

Technical Specification for Stationary VLA - Cells

1. Application

The BAE OPzS Series flooded tubular plate cells are one of the most enduring lead acid batteries on the market today. They are ideally suited for stand-by operations as well as for capacitive loads. They perfectly meet requirements for bridging times between 1h to more than 10h.

Application Uses:

- Power generation plants
- Electrical utilities applications
- Telecommunications
- Microwave radio systems
- Emergency lighting
- Outdoor enclosures
- Photovoltaic applications

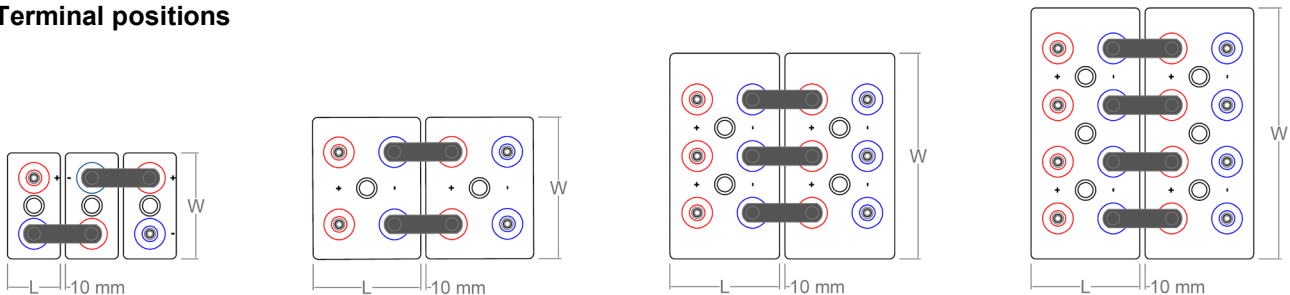


2. Types, capacities, dimensions, weights

Type	1 min 25°C	C ₁ 25°C	C ₄ 25°C	C ₈ 25°C	C ₁₂ 25°C	R _i 1)	I _k 2)	Length (L)	Width (W)	Height (H)	Weight dry	Weight filled	Lead mass
U _e V/cell	Amps 1.75	Ah 1.75	Ah 1.75	Ah 1.75	Ah 1.75	mΩ	kA	inch	inch	inch	lbs	lbs	lbs
2 OPzS 100	162	55	88	104	120	1.52	1.37	4.06	8.11	15.95	20.1	31.9	15.5
3 OPzS 150	230	83	128	160	180	1.06	1.96	4.06	8.11	15.95	24.8	36.2	20.4
4 OPzS 200	284	110	172	208	240	0.84	2.46	4.06	8.11	15.95	28.2	39.6	24.2
5 OPzS 250	338	137	216	264	300	0.70	2.98	4.88	8.11	15.95	33.7	47.8	29.3
6 OPzS 300	386	165	260	312	360	0.60	3.47	5.71	8.11	15.95	39.9	56.6	34.4
5 OPzS 350	401	194	320	384	420	0.57	3.61	4.88	8.11	20.47	44.0	63.5	38.2
6 OPzS 420	453	233	380	456	504	0.49	4.18	5.71	8.11	20.47	51.7	75.0	45.0
7 OPzS 490	496	272	448	536	588	0.44	4.69	6.54	8.11	20.47	59.1	86.1	51.7
6 OPzS 600	469	299	532	672	720	0.47	4.41	5.71	8.11	27.44	72.8	104.4	63.2
7 OPzS 700	631	349	620	784	840	0.36	5.66	8.27	7.52	27.44	92.8	135.6	77.6
8 OPzS 800	706	399	708	896	960	0.32	6.36	8.27	7.52	27.44	102.8	144.2	87.2
9 OPzS 900	685	449	800	1008	1080	0.33	6.2	8.27	9.17	27.44	113.3	166.2	96.8
10 OPzS 1000	797	499	888	1120	1188	0.28	7.25	8.27	9.17	27.44	123.5	175.0	106.5
11 OPzS 1100	806	549	980	1232	1308	0.28	7.36	8.27	10.83	27.44	134.5	197.5	116.1
12 OPzS 1200	916	599	1068	1344	1428	0.24	8.41	8.27	10.83	27.44	144.1	205.9	125.8
11 OPzS 1375	969	634	1280	1520	1632	0.24	8.38	8.27	10.83	33.27	160.3	233.5	136.4
12 OPzS 1500	1026	692	1396	1656	1776	0.22	9.48	8.27	10.83	33.27	170.7	243.3	148.0
13 OPzS 1625	1299	750	1512	1792	1920	0.16	13.03	8.43	15.71	32.36	200.2	303.8	163.1
14 OPzS 1750	1367	808	1628	1936	2076	0.15	13.82	8.43	15.71	32.36	210.1	313.9	174.1
15 OPzS 1875	1428	865	1744	2072	2220	0.14	14.43	8.43	15.71	32.36	220.9	323.9	185.3
16 OPzS 2000	1496	923	1860	2208	2364	0.13	15.2	8.43	15.71	32.36	232.3	334.2	197.0
17 OPzS 2125	1693	980	1980	2360	2532	0.12	16.91	8.35	19.17	32.36	259.5	386.0	214.8
18 OPzS 2250	1803	1038	2096	2496	2676	0.11	17.55	8.35	19.17	32.36	268.7	394.8	225.8
19 OPzS 2375	1827	1095	2212	2632	2820	0.11	18.36	8.35	19.17	32.36	279.5	404.8	237.0
20 OPzS 2500	1982	1153	2328	2768	2976	0.11	18.92	8.35	19.17	32.36	290.8	415.0	248.7
22 OPzS 2750	2098	1269	2560	3048	3264	0.10	19.92	8.35	22.68	32.36	320.5	471.7	271.4
24 OPzS 3000	2211	1384	2792	3328	3564	0.09	21.26	8.35	22.68	32.36	342.2	491.7	293.8
26 OPzS 3250	2320	1499	3024	3600	3852	0.09	22.49	8.35	22.68	32.36	363.8	511.4	316.3

