control panel will return to its Normal mode
- 1.5) Connect all external water alarm devices to Zone 1 with the EOL located at the last device
- 1.6) Operate any device into Water Alarm condition, check the following –
  - a) Zone 1 Facia Alarm Twin LED's are illuminated
  - b) The Sounder relay has operated (checking output polarity)
  - c) The Common Alarm Auxiliary relay has operated (checking N/C to Common)
  - d) Depress the Silence Sounder button - the Sounder relay will de energized and the internal Fault buzzer will sound
- 1.7) Depress the Reset button – the control panel will return to its normal mode
- 1.8) Repeat 1.1) to 1.7) for all devices
- 1.9) Repeat 1.1) to 1.8) for Zone 2

### **SOUNDER CONNECTIONS**

- 1.1) Disconnect Sounder 1 End of Line and check the following –
  - a) The Facia Sounder Fault LED is illuminated
  - b) The Internal buzzer sounds
  - c) The Internal O/C Sounder Fault LED is illuminated
  - d) The Fault relay has de-energised (checking N/C to Common)
- 1.2) Depress the Silence Sounders button – the internal buzzer will stop
- 1.3) Reconnect Sounder 1 End of Line – The panel will return to its normal mode
- 1.4) Short between Sounder 1 +ve and –ve terminals and check the following –
  - a) The Facia Sounder Fault LED is illuminated
  - b) The Internal buzzer sounds
  - c) The Internal S/C Sounder Fault LED is illuminated
  - d) The Fault relay has de-energised (checking N/C to Common)
- 1.5) Remove the short between Sounder 1 terminals – The panel will return to its normal mode
- 1.6) Repeat 1.1) to 1.5) for all other Sounder 2 output
- 1.7) Connect all external Sounders with the End of line fitted to the last Sounder
- 1.8) Depress Alarm Sound button – Check operation of all Sounders
- 1.9) Depress Reset button to return panel to its normal mode

### **AUXILIARY CONNECTIONS**

- 1.1) Connect all External auxiliary outputs and check for correct operation
- 1.2) To Isolate external auxiliary outputs (Alarm only) during routine testing, depress the Auxiliary Isolate button and check the following-
  - a) The Facia Auxiliary Isolated LED is illuminated
  - b) The internal buzzer sounds (cannot be silenced in this condition)
- 1.3) Depressing the Auxiliary Isolate button again and holding until "Auxiliary Isolated" LED goes Returns Alarm auxiliary relay to its normal mode .

### **LAMP TEST**

To test all facia LED's and the internal buzzer, Depress the Lamp Test button, all external LED's will illuminate and the buzzer will sound. Release the button – the panel will return to its normal mode

## **ENGINEER'S FACILITES**

The following facilitates should only be used by Commission and Service Engineer's

### **BUZZER ISOLATE SWITCH**

The internal buzzer can be disconnected by moving RH DIL switch - position 7 to OFF

### **AUTO TEST JUMPER**

The control panel can be set to automatically RESET after an alarm (used for commission and service) by fitting Jumper Link across Auto Test Jumper

When fitted is in this position the following functions will occur -

The internal buzzer will sound

The Sounder Fault LED will illuminate

When an alarm is received all standard functions will occur, but the panel will automatically reset after approx. 1 second.

### **ZONAL ISOLATE**

ZONE 1 – Move LH DIL switch – position 1 to OFF

Zone 1 Fault LED will illuminate, O/C internal Fault LED will illuminate and internal Buzzer will sound

ZONE 2 – Move LH DIL switch – position 2 to OFF

Zone 2 Fault LED will illuminate, O/C internal Fault LED will illuminate and internal Buzzer will sound

### **SHORT CIRCUIT ALARM**

ZONE 1 – Move LH DIL switch – position 3 to OFF

ZONE 2 – Move LH DIL switch - position 4 to OFF

### **NON-LATCHING ZONE**

ZONE 1 – Move LH DIL switch – position 5 to OFF

ZONE 2 – Move LH DIL switch – position 6 to OFF

### **ZONE – NO ALARM AUXILIARY OPERATION**

ZONE 1 – Move LH DIL switch – position 7 to OFF

ZONE 2 – Move LH DIL switch – position 8 to OFF

NOTE – Location of DIL switches & jumper are shown on the Typical wiring schematic Drawing

