

LIQUID LEVEL TRANSMITTER 4-20mA ULTRASONIC

ELU-8

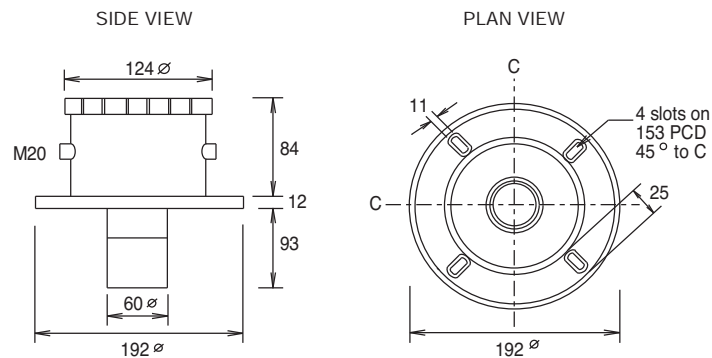
Used to measure fluid depth or target distance in tanks or sumps / slurries. The unit produces a 4-20mA output signal linear across the desired measuring range. Suitable for use with BMS systems. The unit eliminates spurious echoes and ensures a steady output.



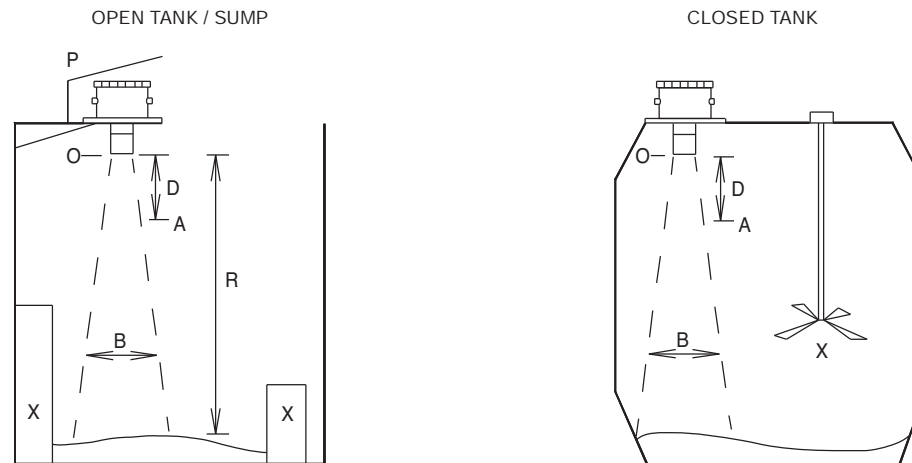
Accuracy 0.25% of measuring range.
Pressure -0.25 / +2 bar
Programmable display : 4 digit concealed
Flange mounting : DN80 PN16, BS10 TABLE D 3i, ANSI 3i.
Load at 24VDC 250Ω
Ultrasonic cone angle 12°
Materials : UPVC, Polypropylene
The unit is not suitable for use with any media that has visible fumes.

Type	Measuring Range	Operating Temp °C	Span Min	Resolution	Supply ± 15%	Output 2 wire	Max Power	Protection
ELU-8	0.5 / 8m	-10/+60	100mm	1mm	24VDC	4-20mA loop	0.5W	IP68

DIMENSIONS



INSTALLATION:



O : Origin of measurement. All measurements (distances / depths) are taken from O.

D : Dead band 500mm.

A : Max media height for signal range. If measurement is required to the top of the tank, mount the transmitter 500mm higher.

P : Protect the unit from sunlight.

B : Beam width 0.21 x Range (R)

X : Beam must not touch any obstacles. Ensure that the beam path is uninterrupted.

Mounting :

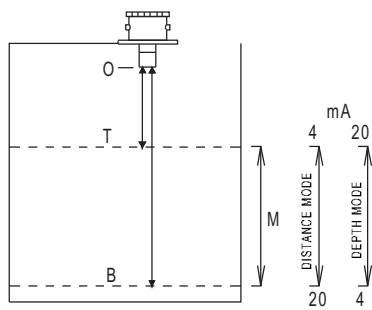
OPEN TANK ñ Mount at least 0.5m above the highest media level and 105mm away from walls for every 1m of media depth.

CLOSED TANK ñ Mount at least 0.5m above the highest media level. Do not mount the unit in the centre of the tank to monitor powder or granules etc. which can form into a cone shape and give inaccurate readings - in this case the unit should be mounted close to the edge as shown.

Use plastic mounting bolts. Do not over-tighten as this may cause acoustic coupling to the mounting and give false readings.

The transmitter must be mounted on the gasket supplied.

