



**LT260**

**Ultrasonic Level Transmitter**



**Operation and Maintenance Manual**



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# **1. SYSTEM INTRODUCTION**

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## **1. Receiving and Inspection of Product and Packaging**

When opening the LT260 packaging, inspect all cartons for damage that may have occurred during shipping. Carefully unpack equipment and inspect thoroughly for damage or shortage. Report any damage to carrier and/or shortages to supplier. DO NOT discard any boxes or packaging if damage has occurred.

## **2. Safety and Operation**

In the interest of safety, the installation and operation of the LT260 shall be performed by licensed or qualified professionals. Before powering the LT260, please read his manual thoroughly. Flomotion Systems is not responsible for accidents caused by misuse or modification of the product.

## **3. Warranty**

Flomotion Systems, Inc. warrants the LT260 Series to be free of defects in material and workmanship for a period of one year from date of sale. Under normal use, if the LT260 becomes defective within the stated warranty time period, contact Flomotion Systems, Inc. for return authorization prior to returning any product. Flomotion Systems, Inc. reserves the right to make the final determination as to the validity of a warranty claim, and sole obligation is to repair or replace only components, which have been rendered defective due to faulty material or workmanship. No warranty claim will be accepted for components which have been damaged due to mishandling, improper installation, unauthorized repair and/or alteration of the product, operation in excess of design specifications or other misuse, or improper maintenance. Flomotion Systems, Inc. makes no warranty that its products are compatible with any other equipment, or to any specific application, to which it may be applied and shall not be held liable for any other consequential damage or injury arising from the use of its products. This warranty is in lieu of all other warranties, expressed or implied. No other person, firm or corporation is authorized to assume, for Flomotion Systems, Inc., any other liability in connection with the demonstration or sale of its products.

## 2. TECHNICAL SPECIFICATIONS

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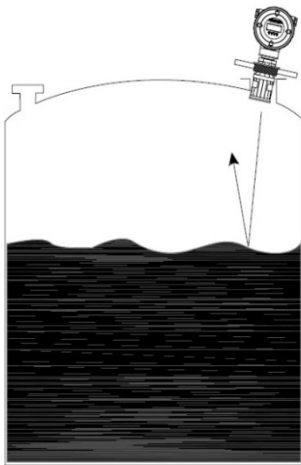
Dimensions	7.4d x 11.2h in. (188d x 284h mm)
Process Connection	3" NPT or Flanged
Housing Material	Aluminum Alloy
Sensor Material	PVDF
Weight	6.2 lbs (2.8 Kg)
NEMA Rating	NEMA 6
Temperature	-4°F to 158°F (-20°C to 70°C)
Measurement Range	26ft. (8m)
Accuracy	0.2% of F.S.
Display Resolution	0.04 in (1mm)
Beam Angle	8° at -3dB
Damping Rate	Adjustable
Temperature Compensation	Built-in
Analog Output	4-20mA, 550Ω at 24VDC
Display	5 Digit Numeric LCD
Power Supply	20 to 30VDC
Supply Current	0.022A
Certification	CE

### 3. INSTALLATION

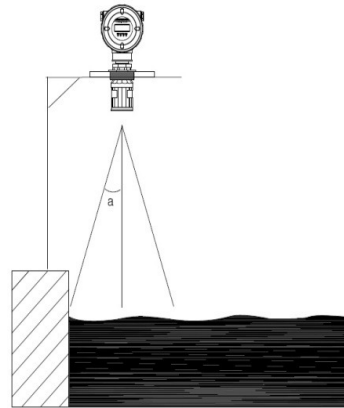
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#### 1. General

- Remove any obstacles between the sensor and measurement point.
- The bottom of the sensor should be perpendicular to the measurement point.
- Avoid mounting the sensor too close to a wall.
- Avoid setting a maximum level into the Dead Zone range.
- Avoid the exposure to direct sunlight.
- Avoid high voltage or high current lines.
- Install on solid, non-vibrating surface.
- LT260 shall be used in accordance with manufacturer's specifications.

