BAE SECURA OGi

Technical Specification for Stationary VLA - Cells

1. Application

BAE OGi - cells are suitable for backup power applications where operational safety and long service-life is a top priority. The OGi performs extremely well where discharge currents are required for short duration discharge times. It also works very well when these short discharge demands are coupled with continuous loads over longer duration discharge times.

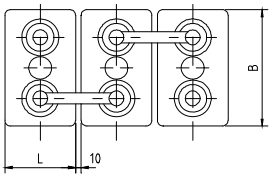
BAE uses a round-grid flat-plate design for its OGi cells. Due to its excellent lead-mass and grid plate a long operational life and a very good high-current performance is realized. The sleek straight-walled containers and bridge-supported plates provide a high power-density in a compact foot-print. The transparent container allows visibility and control for easier maintenance and service.

They are used as a stand-by energy source in transmission and/or distribution substations, as well as in data centers for UPS; for emergency lighting equipment and other applications requiring 1hr or less backup time.

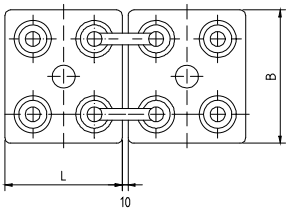
2. Types, capacities, dimensions, mass

Type	C10 25°C	C8 25°C	C5 25°C	C3 25°C	C1 25°C	C_{30min} 25°C	C_{10min} 25°C	R_i 1)	I_{Ks} 2)	length	width	height (Max)	Mass 3)	Mass 4)
U_e V / cell	Ah 1.80	Ah 1.75	Ah 1.75	Ah 1.75	Ah 1.75	Ah 1.65	Ah 1.65	mΩ	kA	inch	inch	inch	lbs	lbs
5 OGi 400	421	392	355	318	244	204	109	0.450	4.5	5.71	8.11	27.56	58.4	88.2
6 OGi 480	495	464	420	375	287	240	129	0.375	5.4	5.71	8.11	27.56	67.2	94.8
7 OGi 560	565	536	480	429	328	275	147	0.321	6.3	5.71	8.11	27.56	76.1	103.6
8 OGi 640	625	600	540	483	368	308	165	0.281	7.2	5.71	8.11	27.56	83.8	112.4
9 OGi 720	682	656	595	531	406	340	182	0.250	8.1	5.71	8.27	27.56	92.6	119.1
10 OGi 800	758	792	710	636	487	408	219	0.225	9.0	8.27	7.52	27.56	109.1	136.7
11 OGi 880	834	864	775	696	531	445	238	0.205	9.9	8.27	7.52	27.56	117.9	149.9
12 OGi 960	910	928	840	750	574	480	258	0.188	10.8	8.27	7.52	27.56	126.8	162.0
13 OGi 1040	985	1000	900	807	616	516	276	0.173	11.7	8.27	9.17	27.56	136.7	172.0
14 OGi 1120	1060	1064	960	858	657	550	295	0.161	12.6	8.27	9.17	27.56	145.5	185.2
15 OGi 1200	1130	1128	1020	912	697	584	313	0.150	13.5	8.27	9.17	27.56	154.3	194.0
16 OGi 1280	1210	1192	1075	963	736	616	330	0.141	14.4	8.27	10.83	27.56	164.2	207.2
17 OGi 1360	1280	1256	1130	1014	774	649	348	0.132	15.3	8.27	10.83	27.56	173.1	216.1
18 OGi 1440	1360	1320	1185	1062	812	680	364	0.125	16.2	8.27	10.83	27.56	180.8	224.9
19 OGi 1520	1440	1504	1355	1212	925	775	415	0.118	17.1	8.27	14.17	26.57	192.9	275.6
20 OGi 1600	1510	1568	1415	1266	967	810	434	0.113	18.0	8.27	14.17	26.57	201.7	277.8
21 OGi 1680	1590	1640	1475	1320	1009	845	453	0.107	18.9	8.27	14.17	26.57	209.4	282.2
22 OGi 1760	1660	1704	1535	1374	1050	879	471	0.102	19.8	8.27	14.17	26.57	218.3	286.6
23 OGi 1840	1740	1768	1595	1428	1090	913	489	0.098	20.7	8.27	14.17	26.57	227.1	293.2
24 OGi 1920	1820	1832	1650	1479	1129	946	507	0.094	21.6	8.27	14.17	26.57	235.9	297.6
25 OGi 2000	1890	1896	1710	1530	1168	978	524	0.090	22.5	8.27	17.32	26.57	246.9	326.3
26 OGi 2080	1970	1960	1765	1578	1207	1010	542	0.087	23.4	8.27	17.32	26.57	254.6	330.7
27 OGi 2160	2040	2016	1820	1629	1244	1042	558	0.083	24.3	8.27	17.32	26.57	263.5	337.3
28 OGi 2240	2120	2080	1875	1677	1281	1073	575	0.080	25.2	8.27	17.32	26.57	272.3	345.0
29 OGi 2320	2190	2136	1925	1725	1317	1103	591	0.078	26.1	8.27	17.32	26.57	281.1	348.3
30 OGi 2400	2270	2192	1980	1770	1353	1133	607	0.075	27.0	8.27	17.32	26.57	289.9	352.7

