Teledyne RD Instruments

New! RiverPro ADCP
Intelligent River Discharge Measurement System

5-Beam ADCP for Shallow River Environments

Teledyne RD Instruments is pleased to introduce RiverPro, the newest member of our growing family of Acoustic Doppler Current Profilers (ADCPs) for inland Water Resources applications.

The 1200 kHz RiverPro has been purpose-built to fill two specific needs:

• To provide an ADCP designed specifically for shallow river applications (20 cm to 25 m range)
• To provide an upgrade path for our current industry gold-standard Rio Grande ADCP users

Like our next-generation RiverRay ADCP, the RiverPro offers users a 5-beam solution, auto-adaptive sampling, user-friendly interface, and Teledyne RDI’s unsurpassed quality, service, and support.

The RiverPro has also been designed to fit into our RiverRay float, allowing users to swap out their ADCPs based upon their environment, eliminating the need to purchase and transport a second float.

Rio Grande ADCP users can also use RiverPro as a conduit to upgrade their existing Workhorse ADCP to include the benefits derived from our next-generation electronics and technology advancements.

PRODUCT FEATURES

• A 20-degree beam, allowing users to collect data closer to the bottom
• A 600 kHz 5th beam collects true vertical velocity with a calibrated RSSI (return signal strength indicator) and range to bottom
• Fully integrated GPS for geo-referencing
• Auto-adaptive sampling, which quickly provides accurate discharge measurements without the need for user configuration
• A manual override, which allows advanced users the ability to fully customize their system setting as an alternative to auto-adaptive sampling

Q-View

Combine your RiverPro with Teledyne RDI’s Q-View software for unmatched measurement quality.

<table>
<thead>
<tr>
<th>ADCP</th>
<th>IDEAL FIELD ENVIRONMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>StreamPro ADCP</td>
<td>Shallow streams, 10 cm - 6 m *</td>
</tr>
<tr>
<td>RiverPro ADCP</td>
<td>Deep streams to shallow rivers, 20 cm - 25 m</td>
</tr>
<tr>
<td>RiverRay ADCP</td>
<td>Shallow to deep rivers, 40 cm - 60 m</td>
</tr>
</tbody>
</table>

* with extended range option

Teledyne RD Instrument
Everywhere you look™
## TECHNICAL SPECIFICATIONS

### Water Velocity Profiling
- **Operation mode**: Broadband / pulse coherent; automatic / manual
- **Velocity range**: ±5 m/s default, ±20 m/s max
- **Profiling range**: 12 cm³ to 25 m³
- **Accuracy**: ±0.23% of water velocity relative to ADCP, ±2 mm/s
- **Resolution**: 1 mm/s
- **Number of cells**: 15-30 typical, 200 maximum
- **Cell size**: 2 cm to 5 m
- **Data output rate**: 1-2 Hz (typical)

### Bottom Tracking
- **Operation mode**: Broadband
- **Velocity range**: ±9 m/s
- **Depth range**: 15 cm to 35 m
- **Accuracy**: ±0.25% of bottom velocity relative to ADCP, ±2 mm/s
- **Resolution**: 1 mm/s

### Slant Beams (Depth Measurement)
- **Range**: 15 cm to 35 m²
- **Accuracy**: ±1%³, ±1%⁴
- **Resolution**: 1 mm

### Vertical Beam (Depth Measurement)
- **Range**: 120 m²
- **Accuracy**: ±1%⁴
- **Resolution**: 1 mm

### Standard Sensors
- **Range**: Temperature
  - -5°C to 45°C
  - ±0.5°C
- **Accuracy**: Tilt (pitch and roll)
  - ±90°
  - ±0.3°
- **Compass**: 0-360°
  - ±1°
- **GPS (Embedded)**: 3 m Horizontal/5 m Vertical/0.02 m/s Velocity

### Transducer and Hardware
- **System frequency**: 1200 kHz/600 kHz
- **Configuration**: 4 piston transducers, Janus arrangement with 20° beam angle/1 vertically oriented transducer
- **Internal memory**: 16 MB

### Communications
- **Standard**: RS-232, 1200 to 115,200 baud. Bluetooth, 115,200 baud, 200 m range
- **Optional**: Radio modem, range >30 km (line of sight)

### Software (Included)
- **WinRiver II** (standard) for moving-boat measurement, **Q-View** (optional), **SxS Pro** (optional)

### Power
- **Input voltage**: 10.5-18 Volts
- **Power consumption**: 1.5 W typical
- **Battery (inside float)**: 12 V, 7 Ah lead acid gel cell (rechargeable)
- **Battery capacity**: > 40 hrs continuous operation

### Float (Included)
- **Configuration**: Three hulls (trimaran)
- **Material**: Polyethylene
- **Dimensions**: Length 120 cm, width 80 cm, height 20 cm
- **Weight**: 10 kg bare; 17 kg with instrument and battery

### GPS Integration (optional)
- Integration with customer-supplied GPS, depth sounder, gyro compass via RS-232

### Environmental
- **Operating temperature**: -5°C to 45°C
- **Storage temperature**: -20°C to 50°C

---

1. Distance measured from the center of the first cell to the transducer surface
2. Actual range depends on temperature and suspended solids concentration
3. For beam-averaged depth data
4. Assumes uniform water temperature and salinity profile
5. For combined tilt +-70° and dip angle ±70°