ECHO-N

Universal Ultrasonic Level-Sensor

Features

/ Contactless measurement

/ No mechanical parts

/ Maintenance and wear-free

/ Simple installation

/ Easy calibration

/ Temperature-compensated

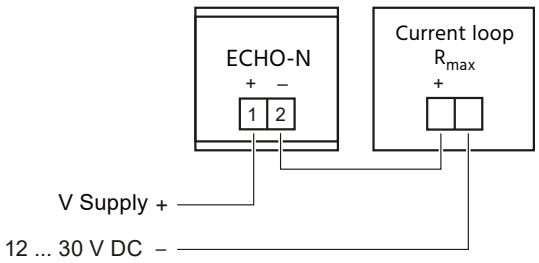
Description:

ECHO-N type ultrasonic level sensors are used when fluids and bulk goods need to be measured continually. The sensor works according to the principle of runtime method. It emits ultrasonic signals and subsequently measures the time elapsed until it receives again the echo reflected by the media surface. The echo runtime is proportional to the distance between the sensor and the medium and, therefore, to the level. Temperature influences are automatically compensated. By means of the Sonic Intelligence echo processing algorithms a filter discriminates between the true echo and false echos caused by electrical noises, acoustic or agitatords. The device is supplied as a compact unit in a water-proof plastic housing. A display unit, the connecting terminal and 2 programming keys are located below a cover flap.

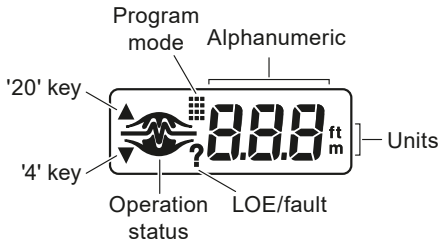
Application:

Ultrasonic level sensors are used wherever contamination and conditions of coldness, heat and humidity pose a problem to conventional measuring systems. By deploying ECHO-N, already occupied and soiled probes, hardened membranes, clogged floaters, leaking bubbling-through measuring systems and continual readjustments are a thing of the past. Key applications are: storage vessels, filter beds, waste water pits, food applications.

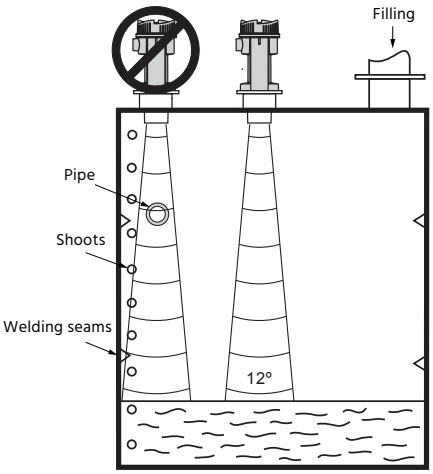
Electrical Connection:



Display



Mounting:



Location for installation

The ECHO-N must be installed in such a way to allow the sound without obstructions to reach at right angle to the surface of the medium. In any case, there must be a clearance of 250 mm between the lower edge of the sensor and maximum expected level. Distance must be maintained from obstructing structures like wires, tubes, strutting and strong welding seams.

Electrical Specifications:

Power supply /	12. . .30 VDC, 0.1 A peak
Consumption /	max. 0.75 W, (25 mA at 24 VDC)
Output signal /	4. . .20 mA, 2-wire
Load /	max. 600 Ω at 24 VDC
Electrical connection /	terminal block
Certificates /	CE, $CSA_{US/C}$

Technical Specifications:

max. Pressure /	ambient pressure
max. Ambient-temp. /	standard: -30. . .+60°C installation with metal-thread: -20. . .+60°C
Measuring range /	0.25. . .5 m at 54 kHz
Operating range /	proportional / inversibly proportional
Display /	3-digit LCD-display
Weight /	1.3 kg without flange adapter 1.5 kg with flange adapter
Accuracy /	0.25% of operating range (in air)
Resolution /	3 mm
Temp. compensation /	built in
Beam angle /	12°
Protection /	IP68 / NEMA 6 / TYPE 6
ATEX (on request) /	II 1G Ex ia IIC T4 Ga
Material /	electronic enclosure: PBT transducer: PVDF Copolymer
Process connection /	2" NPT (Taper), ANSI/ASME B1.20.1 R2" (BSPT) EN 10226 G2" (BSPP), EN ISO 228-1 4" sanitary
Flange adapter /	3" universal (fits DN65 PN10 and 3" ASME)
Cable inlet /	1 inlet for M20, optional 1/2" NPT

Ordering Codes:

