BAE SECURA OPzS

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.

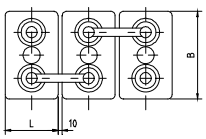
Application Uses:

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

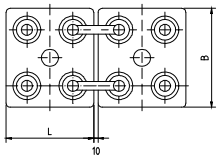
2. Types, capacities, dimensions, mass

Type	C_{10} 20°C	C_8 25°C	C_5 25°C	C_3 25°C	C_1 25°C	Ri 1)	Ik 2)	length	width	height (max.)	mass 3)	mass 4)	lead mass
	Ah	Ah	Ah	Ah	Ah	mΩ	A	inch	inch	inch	lbs	lbs	lbs
U_e V/cell	1.80	1.75	1.75	1.75	1.75								
2 OPzS 100	122	124.8	109	94	61	1.90	1.08	4.06	8.11	15.95	20.5	34.2	19.9
3 OPzS 150	159	163.2	144	121	82	1.27	1.62	4.06	8.11	15.95	24.7	37.5	24.0
4 OPzS 200	192	208	185	159	110	0.95	2.16	4.06	8.11	15.95	28.2	39.2	27.4
5 OPzS 250	246	264	230	201	137	0.76	2.70	4.88	8.11	15.95	33.7	47.4	32.7
6 OPzS 300	310	312	275	240	165	0.63	3.24	5.71	8.11	15.95	39.5	55.1	38.3
5 OPzS 350	371	384	345	288	194	0.70	2.90	4.88	8.11	20.47	44.1	61.7	42.8
6 OPzS 420	450	456	410	348	233	0.58	3.48	5.71	8.11	20.47	51.4	71.9	49.8
7 OPzS 490	519	536	475	405	272	0.50	4.06	6.54	8.11	20.47	58.6	82.7	56.9
6 OPzS 600	645	672	585	486	299	0.47	4.32	5.71	8.11	27.44	72.8	101.0	70.6
8 OPzS 800	888	896	780	648	399	0.35	5.76	8.27	7.52	27.44	102.3	140.0	99.2
10 OPzS 1000	1048	1120	975	810	499	0.28	7.20	8.27	9.17	27.44	122.8	170.0	119.1
12 OPzS 1200	1272	1344	1170	972	599	0.23	8.64	8.27	10.83	27.44	144.0	201.1	139.6
12 OPzS 1500	1568	1696	1470	1236	692	0.23	9.18	8.27	10.83	33.27	170.9	241.6	165.7
16 OPzS 2000	2024	2264	1960	1644	923	0.17	12.24	8.46	15.71	32.36	225.8	326.3	219.0
20 OPzS 2500	2576	2832	2450	2058	1153	0.14	15.30	8.35	19.17	32.36	291.7	415.8	282.9
22 OPzS 2750	2904	3000	2715	2343	1421	0.12	16.83	8.35	22.68	32.36	320.6	492.7	310.9
24 OPzS 3000	3296	3392	2935	2469	1579	0.11	18.36	8.35	22.68	32.36	342.2	508.0	331.9
26 OPzS 3250	3432	3544	3210	2769	1679	0.10	19.97	8.35	22.68	32.36	363.8	522.3	352.8

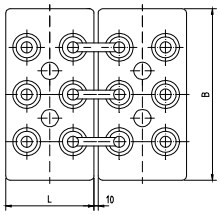
1, 2) internal resistance and short - circuit - current from IEC 60896-11 3) dry-charged 4) filled and charged



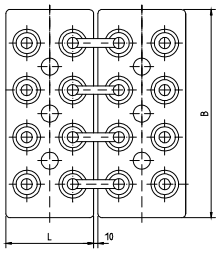
2 OPzS 100 to
6 OPzS 600



8 OPzS 800 to
12 OPzS 1500



16 OPzS 2000



20 OPzS 2500 to
26 OPzS 3250

ENERGY FROM BATTERIES

BAE

Technical Specification for BAE *SECURA OPzS*

3. 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	microporous separator
Electrolyte	sulphuric acid with a density of 1.24 kg/l
Container	high impact, transparent SAN (Styrol-Acrylic-Nitrile), UL-94 rating: HB
Lid	high impact SAN in dark grey color, UL-94 rating: HB
Flame arrestors	includes standard ceramic arrestors with optional ceramic flip-top funnel arrestors acc. DIN 40 740 available
Pole - bushing	100% gas- and electrolyte-tight, sliding, injection moulded “Panzerpol”
Kind of pole	M10 brass insertion
Intercell connectors	insulated PVC coated solid copper connectors with cross-sections of 90, 150 or 300 mm² depending upon application
Inter-tier connectors	flexible insulated copper cables
Connector screw	M10 stainless steel with insulated cap
Kind of protection	IP 25 regarding DIN 40050, touch protected according VBG 4.

4. 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	15mA/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 $1.5 \cdot I_{10}$ initial current, 2.23 V/cell, 80% C3 discharged

5. 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

6. Maintenance

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

7. Operational data

Operational life	20+ years in stand-by operation, float at 20 to 25 °C (68 °F to 77 °F)
Water - refilling - interval	more than 3 years at 25°C (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 40 736 part 1
Tests according	IEC 60 896 - 11
Safety standard, ventilation	DIN EN 50 272-2
Transport	Batteries are not subject to ADR (road transport), if the conditions of the special rule (chapter 3.3) are observed.

BAE Batteries USA ▪ 484 County Highway V V ▪ Somerset WI 54025
TEL (715) 247-2262 FAX (715) 247-5741
www.baebatteriesusa.com