SeaWATCH / SeaPROFILER DF ADCP

Dual FREQUENCY

Self-Contained and Direct-Reading
300 kHz / 600 kHz / 1200 kHz ADCP

The ROWE Technologies SeaWATCH DF (Dual Frequency) and SeaPROFILER DF product family of Acoustic Doppler Current Profilers (ADCPs) lead the industry in state of the art acoustic Doppler technology. ROWE’s second generation electronics provide the ability to use two independent acoustic frequencies in the same instrument.

Each of the frequencies can be independently controlled allowing for near simultaneous acquisition of high resolution, short range current profiles from the high frequency channels, and long range, lower resolution profiles for the low frequency channels. With the SeaWATCH DF and SeaPROFILER DF you truly have two ADCPs in one!

With this DF ADCP you do not need to forfeit performance or flexibility. All of the same core signal processing functions available in the single frequency ADCP model are available in the DF model. This includes broadband, narrowband and pulse-to-pulse signal processing as well as the ability to track the bottom and obtain earth-referenced velocity measurements.

Both the SeaPROFILER DF and SeaWATCH DF ADCPs are well-suited for a variety of coastal and offshore oceanographic applications – including meteorological and wave data acquisition, environmental management, coastal engineering site assessment, and oil/gas exploration and drilling. The systems are easily deployed on buoys, moorings or sea-floor structures.

The SeaPROFILER DF and SeaWATCH DF ADCPs are available in 300 kHz, 600 kHz, or 1200 kHz – you select which two frequencies you want.
Product Features:
• Both SeaWATCH and SeaPROFILER DF Models are Available in 300 kHz, 600 kHz and 1200 kHz – You Select Desired Two Frequencies.
• Multi-Use Configuration – 3-Axis Current Profile and Bottom Track or Water Track Velocity Measurements.
• User Programmable Acoustic Transmission – Broadband, Narrowband, and Pulse-to-Pulse Coherent Technologies.
• User Selectable Signal Processing Options for Each Frequency.
• Can Optimize Acquisition Parameters for Precise, High Accuracy Measurements.

Optional Features:
• Configuration to Support Both Direct-Reading and Self-Contained Applications in The Same Package.
• Self-Contained DF ADCPs Have an External Battery Pressure Housing as an Option.

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**Specifications**

- **Single Frequency (nominal):** 300KHz, 600KHz, 600KHz, 1200KHz
- **Piston Ceramic Size:** 3 in, 3 in, 2 in, 2 in
- **Beam widths (2 way):** 2.70°, 2.00°, 2.00°, 1.01°
- **Beam Spacing:** 4 beams inclined 20°
- **Velocity Range:** +/- 20 m/s Max; +/- 5 m/s Typical
- **Resolution:** 0.01 cm/s
- **Number of Cells:** up to 200
- **Cell Size:** 2.0 cm minimum
- **Current Profiling:**
  - **Maximum Range:** 150 m, 78 m, 78 m, 30 m
  - **Velocity Range:** 100 m, 50 m, 45 m, 20 m
  - **Long-Term Accuracy (High Accuracy Option):** ± 0.70%, ± 0.25%, ± 0.25%, ± 0.25%
  - **Long-Term Accuracy (Low Accuracy Option):** ± 1.0%, ± 2 mm/s
  - **BB Single-Ping Precision:** 3.5 cm/s @ 4 m cell depth, 3.5 cm/s @ 2 m cell depth, 3.5 cm/s @ 1 m cell depth
  - **NB Single-Ping Precision:** 20 cm/s @ 4 m cell depth, 20 cm/s @ 2 m cell depth, 20 cm/s @ 1 m cell depth
- **Data Output Rate:** 1-2 Hz typical, 10 Hz max
- **Bottom Tracking:**
  - **Maximum Range:** 300 m, 130 m, 120 m, 90 m
  - **Velocity Range:** 15 m/s
  - **Long-Term Accuracy (High Accuracy):** ± 0.70%, ± 0.25%, ± 0.25%, ± 0.25%
  - **Long-Term Accuracy (Low Accuracy):** ± 1.0%, ± 2 mm/s
  - **Single-Ping Precision:** ± 0.6 cm/sec @ 3 m/sec, ± 0.6 cm/sec @ 3 m/sec, ± 0.4 cm/sec @ 3 m/sec
  - **Resolution:** 0.01 cm/s
- **Sensors:**
  - **Compass:** Range/Accuracy/Resolution: ± 0.05°/1 m/0.05°
  - **Pitch/Roll:** Range/Accuracy/Resolution: ± 0.05°/1 m/0.05°
  - **Water Temp:** Range/Accuracy/Resolution: ± 0.1°C
  - **Pressure:** Range/Accuracy: Selectable +/- 10% Range
- **Materials Options:** Acetal / Aluminum / Titanium
- **Input Power:**
  - **Voltage Range (Ext DC Input):** 12 - 36 VDC
  - **Average Power (5% duty cycle) / Peak Current:** 23 W typical, 30 W typical, 30 W typical, 23 W typical
- **Output Data:**
  - **Communcations:** RS-485, RS232, 100Base T/Ethernet (self-contained only)
  - **Internal Recording:** 32 GByte
  - **Environmental:**
    - **Temperature:** 5° to 45°C (Operating), -30°C to 60°C (Storage)
    - **Depth Rating:** 50 m, 300 m, 3000 m, and 6000 m (600 kHz)

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

**In Development**

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Rowe Technologies, Inc.
www.rowetechinc.com
sales@rowetechinc.com
Tel: +1 858 842 3020