hydrosense

Delivering a New Standard in Water Leak Detection

Installation Instructions

3500012_REV0301

By

VIMPEX

Overview of the Hydrosense Water Detection System

The Hydrosense water detection system is designed to detect the intrusion of water in concealed areas or any place where water penetration must be identified so that corrective action can be taken immediately.

It will continuously monitor the potential hazards 24 hours a day and has the facility for 24 hours battery standby in the event of power failures.

Any water penetration detected will be signalled to a control panel that can give audible and visual alarms.

The detection system comprises of three basic components, water detection cable, localised probes and a control panel.

Water leak detection systems can be divided into two basic categories:

(a) Linear Detection
(b) Point Detection

The Hydrosense supports both types on the system.

Detection Components

Linear Detection- Hydrowire Cable

Where floor areas, ducts and suspended ceilings need to be protected this is usually best achieved by installing lengths of Hydrowire. Hydrowire is a highly conductive cable extremely sensitive to moisture. It is available in 5 metre lengths (HYDW-05) or 10 metre lengths (HYDW-10).

Each length of Hydrowire is terminated with a male and female 4 way plug to enable them to be plugged together up to maximum zone length of 50 metres and terminated with an EOL. It is connected to the panel through the Connection Interface. As soon as the cable detects moisture this will trigger an alarm. For the cable to measure water on the surface then it is recommended that the cable is fixed down with Hydrosense fixing clips (HY-FXSA)

Linear Detection EOL

Each Hydrowire is terminated by an End of Line Device (HS-HWCI-EOL), which enables it to be continuously monitored for defects.

Linear Detection Connection Interface

Each Zone of linear detection cable is plugged-in to the Connection Interface module (HS-HWCI) that allows connection to the control panel using standard 1.5mm^2 2-core cable HYLCB.

Floor Probe Junction Box

Each floor probe is simply plugged-in to the Junction Box (HS-WLJB) that allows connection to the control panel using standard 1.5mm^2 2-core cable HYLCB

Point Detection Floor Probe

Where a requirement exists for more localised detection, such as HVAC plant, drip trays, elevator shafts and storage areas a floor probe (HS-WLDP) can be installed.

As with the cable the detection of moisture triggers an alarm and is also monitored by the line fault circuit of the control panel. Additionally the probe has an LED indicator on top to identify exactly which probe has been activated. Up to 20 detectors can be used in each zone. The probe is simply plugged into the system using the Junction Box.

Probe is fitted with a 1m cable.

If the distance from the junction box to where the probe needs to be mounted is more than 1m then additional Extension leads are available in 1m (HY-ZB01), 3m (HY-ZB03) and 10m (HY-ZB10) lengths.

Control and Indicating Equipment of a Hydrosense System

Control Panel (2 to 8 Zones)

HSCP Series – This panel is available in 2, 4 and 8 zone configurations. These are fully programmable and allow the addition of Ancillary PCBs, repeater panels and a Mimic Display.

Ancillary PCBs provide a means to extend Alarm, Fault, coincidence and Zonal alarm volt free contacts to locations remote from the control panel via a 2-core data bus (RS485).

Hydrosense Mimic Panels

The Hydrosense Mimic Display uses flexible fibre optic guides to illuminate areas on a floor plan. This provides a clear, geographical indication of the alarm activation enabling a speedy identification of the source and location of the alarm.

This unique system dispenses completely with wiring and enables indicators to be moved, removed or added without the need for any wiring.

It can only be used with the HSCP range of panels.

System components:

Hydrowire (5 metre Length)	HYDW-05
Hydrowire (10 metre Length)	HYDW-10
End of Line Plug	HS-HWCI-EOL
Hydrowire Connection Box	HS-HWCI
Zone Extender (1 metre length)	HY-ZB01
Zone Extender (3 metre length)	HY-ZB03
Zone Extender (10 metre length)	HY-ZB10
Leader Cable (100m lengths)	HYLCB
Hydrowire / Leader Cable Fixing Clips	HY-FXSA
Batteries	E-NP7-12

System Options

Floor Mounted Probe	HS-WLDP
Probe Junction Box	HS-WLJB
Remote Indicator Unit	HY-WLRI-F
Remote Indicator with Surface Box	HY-WLRI-S
Voice Sounder Voice Sounder with Beacon	HYVS
Voice Sounder with Beacon	HYVSB
White Sounder (Multi Tone)	10-1112WSB-S
White Beacon	10-1312WSB-S

Design & Planning

Design Notes

- Water finds its own level so careful consideration must be given to slopes and dips in the area to be protected.

- Can the cable be installed to avoid doorways and traffic.

- Floor probes can be used to protect wells, cavities or hollows.

- Is the site occupied? If so, will the site require just visible alarms or will there be a need for conventional or voice enhanced sounders?

- Is a remote signalling device required?

- How is the cable to be fixed to the floor? Are other services going to interfere with it?

- Check with the building owner or manager for future plans or designs that may alter the requirements or siting of the equipment.

- Will the system require expansion? Give consideration to the possible addition of extra zones.

- Maximum length of Hydrosense cable should be kept to 50 metres

- Maximum number of detectors per zone should not exceed 20.

- Only one remote indicator to each Hydrowire Connection Interface or Junction Box.

Design Guidelines

Hydrosense Floor Probe:

Maximum recommended coverage:	- 20 sq.m per detector
Maximum detectors per zone	- 20
Maximum distance between probes for perimeter detection	- 3 metres
Sensor height above finished floor	- Fixed
Leader cable (HYLCB)	- 1.5mm^2 2-core cable

Hydrowire Cable:

Maximum recommended length per zone	- 50 metres
Recommended pitch between cable for area protection	- 2 metres
Minimum bend radius	- 150mm

Note: *Do not mix probes and Hydrowire on the same zone*

System Installation Notes

1. Check design with the kit and components in hand to check that all materials are on site. Check the BOM.

2. Store Hydrowire lengths carefully in a dry area.

3. Prepare the installation area. Remove any furniture or equipment that may obstruct installation. Make sure the area is clean and free from debris.

4. Install the Hydrowire in accordance with the installation procedure HSHWI-100

5. Commission the Hydrowire in accordance with the test procedure HSHWC-100

6. Install and test any floor probes in accordance with the appropriate test procedure HSFPI-100

7. Test the complete system

8. Commission

9. Train the owner / operator

Panel Installation

Safety

Suppliers of articles for use at work are required under section 6 of the Health and Safety at Work act 1974 to ensure as reasonably as is practical that the article will be safe and without risk to health when properly used.

An article is not regarded as properly used if it is used 'without regard to any relevant information or advice' relating to its use made available by the supplier.

This product should be installed, commissioned and maintained by trained service personnel in accordance with the following:

(i) IEE regulations for electrical equipment in buildings
(ii) Codes of practice
(iii) Statutory requirements
(iv) Any instructions specifically advised by the manufacturer

According to the provisions of the Act you are therefore requested to take such steps as are necessary to ensure that you make any appropriate information about this product available to anyone concerned with its use.

