



NORTEK

# Quick guide

Signature250 | 500 | 1000kHz



Signature1000, Signature500 and Signature250, three advanced five-beam current profiling systems, are made with the most demanding scientific user in mind. Built on the entirely new AD2CP platform, the Signature1000, Signature500 and Signature250 are designed for unprecedented performance in high energy turbulent environments, while also giving users the freedom to employ several measurement schemes at one time.

This manual is designed to help users of the Signature series product line get familiar with the system. The short introductory manual gives a system overview and describes how to get the instrument up and running as quickly as possible.

- You will find a more comprehensive Operations Manual that covers functional testing, software information, and tips for maintenance and troubleshooting within the software (click **Help**).
- For system integrators, there is an Integrator's Guide available on the web site, covering modes of operation, commands and data format.

## System:

The figures on the next page show the Signature1000 system but can be easily translated to the Signature500 and Signature250. The Signature1000 and Signature500 sensor heads have five acoustic transducers, four slanted at 25 degrees from vertical, and a fifth vertical beam. The Signature250 uses beams angled at 20 degrees and an optional fifth vertical beam. Note that the optional vertical beam on the Signature250 operates at 500 kHz. On the Signature500 and Signature1000 all beams operate at the same frequency. For dimensions, please refer to the specific instrument data sheet, available for download from our [website](#).

The pressure sensor, temperature sensor and LED light are all visible from the outside. Note also the beam configuration, with Beam 1 pointing in the positive X-direction (see the engraved axis definition on the head). The standard connectors are 2-pin + 6-pin brass Subconn by MacArtney. Optional 8-pin + 6-pin if the instrument is ordered with serial communication. There is the option to install the more robust Souriau connector for long term on-line use.

