ENGINEER'S SPECIFICATION

EPG Series L850F PumpMaster™ Controller

1Ø CONTROL PANEL

Furnish one EPG Companies Inc., UL listed 508A/698A, Series L850F 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, single 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 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.
* Alarm Light: Indicates high level. 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.
* 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 floats.
* Intrinsically Safe Dual Level Relays (IS DLRs): The level sensing circuits shall be by protected by intrinsically safe dual level relays.
* 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.

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SYSTEM LOGIC AND FUNCTION

The controller is designed to operate two pumps in lead/lag alternating mode. The lead pump starts upon change in liquid level as sensed by a start level float sensor. The pump will continue to run until the level reaches the stop level float sensor. The lag pump will start if the liquid level continues to rise above the start level float to a second start level float and both will continue to run until the liquid level decreases to the stop level float sensor. If the liquid level rises to the high level float, a high level condition will be annunciated. If a motor trips while running due to an overload condition, the other pump will start automatically. The electric alternator provides equalized wear and usage of each pump by alternating successive starts.

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