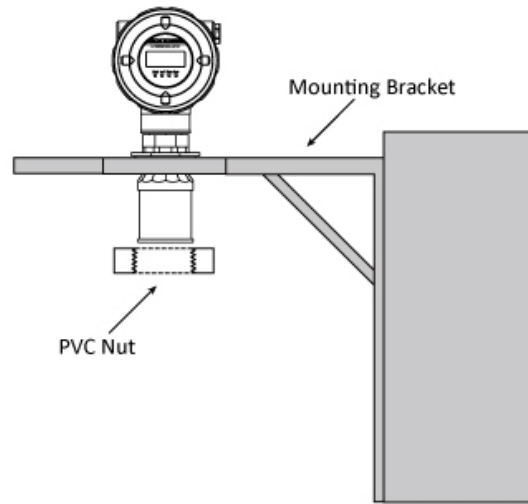


The bottom of the sensor should be perpendicular to the surface of water.

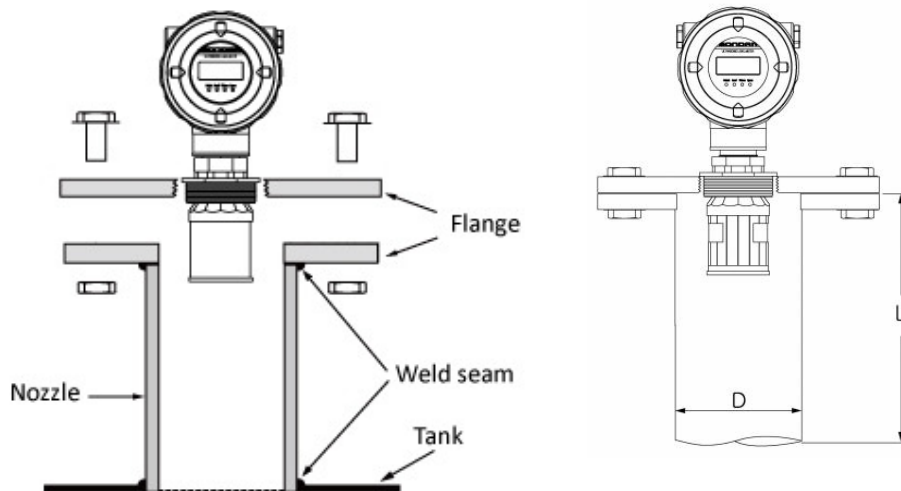


When mounting the sensor, keep the distance to the tank wall into consideration.

## Installation with mounting bracket



## Installation with threaded flange



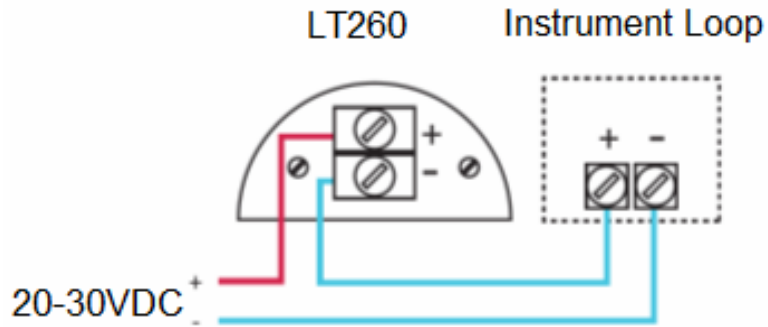
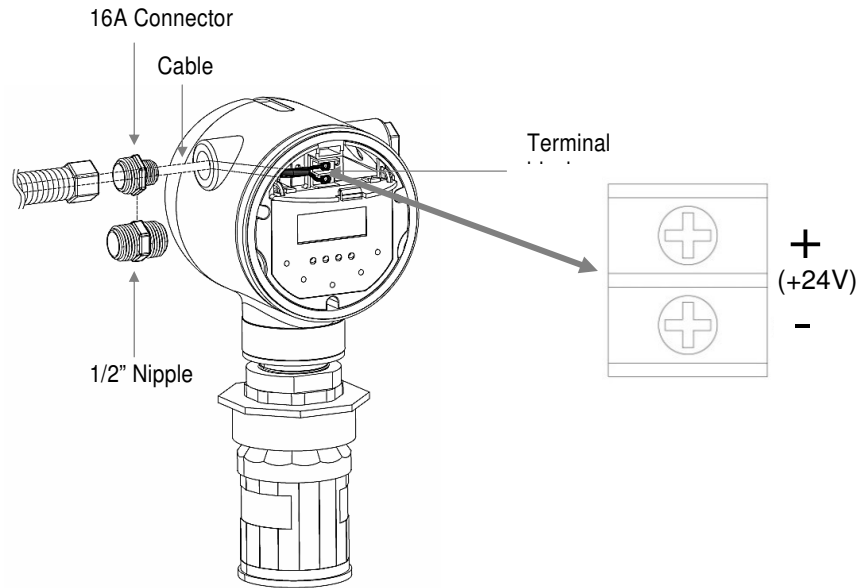
Nozzle Diameter (D)	Maximum Nozzle Length (L)
3" (80mm)	9" (240mm)
4" (100mm)	12" (300mm)
6" (150mm)	17" (430mm)
8" (200mm)	22" (570mm)