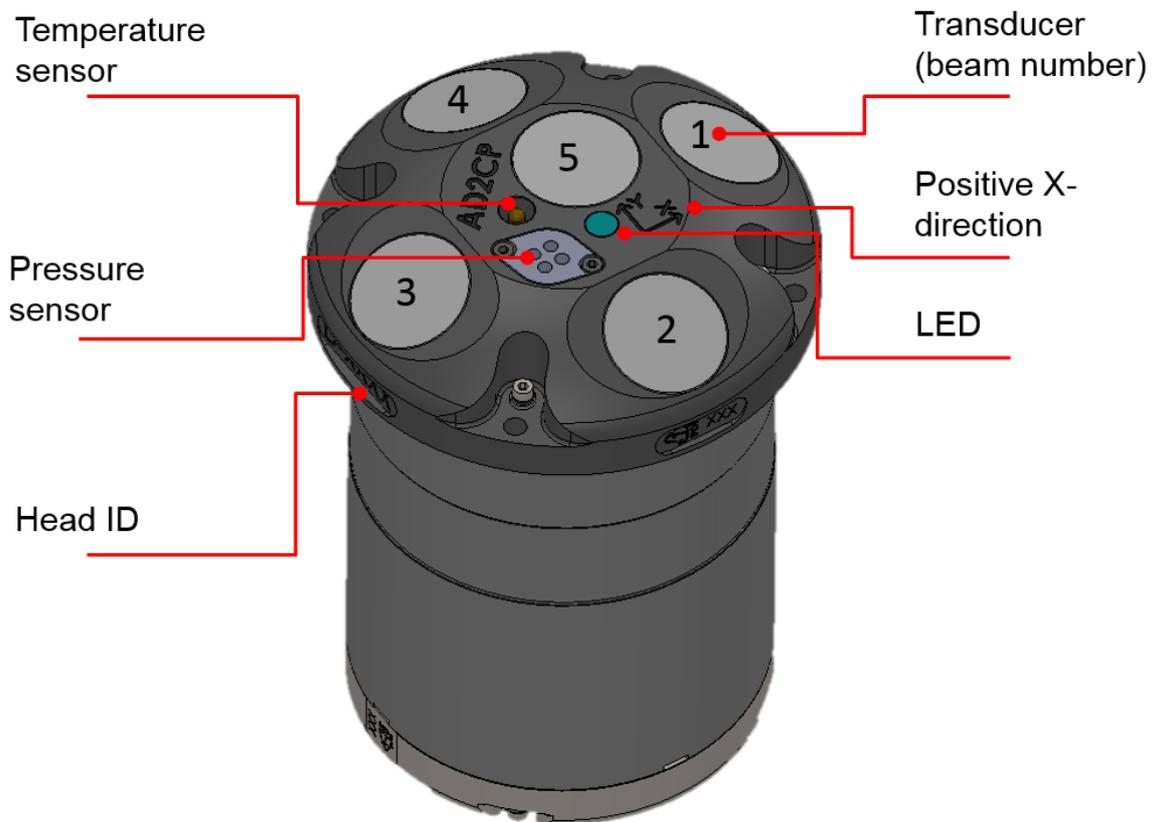


Figure 1. Signature1000 beam and sensor overview

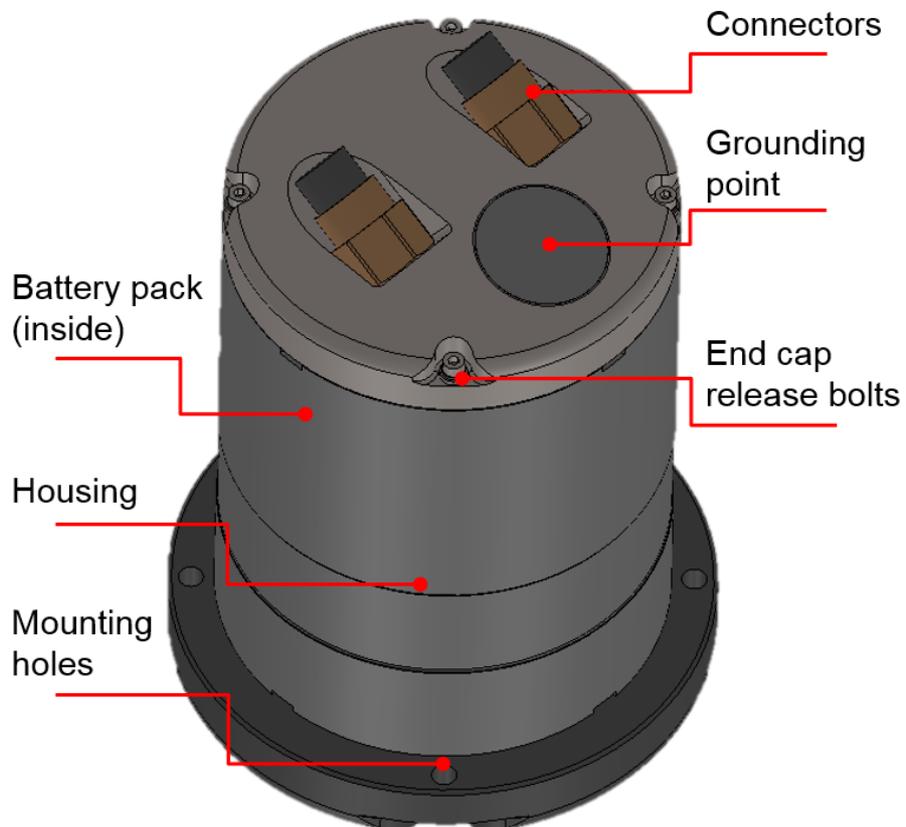


Figure 2. Signature1000 housing, end cap and connectors overview

### Power requirements:

Internal battery:

- Signature1000: 90 Wh, 3\*10AA cells and 15VDC.
- Signature500: 180 Wh, 12 C cells and 18VDC.
- Signature250: 540Wh 18 V alkaline, or 1800Wh 19V Li.

External battery: Single or double alkaline 540Wh, or single or double lithium 1800Wh.

DC input: 12-48 (Sig500/1000), 15-48V (Sig250).

**Note:** Signature instruments cannot use Power over Ethernet (PoE) technology. Using PoE with your Signature instrument will damage the electronics board and require repair.

### Software:

The Nortek Deployment software is an important part of the Signature Series and has been designed to aid you in the planning, execution and recovery of your instrument deployment. A thorough description of the software and its features can be found in the Operations manual. We recommend that you update when prompted by the software to ensure that you have all the new functionality accessible. To install the software:

1. The installation file is located on the memory stick that came with the instrument. It is also available for download from our [software page](#).
2. Run the NortekDeployment.exe file.
3. Follow the on-screen instructions and keep the default settings.

