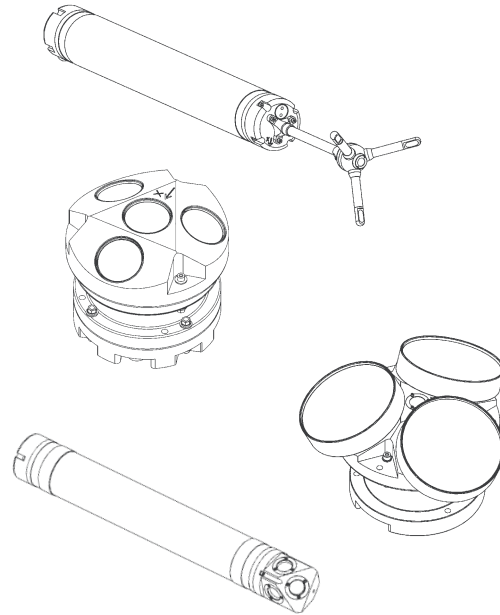


Powering Your Nortek Instrument



A variety of power options are available for your Nortek instruments. Many applications – especially wave measurements – will require extra power to ensure that the instrument can collect all the data you are looking for. In other cases, you may simply want to skip the standard packs and use rechargeable batteries, both for practical and environmental reasons.

Battery packs can be located inside in your instrument or they can be placed in a separate external canister. Two Nortek sensors have no room for internal batteries: The AWAC and the Continental, both of which require an external battery canister to operate in self-contained mode.

Nortek alkaline battery packs are all based on commercially available batteries assembled by specialty manufacturers and protected with diodes. Based on the importance of the battery pack for a successful deployment, and the warranty implications of a failed battery, we do not recommend that you build your own battery packs unless you have compelling reasons to do so. Battery packs using lithium or lithium-ion are not based on standard

battery cells and should only be assembled by professional battery manufacturers because of the fire and explosion hazards.

Calculating Battery Requirements

The Nortek software allows you to calculate the anticipated power consumption as a function of the sampling scheme and the planned deployment duration. The predicted power consumption is given in %, where 100% signifies complete depletion of a standard battery for the particular instrument. For instruments using external batteries only, the % scale refers to a 540Wh alkaline battery pack. For instruments that are provided with internal batteries, the % scale refers to a 50Wh alkaline battery pack. If, for example, you replace the internal alkaline battery pack in an Aquadopp with an internal lithium battery rated to 160Wh, you can plan to use 320% (160/50) of the nominal capacity before the battery is depleted.

Transport of Lithium Battery Packs

Nortek lithium battery packs can only be shipped by air if they are treated as dangerous goods. For individual battery packs shipped inside the instrument, the shipping procedure is quite simple and requires only that a certified freight company labels the goods appropriately. If you order more

batteries than what can be fitted inside the instrument, the battery packs will be shipped inside a metal container to avoid contact between the batteries and water. To reduce delivery times, Nortek aims to stock lithium batteries with our largest representatives.





Nortek instruments use one of two battery pack sizes: A small-size battery equivalent in volume to 18AA-size batteries and a large-size built from 36D-size batteries. The battery packs in the picture are (clockwise from top left): Alkaline 13.5V–50Wh, Li 11.2V – 160Wh, Li-Ion 10.8V–50Wh, Alkaline 13.5V–540 Wh, and Li 18.5V –1200Wh.



Three standard external battery canisters are available. The two blue aluminum canisters are used for one or two large battery packs. The canister to the right can hold four small battery packs in parallel. The AWAC and Continental have separate connectors for the external battery canisters and can be configured for online communication while the external batteries are connected. Other Nortek instruments require a Y-cable if you want to communicate with the instrument while the external battery canister is connected.

External power supplies

Here is some information you may find useful when using your own power supply in connection with a Nortek instrument:

- The recommended DC input voltage range is 10.0–18.0VDC
- The peak current draw is between 1A and 2A

If you use your own power supply, it should be rated to at least 30W. The Continental has different power requirements than the other Nortek sensors: The minimum voltage is 12VDC and the peak current during transmit is higher than 2A for the maximum output power setting.

Specifications

Alkaline battery (small)

Voltage	13.5V
Capacity	50Wh
Dimensions	45×100×45 [mm]
Weight	0.4 kg

Alkaline battery (large)

Voltage	13.5V
Capacity	540Wh
Dimensions	120×190×130 [mm]
Weight	5.3 kg

Li battery (small)

Voltage	11.2V
Capacity	160Wh
Dimensions	45×100×45 [mm]
Weight	0.4 kg

Li batteries should not be used with the Vector

Li battery (large)

Voltage	18.5V
Capacity	1200Wh
Dimensions	120×190×130 [mm]
Weight	5.4 kg

Li-Ion battery (rechargeable)

Voltage	10.8V
Capacity	50Wh
Dimensions	45×100×45 [mm]
Weight	0.4 kg

Aluminium battery canister (small)

Length	290 mm
Diameter (cylinder)	150 mm
Diameter (lid)	190 mm
Weight (without batteries)	5.0 kg

Aluminium battery canister (large)

Length	480 mm
Diameter (cylinder)	150 mm
Diameter (lid)	190 mm
Weight (without batteries)	6.6 kg

Plastic battery canister

Length	570 mm
Diameter (cylinder)	73 mm
Weight (without batteries)	2.0 kg

The absolute limits on the DC input voltage range is 8.0–18.5 V (12.0–18.5 V for Continental). Below 8V (12V) and above 5V, the instrument will go into sleep mode for 10 minutes. Below 5V, the instrument will abort and reset. It will resume data collection when the voltage raises back up above 8V (12V) but the time and date may have been lost.

Please be aware that the Nortek alkaline battery packs for the Continental can have a nominal voltage a little higher than 18 V. You should not supply more than 18V with a standard power supply or with a “stiff” battery chemistry such as lead-acid.

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