

ARTS

ENERGY

ARTS Energy's VH XP super high energy Ni-MH series are perfectly suited for applications requiring high power, high energy density and robustness. The « XP » stands for **eXtended Power** and illustrates the higher power capability of the series.

The VH F XP contains aqueous electrolyte, an important safety feature as it is non-flammable.

This is key reason why the VH F XP are not considered as a dangerous goods and can be transported by air without any transportation constraints (no homologation tests for transportations, no restrictions for packaging and transportation).

To meet customers' requirements, ARTS Energy provides custom-designed and standardised battery packs.

For your battery design and system needs, please contact ARTS Energy's engineers.

APPLICATIONS

- Robots / Unmanned Vehicles
- Medical
- Devices used or carried inside planes
- Professional electronics

MAIN BENEFITS

- High energy density
- High power
- Superior robustness
- Safe, no transportation constraints

TECHNOLOGY

- Foam positive electrode
- Plastic bonded metal-hydride negative electrode



ELECTRICAL CHARACTERISTICS

Nominal voltage (V)	1.2
Typical capacity (mAh)*	15300
IEC minimum capacity (mAh)*	14500
IEC designation	HRH 33/91
Impedance at 1000 Hz (mΩ)	2.5

* Charge 16 h at C/10, discharge at C/5.

DIMENSIONS

Diameter (mm)	32.15 ± 0.1
Height (mm)	88.8 ± 0.4
Top projection (mm)	1.4 ± 0.4
Top flat area diameter (mm)	5.6
Weight (g)	252

Dimensions are given for bare cells.

CHARGE CONDITIONS

	Temp. (°C)	Current
Fast	0 to +40	5A max
Topping (after fast charge)	0 to +40	Consult ARTS Energy
Trickle (after topping)	0 to +40	Consult ARTS Energy
Charge below 0°C	-40 to 0	Consult ARTS Energy

End of Fast charge cut-off: dT°C/dt recommended / -dV acceptable: consult ARTS Energy for optimisation

DISCHARGE CONDITIONS

	Temp. (°C)	Current
	10 to +40	70A max
	0 to +40	3C max
	-10 to +40	1C max
	-20 to +40	C/4 max
	-40 to +40	C/20 max

CYCLING CONDITIONS

	Cycling	Life duration
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Full cycles (100% DOD) > 500 cycles

NI-MH

VH F XP

Super High Energy series

VH F XP

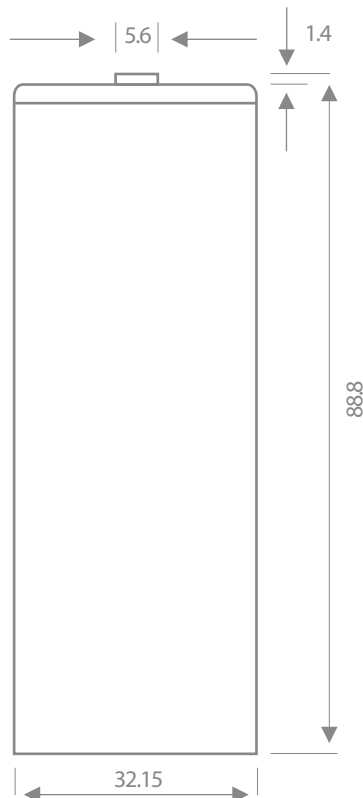
Super High Energy series

STORAGE

Recommended: + 5°C to + 25°C

Relative humidity: 65 ± 5 %

TYPICAL DIMENSIONS



Typical dimensions (mm). Without tube.

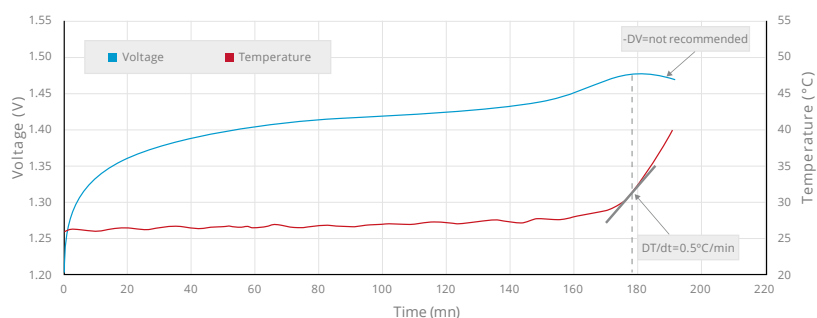
The operation of the battery must strictly be in accordance with ARTS Energy technical recommendations, to obtain the performances stated by ARTS Energy.

Data is given for single cells. Please consult ARTS Energy for utilisation of cells outside specification.

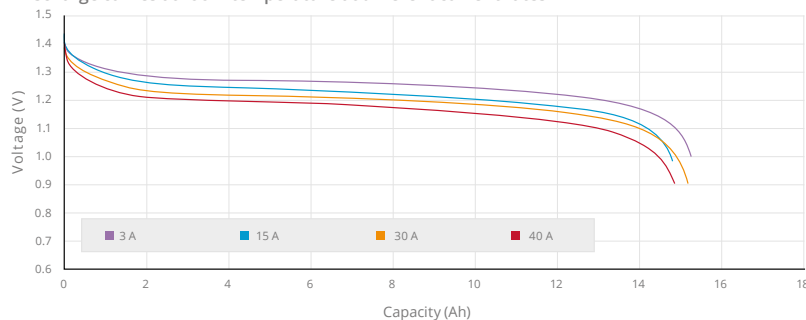
Data in this document is subject to change without notice and become contractual only after written confirmation by ARTS Energy.

For graphs shown, C is the IEC₅ capacity.

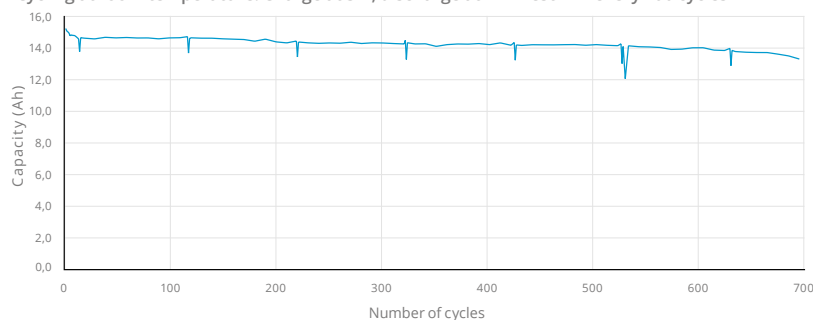
Voltage and temperature at 5 A charge



Discharge curves at room temperature at different current rates



Cycling at room temperature. Charge at 5 A, discharge at 12 A rest 24h every 100 cycles



10, rue Ampère
Zone Industrielle - 16440 Nersac, France
Tél. +33(0)5 45 90 35 52 / 35 53
contact@arts-energy.com

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