## **WATER DETECTION CABLE**

### **INSTALLATION**

- 1) Lengths of Water Detection cable should be laid on the Floor in the protected area such that the distance between any Two Cables is no more than 2 metres
- 2) For localised protection of sources of potential water leakage, such as air conditioning systems water filled Radiators, the distance between the Water Detection Cables may be Greater
- 3) The Cable should be installed such that it remains in contact with the floor along as much of its length as possible. This may require the use of "P Clips ", particularly in areas where the cable may be disturbed
- 4) Although the construction is quite sturdy, the cable may be damaged by crushing or excessive bending. A bend radius of 150mm is recommended as a minimum
- 5) Water Detection cables are supplied in Standard Lengths of 5 and 10 metres.  
Each cable has a Plug / Socket at each end thus allowing longer runs simply by plugging lengths Of Water Detection cable together.  
At the last length of water detection cable terminate with the End of Line Plug (WD/EOL)
- 6) The Terminating Connection Box (WD/CB) should be secured to the Wall of Floor so that Water detection cable does not have to be stretched or pulled to reach it. Connect the Plug end Of the First Water Detection cable into the Connection Box Socket.
- 7) The installed Water Detection Cable system consists of a WD/CB (connection Box), Length(s) of Water Detection Cable and a WD/EOL (End of Line Plug).
- 8) Lengths of Water Detection Cable should not exceed 50 metres
- 9) Water Detection Cable should not come into contact with surface temperatures greater than 70°C

### **CONNECTION TO CONTROL PANEL**

- 1) When Triggered the Water detection circuit presents a Low impedance (approx. 500ohms) to the Zone terminals in the Control panel
- 2) Connect the Z+ & Z- terminals in the Control panel to the + & - Zone terminals in the connection Box. The End of line resistor at the control panel should be discarded.

### **TESTING**

- 1) Once all terminations have been made and the system powered, the Water Detection cable is ready for testing.
- 2) Testing is best done by Wetting the Thumb and forefinger, shaking of the excess trips and then gripping the Water Detection cable firmly whilst rolling it slowly. The Control panel should produce a alarm condition. Any Remote Indication together with the Connection Box Indicator will illuminate.
- 3) Over wetting the Cable should be avoided as a great deal of time can be wasted for the cable to dry out.

