

# Extensolar

## Super Long Life Ni-MH battery system

ARTS Energy's Extensolar offers an ideal solution in extreme temperature environments for reliable, long-life and high-performance applications with cutting-edge Ni-MH technology available in tubular and slim shape.

Extensolar integrates smart electronics, all in a robust plug-n-play tubular battery design. It is well suited for small off-grid photovoltaic (PV) applications, back-up power systems and professional electronics requiring unsurpassed long life energy storage.

### Features

Basic configuration: 12V, 24V, 36V battery systems including:

- Advanced Ni-MH chemistry providing very long calendar life, high charge efficiency, and excellent cycling capability in an extreme range of temperatures (-40°C to +70°C)
- Built-in BMS (Battery Management System) managing charge, discharge, SOC (State Of Charge) and SOH (State Of Health) based on proprietary algorithm
- Communication and remote control possible through the BPCI® (Battery Protection and Communication Interface) RS232 compatible serial bus
- Eco-designed product and RoHS compliant
- Designed for ease of parallel assembly
- Discharge current up to 10 A continuous
- IP65 rated for outdoor use.

### Benefits

- Very long service life, even in hot countries and with high daily DOD (Depth Of Discharge)
- Protection against theft (no need to make a hole in the ground). The battery can be put inside a pole
- Low total cost of ownership (TCO) especially for applications having high maintenance costs.
- Innovative design for the customer device (slimmer battery)
- No sudden end of discharge nor sudden death thanks to the communication interface
- Reduction of energy consumption thanks to electronic management between the solar panel, the battery and the application
- Recyclability and respect for the environment



Configuration	10S2P	20S	20S2P	30S2P
Voltage (V)	12	24	24	36
Capacity (Ah)	20	10	20	20
Energy (Wh)	240	240	480	720
<b>Mechanical characteristics</b>				
Length (mm)	300	300	475	650
Width (mm)	140	140	140	140
Weight (kg)	6	6	11	15,5
volume (liter)	4,6	4,6	7,3	9,2
<b>Specific energy</b>				
Specific energy (Wh/kg)	40	40	44	46
Energy density (Wh/liter)	52	52	66	78
<b>Range of temperature</b>				
Operating temperature range for charge and discharge (°C)	-40°C to +70°C			
Maximum temperature (reversible): thermostat	+75°C (+/- 5°C)			
Maximum temperature (non-reversible): thermofuse	+93°C (+0°C / -5°C)			
Transport and storage	+5°C to +25°C			
<b>Maximum charge current</b>				
That can be delivered to the module	15 A			
That is accepted by the module (regulation)	4 A			
<b>Maximum discharge current</b>				
continuous to termination	10 A			
during 1 minute	15 A			
<b>Life time performance</b>				
Hot country	7-8 years			
other countries	10-15 years			
<b>Standards</b>				
CEM compliance	EN 55014-1 / EN 55014-2			
Safety compliance	EN 61000-6-2 / EN 61000-6-3			
	IEC 61951-2 / IEC 60950			



Advanced Rechargeable Technology and Solutions



## Applications

- Standalone, small off-grid PV applications like street lighting, road signalling, buoys, water supply and irrigation, weather stations and environmental sensors, wireless local area networks and navigation aids, M2M networks
- Urban signalling as bus stops, billboards, lighting connected to the off-peak grid
- Professional applications such as portable measurement equipment, medical carts, cinematography and others
- Back-up and small stationary systems

## Components

- Connectors: 3 connectors (charge, discharge and communication). Consult ARTS Energy to get references
- Main fuse: 15A ATO
- Casing, handle and bottom composition: ABS/PC

## Options available

- Serial communication kit for PC access (with ARTS Energy's software)
- Cables and accessories available for system integration

