VM Operations (333 kHz)

Le package Signature VM fournit les capacités d'un AD2CP monté sur coque

The Signature VM Coastal safeguards data quality, opens up new and unprecedented opportunities to the scientific community, and offers operational convenience and reduced complexity.

The Signature VM Coastal package includes the Signature1000, 500 or 250, allowing for great versatility in both the vessel-mounted and bottom-mounted configurations. By using a state-of-the-art and user-friendly vessel-mounted package, measurement errors and initial installation time can be greatly reduced.

Highlights

- A coherent system that is quick and convenient to operate
- Fifth echosounder beam for sediment measurements down to the bottom (1000/500)
- Ethernet ADCP and GNSS hardware, offering tight network timing
- Simultaneous current and depth information in one place (1000/500)
- Outstanding bottom-track performance, even under challenging conditions
- Straightforward data-acquisition and processing software

Applications

- Coastal surveys, up to 200 m depth
- Port and harbor mapping
- Studies of tidal currents
- Sediment transport studies
- Large-scale mixing studies

Technical specifications

→ Water velocity measurements	
Profiling range*	100 m
Cell size	1–6 m
Max no. cells	128
Min. blanking	0.5 m
Minimum accuracy	0.3% of the measured value
Velocity resolution	0.1 cm/s
Maximum sampling rate	2 Hz
No. of beams	4 slanted at 25 degrees
*) Maximum range depends on acoustic scattering conditions and transmit power.	

→ Bottom velocity measurements	
Single ping std @ 3 m/s	0.5 cm/s
Long-term accuracy (1)	± 0.3%
Minimum altitude	0.3 m
Maximum altitude (2)	150 m
Velocity resolution	0.01 mm/s
Maximum sampling rate	2 Hz
(1) Following standard callibration procedures	
(2) Bottom-track distance dependent upon bottom type	

→ Other, Vessel Mounted ADCP	
Temperature sensor range / accuracy	-4 °C to 40 °C / 0.1 °C
Pressure	Piezoresistive
Compass	Solid State magnetometer
Tilt	Solid State accelerometer
AHRS	Attitude sensor (option)
IO	Ethernet (DF21 over serial as option)
DC Input	24 V DC
Operating temperature	0 °C to 40 °C
Storage temperature	-20 °C to 60 °C
Depth rating	Bottom track is limited to surface vessels

→ Mechanical	
Instrument materials	POM with Titanium fastener
Instrument weight	7 kg
Installation	Instrument to be flush mounted with hull (sea valve solution)
Sea valve (option)	DNV type approval; TAS00002CU
Sea valve material	Ductile Iron (body), Bronze (seat)
Sea valve weight	85 kg

→ Mechanical

Bell housing material	Steel DIN17121
Bell housing weight	29 kg

→ Processing unit

Processor/memory	Intel i5/8 GB
Hard disk	SSD, 256 GB
Operating system	Windows® 10
Housing	19" rack-mountable 2 HE
Dimensions	482x87x400 mm
Input	110-240 V AC, 100 W Max
Total weight	7 kg
Connections*	Power, Signature ADCP, 2x DisplayPort, 1x LAN, 2x USB, 4x RS232|RS422|RS485 configurable port*

*) Processing unit requires heading and GNSS input over Serial or Ethernet

→ Nortek Signature VM acquisition software

Acquisition input	Signature VM - binary
Configuration	Signature VM ADCP, Alignment offsets, Outputs
Display	Vessel track in map, Bottom-track magnitude, direction and depth: (SOG), (COG), Speed Through Water (STW), Mean water column magnitude and direction, 4x depth selectable layer (magnitude and direction), 3D velocity profile (magnitude and direction), 2D vessel cross track current, 24h mean current and direction history (tides), Notes, Echo correlation, Echo amplitude
Status	Signature VM BT and VB + NMEA GGA, HDT, VTG
Online output	NMEA data formats or binary AD2CP with embedded NMEA. DF21 BT proprietary (optional)
Post processing	Signature review software (optional)
Multi vessel display	VM Operations streaming data and display (optional)

*Please note that the package includes the VM Operations acquisition software. The post-processing Review software is optional.