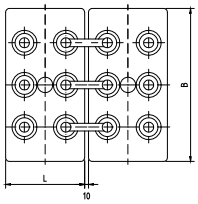
1) 2) internal resistance and short-circuit current according to IEC 896-11 3) dry-charged 4) filled and charged



5 OGi 400 to 9 OGi 720



10 OGi 800 to 18 OGi 1440



19 OGi 1520 to 30 OGi 2400

Technical Specification for BAE *SECURA OGi*

3. Design

Positive electrode	round-grid flat plate with low antimony alloy (1,6%), circular bars high lead weight solid grids in a corrosion-resistant PbSb1.6SnSe - alloy
Negative electrode	round-grid flat plate in low antimony alloy with long-life expander material
Separation	microporous separator
Electrolyte	sulphuric acid with a density of 1.24 kg/l
Lid	high impact, transparent SAN (Styrol-Acrylic-Nitrile), UL-94 rating: HB
Container	high impact SAN in dark grey color, UL-94 rating: HB
Flame arrestors	includes standard ceramic arrestors with optional ceramic flip-top funnel arrestors acc. DIN 40 740 available
Pole bushing	100% gas- and electrolyte-tight, sliding, injection moulded "Panzerpol"
Kind of pole	M10 copper insertion
Intercell connectors	insulated PVC coated solid copper connectors with cross-sections of 90, 150 or 300 mm^2 depending upon application
Inter-tier connectors	flexible insulated copper cables
Connector screw	M10 stainless steel with insulated cap
Kind of protection	IP 25 regarding DIN 40050, touch protected according 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) $\Delta U/\Delta T$ = +/- 0.003 V/K below 10°C in the monthly average
Float current	15mA/100Ah, increasing to 45mA/100Ah at the end of life
Equalize charge	U = 2.33 to 2.40V/cell, time limited
Charging time up to 90%	6h with $1.5*I_{10}$ initial current, 2.23 V/cell, 80% C3 discharged

5. Discharge characteristics

Reference temperature	25°C (77 °F)
Initial capacity	95% or better at time of delivery
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 and temperature
Every 12 months	record battery voltage, cell voltages and temperatures

7. Operational data

Operational life	20 years in stand-by operation, float at 20 to 25 °C (68 °F to 77 °F)
Water - refilling - interval	more than 3 years at 25°C (77 °F)
IEC 60 896-1 cycles	> 1200
Self-discharge	app. 3% per month at 20°C (68 °C)
Operational temperature	-20°C to 55°C(-4 °F to 131 °F); recommended 10°C to 30°C(50 °F to 86 °F)
Standard	DIN 40 736 part 1
Tests according	IEC 60 896 - 11
Safety standard, ventilation	DIN EN 50 272-2
Transport	Batteries are not subject to ADR (road transport), if the conditions of the special rule (chapter 3.3) are observed.

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