

M300 Fuel Filtration / Polishing System

A. Manufacturers

1. Earthsafe Systems M300
2. Engineer approved equal

B. General: Provide a packaged pump and filter set to provide filtration of stored fuel on a timed cycle. The pump and filter set shall be integrated with a control panel to provide motor control, system status, and alarm indication.

C. Design Criteria

1. Transfer Pumps: The transfer pump shall be rated at a minimum of 10 GPM or the design flow as indicated on the drawings. Pump motors shall be as required to provide the design flow. Motors shall be TEFC.
2. Filter Housing: The filter housing shall be welded carbon steel construction rated at a minimum 150 PSI. The unit shall have minimum 1 inch inlets and outlets, and minimum ¼ inch openings for top air vent, pressure gauge connections, bottom water drain and water sensing. The interior of the housing shall be epoxy coated and the exterior shall have a prime and finish cost of industrial enamel.
3. Filters: The filters shall provide two stage separation and coalescing of water and dirt from the diesel fuel. The stage 1 filter shall be rated at 25 microns, and the stage 2 coalescing filter shall be rated at 10 micron. The filters shall have viton gaskets and corrosion protection metal components. The filters shall be rated at up to 75 PSI differential pressure.
4. Containment Base and Frame: Pumps shall be mounted on a welded steel liquid tight containment basin. The base shall include a welded steel support for piping and accessories.
5. Pump Motor Starters: Each pump shall be equipped with an individual motor starter disconnect panel. The panel shall include an HOA switch for operator use. The panel shall include output relays for pump overload trip and Not-In-Auto signals. In auto mode the pump shall be controlled by the filter control module.
1. Control Module: The pump set shall be controlled by a microprocessor based control module. The unit shall be programmed to activate the pump on a time cycle to provide one complete filtration cycles each week. The unit shall monitor a differential pressure switch across the filter and shall provide an alarm at a 20 PSI differential pressure. The unit shall monitor a high water level switch and indicate a high water alarm. Indicator lights shall be provided for power on, pump on, and pressure / water alarms.

D. Accessory Equipment

- 1 Ball Valves: Brass ball valves at unit inlet, outlet and to isolate the pump and filter.
- 2 Check Valves: Brass swing check valves at the discharge of the pump.
- 3 Pressure Relief Valve: Brass relief valve set at 100 PSI at pump discharge.
- 4 Strainers: Brass basket strainers at the inlet for the pump.
- 5 Flow Switch: Differential pressure switch across filter.
- 6 Water Switch: High water level switch in the filter housing.
1. Differential Pressure Gauge: Provide filter DP gauge.
2. Leak Sensor: Liquid sensor for containment.
3. Enclosure: Where indicated on the drawings the pump set shall be enclosed within a welded steel weatherproof enclosure.
4. Optional Heater: Where indicated provide unit heater, and thermostat to provide freeze protection for the filter system.
5. Optional Multi-Tank Selection System: Where indicated provide a multi-tank selection system as described above to allow the filter unit to serve multiple tanks.

