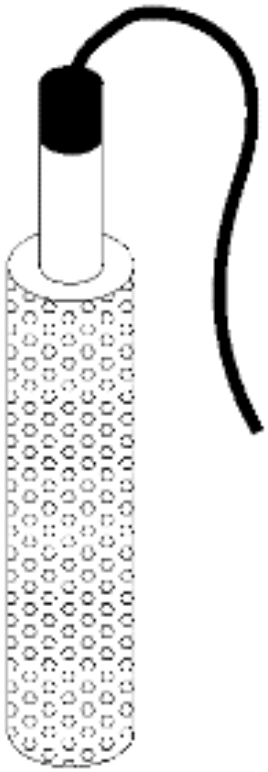
TRM Sensors LLC Data Sheet

TRM-HX

Acid / Brine Sensors



Product Description

TRM-HX sensors are designed to detect the brine, acid, caustic, waste solutions and similar fluids that are more conductive than water. A typical application would be to monitor for leaks or tank overflows within a contained space or bermed area surrounding outdoor acid storage tanks. The sensor does not detect or react to rain, snow melt or condensation. The bottom ½" if the sensor probe is the active portion of the sensor. The probe should be mounted vertically in a sump, low point or similar contained area where leaking fluids are likely to collect. Since highly conductive fluids like brine or acids tend to be more dense than water, even with partial mixing, more conductive solutions tend to collect at the bottom of the contained area and are detected. However for very slow leak rates and large storm water accumulations, dilution effects can prevent detection

TRM-HX sensors must be monitored using the TRM Relay Unit Type-CV. The Type-CV unit features a field adjustable alarm threshold than allow the user to "dial-out" what the user considers to be normal water while retaining the ability to detect more conductive fluids. There is usually a comfortable margin between typical storm water and leaking fluids of interest, however this margin may not exist where the storm water is dirty and when the target fluid is extremely dilute.

Key Features

- Fast detection of brine, dilute acids, caustic solutions and similar
- Suitable for Hazardous Areas when installed with appropriate zener barriers
- Ignores rain, snow melt and most sources of casual water
- Qualifies as simple apparatus with no moving parts, energy storing or generating components.
- Wide range operating temperature range
- Corrosion resistance stainless steel components used throughout
- Can be cleaned, reset and reused in most cases.

Product Specifications

- Dimensions:
  - Upper Body: 3/4" x 4" 316 stainless steel
  - Interior Probe : 3/8" dia. 316 stainless steel
  - Protective Screen: 2" dia. 316 stainless steel
  - Overall length ~ 12.5"
- Probe length: 9" (lower ½" is active)
- Standard leader cable length: 7 ft. (2 m)
- Operating Temperature: -40C to +125C (in practice the effective operating range is determined by the freezing point and boiling point of the target fluids
- Response time is less than 3 seconds
- Resets when lifted from fluid. Can be cleaned and dries with water and clean cloth

ORDERING INFORMATION AND CARE INSTRUCTIONS ON REVERSE

TRM-CC Hydrocarbon Sensors for sumps

Ordering Information:

TRM-HX	Acid / Brine Sensor Probe
TRM Relay Unit Type-CV	12 Vdc, monitoring device with relay output

Installation:

1. TRM-HX sensor probes should be installed in a vertical orientation with the cable at the top. Use uni-strut or similar sturdy structure to fix the sensor in position. A U-bolt can be used to clamp the sensor body to the uni-strut frame.
2. The sensor should be installed at the low point of the contained area or sump. It is important that the sensor positioned as low as possible with the bottom of the probe in contact or just above the floor of the sump or containment. (Only the lower 1.2" of the probe is active).

   CAUTION: It is the installers responsibility to select the installation location such that any acid / brine spill accumulating in the contained area will come into contact with the sensor probe before it exits the containment via a storm drain or by overtopping the containment berm. IN some installations more than one probe may be necessary

3. Connect the leader cable from the sensor probe to the TRM relay Unit Type-CV monitoring device terminal block matching the marked color code. Only the green and yellow conductor are used. Up to 500 feet of additional jumper cable may be used if the monitoring device is mounted remotes.
4. Make sure that a small jumper wire is connected between the red and yellow terminals.
5. Use MTL 7760-ac zener safety barrier if the probe is mounted in a hazardous area.

Care and Reset:

1. In most instances the probe will reset as soon as it is removed from the spill.
2. Additional water may be used if needed
3. The outer stainless steel protective sleeve can also be removed for cleaning.
4. A soft cloth can be used to clean and dry the probe if needed.
5. Avoid metal brushes or steel wool or other tools that can damage the outer layer of insulation.

Field Sensitivity Adjustment of Relay Unilt Type-CV:

Each TRM-HX is paired with a single TRM Relay Unit Type-CV. The "Acid / Brine" sensitivity is pre-set at the factory for most common applications. However the alarm threshold can be adjusted if necessary. In order to optimize performance a sample of local rain water or snow melt is ideal, but tap water can be used as a substitute. A sample of the targeted fluid (brine, acid waste, etc.) is also required.

Follow this procedure.

1. Connect the green and yellow conductors from TRM-HX to the GRN and YEL terminals on the TRM Relay Unit Type-CV
2. Connect 12 Vdc to the +12Vdc and 0 Vdc terminals to energize the Relay Unit. Observe that the green POWER LED is on and the RED ALARM LED is off.
3. Before making any adjustments, test the sensor by placing the bottom 1" into the sample of rain, snow melt or tap water. Observer that the RED ALARM LED remains off. If the RED LED is on, turn the Acid / Brine adjustment screw counter-clockwise one turn at a time until the RED ALARM is off.)
4. Remove the sensor from the tap water and with a small screwdriver turn the ACID / SENSITIIVITY adjustment screw ½ turn in a clockwise direction.
5. Place the TRM-HX back in the rain (tap) water sample and note whether the RED ALARM LED is off or on:
   a. If OFF repeat step 4
   b. If ON, remove the sensor and turn the ACID / BRINE adjustment screw in a counter-clockwise direction 3/4 turn.
6. Observe that the RED ALARM LED light stays off when the sensor is dipped into rain (tap) water
7. Verify that the RED ALARM LED goes on when the sensor is dipped into the target fluid.