

Contents of the shipping box



Vangkrøken 2
N-1351 RUD
Norway
Tel: +47 6717 4500
Fax: +47 6713 6770
Inquiry@nortek-as.com
www.nortek.no

Nortek order no:

42965-1-110

Type of system:

SIGNATURE 100

Instrument type:

- | | | | | |
|--|---|--|--|--|
| <input type="checkbox"/> Aquadopp | <input type="checkbox"/> Aquadopp 6000m | <input type="checkbox"/> Vector | <input type="checkbox"/> Signature55 | <input type="checkbox"/> Signature500 |
| <input type="checkbox"/> Aquadopp profiler | <input type="checkbox"/> AWAC | <input type="checkbox"/> Vectrino | <input checked="" type="checkbox"/> Signature100 | <input type="checkbox"/> Signature1000 |
| <input type="checkbox"/> Aquadopp 3000m | <input type="checkbox"/> VM AWAC | <input type="checkbox"/> Vectrino profiler | <input type="checkbox"/> Signature250 | <input type="checkbox"/> NortekDVL |

Software version:

SIGNATURE
DEPLOYMENT

Firmware version:

1.4.5217.2217_4/169

Other:

Cable:

☒ 10m length

☐ Other:

Connector:

☐ 8-pin Inline

☐ 12-pin UW

☒ 6-pin Inline

☐ 7-pin Souriau

☐ Other:

Communication:

☐ RS232

☒ Ethernet

☐ RS422

☐ Other:

Options:

☐ Analog input

☐ Synch

☐ Analog output

☐ Other:

Battery cannister:

- ☐ Paradopp battery cannister
- ☐ Single battery aluminium cannister
- ☐ Double battery aluminium cannister

Battery cables:

- ☐ 2pin Inline-2pin
- ☐ 8pin Inline-2pin
- ☐ 8pin rectangular-2pin

Accessories:

- ☒ Toolkit
- ☒ Quick guide
- ☒ Final test checklist
- ☐ Seeding material
- ☐ USB to serial converter RS232
- ☐ Altronix AL310 USB driver
- ☐ Recorder kit/ProLog
- ☐ Battery harness for 2 batteries

Batteries:

- | | | |
|---|---------------------|--------------------------|
| <input type="checkbox"/> Alkaline 50Wh | 13.5V | <input type="checkbox"/> |
| <input type="checkbox"/> Alkaline 100Wh | 13.5V | <input type="checkbox"/> |
| <input type="checkbox"/> Alkaline 540Wh | 13.5V | <input type="checkbox"/> |
| <input type="checkbox"/> Alkaline 540Wh | 18V | <input type="checkbox"/> |
| <input type="checkbox"/> Alkaline 90Wh | 15V (Signature1000) | <input type="checkbox"/> |
| <input type="checkbox"/> Alkaline 180Wh | 18V (Signature500) | <input type="checkbox"/> |

Extra set:

AC/DC Power supply

- | | | |
|---|---|--|
| <input type="checkbox"/> 15V standard | <input type="checkbox"/> 48V Signature55 Online | <input type="checkbox"/> 24V Vectrino |
| Plug | | |
| <input checked="" type="checkbox"/> 24V DC/DC & Signature | <input type="checkbox"/> EU | <input type="checkbox"/> UK <input checked="" type="checkbox"/> US |

Other:

Date:

13.09.2019.

Responsible:

Tommy Johansen

Final test checklist AD2CP



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Order number:
42965-1-110

Name: **Signature 100**
Instrument serial number: **109601**
Frequency: **100KHz** Main board: **AD2CP-1720**
Firmware versions: **1.4.5217.2211-4/169**

Label checked ☒ OK
Dock test ☒ OK
Baudrate 115200 ☒ OK

Comments:

Tilt check
☒ Pitch up
☒ Roll up
☒ Status bit
☒ Pitch down
☒ Roll down
pitch & roll within +/- 0.2 °

Clock
☐ Set clock

Heading
☒ Up
☒ Down
tolerance: +/- 2 °

Pressure
Psenortemp ☒ OK
tolerance: +/- 0.1 % of
500 m

Temperature
☒ OK
tolerance: +/- 0.1 °

Beam check	Correct order	Beam Imp	Noise floor	Amplitude in tank	Range
Beam 1	<input checked="" type="checkbox"/> OK	76 Ω	25 dB	>80 dB	<input checked="" type="checkbox"/> OK
Beam 2	<input checked="" type="checkbox"/> OK	77 Ω	25 dB	>80 dB	<input checked="" type="checkbox"/> OK
Beam 3	<input checked="" type="checkbox"/> OK	79 Ω	25 dB	>80 dB	<input checked="" type="checkbox"/> OK
Beam 4	<input checked="" type="checkbox"/> OK	77 Ω	25 dB	>80 dB	<input checked="" type="checkbox"/> OK
Beam 5	<input checked="" type="checkbox"/> OK	583 Ω	25 dB	>80 dB	<input checked="" type="checkbox"/> OK

Velocity direction **To heavy to verify.**
XYZ coordinate system
X ☒ OK **Matrix correct.**
Y ☒ OK
Z ☒ OK
Z2 ☒ OK
ENU coordinate system
E ☒ OK
N ☒ OK
U ☒ OK
U2 ☒ OK

