BAE SECURA OPzV BLOCK-N7

Technical Specification for Stationary VRLA – Raised Post Block Batteries

1. Application

The BAE OPzV Series VRLA tubular plate gel batteries belong to the best EUROBAT classification for maintenance free lead-acid batteries. These are classified as >12 year, long life, the highest classification according to EUROBAT. They are ideally suited for stand-by operations with high requirement of operational safety. They perfectly meet requirements for bridging times between 1h to more than 10h. The raised-post "N7" design permits individual internal and connection Ohmic testing on a per cell basis for a significant increase in reliability.

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

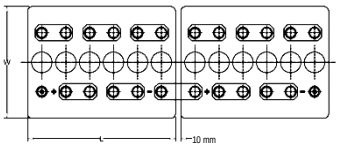
Application Uses:
Telecommunications
Microwave radio systems
Emergency lighting
Power generation plants
Electrical utilities applications
Outdoor enclosures
Photovoltaic applications

2. Types, capacities, dimensions, mass

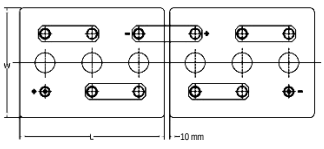
Type	1 min 25°C	C_1 25°C	C_4 25°C	C_8 25°C	C_{12} 25°C	R_i 1)	I_k 2)	Length (L)	Width (W)	Height (H)	Weight filled	Lead mass
U_e V/cell	Amps 1.75	Ah 1.75	Ah 1.75	Ah 1.75	Ah 1.75	mΩ	kA	inch	inch	inch	lbs	lbs
12V 1 OPzV 50-N7	116	38	51	60	62	21.60	0.58	10.71	8.07	15.16	89.4	59.1
12V 2 OPzV 100-N7	210	71	96	108	114	10.80	1.15	10.71	8.07	15.16	109.8	80.9
12V 3 OPzV 150-N7	295	105	142	164	172	7.20	1.73	14.96	8.07	15.16	166.4	117.2
6V 3 OPzV 150-N7	295	105	142	164	172	3.47	1.85	10.71	8.07	15.16	96.5	57.9
6V 4 OPzV 200-N7	369	142	192	212	230	2.70	2.30	10.71	8.07	15.16	112.4	77.2
6V 5 OPzV 250-N7	436	170	241	281	289	2.16	2.88	14.96	8.07	15.16	145.6	95.3
6V 6 OPzV 300-N7	501	213	288	336	347	1.80	3.45	14.96	8.07	15.16	161.6	113.9

1) Internal resistance from IEC 60896-11; 2) Short circuit current from IEC 60896-11; All data is subject to change.
Height (H) is the maximum distance between container bottom and top of the bolts in assembled condition.

3. Terminal positions



12V 1 OPzV 50-N7 to
12V 3 OPzV 150-N7



6V 3 OPzV 150-N7 to
6V 6 OPzV 300-N7

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4. 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 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.

5. 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 $1.5 \cdot I_{10}$ initial current, 2.25 V/cell, 50% C10 discharged

6. 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

7. 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

8. Operational data

Classification - 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	>1200
Self-discharge	approx. 2% per month at 20°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)
Standard	DIN 40742 part 1
Tests according to	IEC 60896-21, -22
Safety standard, ventilation	DIN EN 50272-2, Ventilation requirements are reduced to 20% compared to those for vented batteries of the same capacity
Transport	Subject to DOT Regulations – See SDS for details

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