## **FLOOR PROBE**

### **INSTALLATION**

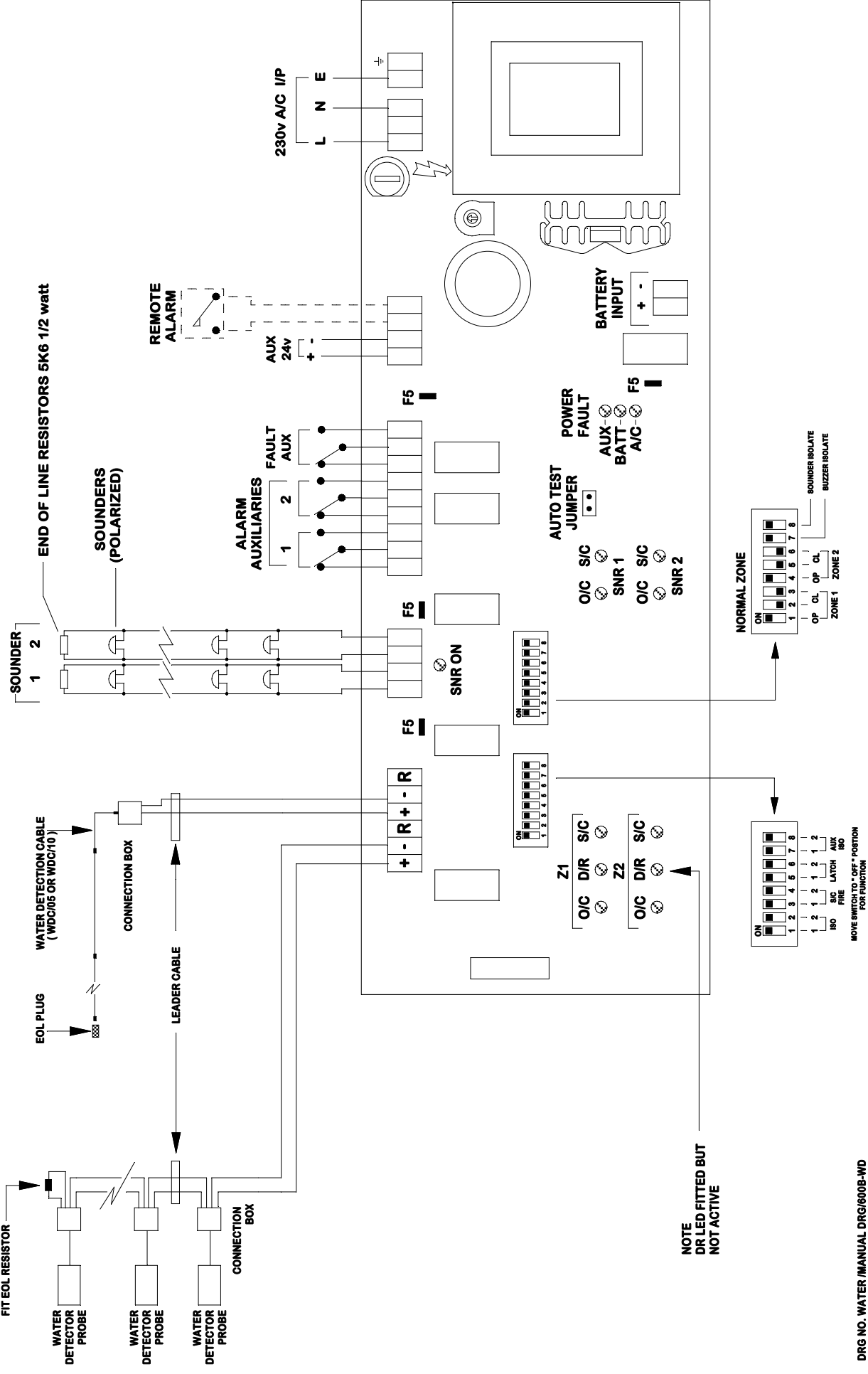
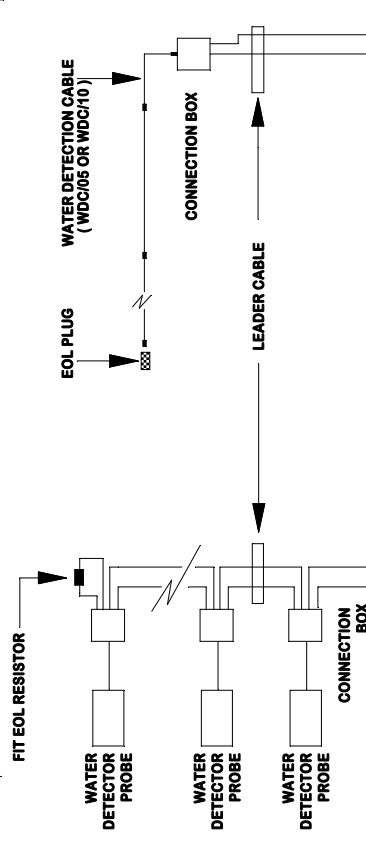
- 1) The floor probe assemble comes complete with a floor mounting bracket (adjustable) and a pre Wired connection plug (lead length 3 metres) for connection into a WD/CB (connection box)
- 2) Remove the 2 wings nuts from the probe assemble and remove Bracket
- 3) Fix bracket to the floor – 4 fixing holes are proved
- 4) Re-fix bracket to the floor probe ( Note : Bracket floor fixings visible)
- 5) Loosen Wings nuts and adjusted distance between probe pins and floor as required
- 6) Plug-in the probe lead into the WD/CB (which has already been installed)
- 7) The above should be repeated for all probes connected
- 8) On the last WD/CB fit the end of line resistor supplied with the panel

