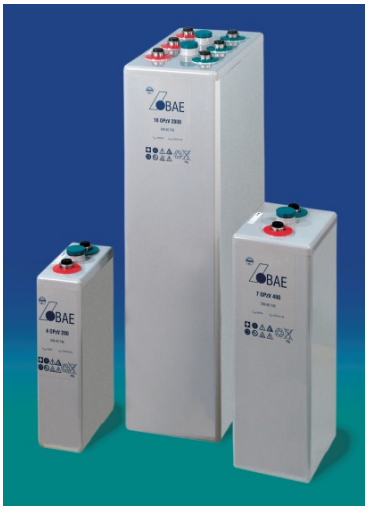
BAE SECURA OPzV

Technical Specification for Stationary VRLA – Cells



1. Application

BAE OPzV - Batteries belongs to the best EUROBAT classification for maintenance free lead-acid batteries. These are classified as >12 years, long life, the highest classification according to EUROBAT.

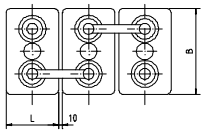
In applications with high requirements of operational safety and bridging times of 1h to more than 10h, the BAE OPzV is the right choice.

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

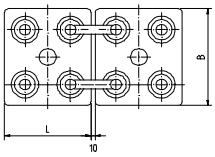
2. Types, capacities, dimensions, mass

Type	C10 25°C	C8 25°C	C5 25°C	C3 25°C	C1 25°C	Ri 1)	Ik 2)	length	width	height (max.)	mass	lead mass
	Ah	Ah	Ah	Ah	Ah	mΩ	kA	inch	inch	inch	lbs	lbs
U_e V/cell	1.80	1.75	1.75	1.75	1.75							
4 OPzV 200	238	235	130	188	128	1.200	1.70	4.06	8.11	15.95	44.2	29.5
5 OPzV 250	298	294	161	235	160	0.960	2.15	4.88	8.11	15.95	50.8	32.5
6 OPzV 300	356	352	192	281	192	0.800	2.57	5.71	8.11	15.95	63.6	43.2
5 OPzV 350	427	419	226	325	214	0.710	2.88	4.88	8.11	20.47	70.7	47.9
6 OPzV 420	512	503	272	389	257	0.600	3.46	5.71	8.11	20.47	81.1	53.3
7 OPzV 490	597	587	315	454	300	0.510	4.04	6.54	8.11	20.47	90.6	58.2
6 OPzV 600	729	718	389	563	358	0.450	4.58	5.71	8.11	27.44	114.9	78.2
8 OPzV 800	972	956	519	751	478	0.340	6.10	8.27	7.52	27.44	152.3	100.8
10 OPzV 1000	1215	1195	649	936	598	0.270	7.63	8.27	9.17	27.44	187.0	125.4
12 OPzV 1200	1463	1434	779	1125	717	0.230	9.15	8.27	10.83	27.44	220.1	147.5
12 OPzV 1500	1669	1673	878	1239	775	0.240	8.58	8.27	10.83	33.27	254.2	169.4
16 OPzV 2000	2225	2225	1171	1650	1033	0.180	11.40	8.46	15.71	32.36	345.2	230.9
20 OPzV 2500	2781	2785	1465	2064	1292	0.140	14.30	8.35	19.17	32.36	431.0	286.6
22 OPzV 2750	3090	3016	2122	2271	1421	0.131	14.30	8.35	22.68	32.36	477.4	317.4
24 OPzV 3000	3337	3338	2925	2475	1550	0.120	17.10	8.35	22.68	32.36	521.6	347.7
26 OPzV 3250	3660	3560	3305	2931	1829	0.111	18.52	8.35	22.68	32.36	552.5	368.3

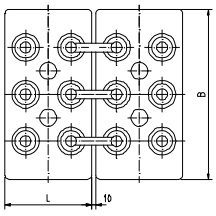
1, 2) internal resistance and short - circuit - current from IEC 60 896-21



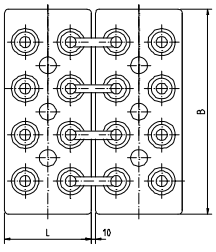
4 OPzV 200 to
6 OPzV 600



8 OPzV 800 to
12 OPzV 1500



16 OPzV 2000



20 OPzV 2500 to
26 OPzV 3250

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Technical Specification for BAE *SECURA OPzV*

3. Design

Positive electrode	tubular - plate with a polyester gauntlet and solid grids in a corrosion-resistant PbCaSn - alloy
Negative electrode	grid - plate in a PbCaSn alloy with long - life expander material
Separation	microporous separator
Electrolyte	sulphuric acid with a density of 1.24 kg/l, fixed as a GEL by fumed silica
Container and lid	high impact SAN (Styrol-Acrylic-Nitrile), grey coloured, UL-94 rating: HB (Alternatively container and lid in ABS (Acrylonitrile-Butadiene-Styrene), UL-94 rating: V0)
Valve	valve with flame arrestor, opening pressure approx. 120 mbar, closing pressure approx. 50 mbar
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.
Horizontal operation	Please use BAE special type OPzV "horizontal". The construction and production of this type is adapted to the horizontal operation.

4. Charging

IU - characteristic	I_{max} without limitation U = 2,25V/cell +- 1%, between 10°C and 45°C (50°F to 113°F) $\Delta U/\Delta T$ = -0,003 V/K below 10°C in the monthly average
float current	20 – 30 mA/100Ah
boost charge	U = 2,33 to 2,40V/cell, time limited
charging time up to 90%	6h with 1,5·I_{10} initial current, 2.25 V/cell, 50% C10 discharged

5. Discharge characteristics

reference temperature	25°C (77°F)
initial capacity	according to IEC 60896-21: 95% or greater
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 and record battery voltage, pilot cell voltage and temperature
every 12 months	check and record battery, cell voltages and temperatures

7. Operational data

Classification according to EUROBAT	> 12 years, Long life
Operational life	15 to 20 years in stand-by operation, float at 20°C to 25°C (68°F to 77°F)
Maintenance-free	no topping off water during life
IEC 60 896-2 cycles	>1500
Self-discharge	approx. 2% per month at 25°C (68°F)
Operational temperature	-20°C to 45°C (-4°F to 113°F), recommended 10°C to 30°C (50°F to 86°F), short-periods 45°C to 55°C (113°F to 131°F)
Deep discharge recovery	very good
Standard	DIN 40 742 part 1
Tests according to	IEC 60 896 - 21, -22
Safety standard, ventilation	DIN EN 50 272-2, Ventilation requirements are reduced to 20% compared to those for vented batteries of the same capacity
Transport	Batteries are not subject to ADR (road transport), if the conditions of the special rule (chapter 3.3) are observed.

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