

Installation and Calibration

Series R (Remote) Product Detector

After unpacking the unit, inspect it for any evidence of shipping damage. Any claims for damage due to shipping must be filed with the carrier.

Select a mounting location: 1. A vertical mount with the antenna pointing down. 2. A horizontal mount. 3. A 45 degree mount with the antenna pointing down. All standard antennas have a 1" NPT connection.

CAUTION: The Teflon insulator on the antenna must have sufficient protrusion (approximately 1 to 2 inches) inside the vessel wall to prevent any bridging of material between the antenna and the vessel it's mounted in.

The unit may not work properly if:

1. Material density is less than 5 pounds per cubic foot.
2. A conductive bridge occurs between antenna and vessel wall. (Fully insulated antenna required.)
3. The antenna comes in contact with the vessel wall.
4. The unit is mounted in a non-metallic vessel (Requires a ground plane.)
5. The unit is not properly grounded.
6. The antenna is mounted improperly. (See the above three mounting types.)

CAUTION: If any of these statements apply to your application, do not install the unit until you contact your local distributor or R & D Specialties for instructions.

Screw the unit into a 1" NPT connection mounted in the vessel, and install conduit suitable to the environment in which the unit is to be used. The conduit installation shall be of such design that condensate from the conduit does not drain into the unit.

CAUTION: Be sure that all wiring conforms to the requirements of the National Electrical Code and any enforcing authorities or agencies having jurisdiction over the installation.

CALIBRATION:

Calibrate the unit by using the following procedure.

NOTE: All units are shipped from the factory with these options set as standard:

120 Volt AC/24 Volt DC

1/8 Second Time Delay

Time Delay Falling/Fail-Safe Low (Relay De-energized)

Sensitivity Mid-Range, to sense presence or absence of most liquids

1. Push test button momentarily to determine if unit is operational. The set point and relay status LEDs should light and the relay actuate.
2. The product you are sensing must **NOT** be in contact with the antenna. If the LED set point light is off, turn the sensitivity clockwise until the LED comes on; and then turn the sensitivity counter-clockwise slowly until the LED just goes out, plus 1/4 of a turn. The unit is now calibrated and will actuate when product comes in contact with the antenna.
3. Interfacing two dissimilar products: Example -oil/water: To detect water extend the antenna through the oil into the water section. If the set point LED is on, decrease by turning the sensitivity counter-clockwise until the LED goes out - not to exceed twenty five turns. If the LED goes out -stop and turn the sensitivity clockwise until the set point LED just comes on plus 1/4 turn. If the set point LED did not go out, stop at this point as the unit is set to recognize water only. If it does recognize oil/water emulsions, you require a coated antenna.

TIMER MODE:

1. Time delay rising means that when product comes in contact with the antenna, the timer will start and the relay will not actuate until the end of the designated time period. For this setting switch S5 is down/off and switch S4 is up/on.
2. Time delay falling means that when product comes in contact with the antenna, the relay is actuated. When product disengages from antenna, the timer starts. Upon reaching the end of the designated time period, the relay de-activates. For this setting switch S5 is up/on and switch S4 is down/off.

RELAY SETTING:

The relay may be activated or de-activated for any operating condition desired by using switch S3. Refer to operational chart.

TIME DELAY RANGE:

The time delay range is from .15 seconds to 7500 seconds (2 hours and 5 minutes), and divided into 4 ranges for quick time setting. Example: If you want a 1 hour time delay - one hour is 3600 seconds -it would fall in ratio 256. Divide 3600 seconds by 256 = 14 seconds. Use ratio 1 with switch S2 up/on and switch S1 down/off. Increase time delay clockwise, or decrease counterclockwise, to get 14 seconds. When you have 14 seconds flip switch S1 up/on and now you have approximately a 1 hour time delay.

REMOVING AND INSTALLING ELECTRONICS:

Disconnect power at the main power source.

MAINTENANCE AND TROUBLESHOOTING:

No routine maintenance is required other than keeping the interior of the unit clean and free of contaminants.

Problem:

- a. Set point LED light cannot be adjusted to turn on.
1. Confirm antenna lead is plugged into antenna.
 2. Check power supply to unit.
 3. Check on-board fuse.
 4. If the above are okay, replace electronic module.
- b. Set point LED light remains on at all times.
1. Antenna is shorted to case or ground.
 2. Check for open wiring to remote electronics.

c. Unit actuates when product touches antenna, but will not reset when product recedes from antenna and gives false alarm.

1. Improper mounting of antenna.
2. Improper calibration.
3. Excessive buildup on antenna. (Dirty antenna adjust.)

d. Unit will not detect material.

1. Improper calibration.
2. Antenna lead not plugged into antenna.
3. Confirm product is touching antenna.

e. Unit will not stay in calibration.

1. Poor grounding. (Provide secure ground connection.)

f. Relay operates properly, but no signal at terminal.

1. Bad relay contacts.
2. Burned or broken traces on circuit board.

