Ocean Observer III

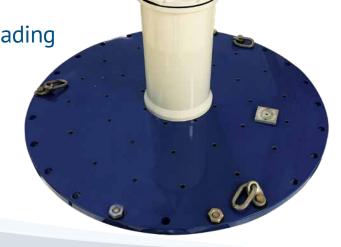
38 kHz (0011138DR) Long-Range Direct-Reading

(Real-Time) ADCP (3rd Generation)

Since 1997 Teledyne RD Instruments (TRDI) has been providing ADCPs that have proven in the field they can profile beyond 1000 m from research vessels traveling at speeds >15 knots and from offshore oil and gas platforms during exploration work.

That same technology has now allowed us to create the Ocean Observer III 38 kHz ADCP. We have combined our field-proven 38 kHz phased array ADCP transducer with our field-proven electronics into a single package that is capable of profiling >1000 m.

This design makes it ideal to be mounted from an oil platform, over the side of a vessel, and in surface buoys.



## **PRODUCT FEATURES**

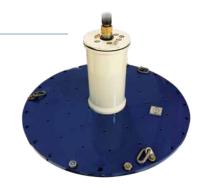
- Field-Proven Hardware Functionality: Phased-array transducer technology >18 years Electronics/firmware >5 years
- Field-Proven Profiling Range: 1000 m profiling range on more than 100 installations worldwide for >18 years
- Compact Size: Patented phased-array transducer with integrated electronics in a single package
- Dual Profiling Modes: Independent or interlaced longrange and high-resolution modes to optimize for deployment requirements
- Integrated Sensors: Heading, pitch, roll, temperature, pressure, and HEM sensors
- Fit for use: Collect real-time 1000 m profiles from just about any surface platform or mooring





