AWAC

Acoustic Wave and Current Profiler

The Acoustic Wave and Current profiler (AWAC) performs measurement of wave height, wave direction and the full current profile using the unique acoustic surface tracking (AST) feature.

- Improved pressure sensor
- ProLog Internal Processor
- Special ice detection algorithm
- SeaState 2.0 for online data collection

The system can resolve waves from 1 to 100 s. AWAC provides current profiler and a wave directional system in one unit. AWAC can measure the current speed and direction in 1-meter thick layers from the bottom to the surface.

Possible as powered from network also as stand-alone, as bottom moored or mounted on subsurface buoys. Wave direction is calculated by combining AST with orbital velocity measurements in an array near the surface.

Technical specifications

System

Acoustic frequency	1 MHz, 600 kHz or 400 kHz
Acoustic beams	4 beams, one vertical, three slanted at 25°
Vertical beam opening angle	1.7°
Operational modes	stand-alone or online monitoring

Current profile

Maximum range	30 m (1 MHz), 50 m (600 kHz), 100 m (400 kHz) (depends on local conditions)
Depth cell size	0.25 – 4.0 m (1 MHz) 0.5 – 8.0 m (600 kHz) 1.0 – 8.0 m (400 kHz)
Number of cells	typical 20 – 40, max. 128
Maximum output rate	1 Hz

Velocity measurements

Velocity range	± 10 m/s horizontal, ± 5 m/s along beam
Accuracy	1% of measured value ± 0.5 cm/s

Wave measurements

Maximum depth	35 m (1 MHz), 60 m (600 kHz), 100 m (400 kHz)
Data types	pressure, one velocity along each beam, AST
Sampling rate (output)	2 Hz velocity, 4 Hz AST (1MHz), 1 Hz velocity, 2 Hz AST (600kHz), 0.75 Hz velocity, 1.5 Hz AST (400 kHz)
Temperature Drift	< 1 ppm/°C

Wave estimates

Range	15 to +15 m
Accuracy / resolution (Hs)	< 1% of measured value/1cm
Accuracy / resolution (Dir)	2° / 0.1°
Period range	0.5 - 100 s (1 MHz), 1 - 100 s (0.6 MHz), 1.5 - 100 s (0.4 MHz)
Number of cells	typical 20 – 40, max. 128
Maximum output rate	1 Hz

Environmental

Operating temperature	–4 °C to 40 °C
Storage temperature	–20 °C to 60 °C
Shock and vibration	IEC 721–3–2
Depth rating	300 m