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Oil Leak Detection Sensor for outside use Type OSPW



The sensor has been designed to detect the presents of oil or any non-conductive liquid including fuel oil, diesel etc. and energise an internal relay to provide a signal to existing alarm systems, Building Management Systems or SMS messaging systems.

The sensor as standard includes a Stainless Steel floor mounting bracket and on request can be fitted with a wall mounted bracket.

The Sensor includes two liquid detectors one looking for conductive liquids (water) with the other looking for non-conductive liquids (fuel oil etc.) using an optical sensor. The mode of operation for the optical sensor is the principle of total internal reflection. An LED and photo-transistor are housed in a plastic (Polysulfone) dome. When no liquid is present, light from the LED is internally reflected from the dome to the photo-transistor. When a liquid covers the dome, the effective refractive index at the dome-oil boundary changes allowing some light from the LED to escape. Thus the amount of light received by the photo-transistor is reduced indicating the presents of a liquid. The conductive sensor looks for water by using bi-directional DC in both sensors to stop electrolysis of the electrodes.

Sensors can be connected together to give a common alarm within an area or connected

Output alarm relay truth table

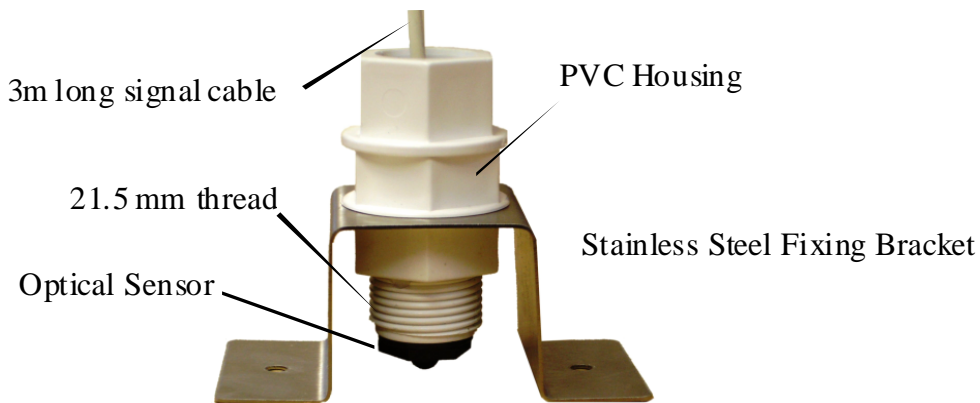
<i>Water Detected</i>	<i>Oil Leak Detected</i>	<i>Relay output Contact</i>
NO	NO	Open (no alarm)
NO	YES	Closed (alarm)
YES	NO	Open (no alarm)
Water detected first	Then an oil leak	Open (see <i>note 2</i>)
Water detected second	Oil Leak detected first	Closed (see <i>note</i>)

Note

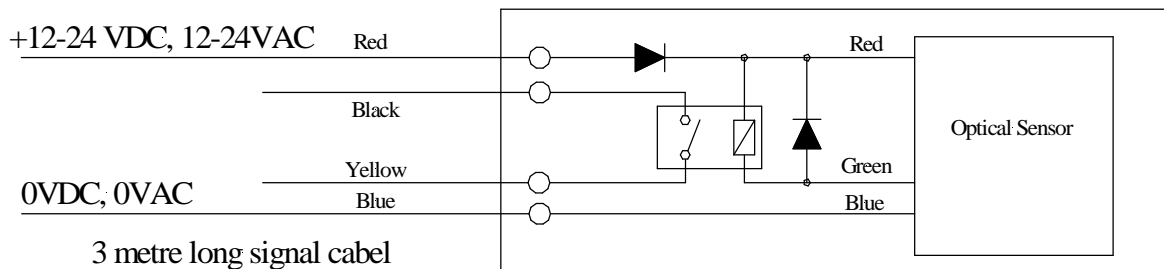
If the sensor is detecting an oil leak before water is detected, the output relay will remain ON. However, if water is detected before an oil leak the relay will remain OFF (see note 2) until the water has evaporated when the relay will turn ON if oil is still present.

Note 2

The sensor will also detect oil in water providing enough oil is present to force the water away from the optical sensor.



Internal wiring



Specification

Housing type	ABS Plastic
Size excluding bracket	75mm High x 38mm diameter
Colour	White
Input power	12 to 24 VAC or 12 to 24VDC
Power Consumption	30mA @ 24VDC
Connections to Sensor	3 metre long 4 core signal cable
Relay contact	Normally Open , (close in alarm) 1 amp 30VDC volt free contact
Ingress Protection Rating	IP65