The control panel is designed to be operated from either 110V or 230V 50Hz mains supplies depending upon model and is of class 1 construction. As such it must be connected to a protective earthing conductor in the fixed wiring of the installation and a readily accessible double pole disconnect device meeting the requirements of EN60950/IEC950 which disconnects live and neutral simultaneously shall be incorporated in the fixed wiring. Switch disconnect devices such as MK Sentry 63A or similar are suitable for this.

Failure to ensure that all conductive accessible parts of this equipment are adequately bonded to the protective earth will render the equipment unsafe.

The control panel is designed for indoor use only and at temperatures between -5^0C (+/- 3^0C) and $+40^0$C (+/- 2^0C) and with a maximum relative humidity of 95%.

The IP rating for the enclosure is IP30.

Operation outside of these limits may render the equipment unsafe.

Panel Mounting

The control panel should be mounted on a dry, flat surface, at eye height to the display and in a level position such that the enclosure is not distorted.

Screws or bolts of a minimum of 5mm diameter must be used to mount the enclosure in all three mounting positions.

The panel can be semi or deep recessed using the bezel kit (HYCP-Bezel)

It should be positioned in an accessible place as agreed with the end user.

Suitable fixings should be used at all fixing points such that the control panel is securely mounted and is not liable to move once fixed.

The control panel should not be mounted in another enclosure or near sources of excessive heat.

Cables should be connected using suitable cable glands fitted to the knockouts provided. If additional cable entry points are required, all swarf and debris caused by drilling of additional cable entries must be cleared before power is applied to the panel.

Figure 1
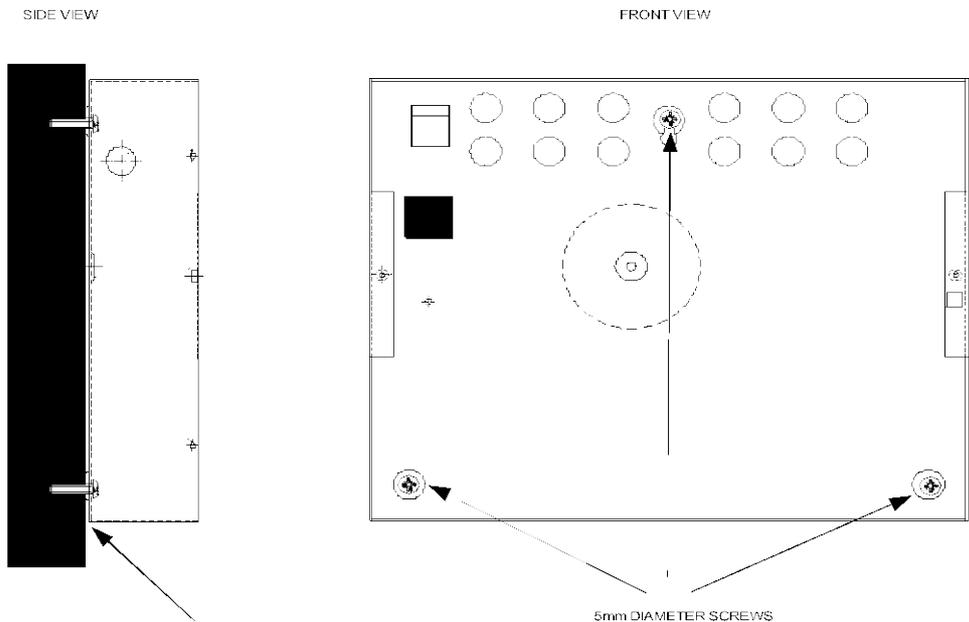
Sufficient room should be available to the left of the panel to allow the front door to be opened as per diagram below;
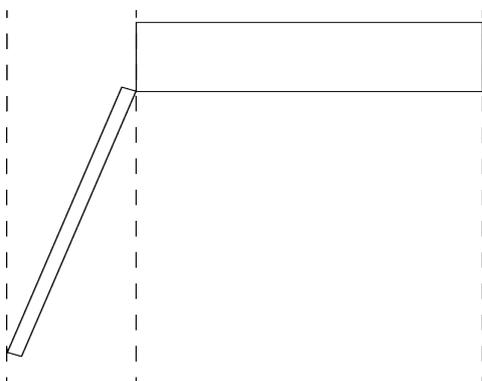
Removing the front facia

Open the cabinet with the supplied key, before the fascia can be removed it will be necessary to unplug the three way terminal block on the left hand side of the PCB. The fascia of the control panel is held in place by countersunk screws. Undo the two screws and

lift the fascia gently away from the box towards you. With the fascia removed there is much more room inside the panel for making off and dressing cables. When cabling work is complete the fascia can be re-fitted with the two countersunk screws and the red, green/yellow and black wires re-connected to the three way terminal block

NOTE: *It is most important that the polarity of the red and black wires are observed as wrong connection of these will damage the control panel.*

Connecting to the circuit board
All connections for field wiring are to a single row of terminals along the top of the circuit board. The connections for the power cables are to a pluggable terminal block, which may be pulled off of the board to remove the plate/PCB assembly. Remove this pluggable terminal only with mains power off. For Zone connections twin PVC cable with conductors of .75mm to be used and plastic or metal cable glands can be used for all connections to the panel.
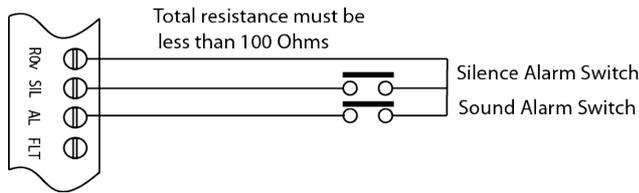
The resistance of any core of any cable must not exceed 25 ohms.
Wiring should enter the enclosure at the top of the panel using the knockouts provided and be formed tidily to the appropriate terminals leaving enough wire to ensure that there is no strain on the PCB. Terminals are capable of accepting wires of up to 2.5mm

Figure 2

Terminal designations

Wiring must not go across the front of the circuit board plate or between the plate and the circuit board. If cable entries need to be in positions other than at the knockouts provided, wiring must be fed behind and well away from the surface of the circuit board. The space at the bottom of the enclosure is occupied by the standby batteries so this must be borne in mind when considering cable entries.

Remote Inputs
Some functions of the control panel can be controlled externally from the panel if required. Operation of these inputs should be restricted to access level 2 control. These are abbreviated at the terminals block as follows:

a) Remote 0V supply - ROV   d) Fault – FLT
b) Silence Alarm – SIL   e) Reset – RST
c) Sound Alarm – AL

To activate these inputs, the remote 0 Volt (R0V) supply must be connected to the input via a normally open switch or contact and via a resistance of no greater than 100 ohms.
All of the remote control inputs are non-latching.

