

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.

- 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 combined 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

ADCP (type)	FIELD ENVIRONMENT	DEPHTS
StreamPro	Shallow streams	0.10 m - 6 m *
RiverPro	Deep streams to shallow rivers	0.20 m - 25 m
RiverRay	Shallow to deep rivers	0.40 m - 60 m

• with extended range option

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 cm ¹ to 25 m ²							
	Accuracy:	± 0.25 % 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							
Bottom Tracking:	Surface cell range:	25 cm ³							
	Data output rate:	1-2 Hz (typical)							
	Operation mode:	Broadband							
	Velocity range:	± 9 m/s							
	Depth range:	15 cm to 35 m ²							
	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 m ²							
	Accuracy:	± 1 % ^{3,4}							
	Resolution:	1 mm							
Vertical Beam: (Depth measurement)	Range:	20 cm to 120 m ²							
	Accuracy:	± 1 % ⁴							
	Resolution:	1 mm							
Standard Sensors:	Temperature:		Tilt (pitch and roll):	Compass:	GPS (embedded):				
	Range:					-5 °C to 45 °C	± 90°	0-360°	3 m horizontal / 5 m vertical
	Accuracy:					± 0.5 °C	± 0.3°	± 1° ⁵	
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							
	Transmit Power:	8 W							
	Battery (inside float):	12 V, 7 A-hr 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) Assumes fresh water, 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°.

The right is reserved to change or amend the foregoing technical specification without prior notice

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