

## ENGINEER'S SPECIFICATION

## EPG Series L930PT PumpMaster™ Controller 1Ø CONTROL PANEL

Furnish one EPG Companies Inc., UL listed 508A/698A, Series L930PT controller to operate a pump motor and auxiliary equipment in manual or automatic mode. The control panel enclosure shall be NEMA type \_\_\_\_\_.

The enclosure shall be equipped with a window in the outer door, an inner door, a stainless steel drip shield, and a tamper resistant latch. The NEMA 4 (standard) enclosure is finished with polyester urethane paint. The NEMA 4X (optional) enclosure can be either stainless steel or non-metallic.

The control system will operate from a \_\_\_\_\_ Volt, 60 Hertz, single phase power supply. Pump control components will be sized to operate a pump motor of specified horsepower.

The control panel shall include the following as standard features:

- \* Main Disconnect Switch: The main disconnect switch shall be \_\_\_\_\_ Amp rated and will prevent opening of the control panel while the power is on, and includes \_\_\_\_\_ Volt, \_\_\_\_\_ Amp dual element fuses.
- \* "Hand-Off-Auto" Selector Switch: Allows manual or automatic operation of the pump motor. The selector switch shall be a heavy duty, oil tight, NEMA 4 rated switch mounted on the inner door. The hand position shall be momentary with a spring return.
- \* Motor Contactor: The motor contactor shall be sized to the pump motor horsepower.
- \* Motor Start Winding Control with Start Capacitor and Start Winding Relay: A capacitor is used to start the motor, and a relay is used to remove the start winding from the circuit when the motor reaches operating speed.
- \* Control Transformer: A transformer with fused primary and secondary shall isolate the control circuit from the power circuit and provide easier and safer field wiring of accessories. It shall lower incoming voltage to 120 Volts.
- \* Run Light: Indicates energization of motor circuit. It shall be heavy duty, oil tight, NEMA 4 rated and shall have an LED lamp with 100,000 hour life. The light shall be mounted on the inner door and will be green in color.
- \* LevelMaster™ Level Control: The LevelMaster level control meter shall be mounted on the inner door. The meter shall have a digital readout and the capability to monitor and maintain liquid levels as well as output high and low level alarms. Level control shall be accurate to within 0.1 inch.
- \* Level Simulator: The level simulator shall be mounted on the inner door. The level simulator is a built-in test circuit designed to simulate a 4-20 mA load to assist in level meter setup and troubleshooting.
- \* Intrinsically Safe Barrier: The level sensor circuit shall be by protected by an intrinsically safe barrier.
- \* Heater with Adjustable Thermostat: A heater with adjustable thermostat shall promote even distribution of heat and elimination of hot spots and condensation. It shall also maintain the minimum temperature required for the operation of the LevelMaster level control meter. The heater element shall be mounted in space between the sub-panel and the back of the enclosure and provide a minimum of \_\_\_\_\_ inches square of heating area.
- \* Lightning Arrestor: Shall be grounded, metal-to-metal, to water strata. When properly grounded, the lightning arrestor will protect electrical equipment against lightning induced surges.
- \* Terminal Strip: A labeled and numbered terminal strip provides easy connection of external components.
- \* Corrosion Inhibitor Emitter: Inclusion of an industrial corrosion inhibitor emitter shall protect internal components of control panel from corrosion for up to one year and shall be replaceable.
- \* Options are available to meet specific needs.

## SYSTEM LOGIC AND FUNCTION

The controller is designed to start and stop a pump using the LevelMaster level control meter with a submersible pressure transmitter. The pump starts at the pump start level set point and continues to run until the liquid level decreases to the pump stop level set point as programmed in the LevelMaster level control meter. If the liquid level rises to the high level alarm set point, a high level alarm will be annunciated. If the liquid level decreases to the low level alarm set point, a low level alarm will be annunciated. The pressure transmitter level sensor shall have a range of 0 \_\_\_\_\_ feet with a 4-20 mA output signal.