Figure 3

RS 485 Bus

Bus connected devices are connected via a 2 core cable to the terminals marked RS485 + and – on the main control panel PCB. Up to 14 devices may be connected and each device has terminals for the incoming cables and outgoing cables. All except the last device connected to the cable must have the jumper links J2 removed.
Set the devices address using the DIP switch, ensure no two devices share the same address.

NOTE: *Each RS 485 device will need power applied as well as the RS 485 for the device to operate.*

Figure 4

Maximum of 14 devices on the RS485 bus
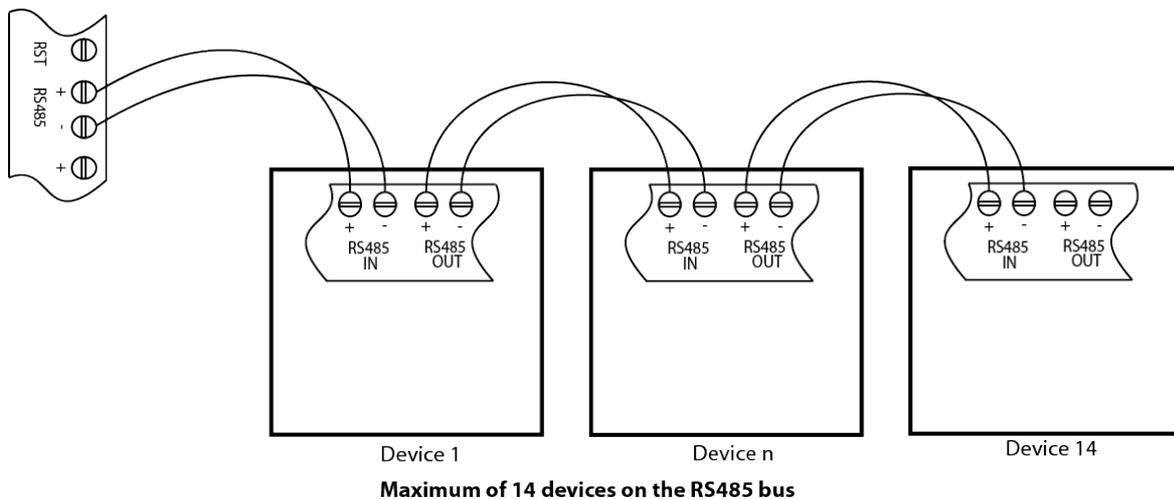
RS 485 Repeater Panels

Connect the RS485 bus and power to each repeater panel. Up to 7 repeater panels may be connected and each board has terminals for the incoming cables and outgoing cables. All except the last RS485 device must have the jumper links J2 removed. Turn on the Enable Control key-switch and set the Write Enable switch to on then briefly press the PROCESSOR RESET button on the control panel. Wait for a few seconds and the main panel will show the addresses of the repeaters that were found on the display for instance r1 indicates that a repeater at address 1 has been found.
Turn the write enable switch of, then on again and then press the ENTER button to accept each repeater that has been found. When all repeaters have been added, set the control panel Write Enable switch to off.
Press the Watchdog reset switch on the main panel.

All repeaters are now configured and the control panel will report a fault if any repeaters that have been accepted become faulty or go off line.

Ancillary Boards

Connect the RS485 bus and power to each Ancillary board. Up to 7 Ancillary boards may be connected and each board has terminals for the incoming cables and outgoing cables. All except the last RS485 device must have the jumper links J2 removed.

Set the ancillary board address using the DIP switch (SW2); ensure no two ancillary boards share the same address.

Apply power to main panel and all ancillary boards then turn on the enable key-switch and set the write enable slide switch to on, briefly press the PROCESSOR RESET button on the main panel, wait for a few seconds and the main panel will show the addresses of the ancillary boards that were found on the display for instance o1 indicates that an ancillary board at address 1 has been found.

Press the ENTER button to accept each ancillary board that has been found.

The control panel will report a fault if any ancillary boards that have been accepted become faulty or go off line.

Sounder circuit wiring

All sounders must be of the polarised type. If non-polarised sounders are used the control panel will permanently show a fault condition.

Sounder circuits are monitored for open and short circuit faults by placing a 10K end of line monitoring resistor across the last device on the circuit.

Sounder circuits must be wired as a single, radial circuit with no spurs or T junctions to enable the monitoring circuit to work correctly.

A maximum of 1.6 Amps is available for powering sounders with a maximum load of 0.41 Amps on any one circuit.

Figure 5
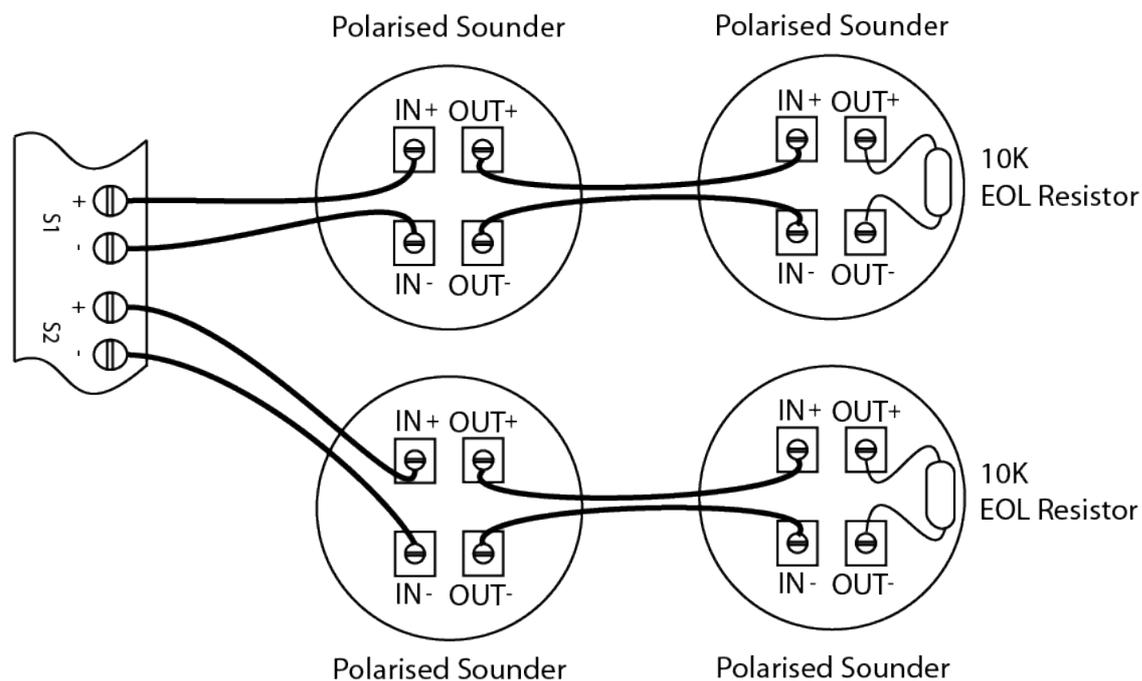
Detection zone wiring

The detection zones provide a nominal 24V DC to power the Hydrosense devices.
The wiring is monitored for open and short circuit fault conditions by removing the 6K8 end of line monitoring resistors that are supplied fitted to the control panels' terminals and placing it in the last Hydrosense Probe junction box or discarded if Hydrowire Connection Interface is wired to the zone circuit. Detection zone circuits must be wired as a single, radial circuit with no spurs or T junctions to enable the monitoring circuit to work correctly.

