

Series 2001: Inductive Current Meters ISM-2001

Application spectrum:

Low-cost and robust sensors for the two component current measurement under adverse conditions and at the water sole or dense below the surface too, equally in poly-phase currents (with air bubbles and sediment freight).

Simple integration into data collecting units; fits to multiple parameter water probes of series 2001. Proved technique, proved long-standing in continuous efforts.

Good anti-fouling through the specific surface system of the measuring head and the constructional units made from sea water resistant brass.

An internal compass (2 axis magnetometer) is available optionally.

Working principle:

The disk sensor generates an alternating magnetic field in its environment. Free charge carriers pass this magnetic field near the sensor and are separated by Lorentz's force $F=q(\mathbf{v} \times \mathbf{B})$ up to the balance with the electrostatic attraction of the separated charges $F=qE$. An electrical field $E=\mathbf{v} \times \mathbf{B}$ builds up itself.

With two orthogonal electrode pairs voltages are picked up herein. The linearity between the flow velocity and the measured voltages is ensured by internal electronics.

Simple handling:

Two factory calibrated analogous outputs are to connect to a subsequent data collecting unit, e.g. flange version (F) to a multiple parameter probe of series 2001. Supply occurs from an external power source. No adjustments or settings are necessary at the sensors. The calibrations of zero and span are stable.

The micro-connectors of version C are compatible to Subconn and wetly plug-in. In this way, the probes are also suitable for long-term installations that are maintained by divers. Other connectors are available optionally.

Cleaning with simple mechanical means (sponge).

Key data:

Measuring range:	± 3 m/s (standard)
Accuracy:	± (0.5% Reading + 0.5% F.S.)
Disc sensor:	Ø 85 mm; thickness approx. 30 mm
Shaft:	Ø 16 mm; approx. 170 mm long
Electronics case:	Ø 40 mm; lengths without connectors: 145 mm (C) / 110 mm (F)
Weight (in air):	1.55 kp (C) / 1.25 kp (F)
Depth:	1000 m (deep-sea versions optional)
Current supply:	(85+35) mA (current + compass) @ 12 Vdc +20/-15% (other available)
Outputs:	0 to +5 V (as standard; other available)
Output filter:	Low pass 1.O. $\tau=0,5s$ (as standard)
Magnetometer:	± 65 μT at approximately 30 mV/ μT (2 orthogonal components 0 to +5 V)

Series 2001:

Current meters (with memory, serial interfaces), directional sea-state probes, and multiple parameter probes of different equipment.

Versions:

UW connector or
ISM-2001C

S2001 flange
ISM-2001F

