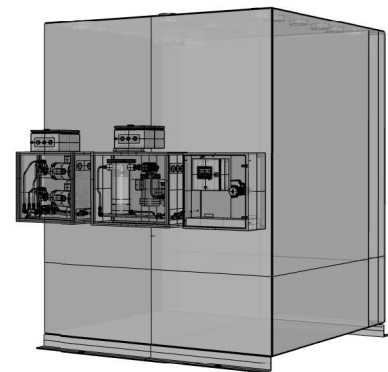


# earth<sup>o</sup> safe

Fuel Systems for Critical Power

## Integrated Tank System M600

Fuel Storage, Filtration, and Transfer System  
Integrated Monitoring and Control



### General Description

The M600 Integrated Tank System simplifies the specification, purchase, installation and operation of fuel storage systems. The bulk storage tank is factory equipped with tank accessory equipment, transfer pumps, filtration – polishing equipment, and integrated monitoring and controls.

Performance Characteristics include:

- Double Wall Bulk Fuel Tanks UL 142 or UL2085 Fire Rated
- Transfer pumps with regulated flow (5-30 GPM) and Pressure (10-150 PSI)
- Duplex Pumps for Generators with Optional Duplex Pumps for Boilers
- On-Board Filtration Polishing Equipment
- Remote Fill Connection with High Level Sensors and Shutoff valves
- Level and Leak Sensors
- Single Point Power Connection to Unit
- C9 Control Module for Local Monitoring and Single-point of BMS integration

The integrated tank system is used for a wide variety of applications:

**Fuel Tanks in Buildings.** The M600 Integrated Tank System is equipped with the low flow and high pressure pumps typical in multi-story facilities. The integral mounting of equipment minimizes the fuel system footprint.

**Out Side Fuel Tanks Adjacent to Buildings and Generators.** The M600 Unit includes a weather-proof enclosure for all tank mounted equipment for exterior applications.

<b>M600 Integrated Tank System</b>						
Dimensions and Weights UL 142 Double Wall	<b>Tank</b>	<b>W</b>	<b>L</b>	<b>H</b>	<b>Empty</b>	<b>Operate</b>
	<b>GAL</b>	<b>IN</b>	<b>IN</b>	<b>IN</b>	<b>LBS</b>	<b>LBS</b>
	250	42	48	48	900	3100
	500	42	82	48	1500	5600
	750	42	96	60	2000	8000
	1000	54	96	60	2500	10,300
	1500	66	102	66	3500	15,000
	2000	66	120	72	5000	20,300
	2500	66	146	72	6000	25,000
	3000	78	146	72	7000	29,800
	4000	90	166	72	8600	38,900
5000	90	208	72	10000	47,800	
Dimensions and Weights UL 2085 Fire Rated	<b>Tank</b>	<b>W</b>	<b>L</b>	<b>H</b>	<b>Empty</b>	<b>Operate</b>
	<b>GAL</b>	<b>IN</b>	<b>IN</b>	<b>IN</b>	<b>LBS</b>	<b>LBS</b>
	250	48	54	54	3000	5200
	500	48	88	54	5000	9100
	750	48	102	66	6000	12,000
	1000	60	102	66	6500	14,300
	1500	72	108	72	7000	18,600
	2000	72	126	80	8000	27,800
	2500	72	152	80	9000	28,000
	3000	84	152	80	12,000	34,800
	4000	96	172	80	14,000	44,300
5000	96	214	80	16,000	53,800	
Equipment Enclosure	Welded Steel Construction 15 Gallon Secondary Containment Enclosure with Hinged Lockable Cover					
Tank Accessories	Standard Vent Cap Emergency Vent Primary Emergency Vent Secondary Inspection Port and Cap Direct Reading Gauge					
Fill System	Removable for Remote Mounting Stainless Steel Containment Enclosure (24x24x18) Hose Adapter Ball valve Check Valve Strainer Screen High Level Alarm Annunciator Actuated Ball Valve for Tank High Level Protection					
Instrumentation and Control	C9 Master Control Module Tank Level Transmitter Tank High Level Sensor Tank Interstitial Leak Sensor Equipment Enclosure Leak Sensor					
Continued on next page						

**M600 Integrated Tank System, continued**

Power	<p>Single or Dual Power Source 208 VAC – 1 PH or 240 / 480 VAC – 3 PH</p> <p>PowerPlex Power Controller Auto Switch for Dual Power Control Transformer and Circuit Breakers Motor Starters with Disconnect and OL Protection</p>
Fuel Transfer Duplex Pump	<p>Optional Second Duplex Pump Set for Boilers Flow Rate 5 – 10 – 15 – 20 – 30 GPM Pressure Rating 150 PSI Viking Positive Displacement Iron Body Pumps TEFC Motors Close Coupled 1" MNPT Outlet Connection</p> <p>Pump Accessories: Inlet and Outlet Gauges, Inlet check valves, outlet ball valves, integral pressure bypass / relief valve</p>
Filtration Polisher	<p>Particulate and Coalescing Filters Micron Rating Options 25 – 10 – 5 – 1 Viking Low Speed Pump and Accessories Differential Pressure Gauge and Sensor Water Sensor and Drain Valve</p>

