MULTI-TANK GAUGE and LEAK DETECTION SYSTEM
Model TG-EL-D5

- Multi-Tank Gauge and Leak-Detection System
  - Accepts Model TG-EL-WF Wire Float, ultrasonic or differential pressure level sensors
  - Accepts up to 4 level sensors
  - Accepts up to 12 HD-A1 Leak Detectors
  - Consult factory for larger quantities

- Major Capabilities
  - 16 line by 40 character LCD Display
  - Overfill alarm leak detector and level sensor test capability
  - Alarm horn
  - Building Automation System (BAS) RS485 Modbus communication port
  - BAS relay outputs
  - Volumetric 4-20 mA DC outputs
  - Automatic Fuel Oil Transfer Pump Set, Model ATPS integration

Description
The Model TG-EL-D5 Multi-Tank Gauge and Leak-Detection System is a comprehensive system that can simultaneously monitor product levels and leaks. The Model TG-EL-D5 combines digital monitoring and control technology with Preferred’s line of tank gauging and monitoring equipment. The system provides the best solution for a variety of gauging and leak-detection applications. Intuitive displays operate on a simple menu system providing quick and easy navigation for all of the Model TG-EL-D5’s features. The 16-line by 40 character LCD display is backlit to provide easy visibility of tank contents, leak sensor status and alarms. The Model TG-EL-D5 is applicable to a wide range of tank gauging applications. It accepts the wire float, Model TG-EL-WF for applications with liquid depths of 12 feet or less, and may accept ultrasonic or differential pressure sensors for larger depth liquids. Using the discriminating leak sensor, Model HD-A-C the Model TG-EL-D5 monitors both steel and fiberglass double wall tanks, double wall piping, tank manholes and/or vaulted tank containment areas. The Model HD-A2-C sensor provides both local and remote oil and water leak detection.

Major Capabilities

Inventory Management
The Model TG-EL-D5 provides product level and volumetric data for each tank and maintains a delivery log with time/date stamp, product quantity and tank number.

Annunciation
The Model TG-EL-D5 provides high level and leak alarm monitoring. Alarms are visible on the tank status display, activate the integral alarm horn and are logged with time/date stamp and English language description on an alarm summary display. Monitored alarms include: overfill alarm (high level), low level alarm (time to refill), and leak alarm.

Fuel Transfer System Integration
The TG-EL-D5 may be fully integrated into Preferred’s Automatic Fuel Oil Transfer Pump Set. Both pump set and tank gauge status is available on a common LCD display and RS-485 communication port. Up to a two (2) tank, a Model TG-EL-D5-2 may be integrated into the Automatic Fuel Oil Transfer Pump Set. Consult the factory for larger systems.
MULTI-TANK GAUGE and LEAK DETECTION SYSTEM
Specifications

Input Power: 120 VAC +/- 15%, 50/60 Hz
Ambient Temperature: 32° to 122° F
Weight: 55 lb.
Instrument Housing: 16.5"W x 14.5"H x 6.75"D, wall mounted
Display: 16 line by 40 character, 2.9" H X 5.1" W backlit LCD
Audible Alarm: Integral
Keypad: Membrane, tactile feedback
Level Sensor: Up to four (4) wire float, Model TG-EL-WF, consult factory for other sensors or additional tank quantities
Leak Sensor: Up to twelve (12) leak detectors Model HD-A1, consult factory for additional quantities

Intrinsic Safety: (optional)

Outputs: Common alarms PDT, 8A, ½ HP, 120 VAC

Overfill Alarm Station: High alarm relay output (for each tank), SPST, 8A, ½ HP, 120 VAC, remote alarm silencing input
Common Alarm: Relay output, SPST, 8A, ½ HP, 120 VAC
BAS Outputs: Up to eight (8) relay outputs, SPST, 8A, ½ HP, 120 VAC (optional)
Analog Output: Volumetric output for each tank, 4-20 mADC (optional)
Modem: Internal baud; RJ-11 jack and data (optional)
Communication: Modbus (ASCII or RTU modes), 1200 to 38,400 baud, RS485, optically isolated

