



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



### 1. Application

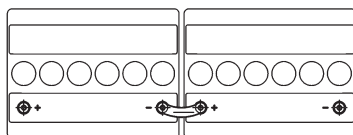
BAE PVV Block solar batteries are maintenance-free and used to store electric energy in small solar photovoltaic installations.

### 2. Technical data (Reference temperature 20°C)

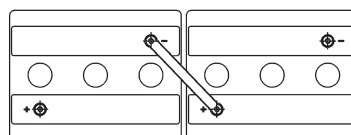
Type	C <sub>1h</sub> Ah	C <sub>10h</sub> Ah	C <sub>20h</sub> Ah	C <sub>72h</sub> Ah	C <sub>100h</sub> Ah	C <sub>120h</sub> Ah	C <sub>240h</sub> Ah	R <sub>i</sub> 1) mΩ	I <sub>k</sub> 2) kA	Length mm	Width mm	Height mm	Weight kg
U <sub>e</sub> (100 %)/V <sub>pc</sub>	1.65	1.80	1.80	1.80	1.80	1.80	1.80						
U <sub>e</sub> (80 %)/V <sub>pc</sub>	1.80	1.91	1.91	1.91	1.91	1.91	1.91						
<b>12V 1 PVV 70</b>	37.6	57.4	61.8	70.0	71.8	72.7	75.1	21.60	0.58	272	205	385	43.0
<b>12V 2 PVV 140</b>	72.4	110	118	133	137	139	144	10.80	1.15	272	205	385	52.0
<b>12V 3 PVV 210</b>	109	166	178	202	206	210	216	7.20	1.73	380	205	385	74.2
<b>6V 4 PVV 280</b>	150	229	248	280	287	290	300	2.70	2.30	272	205	385	51.0
<b>6V 5 PVV 350</b>	188	287	308	349	359	363	374	2.16	2.88	380	205	385	65.0
<b>6V 6 PVV 420</b>	226	344	370	420	431	435	451	1.80	3.45	380	205	385	73.8
<b>2V 12 PVV 840</b>	451	688	742	842	862	872	900	0.30	6.90	272	205	385	51.0
<b>2V 15 PVV 1050</b>	564	860	926	1,051	1,080	1,090	1,125	0.24	8.63	380	205	385	65.0
<b>2V 18 PVV 1260</b>	677	1,030	1,112	1,260	1,290	1,308	1,351	0.20	10.35	380	205	385	73.8

1) R<sub>i</sub> and 2) I<sub>k</sub> values according to IEC 60896-21

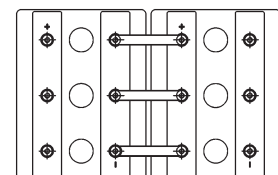
### 3. Terminal position



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 insulated solid copper connectors with cross-section 90, 150 or 300 mm<sup>2</sup> or flexible insulated copper cables with cross-section 25, 35, 50, 70, 95 or 120 mm<sup>2</sup>.

# Technical Specification of BAE *SECURA PVV BLOCK solar*

## 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.

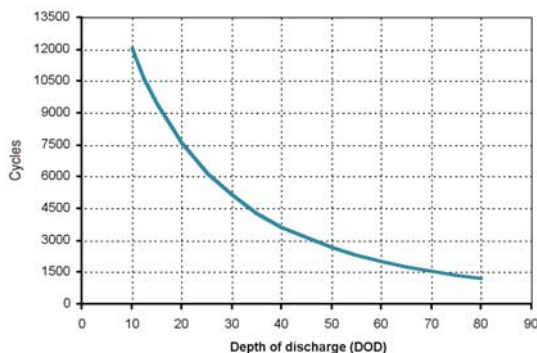
## 6. Maintenance

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)	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 < 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 $\Delta U/\Delta T = -0.003 \text{ Vpc/K}$
recharge to 100 %	within a period of one up to 4 weeks
IEC 61427 cycles	1950 (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



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