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Water Leak Detection with Distance to leak Measurement Type LD100



This unit has been designed to detect water leaks from pipework, equipment containing water, server rooms or large areas and display the measurement to the leak from the sensor. The unit also has standard output relay contacts for both alarm and cable fault. The sensor can interface with existing alarm units, control PLC systems or Building Management Systems (BMS) via the volt free changeover contacts. It requires a power supply between 12 to 24VDC/AC to power the system allowing power to be supplied from A/C units, BMS systems and control systems. Complete with an alpha numeric display, the unit will display the distance to a leak in metres i.e. "Leak at 20Mts". This feature will enhance the ability to find the leak when the detection cable is out of sight i.e. within a false floor void, ceiling cavities or large areas.

Features

-  Large alpha numeric display with backlight to display distance to leak
-  With no leaks the unit displays the length of the detection cable
-  The detection cable is monitored for damage or dis-connection
-  The detection cable can be from 20 to 100m long
-  Detection cable can be extended up to 100m if additional cover is required
-  No commissioning, just turn on the unit allowing the system to determine the cable length
-  Volt free (dry) leak alarm changeover contact
-  Volt free (dry) cable fault changeover contact
-  Can optionally be fitted with audible warning device and mute button
-  Wall mounted control unit, pluggable detection cable, power cable and alarm contacts
-  Small footprint, 125 mmx 78mm x 35mm housing
-  RJ45 connector for power, removable terminal block for alarm & fault contacts screwlock connector for detection cable, two point external fixings points for wall mounting the alarm unit



Principle of Operation

On powering up, the unit will monitor the cable for damage, contaminants or water in the cable to ensure that when it self calibrates by measuring the cable length, the cable is connected correctly and clean. If the cable is damaged or disconnected the display will show "Sensor Cable Fault", if the cable is contaminated i.e. water on the cable, the screen will show "Cable Length Error" in both instances the fault relay will activate. Provided the detection cable is not damaged or contaminated, the display will show the length of the detection cable it will be monitoring i.e. "No Leaks Cab = 100m". When water comes into contact with the detection cable, the unit will measure the leaks length from the controller end a number of times before displaying "Leak Detected" followed by "Leak at 45m" a few seconds later, and the alarm volt free contact will energize. Once the leak has been removed, the system will automatically reset for the next event.

Strapping the detection cable to a conductive surface

In normal applications such as laying on concrete floors, or in drip trays etc. the detection cable can be un-braided, this is because the detection sensors are below the overall diameter of the cable. However, in applications such as following water pipe runs where the cable is to be strapped to a conductive surface i.e. the underside of water pipes fitted with aluminium lagging, we can upon request braid to the outside of the detection cable providing an additional barrier between the sensor wires and the metal surface.

Power connectors

The unit is provided with two RJ45 connectors. To connect power to the unit, plugin the lead fitted with the unit and connect pin 4 (blue) and pin 5 (white/blue) to the 12/24 volt supply. The second RJ45 connector can then be used to power the next LD100 sensor and so on to a maximum line of 10 sensors on a single cat5/6 cable.

Specification

Housing type	ABS Plastic, Light grey
IP Rating	IP51
Mounting	Wall, or surface
Size	125mm high x 80mm wide x 35mm deep
Input power	12 to 24VDC/AC
Burden	< 1VA
Maximum number of sensor per power line	10
Accuracy	+/- 1 metre
Minimum detection cable length	20 metres
Maximum detection cable length	100 metres
Maximum power lead length	100 metres
Power lead connector and cable	RJ45 connector, cat 5 or 6 cable
Detection cable connectors	Metal 4 pin screwlock
Diameter of detection cable	4.5mm
Alarm volt free contact rating	24VDC/AC 0.5amp
Fault volt free contact rating	24VDC/AC 0.5amp

Optional Equipment

Beacon / Sounder Beacon
Mutable onboard audible warning device
SMS text messaging unit