



Submersible Pump Protection Device

Features

- The compact size and specially designed for submersible pumps, enhancing safety for both the pumps and technicians.
- Monitors submersible pumps for overheating and seal leaks. The device is UL certified.
- Adjustable sensitivity for seal leakage detection.
- Isolated 10A SPDT output contacts.
- LED supply and fault indication.
- Dual voltage, 120/220 VAC.
- Manual or automatic reset.



Specifications

| | |
|---|---|
| Voltage Between E1 and E2 | 28 VDC |
| Operation Delay | 3 second |
| Resistance Sensitivity Range (seal leak) | 5K to 100 K Ω Recommend adjustment: 50K to 75 K Ω Higher the value better the sensitivity |
| Resistance Sensitivity (over temperature) | 1 K Ω |
| Input Supply Voltage | 120 / 220 VAC \pm 15 % , 50/60 Hz |
| Power Required | 3 Watts |
| Contact Rating | 10 Amp. Max. @ 220 VAC Resistive load |
| Life | Mechanical: 1×10^7 , Electrical: 1×10^6 |
| Storage/Operation Temperature | 4 to +158°F (-20 to +70°C) / 14 to +122°F (-10 to +50°C) |
| Weight | 0.39kg (390 g) / 45*77*113mm |

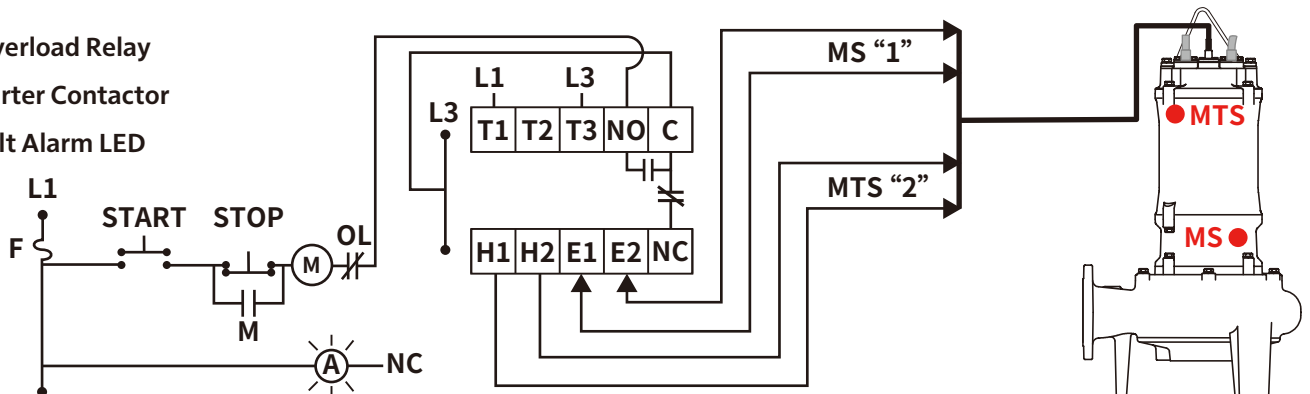
Device Wiring Diagram

*Specifications subject to change without notice

OL: Overload Relay

M: Starter Contactor

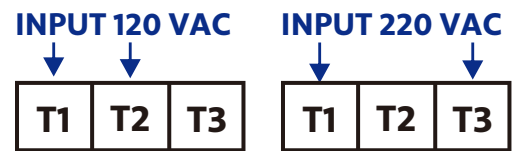
A: Fault Alarm LED



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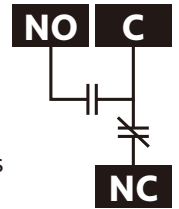
Contact Supply Voltage

- Connect the power supply as follows: 120V AC to terminals T1 and T2
220V AC to terminals T1 and T3. Once connected, the green LINE LED will turn on, indicating that power is supplied.