1) Internal resistance from IEC 60896-11; 2) Short circuit current from IEC 60896-11; All data is subject to change. Height (H) is the maximum distance between container bottom and top of the bolts in assembled condition.

3. Terminal positions



2 OPzS 100 to 6 OPzS 600

7 OPzS 700 to 12 OPzS 1500

13 OPzS 1625 to 16 OPzS 2000

17 OPzS 2125 to 26 OPzS 3250

Technical Specification for BAE *SECURA OPzS*

4. Design

Positive electrode	Tubular - plate with a polyester gauntlet and solid grids in a corrosion-resistant PbSb1.6SnSe alloy
Negative electrode	Round-grid flat plate in low antimony alloy with long-life expander material
Separation	Micro porous separator
Electrolyte	Sulphuric acid with a density of 1.24 kg/l
Container	High impact, transparent SAN (Styrol-Acrylic-Nitrile), UL 94 rating: HB Optional: High impact, transparent Polycarbonate, UL 94 rating: V-0 High impact ABS in dark grey color, UL 94 rating: V-0
Lid	Includes standard ceramic arrestors with optional ceramic flip-top funnel arrestors acc. DIN 40740 available
Flame arrestors	100% gas and electrolyte tight, sliding, injection moulded "Panzerpol" M10 brass insertion
Pole - bushing	Insulated solid copper connectors with cross-sections of 90, 150 or 300 mm ² depending upon application
Kind of pole	Flexible insulated copper cables
Inter-cell connectors	M10 stainless steel with insulated cap
Inter-tier connectors	IP 25 regarding DIN 40050, touch protected according VBG 4.
Connector screw	
Kind of protection	

5. Charging

IU - characteristic	I_{max} without limitation $U = 2.23$ V/cell +/- 1%, between 10°C and 30°C (50°F and 86°F) $\Delta U/\Delta T = +/- 0.003$ V/K below 10°C in the monthly average
Float current	20mA/100Ah, increasing to 30mA/100Ah at the end of life
Equalize charge	$U = 2.33$ to 2.40V/cell, time limited
Charging time up to 90%	6h with 1.5· I_{10} initial current, 2.23 V/cell, 80% C3 discharged

6. Discharge characteristics

Reference temperature	25°C (77°F)
Initial capacity	95% or better at time of delivery
Depth of discharge (DOD)	Normally up to 80%
Deep discharges	More than 80% DOD or discharges beyond final discharge voltages (dependent on discharge current) have to be avoided

7. Maintenance

Every 6 months	Check and record battery voltage, pilot cell voltage and temperature
Every 12 months	Check and record battery voltage, cell voltages and temperatures

8. Operational data

Operational life	20+ years in stand-by operation, float at 20°C to 25°C (68°F to 77°F)
Water - refilling - interval	Up to 3 years, float at 20°C to 25°C (68°F to 77°F)
IEC 60 896-1 cycles	> 1500
Self-discharge	App. 3% per month at 20°C (68°C)
Operational temperature	-20°C to 55°C (-4°F to 131°F); recommended 10°C to 30°C (50°F to 86°F)
Standard	DIN 40736 part 1
Tests according	IEC 60896-11
Safety standard, ventilation	DIN EN 50272-2
Transport	Subject to DOT Regulations – See SDS for details

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