PARATRONIC
Eau Environnement Risques Naturels

INSTALLATION INSTRUCTIONS

Entreprise certifiée ISO 9001

French manufacturer

ULTRASONIC SENSOR 4-20 mA

Contents

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1 SAFETY INSTRUCTIONS

⚠: WARNING: The sensor must be powered by a LIMITED POWER SOURCE.
The protection offered may be compromised if the ultrasonic sensor is not used as specified. A suitable isolation device must be provided outside the equipment.
Detailed information on safety symbols and marks can be found on the last page of this document (**section 6**).

2 DESCRIPTION

PARATRONIC ultrasonic sensors are designed for non-submerged level measurement, free from contact with liquids. They are particularly suitable for use in treatment stations, reservoirs, storm overflows, waterways, discharge channels, etc., and are protected against submersion effects (IP68).
Self-powered by the measurement circuit, they supply a 4/20mA signal for a measurement of up to 10m (depending on the model). They are simple and quick to use as they can be suspended from the cable. Commissioning via the configuration console takes a matter of seconds. It is also possible to use “WinUS” software and the “APD 232-US” adapter from **PARATRONIC**.

3 TECHNICAL SPECIFICATIONS

3.1 MECHANICAL SPECIFICATIONS

Description:	Metal casing
Material:	Cast aluminium, epoxy paint
Dimensions (mm):	L=95 x W=67 x H=242 (see detailed drawing)
Weight (kg):	1.7 + cable
Mounting:	Suspended with cable or on plate
Cable:	PVC sleeve, electrical shielding, 2 x 0.60 mm² conductors Diam. 7 mm +/-0.5 mm, weight 60 g per metre

4 ELECTRICAL SPECIFICATIONS

Power supply voltage:	10 to 40 V=
Output signal:	4/20 mA on 2 wires (protected against polarity inversion)
Fault signal:	22 mA (no echo)
Fault time delay:	240 sec (adjustable on request from 10 to 250 sec)
Max permissible resistance:	1350 Ω
Measurement range:	6 metres (US6), 10 metres (US10)
Emission cone:	+/- 6° at -3 dB
Blind zone:	30 cm
Level variation rate:	5 cm/s (adjustable on request from 1 to 50 cm/s)
Resolution:	1 mm
Linearity:	0.2% of full scale
Heating time:	3 s
Response time:	1 s (Warning: configurable average out of 2 to 16 measurements)
Temperature compensation:	yes (residual drift: 0.04% / °C)
Connection:	Cable with 2 x 0.60 mm² conductors

4.1 ENVIRONMENT, STANDARDS

Maximum altitude:	2000m above sea level
Protection rating:	IP68
Operating temperature:	-20°C to 60°C
Storage temperature:	-20°C to 60°C
Electromagnetic compatibility:	Fast transients level 4 Lightning surge wave 8/20, 2 KV EN 61000-6-2, EN 61000-6-3
Electrical safety:	EN 60950-1
Health:	EN 62479
Environment	EN 50581
CE Mark :	CE

