BAE *14V Battery*

Technical Specification

1. Application

The BAE 14V Batteries are stationary batteries for railway applications. They are used for level crossings, in switch stations or for signal and lighting systems.
The 14V Batteries are available in different technologies for different requirements. Tubular plate design for discharges of 1h+ (SPzS, SPzV) and flat plate design for high current discharges (SGi, SGiV).

2. Types, capacities, dimensions, weights

Type	$C_{10\,h}$	$C_{5\,h}$	$C_{3\,h}$	$C_{1\,h}$	$C_{30\,min}$	$C_{10\,min}$	R_i 1)	I_k 2)	Length	Width	Height	weight ± 5%
	Ah	Ah	Ah	Ah	Ah	Ah	mΩ	kA	mm	mm	mm	kg
U_e	1.8	1.77	1.75	1.67	1.6	1.6						
14 V 2 SPzV 120	119	108	99	75	60	33	7 x 1.6	1.30	349	218	385	64
14 V 2 SPzS 100	106	93	81	61	50	34	7 x 1.7	1.22	349	218	385	61
14 V 3 SGi 75	88	80	71	54	43	31	7 x 1.1	1.9	349	218	385	58
14 V 4 SGi 100	118	106	95	72	57	42	7 x 0.8	2.6	349	218	385	65
14 V 4 SGiV 100	110	1103	104	83	70	50	7 x 0.7	2.2	349	218	385	68

R_i, I_k in accordance with IEC 60896-11 / 21,22 Technical details may be subject to alterations Reference temperature: 20 ° C

3. Design

	SPzS	SPzV	SGi	SGiV
Positive electrode	Tubular low antimony PbSbSe alloy	Tubular PbCaSn alloy	Flat plate low antimony PbSbSe alloy	Flat plate PbCaSn alloy
Negative electrode	Pb low Sb alloy	PbCaSn alloy	Pb low Sb alloy	PbCaSn alloy
Separation	Micro porous separator			
Electrolyte	Sulphuric acid	GEL	Sulphuric acid	GEL
Plug	Vent plug	Valve with flame arrestor	Vent plug	Valve with flame arrestor
Tray, container, lid	Impact-resistant polypropylene, coloured, V 0-quality as option			
Pole bushing	100 % gas- and electrolyte-tight			
Connectors	Flexible cable connector; 25, 35, 50 mm²; M10 pole screw, insulated			
Tray	Plastic tray with flexible handles			

Technical Specification for **BAE** *14V Battery*

4. Charging

IU - characteristic	I_{max} without limitation
Float current	SPzS, SGi: 20 mA/100 Ah, increasing to 60 mA / 100 Ah at the end of life SPzV, SGiV: 20 – 30 mA/100 Ah
Boost charge	U = 2.35 – 2.40 V/cell, time limited

5. Discharge characteristics

Depth of discharge (DOD)	normally up to 80%
Deep discharges	more than 80% DOD or discharges beyond final discharge voltages (dependent on discharge current) have to be avoided

6. Maintenance

Every 6 months	check battery voltage, pilot cell voltage, temperature
Every 12 months	record battery, cell voltages and temperatures, check connectors; for SGi and SPzS measurement of acid density

7. Operational data

	SPzS	SPzV	SGi	SGiV
Operational life, float	14 years	12 years	10 years	9 years
Water refill interval	~ 2 years	no topping up	~2 years	no topping up
IEC 60896 cycles	>1000	1000	800	600
Shock, vibration	according to EN 60 068 part 2-27, EN 60 068, part 2-6, EN 60 068 part 2-29			
Safety standard	EN 50 272-2			

BAE Batterien GmbH
Wilhelminenhofstraße 69/70
12459 Berlin – Germany
P.O. Box 9 – 12442 Berlin
Tel. +4930 53001-0
Fax. +4930 53001-667
E-Mail: info@bae-berlin.de
www.bae-berlin.de