### System requirements:

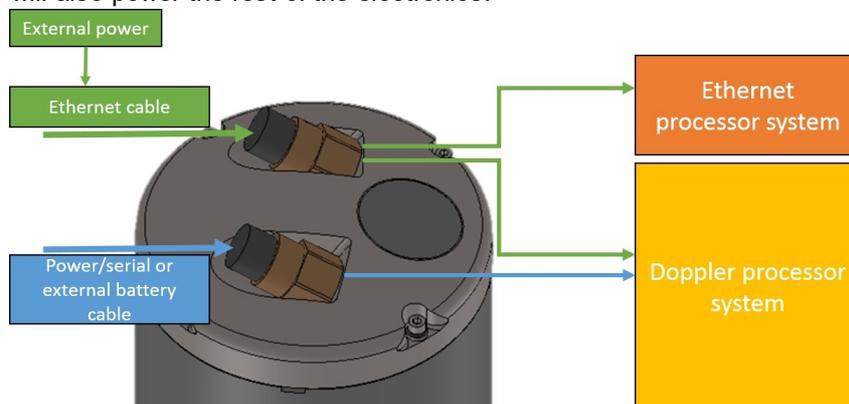
Component	Requirement
Processor	1 GHz or faster processor
Memory	1 GB RAM
Hard disk	100 MB (programs)
Operating system	The software will run on Windows Vista or newer with .NET framework 4.5. If you use Mac OS platform: you have to rely on Windows-on-Mac virtualization programs such as Parallels Desktop
Display	1024x576 or higher resolution monitor

### Licenses:

The Deployment software itself does not require a license to run. Instrument licenses that are ordered with the instrument are already registered. Licenses purchased later can be added in the software. You will not need a license when updating the firmware version.

### Connecting:

The Ethernet communication has been implemented by using a dedicated network processor, and needs to be powered by connecting a power supply to the external power breakout on the cable. Note that powering through the Ethernet cable will also power the rest of the electronics.



**Figure 3. Power distribution.** When the Ethernet cable is connected to the instrument, it will need to be powered from the power breakout cable. This will power both processor systems. If power is supplied through the Serial or external battery connector, the Ethernet processor is unavailable.

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**DO NOT APPLY POWER TO THE ETHERNET CABLE BEFORE YOU HAVE CONNECTED THE CABLE TO THE INSTRUMENT**

**If you power the Ethernet cable before you connect it to the instrument, there is a risk that you will connect the cable incorrectly and apply power to the wrong lines. This will cause components on the board to burn out. If this occurs, you will see a loss of communication and you will need to return the instrument to Nortek for repair.**

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1. Connect the supplied test cable to the communication output on your instrument and apply power to the breakout cable. The blue LED should be turned on shortly.
2. Use a direct connection or an Ethernet switch to connect the Ethernet connector to your computer.
3. If you use a computer Ethernet port that has status lights, verify that the link is active by looking for a stable green light on the port. If an Ethernet switch is used, the Ethernet port should also show an active Ethernet link. If the status light is not lit refer to the Troubleshooting chapter in the Operations Manual.
4. Check the internet access status at the notification area in the taskbar of your PC.
5. Open the Nortek Deployment software and click **Connect** to launch the Discovery feature. This will produce a window with a list of instruments available on the network. It may take a few minutes before the Discovery tool lists a newly connected instrument. This is due to the IP address assignment process which uses either DHCP or AutoIP protocol. If the instrument is not shown in the list, wait approximately 90 seconds and click **Discover** again. The computer is capable of communicating with the instruments shown with a white background in the list.
6. Select the instrument by finding the Serial Number that matches your instrument and click **Connect**.
7. We recommend conducting a functional test to ensure the Signature is working as intended. The details are described in the Operations manual, but for a quick overview the tests covers the following:
  - i. Communication
  - ii. Temperature
  - iii. Pressure
  - iv. Tilt
  - v. Compass
  - vi. Amplitude
  - vii. Correlation
  - viii. Recorder/Memory

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For more information we recommend one of the following channels:

**Nortek online**

At our website, [www.nortekgroup.com](http://www.nortekgroup.com), you will find technical support, user manuals, and the latest software and firmware. General information, technical notes, and user experience can also be found here.

**Contact Information**

We recommend first contacting your local sales representative before the Nortek main office. If you need more information, support or other assistance, you are always welcome to contact us or any of our subsidiaries by email, phone or fax.

Email: [inquiry@nortekgroup.com](mailto:inquiry@nortekgroup.com) for general inquiries or [support@nortekgroup.com](mailto:support@nortekgroup.com) for technical support

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