BAE *SECURA PVV BLOCK solar*

Technical Specification for Valve Regulated Lead-Acid Batteries (VRLA)

1. Application

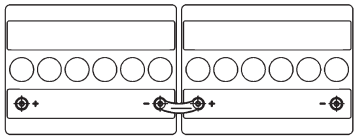
BAE PVV Block solar batteries are maintenance-free and used to store electric energy in small solar photovoltaic installations.

2. Technical data (Reference temperature 20°C)

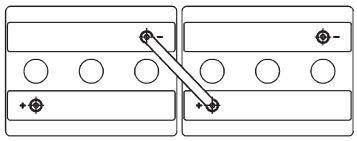
Type	$C_{1\,h}$ Ah	$C_{10\,h}$ Ah	$C_{20\,h}$ Ah	$C_{72\,h}$ Ah	$C_{100\,h}$ Ah	$C_{120\,h}$ Ah	$C_{240\,h}$ Ah	R_i1) mΩ	I_k 2) kA	Length mm	Width mm	Height mm	Weight kg
Ue [V per cell]	**1.65**	**1.80**	**1.80**	**1.80**	**1.80**	**1.80**	**1.80**						
12V 1 PVV 70	37.1	57.3	61.6	69.9	71.8	72.6	74.8	21.60	0.58	272	205	385	43
12V 2 PVV 140	71.5	109	118	133	137	138	144	10.80	1.15	272	205	385	52
12V 3 PVV 210	107	165	178	201	206	208	216	7.20	1.73	380	205	385	74.2
6V 4 PVV 280	148	229	246	280	287	290	300	2.70	2.30	272	205	385	51
6V 5 PVV 350	185	286	308	349	359	362	374	2.16	2.88	380	205	385	65
6V 6 PVV 420	222	344	370	419	431	435	448	1.80	3.45	380	205	385	73.8
2V 12 PVV 840	445	688	740	835	862	872	900	0.30	6.90	272	205	385	51
2V 15 PVV 1050	557	860	926	1 044	1 070	1 089	1 123	0.24	8.63	380	205	385	65
2V 18 PVV 1260	668	1 030	1 110	1 260	1 290	1 308	1 348	0.20	10.35	380	205	385	73.8

1) R_i and 2) I_k values according to IEC 60896-21
All values given in the table correspond to 100 % DOD. Please consider item 7.

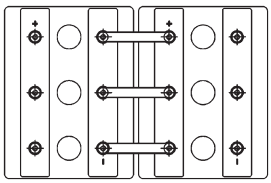
3. Terminal position



12V 1 PVV 70 to 12V 3 PVV 210



6V 4 PVV 280 to 6V 6 PVV 420



2V 12 PVV 840 to 2V 18 PVV 1260

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.

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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 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, SAN (Styrol-Acrylic-Nitrile), grey coloured, UL-94 rating: HB, on request also in UL-94 rating: V-0
valve	one valve per cell with flame arrestor, opening pressure approx. 120 mbar
pole-bushing	100% gas- and electrolyte-tight, sliding, plastic-coated “Panzerpol”
kind of protection	IP 25 regarding DIN 40050, touch protected according to VBG 4

5. Installation

BAE SECURA PVV BLOCK solar batteries are designed for indoor applications.

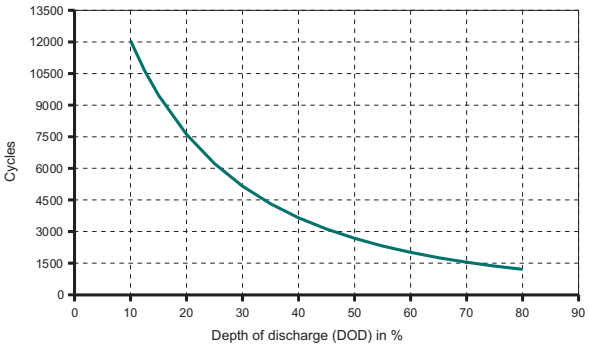
6. Maintenance

every 6 months	check battery voltage as well as temperature
every 12 months	check of mechanical and electrical connections, record battery cell voltage as well as temperature

7. Operational data

depth of discharge (DOD)	max. 80 % (Ue = 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
charge current	may vary from 5 x I_{10} down to 0.01 x I_{10}
floating voltage	2.25 V per cell
charge voltage at cyclic operation	
• DOD per day < 40 % C_{10}	2.30 V – 2.35 V per cell
• DOD per day > 40 % - 60 % C_{10}	2.35 V – 2.40 V per cell
adjustment of charge voltage	no adjustment necessary if battery temperature is between 10 °C and 45 °C in the monthly average, otherwise $\Delta U/\Delta T$ = -0.003 Vpc/K
recharge to 100 %	within a period of one up to 4 weeks
IEC 61427 cycles	2100 (A+B)
operational temperature	-20 °C to 45 °C, recommended temperature range 10 °C to 30 °C
self-discharge	approx. 2 % per month at 20°C

8. Number of cycles as function of DOD (Depth of discharge)



9. Transport

Batteries are not subject to ADR (road transport), if the conditions of special rule 598 (chapter 3.3) are observed.

10. Standards

Test standard	IEC 60896-21, IEC 61427
Safety standard, ventilation	EN 50272-2

BAE