

## Pump Power Monitor™ Model KW941

The Model KW941 monitors and displays actual power to the pump offering simultaneous protection from underload and overload operating conditions.

The KW941 helps to eliminate costly downtime and expensive pump repairs caused by:

- Dry running
- Pump overloads
- Cavitation
- Blocked lines
- Closed suction or discharge valves
- Excessive wear or rubbing

By sensing power and not just amperes, linear measurements are provided with the sensitivity to detect improper operation while eliminating unwanted nuisance trips.

### Broad application range

- Works on all pumps having steady (non-pulsating) loads: centrifugal; gear; turbine; ANSI; API; ISO; paper stock; sealed; mag drive; can motor; self-priming

### Easy installation

- Simple wiring procedure to motor starter
- Easily installed on existing pump installations

### Easy setup & calibration

- Settings controlled from front panel push buttons; no internal adjustments, dip switches or potentiometers
- Large digital display for easy viewing and accurate settings
- One step calibration can be performed without operating pump. No need to run pump at off-operating conditions to calibrate power monitor
- Settings can be viewed or adjusted during normal pump operation

### Premium features for reliable protection

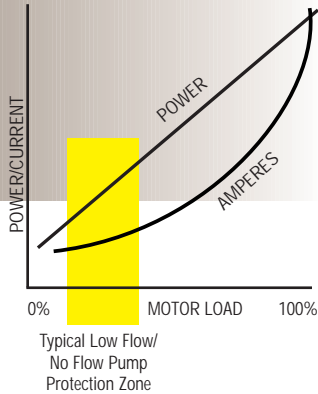
- Push buttons display horsepower or kilowatts; automatic conversion when switching displays
- Adjustable low power and high power set points protect pump from underload and overload operation. Alarms can be tripped or pumps shut down before damage occurs
- Adjustable trip delay timers filter out nuisance trips caused by temporary power fluctuations
- Adjustable start up delay timer is particularly useful in unloading applications
- Optional 4 to 20 milliamp analog output. Facilitates remote displays, operator interface and output to PLC or DCS
- Two form C relay outputs for low and high power trips. Outputs can be used to shut down pump or trip alarms
- Automatic, manual and remote reset options for versatile operation



The KW941 Power Monitor is easy to install on new or existing pump installations. All connections and controls are located at motor starter electrical enclosure as shown above. Costly instrumentation wiring to the pump is eliminated.



**Pump Power Monitor™  
Model KW941  
Specifications**



At low loads, motor amperes do not change much with small changes in pump loads. Small signal changes can cause false trips or allow equipment to operate below the desired minimum operating point.

At low loads, power is linear. Small changes in pump operating loads provide greater signal changes. The KW941 is more sensitive to pump load changes and offers easier setup, more reliable equipment protection and no false trips.

**Display/Control Module:**

**Full Scale Range:** Adjustable 0.7 to 112 kW (1 to 150 HP). To 447 kW (600 HP) using current transformer (not included).

**Display:** 3 digit, 15 mm (0.6 in) high, 7 segment, red LED digital display. Red LED indicators for display mode, trip delays and trip points.

**Enclosure:** Polycarbonate, NEMA 4X / IP66 with see-through cover. Four 4 mm (#8) mounting holes. Enclosure can be drilled, sawed or punched on bottom or back for wiring access.

**Power:** 110 VAC (220/240 VAC optional), 50/60 Hz @ 0.125 amperes. Power is obtained from a control voltage transformer (not supplied) connected between two phases of the three-phase motor power source.

**Operating Temperature:** -40° to 70°C (-40° to 158°F).

**Adjustable Trip Set Points:**

**High Power:** When power exceeds the trip point setting, the trip delay is activated. When the trip delay has timed out, an alarm contact relay will trip.

**Low Power:** When power falls below the trip point setting, the trip delay is activated. When the trip delay has timed out, an alarm contact relay will trip.

**Adjustable Trip Delay Timers:**

Delay timers eliminate trips during motor starting and false trips due to temporary power fluctuations. Individual timers are adjustable from 0-to-999 seconds:

- Start-up Delay
- Lower Power Trip Delay
- High Power Trip Delay

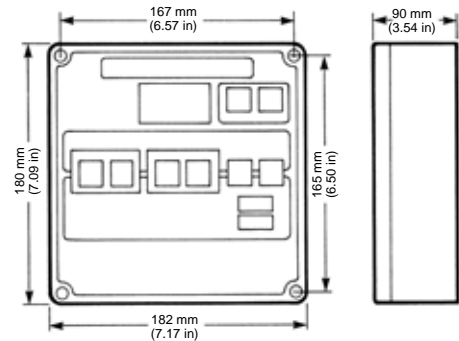
**Alarm Relay Contacts:** Form C relays for low power and high power trip points.

- Ratings: 5 amps @ 125 VAC
- 3 amps @ 277 VAC
- 5 amps @ 30 VDC

**Analog Output (Optional):** 4 to 20 milliamp output proportional to full scale setting. Maximum loop load resistance – 600 ohms.

**Trip Reset Options:**

- Automatic: Automatic trip reset may be selected on the display/control module.
- Manual: Trips may be reset manually on the display/control module.
- Remote: Trips may be reset remotely using a momentary external mechanical or solid state switch.



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