



Technical Specification for Vented Lead-Acid Batteries (VLA)



1. Application

BAE PVS cell solar batteries are low maintenance and used to store electric energy in medium and large solar photovoltaic installations.

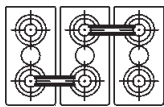
2. Technical data (Reference temperature 20°C)

Type	C _{1h} Ah	C _{10h} Ah	C _{20h} Ah	C _{72h} Ah	C _{100h} Ah	C _{120h} Ah	C _{240h} Ah	R _i 1) mΩ	I _k 2) kA	Length mm	Width mm	Height mm	Weight (dry) kg	Weight (filled) kg
Ue (100 %)/Vpc	1.65	1.80	1.80	1.80	1.80	1.80	1.80							
Ue (80 %)/Vpc	1.74	1.91	1.91	1.91	1.91	1.91	1.91							
4 PVS 280	101	201	234	279	285	288	295	0.95	2.16	105	208	420	12.5	17.0
5 PVS 350	129	258	300	358	367	370	381	0.76	2.70	126	208	420	15.2	21.0
6 PVS 420	158	318	368	444	454	458	472	0.63	3.24	147	208	420	17.8	25.0
5 PVS 550	213	371	414	476	488	496	530	0.70	2.90	126	208	535	20.0	27.0
6 PVS 660	266	469	524	604	620	630	672	0.58	3.48	147	208	535	22.8	32.0
7 PVS 770	309	543	608	700	719	729	777	0.50	4.06	168	208	535	26.4	37.0
6 PVS 900	363	671	752	907	933	945	976	0.47	4.32	147	208	710	32.7	46.0
8 PVS 1200	499	932	1,046	1,260	1,300	1,320	1,368	0.35	5.76	215	193	710	44.6	64.0
10 PVS 1500	595	1,090	1,228	1,476	1,520	1,536	1,588	0.28	7.20	215	235	710	54.3	75.9
12 PVS 1800	721	1,330	1,492	1,792	1,850	1,872	1,934	0.23	8.64	215	277	710	63.4	89.7
12 PVS 2280	890	1,670	1,868	2,188	2,250	2,292	2,397	0.22	9.18	215	277	855	75.4	110
16 PVS 3040	1,150	2,140	2,380	2,786	2,870	2,904	3,048	0.17	12.24	215	400	815	117	150
20 PVS 3800	1,483	2,790	3,120	3,643	3,760	3,816	4,008	0.14	15.30	215	490	815	127	187
22 PVS 4180	1,632	3,070	3,420	4,010	4,130	4,200	4,392	0.12	16.83	215	580	815	141	205
24 PVS 4560	1,830	3,480	3,900	4,572	4,710	4,788	5,016	0.11	18.36	215	580	815	146	218
26 PVS 4940	1,928	3,620	4,040	4,737	4,880	4,956	5,184	0.10	19.97	215	580	815	156	231

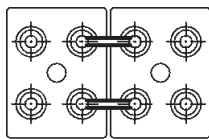
BAE SECURA PVS CELL solar batteries as dry charged version are marked with "TG". E.g. 4 PVS 280 TG

1) R_i and 2) I_k values according to IEC 60896-11

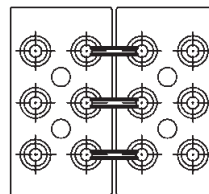
3. Terminal position



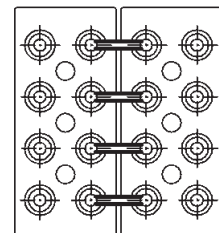
4 PVS 280 to 6 PVS 900



8 PVS 1200 to 12 PVS 2280



16 PVS 3040



20 PVS 3800 to 26 PVS 4940

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

Technical Specification of BAE *SECURA PVS CELL solar*

4. Design

positive electrode	tubular - plate with a polyester gauntlet and solid grids in a corrosion-resistant PbSb1.6SnSe - alloy
negative electrode	grid - 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
container	high impact, transparent SAN (Styrol-Acrylic-Nitrile), UL-94 rating: HB
lid	high impact, SAN in dark grey colour, UL-94 rating: HB
plugs	labyrinth plugs for arresting aerosol, optional ceramic plugs or ceramic funnel plugs according to DIN 40740
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 PVS CELL solar batteries are designed for indoor applications.

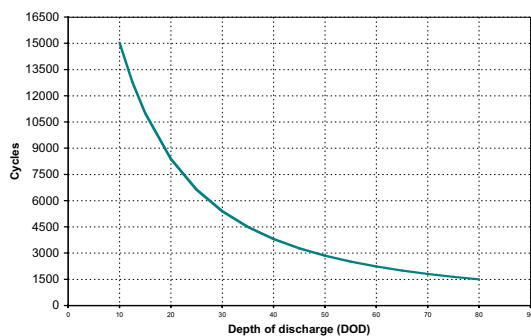
6. Maintenance

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
every 3 years	average water-refilling interval (depending on utilization and ambient temperature)

7. Operational data

depth of discharge (DOD)	restricted to 80 % according to final voltage per cell and discharge time as per Item 2, deep discharges of more than 80 % DOD have to be avoided
charge current	may vary from $5 \times I_{10}$ down to $0.01 \times I_{10}$
charge voltage	restricted from 2.30 V to 2.40 V per cell
• DOD per day < 20 % C_{10}	2.30 V – 2.35 V per cell
• DOD per day > 20 % - 30 % C_{10}	2.35 V – 2.40 V per cell
• DOD per day > 30 % C_{10}	to prevent electrolyte stratification, a gassing recharge must be carried out according to BAE operating instructions
adjustment of charge voltage	no adjustment necessary if battery temperature is between 10 °C and 30 °C in the monthly average, otherwise $\Delta U/\Delta T = -0.003 \text{ Vpc/K}$
recharge to 100 %	within a period of one up to 4 weeks
IEC 61427 cycles	test is still running, currently 2100 cycles (A+B) reached
operational temperature	-20 °C to 55 °C, recommended temperature range 10 °C to 30 °C
self-discharge	approx. 3 % 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 60896-11, IEC 61427
Safety standard, ventilation	EN 50272-2



End2End



BAE Batterien GmbH
 Wilhelminenhofstraße 69/70
 12459 Berlin · Germany
 P.O. Box 9 · 12442 Berlin
 Tel. +49 30 53001-0
 Fax +49 30 5354949
 E-mail: info@bae-berlin.de
 www.bae-berlin.de