Head file
☒ Headfile checked
☒ Saved as read only

Serial communication
☒ RS422
☒ RS232

Recorder erased
☒ OK
Rec size: **1284B**

Ethernet
MAC address: **8C:68:78:00:06:B8**
Static IP address:
Set host name: **101601**

DHCP enabled ☒
FTP OK ☒

Licenses	Wave mode	Vertical velocity	64GB recorder	Calibration license erased
Averaging mode <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Burst Five beams <input type="checkbox"/>	Echo Sounder <input checked="" type="checkbox"/>	Dual frequency low <input type="checkbox"/>	128GB recorder <input checked="" type="checkbox"/>	Production license erased <input checked="" type="checkbox"/>
Bottom track <input type="checkbox"/>	Ice Measurement <input type="checkbox"/>	Dual frequency high <input type="checkbox"/>	256GB recorder <input type="checkbox"/>	Default configuration set <input checked="" type="checkbox"/>
High Resolution <input type="checkbox"/>	Altimeter <input type="checkbox"/>	16GB recorder <input type="checkbox"/>		

Cable/Harness
Cable ☒ Communication ☒
Battery ☒ Battery ☒

Electrical isolation test
50V Ok ☒

External sensors

Power down
☒ OK

Date
Day **13** Month **09** Year **19**
Signature **[Signature]**



Certificate of Calibrations and Tests

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Instrument Information

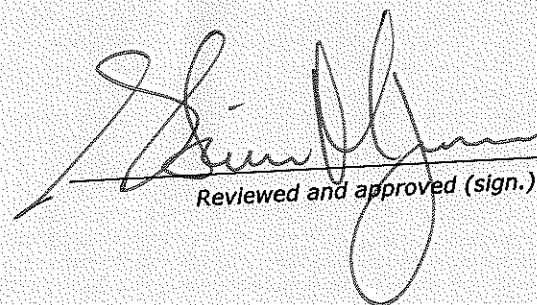
Customer Reference No.	42965-1-110
Instrument Type	Signature100
Instrument Frequency	100 kHz
Instrument S/N	101601
Head S/N	D-1601
Interface Board S/N	1720
Interface Board Mfr. S/N	4MO0618740008
Digital Board Mfr. S/N	4MO0619160022
Echo Sounder Board Mfr. S/N	4MO0614620018
Analog Board Mfr. S/N	4MO0614370019
Sensor Board Mfr. S/N	4MO0555370071
Interface Board Rev.	H-1(High-Power)
Digital Board Rev.	I-3
Echo Sounder Board Rev.	B-1(High-Power Echo)
Analog Board Rev.	B-0(High-Power 100 kHz)
Sensor Board Rev.	I-0

Calibrations and tests performed

Pressure	Passed
Tilt and Compass	Passed

All the tested values are within Nortek AS specifications

September 13, 2019
Date


Reviewed and approved (sign.)



Pressure Report

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Details

Instrument Type	Signature100
Instrument S/N	101601
Pressure Range	500 dBar
Date	September 9, 2019
Operator	Faramarz Torkzad
Location	Nortek Factory Norway
Result	Passed

Description

Verification is performed in an automated pressure chamber. Fixed-point measurements are collected to verify the sensor.

Criteria of acceptance is $\pm 0.1\%$ of full scale.

Reference: Paroscientific, Inc. - Digiquartz 9000-1K-242. Accuracy 0.01% of 689dBar.

Verification Results

Reference (dBar)	Pressure Diff. (dBar)	Pressure Diff. (% of FS)
2.40	0.40	0.08
50.92	0.32	0.06
101.13	0.24	0.05
150.74	0.17	0.03
200.81	0.08	0.02
250.10	-0.01	0.00
300.81	-0.08	-0.02
350.91	-0.17	-0.03
400.69	-0.24	-0.05
448.94	-0.32	-0.06
500.86	-0.40	-0.08



Tilt and Compass Report

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Details

Instrument Type	Signature100
Instrument S/N	101601
Date	September 6, 2019
Operator	Espen Grønlie
Location	Nortek Factory Norway
Result	Passed

Description

Calibration and verification is performed in a two axis automated jig. Continuous and fixed-point measurements are collected to calibrate and verify the sensor.

Criteria of acceptance for tilt sensor is $\pm 0.2^\circ$.

Criteria of acceptance for compass sensor is $\pm 2^\circ$.

Reference: Digital Protractor Series 950 Pro 3600. Accuracy $\pm 0.05^\circ$.

Tilt Verification Results

Reference (°)	Diff. Up		Diff. Down	
	Pitch (°)	Roll (°)	Pitch (°)	Roll (°)
-30.00	0.08	-0.05	0.07	0.00
-15.00	0.13	0.01	0.13	0.08
0.00	-0.08	0.01	0.01	0.07
15.00	0.00	-0.07	-0.01	-0.02
30.00	0.12	0.00	0.12	0.05

Compass Verification Results

Reference (°)	Heading Diff. Up (°)	Heading Diff. Down (°)
0.00	-0.53	-0.03
45.00	-0.22	-0.09
90.00	-0.01	-0.52
135.00	-0.45	-0.75
180.00	-0.50	-0.82
225.00	-0.81	-0.42
270.00	-1.30	-0.14
315.00	-0.94	-0.30