Control relays

Volt free changeover relay contacts are provided for local control and signalling if required. These contacts are rated for switching signalling circuits only and the maximum 30VDC 1Amp should not be exceeded under any circumstances.
Typically, the Aux 24V output of the control panel is switched through these relays and used to control other systems.

Fault relay

The fault relay is normally energised and will de-energise upon any fault condition including total loss of power.

Local Alarm relay

The local fire relay will energise upon activation of a alarm condition on any of the zones or pressing of the sound alarm button on the front panel. The relay will remain activated until the alarm is silenced or the panel is reset. This relay will not operate upon activation of the remote AL input or when an alarm condition is triggered on a zone that is in test mode. This makes the Local fire relay suitable for inter panel signalling without the panels latching each other.

Alarm relay

The alarm relay will energise upon activation of an alarm condition on any of the zones. The relay will remain activated until the control panel is reset. This relay will also operate upon activation of the remote AL input and the sound alarm button.

Access level 2 configuration options

Turn enable keyswitch to get to access level 2.

<u>OPERATION</u>
Press Mode button until the required function as detailed below appears in the 7 segment displays.
For Zonal tests or Disablements, press the Select button to scroll to the required zone number then press enter. The "select" dot at the bottom of the display will flash to indicate a test or disablement is active.
For sounder disablements and other functions, press the Select button until the required function is displayed then press enter to activate that function. The "select" dot will flash to confirm the setting as above.

[t1 - 8]   Test Zone 1 – 8 (total number of zones will depend upon panel)
[d1 - 8]   Disable Zone 1 – 8 (total number of zones will depend upon panel)
[db]   Disable Sounders
[Ad]   Activate Alarm Delays

[t1 - 8] Test zone
Selecting [t1] through to [t8] puts respective zone into test mode. Zones that are in test mode shall automatically reset 3 seconds after they have operated. The Test Mode On and zonal fault/test disablement indicators shall illuminate while any zone is in test mode.

[d1 – 8] Disable zone
Selecting [t1] through to [t8] disables the respective zone. Disabled zones shall not report alarm or fault conditions. The General Disablement and zonal fault/test disablement indicators shall illuminate while any zone is disabled.

[db] Disable Sounders
Selecting [db] will disable sounder outputs. The General Disablement and Sounder fault/ Disablement indicators shall illuminate whilst the sounders are disabled.

[Ad] Activate delays
Selecting [Ad] shall make delays configured by access level 3 options C00 to C09 active.

Access level 3 configuration options

The Hydrosense control panel has many configuration options, which can be set at the time of commissioning to suit the requirements of the installation. These options are normally set once and will rarely need to change. The configuration options are only available at access level 3, which is accessed by operating the Access level 3 switch as shown in Figure 6.
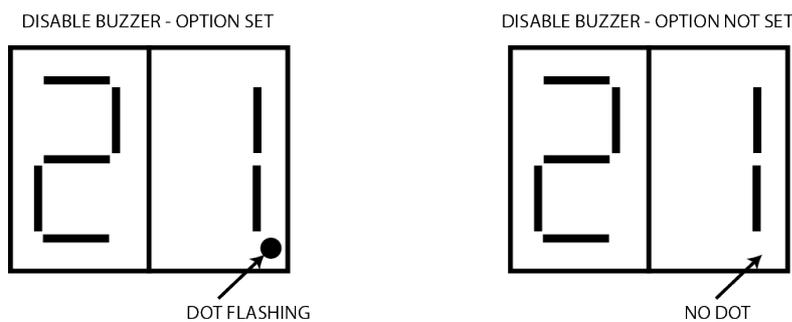
Figure 6
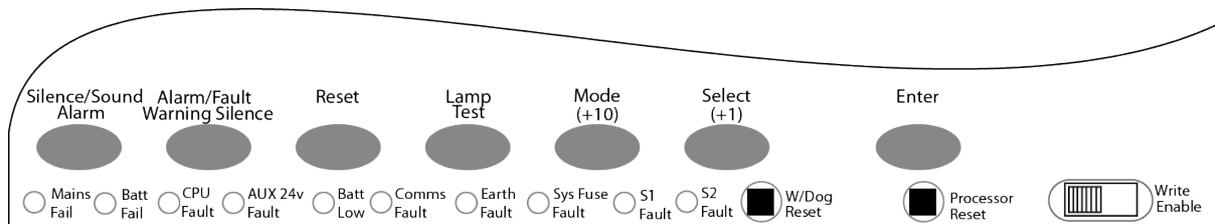
Access level 3 – Write Enable switch location

Configuration options are simple to enter using the codes in Table 1 below. When the control panel is at Access Level 3, the sub-text of the *Mode* and *Select* buttons is used to enter a number using hundreds, tens and units. When the required code number is displayed (Figure 7), pressing the ENTER button will cause the dot on the units, seven segment display to flash. This indicates that a configuration option has been set. To review which configuration options have been set previously, simply scroll through numbers 1 to 99, A1 to A8 and those with a flashing dot indicate which options have been set.

