BAE SECURA OPzV BLOCK

Technical Specification for Stationary VRLA - Block Batteries

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.

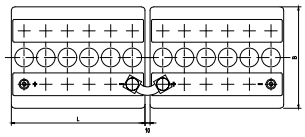
Application Uses:

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

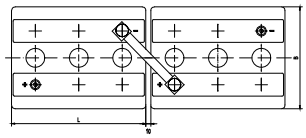
2. Types, capacities, dimensions, mass

Type	C10 20°C	C8 25°C	C5 25°C	C3 25°C	C1 25°C	Ri 1)	Ik 2)	length	width	height (max.)	Weight
U_e V/cell	Ah 1.80	Ah 1.75	Ah 1.75	Ah 1.75	Ah 1.75	mΩ	kA	inch	inch	inch	lbs
12V 1 OPzV 50	57	60	50	45	28	21.60	0.58	10.71	8.07	15.16	95.0
12V 2 OPzV 100	110	108	100	91	57	10.80	1.15	10.71	8.07	15.16	114.9
12V 3 OPzV 150	165	164	148	131	85	7.20	1.73	14.96	8.07	15.16	164.0
6V 4 OPzV 200	229	212	201	178	111	2.70	2.30	10.71	8.07	15.16	112.7
6V 5 OPzV 250	286	281	256	219	139	2.16	2.88	14.96	8.07	15.16	143.7
6V 6 OPzV 300	344	336	295	262	167	1.80	3.45	14.96	8.07	15.16	163.1
2V 12 OPzV 600	688	687	635	576	534	0.30	6.90	10.71	8.07	15.16	112.7
2V 15 OPzV 750	860	856	795	723	665	0.24	8.63	14.96	8.07	15.16	143.7
2V 18 OPzV 900	1030	1024	955	867	800	0.20	10.35	14.96	8.07	15.16	163.1

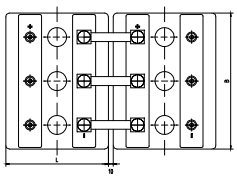
1, 2) internal resistance and short - circuit - current according to IEC 60 896-11



12V 1 OPzV 50 to 12V 3 OPzV 150



6V 4 OPzV 200 to 6V 6 OPzV 300



2V 12 OPzV 600 to 2V 18 OPzV 900

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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)
Blocks with blind cells	4V, 8V, and 10V
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 92%	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°)
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.

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

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