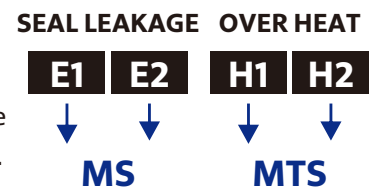
Output Contact

- Connect the NO (normally open) contact and C contact in series to the pump starter's contactor. This allows the pump protection device to shut down the pump in case of a fault (refer to the wiring diagram). Under normal operation, the NO and C contacts are closed (conducting), keeping the pump running. If a fault occurs, the NO and C contacts open, stopping the pump. At the same time, the NC and C contacts close, which can be used to trigger a fault alarm.



Connections to the pump

- Connect the E1 and E2 terminals to the moisture sensor inside the pump. If water enters due to seal failure, the sensor's internal resistance decreases. The pump protection device will detect this as a seal leak—under normal conditions, it should remain **non-conductive**.
※ See HCP PUMP MS signal line, symbol "1".
- Connect the H1 and H2 terminals to the thermal sensor embedded in the pump motor windings. If the motor temperature rises too high, the thermal sensor will activate. The pump protection device will detect this as motor overheating—under normal conditions, it should remain **conductive**. ※ See HCP Pump MTS signal line, symbol "2".



Abnormal LED Indicators

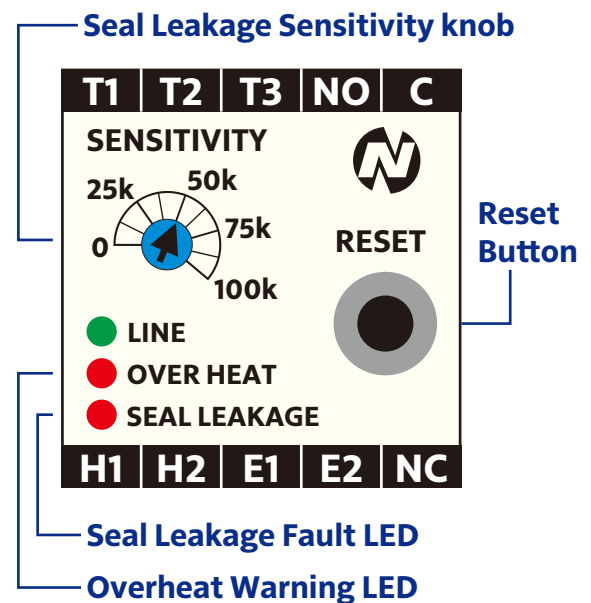
- If the shaft seal begins to leak, fluid enters the seal cavity, reducing the resistance of the internal sensor. When the resistance drops below the sensitivity threshold for more than 3 seconds, the SEAL LEAKAGE LED will flash red.
- If the pump motor temperature rises excessively, the thermal sensor switch will open the contact between terminals H1 and H2. When this occurs, the OVERHEAT LED will flash red.

Adjusting seal leakage sensitivity

- Turn the sensitivity knob to adjust the seal leakage sensitivity.
Recommend adjustment: 50K to 75 KΩ.
Higher the value better the sensitivity.

Manual Reset / Auto Mode

- Manual Reset: After a fault occurs and the fault condition is cleared, press the RESET button to restart the pump. The contact between NO and C will close, allowing the pump to operate, and the corresponding fault LED will turn off.
- Auto Reset: 1. Shut down or remove the power supply. 2. Press and hold the RESET button. 3. Reapply the supply voltage while continuing to press the RESET button. 4. The SEAL LEAKAGE LED will flash red for 5 seconds. Once the LED turns off, the reset is complete. Release the RESET button.



⚠ WARNING Danger! Electric Shock Hazard



This product presents a potential risk of electric shock, which could result in death or serious injury. Installation must be performed by a qualified professional in accordance with local regulations. Before connecting or disconnecting any wiring, ensure the power supply is completely turned off. Carefully read this manual before installation or operation, and keep it for future reference.



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