BAE *SECURA OGi*

Technical Specification for Stationary VLA-Cells

1. Application

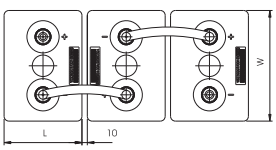
BAE *SECURA OGi*-Cells are suitable for safety batteries where operational safety and long operational life has top priority and high discharge currents during short discharge times and capacitive loads over longer discharge times are required. They are used as standby source in power supply stations, transforming stations, UPS-stations, emergency light equipment according to VDE 0108 and VDE 0107.

Due to the used grid plate design with high mass of lead and circular bars a long operational life and a very good high-current-performance can be assured. The slick-walled containers and the vertical arranged plates offer a high power density related to a small foot-print. The transparent container allows an easy visual access and simplifies service and maintenance significantly.

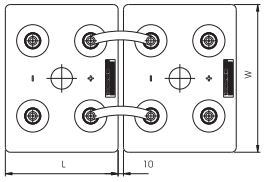
2. Types, capacities, dimensions, weights

Type	$C_{10\,h}$ 20 °C Ah	$C_{5\,h}$ 20 °C Ah	$C_{3\,h}$ 20 °C Ah	$C_{1\,h}$ 20 °C Ah	$C_{30\,min}$ 20 °C Ah	$C_{10\,min}$ 20 °C Ah	$C_{8\,h}$ 25 °C Ah	R_i 1) mΩ	I_k 2) kA	Length (L) mm	Width (W) mm	Height (H) mm	Weight dry kg	Weight filled kg
U_e V/cell	1.80	1.80	1.79	1.75	1.72	1.65	1.75							
8 OGi 200	223	203	187	142	113	76.8	221	0.490	4.24	103	206	420	13.8	17.3
10 OGi 250	278	253	234	178	141	96.0	277	0.392	5.31	124	206	420	16.6	21.3
12 OGi 300	334	304	280	213	169	115	332	0.327	6.36	145	206	420	19.5	25.2
14 OGi 350	383	349	321	246	195	133	381	0.280	7.43	145	206	420	22.3	29.1
5 OGi 400	409	359	309	223	178	105	408	0.450	4.50	145	206	700	26.8	39.5
6 OGi 480	491	431	372	268	213	126	489	0.375	5.40	145	206	700	30.6	43.0
7 OGi 560	573	500	435	313	249	147	572	0.321	6.30	145	206	700	35.0	46.5
8 OGi 640	655	575	495	357	285	168	653	0.281	7.20	145	206	700	38.0	49.7
9 OGi 720	705	620	540	388	312	186	704	0.250	8.10	145	206	700	43.0	53.5
10 OGi 800	818	715	621	447	356	211	816	0.225	9.00	210	191	700	49.0	65.8
11 OGi 880	900	790	681	491	392	232	896	0.205	9.90	210	191	700	52.3	68.9
12 OGi 960	938	825	720	517	415	249	936	0.188	10.80	210	191	700	56.0	72.5
13 OGi 1040	1,060	935	807	581	463	274	1,056	0.173	11.70	210	233	700	62.0	82.9
14 OGi 1120	1,140	1,005	870	626	499	295	1,144	0.161	12.60	210	233	700	64.5	85.6
15 OGi 1200	1,200	1,055	915	659	527	314	1,200	0.150	13.50	210	233	700	69.7	90.9
16 OGi 1280	1,250	1,105	960	691	554	332	1,248	0.141	14.40	210	275	700	74.5	94.0
17 OGi 1360	1,390	1,220	1,056	760	606	358	1,384	0.132	15.30	210	275	700	77.0	98.0
18 OGi 1440	1,420	1,255	1,089	783	627	375	1,416	0.125	16.20	210	275	700	82.4	101.8
19 OGi 1520	1,550	1,365	1,179	849	677	401	1,552	0.118	17.10	210	360	675	87.5	125.0
20 OGi 1600	1,630	1,435	1,242	894	712	422	1,632	0.113	18.00	210	360	675	91.5	126.0
21 OGi 1680	1,710	1,510	1,305	939	748	443	1,712	0.107	18.90	210	360	675	94.5	129.0
22 OGi 1760	1,750	1,545	1,341	965	772	460	1,752	0.102	19.80	210	360	675	99.0	130.0
23 OGi 1840	1,800	1,590	1,380	994	797	477	1,800	0.098	20.70	210	360	675	103.0	133.0
24 OGi 1920	1,880	1,660	1,440	1,037	832	498	1,872	0.094	21.60	210	360	675	107.0	135.0
25 OGi 2000	2,030	1,790	1,545	1,113	888	526	2,032	0.090	22.50	210	440	675	112.0	148.0
26 OGi 2080	2,050	1,810	1,572	1,131	906	542	2,048	0.087	23.40	210	440	675	115.5	150.0
27 OGi 2160	2,110	1,870	1,623	1,166	936	560	2,112	0.083	24.30	210	440	675	119.5	153.0
28 OGi 2240	2,190	1,935	1,683	1,210	970	581	2,192	0.080	25.20	210	440	675	121.5	155.0
29 OGi 2320	2,260	2,000	1,737	1,248	1,002	601	2,256	0.078	26.10	210	440	675	127.5	158.0
30 OGi 2400	2,310	2,050	1,782	1,282	1,031	620	2,312	0.075	27.00	210	440	675	131.5	160.0

