

# earth safe

Fuel Systems for Critical Facilities

EMERGENCY POWER FUEL SYSTEMS

VERSION: ENGLISH—GLOBAL

## Earthsafe M500

Generator Day Tanks with Integral  
OmniPlex Network Controller

BACnet, Modbus, Metasys N2, or LON Communications



### General Description

**Safe Fuel Storage Inside Buildings.** Earthsafe day tanks safely store fuel for generator engine consumption within the building. Day tanks are designed with integral secondary containment. Fuel transfer equipment and controls are designed for safe and reliable re-filling.

**Reliable Refill Systems.** Day Tanks are designed and furnished with pre-assembled and tested fuel transfer equipment and controls. Inlet control valves, transfer pumps, level sensors, leak sensors, and other equipment are all monitored and controlled by the Earthsafe OmniPlex or CentraPlex control panels.

**Integrated Building Management Systems.** Earthsafe advanced controllers allow for the communication of vital day tank operating information to other building systems. These systems may include Building Automation Systems, generator controls, switchgear and other power controls, security and fire alarm systems.

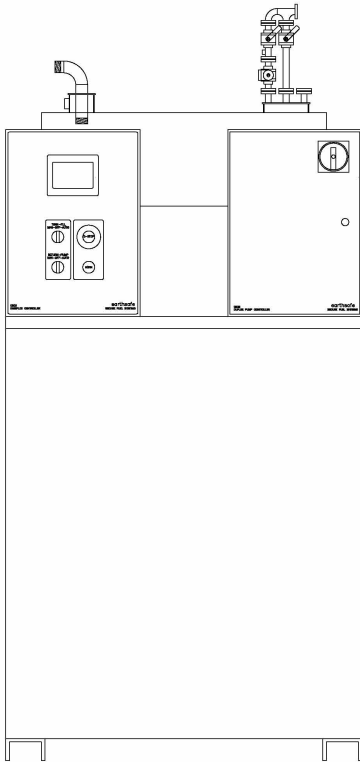
**Readily Adaptable for Special Operation.** Earthsafe day tanks can be readily adapted for special operation characteristics such as: dual inlet valves, monitored valve positions, high level / overflow pumping, emergency evacuation, auto-commissioning, fluid metering, high temperature control.

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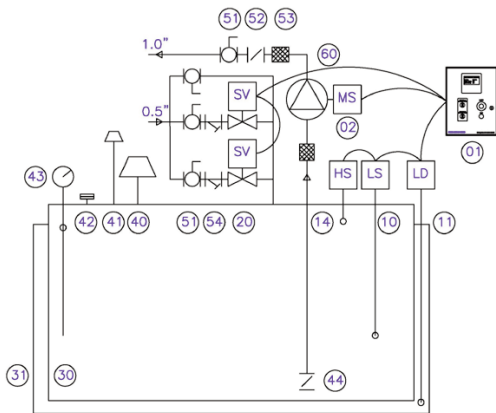
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**PP510 Generator Day Tank (Inlet Flow Valves)**  
**PP520 Generator Day Tank (Transfer Pumps)**  
**PP530 Generator Day Tank (Return Pumps)**

Dimensions (Capacity)	760 L x 460 W x 1500 H (200 L) 760 L x 760 W x 1500 H (400 L) 760 L x 1200 W x 1500 H (600 L) Capacities up to 1000 Gallon
Approval	BS 799, UL 142
Flow Control	<ul style="list-style-type: none"> <li>• Dual 12 mm Inlet Solenoid Valves for Remote Pump, or</li> <li>• Dual on-board Fuel Transfer Pumps (20 LPM)</li> </ul>
Level Control	5 Point Level Sensor: High • Fill Stop • Fill Start • Low • Critical Low
Optional Safety	<ul style="list-style-type: none"> <li>• Inlet NO Solenoid Valves</li> <li>• Vent High Level Switch</li> </ul>
Optional Return Pump	<ul style="list-style-type: none"> <li>• Single or Dual Pumps</li> <li>• Viking Close Coupled Pump</li> <li>• 40-60-80 LPM</li> <li>• IP55 Motor 1800 RPM</li> <li>• 110 / 230 VAC – 1PH or 415 VAC – 3 PH</li> </ul>
Accessories	Inlet Solenoid Valves Inlet Manual and Bypass Valves Inlet Strainers Outlet (to engine) Manual Valves Leak Sensor Direct Read Gauge Inspection Port Std and Emer Vents
Construction	Welded Steel Construction Containment Basin 150% Industrial Enamel Finish Color RAL 7035 (Light Gray) Option: Weatherproof Enclosure
Controls	C850 OmniPlex Module



