



SeaWATCH / SeaPROFILER ADCP

Self-Contained and Direct Reading 150 kHz / 78 kHz ADCP

The ROWE Technologies **SeaWATCH** family of self-contained Acoustic Doppler Current Profilers (ADCPs) lead the industry in state of the art acoustic Doppler technology. ROWE's second generation electronics provide higher power operation needed for lower frequency [78 kHz and 150 kHz] ADCPs.

The **SeaWATCH** systems are offered in both conventional piston transducers, and the newly designed ROWE Doppler Array. The performance characteristics of both piston transducers and Doppler Array configurations are similar, but the Doppler Array system dramatically reduces the unit's volume and weight requirements. This, combined with the next generation of ROWE compact electronics and robust signal processing, provides a versatile ADCP platform, capable of producing precise current profile measurements over extended ranges out to 1000km.

ROWE's Doppler Array technologies offer unique benefits, especially in low frequency systems where the size of the transducers dominate the overall ADCP volume and weight. These Doppler Array surfaces are flat, and form acoustic beams with characteristics equivalent to conventional piston transducers, but use approximately 50% less frontal area, volume and weight.

ROWE Doppler Arrays can form up to 9 acoustic beams (at 0°, 4 at 20°, and 4 at 30°) unlike existing piston technology which uses four fixed beams in a Janus configuration. The ROWE Doppler Array design increases measurement flexibility for better velocity accuracy (30° beams), improves range (20° beams), or generates a highly accurate altitude/depth (single broadside beam).

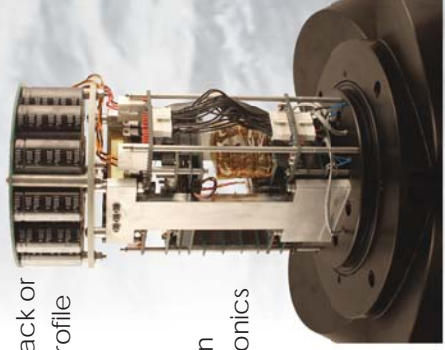




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Standard Features:

- Single Unit 3-Axis Current Profiles, Bottom Track or Water Track Velocity, and Echo Intensity Profile
- Industry Standard Serial Data Interfaces: RS232, RS422, RS485 and/or Ethernet User-Programmable Operation
- Vertical or Horizontal Electronics Orientation
- 2nd Generation ROWE Technologies Electronics
- High Accuracy Velocities:
 +/- 0.7% for 150 kHz
 +/- 1.0% for 75 kHz
- Heading: Fluxgate +/- 1° Accuracy
- Pressure: +/- 1% Full Scale Accuracy



2nd Generation ROWE Technologies Electronics: Vertical Orientation

Optional Features:

- Phased Array or Piston Transducers: 78 & 150 kHz
- 300, 1500 3000, and 6000 m Depth Ratings
- Housing: Plastic, Aluminum, Titanium
- Standard Transducer Beam Angles:
 4 at 20° or 30°
- Phased Array Transducers (9 Beams)
- 1 at 0°, 4 at 26°, 4 at 39° (Rotated at 45 deg.)
- External Battery Pack(s) for Extended Deployments



78 kHz 11.4" OD Piston



78 kHz 9.5" OD Piston



150 kHz 7.95" OD Piston



78 kHz 15.6" OD
Doppler Array



78 kHz 9.1" OD
Doppler Array



150 kHz 7.95" OD
Doppler Array

SeaWATCH

Specifications

Single Frequency (nominal):	78 kHz	78 kHz	150 kHz	78 kHz	150 kHz	78 kHz	150 kHz
Piston Ceramic Size OD:							
Beam widths [2 way]:							
Beam Spacing:							
Doppler Array Transducer Size OD:**							
Beam widths [2 way]:							
Beam Spacing:							
Velocity Range:	±20 m/s Max, ±5 m/s Typical						
Resolution:	0.01cm/s						
Number of Cells:	up to 200						
Cell Size:	8 m typical (8 cm minimum)						
Current Profiling:	16 m typical (16 cm minimum)						
Maximum Range:							
Narrow Band:	700 m	600 m	425 m	650 m	425 m	620 m	425 m
Broad Band:	455 m	400	275 m	435 m	275 m	425 m	275 m
Long-Term Accuracy (High Accuracy Option):	± 1.0%, ± 2 mm/s						
Long-Term Accuracy (Low Accuracy Option):	± 0.70%, ± 2 mm/s						
BB Single-Ping Precision:	± 1.0%, ± 2 mm/s						
NB Single-Ping Precision:	± 1.0%, ± 2 mm/s						
Data Output Rate:	0.7 Hz	0.7 Hz	1 Hz	0.7 Hz	0.7 Hz	0.7 Hz	1 Hz
Bottom Tracking:							
Maximum Range:	1000 m	1000 m	700 m	1000 m	1000 m	1000 m	700 m
Maximum Bottom Track Speed:	15 m/s						
Long-Term Accuracy (High Accuracy):	± 1.0%, ± 2 mm/s						
Long-Term Accuracy (Low Accuracy):	± 1.0%, ± 2 mm/s						
Single-Ping Precision:	< 1 cm/beam for 30° beams; < 2 cm/beam for 15° beams						
Resolution:	0.01 cm/sec						
Sensors:							
Compass: Range/Accuracy/Resolution:	0 - 360° / 1° RMS / 0.01°						
Pitch/Roll: Range/Accuracy/Resolution:	Roll ± 150° / Pitch ± 90° / <1° RMS / 0.01°						
Water Temp: Range/Accuracy/Resolution:	-5°C - 70°C / ±0.15°C						
Pressure: Range/Accuracy:	Selectable / ±0.10% Range						
Materials Options:	Acetal / Aluminum / Titanium						
Input Power:							
Voltage Range (Ext DC Input):	20 - 36 VDC						
Average Power (5% duty cycle) / Peak Current:	50 W / 6 Amps for Profiling and 150 W / 25 Amps for Bottom Tracking						
Output Data:							
Communications:	RS232, RS485, 10BaseT Ethernet (self-contained only)						
Internal Recording:	32 GB/yr						
Environmental:							
Temperature:	-5°C to 45°C (Operating), -30°C to 60°C (Storage)						
Depth Rating:	500 m, 1600 m, 3000 m and 6000 m						

Specifications may be subject to change at any time in the future.

** In Development