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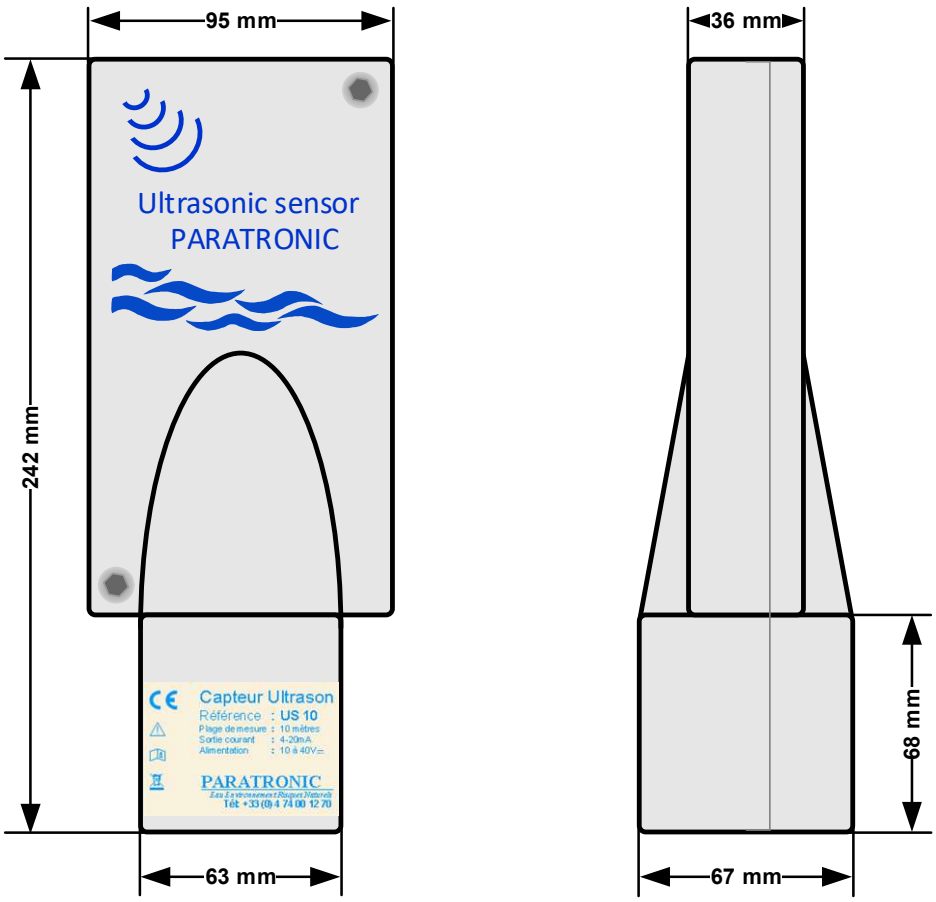
5 DIMENSIONS



6 MAIN ADVANTAGES

Ultrasonic technology:
- **The measurement is made with no contact with the liquid.**
- **Ideal in corrosive, particle-laden environments or those subject to food constraints.**

IP68:
- **Protected against submersion effects.**

Measurement sensor:
- **Measurement is not affected by ambient temperature.**

Highly reduced emission cone:
- **Works in small or congested areas.**

Automatic parasitic echo filtering:
- **Can operate in tubes (diam. ≥ 67 mm) or along a vertical wall with no rough areas.**
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Simplified measurement configuration:
- **The “full scale” and “current level” information is sufficient to configure the sensor.**

Signal 4 – 20 mA on 2 wires:
- **Measurement standard.**
- **No line resistance limitation.**

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Power supply 10 to 40 V:
- **Allows compatibility with all acquisition standards: automated systems, remote management, data loggers.**

Resolution: 1 mm for distance ≤ 3 m, 0.03% of “FS” for distance > 3 m:
- **High measurement precision.**

Connection without specific connector:
- **Allows compatibility with all acquisition standards: automated systems, remote management, data loggers.**

Polarity inversion protection:
- **Robust design and easy installation.**

Fault signal: 22 mA:
- **Measurement fault alarm.**

2-conductor cable, with electrical shielding:
- **Flexibility and high resistance to physical and chemical attacks.**

Suspended directly on cable or mounted on plate:
- **Simple and safe to use.**

No special maintenance required:
- **Optimal ease of use.**

7 SAFETY SYMBOLS AND MARKS

: Hazard risk. Important information. Refer to the instructions for use.

: Read the instructions for use.

CE: Compliant with European Union and EFTA directives.

: European Directive 2002/96/EC of 27 January 2003 on waste electrical and electronic equipment (WEEE Directive) was transposed in France by Decree No. 2005-829 of 20 July 2005.
Electrical or electronic appliances, and their spare parts and consumables must never be disposed of in household waste.
PARATRONIC has undertaken to set up an Individual Collection System.
PARATRONIC waste electrical and electronic equipment should be returned by customers (End users) to the following address:

PARATRONIC - Zone Industrielle - Rue des Genêts, 01600 REYRIEUX, France
Service Recyclage DEEE

The specifications described in this document are subject to change by the manufacturer without notice.

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