## Ocean Observer III 38 kHz (0011138DR) Long-Range Direct-Reading (Real-Time) ADCP (3rd Generation)





Vertical Resolution Cell Size! Max Range! Precision¹ 16 m >1000 m 30 cm/s  High Precision Mode 38 kHz  Vertical Resolution Cell Size! Max Range! Precision² 16 m >900 m 15 cm/s 24 m >900 m 15 cm/s 24 m >900 m 15 cm/s 24 m >990 m 10 cm/s  Profile Parameters Velocity accuracy (typical) ±1.0% ±0.5 cm/s Velocity range ±9 m/s Number of depth cells 1-128 Maximum ping rate 0.4 Hz  Echo Intensity Profile Vertical resolution Depth cell size, user configurable Dynamic range 80 dB Accuracy ±1.5 dB  Transducer and Hardware Beam angle 30° Configuration 4-beam, phased array Communications Rs-732 or RS-422 at 1200-115,200 baud Hex-ASCII or binary  System Power AC input 90-250 VAC, 47-63 Hz DC Power 36-48 VDC, 300 W  Use TRDI's Windows"-based software for best results: VMDAS — Verseel-Mount Data Acquisition System; WinADCP — Data Display and Export  Storage temperature Storage temperature -5° to 45°C Storage temperature -30° to 60°C Standard depth rating 100 m  Standard Sensors Tillt" Accuracy *0.2* RMS Compass (AHRS) Pressure Sensor Range 20 Da, accuracy 0.1% FS  System Components Options Dimensions Dimensions	Water Profiling	Long Range Mode 38 kHz		
24 m   >1000 m   20 cm/s		Vertical Resolution Cell Size <sup>1</sup>	Max Range <sup>2</sup>	Precision <sup>3</sup>
High Precision Mode 38 kHz  Vertical Resolution Cell Size¹ Max Range² Precision³  16 m >900 m 15 cm/s  24 m >9950 m 10 cm/s  Profile Parameters  Velocity accuracy (typical) ±1.0% ±0.5 cm/s  Velocity range ±9 m/s  Number of depth cells 1-128  Maximum ping rate 0.4 Hz  Echo Intensity Profile  Vertical resolution Depth cell size, user configurable Dynamic range 80 dB  Accuracy ±1.5 dB  Accuracy ±1.5 dB  Transducer and Hardware Baam angle 30°  Configuration 4-beam, phased array Communications Rs-232 or Rs-422 at 1200-115,200 baud Hex-ASCII or binary  System Power AC input 90-250 VAC, 47-63 Hz DC Power 36-48 VDC, 300 W  Use TRDI's Windows®-based software for best results: VMDAS - Vessel-Mount Data Acquisition System; WinADCP - Data Display and Export  Environmental Operating temperature -5° to 45°C Storage temperature -30° to 60°C Standard depth rating 100 m  Standard Sensors  Titl* Accuracy ±0.2° RMS Ompass (AHRS) Heading accuracy 1° RMS Pressure Sensor Range 20 bar, accuracy 0.1% FS  System Components  Options  Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range 38 kHz phased-array transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m cable for power and communications, data acquisition software package  Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range 38 kHz phased-array transducer aud single diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)		16 m	>1000 m	30 cm/s
Vertical Resolution Cell Size <sup>1</sup>   Max Range <sup>2</sup>   Precision <sup>3</sup>   16 m   >900 m   15 cm/s   24 m   >950 m   10 cm/s   10 cm/s   100		24 m	>1000 m	20 cm/s
Profile Parameters Profile Parameters Velocity accuracy (typical) Velocity range 49 m/s Number of depth cells 1-128 Maximum ping rate 0.4 Hz Vertical resolution Depth cell size, user configurable Dynamic range 80 dB Accuracy 41.5 dB  Transducer and Hardware Beam angle Configuration Communications RS-232 or RS-422 at 1200-115,200 baud Hex-ASCII or binary AC input DC Power AC input DC Power 36-48 VDC, 300 W  Use TRDI's Windows*-based software for best results: VMDAS—Vessel-Mount Data Acquisition System; WinADCP—Data Display and Export  Environmental Operating temperature Storage temperature Storage temperature Storage temperature Storage temperature Storage temperature Storage temperature (mounted on transducer) Tilt* Accuracy 2.02 RMS Ormpass (AHRS) Pressure Sensor Range 20 bar, accuracy 0.1% FS  Fully integrated 38 kHz Phased Array Transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m cable for power and communications, data acquisition software package Velocity for advanced post processing; 1000 m define transware available upon request) Velocity for advanced post processing; 1000 m (line drawings available upon request)		High Precision Mode 38 kHz		
Profile Parameters Velocity accuracy (typical) Velocity range Vertical resolution Depth cell size, user configurable Dynamic range 80 dB Accuracy Velocity range Vertical resolution Dynamic range Vertical resolution Dynamic range Vertical resolution Dynamic range Vertical resolution Dynamic range Vertical resolution Vertical resolution Dynamic range Vertical resolution Vertical resolution Dynamic range Vertical resolution Vertical resolution Operating Vertical resolution Vertical resolut		Vertical Resolution Cell Size <sup>1</sup>	Max Range <sup>2</sup>	Precision <sup>3</sup>
Profile Parameters  Velocity accuracy (typical)  Velocity range  49 m/s  Number of depth cells  1-128  Maximum ping rate  0.4 Hz  Vertical resolution  Dynamic range  80 dB  Accuracy  41.5 dB  Transducer and Hardware  Beam angle  Configuration  Communications  RS-232 or RS-422 at 1200-115,200 baud Hex-ASCII or binary  AC input  DC Power  AC input  90-250 VAC, 47-63 Hz  DC Power  Software  VMDAS - Vessel-Mount Data Acquisition System; WinADCP - Data Display and Export  Environmental  Operating temperature  -5° to 45°C  Storage temperature  -30° to 60°C  Standard Sensors  Titt'  Compass (AHRS)  Pressure Sensor  Range -5° to 45°C, Precision ±0.1°C, Resolution 0.03°  Titt'  Accuracy ±1.5 dB  Transducer and Hardware  Fully integrated 38 kHz Phased Array Transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m cable for power and communications, data acquisitions bousing idameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)		16 m	>900 m	15 cm/s
Velocity range   ±9 m/s		24 m	>950 m	10 cm/s
