

# Signature 250

300 m

Intermediate current profiling range that includes wave height/direction and ice tracking capability



The Signature 250 ADCP is a medium-range current profiler with a suite of extra features. It has a current profiling range of 200 m, and can measure wave height, period and direction at depths as great as 150 m. The Signature 250 ADCP can also measure acoustic ranging to ice. Its compact design and low power consumption make it an ideal tool for long-term deployments in all waters.

Download our guide to Signature ADCPs here.

#### **Highlights**

- ✓ 200 m current profiling range
- ✓ Wave height and direction from 150 m installation depth
- ✓ Acoustic ranging to ice

#### **Applications**

- ✓ Ice drift and draft measurements
- ✓ Long-term deployments requiring directional wave measurements and mid-depth current profiles
- Upwelling and downwelling, large-scale mixing studies

### **Technical specifications**

Water velocity measurements		
Maximum profiling range*	200 m	
Cell size	1-8 m	
Minimum blanking	0.5 m	
Maximum number of cells	200 (average)	
Velocity range (along beam)	User-selectable 1.0 to 5.0 m/s	
Minimum accuracy	1% of measured value $\pm$ 0.5 cm/s	
Velocity precision	Broadband processing, consult instrument software	
Velocity resolution	0.1 cm/s	
Max sampling rate	3 Hz (1 Hz at max power)	

<sup>\*</sup>Dependent on measurement conditions

HR option (on 5th beam only)		
Velocity range	N/A	
Cell size	N/A	
Profiling range	N/A	

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## HR option (on 5th beam only) Range velocity limitations N/A **AD2CP Measurement modes** Single Average Concurrent Average and waves/ice Alternate **Echo Intensity (along slanted beams)** Sampling Same as velocity 0.5 dB / 70 dB Resolution/ dynamic range 250 kHz Transducer acoustic frequency Number of beams 5; 4 slanted at 20°, 1 vertical at 500 kHz (optional) Beam width 2.3° (slanted), 2.2° (vertical) **Echo sounder option** Resolution N/A Number of bins N/A Transmit pulse length N/A Transmit pulse N/A Resolution / dynamic range N/A

Wave measurement option	
AST frequency	500 kHz
AST max distance	170 m
Maximum wave measurement depth	150 m
Height range	-15 to +15 m
Accuracy/resolution (Hs)	< 1% of measured value / 2 cm
Accuracy/resolution (Dir)	2° / 0.1°
Period range	2-50 s
Cut-off period (Hs)	25 m depth; 2 sec, 50 m depth; 2 sec,100 m depth; 2.2 sec, 150 m depth; 2.7 sec
Cut-off period (dir)	Please inquire
Sampling rate (velocity and AST)	1 Hz

Parameters	Acoustic ranging to ice, speed and direction, echo sounder data
Sensors	
Temperature:	Thermistor in head (sampled at meas. rate)
Temp. range	-4 to +40 °C
Temp. accuracy/resolution	0.1 °C/0.01 °C
Temp. time response	2 min
Compass:	Solid State magnetometer (max 1 Hz sample rate)
Accuracy/resolution	2° for tilt < 30°/0.01°
Tilt:	Solid State accelerometer (max 1 Hz sample rate)

Ice measurement option

Accuracy/resolution

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 $0.2^{\circ}$  for tilt  $< 30^{\circ}/0.01^{\circ}$ 

