



Naps Batteries for Industrial PV Systems

Low Antimony Tubular Plate Single Cells Type Secura OPzS

Low antimony tubular plate 2 Volt lead-acid single cells are ideal for use in most larger industrial renewable energy systems.

Secura OPzS vented single cells are 2V tubular plate lead-acid units with nominal capacities in the range 286 to 4714 Ah (C_{100}). 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, Secura OPzS cells combine the excellent corrosion resistance and cycling capability of the tubular positive plate construction with the low maintenance advantages of a low antimony positive plate lead alloy. High capacity and reliability is achieved with the use of proven materials and design.

Secura OPzS single cells

Main Technical Characteristics

- Tubular positive plates with a woven polyester gauntlet combine excellent resistance to grid corrosion and good cycle life.
- Thick pasted negative plates with long life expander ensure a long service life.
- Low antimony alloys in both positive and negative plates reduce self-discharge, water consumption and corrosion throughout the lifetime of the battery.
- Microporous separator ensures electrical isolation between the plates, a homogeneous distribution of electrolyte and good retention of the active materials.
- The 1.24 acid density ensures a long service life. The large electrolyte volume and low water consumption mean reduced maintenance.
- Transparent container (SAN) allows easy checking of acid levels.
- Gas- and acid-tight pole bush with rubber ring seal allows for trouble-free positive plate growth during ageing.
- Screw terminals (M10 brass insert) allow easy interconnections using flexible insulated copper cables or solid copper connectors. Interconnect protection IP 25 (DIN 40050), touch protected to VBG 4.
- Measurement leads can be connected using special hollow terminal screws. Contact resistance measurement point also available on terminal.
- Optional sintered ceramic explosion proof caps ensure safe operation and also prevent acid leakage.
- Storage: Up to 2 years for dry charged cells in low temperature and low humidity conditions

Information last updated 28th January 2008

Specifications may change without notice due to Naps continuous product improvement policy. Please check actual specifications before ordering.

Naps Secura OPzS single cells Technical Data

name	Capacity* (Ah)				L mm	Dimensions			Weight (kg)		Acid volume (l)	
	10h	100h	200h	300h		W mm	H mm	empty	filled**	total	reserve***	
4OPzS200	201	286	302	306	105	208	420	12.2	17.2	4.0	0.4	
5OPzS250	258	367	388	394	126	208	420	14.6	20.8	5.0	0.5	
6OPzS300	318	455	460	467	147	208	420	17.2	24.3	5.7	0.6	
5OPzS350	361	475	574	583	126	208	535	18.9	26.9	6.5	0.7	
6OPzS420	453	597	703	714	147	208	535	22.2	31.5	7.5	0.9	
7OPzS490	525	692	818	830	168	208	535	25.2	36.1	8.8	1.0	
6OPzS600	683	950	885	898	147	208	710	31.9	44.8	10.4	1.2	
8OPzS800	948	1326	1186	1204	215	193	710	44.2	61.3	13.8	1.5	
10OPzS1000	1113	1548	1500	1524	215	235	710	52.3	74.5	17.9	2.0	
12OPzS1200	1352	1882	1785	1812	215	277	710	62.1	88	20.9	2.4	
12OPzS1500	1673	2255	2425	2462	215	277	855	80.4	114.3	27.3	2.8	
16OPzS2000	2195	2952	3228	3276	215	400	815	102.5	151.5	39.5	3.4	
20OPzS2500	2901	3928	4032	4092	215	490	815	129.8	193	51.0	4.2	
24OPzS3000	3482	4714	4850	4923	215	580	815	159.4	234.5	60.6	5.1	

* Initial Capacity to 1.80V/cell at 20°C

** For acid density 1.24 kg/litre

*** acid volume above plates between min and max marks

Capacity (C₁₀₀) at low temperature

20°C	15°C	10°C	5°C	0°C	-5°C	-10°C	-20°C
100%	98%	94%	90%	85%	79%	72%	55%

Watering requirements: On float duty at 20°C, watering interval is approximately 3 years. At 1% daily overcharge (typical for PV systems), recommended watering interval is 1 year.

Self discharge rate: Approx 3% per month at 20°C

Maximum recommended depth of discharge: 80%

Standards

Conforms to: DIN 40 736 part 1

Tested to: IEC 896 - 1

Safety standard: VDE 0510 part 2

Transport: non-hazardous goods for road transport

Estimation of service life in PV systems

average working temperature °C	years	if daily cycling less than
20	16	12%
25	11	17%
30	8	25%
35	6	35%
40	4	49%

of C₁₀

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

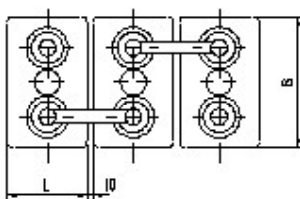
Service life on float charge (not PV)

average working temperature °C	years
20	20
30	10
40	5

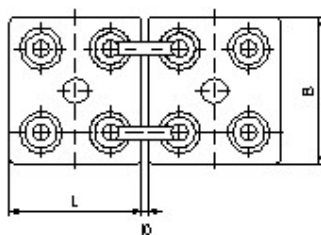
Cycle Life

1500 cycles under IEC 896-1 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.

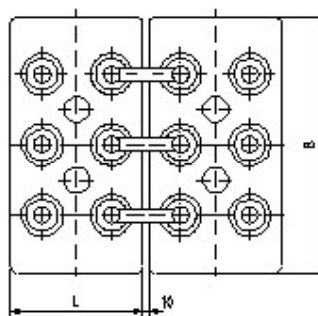
4 OPzS 200 to 6 OPzS 600



8 OPzS 800 to 12 OPzS 1500



16 OPzS 2000



20 OPzS 2500 to 24 OPzS 3000