Figure 7

Table 1

Code	FUNCTION	COMMENTS
UXX	CONFIGURATION UPDATE COUNT	Number incremented each time access level 3 config changed
C00	SOUNDER DELAY TIME = 30 SECONDS	Introduces a time delay before sounders operate.
C01	SOUNDER DELAY TIME = 1 MINUTE	
C02	SOUNDER DELAY TIME = 2 MINUTES	
C03	SOUNDER DELAY TIME = 3 MINUTES	
C04	SOUNDER DELAY TIME = 4 MINUTES	
C05	SOUNDER DELAY TIME = 5 MINUTES	
C06	SOUNDER DELAY TIME = 6 MINUTES	
C07	SOUNDER DELAY TIME = 7 MINUTES	
C08	SOUNDER DELAY TIME = 8 MINUTES	
C09	SOUNDER DELAY TIME = 9 MINUTES	
C10	COMMON ALARM MODE	All sounders operate upon any alarm condition.
C11	2 STAGE MODE	Continuous sounders in alarm zone, others pulsed.
C12	ZONAL MODE	Only sounders connected to zone in alarm operate.
C21	DISABLE BUZZER	Buzzer will not operate in alarm condition.
C22	DISABLE FAULT OUTPUT	Fault relay will only operate under total power loss.
C23	DISABLE EARTH FAULT MONITORING	Earth fault conditions will show a fault condition.
C24	PULSE R0V OUTPUT	0V pulses when alarm triggered.
C27	REMOVE AUX 24V ON SYSTEM RESET	24V supply switches off for 5s when panel reset
C28	INDICATE CALL POINT ACTIVATION	
C29	DO NOT RE-SOUND ALARMS FROM ANOTHER ZONE	Silenced sounders do not re-sound with further zone activations.
C31	ZONE 1 ALARM FROM DETECTOR DELAYED	Sounder outputs will be delayed by time set at options 0-9 when selected zone(s) triggered by Hydrowire or Floor Probe only.
C32	ZONE 2 ALARM FROM DETECTOR DELAYED	
C33	ZONE 3 ALARM FROM DETECTOR DELAYED	
C34	ZONE 4 ALARM FROM DETECTOR DELAYED	
C35	ZONE 5 ALARM FROM DETECTOR DELAYED	
C36	ZONE 6 ALARM FROM DETECTOR DELAYED	
C37	ZONE 7 ALARM FROM DETECTOR DELAYED	
C38	ZONE 8 ALARM FROM DETECTOR DELAYED	
C41	ZONE 1 ALARM FROM CALL POINT DELAYED	Sounder outputs will be delayed by time set at options 0-9 when selected zone(s) triggered by call point only
C42	ZONE 2 ALARM FROM CALL POINT DELAYED	
C43	ZONE 3 ALARM FROM CALL POINT DELAYED	
C44	ZONE 4 ALARM FROM CALL POINT DELAYED	
C45	ZONE 5 ALARM FROM CALL POINT DELAYED	
C46	ZONE 6 ALARM FROM CALL POINT DELAYED	
C47	ZONE 7 ALARM FROM CALL POINT DELAYED	
C48	ZONE 8 ALARM FROM CALL POINT DELAYED	
C71	ZONE 1 SHORT CIRCUIT INDICATES ALARM	Changes the trigger threshold of the zone so that the control panel can be used on older systems that uses short circuit to trigger the alarm
C72	ZONE 2 SHORT CIRCUIT INDICATES ALARM	
C73	ZONE 3 SHORT CIRCUIT INDICATES ALARM	
C74	ZONE 4 SHORT CIRCUIT INDICATES ALARM	
C75	ZONE 5 SHORT CIRCUIT INDICATES ALARM	
C76	ZONE 6 SHORT CIRCUIT INDICATES ALARM	
C77	ZONE 7 SHORT CIRCUIT INDICATES ALARM	
C78	ZONE 8 SHORT CIRCUIT INDICATES ALARM	
C81	ZONE 1 NON-LATCHING	Renders the zone self-resetting so that it can be used to receive signals from other systems and will reset when the input is removed.
C82	ZONE 2 NON-LATCHING	
C83	ZONE 3 NON-LATCHING	Note: It can take up to 20 seconds for zone to reset itself when sounders are operating.
C84	ZONE 4 NON-LATCHING	
C85	ZONE 5 NON-LATCHING	
C86	ZONE 6 NON-LATCHING	
C87	ZONE 7 NON-LATCHING	
C88	ZONE 8 NON-LATCHING	
C91	ZONE 1 NON- SOUNDER MODE	Prevents the zone from operating the two common sounder outputs.
C92	ZONE 2 NON- SOUNDER MODE	
C93	ZONE 3 NON- SOUNDER MODE	

C94	ZONE 4 NON- SOUNDER MODE	
C95	ZONE 5 NON- SOUNDER MODE	
C96	ZONE 6 NON- SOUNDER MODE	
C97	ZONE 7 NON- SOUNDER MODE	
C98	ZONE 8 NON- SOUNDER MODE	
A1	ZONE 1 30 SECOND INPUT DELAY	Zone needs to be triggered for 30 seconds continuously before an alarm is generated, programmable for each zone. (Prevents spurious alarms)
A2	ZONE 2 30 SECOND INPUT DELAY	
A3	ZONE 3 30 SECOND INPUT DELAY	
A4	ZONE 4 30 SECOND INPUT DELAY	
A5	ZONE 5 30 SECOND INPUT DELAY	
A6	ZONE 6 30 SECOND INPUT DELAY	
A7	ZONE 7 30 SECOND INPUT DELAY	
A8	ZONE 8 30 SECOND INPUT DELAY	
AD	ACTIVATE ALARM DELAY	

DO NOT set option codes that are not listed in the above table, setting of unlisted options may have unintended and serious consequences.

Once the required configuration options have been set, the Access level 3 switch **must** be returned to its normal position. The General fault indicator will remain lit if the Access level 3 switch is not turned off.

Internal Switches

Watchdog Reset switch (W/Dog Reset)

If for any reason the microprocessor in the control panel fails to carry out its operation correctly it will attempt to restart itself. This process is called a "watchdog" and the control panel must record and indicate these events.

If a watchdog event occurs, the control panel will show the FAULT and SYSTEM FAULT LEDs on the front panel, the CPU fault LED inside the panel and the buzzer will sound. This fault can only be cleared by pressing the **Watchdog Reset** button on the PCB inside the control panel. This is a serious failure and the control panel buzzer will continue to sound until the watchdog activation is reset.

Processor Reset

Once started, the microprocessor controlling the panel should continue to run the panel continuously without interruption. If the microprocessor fails to run, it can be reset by operating the **Processor Reset** button on the PCB.

This should not normally be necessary but should be done as a matter of course if the system is behaving abnormally. The system should resume normal operation within a couple of seconds of pressing the **Processor Reset** button.

Write Enable

Changes to the configuration as listed in table above require that the changes be stored in the control panel memory. To enable the memory to be written to it is necessary to operate the Write Enable slide switch.

Internal Indicators

Mains fail

Indicates that the 230V AC supply is not present and the system is running on standby batteries. If there is not a power cut, check the panels mains fuse.

Batt Fail

Indicates that the standby battery has become disconnected or that the charging circuit of the control panel has failed. Check that both batteries are connected and linked together. Test battery. Disconnect battery and ensure that 28 Volts can be measured on battery charger leads.

CPU Fault

Indicates that the central processor unit has failed to correctly execute code and has been re-started by the system watchdog. The **Watchdog Reset** switch must be pressed to clear the CPU fault condition.

Press **Watchdog Reset**. If system does not return to normal then the panel is probably damaged and needs the circuit board replacing.

Aux 24V Fault

The Aux 24V and R0V terminals provide a 500 milliamp, 24V DC power supply for power fire alarm ancillary equipment. This LED indicates that fuse protecting the R0V output has operated and the rating of this output has been exceeded. The fuse is a self-resetting type and the supply will resume when the fault condition is removed.

Batt Low

Illuminates when the system is running on batteries and the battery voltage is between 21.5 V and 20.5 V (the minimum battery voltage).

Comms Fault

Indicates that communication has been lost with a repeater panel or Ancillary board. Check for comms fault at all repeaters and ancillary boards to identify the source of the problem.

