

## TANK GAUGING | LEAK MONITORING | OVERFILL PREVENTION

### A. TANK GAUGING MONITOR:

1. Manufacturer must be ISO 9001:2015 certified.
2. Provide and install one common remote tank gauging and leak detection system for all tanks that can simultaneously monitor product levels, water levels, temperatures, and leaks in up to eight tanks. System shall be UL, CUL, ATEX and IECEx listed and provide intrinsically safe outputs for use in Class 1, Group C & D Hazardous Locations when wired in accordance with manufacturers control drawing. System shall also be Third Party Certified and listed to meet EPA leak detection requirements. Locate monitor console where shown on project drawings.
3. Central Processing and Indicating Instrument – Controller shall have a backlit color 7-inch graphic display with capacitive touch screen and optional 32-character thermal printer or network printing capable. System must be capable of driving single or multi-tank 12 VDC NEMA 4X remote audio visual high level alarms and/or remote displays. System must be capable of providing up to five built in individually programmed isolated relay contacts for any alarm event. Controller shall be as manufactured by OMNTEC® Mfg., Inc. model number OEL8000IIK4-5 (for indoor mounting, accepts 4 level probes and 16 sensors), OEL8000IIK8-5 (for indoor mounting, accepts 8 level probes), OEL8000IIK4P-5 (for indoor mounting, accepts 4 level probes and 16 sensors, with printer), OEL8000IIK8P-5 (for indoor mounting, accepts 8 level probes, with printer), OEL8000IIK4-5-SS (for outdoor mounting, accepts 4 level probes and 16 sensors), or OEL8000IIK8-5-SS (for outdoor mounting, accepts 8 level probes). The main console will be preprogrammed by the factory and field adjusted as required. Console shall be equipped with (1) RS-232 port, (2) optional configurable RS-232/RS-485 ports, Ethernet, and e-mail capability for communication. MODBUS, additional 120 VAC @ 5 amps resistive relays, and 4-20mA output shall be available as options. System shall be capable of serving up a web page making current inventory, sensor status and alarms available from any web browser or smart phone. System shall have built in encrypted VPN for cloud-based monitoring. System is also capable of secure remote software updates.
4. Panel shall come equipped with three LED lights for Power, Warning and Alarm status. Alarms shall be displayed visually on a color 7-inch graphic display with capacitive touch screen and wide viewing angle as well as Warning and Alarm lights on face of panel. System shall have an 85dB piezoelectric horn for audible alarm indication.
5. Indoor and Outdoor mounting options must be available. Indoor mounting options must include a panel compact in size not to exceed 15.2" (w) 10" (h) 5.1" (d) and constructed of powder coated industrial steel. Outdoor mounting options must include a panel compact in size not to exceed 17.6" (w) 12.6" (h) 6.2" (d) and constructed of stainless steel. The complete leak / level gauging system shall include a one-year parts warranty. The complete leak / level monitoring system shall be as manufactured by OMNTEC Mfg., Inc., Ronkonkoma, NY (631-981-2001) or equal.

## **B. LIQUID LEVEL PROBE**

1. Shall consist of a 316-grade stainless steel IP68 rated model number MTG-RS Series rigid level probes or model number MTG-FL Series Kynar flexible level probes where overhead clearance is not available. Probe shall use magnetostrictive technology with 6 temperature sensing devices and an accuracy of 0.01 inches in inventory mode and 0.001 inches in leak detection mode. Probe shall simultaneously provide product levels, water levels and temperature within the storage tanks.
2. The level probe shall be installed in an accessible 4" NPT male riser pipe. Probe shall include a 4" cap with integral cable gland, floats, and installation kit. 2" NPT option available upon request. All splices must use supplied splice kits. Field wiring from probe to controller must be OMNTEC EC-2 or Belden 8761 cable in suitable conduit. Level probes shall be as supplied by OMNTEC Mfg., Inc.

## **C. PRODUCT DISCRIMINATING SMART LEAK SENSORS**

1. All leak sensors shall be microprocessor based and capable of recognizing its unique serial number, model number and function. All sensors (up to 16) shall be capable of being installed on (1) four conductor cable back to the main controller. The sensors principle of operation shall be electro optic for liquid detection and conductivity to discriminate fuel and water. Sensors shall be remotely testable from console via touch screen Test button icon. Sensors shall be capable of detecting liquid at any angle. Float technology will not be accepted. Interstitial sensors shall be model number BX-PDWS for steel tank interstitials or BX-PDWF-\* (\* denotes tank diameter) for dry double wall space fiberglass tanks or BX-RES for brine filled fiberglass tanks. Containment sump sensors shall be model number BX-PDS. See project drawings for location and quantities of sensors required. All sensors are to be wired thru conduits using OMNTEC EC-4 cable or 22 gauge four conductors, shielded twisted pair cable with drain wire. Do not run OEL8000IIK intrinsically safe low voltage wiring in the same conduit with any other wiring. All sensors shall be manufactured by OMNTEC Mfg., Inc.

