NORTEK

Quick guide

Signature55 | 100 kHz

The Signature55 and Signature100 operate as long range profilers of 1000m and 400m, respectively. The Signature55 uses dual frequency, 55kHz and 75kHz, with true broadband technology for both long, coarse resolution profiles and shorter, fine resolution profiles. The Signature100 has an optional central echosounder with three frequencies (70, 90 and 120kHz), each available with pulse compression to detect biological activity in the water column.

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 Signature55 but can be easily translated to the Signature100. The sensor head has three/four acoustic transducers slanted at 20 degrees from vertical, plus optional echo sounder for the Signature100. 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 one pointing in the positive X-axis (see the engraved axis definition on the head). The stand alone connectors are 2-pin + 6-pin brass Subconn by MacArtney. Optional 8-pin + 6-pin if the instrument is ordered with serial communication. Online systems use the more robust Souriau connector intended for long term use.

Power requirements:
Online: No integrated battery
Stand alone: Double alkaline 1080Wh 18V, or double lithium 3600Wh 19V.
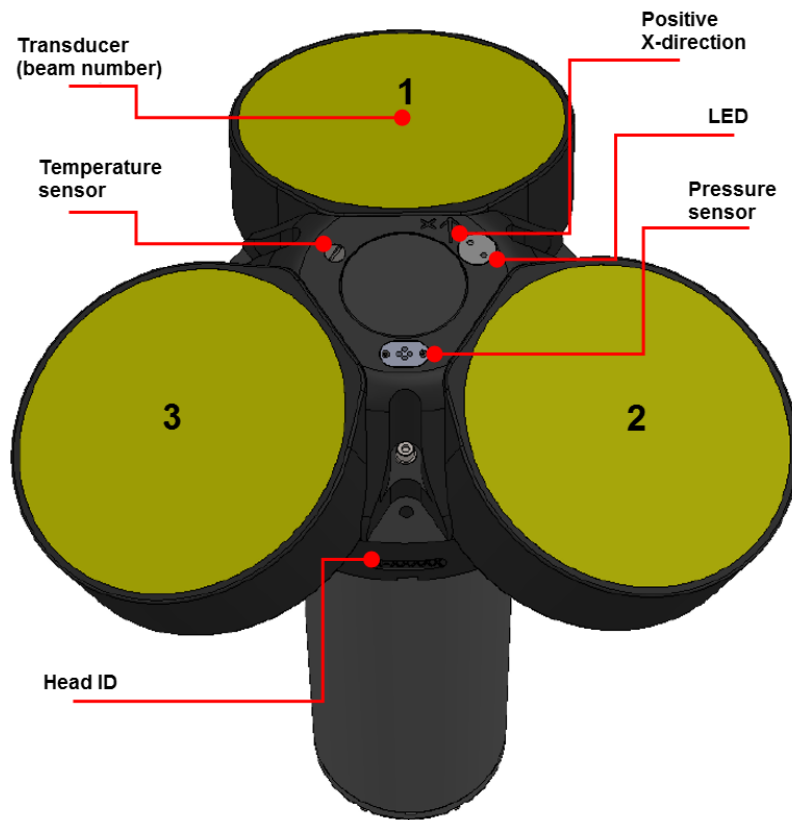DC input. 15-48V. We recommend using the supplied DC adapter (24V).

Transducer (beam number)

Positive X-direction

LED

Temperature sensor

Pressure sensor

1

3

2

Head ID

Figure 1. Signature55 beam and sensor overview

Grounding point

Connectors

End cap release bolts

Pressure release
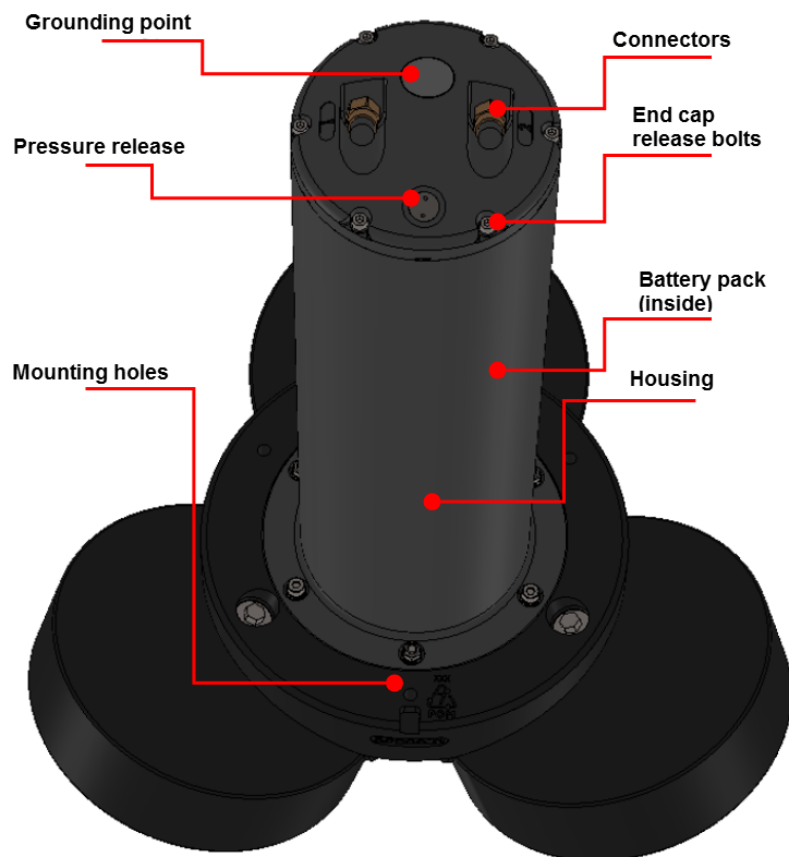
Battery pack (inside)

Mounting holes

Housing

Figure 2. Signature55 housing, end cap and connectors overview

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.
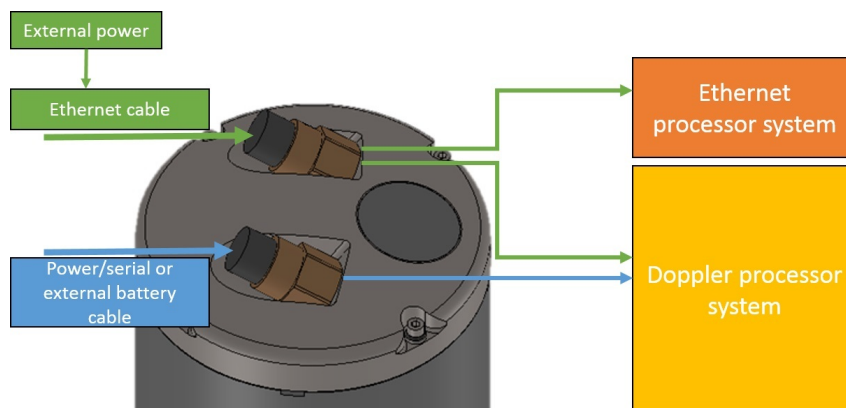

Figure 3. Power distribution. When the Ethernet cable is connected to the instrument, it will need to be powered from the power breakout cable. This will power both processor systems. If power is supplied through the Serial or external battery connector, the Ethernet processor is unavailable.

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.

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

For more information we recommend one of the following channels:

Nortek online
At our website, 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.
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