

# BAE SECURA OPzV BLOCK

## Technical Specification for Stationary VRLA - Block - Batteries

### 1. Application

BAE OPzV - Batteries belong to the best EUROBAT classification for maintenance free lead - acid - batteries: > 12 years, long life.

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

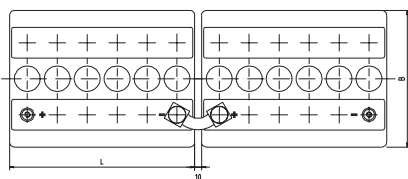
They are used as standby power sources in telecommunications, microwave radio stations, emergency light equipment and other equipments.



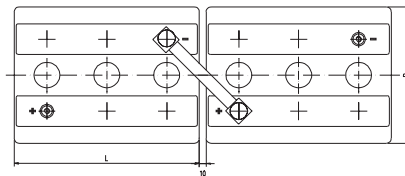
### 2. Types, capacities, dimensions, mass

Type	C10 20 °C Ah	C5 20 °C Ah	C3 20 °C Ah	C1 20 °C Ah	C8 25 °C Ah	Ri 1) mΩ	I <sub>SC</sub> 2) kA	length L mm	width W mm	height H (max.) mm	mass kg	lead mass kg
Ue V / cell	1.80	1.78	1.75	1.67	1,75							
12 V 1 OPzV 50	59	47	44	34	60	21.60	0.58	272	205	385	42.5	28
12 V 2 OPzV 100	107	97	88	69	108	10.80	1.15	272	205	385	50.5	38
12 V 3 OPzV 150	169	143	127	101	164	7.20	1.73	380	205	385	72	53
6 V 4 OPzV 200	219	192	173	129	212	2.70	2.30	272	205	385	48	35
6 V 5 OPzV 250	276	242	212	165	281	2.16	2.88	380	205	385	63	43
6 V 6 OPzV 300	326	291	255	200	336	1.80	3.45	380	205	385	70	50
2 V 12 OPzV 600	654	572	514	383	208	0.30	6.90	205	272	385	48	35
2 V 15 OPzV 750	828	721	630	489	278	0.24	8.63	205	380	385	63	43
2 V 18 OPzV 900	973	867	758	593	333	0.20	10.35	205	380	385	70	50

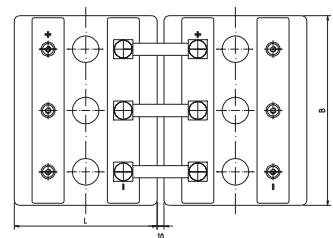
1, 2) internal resistance and short - circuit - current according to IEC 60 896-21



12 V 1 OPzV 50 to 12 V 3 OPzV 150



6 V 4 OPzV 200 to 6 V 6 OPzV 300



2 V 12 OPzV 600 to 2 V 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 PbCaSn - alloy with long - life expander
separation	microporous separator
electrolyte	sulphuric acid with a density of 1.24 kg/l, fixed as GEL by fumed silica
container	high-impact, halogene-free SAN, grey coloured, UL rating 94 HB
lid	high-impact, halogene-free SAN, grey coloured, UL rating 94 HB
blocks with blind cells	4 V, 6 V, 8 V, 10 V
valve	one valve per cell with flame arrestor opening pressure approx. 100 mbar, closing pressure approx. 50 mbar
pole - bushing	100% gas- and electrolyte-tight, sliding, injection-moulded Panzer pole
kind of pole	M10 brass insertion
connectors	insulated solid copper connectors with cross-section of 90 and 150 mm <sup>2</sup> or flexible insulated copper cables with cross-section of 35, 50, 70, 95 or 120 mm <sup>2</sup>
connector screw	M10, steel, insulated
kind of protection	IP 25 regarding to DIN 40050, touch - protected according to VBG 4.

## 4. Charging

IU - characteristic	$I_{max}$ without limitation $U = 2.23$ to $2.25$ V/cell $\pm 1\%$ , between $10^{\circ}\text{C}$ and $45^{\circ}\text{C}$ $\Delta U/\Delta T = -0.003$ V/K below $10^{\circ}\text{C}$ in the monthly average
float current	20 - 30 mA/100 Ah
boost charge	$U = 2.35$ to $2.40$ V/cell, time limited
charging time up to 90%	6 h with $1.5 \cdot I_{10}$ initial current, 2.23 V/cell, 80% C3 discharged

## 5. Discharge characteristics

reference temperature	$20^{\circ}\text{C}$
initial capacity	100%
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
deep discharge recovery	the GEL design allows a complete recharging after an unwanted deep discharge

## 6. Maintenance

every 6 months	check battery voltage, pilot block voltage, temperature
every 12 months	record battery and block voltages and temperatures

## 7. Operational data

classification according to EUROBAT	> 12 years, long life
operational life	18 years in stand-by operation, float
maintenance-free	no topping-up during life
IEC 60 896-2 cycles	> 1500
self-discharge	approx. 2% per month at $20^{\circ}\text{C}$
operational temperature	$-20^{\circ}\text{C}$ to $45^{\circ}\text{C}$ recommended $10^{\circ}\text{C}$ to $30^{\circ}\text{C}$
deep discharge recovery	very good
standard	DIN 40 744
test standard	IEC 60 896-21, -22
safety standard, ventilation	EN 50 272-2
transport	Batteries are not subject to ADR (road transport), if the conditions of the special rule 598 (chapter 3.3) are observed.



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