

Series 2001: Inductive Current Meters ISM-2001

Application spectrum:

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

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

Good anti-fouling through the specific surface system of the sensor and the constructional parts made from sea water resistant brass (ISM-2001C) or Titanium TiAl6V4 (ISM-2001CTi).

A two-axis magnetometer is available as compass 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. the flange version (F) to a multi-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 versions C/CTi are compatible to Subconn and wet pluggable. Therefore, 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/CTi) / 110 mm (F)
Weight (in air):	1.55 kp (C) / 1.00 kp (CTi) / 1.25 kp (F)
Depth:	1000 m (C) / 7000 m (CTi)
Current supply:	(85 + 35) mA (current + compass) @ 12 Vdc ±25% (others available)
Outputs:	0 to +5 V (as standard; others 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 S2001 flange

ISM-2001C
ISM-2001CTi

ISM-2001F

