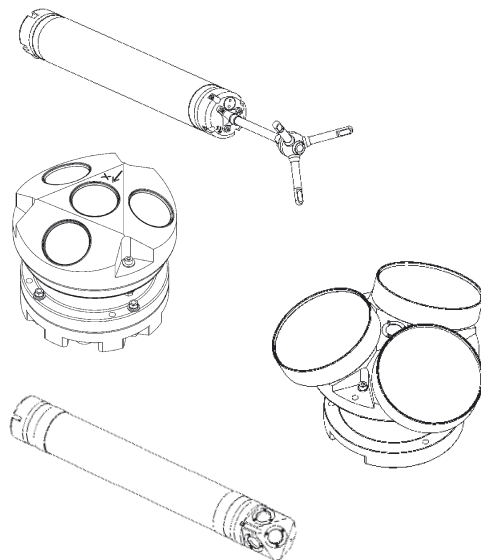


Powering Your Nortek Instrument



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 replace the standard battery packs and use rechargeable batteries, both for practical and environmental reasons.

Battery packs can be located inside 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 stan-

dard 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 150Wh, you can plan to use 300% (150/50) 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.



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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 – 150Wh, Li-Ion 10.8V–50Wh, Alkaline 13.5V–540Wh, 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 canister 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.

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 9–16VDC. 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

Specifications

Alkaline battery (small)

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

Alkaline battery (large)

Voltage	13.5V/18.5V (Continental)
Capacity	540Wh
Dimensions	120×190×130 [mm]
Weight	5.5kg

Li battery (small)

Voltage	11.2V
Capacity	150Wh
Dimensions	45×100×45 [mm]
Weight	0.4kg

Li batteries should not be used with the Vector

Li battery (large)

Voltage	14.4V/18.5V (Continental)
Capacity	1200Wh
Dimensions	120×190×130 [mm]
Weight	4kg

Li-Ion battery (rechargeable)

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

Aluminium battery canister (small)

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

Aluminium battery canister (large)

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

Plastic battery canister

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

will resume data collection when the voltage raises back up above 8V (12V) but the time and date may have been lost.

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.

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