MEASUREMENT :



The unit can be set to read in either Distance or Depth mode.
 M : minimum distance between set points must be > 100mm
 D : 500mm Dead band O : Start of measurement

Distance Mode :

The 4mA point is required to be closer to 'O' than the 20mA point
 ie O-T = 1m = 4mA O-B = 5m = 20mA
 At 2m the unit will give an output of 8mA

Depth Mode :

The 20mA point is required to be closer to 'O' than the 4mA point
 ie O-T = 1m = 20mA O-B = 5m = 4mA
 At 2m the unit will give an output of 16mA

INSTALLATION: Press the following keys in sequence M ↑ ↓ ↑ ↓. The display now shows 'Ent'

1. Scaling

Choose either Manual or Automatic scaling.

Manual

Achieved by taking measurement from O to target distance for the 4mA & 20mA points.

Press E to display current setting. To change, press E again & use the ↑ ↓ keys to set the distance (m) for the 4mA setting. Press E to confirm setting - unit displays 'donE' & then the new setting. Press ↑. Unit now displays current 20mA setting. To change, press E & use the ↑ ↓ keys to set the distance (m) for the 20mA setting. Press E to confirm the setting. The unit displays 'donE' and then the new setting. Press M twice to enter run mode.

Automatic

Achieved by adjusting physical tank contents to the the 4mA & 20mA points

Press ↑. The unit displays 'Auto'. Press E once and the display will show the 4mA distance of media from the sensor. Press E to store the value. Press E to confirm. Unit displays 'donE' and then displays the current setting. Press ↑. Unit displays the 20mA distance of media from the sensor. Press E to store the value. Press E to confirm. Unit displays 'donE' and then displays the current setting. Press M twice to enter run mode.

2. Display Selection:

Press keys in sequence M ↑ ↓ ↑ ↓. Unit displays 'Ent' Press ↑ ↑. The unit now displays 'disP'. Press E.

To display depth/distance in metres : Use the ↑ ↓ keys to display depth above 4mA point or distance above 20mA point in metres.

Press E to confirm the setting. Unit displays 'donE'. Press M twice to enter run mode.

To display depth/distance as % of range. Use the ↑ ↓ keys to display depth above 4mA point or distance above 20mA point in metres. Press ↓. The unit now displays 'PerC'. Press E to confirm the setting The unit displays 'donE' Press M twice to enter run mode.

3. Lost Echo Response:

This occurs if the unit fails to receive 'good' echoes. When normal conditions resume, so do output & display.

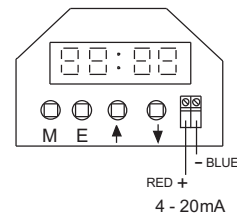
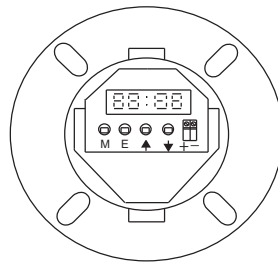
Press keys in sequence M ↑ ↓ ↑ ↓ ↓. Unit displays 'LE'. Press E. then ↑ ↓ keys to select the 'lost echo' output required :-

Select '20mA' : drive to 20mA OR '4mA' : drive to 4mA OR '21mA' : drive to 21mA OR 'hold' : holds last 'good' reading.

Press E to confirm setting. The unit displays 'donE' Press M twice to enter run mode.

WIRING:

Detail showing keypad and display located under the transmitter cover



Terminals 0.5-1.5mm²
 Screened cable is recommended
 Keep sensor/control signal wires away from power cables/units which may cause interference.

Sensor / control signal cable size 7/0.2mm

Max length 300m

The screen should be earthed at controller end only

TROUBLE SHOOTING :

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|--|---|
| <ol style="list-style-type: none"> 1. Unit gives 'Lost Echo' reading 'LE' 2. Reading not changing with level. 3. Reading erratic. 4. Reading occasionally high when tank not full. 5. No Display / Loop current. 6. Display reads " _ _ _ _ " or " _ _ _ _ " 7. Display reads "Err" | <p>Target is out of range or media is too dusty/steamy or excessive foam on liquid surface. Check tank conditions and/or re-site transmitter.</p> <p>Obstruction interfering with echo ie agitator blade or tank wall. Re-site transmitter away from obstructions.</p> <p>Media unsteady or within dead band. Electrical noise interference. Re-site transmitter ensuring media is 500mm away. Check wiring.</p> <p>Close range echo being detected. Acoustic coupling to mounting bracket. Re-site transmitter. Fit foam gasket and loosen mounting bolts.</p> <p>Power failure. Check power supply.</p> <p>Media over or under range ie outside the 4-20mA setpoints. Reset the unit.</p> <p>4mA & 20mA setpoints are within 100mm of each other. Reset the unit.</p> |
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