Ordering Information

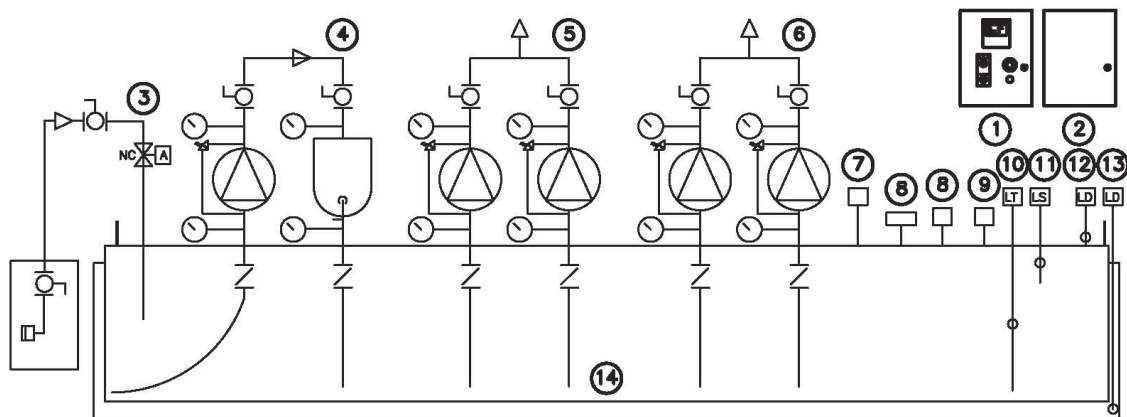
**M610.MM.XX.YY**  
Integrated Tank UL 142 DW

**M620.MM.XX .YY**  
Integrated Tank UL 2085 Fire Rated

MM=0250	250 GAL
MM=0500	500 GAL
MM=0750	750 GAL
MM=1000	1000 GAL
MM=1500	1500 GAL
MM=2000	2000 GAL
MM=2500	2500 GAL
MM=3000	3000 GAL
MM=4000	4000 GAL
MM=5000	5000 GAL

XX=05	5 GPM Pumps
XX=10	10 GPM Pumps
XX=15	15 GPM Pumps
XX=20	20 GPM Pumps
XX=30	30 GPM Pumps

YY=21	208 VAC – 1 PH
YY=23	240 VAC – 3 PH
YY=43	480 VAC – 3 PH



INTEGRATED FUEL TANK

MARK	QTY	DESCRIPTION
1	1	CENTRAPLEX CONTROL PANEL
2	1	POWERFLEX PANEL
3	1	FILL STATION
4	1	FILTRATION - POLISHER
5	1	DUPLEX PUMP SET - GENERATORS
6	1	DUPLEX PUMP SET BOILERS
7	2	STANDARD VENT
8	1	EMERGENCY VENT
9	2	DIRECT READ GAUGE
10	1	LEVEL TRANSMITTER
11	1	HIGH LEVEL SENSOR
12	1	LEAK SENSOR - EQUIPMENT
13	1	LEAK SENSOR TANK
14	1	FUEL TANK

## M600 Integrated Tank

### Integrated Control:

The integrated control panel provides (a) operator interface for function selection and status monitoring, (b) Hand-Off-Auto selection for pump status, (c) audible and visual alarms, (e) Output relays and data interface for BMS and other systems integration.

### Power Distribution:

The power panel accepts a single power feed or a primary and redundant power feed through a code compliant disconnect switch. When dual sources are provided, the sources are monitored and auto-switch upon failure of the primary source. A transformer is provided for 120 VAC control power and circuit breakers are provided for the control panel and control devices. All pumps operate on line voltage. Each pump is provided with a motor starter with disconnect, overload protection, and current sensor.

### Duplex Pumps:

The control panel allows selection of the primary and secondary pump, and the options for lead – lag or alternating operation. The lag pump will start, after a 20 second delay, if the lead pump has on overload alarm or a current sense failure. Either pump can be started at the control panel in the manual mode.

### Filtration Polisher:

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 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 filter unit is monitored 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.

### Fill System:

The control panel monitors a high level sensor in the fuel tank and controls the opening of the actuated valve in the fill pipe. The fill operator selects the the fill line valve to energized to open, as long as the tank level is less than 85%. Fuel is transferred into the tank until the 85% tank level is reached and an audible alarm is activated. The audible alarm operates for 60 seconds, or until reset. At 90% fill level the alarm is re-activated and the fill pipe valve is closed. The valve may be opened in the manual mode up to 95%, at which point the valve is closed and disabled.

### Level – Leak Monitoring:

The tank level transmitter provides a signal to the control panel to indicate the tank fuel level and temperature. The control panel displays tank level in inches and gallons and any alarm conditions for high level, low level, or re-order level. Leak sensors are provided for the tank interstitial space and the equipment compartment. Remote leak sensors for piping and sumps may also be integrated into the control panel.