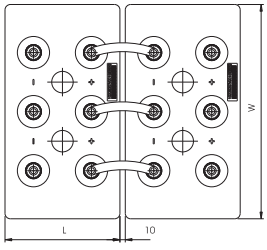
1, 2) Internal resistance and short circuit current according to IEC 60896-11
BAE *SECURA OGi*-cells as dry charged version are marked with "TG", e.g. 30 OGi 2400 TG.
All values given in the table correspond to 100 % DOD. Please consider item 5.



8 OGi 200 to 9 OGi 720



10 OGi 800 to 18 OGi 1440



19 OGi 1520 to 30 OGi 2400

ENERGY FROM BATTERIES BAE

Technical Specification for BAE *SECURA OGi*

3. Design

Positive electrode	grid-plate with circular bars in a corrosion-resistant PbSb1.6SnSe-alloy
Negative electrode	grid-plate in low antimony alloy with long-life expander material
Separation	microporous separator
Electrolyte	sulphuric acid with a density of 1.24 kg/l
Container	high impact, transparent SAN (Styrol-Acrylic-Nitrile), UL-94 rating: HB
Lid	high impact SAN in 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 pole	M10 copper insertion
Connectors	flexible insulated copper cables with cross-section of 25, 35, 50, 70, 95 or 120 mm^2; on request: insulated solid copper connectors with cross-section 90, 150 or 300 mm^2
Connector screw	M10, steel, insulated, with measuring point
Kind of protection	IP 25 regarding DIN EN 60529, touch protected according to VBG 4

4. Charging

IU-characteristic	I_{max} without limitation U = 2.23 V/cell ± 1 %, between 10 °C and 30 °C (50 °F and 86 °F) in the monthly average; otherwise $\Delta U/\Delta T$ = -0.003 V/cell per K
Float current	approx. 15 mA/100 Ah, increasing to approx. 45 mA/100 Ah at the end of operational life
Boost charge	U = 2.33 to 2.40 V/cell, time limited
Charging time up to 90 %	6 h with 1.5 x I_{10} initial current, 2.23 V/cell, 50 % C_{10} discharged

5. Discharge characteristics

Reference temperature	20 °C (68 °F)
Initial capacity	according to IEC 60896-11: 95 % at the 1st cycle, 100 % at the 5th cycle
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 voltages, temperatures
Every 12 months	record battery and cell voltages and temperatures

7. Operational data

Operational life	20 years in stand-by operation, float at 20 °C to 25 °C (68 °F to 77 °F)
Water-refilling-interval	>3 years, float at 20 °C to 25 °C (68 °F to 77 °F)
IEC 60896-11 cycles	>1,200
Self-discharge	approx. 3 % per month at 20 °C (68 °F)
Battery temperature	-20 °C to 55 °C (-4 °F to 131 °F) recommended 10 °C to 30 °C (50 °F to 86 °F)
Standard	dimensions according to DIN 40736-1
Tests according to	IEC 60896-11
Safety standard, ventilation	EN 50272-2
Transport	Batteries are not subject to ADR (road transport), if the conditions of special rule 598 (chapter 3.3.) are observed.

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07/2011 4804039 Technical details may be subject to alterations.