Number of depth cells Maximum ping rate  Vertical resolution Depth cell size, user configurable Dynamic range 80 dB Accuracy \$1.5 dB  Transducer and Hardware Beam angle Configuration Communications RS-232 or RS-472 at 1200-115,200 baud Hex-ASCII or binary  AC input 90-250 VAC, 47-63 Hz DC Power 36-48 VDC, 300 W  Use TRDI's Windows*-based software for best results: VMDAS - Vessel-Mount Data Acquisition System; WinADCP - Data Display and Export  Provinger temperature Standard Sensors Standard Sensors Tilt' Compass (AHRS) Pressure Sensor Range -5° to 45°C, Precision ±0.1°C, Resolution 0.03° Tilt' Accuracy 4.0.2° RMS Pressure Sensor Range 2.0 bar, accuracy 0.1% FS  System Components Options Dimensions  Number of depth cells 0.4 Hz DC Hz Depth cell size, user configurable Display and Export Display	<b>Profile Parameters</b>	Velocity accuracy (typical)	±1.0% ±0.5 cm/s	
Maximum ping rate   0.4 Hz			•	
Etho Intensity Profile Dynamic range Bod B Accuracy Dynamic range Beam angle Configuration Communications RS-232 or RS-422 at 1200-115,200 baud Hex-ASCII or binary  System Power AC input DC Power Boffware DPynamic generature Storage temperature Strandard Sensors Titt Accuracy Department on the ding accuracy 1° RMS Pressure Sensor Range 20 bar, accuracy 0.1% FS Fully integrated 38 kHz Phased Array Transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m deple for power and communications, data acquisition software package  Options Dimensions  Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range Bornamic Accuracy 18 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)		Number of depth cells		
Dynamic range		Maximum ping rate	S., 1.2	
Transducer and Hardware Beam angle Configuration Accuracy Abeam, phased array Communications RS-232 or RS-422 at 1200-115,200 baud Hex-ASCII or binary  AC input DC Power AC input DC Power WIDAS - Vessel-Mount Data Acquisition System; WinADCP - Data Display and Export  Environmental Operating temperature Standard Sensors Temperature (mounted on transducer) Titl4 Accuracy ±0.2° RMS Compass (AHRS) Pressure Sensor Range 20 bar, accuracy 0.1% FS  Fully integrated 38 kHz Phased Array Transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m cable for power and communications, data acquisition software package  Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range  38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm ( <i>line drawings available upon request</i> )	Echo Intensity Profile	Vertical resolution	Depth cell size, user configurable	
Transducer and Hardware  Beam angle Configuration 4-beam, phased array Communications RS-232 or RS-422 at 1200-115,200 baud Hex-ASCII or binary  AC input DC Power 36-48 VDC, 300 W  Software Use TRDI's Windows*-based software for best results: VMDAS—Vessel-Mount Data Acquisition System; WinADCP—Data Display and Export  Environmental Operating temperature Storage temperature -5° to 45°C Storage temperature -30° to 60°C Standard Sensors Temperature (mounted on transducer) Titt* Accuracy ±0.2° RMS Compass (AHRS) Pressure Sensor Range 20 bar, accuracy 0.1% FS  Fully integrated 38 kHz Phased Array Transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m cable for power and communications, data acquisition software package  Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range  38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)		Dynamic range	** **	
Configuration 4-beam, phased array Communications RS-232 or RS-422 at 1200-115,200 baud Hex-ASCII or binary  AC input 90–250 VAC, 47–63 Hz DC Power 36-48 VDC, 300 W  Use TRDI's Windows*-based software for best results: VMDAS— Vessel-Mount Data Acquisition System; WinADCP—Data Display and Export  Environmental Operating temperature -5° to 45°C Storage temperature -30° to 60°C Standard depth rating 100 m  Standard Sensors Temperature (mounted on transducer) Range -5° to 45°C, Precision ±0.1°C, Resolution 0.03° Tilt4 Accuracy ±0.2° RMS Compass (AHRS) Heading accuracy 1° RMS Pressure Sensor Range 20 bar, accuracy 0.1% FS  System Components Options  Options Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range  38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)		Accuracy		
Communications  RS-232 or RS-422 at 1200-115,200 baud Hex-ASCII or binary  AC input DC Power 36-48 VDC, 300 W  Use TRDI's Windows®-based software for best results:  VMDAS – Vessel-Mount Data Acquisition System; WinADCP – Data Display and Export  Environmental Operating temperature Standard Sensors Temperature (mounted on transducer) Tilt⁴ Accuracy ±0.2° RMS Compass (AHRS) Pressure Sensor Range 20 bar, accuracy 0.1% FS  System Components Options Dimensions  RS-232 or RS-422 at 1200-115,200 baud Hex-ASCII or binary 90–250 VAC, 47–63 Hz 36-48 VDC, 300 W  When ADCP – Data Display and Export -5° to 45° C -30° to 60° C Standard Sensors -5° to 45° C -30° to 60° C -30° to 60° C -30° to 45° C, Precision ±0.1° C, Resolution 0.03° -7 Tilt⁴ Accuracy ±0.2° RMS -7 RMS -7 RMS -7 Range 20 bar, accuracy 0.1% FS  System Components Welocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range -7 Representation of track with 1700 m range -7 Re	Transducer and Hardware	5	30°	
Software  Software  DC Power  Software  Software  Software  DC Power  Software  Use TRDI's Windows®-based software for best results:  VMDAS— Vessel-Mount Data Acquisition System; WinADCP—Data Display and Export  Environmental  Operating temperature  Storage temperature  Storage temperature  Standard Sensors  Temperature (mounted on transducer)  Tilt4  Accuracy ±0.2° RMS  Compass (AHRS)  Pressure Sensor  Range -5° to 45°C, Precision ±0.1°C, Resolution 0.03°  Accuracy ±0.2° RMS  Pressure Sensor  Range 20 bar, accuracy 0.1% FS  System Components  Options  Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range  38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)				
