

FEATURES AND BENEFITS

- Single or Dual-Frequency operation in a single phased array transducer (patented) ADCP system providing:
 - High-Resolution Current Profiles in the upper and coastal ocean
 - Long-Range Current Profiles in deep ocean
- RTI's proven Doppler Signal processing and advanced Bottom detection algorithms
 - Narrowband for longer range
 - Multiple Broadband modes and bandwidths
- ± 1% Current and Bottom Velocity accuracy
- High accuracy Dual-Frequency echo intensity for plankton particle size distribution calculation over overlapping profiling range
- Host Computer control of Profiling Range/Precision Multi-Mode operation and Application Specific post signal processing

DESCRIPTION

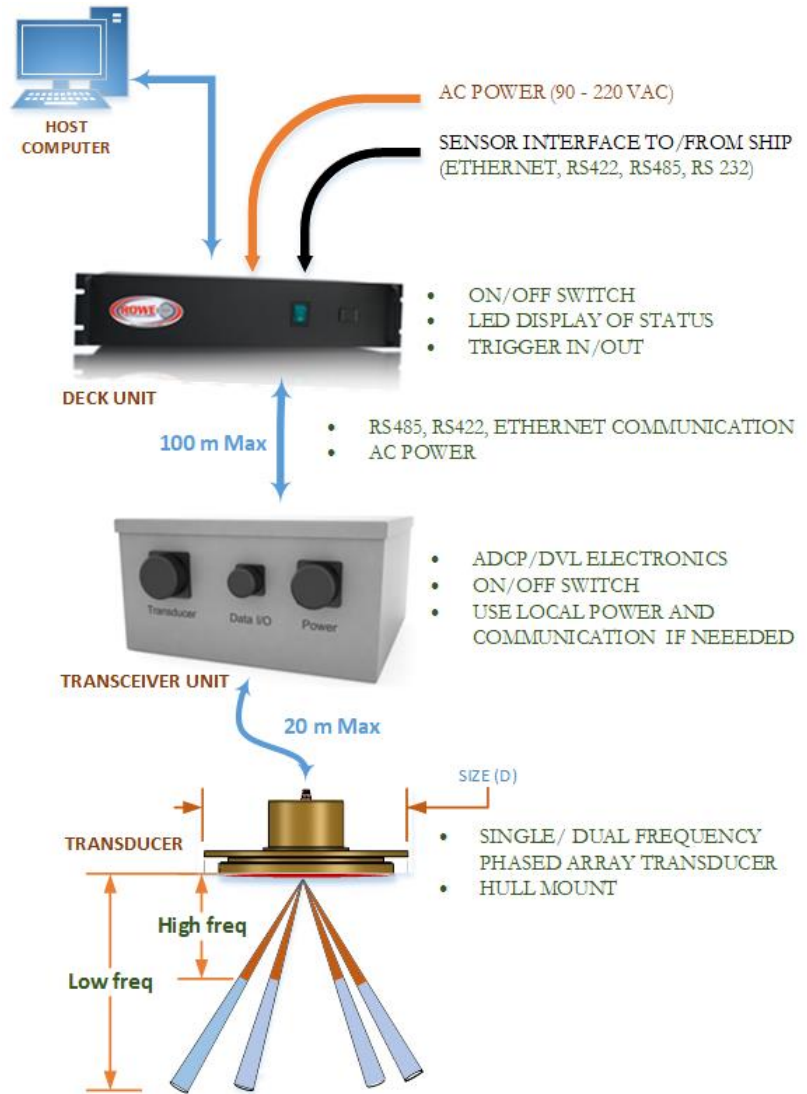
RTI's **Sea SURVEYOR** ADCP and DVL employ advanced 3rd generation **ROWE ADCP Technologies (ADCP3)**, to simultaneously measure precision Short Range and Long Range vertical profiles of:

- 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 surface or subsurface vessel path.