Sensors	
Maximum tilt	Full 3D
Up or Down	Automatic detect
Pressure:	Piezoresistive (sampled at meas. rate)
Standard range	0-300 m (inquire for options)
Accuracy/precision	0.1% FS / Better than 0.002% of full scale
AHRS option	
Accelerometer dynamic range	± 2 g
Gyro dynamic range	± 250°/sec
Magnetometer dynamic range	± 1.3 Gauss
Pitch and roll range / resolution	$\pm$ 90° (pitch) $\pm$ 180° (roll) /0.01°
Pitch and roll accuracy	$\pm$ 2° (dynamic)4), $\pm$ 0.5° (static, $\pm$ 30°)
Heading range / resolution	360°, all axis /0.01°
Heading accuracy	$\pm$ 3° (dynamic)4), $\pm$ 2° (static, tilt < 20°)
Sampling rate	Same as measurement rate (up to 3 Hz)
Data recording	
Capacity	16 GB, 64 GB or 128 GB (inquire for larger capacity)
Data record	Consult instrument software
Mode	Stop when full
Real-time clock	
Accuracy	1. 1. main france
Accuracy	± 1 min/year
Clock retention in absence of external power	·
-	·
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Clock retention in absence of external power  Data communications	1 year. Rechargeable backup battery.
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Clock retention in absence of external power  Data communications  Ethernet	1 year. Rechargeable backup battery.  10/100 Mbits Auto MDI-X, TCP/IP, UDP/IP, HTTP protocols, Fixed IP / DHCP client /Auto IP address assignment, UPnP and Nortek proprietary instrument discovery over Ethernet
Clock retention in absence of external power  Data communications  Ethernet  Serial	1 year. Rechargeable backup battery.  10/100 Mbits Auto MDI-X, TCP/IP, UDP/IP, HTTP protocols, Fixed IP / DHCP client /Auto IP address assignment, UPnP and Nortek proprietary instrument discovery over Ethernet  Configurable RS-232/RS-422 300-1250000 bps
Clock retention in absence of external power  Data communications  Ethernet  Serial  Recorder download baud rate	1 year. Rechargeable backup battery.  10/100 Mbits Auto MDI-X, TCP/IP, UDP/IP, HTTP protocols, Fixed IP / DHCP client /Auto IP address assignment, UPnP and Nortek proprietary instrument discovery over Ethernet  Configurable RS-232/RS-422 300-1250000 bps  20 Mbit/s (Ethernet only) - 1 GB in 6 minutes
Clock retention in absence of external power  Data communications  Ethernet  Serial  Recorder download baud rate  Controller interface	1 year. Rechargeable backup battery.  10/100 Mbits Auto MDI-X, TCP/IP, UDP/IP, HTTP protocols, Fixed IP / DHCP client /Auto IP address assignment, UPnP and Nortek proprietary instrument discovery over Ethernet  Configurable RS-232/RS-422 300-1250000 bps  20 Mbit/s (Ethernet only) - 1 GB in 6 minutes
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Clock retention in absence of external power  Data communications  Ethernet  Serial  Recorder download baud rate  Controller interface  Connectors  Depending on configuration	1 year. Rechargeable backup battery.  10/100 Mbits Auto MDI-X, TCP/IP, UDP/IP, HTTP protocols, Fixed IP / DHCP client /Auto IP address assignment, UPnP and Nortek proprietary instrument discovery over Ethernet  Configurable RS-232/RS-422 300-1250000 bps  20 Mbit/s (Ethernet only) - 1 GB in 6 minutes  ASCII command interface over Telnet and serial  MCBH6F (Ethernet), MCBH8F (serial), MCBH2F-G2 (pwr), optional
Clock retention in absence of external power  Data communications  Ethernet  Serial  Recorder download baud rate  Controller interface  Connectors  Depending on configuration  Software	1 year. Rechargeable backup battery.  10/100 Mbits Auto MDI-X, TCP/IP, UDP/IP, HTTP protocols, Fixed IP / DHCP client /Auto IP address assignment, UPnP and Nortek proprietary instrument discovery over Ethernet  Configurable RS-232/RS-422 300-1250000 bps  20 Mbit/s (Ethernet only) - 1 GB in 6 minutes  ASCII command interface over Telnet and serial  MCBH6F (Ethernet), MCBH8F (serial), MCBH2F-G2 (pwr), optional Souriau M-series metal connector for online use (10M)  Deployment planning, instrument configuration, data retrieval and
Clock retention in absence of external power  Data communications  Ethernet  Serial  Recorder download baud rate  Controller interface  Connectors  Depending on configuration  Software  Functions	1 year. Rechargeable backup battery.  10/100 Mbits Auto MDI-X, TCP/IP, UDP/IP, HTTP protocols, Fixed IP / DHCP client /Auto IP address assignment, UPnP and Nortek proprietary instrument discovery over Ethernet  Configurable RS-232/RS-422 300-1250000 bps  20 Mbit/s (Ethernet only) - 1 GB in 6 minutes  ASCII command interface over Telnet and serial  MCBH6F (Ethernet), MCBH8F (serial), MCBH2F-G2 (pwr), optional Souriau M-series metal connector for online use (10M)  Deployment planning, instrument configuration, data retrieval and
