MODEL 802 - Electromagnetic Current Flow Sensors

The Model 802 range of Electromagnetic Current Flow Sensors offer precision flow measurement in a wide variety of applications. A choice of sensor designs allows a range of requirements to be met, from the small spatial resolution needed for laminar flow modelling in the laboratory to larger highly durable sensor for use in the surf zone or deep seabed deployments. The electromagnetic technology allows operation in clean water environments, and the system can be supplied in several configurations to suit the application.

Sensors

The Model 802 is available with a choice of different sensor shapes to suit a variety of applications. The specific characteristics of each type are as follows:

Discus

Particularly suitable for laminar flow applications. The smallest sensors give excellent spatial resolution, and the largest are particularly robust. Sampling volume is a cylinder of the same diameter as the sensor, and height of ½Ø, projecting from the sensor face.

Size:	3.2, 5.5 or 11cm Ø
Accuracy:	±1% measurement accuracy
	±5mm/s zero stability
	±12mm/s (rms) signal noise @ 1m/s (3.2cm)
	±10mm/s (rms) signal noise @ 1m/s (5.5cm)
	±2mm/s (rms) signal noise @1m/s (11cm)
	Tilt Response: -5% @ 25°
Heading Error:	±0.5° max

Spherical

Suitable for non-laminar flow applications, where durability is of prime concern. Sampling volume is a sphere surrounding the sensor, 3x Ø of sensor.

Size:	3.2, 5.5cm Ø
Accuracy:	±1% measurement accuracy
	±5mm/s zero stability
	±20mm/s (rms) signal noise @ 1m/s (3.2cm)
	±15mm/s (rms) signal noise @ 1m/s (5.5cm)
	Tilt Response: -5% @ 90°
Heading Error:	±5° max

Data Acquisition

Sample Rate:	1, 2, 4, 8 or 16Hz, or data on demand	
Control:	Via ASCII control codes	
Filter Delay:	Digital FIR filter, with delay dependent on rate	
	1Hz	8 samples
	2Hz	8 samples
	4Hz	7 samples
	8Hz	15 samples
	16Hz	5 samples

Data Output

RS232:	±XXXX<tab>±YYYY<cr><lf>
	where XXXX and YYYY are speeds on X & Y axes in mm/s.
Analogue:	Optional ±5V each axis (reconstituted from digital data using 12 bit D/A).
	Enquire about alternative ranges.

Configurations

Integral Underwater

Chosen sensor and all electronics in a single underwater housing, with a single connector for power in / signal out.

Remote Underwater

Chosen sensor and pre-amp housing on a 3m cable to separate electronics housing. Single connector for power in / signal out.

OEM Package

Chosen sensor and pre-amp housing on a 3m cable to un-housed electronics. Supplied with wiring looms for power in and signal out.

Display Unit Package

Chosen sensor and pre-amp housing on a 3m cable to surface control display unit fitted with graphics LCD display showing instant and average data. Display unit also has internal battery pack supplying itself and sensor, and 128kbyte memory (data downloaded to PC in ASCII text format). Display unit specifications are:

Material:	Moulded ABS plastic
Power:	8 x 1.5v alkaline C cells
Dimensions:	244 x 163 x 94mm, 2kg
Protection:	IP67 (10 secs @ 0.3m)

Physical

Materials:	Polyurethane sensors, Titanium housings.
Depth Rating:	All sensors and housings rated to 3000m
Connectors:	Valeport subsea connectors
Power:	12 - 24vDC, add 1.5W for display unit system

	3.2cm	5.5cm	11cm	17cm
Discus	3W	2.4W	2W	N/A
Spherical	2W	2W	N/A	N/A

Ordering

Order codes are not given here, because of the wide choice of sensors and configuration options. Please contact Valeport to discuss your measurement requirements.

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