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ENGINEER'S
SPECIFICATION

EPG Series L950PT
PumpMaster™ Controller
Duplex 3Ø Control Panel

Furnish one EPG Companies Inc., UL listed 508A/698A, Series L950PT controller to alternate the operation of two pump motors 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, three phase power supply. Pump control components will be sized to operate pump motors 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.
"Hand-Off-Auto" Selector Switches: Allow manual or automatic operation. The selector switches shall be heavy duty, oil tight, NEMA 4 rated switches mounted on the inner door. The hand position shall be momentary with a spring return.
Motor Starters: The motor starters 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: Transformer with fused primary shall isolate control circuit from power circuit and provide easier and safer field wiring of accessories. It shall lower incoming voltage to 120 Volts.
Run Lights: Indicate energization of motor circuit. They shall be heavy duty, oil tight, NEMA 4 rated and shall have LED lamps with 100,000 hour life. The lights shall be mounted on the inner door and will be green in color.
Motor Overload Lights: Indicate motor not running due to overload condition. They shall be heavy duty, oil tight, NEMA 4 rated and shall have LED lamps with 100,000 hour life. The lights shall be mounted on the inner door and will be red in color.
Electronic Alternator: The electronic alternator shall include lead/lag pump operation to equalize wear on pump motors by alternating successive starts. The lag pump shall start after the lead pump starts if the liquid level continues to rise above the pump start level set point and both pumps will continue to run until the liquid level decreases to the pump stop level set point as sensed by the pressure transmitter.
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 pumping operations as well as output a high level alarm. 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 Barriers: The level sensor circuits shall be protected by intrinsically safe barriers.
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 100 inches square of heating area.

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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 controller is designed to operate two pumps in lead/lag alternating mode. The electric alternator provides equalized wear and usage of each pump by alternating successive starts. The lead 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. The lag pump will start after the lead pump starts if the liquid level continues to rise above the pump start level set point and both pumps will continue to run until the liquid level decreases to the pump stop level set point as sensed by the pressure transmitter. If the liquid level rises to the high level alarm set point, a high level alarm will be annunciated. If a motor trips while running due to an overload condition, the other pump will start automatically. The pressure transmitter level sensor shall have a range of 0 to ____ feet with a 4-20 mA output signal.