



Oil/Grease Point Alarm for Proceptor Separators

Inlet Side

 **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov

 **ADVERTENCIA:** Cáncer y daño reproductivo - www.P65Warnings.ca.gov

 **AVERTISSEMENT:** Cancer et effets néfastes sur la reproduction -
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Proceptor

Oil or Grease Separator Point Alarm Switch

Applications

- Separators
- Sumps
- Interface Detection

Related Materials

- Wiring Diagram

Description

The Green Turtle Oil/Grease Point Alarm is specifically designed for use in Proceptor Oil or Grease Gravity type separators. The unit contains no moving parts, eliminating maintenance due to mechanical malfunction.

An integrated pulse card (PMC) is mounted directly onto the probe in an explosion proof epoxy coated housing. This allows the alarm panel electronics to be mounted up to 1 km (0.7 mile) away using inexpensive 2-conductor shielded wire. Wetted parts are 316SS and Teflon, and the alarm panel housing is Type 4 metal, providing a tough, yet economical, solution for switch point elevation alarm in Proceptor Separators.

A relay is included for user-supplied remote devices such as pump controls, connection to building automation systems, etc.

Operation

The probe length is determined by the distance from the desired alarm point up to the process connection of the probe head. The bottom 4 in (100mm) of the probe is a Teflon-coated active capacitance probe, which is calibrated with clean water by the installer or operator. The remainder of the probe is sealed within a stainless tube so that any level changes of the upper air surface are discounted.

During waste water flows, water is gradually displaced through the separator as the oil/grease rises to the surface and accumulates.

When the tip of the probe, which is normally submerged in water, senses a decrease in capacitance from contact with the oil/grease, the alarm switch closes a relay contact and triggers an alarm light and buzzer at the panel. This is the signal for the maintenance operator to have the tank pumped out and then refill with clean water. Once the unit is refilled with clean water the alarm light will go out.



Specifications

Power Input:	110 VAC or 220 VAC, (controller rated for 10 VA). 50/60 Hz, 25 mA or 24 VDC, 60 mA
Relay:	DPDT, 5 amp @ 220 VAC max, Dry Contacts
Sensitivity:	.5 pf
Accuracy:	+/- 2 mm
Time Delay:	Field Selectable 0 to 30 seconds
Relay:	High or Low Selectable
Temperature:	Controller Electronics: - 4°F to +140°F (-20 C to +60 C) Probe Junction Box with PMC Electronics - 75°F to +140°F (-60 C to +60 C) Probe (wetted parts): -75°F to +480°F (-60 C to +250 C)
Wetted Parts:	316SS and Teflon
Process Connection:	3/4" NPT standard
Pressure Rating:	max 1500 psi
Housing:	Controller: Type 4 Metal Enclosure. Probe with PMC Electronics: Epoxy Coated Cast Aluminum
Electrical Rating:	Controller: UL 508 Probe: Explosion Proof Class 1, Div 1, Group C & D

Installation

Note: Alarms are sensitive instruments and all care is taken to ensure they are shipped without damage. Please examine the instrument for possible shipping damage. **IMPORTANT:** If for any reason it is determined that parts need to be returned to the factory, please notify a Green Turtle Representative prior to shipment for a Return Authorization Number. The installation should be done by a qualified electrician with experience in wiring control systems.

1. Thread the sensing probe into the bracket of the separator access way. The elevation of the probe tip will determine the alarm point of the system. (The exposed white portion of the probe tip is the actual sensing area.) The probe length will depend on the tank model.
2. The probe is rated for Class I, Div. 1, Group C & D. If the probe is mounted in one of these designated areas, the contractor must use approved explosion proof installation techniques. If the location is non-classified, then local regulations should be followed in installing proper electrical conduit.
3. Wire the probe to the main control unit using the three-wire shielded instrument cable supplied (25 feet). Ensure vapours cannot travel up the wiring conduit from the interceptor into the alarm panel. If the main controller is mounted further than 25 feet up the line from the top of the probe, the contractor must supply an electrically approved junction box or splitter box. The contractor then must supply 18-20 gauge 3 conductor shielded cable (ie., Belden 8772) or 2 conductor shielded with a separate ground wire. DO NOT run these wires along side of high voltage wires. DO NOT coil or wrap the extra length of instrument cable. Connect the red, black and cable shield to the +/- shield terminals respectively at the controller. See the electrical connection drawing in the back of the manual for further instruction. Make sure that the probe is electrically grounded to the controller box by connecting the clear wire supplied to the ground stud on the sub-plate.
4. Connect 110 VAC power to the main control unit. After powering on the unit, the STATUS LED on the 9830 circuit board should be green, indicating that power is on with no fault conditions. If the status LED is red, the unit is showing fault. Check to make sure that the probe wires are correctly wired to the controller for continuity and proper polarity.
5. Fill the separator with water up to the level of the outlet pipe. Ensure the bottom tip of the alarm probe is submerged.
6. Calibrate the alarm.

