



TLU...

Ultrasonic Level Transmitter

Technical Specification Document

Approvals & Certifications:



Model TLU



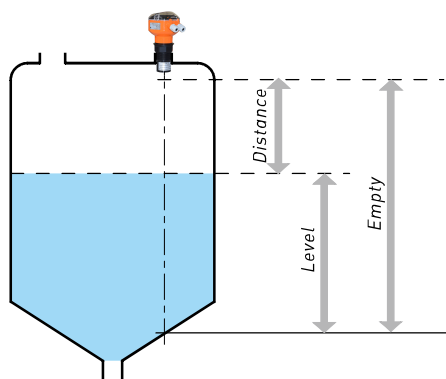
Description

TLU is an ultrasonic non-contacting level meter which will increase the effectiveness of your liquid management process. It is designed its sensor and controller in one compact housing. TLU is two-wire loop-powered instrument and its measurement range is 5 meters. TLU menu makes the user easy and simple for calibration. All functions are optimized which enables you to effectively monitor the liquid level and keep your facilities running safely and reliably.

Principle of Operation

The sensor transmits ultrasonic pulses to the measurement target. The pulses are reflected from the surface of the target and received back by the sensor.

The running time is converted in to the distance and it shows as level or volume on the display.



$$D = [C \cdot T] / 2$$

D: distance

C: sound velocity

T: time of flight

Distance: from the sensor bottom to surface of the target

Level: from the bottom of storage to surface of the target

Empty: from the sensor bottom to the bottom of storage

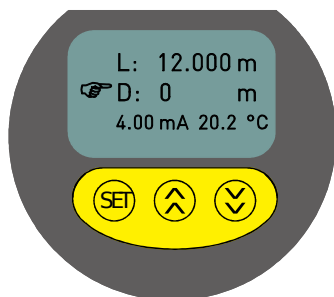
Features

- Compact Size
- User Friendly menus
- Temperature Compensation
- Two-wire loop-powered
- Simple Installation & Maintenance
- RS232, RS485, Modbus
- Various output types
- High protection class
- Explosion proof type
- LCD display

Applications

- Sedimentation tank
- Sewage treatment
- Food industry (Winery, Granary etc)
- Electricity mining industry
- Petrochemical industry

Display



L=Level: from the bottom of storage to surface of the target

D=Distance: from the sensor bottom to surface of the target

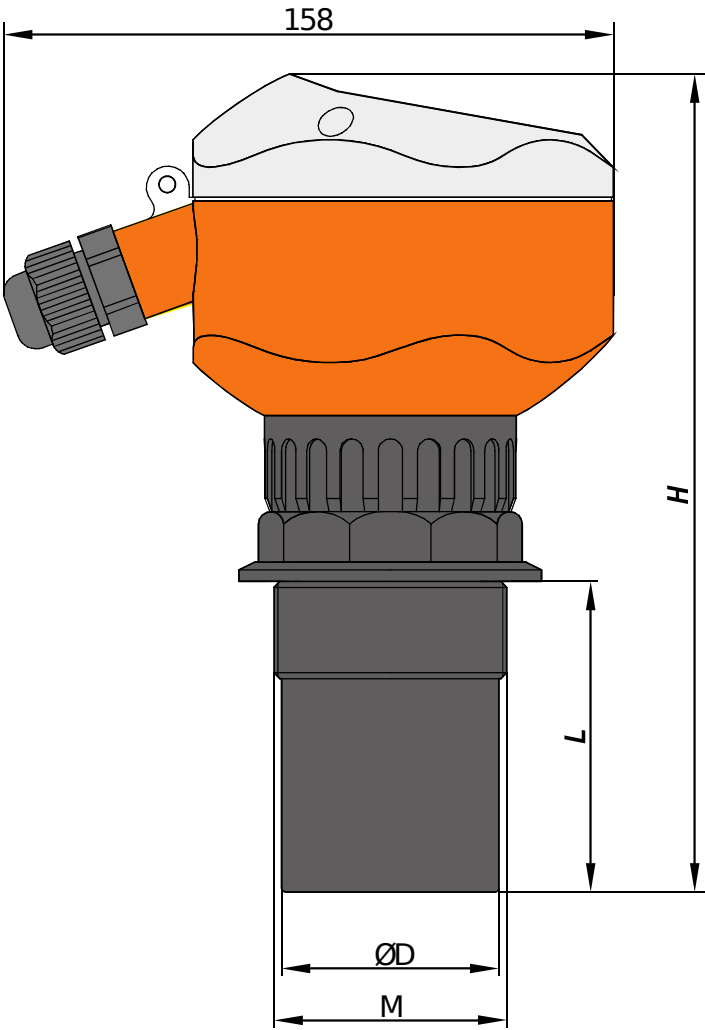
4.00mA=current value: The level corresponding to the current value

Technical Specifications

Measurement Type	Ultrasonic non-contacting
Measuring Range	5m/10m/15m/20m/30m/40m/50m/60m/70m/
Accuracy	0.25F.S, 0.5%F.S, 1%F.S
Resolution	2mm or 0.1% of F.S
Output Analog	4-20mA-2wire[load Resistance=510Ω] 4-20mA-4wire[load Resistance=250Ω]
Output option	RS485, Relay/Alarm
Power Supply	24VDC, 220VAC+/-10% option
Display	LCD, 4-digit
Display Units	mm, cm, m
Dead Band	25cm[min.]
Process Temp.	-20~+70°C(Sensor), -20~+60°C(LCD)
Temp. Comp	-20~+60°C
Pressure	<1bar
Protection Class	IP65
Process Mount	Screwing with thread M48x2 / M60x2 / M78x2/G2 or Flange
Relay/Alarm Output(option)	Alarm for high and low level AC 250V/8A or DC 30V/5A
Weight	~3kg(not include cable)

TLU: Ultrasonic Level Transmitter

Dimensions (in mm)



Process connection (M)	ØD	L	H
M48x2	46	92	223
M60x2	56	80	210
M78x2	74	80	220
M108x2	104	115	210
G2	56	80	210

Ordering Code

TLU - - - - -

Performance

N - Normal usable in non-explosive areas only
Ex - Ex. proof suitable for explosive areas

Measuring Range

05 – 0...5 m	40 – 0...40 m
10 – 0...10 m	50 – 0...50 m
15 – 0...15 m	60 – 0...60 m
20 – 0...20 m	70 – 0...70 m
30 – 0...30 m	X0 – Customized

Accuracy:

E1– 0.25%F.S
E2– 0.5%F.S
E3– 1.0%F.S

Power supply:

S1– 24VDC
S2– 220VAC+/-15% 50HZ

Output signal:

I2– 4~20mA-2wire(For range<15m)
I4– 4~20mA-4wire(For range>10m)
R1– RS485
R2– 4~20mA+RS485

Process connection:

M48 - M48x2 male thread	G2 - G2" male thread
M60 - M60x2 male thread	Flange - flange
M78 - M78x2 male thread	
M108 - M108x2 male thread	

Correct specification examples: TLUN-05-M48-I2-S1-E2

Specifications are subject to change without prior notice