Earth Fault

Indicates that part of the system wiring is connected to earth. Remove all system wiring and re-connect cables one at a time until the earth fault returns. This will indicate which cable the earth fault is present on.

Sys Fuse Fault

Indicates that the total power rating of the power supply has been exceeded and that the system fuse has come into operation. Remove and review all loads and re-connect one at a time until over rated circuit trips fuse to identify troublesome circuit.

S1 and S2 fault

Indicates a short or open circuit on sounder outputs. Remove wiring and refit end of line resistors. Check sounder circuit wiring.

Hydrowire Installation and Commissioning

Hydrowire Installation HSHWI-100

Mount the Connection Interface to the area where the start of the Hydrowire is to be mounted. Wire the Connection Interface back to the Hydrosense Control Panel as shown in Hydrosense Wiring section.

1. Connect the lengths of Hydrowire to be used in the zone and terminate with an EOL (HS-HWCI-EOL). Plug the Hydrowire into the Connection Box (HS-HWCI). Power up Control panel and Check that no fault or alarm is reported on the connected zone.

**Hydrowire
HYDW-05
HYDW-10**

**Connection Interface
HS-HWCI**

**End of Line Plug
HS-HWCI-EOL**

2. Remove the end of line plug and check that a Fault is reported.

3. Remove power from the Control Panel. Disconnect the Hydrowire and store ready for installation.

4. Ensure that the installation area is clean and free from water, dust and debris.

5. Plan detection route and mark floor and install clips (HY-FXSA) to the area to be protected so that the distance between any two Hydrowires is no more than 2 metres. (For localised protection of sources of potential water leakage, such as air conditioning and water filled radiators, the distance between Hydrowires may be greater).

6. Plug the Hydrowire cable into the Connection Interface, then lay cable to the first clip ensuring cable not taught, fit into clips and then push clips down to retain the cable. At the end of the Hydrowire cable fit the EOL (HS-HWCI-EOL).

7. The Hydrowire cable should be installed so that it remains in contact with the floor for as much of its length as is possible. *Great care must be taken when using other fixing clips. Although the cable is quite sturdy is can be damaged by crushing or excessive bending. A bend radius of 150mm is recommended as a minimum.*

8. The product label should be left such that it is clearly visible.

Note: *Hydrowire should not come into contact with surface temperatures greater than 70°C.*

Lengths of greater than 50 metres are not permissible from the Connection Interface, this distance includes Hydrowire and any Zone Extenders fitted.

Hydrowire Wiring

The HS-HWCI Connection Interface allows the Hydrowire to be plugged in and provides the installer the option of connecting a Remote Indicator.

The Zone In + and – terminals inside the Connection Interface must be connected via a 1.5mm^2 2-core cable (HYLCB) to the Z+ and Z- terminals at the control panel.

Figure 8
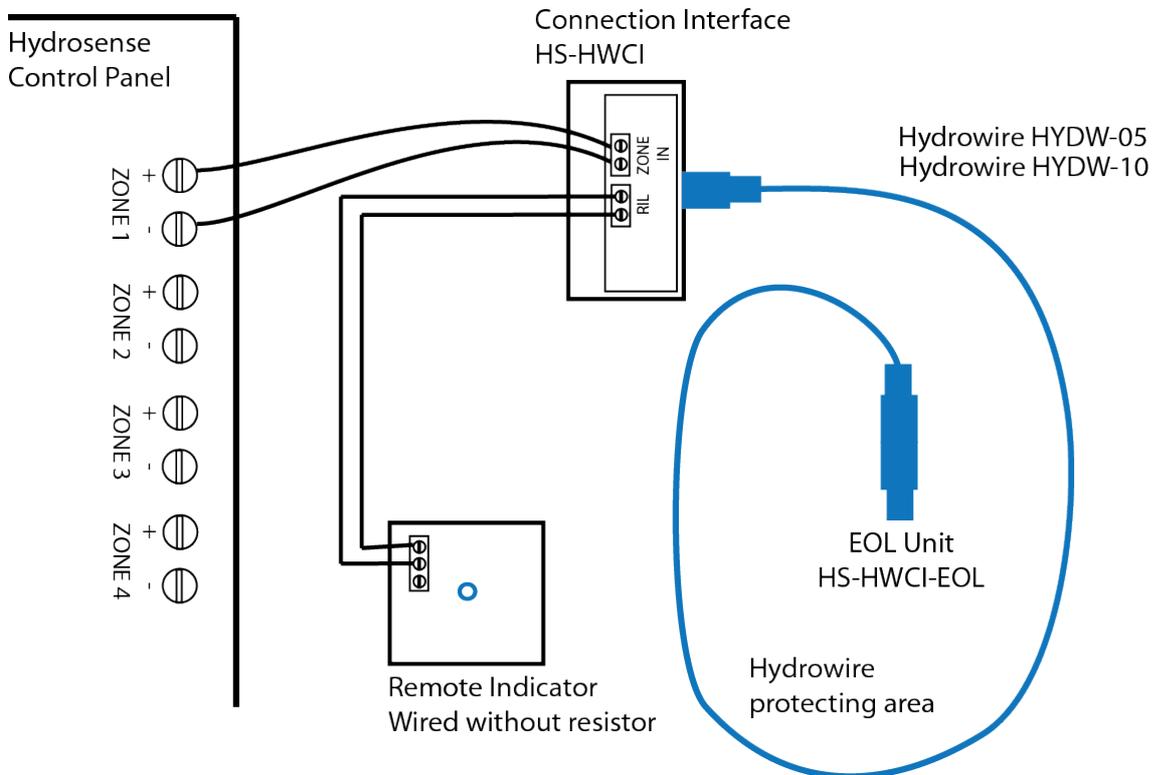
The end of line (EOL) resistor at the control panel can be discarded.
It is advisable to leave the lid off the control panel until all testing is complete.

NOTE: *The Connection Interfaces cannot be daisy chained together, only one Connection Interface can be connected per zone.*

Hydrowire Remote Lamp Connection

In some installations, particularly in floor voids, it is desirable to identify the area in which water has been detected with a remote indicator unit (HY-WLRI-F) mounted above the void.

This can be achieved by wiring a HY-WLRI-F remote lamp unit to the –ve and +ve of the RIL terminals in the HS-HWCI Connection Interface.

NOTE: *Only one remote lamp unit can be connected to each Connection Interface.*

Hydrowire Commissioning – HSHWC-100

Once all terminations have been made and the system is powered, the Hydrowire is ready for testing.

This is best achieved by dipping the forefinger and thumb into a cup of tap water, shaking off the excess drips and then gripping the Hydrowire firmly whilst rolling it slowly.

This should produce an alarm condition at the control panel and if fitted, the remote indicator lamp and the panel sounder.