CALIBRATION FEATURES:

Circuit Board Controls:

1. CALIBRATE BUTTON: Pushes to initiate automatic calibration feature. See below for procedure.
2. HI/LOW DIELECTRIC: The unit may be calibrated under a normal or alarm condition. Normally, the probe tip will be submerged in water. If this is the case, the toggle switch position should be in "HI".
3. SENSITIVITY (SENS): Determines the capacitive change required to cause the unit to alarm. Most applications require the setting to be adjusted to 3. Never set the alarm on 0 or above 7. A notch in the side of the dial indicates its position.
4. ALARM DELAY:
 - a. After the control point is exceeded, this circuit holds the relay in an energized position for a pre-set time of 1 to 20 seconds.
 - b. When the instrument is set up as a Low Level Controller, the relay will remain energized for the pre-set time after the low level is reached.
 - c. To increase the Time Delay, turn the pot clockwise.
5. HI/LOW RELAY: This two-position switch will determine if the relay energizes or de-energizes on an alarm condition. Standard industrial practice provides for the relay to de-energize on alarm. Under this condition (LOW setting), any power failure to the unit causes the unit to signal an alarm condition.

CALIBRATION PROCEDURE:

1. For Proceptor Interceptor application, set the switches of the controller as follows:

"DIELECTRIC"	"High" (when probe tip is submerged in water)
"SENS"	Position "3" Use a Phillips No. 1 screw driver to adjust the orange dial.
"ALARM DELAY"	Position "6" (approx 15 seconds)
"RELAY"	"Low"
2. Check to ensure the probe end is submerged in relatively clean water.
3. Press the "CALIBRATE" push-button until the STATUS LED light above the calibration button glows red. Release.
4. The STATUS LED should begin flashing green, indicating that the unit is in calibration mode.
5. Press the "CALIBRATE" button again until the STATUS LED glows red. Release.
6. Check to make sure the STATUS LED goes to steady green and the ALARM LED is red. This indicates the relay "energized" under normal conditions with a failsafe alarm setup.
7. The unit is now calibrated and will alarm when the 4" sensing section of the probe tip is exposed to oil or grease. The alarm will also be activated if the probe tip contacts air, such as when a vacuum truck removes the liquid from the tank.

TROUBLESHOOTING:

