BAE SECURA PVSM CELL solar

Technical Specification for Vented Lead-Acid Batteries (VLA)

1. Application

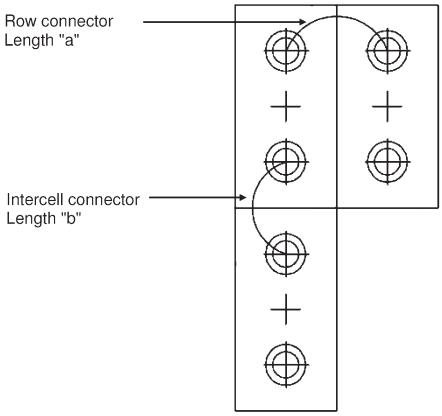
BAE PVSM cell solar batteries are low maintenance and used to store electric energy in small solar photovoltaic installations.

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_i 1) mΩ	I_k 2) kA	Length mm	Width mm	Height mm	Weight (dry) kg	Weight (filled) kg
Ue (100 %)/Vpc	**1.67**	**1.78**	**1.80**	**1.80**	**1.80**	**1.80**	**1.80**							
Ue (80 %)/Vpc	**1.74**	**1.85**	**1.90**	**1.91**	**1.91**	**1.91**	**1.91**							
2 PVSM 220	82.0	162	185	217	224	226	235	1.75	1.16	47	198	486	7.5	9.6
3 PVSM 330	123	243	277	326	335	339	350	1.17	1.74	65	198	486	11.0	14.0
4 PVSM 440	163	324	370	434	447	452	467	0.88	2.32	83	198	486	14.2	18.1
5 PVSM 550	205	400	456	536	552	558	578	0.70	2.90	101	198	486	18.5	22.6
6 PVSM 660	245	490	559	656	676	684	710	0.58	3.48	119	198	486	21.4	26.6
7 PVSM 770	285	570	650	763	786	795	826	0.50	4.06	137	198	486	24.8	31.1
8 PVSM 880	327	648	739	868	894	905	938	0.44	4.64	155	198	486	27.7	35.2
9 PVSM 990	368	729	832	977	1,006	1,017	1,052	0.39	5.22	173	198	486	31.0	39.6
10 PVSM 1100	408	810	924	1,086	1,118	1,131	1,172	0.35	5.80	192	198	486	33.8	43.8

BAE SECURA PVSM CELL solar batteries as dry charged version are marked with "TG". E.g. 2 PVSM 220 TG
1) R_i and 2) I_k values according to IEC 60896-11

3. Terminal position



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.

Technical Specification of BAE *SECURA PVSM 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 and lid	impact-resistant polypropylene, UL-94 rating: HB
plugs	with integrated min and max level of electrolyte
pole-bushing	100% electrolyte-tight
kind of protection	IP 25 regarding DIN EN 60529, touch protected according to VBG 4

5. Installation

BAE PVSM solar battery cells have to be installed either in steel, wooden or plastic battery trays in order to avoid an excessive bulging of the side walls of the battery cell containers.

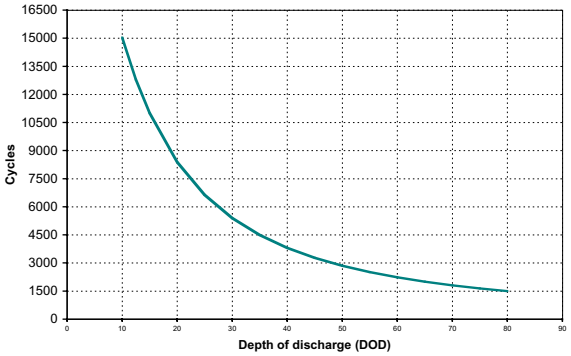
6. Maintenance

every 6 months	check battery voltage as well as temperature, average water-refilling interval (depending on utilization and ambient 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)	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 x I_{10} down to 0.01 x 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 % C10	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 Vpc/K
recharge to 100 %	within a period of one up to 4 weeks
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

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08/2008 4804960 Technical details may be subject to alterations.