

Directional Wave and Current Meter

*Wave Direction and Height with vector-averaged
3D Current Speed and Direction in a Single Instrument*

Enhanced Design, Performance, Specifications

The **ACM-WAVE-PLUS** from Falmouth Scientific, Inc. provides wave direction, wave height, and other wave statistics by combining FSI's enhanced ACM-PLUS acoustic current meter technology with a high-accuracy, micro-machined silicon pressure sensor. The instrument can be deployed in a multiple-mode format to allow periodic burst sampling of wave data as well as long-term averaging.

The **ACM-WAVE-PLUS** includes advanced standard features such as **extended on-board data memory**, **fast download capability**, **high accuracy real-time clock**, and **high speed data sampling**.

The **ACM-WAVE-PLUS** comes complete with FSI's Windows-based **ACMProPLUS** software for system configuration and data download, as well as our **WavePost** software for graphics display and advanced post-processing.

The device may also be equipped with an optional CTD module, and can be configured to log up to two analog inputs from external sensors (e.g., DO, OBS, Fluorometer, Transmissometer).



FSI ACM-WAVE-PLUS shown with optional CTD and 5-ton frame

FEATURES

- High-accuracy wave data, precise pressure sensor
- Built-in 3-Axis ACM with excellent low-velocity resolution
- Electronic magneto-resistive compass, 2-axis tilt sensor
- **Fast Data Sampling up to 5 Hz, Fast Data Download**
- Long-term data logging to **16 GigaByte internal memory**
- Built-in **High Accuracy** real-time clock
- 1.5-ton working strength mooring frame standard; optional 5-ton mooring frame
- Optional conductivity, temperature, pressure sensor package (CTD) may be added



SPECIFICATIONS

Sensors

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Parameter	Type	Range	Accuracy	Resolution
Pressure (Wave Height)	Silicon Micro-machined	0-50 PSIA (23m max depth)	±0.01% full scale	0.145 x10 ⁻³
Velocity	Acoustic	0 to 600 cm/s	≤ 1%±0.5 cm/s	0.01 cm/s
Direction	3 Axis Magnetometer	0 to 360°	±2°	0.01°
Tilt	2 Axis Accelerometer	0 to 30°	0.5°	0.01°
Temperature	Semiconductor	-2 to 35°C	0.5°C	0.01°C

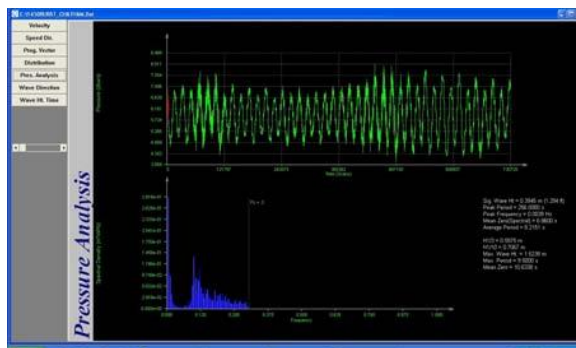
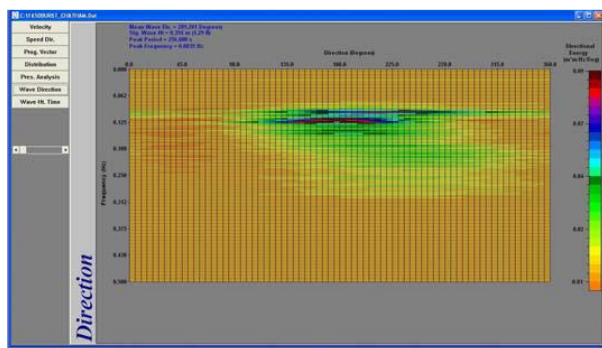
Optional CTD

	Range	Accuracy	Resolution	Stability
Conductivity (mS/cm)	0 to 70	±0.01	.001	±0.0005 per month
Temperature (Celsius)	-5 to 32° ITS-90	±0.01°	.001°	±0.0005° per month
Pressure (dBar)	0 to 300 dBar*	±0.1% full scale	0.01% full scale	±0.01% per month

*Limited to 23m max depth

Instrument

- External Power:** 8 to 32 VDC
- Current Draw:** Typical 60 mA at 1 Hz sample rate;
Sleep 1.0 mA battery, 3.5 mA external power
- Battery Power:** Alkaline 5 D Cell Welded Pack, 10 AHR
- Internal Memory:** 16.0GB Standard
- Sample Rate:** 5 Hz Maximum
- Vector Averaging Period:** User Selectable up to 59 Min:59 Sec
- Real Time Clock:** Programmable High Accuracy Sampling / Low-power Mode
- Sampling Modes:** Continuous, Interval, and Delayed Start (continuous or interval)
- Clock Stability:** +/- 2ppm (0-40 degrees C);
+/- 4ppm (-40 degrees C to +85 degrees C)
- Optional Input Channels:** Two (2) 0-5V DC Input Channels with 12 bit A/D resolution available for external sensor input (Regulated 12 VDC, 1.5W provided to power external sensors)
- Depth Rating/Physical Material:** 300 Meter Epoxy Housing Standard, P/N: B400-303 (Limited to 23m max depth)
- Mooring Frame:** 1.5 Ton Rated 316 Stainless Steel Mooring Frame (Standard); 27" x 9.25" square (approx.)
5 Ton Rated 316 Stainless Steel Mooring Frame (Optional); 39" x 9.4" square (approx.)



Example Wave Directional Energy (left) and Pressure Analysis (right)

NOTE: FSI Does not provide the wave analysis Software

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