### Day Tank with Dual Inlet Valves

The control panel monitors the tank level sensors, which are approximately 90% High Level, 85% Fill Stop, 75% Fill Start, 50% Low Level, and 25% Critical Low level. Upon receipt of the Fill Start signal, the control panel closes an output relay to send a pump on / fuel request signal to the remote fuel transfer pump. Simultaneously the lead inlet solenoid valve is energized to open. Upon receipt of the Fill Stop signal, the pump on / fuel request signal ceases, and the inlet solenoid valve de-energizes to close. At Low Level the control panel energizes the lag inlet solenoid valve. The inlet solenoid valves automatically alternate upon starts.

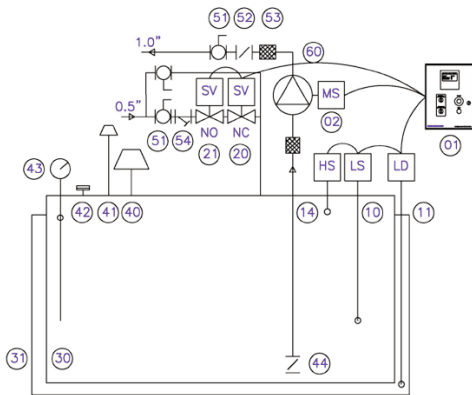
High, Low, and Critical Low Level signals activate an alarm signal and message. The High Level alarm disables the operation of the system in the MAN mode. The system monitors independent Critical High Level, and Tank Leak sensors. Activation of these sensors disables tank fill operation in either MAN or AUTO mode.

The display indicates: (a) normal or alarm condition, (b) fill active status, (c) alarm indication for critical high, high, low, critical low, and leak alarms, (d) optional % full or gallons. A common alarm output relay and a serial data interface are provided for BMS integration.

Optional Return Flow Pump: In the AUTO mode the pump is activated by the high level signal. The pump operates until the high level signal ceases, plus a 60 second stop delay to prevent short cycling.

### Day Tank – Dual Inlet Valves

Item	Qty	Description
1	1	OmniPlex Control Panel
10	1	Tank Level Sensor
11	1	Leak Sensor
14	1	High Level Sensor
20	2	Solenoid Valve NC
30	1	Day Tank UL 142
31	1	Tank Containment
40	1	Emergency Vent
41	1	Standard Vent
42	1	Inspection Port
43	1	Direct Read Gauge
51	3	Ball Valve
54	2	Strainer
		Add for Return Flow Pump Option
2	1	Pump Control Panel
44	1	Foot Valve
51	1	Ball Valve
52	1	Check Valve
53	2	Flex Connector
60	1	Pump – Return Flow



### Day Tank with High Stop Valve

The control panel monitors the tank level sensors, which are approximately 90% High Level, 85% Fill Stop, 75% Fill Start, 50% Low Level, and 25% Critical Low level. Upon receipt of the Fill Start signal, the control panel closes an output relay to send a pump on / fuel request signal to the remote fuel transfer pump. Simultaneously the inlet solenoid valve is energized to open. Upon receipt of the Fill Stop signal, the pump on / fuel request signal ceases, and the inlet solenoid valve de-energizes to close.

High, Low, and Critical Low Level signals activate and alarm signal and message. The High Level alarm disables the operation of the system in the MAN mode, and energizes the Normally Open Fill solenoid valve to close. The system monitors independent Critical High Level, and Tank Leak sensors. Activation of these sensors disable to tank fill operation in either MAN or AUTO mode, and energizes the Normally Open Fill solenoid valve to close.

The display indicates: (a) normal or alarm condition, (b) fill active status, (c) alarm indication for critical high, high, low, critical low, and leak alarms, (d) optional % full or gallons. A common alarm output relay and a serial data interface are provided for BMS integration.

Optional Return Flow Pump: In the AUTO mode the pump is activated by the high level signal. The pump operates until the high level signal ceases, plus a 60 second stop delay to prevent short cycling.

