

ENGINEER'S SPECIFICATION

EPG WSDPT SurePump™ Wheeled Sump Drainer for side slope riser installations with built-in level sensor

Furnish 2 centrifugal submersible EPG WSDPT SurePump Wheeled Sump Drainer(s) (U.S. patented), Model WSDPT 7 - 2 with 2 impeller stages. Each unit shall be suitable for side slope riser installation. Each unit shall be equipped with a $\frac{3}{4}$ HP, submersible electric motor for operation on 230 Volts, 1 phase, 60 Hertz service with 100 feet of power cable. Each SurePump Wheeled Sump Drainer shall have a 1 ½ inch MNPT threaded discharge nozzle and be capable of delivering 35 GPM at 43 feet of TDH. Each SurePump will be fitted with 100 feet of stainless steel lifting cable of sufficient strength to permit removal of the unit.

DESIGN

Each SurePump Wheeled Sump Drainer shall be capable of pumping contaminated ground water for spill recovery, leachate, and condensate removal. A removable level transmitter and mount (patented) shall be installed at the center bottom of the Sump Drainer for liquid level control. The stainless steel Sump Drainer shall permit the unit to "pump down" to within 8 inches of the sump bottom without any loss of performance or damage to the pump. External "priming" shall not be required nor allowed. The Sump Drainer shall be sealed with fluid inlet only at bottom and be equipped with a vent valve to assist with the evacuation of air from the Sump Drainer.

MATERIALS

Major components shall be made of 304 stainless steel, seal rings are to be made of E-Glide™, and bearings are to be E-Glide. In addition, all fasteners shall be 304 stainless steel. Teflon or rubber bearings and seal rings are not allowed.

CHECK VALVE

Each unit shall include a built-in check valve with non-metallic seat, and housing and disc of 304 stainless steel.

SHAFT

The shaft shall be of 304 stainless steel and rotate on E-Glide bearings that are fluid lubricated.

DIFFUSER CHAMBER

The diffuser chambers for each impeller shall be 304 stainless steel and fitted with E-Glide impeller seal rings.

IMPELLERS

The impeller(s) shall be closed and consist of 304 stainless steel.

SUMP DRAINER

The sump drainer shall be fabricated from 304 stainless steel with sealed top, sealed around motor lead and level sensor cable. Shall have fluid entrance only below the bottom of the motor to promote cooling. Shall have multiple wheels on each end. Shall have the level sensor mounted at the bottom central axis. The use of HDPE, PVC, or similar plastics is not allowed.

MOTOR

The motor shall be a submersible, hermetically sealed motor. The motor shall be designed for continuous duty, capable of sustaining up to 100 starts per day. The motor shall be connected to the pump via a motor adaptor and coupling in 304 stainless steel. Single phase motors in ½ HP to 1 HP only shall have thermal protection in the motor windings to protect the windings from overload. The unit will restart automatically after the motor cools down. Larger horsepower single phase motors and three phase motors shall have thermal protection located in the control panel that is manually reset.

MOTOR LEAD WIRE

The lead wire shall be no-splice with EPG's "CP" waterproof and chemically resistant jacket over 600 Volt insulation and be of the length specified. Wire shall be sized for amp load of the motor.

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EPG Series L925PT PumpMaster™ Controller 1Ø CONTROL PANEL

Furnish one EPG Companies Inc., UL listed 508A/698A, Series L925PT controller to operate a pump motor and auxiliary equipment in manual or automatic mode. The control panel enclosure shall be NEMA type 4.

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 230 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 60 Amp rated and will prevent opening of the control panel while the power is on, and includes 230 Volt, 10 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 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 meter setup and troubleshooting.
- * Intrinsically Safe Barrier: The level sensor circuit shall be 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 100 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 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 to 11 feet with a 4-20 mA output signal.