

## ENGINEER'S SPECIFICATION

## EPG Series L925PTG PumpMaster™ Controller 3Ø CONTROL PANEL

Furnish one EPG Companies Inc., UL listed 508A/698A, Series L925PTG controller to operate 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, generator supplied three phase power supply. Pump control components will be sized to operate 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 control panel while power is on, and includes \_\_\_\_\_ Volt, \_\_\_\_\_ Amp dual element fuses.
- \* Generator Plug Receptacle (optional): A generator plug receptacle with cover shall be provided for easy connection to the generator. It shall be NEMA 4 rated mounted on the side of the enclosure.
- \* "Hand-Off-Auto" Selector Switch: Allows manual or automatic operation. 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 Starter: The motor starter shall be sized to the pump motor horsepower, and shall be equipped with built in single phasing protection and ambient compensated, quick trip adjustable thermal overloads.
- \* 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.
- \* Motor Overload Light: Indicates motor not running due to overload condition. 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 red in color.
- \* Power Monitor: Shall monitor over and under voltage. It will shut off the pump motor to prevent damage that may occur as a result of fluctuations in power supply voltage beyond acceptable limits.
- \* Control Transformer: Transformer with fused primary and secondary shall isolate control circuit from power circuit and provide easier and safer field wiring of accessories. It shall lower incoming voltage to 120 Volts.
- \* 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 a high level alarm. It shall also provide a high-high level alarm fail-safe feature that shuts off the pump motor. The high-high alarm may indicate level sensor failure or a problem with the pump. 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 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. 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.
- \* Terminal Strip: 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 system is designed to operate a pump when connected to a 230 V, three phase generator. A power monitor will monitor over and under voltage. It will shut off the pump to prevent damage that may occur as a result of fluctuations in power supply voltage beyond acceptable limits. The controller will 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 set point, a high level will be annunciated. If the liquid level rises to the high-high level fail-safe set point, the pump motor will shut off. The pressure transmitter level sensor shall have a range of 0 \_\_\_\_\_ feet with a 4-20 mA output signal.