

earth^o safe

Fuel Systems for Critical Power

Earthsafe M300

Filtration / Polisher
with Integral Network Controller

General Description

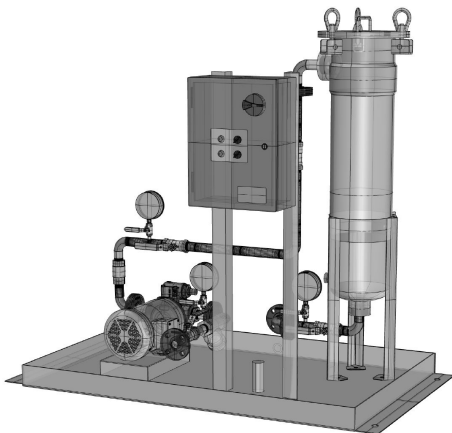
The Filtration / Polisher is designed to circulate and clean fuel stored diesel fuel at critical facilities. Filtration / Polishing has become an important aspect of emergency power reliability: (a) critical facilities store increasing amounts of fuel onsite to assure continuity of operation and this fuel has low turnover in operation, (b) as diesel fuel ages, particulates form which can increase the wear on generator engine parts, (c) fuel storage tanks accumulate water through vapor condensation and this water can encourage bacterial growth, and (d) newer diesel engines with improved emissions technology require higher purity fuel to prolong engine life.

The M300 Filtration / Polisher has an innovative compact design has a minimal footprint for Filtration / Polishing of tanks from 500 to 50,000 gallon (2000-200,000 L) capacity

The mechanical design is based on Viking pumps and Racor filters and is complete with strainers, check valves, ball, valves, pressure / vacuum gauges, relief valves. The unit is mounted on an integral containment with leak detection monitoring.

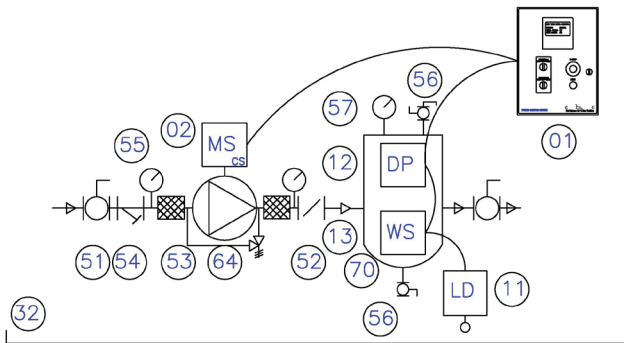
The Filtration / Polisher includes a motor starter panel, or optional VFD drive, with disconnect switch.

The Controller provides Filtration / Polisher operation and monitoring with HOA switches and an emergency stop. The OmniPlex screen provides a summary of operating parameters and allows selection of special operating modes. The Controller networks with other system controllers using Ethernet, and directly to Building Management Systems with an option of BACnet, Modbus, Metasys N2, or Lon protocols.



M300 Filtration / Polisher

Dimensions	30" L x 18" W x 60" H (760x460x1520)
Flow Capacity (GPM)	25 - 150 GPM (100-600 LPM)
Pump Type	Viking Iron Body Pump
Motor	Close Coupled TEFC Motor 120-240 VAC Single Phase, or 480-240 VAC Three Phase
Filter Unit	Racor RVFS
Accessories	SS Flex Connectors Inlet Strainers Outlet Check Valve Leak Sensor Inlet Suction Gauges Outlet Pressure Gauges Motor Disconnect Switches
Construction	Welded Steel Construction Containment Basin (7 GAL) (30L) Industrial Enamel Finish Color RAL 7035 (Light Gray) Option: Weatherproof Enclosure
Inlet / Outlet Connections	1.00" (25) MNPT (5-30 GPM) (20-120 LPM) Optional: Plain End for Weld
Controls	C8Module
Motor Disconnect / Drives	C2 Single Standard Service C2 SingleVFD Drive
Optional Equipment	01 Weatherproof Enclosure 02 Less OmniPlex Controller CentraPlex System Control) 03 X-Proof Motors and Disconnects 04 Add Electronic Meter 05 Dual Tank Service 06 Multi-Tank Service



Filter – Pump Set		
Item	Qty	Description
1	1	OmniPlex Control Panel
2	1	Pump Control Panel
12	1	Filter DP Sensor
13	1	Filter Water Sensor
33	1	Pump / Filter Containment
51	2	Ball Valve
52	1	Check Valve
53	2	Flex Connector
54	1	Strainer
55	2	Pressure / Vacuum Gauge
56	2	Valve – Filter Drain-Vent
57	1	Gauge - Filter
64	1	Pump - Filtration
70	1	Filter Vessel / Cartridges

Filter / Polishing Unit

The control panel operates the pump on a programmable timed cycle to circulate fuel from the storage tank through the filter and returning to the storage tank. The unit can be operated with a tank selection system to provide filtration for multiple tank units.

The programmable timer allows setting of the start time / date, the ON cycle time, and the OFF cycle time for the AUTO mode. The programmable timer allows setting of the cycle duration for the MAN mode, to start the pump upon manual initiation and stop it after the defined cycle.

The control panel monitors the filter unit for high differential pressure indicating a need for filter change, and water accumulation. The leak sensor is also monitored and disables the unit from operation in MAN or AUTO mode.

The display indicates: (a) normal or alarm condition, (b) cycle active status, (c) time to start / stop cycle, (d) alarm indication for differential pressure, water accumulation, or leak, (e) pump status. A common alarm output relay and a serial data interface are provided for BMS integration.

Operating Modes:

The system is programmable for common operating modes:

- Continuous Operation
- Weekly Timed Start and Operating Duration
- Manual Start and Operating Duration
- Weekly Timed Start and Gallons to Process (with optional meter)
- Manual Start and Gallons to Process (with optional meter)

Selecting a Flow Rate:

Tank Size (Gallons) (Liters)	Turnover per Week with 5 GPM (20LPM) Continuous Run	Turnover Cycle Time (Hours)			
		5 GPM (20 LPM)	10 GPM (40 LPM)	15 GPM (60 LPM)	20 GPM (80 LPM)
5,000 (20000L)	10	16	8	6	4
10,000 (40000L)	5	33	16	12	8
20,000 (80000L)	2	66	33	24	16
30,000 (120000L)	1	100	50	38	25
40,000 (160000L)	1	128	64	48	32