Ordering Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalog Number</th>
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</thead>
<tbody>
<tr>
<td>Tank Quantity, Up to 4 Tanks</td>
<td>1</td>
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<tr>
<td>Optional Features</td>
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<tr>
<td>Building Automation System</td>
<td>add &quot;-BAS&quot; suffix</td>
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<tr>
<td>Discrete Output Contacts</td>
<td></td>
</tr>
<tr>
<td>Remote Volumetric Display Outputs (one output for each tank)</td>
<td>add &quot;-R&quot; suffix</td>
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</tbody>
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Additional Ordering Information
1) Specify number of tanks
2) Provide tank print or description. It should include:
   - Type of construction (single or double wall, fiberglass or steel)
   - Manufacturer name and model number
   - Fluid capacity
   - Inside dimensions of tank including diameter and length (if dished heads, show length of both shell and overall)
   - Important dimension: from the inside bottom of tank to the top of the tank entrance fitting, and the type and pipe size of fitting
3) Provide fluid description:
   - Grade of fuel oil
   - Other fluids type and specific gravity
   - For corrosive fluids, buyer must approve wetted parts material
4) Specify destination: to satisfy local codes, specify destination so that the proper local governing authority information packages are included.

Tank Information Required When Ordering
Please Note: Tank gauges are manufactured in accordance with specifications furnished with the order and are not suitable for operation with different tank configurations or installation plans. Complete specifications must be provided and should include a tank print.

120 VAC
Suggested Specifications

1. Application
Supply a fully integrated remote reading microprocessor-based multiple tank monitoring system for one (1) (select up to 4) fuel oil storage tanks per the requirements of NFPA 30 Flammable and Combustible Liquids Code, NFPA 31 Standard for the Installation of Oil-Burning Equipment, and NFPA 110 Standard for Emergency and Standby Power Systems. The monitor shall contain a real time clock and provide real time monitoring of each tank, identifying fuel oil levels as well as leaks. Up to three (3) leak detection sensors must be available per tank for monitoring interstitial spaces, piping sumps, double wall piping and tank vaults. All wiring between the monitor and sensors shall be low voltage. System shall be Preferred Instruments, Danbury, CT multi-tank gauge and leak-detection system, Model TG-EL-D5.

2. Operator Indications and Alarms
The system shall have a 16 line by 40 character back lit LCD display for tank inventory and alarm status and setup menus for easy operation and troubleshooting. Alarms shall be logged with time/date stamp and English language description. The tank gauge shall include a minimum of 200 point memory. The following alarm conditions shall activate a local visual and audible alarms: high product level (higher than warning level), warning level (remote overfill alarm only), low product level, high water level and leak alarm. An over-fill visual and audible alarm circuit shall be provided for each tank to activate the remote alarm at the fill station on a high level condition. This circuit shall have remote alarm silencing capabilities. In addition, two (2) independently programmable relays shall be provided for each tank for user defined alarms.

3. Inventory Management
The tank management system shall be able to detect an inventory increase when a fuel delivery is being made. This feature shall be automatically activated when the system detects an increase in volume that is in excess of a pre-programmed value. Upon activation, the system shall wait until the contents have settled and then display the amount of fuel delivered. The monitor will have the capability to store up to (32) deliveries. Deliveries in excess of 32 will automatically delete the oldest delivery to allow storage of the newest delivery.

4. Testing
The system shall include a “manual leak test” feature that when activated via a magnet on the leak sensor shall test various elements of the system including: leak sensor, LCD, LED (controller and remote annunciator) and alarm horn (controller and remote annunciator).

5. Communication
The tank monitoring system shall have the ability of simultaneously communicating to a Data Acquisition System (DAS), Building Automation System (BAS) or Building Management System (BMS) via RS-485 Modbus protocol. Tank inventory and alarm status shall be available through the communications ports.

6. Quality Assurance
The tank monitoring system shall be manufactured and labeled in accordance with UL 508 requirements (CSA C22.2 #14 for use in Canada). Inspection and labeling shall be supervised by UL or other OSHA approved Nationally Recognized Test Lab (NRTL). The tank monitoring system shall be a Preferred Utilities Mfg. Corp., Danbury, CT, Model TG-EL-D5-x-M (‘x’ = tank quantity from 2 to 4).