|INFORMATION SHEET

Getting started with the Vector

Below you will find some useful information about how to get started using your Generation 2 Vector instrument. You will find links to the configuration software and details about where to find more comprehensive information about the product. If something is missing or unclear, please contact your local Nortek representative – or reach out to the support department at support@nortekgroup.com
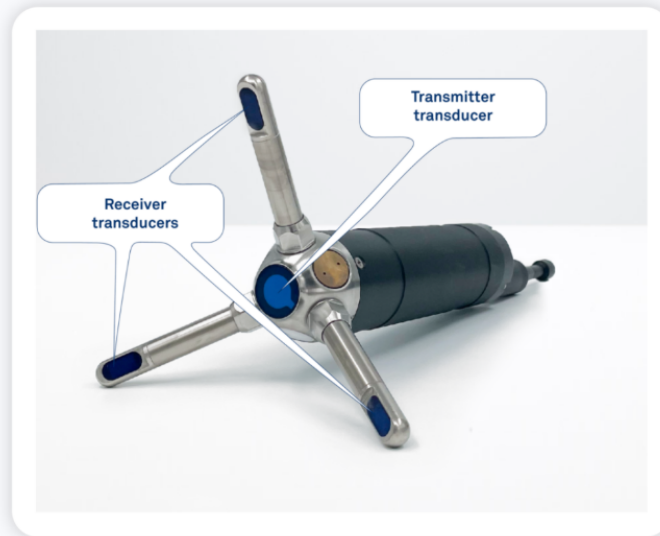

Generation 2 Vector 6000 kHz
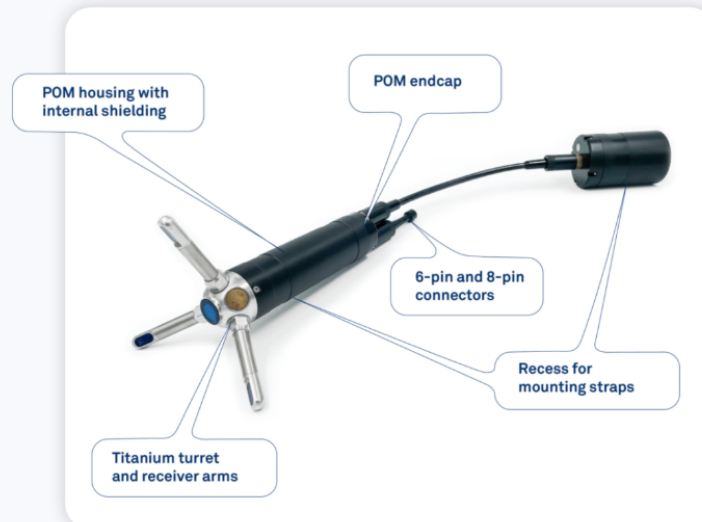

Communications box

Battery canister

What's in the Box?

The Generation 2 Vector is a compact, high precision velocimeter designed to measure currents, waves, and turbulence. It includes a central transmitter (transducer), and three receivers mounted on evenly spaced arms. A communication box is supplied to enable connection, configuration, and data download for the Vector.

Generation 2 Vector
Side-view

Transmitter transducer

Receiver transducers

Generation 2 Vector
with battery canister

POM housing with internal shielding

POM endcap

6-pin and 8-pin connectors

Recess for mounting straps

Titanium turret and receiver arms

Generation 2 Vector
Front-view

Temperature sensor

Pressure sensor

LED

CABLES

The Vector 2 connects to a communication box using a set of dedicated cables. These include an Ethernet cable for data downloads and firmware updates, and an RS422 serial cable for configuring and communicating with the instrument. If your system was purchased with an external battery canister, a battery cable to supply power during deployment will also be available (note that when using an external battery canister, no real-time communication with the instrument is possible as the battery cable is connected in place of the communication cable). The instrument is equipped with a pressure and temperature sensor located on its head, along with an LED indicator that provides a visual signal when the device is connected or actively measuring.

Guides and manuals

A comprehensive help guide and details on how to operate and configure your instrument is found in the deployment software wizard – **Nortek Deployment**.

In addition to the help sections in the software, the following relevant manuals are available in PDF on our support site:

Manual	Link (if using online version)
Principles of Operation – High-Resolution:	Principle of Operations: High Resolution
Principles of Operation – Currents:	Principle of Operations: Currents
Principles of Operation – Waves:	Principle of Operation: Waves
Principles of Operation – Echosounder:	Principle of Operation: Echosounder

Instrument configuration software

A web-based application called Nortek Deployment is used to operate and configure the Generation 2 Vector. This software can be launched from your web browser by visiting deployment.nortekgroup.com, but can also be installed from Microsoft Store or downloaded as an offline installer file.

Technical specification

All instrument specification and other technical information can be found on the product site https://www.nortekgroup.com/products

What's new

Full details about the updates made to the Generation 2 Vector from the legacy Vector instrument can be found in the release notes published on our web site https://www.nortekgroup.com.

