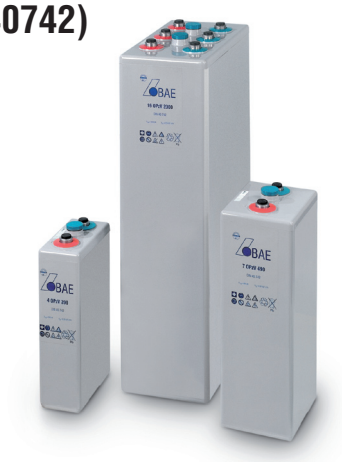
BAE SECURA OPzV

Technical Specification for Stationary VRLA-GEL-Cells (DIN 40742)



1. Application

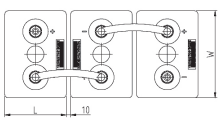
BAE OPzV batteries belong to the highest EUROBAT classification for maintenance-free lead-acid batteries: >12 years long life.
In applications with high requirements of operational safety and autonomy times of 1 h to more than 10 h, the BAE OPzV batteries are the right choice. They are used as stand-by power sources in telecommunications, in microwave radio systems, emergency lighting, power generation plants and other equipments.

2. Types, capacities, dimensions, weights

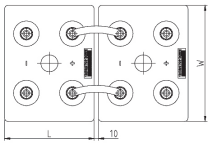
Type	$C_{10\,h}$ 20 °C Ah	$C_{5\,h}$ 20 °C Ah	$C_{3\,h}$ 20 °C Ah	$C_{1\,h}$ 20 °C Ah	$C_{8\,h}$ 25 °C Ah	R_i 1) mΩ	I_k 2) kA	Length (L) mm	Width (W) mm	Height (H) mm	Weight filled kg
U_e V/cell	1.80	1.77	1.75	1.67	1.75						
2 OPzV 100*	121	107	96	71	120	1.65	1.30	105	208	420	12.4
3 OPzV 150*	182	161	144	107	180	1.15	1.86	105	208	420	17.1
4 OPzV 200	243	214	192	143	240	0.89	2.40	105	208	420	19.4
5 OPzV 250	304	268	240	179	300	0.73	2.91	126	208	420	23.3
6 OPzV 300	364	322	288	215	360	0.63	3.39	147	208	420	27.4
5 OPzV 350	447	388	342	254	440	0.68	3.14	126	208	535	31.4
6 OPzV 420	529	459	405	302	521	0.58	3.64	147	208	535	36.9
7 OPzV 490	610	530	468	350	601	0.52	4.12	168	208	535	42.4
6 OPzV 600	729	630	564	417	718	0.46	4.63	147	208	710	51.0
7 OPzV 700*	858	740	663	492	840	0.36	5.81	215	193	710	61.9
8 OPzV 800	970	840	750	559	952	0.32	6.54	215	193	710	68.8
9 OPzV 900*	1,090	945	840	616	1,072	0.34	6.29	215	235	710	77.0
10 OPzV 1000	1,200	1,045	933	691	1,192	0.28	7.50	215	235	710	83.9
11 OPzV 1100*	1,320	1,145	1,020	748	1,304	0.28	7.56	215	277	710	92.2
12 OPzV 1200	1,440	1,245	1,113	822	1,416	0.24	8.63	215	277	710	99.2
11 OPzV 1375*	1,570	1,375	1,209	839	1,576	0.27	7.86	215	277	855	108.2
12 OPzV 1500	1,710	1,495	1,317	927	1,704	0.23	9.18	215	277	855	116.5
13 OPzV 1625*	1,890	1,660	1,461	1,040	1,880	0.18	11.91	215	400	815	131.4
14 OPzV 1750*	2,070	1,810	1,590	1,125	2,056	0.17	12.63	215	400	815	141.2
15 OPzV 1875*	2,170	1,900	1,677	1,191	2,160	0.16	13.25	215	400	815	147.9
16 OPzV 2000	2,300	2,015	1,779	1,265	2,288	0.15	13.94	215	400	815	156.2
17 OPzV 2125*	2,480	2,170	1,911	1,358	2,464	0.14	15.32	215	490	815	173.6
18 OPzV 2250*	2,610	2,290	2,016	1,433	2,600	0.13	16.03	215	490	815	181.4
19 OPzV 2375*	2,740	2,405	2,121	1,507	2,728	0.12	16.70	215	490	815	189.6
20 OPzV 2500	2,870	2,520	2,223	1,581	2,864	0.12	17.37	215	490	815	197.8
22 OPzV 2750*	3,210	2,805	2,466	1,740	3,192	0.11	18.43	215	580	815	205.7
24 OPzV 3000	3,470	3,035	2,670	1,887	3,456	0.10	19.76	215	580	815	222.0
26 OPzV 3250*	3,650	3,210	2,832	2,014	3,640	0.10	21.02	215	580	815	235.1

