

GTP USLS Ultrasonic Level Sensor Operations & Maintenance Manual



This "QUICK START" manual is supplied as a guideline for installation; please visit www.gtpcompany.com for complete instruction manual, assembly drawings and installation drawings.

GENERAL INFORMATION

MODEL: _____

SERIAL: _____

ACCESSORIES: USLS3001 (49.2") USLS3002 (78.7") USLS3003 (118.0")

*** WARNING – BEFORE YOU GET STARTED ***

- 1) All fasteners & fittings should be inspected and secured before operation as they may be loosened in transit
- 2) Personnel safety practices should apply at all times
- 3) Safety glasses or face shields and gloves should be worn
- 4) Do not service glycol feed package without disconnecting power
- 5) Close isolation valve and release pressure before servicing any components on the system
- 6) All liquids in system should be drained before servicing

2.0 WARRANTY General Treatment Products "USLS" Ultrasonic Level Sensors are guaranteed for one year from date of shipment against manufacturing defects in material and workmanship that develop in the service for which they are designed. We will repair or replace a defective part of this system when returned to our factory with freight prepaid; providing that the part is found to be defective upon inspection. We assume no liability for labor and/or other expenses in making repairs or adjustments.

3.0 UNPACKING Upon receipt of order, inspect package thoroughly. In the event there was damage incurred in transit you must notify the freight company within 3-5 days of receipt of order. Once valve is inspected for damage and received in good condition, and store indoors until installing.

4.0 LOCATION/ENVIRONMENT Although the sensor enclosure is NEMA rated, sensor, mounting hardware and power cord should not be exposed to direct elements. In most cases, there will not be a dry indoor location that is convenient to install the sensor. Some shelter, awning or shed needs to be installed to validate warranty.

5.0 INSTALLATION/OPERATION Level Sensor Installation Tips:

- 1) Install the sensor straight up and down
- 2) Make sure there is minimal turbulence inside the tank from pumps and mixers
- 3) That sensor beam (23°) does not hit side wall of tank for the range of the level

Once a location has been decided on, drill a 2-5/8" hole in tank. Feed the sensor through and screw on lock nut from inside tank.

5.1 CALBRATION: USLS sensors transmit a 4-20 signal based on the maximum length of the beam. Meaning 4mA is the upper most point (less the dead zone 2.36") and 20mA is the maximum beam length (3001 = 49.6", 3002 = 78.7" and 3003 = 118.0"). To calculate the 20mA value, you need to figure how many gallons per inch is your tank and multiply the gallons per inch by the extra length the beam is compared to your tank geometry.

Example: Tank capacity is 35 gallons, Tank full is 18". Capacity per gallon is 1.94 gallons per inch. Using a USLS-3001 with a maximum beam length of 49.6" the 20mA mark is -61.69 gallons and the 4mA value is the max volume of 35.

Equation:

(max volume divided by volume height) = gallons per inch

$$(35/18) = 1.94$$

(beam length minus max tank height) = over beam length

$$(49.8-18) = 31.8$$

(over length times gallons per inch) = 20mA value as a negative

$$(31.8*1.94) = -61.69$$

Setting are 4mA = 35 and 20mA = -61.69

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Settings for GTP DW Tanks:

| Tank Model | Tank Height | Sensor Model | Beam Length | 4mA | 20mA |
|------------|-------------|--------------|-------------|-----|--------|
| DW18 | 21.5" | USLS-3001 | 49.8" | 18 | -23.69 |
| DW35 | 28.75" | USLS-3001 | 49.8" | 35 | -25.63 |
| DW65 | 39.5" | USLS-3001 | 49.8" | 65 | -16.95 |
| DW120 | 50" | USLS-3002 | 78.7" | 120 | -68.88 |
| DW160 | 61.5" | USLS-3002 | 78.7" | 160 | -44.75 |
| DW220 | 56" | USLS-3002 | 78.7" | 220 | -89.18 |

Settings for GTP DW Tanks:

| Tank Model | Tank Height | Sensor Model | Beam Length | 4mA | 20mA |
|------------|-------------|--------------|-------------|-----|--------|
| DWE15 | 26.5" | USLS-3001 | 49.8" | 15 | -13.19 |
| DWE35 | 34.5" | USLS-3001 | 49.8" | 35 | -15.52 |
| DWE60 | 30.25" | USLS-3001 | 49.8" | 60 | -38.78 |
| DWE110 | 61.25" | USLS-3002 | 78.7" | 110 | -22.67 |
| DWE165 | 81.25" | USLS-3003 | 118" | 165 | -74.63 |

Note: Spanning or calibrating your sensor is typically dependent on the monitor/controller. See instructions for details on your monitor/controller. Most monitor/controllers have a 2 point calibration. This will be the most accurate. When this is not available, contact the factory for help.

6.0 PRESSURE AND TEMPERATURE LIMITATIONS USLS Sensors maximum operating perimeters are OPSI @ 100F. Some optional fittings, as noted in descriptions, may change limitations.

7.0 ROUTINE MAINTENANCE Routine maintenance in this section is referred to as checking a sensor once a month until a maintenance schedule can be determined. **All fasteners should be check for proper operations.** Maintenance and care will depend upon the usage.

8.0 PARTS LISTING Contact factory for further information.

9.0 WIRING USLS sensors are 12-24VDC, 2 wire loop powered sensor. The red wire is the positive and the black wire is the negative. See your controller/monitor for further details.

10.0 TROUBLE SHOOTING If you are having trouble, contact us at: repairs@gtpcompany.com or you can call us at the number on the front of the instruction manual.

Manufacturing: Bypass & Filter Feeders, Glycol Feed Packages, Separators & Separator Systems, Tanks, Tank Stands, Chemical Batch Mixers, Corrosion Coupon Racks, Packaged Feed Systems and Custom Systems

P.O. Box 8697, Brea, CA 92822-5697 ♦ Phone: 714) 257-9165
 113 Viking Ave., Brea, CA 92821 ♦ Fax: 714) 257-9215
www.gtpcompany.com ♦ customerservice@gtpcompany.com

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