**NOTE:** Do not exceed maximum nozzle length for recommended nozzle diameter. Nozzle material must be seamless.

## 4. WIRING & POWER

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When powering the LT260 use 20-30Vdc. Wiring and power diagram for proper installation below.





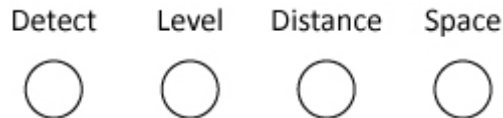
## 5. INITIAL START-UP & DISPLAY

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The LT260 has two display modes; a measurement mode for displaying level and a programming mode for application set-up.

### Measure Mode:

In measurement mode, 4 LED's are seen on the front panel of the LT260, shown below. A Flashing "0" on the display is shown when it is in fault condition (Lost Echo).



LED	Condition	Function
Detect & Level	Flashing together	Indicates Normal Operation Mode selected = Level
Detect & Distance	Flashing together	Indicates Normal Operation Mode selected = Distance
Detect & Space	Flashing together	Indicates Normal Operation Mode selected = Space
Level or Distance or Space	Flashing alone	Indicates that LT260 is detecting an echo but checking if the value is correct.
None	All Off Display indicates "E-Err"	Indicates that LT260 has gone into Fail condition. Reasons: - There is no reflected echo received. - Transducer and electronic part are disconnected



## 6. PROGRAMMING

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The “MENU” button is used to enter the programming mode. It is located below the LED function on the display. In programming mode, a program number is shown on the LCD such as P01, P02.

### Programming Buttons

To enter the Program Mode simply press the “MENU” button >1 sec. Once in Program Mode, The Level, Distance, and Space LED’s turn off. The software version will display and the Menu P01 will appear. Use the Up/Down buttons to access each parameter.



Enter Program Mode  
Enter specific parameter mode



Exit from programming mode and put into operating mode.



Accepts parameter settings when in programming mode.



Changes parameter option.  
Increase a specific parameter setting.



Changes parameter option.  
Decrease a specific parameter setting.

## Programming Example



Press “MENU” button for 1 second in measuring mode.



Software version displays for 2 second.



After showing the S/W version, the parameter number displays.



Use “UP” and “DOWN” button go change parameter.



Press “menu” button, the first digit flickers. Press up/down buttons to change parameter setting.



After the first digit is set, press “MENU” button to move the second digit.



Once value is entered, press “RUN” to save the value. Display will return to measuring mode.



If you press “ESC” button instead of “RUN” button, it returns to the programming mode and the parameter setting value is saved.

## PROGRAMMING MODE

### [P01] Measurement Type

[Default: 1 (Level)]

Option	Value	Description
1	Level	Displays how full the tank is with respect to the Empty (0% of Span)
2	Distance	Displays the distance from the transducer face to the water surface.
3	Space	Displays how an empty the tank is with respect to Full (100% of Span) i.e. how much space is available in the tank.