### Day Tank – Inlet Valve with High Stop

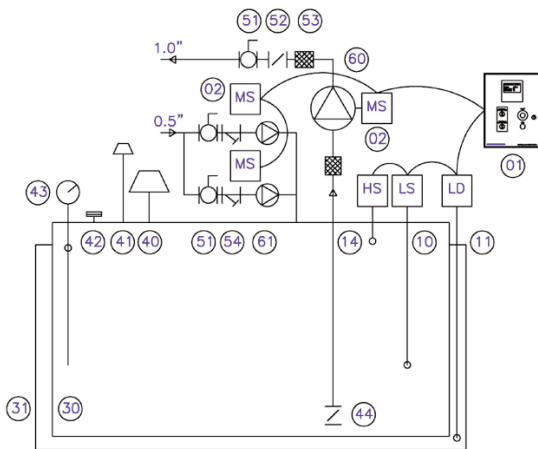
Item	Qty	Description
1	1	OmniPlex Control Panel
10	1	Tank Level Sensor
11	1	Leak Sensor
14	1	High Level Sensor
20	1	Solenoid Valve NC
21	1	Solenoid Valve NO
30	1	Day Tank UL 142
31	1	Tank Containment
40	1	Emergency Vent
41	1	Standard Vent
42	1	Inspection Port
43	1	Direct Read Gauge
51	2	Ball Valve
54	2	Strainer
		Add for Return Flow Pump Option
2	1	Pump Control Panel
44	1	Foot Valve
51	1	Ball Valve
52	1	Check Valve
53	2	Flex Connector
60	1	Pump – Return Flow

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## Day Tank with Dual Fuel Supply Pumps

The control panel monitors the tank level sensors, which are approximately 90% High Level, 85% Fill Stop, 75% Fill Start, 50% Low Level, and 25% Critical Low level. Upon receipt of the Fill Start signal, the control panel closes an output relay to activate the lead fuel transfer pump. Upon receipt of the Fill Stop signal, the pump on / fuel request signal ceases, and the fuel transfer pump stops. At Low Level the control panel energizes the lag fuel transfer pump. The fuel transfer pumps automatically alternate upon starts.

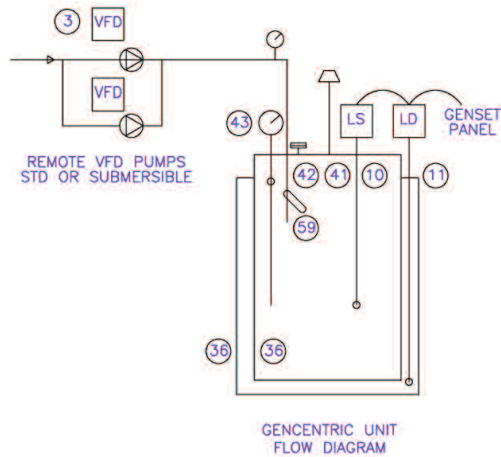
High, Low, and Critical Low Level signals activate an alarm signal and message. The High Level alarm disables the operation of the system in the MAN mode. The system monitors independent Critical High Level, and Tank Leak sensors. Activation of these sensors disables tank fill operation in either MAN or AUTO mode.

The display indicates: (a) normal or alarm condition, (b) fill active status, (c) alarm indication for critical high, high, low, critical low, and leak alarms, (d) optional % full or gallons, (e) pump status. A common alarm output relay and a serial data interface are provided for BMS integration.

Optional Return Flow Pump: In the AUTO mode the pump is activated by the high level signal. The pump operates until the high level signal ceases, plus a 60 second stop delay to prevent short cycling.

## Day Tank – Dual Transfer Pumps

Item	Qty	Description
1	1	OmniPlex Control Panel
2	1	Pump Control Panel
10	1	Tank Level Sensor
11	1	Leak Sensor
14	1	High Level Sensor
30	1	Day Tank UL 142
31	1	Tank Containment
40	1	Emergency Vent
41	1	Standard Vent
42	1	Inspection Port
43	1	Direct Read Gauge
51	2	Ball Valve
54	2	Strainer
61	1	Pump – Day Tank Supply
		Add for Return Flow Pump Option
2	1	Pump Control Panel
44	1	Foot Valve
51	1	Ball Valve
52	1	Check Valve
53	2	Flex Connector
60	1	Pump – Return Flow



GenCentric Unit		
Item	Qty	Description
3	1	VFD Pump Drive
10	1	Tank Level Sensor
11	1	Leak Sensor
36	1	GenCentric Unit
41	1	Standard Vent
42	1	Inspection Port
43	1	Direct Read Gauge
59	1	GenCentric Flaot Valve

### GenCentric Day Tank

The GenCentric unit is fed fuel from a continuously maintained low pressure fuel header supplied by VFD pumps. The precision mechanical float valve within the unit allows re-fill of the tank as the fuel is consumed. A high level condition causes the vent float valve to close, pushing excess fuel through the return flow pipe and back to the storage tank.

The level switch for Critical High, High, Low, and Critical Low Alarms plus the leak switch are integrated directly to the generator control panel.