Over-wetting of the Hydrowire should be avoided as a great deal of time can be wasted waiting for the Hydrowire to dry out. **DO NOT MIX PROBES AND HYDROWIRE IN THE SAME ZONE.**
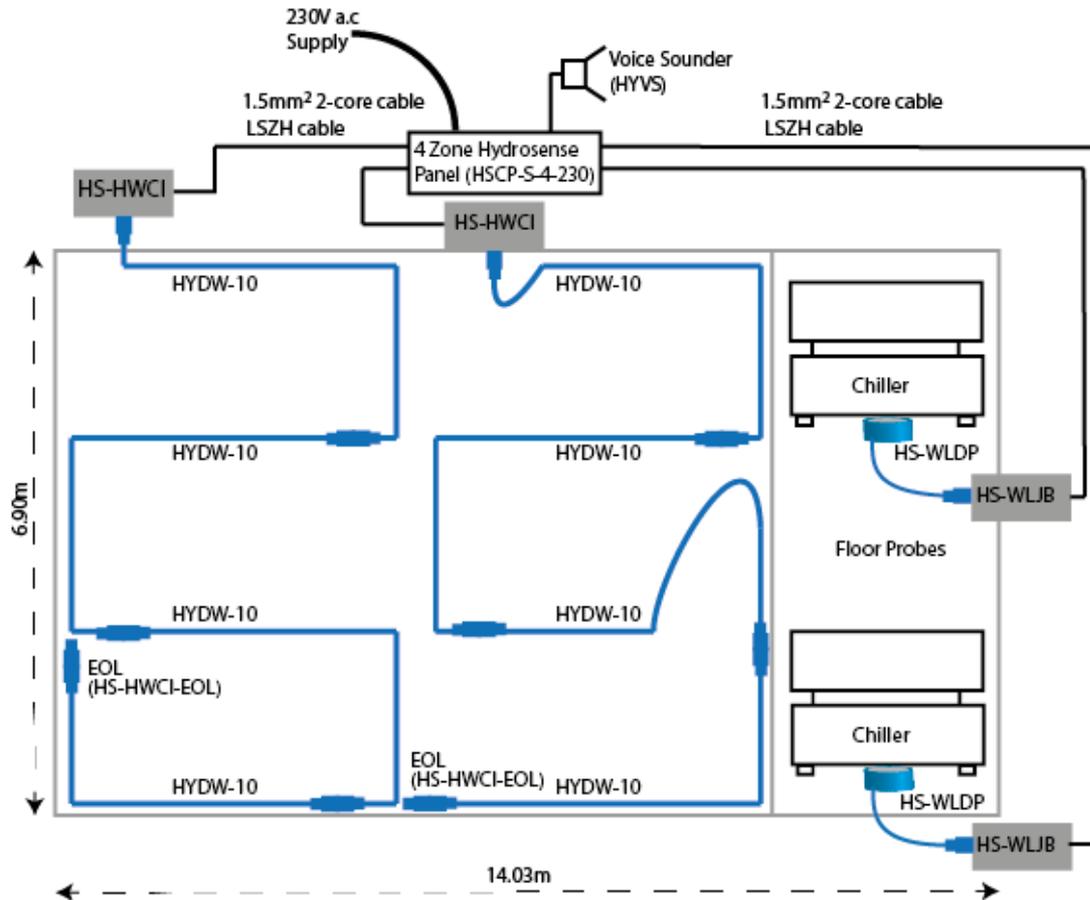
Hydrowire Layout

Figure 9

As it can be seen in Figure 9 that the Hydrowire cables are plugged together to provide 40m of detection cable.

Part Number	Description	Quantity
HSCP-S-4-230	4 Zone Control panel	1
HYDW-10	Hydrowire cable (10m)	8
HS-HWCI-EOL	End Of Line Device	2
HS-HWCI	Hydrowire Connection Interface	2
HS-WLDP	Hydrosense Floor Probe	2
HS-WLJB	Hydrosense Junction Box	2
HYVS	Voice Sounder	1
HY-FXSA	Hydrowire self-adhesive fixing clips	3
E-NP7-12	7A backup batteries	2
HYLCB	1.5mm^2 2-core cable LSZH (100m)	1

Floor Probes Installation and Commissioning

Floor Probe Installation HSFPI -100

Mount the Junction Box to within 1 metre of where the Floor Probe is to be mounted. Wire the Junction Box back to the Hydrosense Control Panel as shown in Hydrosense Wiring section if it is the first Junction Box on the zone, otherwise wire from last Junction Box on the zone.

1. Plug the Floor Probe(s) (HS-WLDP) to all Junction Box(s). Power up Control panel and check that no fault or alarm is reported on the connected zone.

Note: *The EOL resistor, which is normally fitted to the control panel zone must be removed and installed on the last Junction box.*

**Floor Probe
HS-WLDP**

**Junction Box
HS-WLJB**

2. Unplug the Floor Probe(s) and check that a Fault is reported.

3. Remove power from the Control Panel. Disconnect the Floor Probe(s) and store ready for installation.

4. Ensure that the installation area is clean and free from water, dust and debris.

5. Fix the Floor Probe(s) using the fixing hole and ensure the Floor Probe(s) cable lays flat and then plug back in to the Junction Box.

6. If the Floor Probe needs to be mounted further than the length of the cable on the Floor Probe (1m) then the cable can be extended using Zone Extenders which are available in 1m / 3m & 10m lengths)

   The Floor Probe should be installed so that the two gold contacts remain in contact with the floor. *Great care must be taken that the fixing screw is no larger then M5 and that the screw is hand tightened only.*
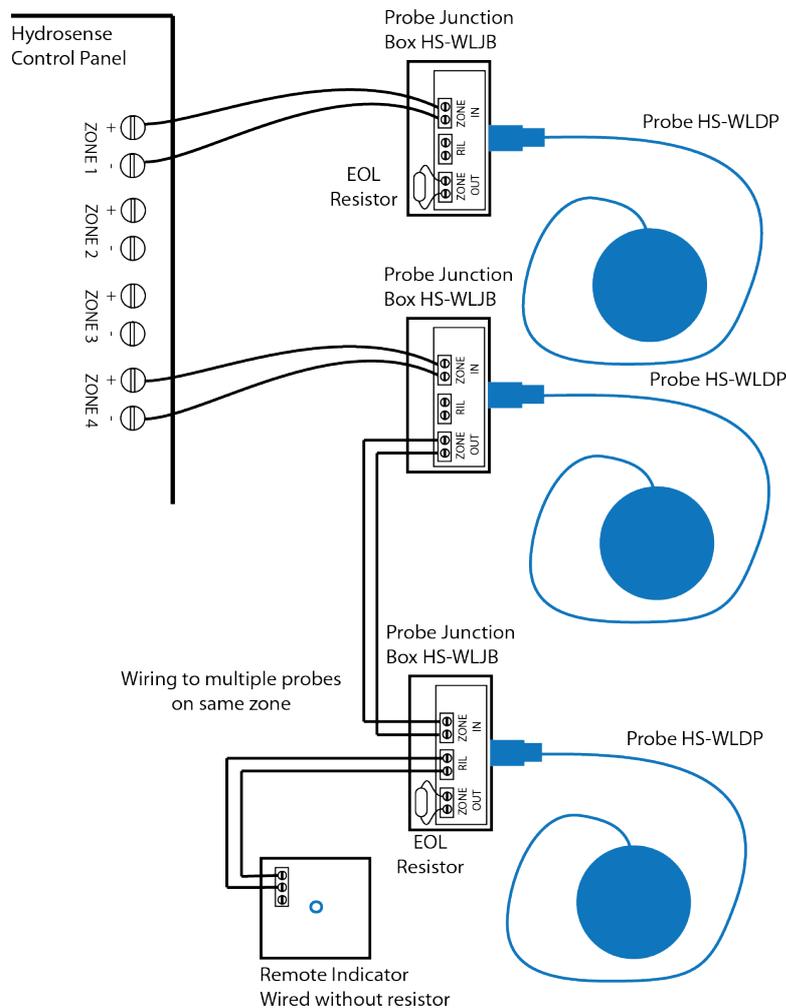
Floor Probe Wiring