### **TESTING**

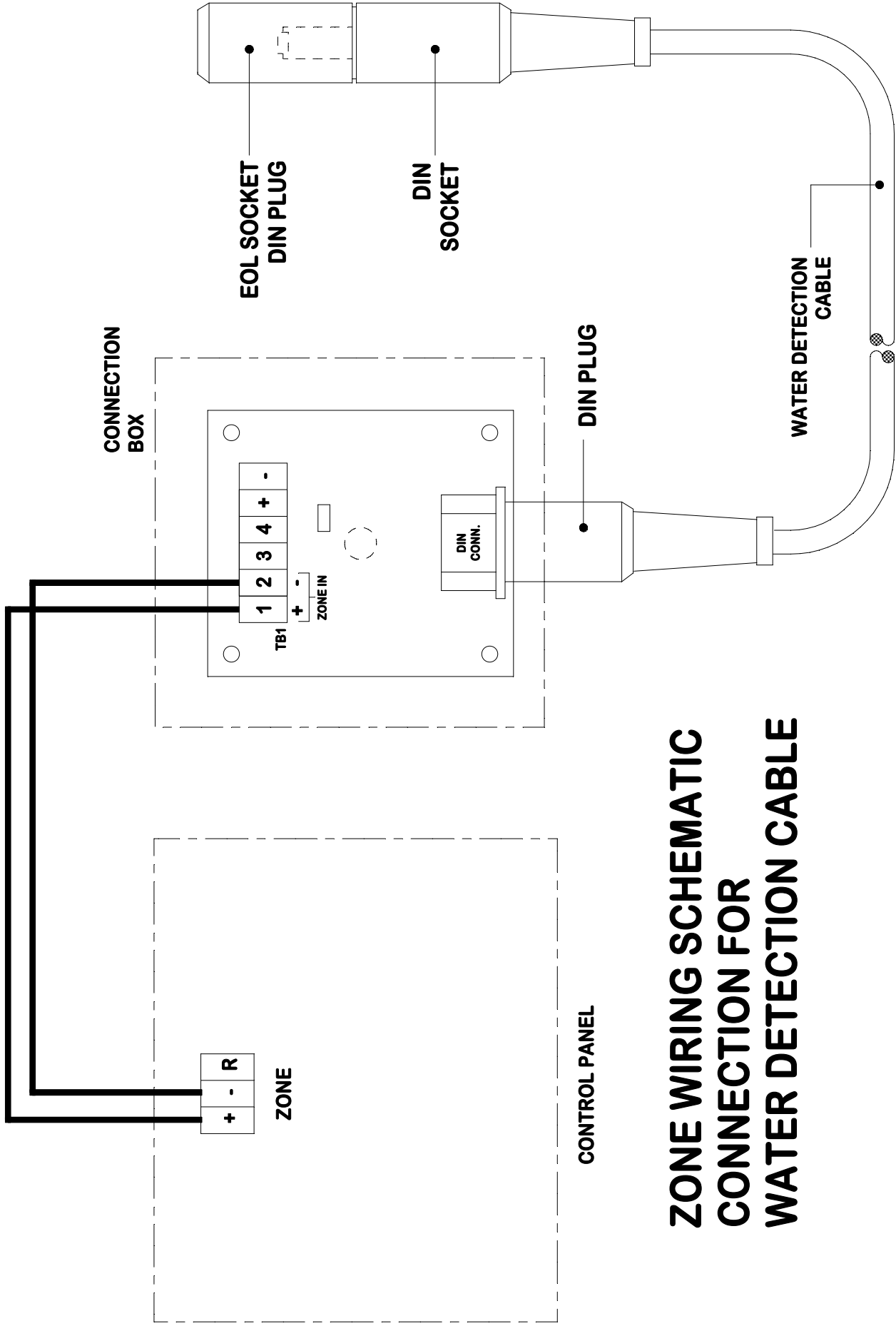
- 1) Once all terminations have been made and the system powered, the Water Probe(s) are ready for testing.
- 2) Testing is best done with a wet sponge - shorting out between the two probe pins
- 3) The Control panel should produce an alarm condition. The Local Probe indicator will illuminate.
- 4) Remove sponge and dry between probe pins before Resetting the control panel



