

PumpSaver® Submersible pump protector

PumpSavers are optional pump monitors designed to protect single- or three-phase submersible electric pumps from dry wells, dead head, jammed impellers, rapid cycling, over/under voltage, and, depending on the model, other conditions. They protect 2- or 3-wire pumps from 1/3 hp to 3 hp.

■ Single-phase PumpSavers



PumpSaver, TR- 2601



Informer, TR- 2606

Single-phase PumpSavers measure the power factor, voltage and current. These measurements are collected and analyzed by a microcontroller which, under precise conditions, trips a built-in relay to shut off the pump motor to prevent damage.

A calibration adjustment allows models TR-2601 and TR-2602 to be calibrated to specific pumping applications, thereby reducing the possibility of false or nuisance tripping. When an abnormality (such as would occur in a loss of suction) in power fluctuations, overcurrent, or undercurrent is detected, The PumpSaver deactivates its output relay and directly disconnects the pump motor. The unit then begins its user-selectable re-start delay (dry-well recovery) timer. When the timer counts to zero or power is removed and reapplied, the PumpSaver reactivates its output relay and turns the pump back on. An infrared LED can communicate directly with the Informer (sold separately).

The Informer is an optional diagnostic tool for use with TR-2601 and TR-2602. This hand-held device reads values from the LED on the PumpSaver and displays 15 parameters including real-time voltage, current, and power; dry-well and overload trip points; calibration voltage; voltage, current, power at last fault; highest/lowest voltage and current since last calibration; model number.

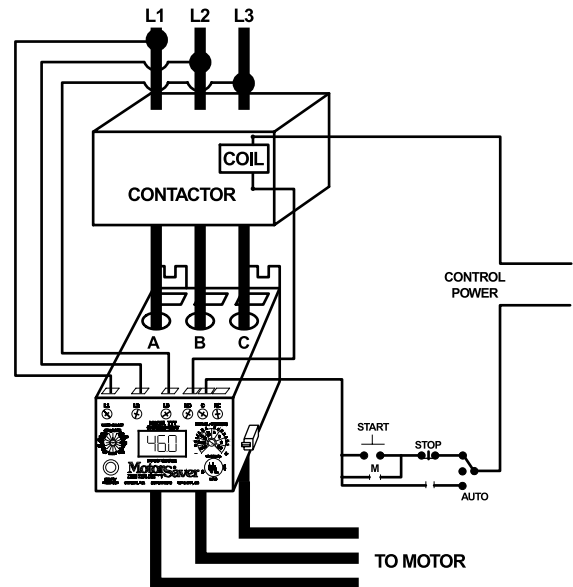
Note: The use of restrictors or unusually high head pressures at the time of calibration may interfere with the detection of dead head conditions.

■ Three-phase PumpSavers



PumpSaver, TR-2604

Three-phase PumpSavers combine a voltage relay, an underpower relay and an electronic overload relay into one device to provide optimal protection. The underload trip is based on power which is desirable when the current vs. load characteristic in non-linear or has little change—which is the case with these relatively small motors.



Typical wiring diagram for TR-2604

■ Motor Monitoring Device



Communications Module, TR- 2608



Motor-Monitoring Device, TR- 2607

The Remote Motor-Monitoring Device improves safety for service and operations personnel by allowing them to control and monitor the PumpSaver (TR-2603, TR-2604, and TR-2604 only) without opening the control panel. It requires a Communication Module on each PumpSaver to enable the Modbus communications function. One Remote Motor-Monitoring Device can monitor up to 16 PumpSavers

In addition to monitoring functions, the Motor-Monitoring Device can reset a tripped PumpSaver.

The enclosure is NEMA 3R outdoor rated and is easily mounted on the front of a panel. One device can control up to 16 PumpSaver units through an RS-485 network using Modbus TRU protocol. A second communication port allows monitoring and control from a computer, PLC, or SCADA system.

The Motor-Monitoring Device displays:

- Individual line currents and average current
- Current unbalance
- Individual phase voltages and average voltage
- Voltage unbalance
- Present fault trip reason and restart timer status
- Last four faults
- PumpSaver setpoints
- Run-hours on each motor
- Warning of pending (imminent) faults

The Motor-Monitoring Device controls:

- Reset run-hour metre
- Reset PumpSaver
- Clear last fault in PumpSaver
- Change set point for the Motor-Monitoring Device

PUMPSAVER® SELECTION TABLE

Part Nr	TR-2601	TR-2602	TR-2603	TR-2604	TR-2605
Load Range (hp)	1/3 - 1	1/3 - 1.5	1/3 - 3	1/3 - 3	3 - 7.5
Phase	1		1	3	
Line Voltage [V (ac)]	115	230	95-240	190 - 480	
Frequency	50*/60 Hz				
Low Voltage	•			•	
High Voltage	•			•	
Contact Failure				•	
Linear Trip Delay			•		
Low Kilowatt Trip Point				•	
Low Horsepower Trip Pt.				•	
Underload/Undercurrent	•			•	
UL Listed Overload				•	
Overload/Overcurrent	•			•	
Current Unbalance					•
Rapid Cycling	•			•	
Diagnostic Display (3 digit)				•	
Diagnostic LEDs	•				
Manual Reset	•			•	
Informer Compatible	•				
Motor-Monitoring Device (sold separately)				•	

* 50 Hz will increase all dealy timers by 20%.

ORDERING INFORMATION

TR-2601	PumpSaver® 1/3 - 1.0 hp 115 V (ac), single phase, *	1.6 lb
TR-2602	PumpSaver® 1/3 to 1.5 hp 230 V (ac), single phase,*	1.6 lb
TR-2603	PumpSaver®, 1 - 9 A 240 V (ac), single phase	2.0 lb
TR-2604	PumpSaver®, 1 - 9 A 190 - 480 V (ac), three phase	2.0 lb
TR-2605	PumpSaver®, up to 7.5 hp 190 - 480 V (ac), three phase	2.0 lb
Options:		
TR-2606	INFORMER diagnostic tool for single-phase PumpSavers. Batteries not included.	0.5 lb
TR-2607	Remote Motor-Monitoring Device (for TR-2603, TR-2604, and TR-2604). Requires communications module, TR-2608	0.5 lb
TR-2608	Communications Module (for TR-2607)	—

* in NEMA 3R case with lens.