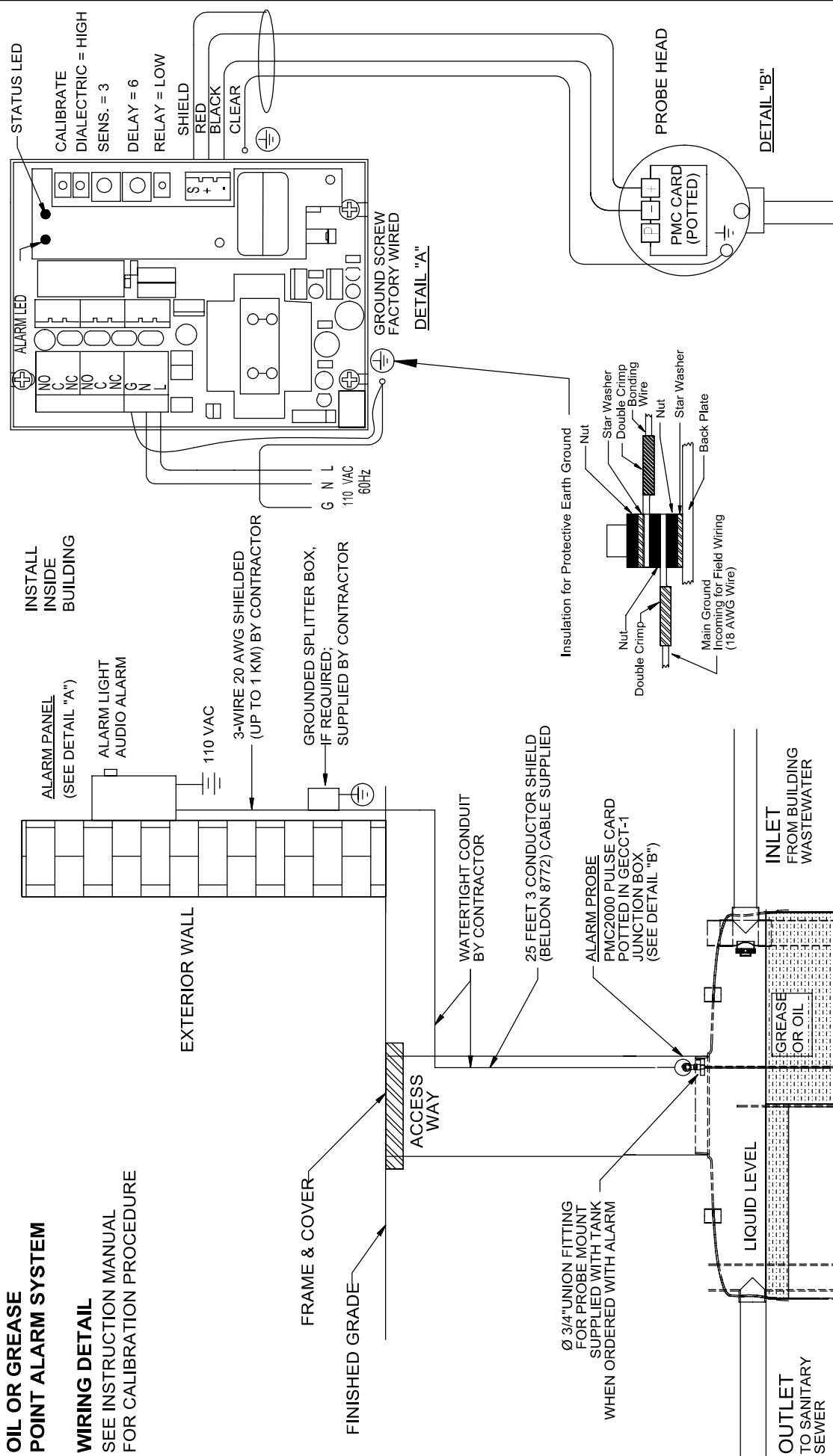
**Under normal conditions the status light on 9830 electronics (inside enclosure) should be Green and relay light should be Red. **

CONDITION	DO THIS
1. No indicators on at powerup	<ul style="list-style-type: none"> • Check power to unit • Make sure power applied is as specified for the unit. (e.g. 120VAC) • If power is ok, check the fuse. If the fuse is blown, call Green Turtle representative to analyze why the fuse has blown.
2. Status indicator is RED (Fault Condition)	<ul style="list-style-type: none"> • This indicates that the controller is not receiving a signal from the probe. • Verify that the polarity of probe wires is correct as per electrical drawing. Red wire to "+", Black wire to "-". Measure 9-10 Volts DC across +/- terminals. • Make sure there is no break in the wiring between controller and probe. • If using a splitter box ensure that proper connections have been made. • Replace the probe with a spare if available.
3. False alarms	<ul style="list-style-type: none"> • Add some time delay to unit. • If coax cable is used from sensors to probe, make sure it is not coiled (may cause an increase in inductance). • Make sure there is no outside interference that may be causing false alarms such as an agitator, high voltage interference, or input flow to the tank affecting the probe. • Adjust the sensitivity switch to next setting to decrease the 9830's sensitivity. • Make sure separator or grease trap is filled up with water above the white Teflon (sensing area) of probe.

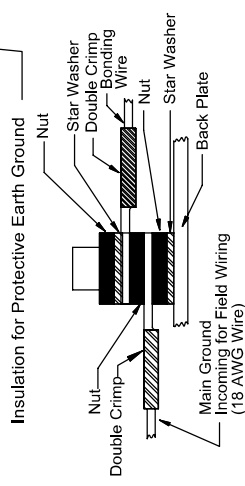
OIL OR GREASE POINT ALARM SYSTEM

WIRING DETAIL

SEE INSTRUCTION MANUAL FOR CALIBRATION PROCEDURE



INSULATION FOR PROTECTIVE EARTH GROUND



REV	DATE	DRAWN
1	SEPT. 11, 2006	L. SIMKINS
2	SEPT. 19, 2006	V.H.
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TITLE: PROCEPTOR SEPARATOR OIL/GREASE POINT ALARM SYSTEM
 PROJECT: WO:
 DRAWN BY: L. SIMKINS
 DRAWN DATE: 26/6/6
 SCALE: INTS | DO NOT SCALE DRAWING | AUTOATRT1

Proceptor
 by greenturtle
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 SIZEDWG. NO. A
 ALARM-MC
 REV. 2