1, 2) Internal resistance R_i and short circuit current I_k according to IEC 60896-21
* Special type based on DIN 40742
Height (H) is the maximum height between container bottom and top of the bolts in assembled condition.
All values given in the table correspond to 100 % DOD without voltage drop of connectors. Please consider item 6.

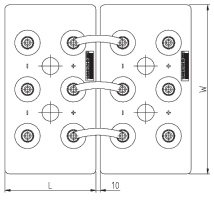
3. Terminal positions



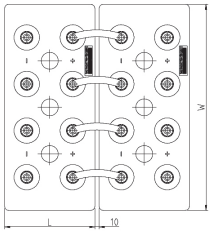
2 OPzV 100 to 6 OPzV 600



7 OPzV 700 to 12 OPzV 1500



13 OPzV 1625 to 16 OPzV 2000



17 OPzV 2125 to 26 OPzV 3250

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Technical Specification for BAE *SECURA OPzV*

4. Design

Positive electrode	tubular-plate with woven polyester gauntlet and solid grids in a corrosion-resistant PbCaSn-alloy
Negative electrode	grid-plate in PbCaSn-alloy with long-life expander material
Separation	microporous separator
Electrolyte	sulphuric acid with a density of 1.24 kg/l, fixed as GEL by fumed silica
Container and lid	high impact ABS (Acrylonitrile-Butadiene-Styrene), grey coloured (colour may vary slightly from given image), UL-94 rating: HB; on request also in UL-94 rating: V-0
Valve	valve with flame arrestor, opening pressure approx. 120 mbar
Pole-bushing	100 % gas- and electrolyte-tight, sliding, plastic coated “Panzerpol”
Kind of pole	M10 brass insertion
Connectors	flexible insulated copper cables with cross-section of 25, 35, 50, 70, 95 or 120 mm^2; on request: insulated solid copper connectors with cross-section 90, 150 or 300 mm^2
Connector screw	M10, steel, insulated, with measuring point
Kind of protection	IP 25 regarding EN 60529, touch protected according to VBG 4
Horizontal operation	Please use BAE special type OPzV “horizontal”. The construction and production of this type is adapted to the horizontal operation.

5. Charging

IU-characteristic	I_{max} without limitation U = 2.25 V/cell ± 1 %, between 10 °C and 45 °C (50 °F and 113 °F) in the monthly average, $\Delta U/\Delta T$ = -0.003 V/cell per K below 10 °C (50 °F)
Float current	20 - 30 mA/100 Ah C_{10}
Boost charge	U = 2.33 to 2.40 V/cell, time limited
Charging time up to 92 %	6 h with 1.5 x I_{10} initial current, 2.25 V/cell, 50 % C_{10} discharged

6. Discharge characteristics

Reference temperature	20 °C (68 °F)
Initial capacity	according to IEC 60896-21: 95 % at the 1st cycle, 100 % at the 5th cycle
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 battery voltage, pilot cell voltages, temperatures
Every 12 months	record battery and cell voltages and temperatures

8. Operational data

Classification acc. to EUROBAT	12 years and longer - long life
Service life	20 years in stand-by operation, float at 20 °C to 25 °C (68 °F to 77 °F)
Maintenance-free	no topping up during life
IEC 60896-21 cycles	>1,500
Self-discharge	approx. 2 % per month at 20 °C (68 °F)
Battery temperature	-20 °C to 45 °C (-4 °F to 113 °F) recommended 10 °C to 30 °C (50 °F to 86 °F) short time 45 °C to 55 °C (113 °F to 131 °F)
Deep discharge recovery	very good
Standard	DIN 40742 (except * marked cells)
Tests according to	IEC 60896-21, -22
Safety standard, ventilation	EN 50272-2, 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 Special Provisions 598 and 238 (Chapter 3.3) are observed. BAE cells/batteries are conform to the IMDG-Code, therefore these products are no dangerous goods on sea transport.

12/2012 4804068 Technical details may be subject to alterations.

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