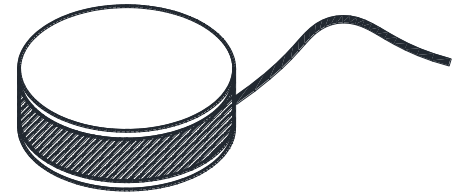


TRM-IOS

Industrial Oil Sensor



Product Description

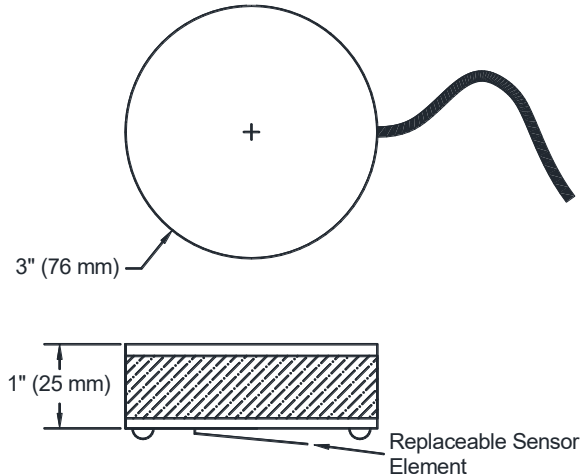
TRM-IOS-1 is designed to detect refined oils, dielectric oils, heat transfer fluids and similar non-conductive, non-fuel liquids. There are no tools needed for installation. Sensors are placed below oil filled equipment on the vault floor, in a drip pan or within a mini-containment where leaking liquid could accumulate.

Detection and alarm occurs when the puddle of leaking oil or fluid reaches the base of the sensor. In the normal state (no oil present) the internal sensor element has a resistance <50,000 ohms. Contact with transformer oil, hydraulic oil, heat transfer oil, etc. causes the sensor resistance to increase rapidly, typically to more than 1 meg-ohm. There are no moving parts or active electronic components in the sensor. The detection mechanism is based on a conductive polymer film that chemically reacts to the presence of the targeted liquid. TRM-IOS works in conjunction with the TRM Easy5-Relay or TRM-Easy5-Panel. The Relay version operates on either 12 Vdc or 24 Vdc and mounts on a DIN rail. The Panel version is a self-contained UL508A certified sheet metal panel that operates on line voltage. In both cases, alarm conditions is signaled by relay contact closure.

The TRM-IOS qualifies as "simple apparatus" per CSA/EN/IEC/UL 600779-11 Clause 5.7 a) & b). It may be installed in hazardous with zener barriers.

The TRM-IOS should be installed in normally dry locations. The sensor can tolerate occasional exposure to water but is not designed to withstand long term exposure to standing water. It should not be installed in locations that will not promptly drain. Exposure to water will cause a temporary increase in the sensor resistance but not as high as the response associated with oil detection. After the sensor dries, the resistance returns to the normal range.

The TRM-IOS ships with spare sensor elements that can be exchanged without tools to re-establish monitoring with little or no down time.



Product Specifications

- TRM-IOS-1 is a passive resistance device. Excitation voltage is supplied by monitoring instrument
- Response times at 70°F (21°C):
 - Mineral oil - less than 30 seconds
 - Hydraulic oil - less than 30 seconds
 - Dowtherm A - less than 30 seconds
- Qualifies as simple apparatus per CSA/EN/IEC/UL 600779-11 Clause 5.7 a) & b). May be installed in hazardous areas with appropriate zener barrier
- Dimensions: 1" thick x 3" dia. (25.4 mm x 76.2 mm dia.)
- Weight: Approx. 6 oz. (412 gm)
- Body material: hard rubber
- Operating Temperature: -40F to 140°F (-40°C to 60°C)
- Replaceable sensor elements supplied with sensor body and available for purchase
- Supplied with 2 m (6 ft.) of 2-wire leader cable.

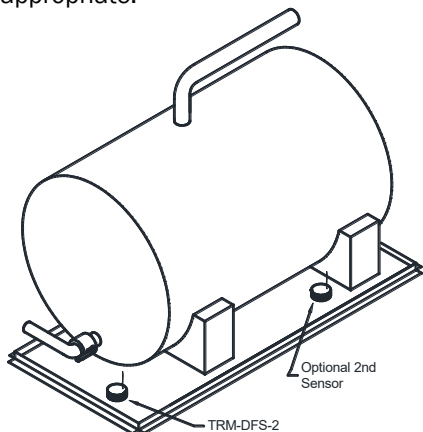
Actual response times are a function of the target fluid and the alarm threshold of the monitoring device. Response time testing using a sample of the actual fluid of interest is recommended. Contact the factory at info@trmsensors.com for assistance.

TRM-IOS INSTALLATION AND CARE INSTRUCTIONS

Installation Instructions

1. Place sensors on the floor or in a drip pan near potential leak source including the area beneath transformer bushings, hydraulic fittings and similar potential leak sources
2. Do not install the sensor in areas subject to standing water. Long term water immersion will cause corrosion and any oil leak is unlikely to be detected since the sensor element could be underwater.
3. Assure that all sensors are resting flat on the floor or drip pan surface.
4. TRM-IOS sensors are supplied with 2 meters (6 ft.) of leader cable. The installer may use up to 100 additional meters (330 feet) of similar jumper cable (minimum 22 AWG) to connect the sensor to the monitoring instrument.
5. TRM recommends using the TRM-DFS-3-SSHD hold down. The fixture can be permanently attached to the floor surface and allows the TRM-IOS sensor to be easily removed and re-installed if service is required.
6. Connect the red and black wires to the appropriate terminals or connectors on the TRM-Easy5-Relay or TRM-Easy5-Panel
7. It is also possible to monitor the TRM-IOS directly with PLC analog inputs when properly wired as part of a voltage divider. Contact the factory for guidance.

* For large floor areas or trenches a mini-containment or trench barrier can be fabricated with PVC angle and construction adhesive. (Grainger Items #1NTY2 and 2GXU5 or equivalents). Additional TRM-IOS sensors may also be appropriate.



TRM-IOS Sensors on floor

Sensor Element Replacement:

Each TRM-IOS is shipped with a spare sensor elements.

If a spill occurs use this procedure to restore:

1. Loosen the thumb screw and remove the TRM-IOS from the hold down fixture.
2. Pull the sensor element from the sensor body. The connection is a simple two-pin header. No tools are needed.
3. Wipe the base of the sensor body with a dry cloth to remove any oil clinging to the sensor body
4. Thoroughly clean the floor area beneath the sensor to remove any residual traces of spilled oil.
5. After clean-up is complete, install a replacement sensor element. No tools are required. There is no polarity to observe, but correct orientation will yield the best sensitivity. The element has a protective paper sleeve with "THIS SIDE DOWN" printed on one side. Make sure to orient the sensor element so that when the sensor element is folded under the sensor body, the side marked "THIS SIDE DOWN" is on contact with the floor.
6. Once the sensor element has been replaced and the floor is clean, slip the sensor body into the SSHD hold down fixture and secure in place with the thumb screw.
7. Because of the oily nature of the industrial oils and fluids, cleaning and resetting of the sensor element is not feasible. The oily sensor element should be discarded.

Additional replacements are available from TRM Sensors as p/n: TRM-IOS--RSE

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