

BAE SECURA PVS BLOCK SOLAR

Technical Specification for Stationary VLA – Block Batteries

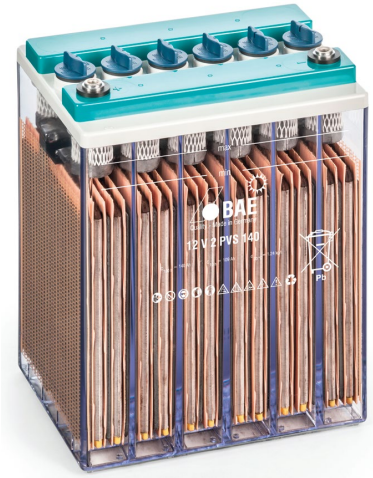
1. Application

The BAE SECURA PVS BLOCK SOLAR batteries are the optimal solution for a reliable and robust storage of regenerative energy under extreme conditions in the industrial sector.

The special tubular electrode design distinguishes the BAE SECURA PVS Block SOLAR batteries leading to high reliability as well as high cycle lifetime.

Application Uses:

- Renewable Energy applications
- Photovoltaic power generation
- Stand-alone photovoltaic systems
- Hybrid applications
- Outdoor enclosures



Similar to the illustration

2. Types, capacities, dimensions, mass

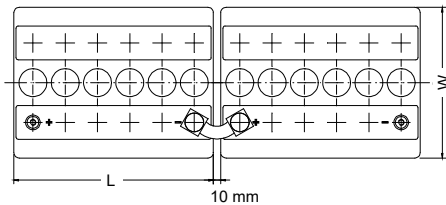
Type	C _{1h} 20°C	C _{10h} 20°C	C _{20h} 20°C	C _{72h} 20°C	C _{100h} 20°C	C _{120h} 20°C	C _{240h} 20°C	R _i 1)	I _k 2)	Length (L)	Width (W)	Height (H)	Weight filled	Lead mass
U _e V/cell	Ah	Ah	Ah	Ah	Ah	Ah	Ah	mΩ	kA	inch	inch	inch	lbs	lbs
12V 1 PVS 70	31	56	64	70	71	72	74	16.62	0.75	10.71	8.07	15.16	95.2	59.1
12V 2 PVS 140	63	109	125	137	140	140	144	8.91	1.40	10.71	8.07	15.16	113.3	80.9
12V 3 PVS 210	95	167	192	211	215	217	222	6.27	1.99	14.96	8.07	15.16	157.4	117.2
6V 4 PVS 280	127	223	254	282	287	289	295	2.47	2.52	10.71	8.07	15.16	104.9	77.2
6V 5 PVS 350	159	279	352	343	359	361	369	2.16	2.98	14.96	8.07	15.16	136.2	95.3
6V 6 PVS 420	191	334	382	424	431	434	444	1.80	3.42	14.96	8.07	15.16	148.8	113.9

1, 2) Internal resistance R_i and short circuit current I_k according to IEC 60896-11; All data is subject to change.

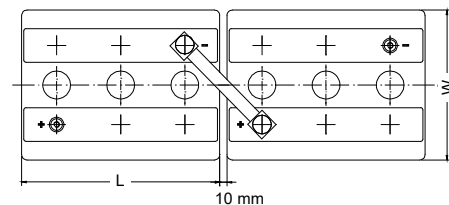
Height (H) is the maximum distance between container bottom and top of the bolts in assembled condition.

All values published in the table correspond to 100% discharge of current depending capacity without voltage drop of connectors. Please consider Item 7.

3. Terminal positions



12V 1 PVS 70 to 12V 3 PVS 210



6V 4 PVS 280 to 6V 6 PVS 420

Terminals are designed as female poles with brass inlay M10 for flexible insulated copper cables with cross-section 25, 35, 50, 70, 95 or 120 mm² or insulated solid copper connectors with cross-section 90, 150 or 300 mm².

Technical Specification for BAE *SECURA PVS BLOCK SOLAR*

4. Design

Positive electrode	Tubular-plate with a polyester gauntlet and solid grids in a corrosion-resistant PbSbSnSe alloy
Negative electrode	Round-grid flat plate in a low antimony alloy with long-life expander material
Separation	Microporous separator
Electrolyte	Sulphuric acid with a density of 1.24 kg/l at 20°C (68°F)
Container	High impact, transparent SAN (Styrol-Acrylic-Nitrile), UL94-HB rating.
Lid	High impact, grey coloured SAN (Styrol-Acrylic-Nitrile), UL94-HB rating, on request Optional ABS (Acrylonitrile butadiene styrene), UL94-V0 rating
Flame arrestors	Includes standard ceramic arrestors with optional ceramic flip top funnel arrestors according to DIN 40740
Pole - bushing	100% gas and electrolyte tight, sliding, injection moulded "Panzerpol"
Kind of pole	M10 brass insertion
Connector screw	M10 stainless steel with insulated cap
Kind of protection	IP 25 regarding EN 60529, touch protected according BGV A3.

5. Installation

BAE *SECURA PVS BLOCK SOLAR* batteries are designed for indoor applications. For outdoor applications an appropriately designed enclosure is to be used, please contact BAE.

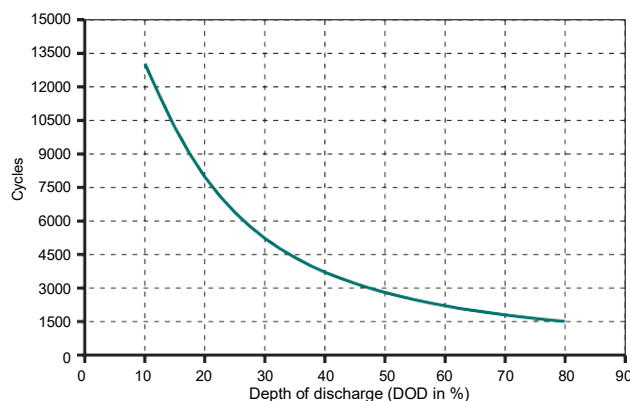
6. Maintenance

every 6 months	Check and record battery voltage, pilot block voltages and temperatures
every 12 months	Check connections, record battery voltages, block voltages and temperatures

7. Operational data

Depth of discharge (DOD)	Max. 80% ($U_e = 1.91$ V/cell for discharge times >10 h; 1.80 V/cell for 1 h), deep discharges of more than 80% DOD have to be avoided.
Initial charge current (I or bulk phase)	Unlimited, the minimal charge current has to be 5 A/100 Ah C_{10}
Charge voltage at cyclic operation	Restricted from 2.30 V to 2.40 V per cell, operating instruction is to be observed
Floating voltage/non-cyclic voltage	2.23 V per cell
Adjustment of charge voltage	No adjustment necessary if battery temperature is kept between 10°C and 30°C (50°F and 86°F) in the monthly average, otherwise $\Delta U/\Delta T = -0.003$ V/cell per K Below 10°C (50°F)
Recharge to 100 %	Within a period of 1 up to 4 weeks
Battery temperature	-20°C to 55°C (-4°F to 131°F), recommended temperature range 10°C to 30°C (50°F to 86°F)
Self-discharge	Approx. 3 % per month at 20°C (68°F)
IEC 61427 cycles	2,700 (A+B) at 40°C (104°F)
IEC 60896-11 cycles	>1,200 at 20°C (68°F)

8. Number of cycles as function of Depth of Discharge



9. Standards and Transport

Tests according	IEC 60896-11, IEC 61427
Safety standard, ventilation	IEC 62485-2
Transport	Subject to DOT Regulations – See SDS for details

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