Firmware and software

Nortek releases new and improved firmware and software on a regular basis. Please always visit our web pages before each deployment to make sure you have the most resent instrument versions. All lates versions of firmware and software can be found on our web site under https://www.nortekgroup.com/software

Connecting to the software

Make sure that you have familiarized yourself with the equipment and software before planning a deployment. When you are ready to get started, you can connect the instrument to your computer using the supplied serial cable (default RS422) and USB converter delivered with the instrument. Make sure the instrument is powered using the external power supply.
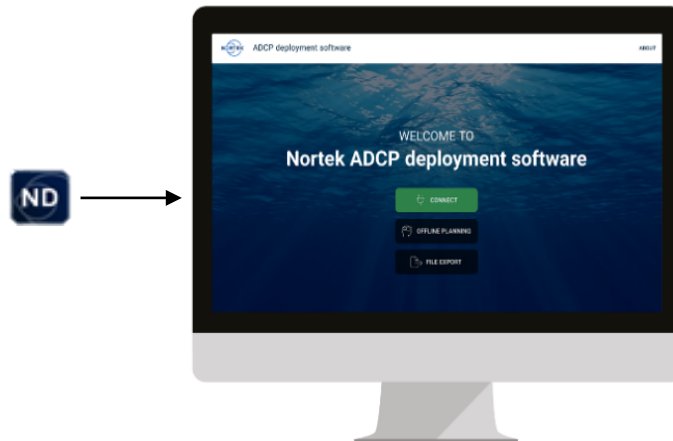

How to connect to your instrument is described step-by-step in the Nortek deployment software help wizard under the **Connection tab.**
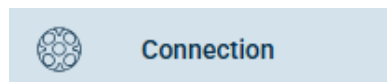
- Select the correct communications port, and the default baud rate is 115200 for the Generation 2 Vector; this can be changed if required within the same connection panel.
- Once connected, check the instrument is functioning by: Show live data on, located on the left-hand side panel (enable Serial Output if required then Start current configuration).

If you need to plan your deployment without being connected to an instrument, you can do so in the software by connecting to a **virtual instrument**
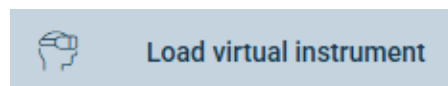
Batteries

The Generation 2 Vector can be operated with an external battery canister, and various options are available from Nortek. Please find below a guide on how to open and install the default 76 Wh lithium-Ion rechargeable battery. The battery fits tightly inside the canister and must be properly positioned for the lid to close. The connector is located near the battery. Checking the O-rings is important; to do this please refer to the FAQ: How do I take care of my connectors?

Opening the instrument

Unscrew and open the endbell using the appropriate Allen key (**Step 1**). Remove the endbell (**Step 2**), by gently pushing or pulling it straight out of the housing (Do not twist). Pull out the battery from the housing (**Step 3**).

Step 1	Step 2	Step 3

Changing the batteries & closing the instrument

The Generation 2 Vector can be setup for autonomous (standalone) deployments by using an external battery canister. Many battery options are available from Nortek, and here we're showing the default option, which is a rechargeable lithium-ion 76 Wh battery.

Start by connecting the battery harness (endbell) to the 2-pin connectors (battery) (**Step 4**). Then place the new battery into the canister, secure the battery in place and then tightly place the battery connector down the open side of the battery (**Step 5**). Connect the endbell back to the battery canister and make sure the screw openings align, and the two tabs on the endbell are aligned with the sides of the battery, then gently push until secure, proceed to fitting and tightening the screws (**Step 6**).

Step 4	Step 5	Step 6

Function test

Testing the Generation 2 Vector before a deployment can be achieved by connecting the instrument, entering the "**Advanced mode**" (the Nortek Deployment window will turn green) by pressing **CRTL**, **ALT**, **N** all together. Then enter the diagnostics section on the lefthand side menu and then selecting "**Probe Check**" and test the transducers and auxiliary sensors in a bucket of water.

