

# Battery systems



## Ni-Cd & Ni-MH standard battery systems

ARTS Energy offers Ni-Cd & Ni-MH standard battery systems addressing all professional and industrial portable applications.

As well as the electrical and mechanical interfaces, these systems usually include management, control and communication capabilities, plus the charger. Parallel assemblies and intelligent battery design are used to achieve high-capacity systems.

Special management algorithms implemented in proprietary electronics bring optimised

performance, long shelf and service life, guaranteed user safety and extended warranty conditions. Battery and system design benefit from ARTS Energy's extensive experience in rapid prototyping, design-to-cost and volume production. As well as making standard battery systems addressing most needs, ARTS Energy also develops custom systems to client specifications. Wherever possible, custom batteries are designed and made using

standard components and subassemblies. ARTS Energy's standard offer consists of modules in ABS plastics (Smart modules), whose assembly has been adapted to robust and easily-connecting designs in aluminum casings. ARTS Energy VH modules are specially designed for personal mobility applications. Smart VHT modules address small off-grid PV applications, back-up power systems and professional electronics requiring unsurpassed long life energy storage.

	Smart VH module								Mobility module					
	VH D			VH F					VH D		VH F			
	10S	20S	30S	10S	20S	30S	10S2P	20S2P	20S	30S	20S	30S	10S2P	20S2P
<b>Electrical characteristics</b>														
Minimal voltage (V)	12	24	36	12	24	36	12	24	24	36	24	36	12	24
Typical capacity (Ah)	9	9	9	15	15	15	30	30	9	9	15	15	30	30
Energy (Wh)	108	216	324	180	360	540	360	720	216	324	360	540	360	720
Specific energy (Wh/kg)	51	57	58	58	64	68	64	67	44	49	55	56	55	59
Energy density (Wh/l)	83	104	113	107	126	134	126	139	85	95	104	113	102	117
<b>Mechanical characteristics</b>														
Height (mm)	99	159	219	129	219	309	219	395	170	228	231	320	235	410
Length (mm)	178	178	178	178	178	178	178	178	185	185	185	185	185	185
Width (mm)	73.5	73.5	73.5	73.5	73.5	73.5	73.5	73.5	81	81	81	81	81	81
Weight (kg)	2.1	3.8	5.6	3.1	5.6	8.0	5.6	10.7	4.9	6.6	6.5	9.6	6.5	12.3
Volume (l)	1.3	2.1	2.9	1.7	2.9	4.0	2.9	5.2	2.5	3.4	3.5	4.8	3.5	6.1

	Smart VHT module							PV module				Extensolar			
	10S	20S	20S	30S	30S	10S2P	20S2P	20S	30S	10S2P	20S2P	10S2P	20S	20S2P	30S2P
<b>Electrical characteristics</b>															
Minimal voltage (V)	12	24	24	36	36	12	24	24	36	12	24	12	24	24	36
Typical capacity (Ah)	10	6	10	6	10	20	20	10	10	20	20	20	10	20	20
Energy (Wh)	120	144	240	216	360	240	480	240	360	240	480	240	240	480	720
Specific energy (Wh/kg)	44	53	50	53	52	50	52	44	44	44	44	40	40	44	46
Energy density (Wh/l)	71	69	84	77	89	84	93	69	75	69	78	52	52	66	78
<b>Mechanical characteristics</b>															
Height (mm)	129	158	219	217	309	219	395	231	320	231	410	300	300	475	650
Length (mm)	178	178	178	178	178	178	178	185	185	185	185	Diameter : 140			
Width (mm)	73.5	73.5	73.5	73.5	73.5	73.5	73.5	81	81	81	81				
Weight (kg)	2.7	2.7	4.8	4.1	6.9	4.8	9.2	5.5	8.1	5.5	10.8	6.0	6.0	11.0	15.5
Volume (l)	1.7	2.1	2.9	2.8	4.0	2.9	5.2	3.5	4.8	3.5	6.1	4.6	4.6	7.3	10.0

As part of its ongoing commitment to advanced technology systems, ARTS Energy has developed a strong expertise in developing, qualifying and manufacturing customised integrated Li-ion battery systems. The specific characteristics of Li-ion cells require well adapted battery management and control systems. Charge and discharge control, application interfacing, communication and safety are to be considered as a whole and need to be optimised for a given application and operating conditions. For more details on the offer, please contact ARTS Energy.