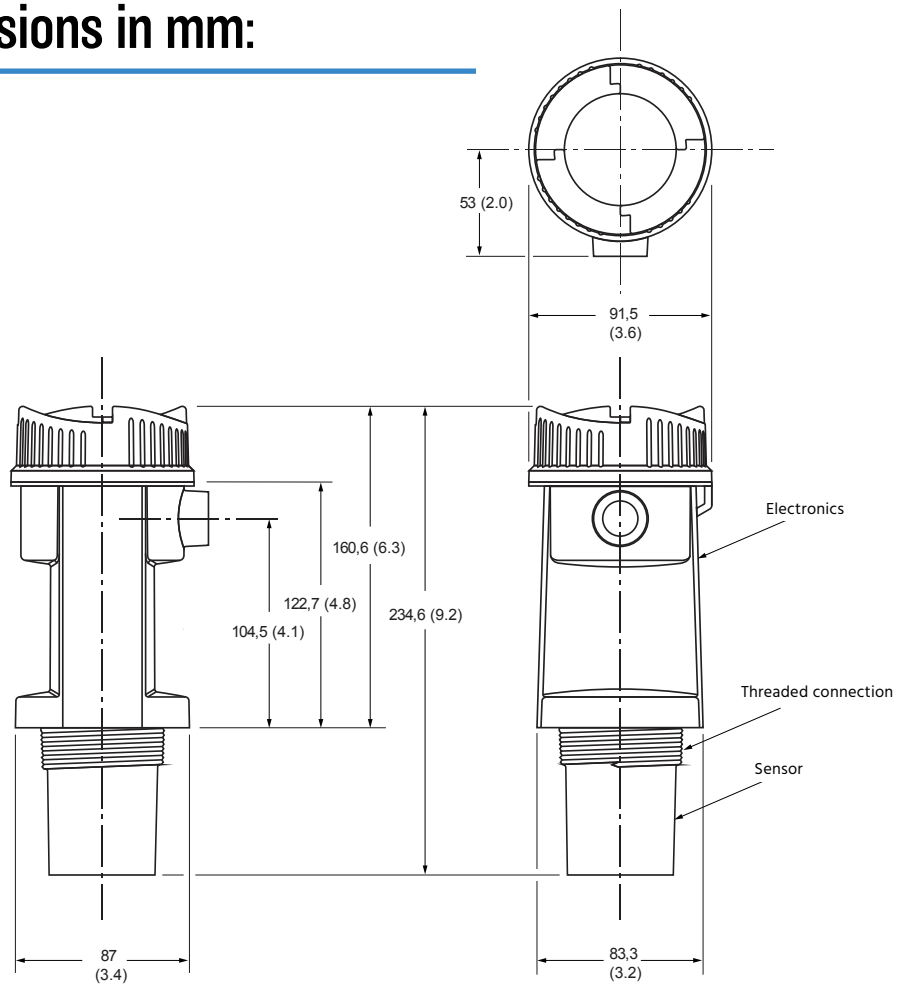
Order number	**ECHO-N.**	**1**
ECHO-N Univeral Ultrasonic Level-Sensor		

Process connection /

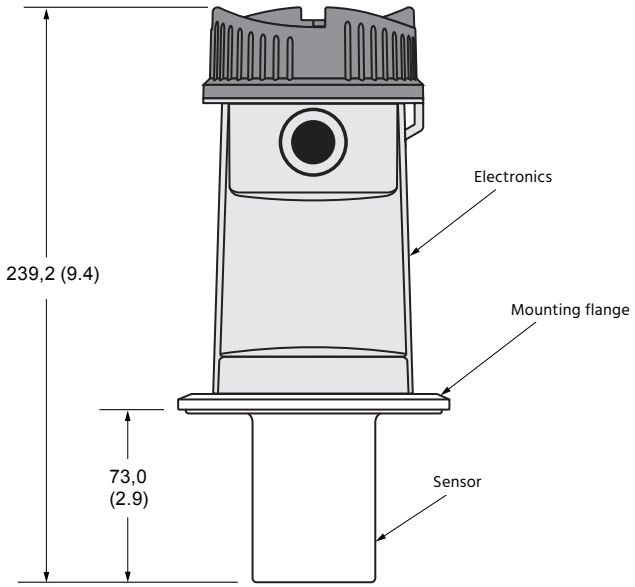
1 = 2" NPT
2 = G2" (BSPP)
3 = tri-clamp, sanitary flange 4"
4 = R2" (BSPT)

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

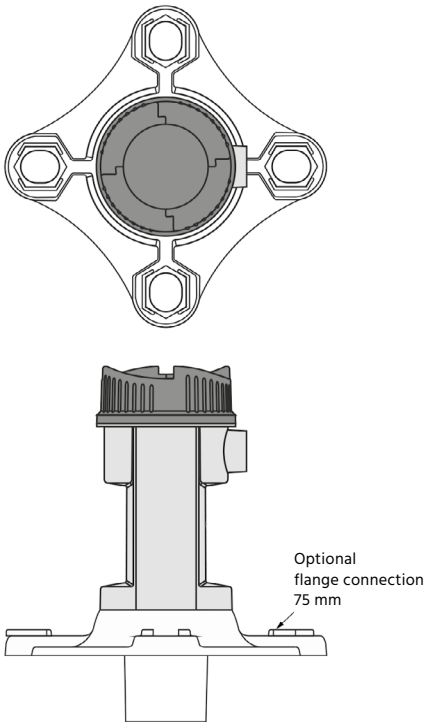
Dimensions in mm:



Sanitary connection in mm:



Flange connection:



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