



# Sea SURVEYOR

## ADCP and DVL for Moving Vessels

### FEATURES

RTI's Sea SURVEYOR key features are listed below:

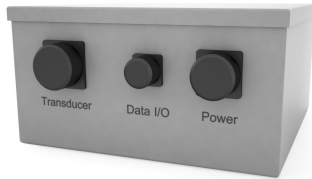
- Patent Pending Dual-frequency system in a single package
- RTI's proven Doppler Signal processing and advanced Bottom detection algorithms
- Continuous data quality and Built-In-Test of transducer and electronics modules provides real time operational data quality and status, plus fault localization to field replaceable module

### CONFIGURATION

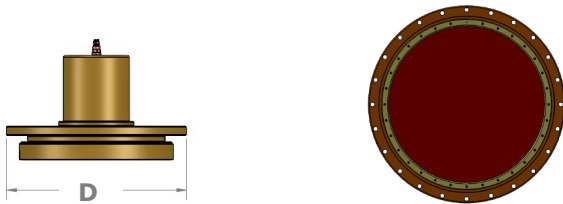
Deck unit



Electronics unit



Phased Array Transducer



Frequency (kHz)	38 or 38/150	75 or 75/300	150 or 150/600
Size (D)	91.5 cm	48 cm	30.5 cm
Range	<= 1000 m	<= 800 m	<= 400 m
Bin size (Typical)	24 m	16 m	8 m

### ADVANTAGES

- High-Resolution Current Profiles in the upper and coastal ocean
- Long-Range Current Profiles in deep ocean
- Simultaneous Depth data and Profiling Range/Precision optimization modes, transmit levels, and bandwidths
- Real-Time user adaptable or totally automatic operation
- Application Specific post signal processing in Host Computer

### DESCRIPTION

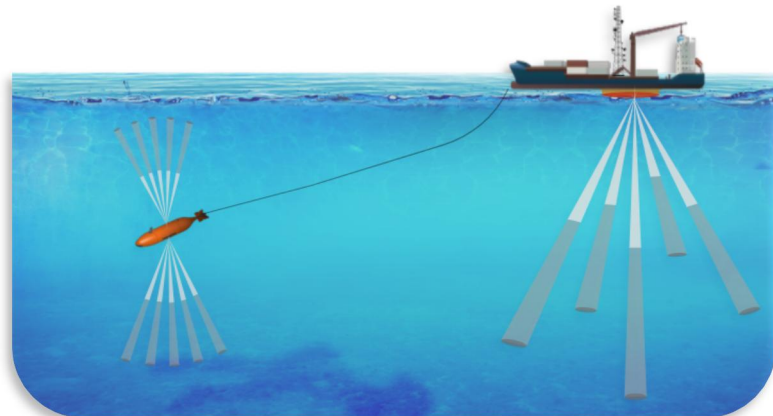
RTI's Sea SURVEYOR ADCP and DVL employ advanced 4<sup>th</sup> generation ROWE ADCP Technologies (ADCP4), to simultaneously measure precision Short Range and Long Range vertical profiles of:

- 3-Axis water Currents,
- Echo Intensity,
- Vertical Profiles of Plankton Size Distribution,
- 3-Axis Bottom Track and Altitude,

providing a horizontal spatial survey of the vertical profiles along the path of surface or subsurface vessel path.

The configurations of the Sea SURVEYOR are available at single and dual frequency options. The various single acoustic frequencies options starting from 38, 75, 150, 300 and 600 kHz and the dual frequency options are 38/150, 75/300, 150/600. The lower frequency provides longer profiling and bottom tracking range, and the higher frequencies provide higher spatial, velocity and temporal resolution currents and echoes nearer to the vessel. Two transducers may be used with a single Transceiver unit for simultaneous UUV up/down measurements, including ocean surface/ice height.

### APPLICATIONS



## TECHNICAL SPECIFICATIONS

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<b>Acoustic:</b>					
Frequency (kHz)	38	75	150	300	600
Transducer Type	Phased Array				
Beams	4 inclined @ 30°, 1 @ 0°				
2-Way Beam Width	2.5	2.7	2.7	2	1.1
<b>Current Profile:</b>					
Velocity range	-10 to 10 m/s				
Long-term Accuracy	±1 % ± 0.5 mm/s				
Broadband Precision	7 cm/s @ Standard Depth Cell				
Narrowband Precision	20 cm/s @ Standard Depth Cell				
Broadband Range (m)	1100	590	370	160	80
Narrowband Range (m)	1400	750	450	200	100
# Cells	Up to 200				
Cell Size (m)	4-64	4-32	2-16	1-8	0.5-4
Max Sampling Rate (Hz)	0.5	1	2	4	8
Min Blanking (m)	4	2	1	0.5	0.3
<b>Echo Intensity Profile:</b>					
Amplitude Resolution	0.1 dB				
Amplitude Accuracy	± 0.5 dB				
Dynamic range	80 dB				
Altitude Accuracy	± 1 %				
<b>Bottom Tracking:</b>					
Long-term Accuracy	+/- 1 %				
Broadband Precision	+/- 0.5 % @ 3 m/s				
Narrowband Precision	2 cm/s @ 3 m/s				
Broadband Range (m)	>1700	1000	600	250	120
Narrowband Range (m)	>2200	1200	700	300	150
<b>Data Communications:</b>					
Serial	RS-232, RS422 or RS-485 serial @ 1200 - 921600 baud				
Ethernet	100 Base-T				
<b>Sensors:</b>					
Water Temperature	-5 to 40°C, ± 0.2°				
<b>Power:</b>					
Voltage Form	90 – 250 VAC, 47-60 Hz or DC 24 – 48 VDC				
Average Power (5 % duty cycle)/ Peak Current	70 W/ 16 A	50 W/ 16 A	30 W/ 16 A	20 W/ 5 A	15 W/ 5 A
<b>Physical:</b>					
Materials	Transducer: Bronze				
Transducer Diameter	See Table (first page)				
Electronics Unit	400 mm * 350 mm *150 mm, NEMA 4/4x/12/13 Rating				
Deck Unit	100 mm Rack Mount				
Transducer-Elec Cable	20 m max				
Electronics-Deck Cable	100 m max				
<b>Environmental:</b>					
Operating Temperature	-5 to 50° C				
Storage Temperature	-30 to 70° C				
<b>Built-In-Test:</b>					
Continuous Monitor	Transmit Power, Transducer Impedance, Operating Voltages, Receiver and Processor Operation,				
Fault Diagnostics	Fault Localization to Plug-in Replaceable Module				