Naps Batteries for Industrial PV Systems

Valve-Regulated Gel Type Tubular Plate Single Cells Type A600

‘Sealed’ (valve-regulated) tubular plate 2 Volt lead-acid single cells with gelled electrolyte are ideal for use in larger industrial renewable energy systems where regular additions of water to batteries are not possible or inconvenient.

A600 OPzV single cells are 2V tubular plate lead-acid valve-regulated units with nominal capacities in the range 224 to 3286 Ah (C_{10}). They are normally supplied as complete batteries of the required voltage and capacity, including necessary cables and interconnects. Optionally, various rack configurations are available for complete battery systems.

Featuring the highest standards of construction, A600 OPzV cells combine the excellent corrosion resistance and cycling capability of the tubular positive plate construction with a lead-calcium-tin alloy. The gelled acid means no water additions are needed throughout the life of the battery, reducing maintenance requirements to a simple periodic check of cell voltages and temperatures, plus simple cleaning and checking of interconnects.

A600 OPzV single cells
Main Technical Characteristics

- High capacity and reliability is achieved with the use of proven materials and design.
- Gelled acid provides the same water reserve as an open tubular cell design, and ensures good heat conduction from the plates to the surroundings.
- Tubular positive plates combine excellent resistance to grid corrosion and good cycle life.
- Thick pasted negative plates ensure a long service life.
- Lead-calcium-tin alloys in both positive and negative plates reduce self-discharge and corrosion throughout the lifetime of the battery.
- Microporous separator ensures electrical isolation between the plates and good retention of the active materials.
- Acid gelled with fumed silica reduces stratification to a minimum.
- High impact and halogen-free container and lid.
- Gas- and acid-tight pole bush with double O ring seal allows for trouble-free positive plate growth during ageing.
- Pressure relief valve with flame arrestor assures operational safety. Operates at 100-150 mbar.

Estimation of service life in PV systems

average working temperature °C	years	if daily cycling less than
20	14	11%
25	10	15%
30	7	22%
35	5	31%
40	4	44% of C_{10}

if daily cycling is greater than above limits lifetime will be reduced

Service life on float charge (not PV)

average working temperature °C	years
20	18
30	9
40	ca 4.5

Information last updated 28th January 2008

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Naps A600 OPzV single cells
Technical Data

	Capacity (Ah) [1]				Dimensions			Weight	
name	**nominal**	**10h**	**20h**	**100h**	**L mm [2]**	**W mm**	**H mm [3]**	**kg**	**DIN name**
A602/200	200	224	244	285	104	207	401	18	4OPzV200
A602/250	250	280	311	360	125	207	401	22	5OPzV250
A602/300	300	337	368	429	146	207	401	25	6OPzV300
A602/350	350	416	452	535	125	207	517	32	5OPzV350
A602/420	420	499	547	630	146	207	517	37	6OPzV420
A602/490	490	582	641	736	167	207	517	42	7OPzV490
A602/600	600	748	845	965	146	207	693	50	6OPzV600
A602/800	800	998	1106	1275	211	192	693	68	8OPzV800
A602/1000	1000	1248	1419	1610	211	234	693	82	10OPzV1000
A602/1200	1200	1497	1697	1931	211	276	693	98	12OPzV1200
A602/1500	1500	1643	1847	2119	211	276	843	112	12OPzV1500
A602/2000	2000	2190	2448	2791	214	399	819	153	16OPzV2000
A602/2500	2500	2738	3071	3532	214	488	819	196	20OPzV2500
A602/3000	3000	3286	3673	4188	213	577	819	225	24OPzV3000

[1] Capacity at 20°C, after 5 cycles, 1.80V/cell
[2] Allow 8-11mm space lengthways in assembled battery
[3] Height is height over terminals

Capacity (C_{10}) at low temperature

30°C	20°C	0°C	-10°C	-20°C	
102%	100%	87%	75%	61%	
1.80	1.80	1.79	1.77	1.75	end V

Cycle Life
1200 cycles under IEC 896-2 conditions, equivalent to 60% of nominal C10 per cycle. This cycle life is only applicable at a constant 20°C and full recharge on each cycle.

Self discharge rate: Approx 2% per month at 20°C

Maximum recommended depth of discharge: 80%

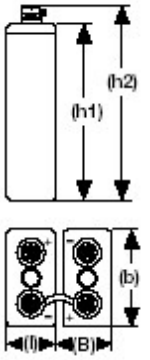
Container: ABS, UL 94-HB as standard, optionally for hazardous areas, ABS to UL 94 V-0.

Terminal: F type, M8, torque 20 Nm

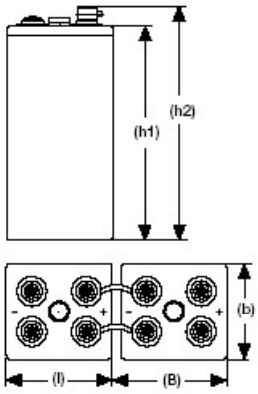
Standards
Conform in construction and performance to DIN 40742
Tested to: IEC 896 - 2

Transport: Trouble-free transportation of operational cells, no restrictions for rail, road, sea and air transportation (IATA, DGR clause A 67)

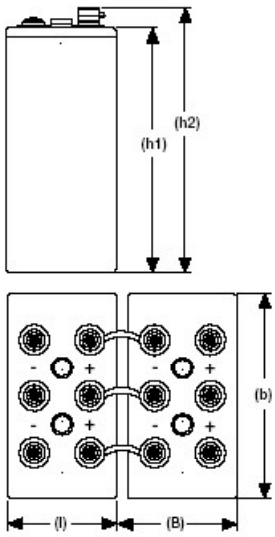
Also available:
Solar version with improved cycle life



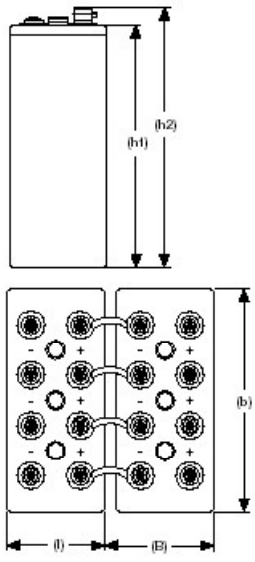
4OPzV200 to
6OPzV600



8OPzV800 to
12OPzV1500



16OPzV2000



20OPzV2500 to
24OPzV3000

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