MAVS-5

Vector Averaging 3-Axis Acoustic Current Meter

The **MAVS Current Meter** is a true 3-axis Acoustic Current Meter which employs a differential travel time measurement technique. The current meter takes measurements across 4 acoustic axes to provide a true vector averaged velocity measurement. Programmable burst mode and triggered sampling provide the most flexible current meter available.

The combination of small sensor geometry and differential travel time technique provide unsurpassed resolution and accuracy. The small transducer size significantly reduces the disturbance to water flow. While the standard range of measurement is 200 cm/sec, accuracy is still preserved in the low speed measurement range of 0.03 cm/sec to 10 cm/sec. Ranges higher than the standard are also possible, but with reduced resolution.

MAVS-5 uses a terminal emulator interface such as *Hyper-Terminal* or *CrossCut* for getting real time data and for downloading and archiving data. Software such as *MATLAB* or *Excel*, etc. may be used for tabular display and graphing data.

MWAVES proprietary software is available for processing directional wave & tide spectra.

The **MAVS-5** employs a faired sensor head design with central strut and a 9.5 cm acoustic path length. The controller is an Persistor CF2 which is mounted by a connector beneath the main circuit board. A battery pack comprising 18 AA alkaline cells provides the necessary power to the instrument. A 4 pin connector on the top end cap permits external power to be applied and provides TTL level, RS-232 or RS-485 communication capability.

Options:

- Tilt sensor
- Wave direction
- Temperature sensor
- Conductivity sensor
- Pressure sensor
- Turbidity sensor
- Deep water housing
- 1 GB Compact Flash memory
- Titanium housing for 6000m
- Integration into moored profiler
- Alternative battery options

Features:

- Unsurpassed resolution and accuracy
- True 3 axis acoustic velocity measurement
- Field proven sensor technology
- No moving parts to foul
- Multi-mode, vector averaging or event driven sampling
- Excellent vertical cosine response
- Differential travel time measuring technique
- Internal recording or direct reading
- Accuracy unaffected by tilt or mooring motion
- Internal real time clock
- Digital coms via 5 Volt TTL, RS-232 or RS-485
- Temperature measurement
- 3-D Compass & Tilt Sensor

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SPECIFICATIONS

Parameter	Accuracy	Resolution	Range
Speed	0.3 cm/sec	0.03 cm/sec	200 cm/sec (optional ranges available)
Direction	+/- 2 °	1°	360°
Temperature	0.1° C	0.03° C	-5 to 45° C
Conductivity	0.2 mS/cm	0.02 mS/cm	0 to 75 mS/cm
Pressure	0.5% F.S*.	0.024% F.S.	15, 30, 60, 450, 3,000, 7,500 & 10,000 PSI
Tilt	2°	0.1°	20° (45° optional)

* 0.04 or 0.1% optional

Drift: None

Technique: Differential travel time, 3 axis

Acoustic Paths: 4 measured, 4 used

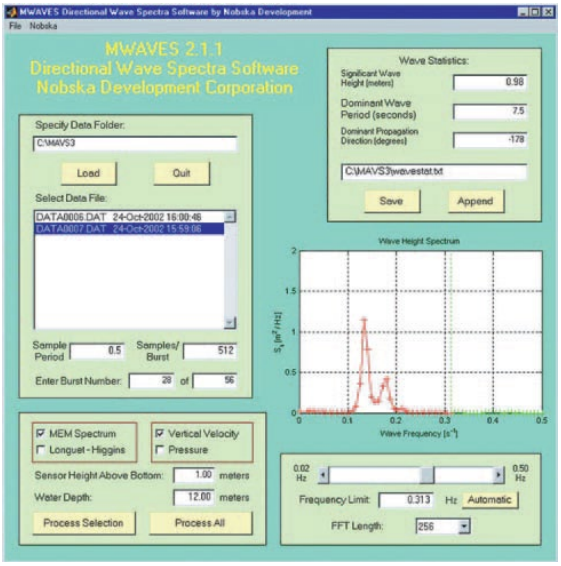
Internal Memory: 1GB compact flash card

Memory Usage: Dependent on sampling method

Communications: TTL, RS-232 or RS-485 @ 38,400 baud maximum 115.2 K baud

Sampling Rates: 10 Hz in Earth Coordinates (resolved to Ve, Vn, Vup) or
15 Hz in instrument coordinates
25 Hz Raw Data, No Compass, No Options

Operating Modes: Burst Mode (programmed for timed sampling)
Vector Averaging
Externally Triggered Sample
Continuous Sampling



Data Record Size: Standard Instrument: 32 bytes per record
for Day, Hour, Min, Sec, T, Tilt, Ve, Vn, Vu
Recorded as Binary and transmitted as
ASCII CSV with CR LF

Depth: 2000m or 6000m.

Dimensions: Length: 635mm Diameter: 83mm

Weight: Water: 1.2 kg. / Air: 2.3 kg (Std version)

Mooring Frame: 900 kg. Optional 4500 kg. available

Sea Cable: RS-485 or RS-232 (others on request)

Software: Terminal Emulator: Hyper-terminal, Crosscut or Tattleterm
Optional graphical software for directional wave & tide spectra (MWAVES)

Power: **Recording:** 13.5 Vdc, 18 AA Alkaline batteries, @ 4.8 Ah, or $LiSOCl_2$ 14.4 Vdc @ 8.8 Ah
Direct Reading: External 12-15 Vdc
Current Drain: 23 mA. Measuring, 0.6 mA. Sleep Mode

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