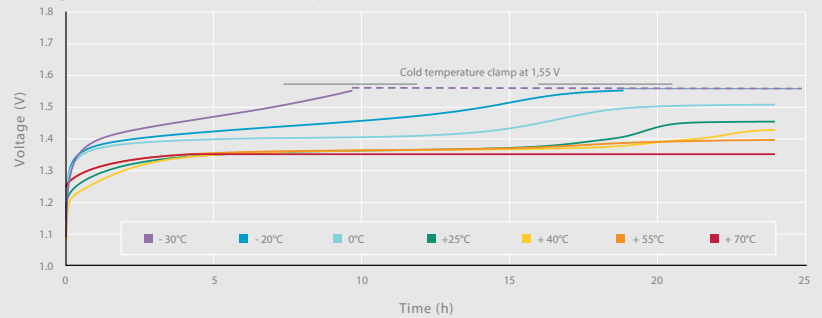
## Recommendations

- Recharge up to 12 months after a full charge.
- Store at temperature from +5 to +25°C
- Do not immerse into water

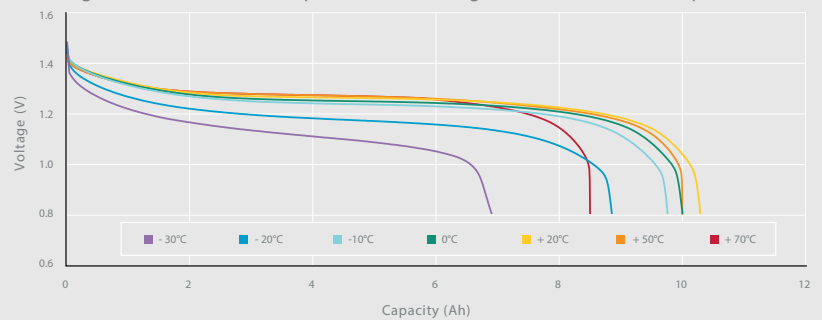
Data are given for single cells. Please consult ARTS Energy for utilization of cell outside this specification.

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

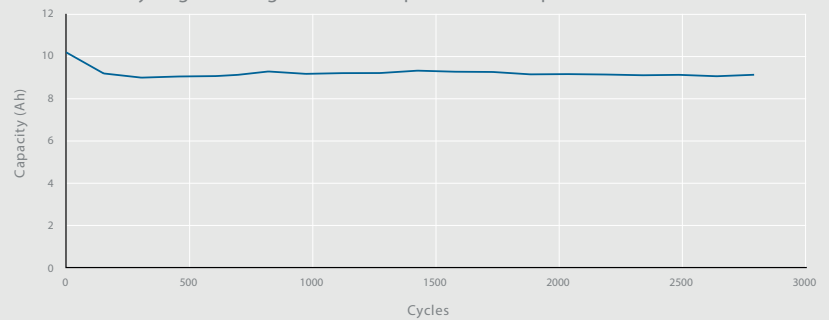
Charge 24h at C/20 at different temperatures



Discharge at C/10 at different temperatures after charge at C/10 at different temperatures

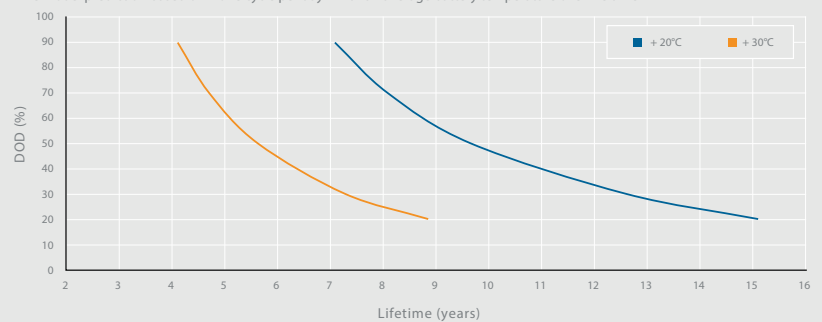


Photovoltaic cycling according IEC 61427 temperature +40°C permanent



Life duration vs. depth of discharge at different battery temperatures

Life model prediction based on one cycle per day with an average battery temperature over life time



10, rue Ampère  
Zone Industrielle  
16440 Nersac, France  
Tél. +33(0)5 45 90 35 50  
[www.arts-energy.com](http://www.arts-energy.com)