

NON-CONTACT ULTRASONIC LEVEL TRANSMITTER/SWITCH



LVU30 Series



- ✓ Low-Cost
- ✓ Analog or Setpoint Switched Output
- ✓ Plug and Play Setup—No Targets Needed
- ✓ Easy Setup Software for Windows® (Included)
- ✓ Built-In Temperature/Sound Speed Compensation
- ✓ Up to 32 Sensors on RS485 Multi-Drop Loop

The LVU30 Series of RoHS Compliant low-cost ultrasonic sensors that produce detection ranges from as close as 100 mm (4") to greater than 4 m (13'). Incorporating state-of-the-art ultrasonic technology, the sensors provide precision non-contact distance measurement for factory automation or industrial process control. The LVU30 series of sensors stand out over all other systems because of their affordability, extraordinary ease of operation, genuinely user-friendly software, versatility in user-controlled outputs, and the ability to be set up without using a target. They transmit narrow beam sound pulses at a user-selected rate (software triggered), the process returns echoes, and various outputs depending on the position of the target and programming parameters.

SPECIFICATIONS (Typical at 24 Vdc, 22°C, 24 Vdc and 50% RH)

Ultrasonic Frequency:

- LVU31: 210 kHz
- LVU32: 150 kHz
- LVU33: 95 kHz nominal

System Beam Angle:

8 degrees conical

Range:

- LVU31: 102 mm to 1.2 m (4" to 4')
- LVU32: 178 mm to 2.4 m (7" to 8')
- LVU33: 305 mm to 4.0 m (1 to 13')

Resolution: 0.25 mm (0.01")

29 mm
(1.13")
diameter



LVU31 and
LVU30-MB
mounting bracket,
shown actual size.

Echo Detection

Sensitivity:

User selectable

Power Required:

12 to 24 Vdc (reverse polarity protected), 30 mA, typical

Output Impedance: 100 Ω for both modes of operation Proportional Mode (Analog Output)

Zero and Span Voltages:

Programmable from 0 to 10.25 Vdc (default: 0 to 10.0 Vdc)

Loss of Echo Voltage: Programmable from 0 to 10.25 Vdc (default: 10.25 Vdc)

Response Time: 60 ms

Resolution: 10-bit

Switch Mode

Setpoint Voltages: 0 or 10.25 Vdc

Setpoint Hysteresis

(Programmable): 0 to 75%

Response Time: < 1 ms

Sampling Rate (Programmable):

0.1 to 25 Hz in 0.1 Hz increments (default: 10 Hz)

Target Distance Averaging

Rolling Average:

From 1 to 32 samples

Boxcar Average: From 1 to 1024

samples (default: 1 sample)

Loss-of-Echo Time-Out:

From 1 to 254 consecutive samples missed before time-out (factory default: 1 sample)

Housing Material: PVC

Connection: 1 NPT

Transducer Surface: Custom PPA

Cable: 5 conductor, PVC jacket,

22 AWG, 200 mm (18") pigtail

[user-extendable for RS485 communication to 1500 m (5000')]

Operating Temperature:

-20 to 65°C (-4 to 149°F)

Storage Temperature: -40 to 85°C

(-40 to 185°F)

Relative Humidity: 0 to 95%, non-condensing

Enclosure Rating: NEMA 6 (IP67)

Programming Requirements

Communications Converter:

RS232 (or USB)/RS485 with automatic send data control

To Order

Model No.	Description
LVU31	Ultrasonic level transmitter/switch 1.2 m (4') range
LVU32	Ultrasonic level transmitter/switch 2.4 m (8') range
LVU33	Ultrasonic level transmitter/switch 4 m (13') range
LVU30-MB	Optional mounting bracket
LVU30-SW	Programming software available free at omega.com/ftp
IC11-PLUS	Auto RS232 to RS422/485 converter

Comes complete with operator's manual and lock nut.

Ordering Examples: LVU31, ultrasonic level transmitter/switch, LVU30-MB, mounting bracket. LVU33, ultrasonic level transmitter/switch.