## **D. NON-PRODUCT DISCRIMINATING SMART LEAK SENSORS**

1. All leak sensors shall be microprocessor based and capable of recognizing its unique serial number, model number and function. All sensors (up to 16) shall be capable of being installed on (1) four conductor cable back to the main controller. The sensors principle of operation shall be electro optic for liquid detection only. Sensors shall be remotely testable from console via touch screen Test button icon. Sensors shall be capable of detecting liquid at any angle. Float technology will not be accepted. Interstitial sensors shall be model number BX-LWS for steel tank interstitials or BX-LWF-\* (\* denotes tank diameter) for dry double wall space fiberglass tanks or BX-RES for brine filled fiberglass tanks. Containment sump sensors shall be model number BX-LS. See project drawings for location and quantities of sensors required. All sensors are to be wired thru conduits using OMNTEC EC-4 cable or 22 gauge four conductors, shielded twisted pair cable with drain wire. Do not run OEL8000IIK intrinsically safe low voltage wiring in the same conduit with any other wiring. All sensors shall be manufactured by OMNTEC Mfg., Inc.

## **E. OVERFILL STATION**

1. Provide near each tank fill terminal as shown on project drawings a low voltage audio/visual NEMA 4X overflow alarm and silencing station. Remote annunciator light shall illuminate, and horn shall sound when the liquid level in the tank rises above a pre-programmed high-level point. The horn will remain on until the silence button is pressed or can be programmed to time out. Visual light will remain lit until the level in the tank drops below the high-level point. Remote annunciator shall be model number RAS Series for single or multi-tanks and shall be manufactured by OMNTEC Mfg., Inc.
2. Provide near each tank fill terminal as shown on project drawings a 100-240 VAC audio/visual NEMA 4X universal remote overflow alarm and silencing station with delivery indication and green light for indicating system is functioning normally. Remote shall have test switch, delivery in progress light and configurable RS-232/RS-485 port for connection to ATG. When a delivery has started amber light illuminates along with flashing lights for each individual tank receiving delivery. Flashing lights will continue until delivery is complete. When overflow level is reached, horn will sound and corresponding tank(s) light(s) will be steadily lit. If tank is fueled when in high level state, remote will reactivate light(s) and horn. Universal remote overflow alarm shall be model number DDL Series for single or multi-tanks and shall be manufactured by OMNTEC Mfg., Inc.

## **F. COMMUNICATION CAPABILITIES**

1. MODBUS via RS-232, RS-485 or TCP/IP
2. Up to 8 additional external dry contact 120 VAC @ 5 amps resistive relays
3. 4-20mA output for level via X232-422-\* (\* denotes number of outputs)
4. BACnet via C232-BAC or C485-BAC (must specify TCP/IP or MSTP)

## **G. OPTIONAL ACCESSORIES**

1. If required, provide a remote display model number MMRD7 Series as manufactured by OMNTEC Mfg., Inc. Display must utilize industry standard protocol for use with most Automatic Tank Gauge monitoring systems. The remote ATG monitor shall display current tank inventory and leak sensor alarms and shall dynamically switch to the tank that is being delivered to.

Remote display must come standard with configurable RS-232/RS-485 port and Ethernet port for connection to ATG.

Level and alarms shall be displayed visually on a color 7-inch graphic display with capacitive touch screen and wide viewing angle. Display shall come equipped with three LED lights on panel face for Power, Warning and Alarm status. System shall have 85dB piezoelectric horn for audible alarm indication.

Enclosure shall be powder coated industrial steel for indoor mounting. Must be capable of flush mount or recess mounting as required. Enclosure shall be compact in size, not to exceed (H) 9.57" (W) 9.72" (D) 3.09".

System must operate on 120/240 VAC or 12 VDC via hard wired model number MMRD7-HW, power cord kit model number MMRD7-PK, or for outdoor locations model number MMRD7-SS with NEMA 4X stainless steel enclosure.

If necessary, provide a wireless link, model number WRS-232, manufactured by OMNTEC Mfg., Inc., that will allow communication between main ATG and MMRD7 Series Remote Display. Contractor shall supply repeaters as needed model number WRS-232R for distances greater than 500' or model number WRS-232XR for distances up to one mile.