Software  Software  Use TRDI's Windows®-based software for best results:  VMDAS — Vessel-Mount Data Acquisition System; WinADCP — Data Display and Export  Environmental  Operating temperature  Storage temperature  Standard depth rating  Standard Sensors  Temperature (mounted on transducer)  Tilt4  Accuracy ±0.2° RMS  Compass (AHRS)  Pressure Sensor  Range 20 bar, accuracy 0.1% FS  Fully integrated 38 kHz Phased Array Transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m cable for power and communications, data acquisition software package  Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range  38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)		Communications	RS-232 or RS-422 at 1200-115,200 baud Hex-ASCII or binary	
Use TRDI's Windows®-based software for best results:  VMDAS — Vessel-Mount Data Acquisition System; WinADCP — Data Display and Export  Operating temperature Standard Sensors  Standard Sensors  Temperature (mounted on transducer) Tilt4 Accuracy ±0.2° RMS Compass (AHRS) Pressure Sensor Range 20 bar, accuracy 0.1% FS  Fully integrated 38 kHz Phased Array Transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m cable for power and communications, data acquisition software package  Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range  38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)	System Power	·	·	
VMDAS – Vessel-Mount Data Acquisition System; WinADCP – Data Display and Export  Environmental Operating temperature				
Storage temperature Standard depth rating  Temperature (mounted on transducer) Tilt <sup>4</sup> Accuracy ±0.2° RMS Compass (AHRS) Pressure Sensor  Range 20 bar, accuracy 0.1% FS  System Components  Union reable for power and communications, data acquisition software package  Options  Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range  38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)	Software			
Standard Sensors  Temperature (mounted on transducer)  Range -5° to 45°C, Precision ±0.1°C, Resolution 0.03°  Tilt <sup>4</sup> Accuracy ±0.2° RMS  Compass (AHRS)  Pressure Sensor  Range 20 bar, accuracy 0.1% FS  Fully integrated 38 kHz Phased Array Transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m cable for power and communications, data acquisition software package  Options  Options  Dimensions  Standard depth rating  100 m  Range -5° to 45°C, Precision ±0.1°C, Resolution 0.03°  Accuracy ±0.2° RMS  Range 20 bar, accuracy 0.1% FS  Fully integrated 38 kHz Phased Array Transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m cable for power and communications, data acquisition software package  Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range  38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)	Environmental	Operating temperature	-5° to 45°C	
Temperature (mounted on transducer) Range -5° to 45°C, Precision ±0.1°C, Resolution 0.03° Tilt <sup>4</sup> Accuracy ±0.2° RMS Compass (AHRS) Pressure Sensor Range 20 bar, accuracy 0.1% FS  Fully integrated 38 kHz Phased Array Transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m cable for power and communications, data acquisition software package  Options Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range 38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)		Storage temperature	-30° to 60°C	
Tilt <sup>4</sup> Accuracy ±0.2° RMS Compass (AHRS) Pressure Sensor Range 20 bar, accuracy 0.1% FS  System Components United the processing of the processing; 1000 m depth rating; bottom track with 1700 m range  8 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)		Standard depth rating	100 m	
Compass (AHRS) Pressure Sensor Range 20 bar, accuracy 0.1% FS  System Components Fully integrated 38 kHz Phased Array Transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m cable for power and communications, data acquisition software package  Options Options Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range 38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)	Standard Sensors	Temperature (mounted on transducer)	Range -5° to 45°C, Precision ±0.1°C, Resolution 0.03°	
Pressure Sensor Range 20 bar, accuracy 0.1% FS  Fully integrated 38 kHz Phased Array Transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m cable for power and communications, data acquisition software package  Options  Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range  38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)		Tilt <sup>4</sup>	Accuracy ±0.2° RMS	
Fully integrated 38 kHz Phased Array Transducer and system electronics, external AC/DC power supply with RS232 serial port, 100 m cable for power and communications, data acquisition software package  Options  Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range  38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)		Compass (AHRS)	-	
Options  Options  Options  Dimensions  100 m cable for power and communications, data acquisition software package  Velocity for advanced post processing; 1000 m depth rating; bottom track with 1700 m range  38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm (line drawings available upon request)				
Dimensions  38 kHz phased-array transducer aluminum housing diameter 915 mm, aluminum housing diameter 180 mm, transducer plus housing length 430 mm ( <i>line drawings available upon request</i> )	System Components			
transducer plus housing length 430 mm (line drawings available upon request)	Options	<b>Velocity</b> for advanced post processing; 1000 m depth rating; bottom track with 1700 m range		
	Dimensions			

 $1. \ \ User's \ choice \ of \ depth \ cell \ size \ is \ not \ limited \ to \ the \ typical \ values \ specified.$ 2. Ranges are typical and vary with situation. 3. Single ping standard deviation. 4. Heading in degrees as well as magnetometer output.



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