Configurations of the **Sea SURVEYOR** are available at single and dual frequency options. Single frequency options are 38, 75, 150, 300 kHz and the dual frequency options are 38/150, 38/300, 75/300, 150/300. 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.

SYSTEM CONFIGURATION



TRANSDUCER FREQUENCY, SIZE, RANGE

| Frequency (kHz) | 38 or 38/150 | 75 or 75/300 | 150 or 150/300 |
|-----------------------------------|--------------|--------------|----------------|
| Size (D) in cm | 91.5 | 48 | 30.5 |
| Range (m) Bottom track (NB) | 2000 | 1200 | 600 |
| Range (m) Bottom track (BB) | 1500 | 800 | 400 |
| Range (m) Current Profile (NB) | 1100 | 600 | 300 |
| Range (m) Current Profile (NB) | 1300 | 800 | 400 |

| TECHNICAL SPECIFICATIONS | | | |
|---------------------------------|--|----------------------|---------------------|
| Acoustic: | | | |
| Frequency (kHz) | 38 | 75 | 150 |
| Transducer Type | 2D Phased Array | | |
| Beams | 4 inclined @ 30° | | |
| 2-Way Beam Width | 3° | | |
| Current Profile: | | | |
| Velocity range | -5 to 15 m/s | | |
| Long-term Accuracy | ±1 % ± 2 mm/s | | |
| Broadband Precision | 4 cm/s at 32 m cell | 4 cm/s at 16 m cell | 4 cm/s at 8 m cell |
| Narrowband Precision | 20 cm/s at 32 m cell | 20 cm/s at 16 m cell | 20 cm/s at 8 m cell |
| Broadband Range (m) | 1100 | 600 | 300 |
| Narrowband Range (m) | 1300 | 800 | 400 |
| # Cells | Up to 250 | | |
| Cell Size (m) | 8-64 | 4-32 | 2-16 |
| Ping Rate at Max Range (Hz) | 0.4 | 0.6 | 1.2 |
| Min Blanking (m) | 4 | 2 | 1 |
| Echo Intensity Accuracy: | ±1 dB | | |
| Bottom Tracking: | | | |
| Long-term Accuracy | ± 1 % ± 2 mm/s | | |
| Broadband Precision | ± 0.5 % @ 3 m/s | | |
| Narrowband Precision | 2 cm/s @ 3 m/s | | |
| Broadband Range (m) | >1500 | >800 | > 400 |
| Narrowband Range (m) | >2000 | >1200 | > 600 |
| Ping Rate @ Max Range (Hz) | 0.25 | 0.5 | 1.0 |
| Altitude Accuracy ¹ | ±1 % | | |
| Data Communications: | | | |
| Serial | RS-232, RS422 or RS-485 serial @ 1200 - 921600 baud | | |
| Ethernet | 100 Base-T | | |
| Sensors: | | | |
| Water Temperature | -5 to 40°C, ± 0.2° | | |
| Power: | | | |
| Voltage Form | 90 – 250 VAC, 47-60 Hz or DC 24 – 48 VDC at 1000W peak and 100W average | | |
| Physical: | | | |
| Materials | Transducer: Bronze | | |
| Transducer Diameter | See Table (first page) | | |
| Electronics Unit | 400 mm (L) * 400 mm (W) *200 mm (H), NEMA 4/4x/12/13 Rating | | |
| Deck Unit | 100 mm Rack Mount | | |
| Transducer Cable | 20 m max | | |
| Electronics-Deck Cable | 100 m max | | |
| Environmental: | | | |
| Operating Temperature | -5 to 50° C | | |
| Storage Temperature | -30 to 70° C | | |
| Built-In-Test: | | | |
| Continuous Monitor | Current profile status, bottom track status, Operating Voltages, Receiver and Processor Operation. | | |
| Fault Diagnostics | Fault Localization to Plug-in Replaceable Module | | |

¹ Does not include effects due to change in speed of sound, pitch and varying bottom conditions