### [P02] Unit of Measure

[Default: 2 (Feet)]

Option	Unit
1	Meter
2	Feet

### [P03] Display Measurement Value

[Default: 1 (Level)]

Option	Unit
1	Measuring Type
2	mA (Current Value)
3	% (Percentage)

### [P04] Empty Distance

[Sets the maximum distance from the face of the transducer to the bottom distance of an empty tank.

Setting range	Default
00.00 - 26.0ft. (0 - 7.92m)	26.00ft

**[P05] Dead Zone**

Sets the distance from the face of the transducer to the closest readable level.

Setting	Default
Minimum 01.00 - 26.00ft (0.30 - 7.92m)	01.00ft

**[P06] 4mA Set Point**

[Default: 00.00ft]

Sets the 4mA value for the measurement type selected to P01. 4mA typically is Empty (0% of Span)

Setting	Default
Minimum 00.00 - 26.00ft (0 - 7.92m)	00.00ft

**[P07] 20mA Set Point**

[Default: 26.00ft]

Sets the 20mA value for the measurement type selected in P01. 20mA typically is Full (100% of Span).

Setting	Default
Minimum 00.00 - 26.00ft (0 - 7.92m)	26.00ft

**[P08] mA Fail-Safe Value**

[Default: 1 (3.8mA)]

Upon Loss of Echo, the mA output can be set to indicate a fault condition.

Option	
1	3.8 mA: Fault condition (LOE) indicated by 3.8mA
2	Hold: Last know measured value
3	22mA: Fault condition (LOE) indicated by 22mA

**[P09] mA Fail-Safe Time**

Sets the time the Fail-Safe value is held.

Setting	Default
Minimum 20 - 900 sec	300 sec

**[P10] Dampening**

[Default: 001.00]

Sets the display value response time.

Option		Description
000.01	Slowest	Slowest response to level change.
		Minimum: 000.01 - Maximum: 100.00
100.00	Fastest	Fastest response to level change.

**[P11] Detection Threshold Voltage**

[Default: 03 and is acceptable for most applications]

Sets the detection of the returned echo. For noisy applications increase the detect threshold. For detection of weak signals, decrease the detect threshold value.

Range: 03 (Low) - 15 (High)

**[P12] Output Power**

[Default: 2]

Option	Level	Description
1	Low Power	Use for short range applications
2	Normal Power	Use in normal conditions
3	High Power	Use in long range measurement
4	Maximum Power	Use in dusty, steamy or turbulent applications.

**[P13] Sound Velocity**

[Default: 331.5, Air, most common setting]

Sets the sound velocity to be changed according to the atmosphere the transducer is operating in.

Range: 150 - 500

Medium	Sound speed (sec)
Chlorine	206
Carbon dioxide	259
Argon	308
Oxygen	316
Air	331.5
Ammonia	415
Ethane	430
Neon	435
Helium	965

**[P14] Vapor Temperature Compensation**

[Default: 060]

Range: 000 - 200

**[P15] Detection Algorithm**

[Default: 1 (Automatic)]

Option	Description
1	Automatic
2	Effective only for the first signal

**[P16] Detection Target**

[Default: 1 (Liquid)]

Option	Description
1	Liquid
2	Bubble Liquid
3	Solid
4	Powder

### **[P17] Current Output Simulation**

[Default: 10.00ft]

Simulates a mA value for the measurement type selected in P01.

Setting	Default
Minimum 00.00 - 26.00ft (0 - 7.92m)	10.00ft

### **[P18] Password**

[Default: 0000] It is not recommended to change. If password is changed and forgotten, the transmitter will need to be sent back to the factory to be unlocked.

Range: 0000 - 9999

## **7. MAINTENANCE**

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Inspect sensor face for dirt or debris and wipe clean if necessary.







**FLOW ~ LEVEL ~ CHEMICAL FEED**

**FLOMOTION SYSTEMS Inc.**  
3 N. Main St., Middleport, NY 14105  
Toll Free: (800)909-3569 (U.S. & Canada)  
Tel: (716)691-3941  
Fax: (716)691-1253  
info@flomotionsystems.com  
www.flomotionsystems.com

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