Clock retention in absence of external power  Data communications  Ethernet  Serial  Recorder download baud rate  Controller interface  Connectors  Depending on configuration  Software  Functions  Power  DC input	1 year. Rechargeable backup battery.  10/100 Mbits Auto MDI-X, TCP/IP, UDP/IP, HTTP protocols, Fixed IP / DHCP client /Auto IP address assignment, UPnP and Nortek proprietary instrument discovery over Ethernet  Configurable RS-232/RS-422 300-1250000 bps  20 Mbit/s (Ethernet only) - 1 GB in 6 minutes  ASCII command interface over Telnet and serial  MCBH6F (Ethernet), MCBH8F (serial), MCBH2F-G2 (pwr), optional Souriau M-series metal connector for online use (10M)  Deployment planning, instrument configuration, data retrieval and conversion (for Windows®)
Clock retention in absence of external power  Data communications  Ethernet  Serial  Recorder download baud rate  Controller interface  Connectors  Depending on configuration  Software  Functions  Power  DC input  Maximum peak current	1 year. Rechargeable backup battery.  10/100 Mbits Auto MDI-X, TCP/IP, UDP/IP, HTTP protocols, Fixed IP / DHCP client /Auto IP address assignment, UPnP and Nortek proprietary instrument discovery over Ethernet  Configurable RS-232/RS-422 300-1250000 bps  20 Mbit/s (Ethernet only) - 1 GB in 6 minutes  ASCII command interface over Telnet and serial  MCBH6F (Ethernet), MCBH8F (serial), MCBH2F-G2 (pwr), optional Souriau M-series metal connector for online use (10M)  Deployment planning, instrument configuration, data retrieval and conversion (for Windows®)  15-48 V DC  1.5 A
Clock retention in absence of external power  Data communications  Ethernet  Serial  Recorder download baud rate  Controller interface  Connectors  Depending on configuration  Software  Functions  Power  DC input  Maximum peak current  Max. average consumption at 1 Hz	1 year. Rechargeable backup battery.  10/100 Mbits Auto MDI-X, TCP/IP, UDP/IP, HTTP protocols, Fixed IP / DHCP client /Auto IP address assignment, UPnP and Nortek proprietary instrument discovery over Ethernet  Configurable RS-232/RS-422 300-1250000 bps  20 Mbit/s (Ethernet only) - 1 GB in 6 minutes  ASCII command interface over Telnet and serial  MCBH6F (Ethernet), MCBH8F (serial), MCBH2F-G2 (pwr), optional Souriau M-series metal connector for online use (10M)  Deployment planning, instrument configuration, data retrieval and conversion (for Windows®)  15-48 V DC  1.5 A  15 W
Clock retention in absence of external power  Data communications  Ethernet  Serial  Recorder download baud rate  Controller interface  Connectors  Depending on configuration  Software  Functions  Power  DC input  Maximum peak current	1 year. Rechargeable backup battery.  10/100 Mbits Auto MDI-X, TCP/IP, UDP/IP, HTTP protocols, Fixed IP / DHCP client /Auto IP address assignment, UPnP and Nortek proprietary instrument discovery over Ethernet  Configurable RS-232/RS-422 300-1250000 bps  20 Mbit/s (Ethernet only) - 1 GB in 6 minutes  ASCII command interface over Telnet and serial  MCBH6F (Ethernet), MCBH8F (serial), MCBH2F-G2 (pwr), optional Souriau M-series metal connector for online use (10M)  Deployment planning, instrument configuration, data retrieval and conversion (for Windows®)  15-48 V DC  1.5 A

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Power	
Transmit power per beam	4-200 W, adjustable levels
Ping sequence	Multiplexing or parallel
Batteries	
Internal	540 Wh alkaline or 1800 Wh lithium
Duration	Depending on configuration, consult software
Environmental	
Operating temperature	-4 to +40 °C
Storage temperature	-20 to +60 °C
Vibration	IEC60068-2-64
EMC approval	IEC/EN 61000-6-2, 61000-6-3
Depth rating	300 m
Materials	
Standard model	POM with titanium fasteners. Reinforced polyurethane transducer cups
Dimensions	
Maximum diameter	464 mm
Maximum length with room for internal batteries	523 mm
Maximum length without room for internal batteries	308 mm
Weight	
In air, no battery	18.5 kg (17.1 kg short)
In water, no battery	1.5 kg (5.2 kg short)
Battery	5.1 kg (540 Wh), 3.8 kg (1800 Wh)

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