The HS-WLJB Junction Box allows the Probe to be plugged in and provides the installer the option of connecting a Remote Indicator.

The Zone In + and – terminals inside the Junction Box must be connected via a 1.5mm^2 2-core cable (HYLCB) to the Z+ and Z- terminals at the control panel.

Figure 10

Floor Probe Remote Lamp Connection

In some installations, particularly in floor voids, it is desirable to identify the area in which water has been detected with a remote indicator unit (HY-WLRI-F) mounted above the void.

This can be achieved by wiring a HY-WLRI-F remote lamp unit to the –ve and +ve of the RIL terminals in the HS-HWJB Junction Box.

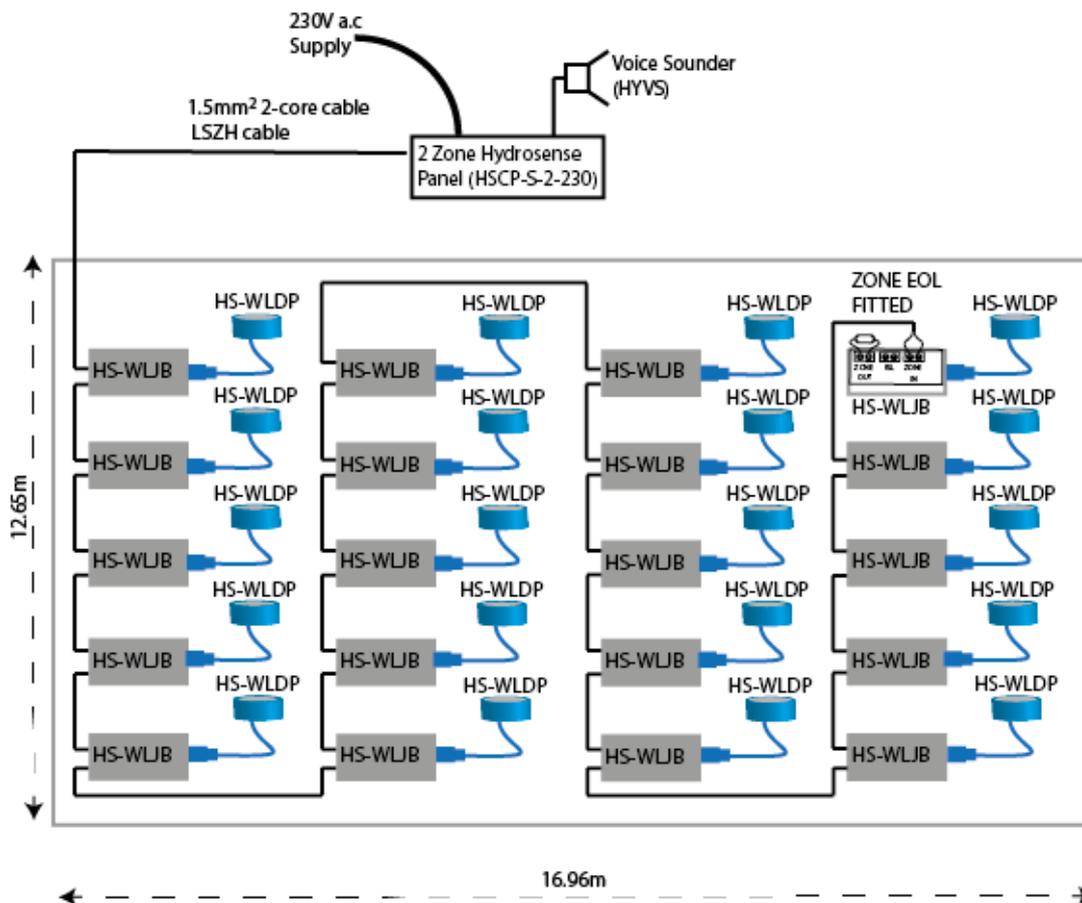**NOTE:** *Only one remote lamp unit can be connected to each Junction Box.*

Floor Probe Testing

(1) This is best achieved by wetting both of the brass contacts simultaneously with fresh water.

(2) This should produce an immediate reaction at the control panel, the LED mounted on top of the probe, if fitted, the remote Indicator lamp and panel sounders.

Probe Layout

Figure 11

Part Number	Description	Quantity
HSCP-S-2-230	2 Zone Control panel	1
HS-WLDP	Hydrosense Floor Probe	20
HS-WLJB	Hydrosense Junction Box	20
HYVS	Voice Sounder	1
E-NP7-12	7A backup batteries	2
HYLCB	1.5mm^2 2-core cable LSZH (100m)	1

Hydrosense Commissioning Record
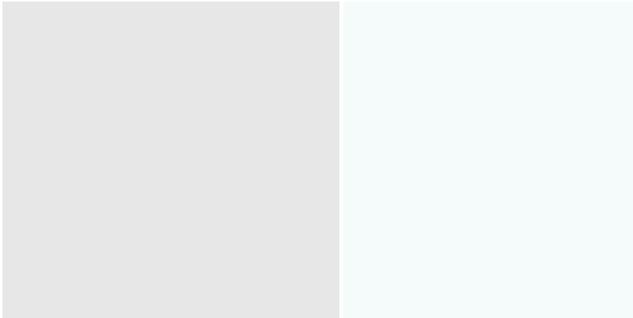
t has been checked).

☐ Check the Hydrowire clips are not crushing or any over bending of Hydrowire cable.

eForm Design - Simple, helpful forms.
Web:eformdesign.co.uk   Email : sales@eformdesign.co.uk

Document Ref
VIM_HYDRO_001

3500012_REV0301   **Page | 25 of 26**

Vimpex Limited
Star Lane, Great Wakering
Essex SS3 0PJ
England

Tel: +44 (0) 1702 216 999

Email: hydrosense@vimpex.co.uk
Web: www.hydrosense-system.com

Document Part No. 3500012 REV03

Page | **26** of **26**