Note that to perform a functional test, the Vector must be setup for real-time data acquisition; that is, you should connect the green Vector cable directly to the 8-pin connector on the instrument's endbell, and *not* use an external battery canister.
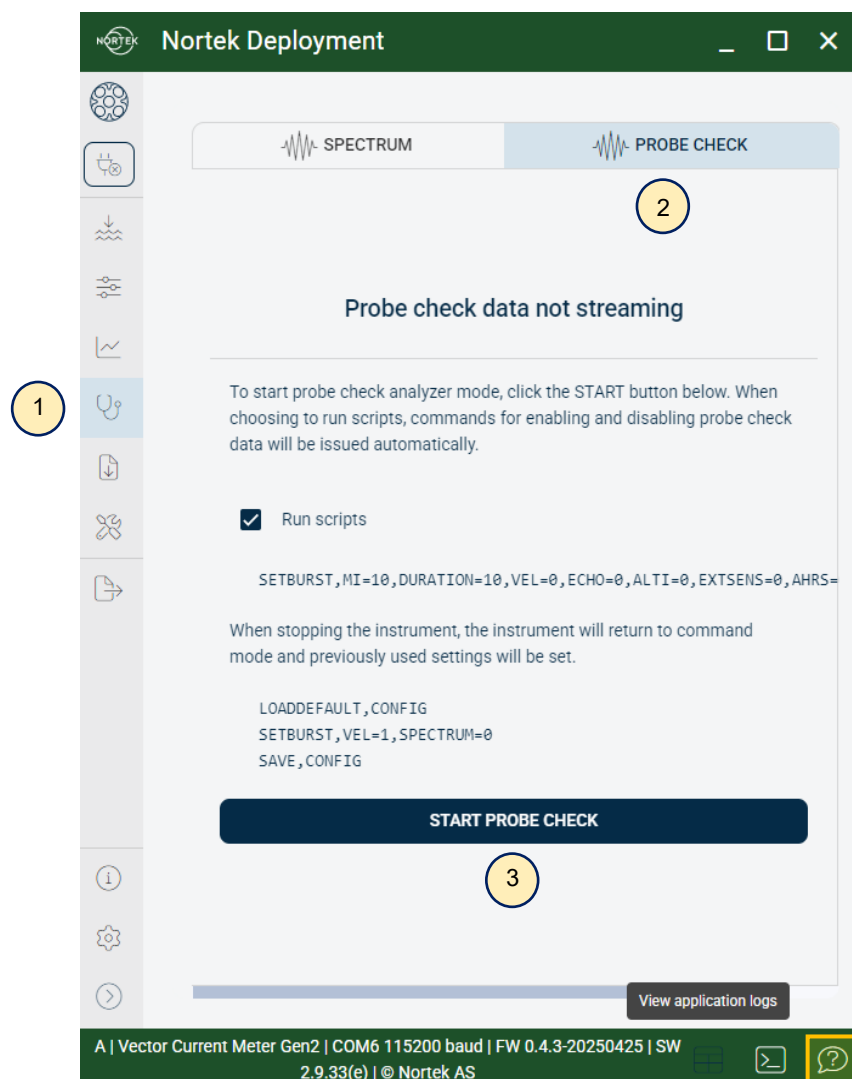
Guidance on interpreting the probe check can be found in the Help and Support section on the right-hand side, or by clicking the question mark bubble in the lower right-hand corner.

Making a Deployment File

Following the function test, or connection to the instrument, select "Plan and Deploy" on the lefthand side menu, follow through the steps, configuring the instrument (all help & support is provided within the software by clicking the question mark located at the bottom righthand

corner). When at Deployment – the final stage of the configuration setup, the user can choose to save the configuration to a file to be accessed later and reused or saved to the instrument before either carrying out a live test (if connected via serial cable) or starting the deployment.

Note: The configuration should be "**SAVED TO INSTRUMENT**" before deploying.

Once configured, you can start the deployment, and the software will indicate that the Vector is actively collecting data.

SAVE TO FILE	SAVE TO INSTRUMENT	TEST IN LIVE DATA	START DEPLOYMENT
Save the file to use at a later date or keep a track of the configuration used for a later deployment.	Save the file to the instrument to use in the current deployment.	After saving the configuration file to the instrument, and while still connected via the serial cable, test the setup by collecting live data in air, a bucket, a tank, or at the coast.	Start the deployment. If the instrument is started while connected via the serial cable, it can be safely unplugged afterward; the external battery can then be connected, and the measurement campaign will begin or continue as configured.

At this point you can close the software. If the instrument will be powered through the Interface Box, you must leave that connected as it is powering the instrument. If you have an optional battery canister and would like to deploy the instrument autonomously, you can disconnect the green Vector cable and connect your external battery canister to it instead. The instrument will then wake up and proceed with data acquisition according to the configuration uploaded to it. NOTE: it may take a few minutes for the instrument to start the sampling scheme (depending on how you configured it); your indication that it is sampling is the blue LED on the Vector, which blinks at the user-configured sampling rate.

Instrument disposal / end-of-life

At the end of its service life, the **Generation 2 Vector** should be responsibly disassembled and its components recycled according to local regulations. Follow these steps:

1. **Disassembly & Sorting:**
   - **Electronics & Sensors (Head, PCB, Connectors, Cables):** Dispose of as electronic waste (E-waste).
   - **Housing & Endbell (Plastic or Titanium):** Recycle plastic parts as plastic waste; titanium should be sent to metal recycling.
   - **Transducers:** Encapsulated components should be handled as hazardous waste.
   - **Batteries (if applicable):** Dispose of at designated battery recycling points.
2. **Recycling Considerations:**
   - If uncertain about local recycling options, contact your waste management service or a professional recycler.
   - Avoid returning the instrument to Nortek unless specifically instructed, as local recycling reduces emissions from unnecessary shipping.

By properly recycling the **Generation 2 Vector**, users contribute to environmental sustainability and minimize waste impact.

Further guidance can be found in Nortek document INF0003 which can be obtained via our support department.

Need help? Contact us at support@nortekgroup.com