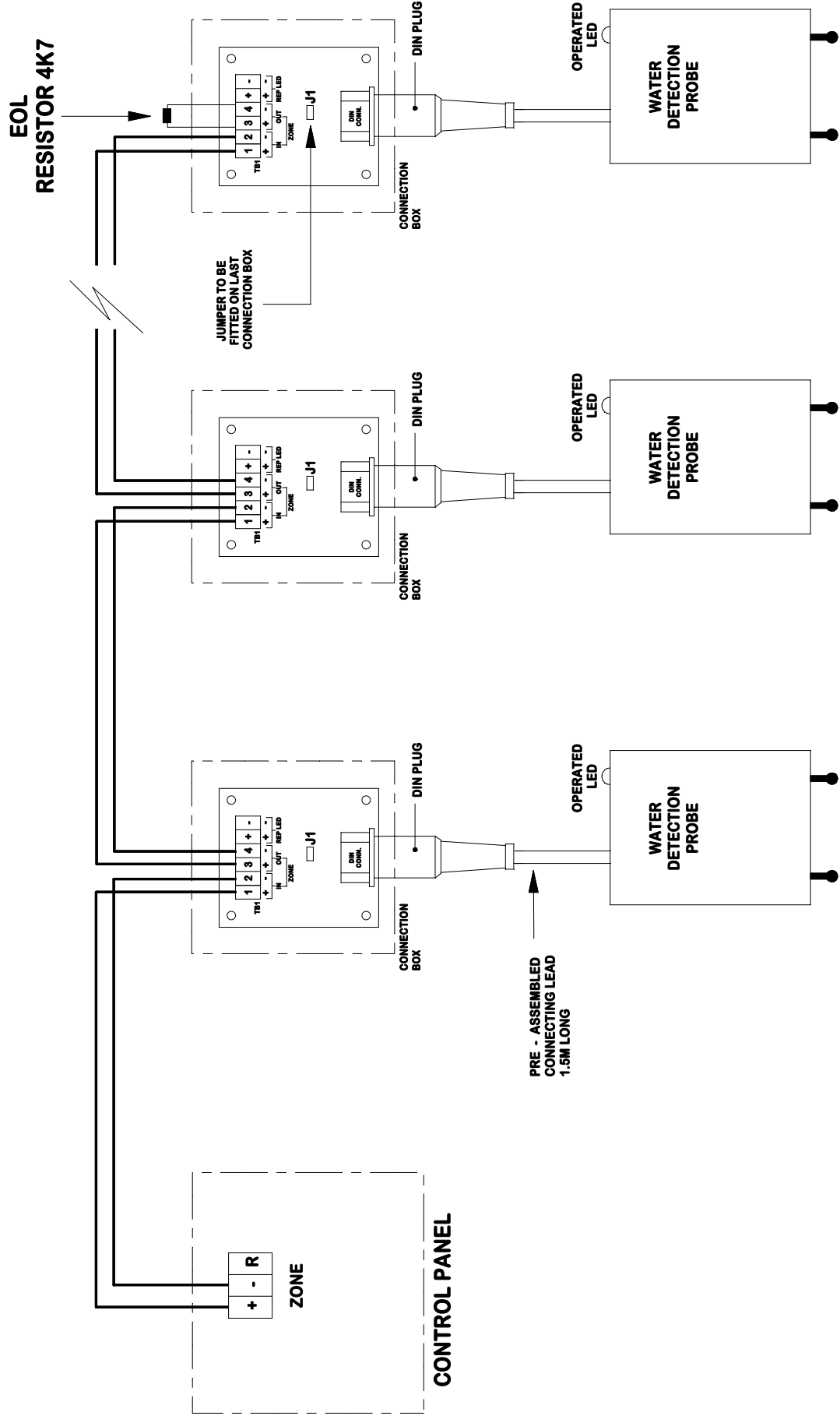
## TYPICAL SERIES 600B WATER ALARM WIRING SCHEMATIC



**NOTE**  
**DR LED FITTED BUT**  
**NOT ACTIVE**



**ZONE WIRING SCHEMATIC  
CONNECTION FOR  
WATER DETECTION CABLE**



**ZONE WIRING SCHEMATIC  
FOR CONNECTION TO  
WATER DETECTION PROBE ('s)**