RANGE SUMMARY

OGi Perfect

Batteries in the OGi Perfect range has the highest levels of reliability and has been used in all stand-by critical application.

OGi Perfect are quasi-VRLA cell due to use pole with outer labyrinths thread and plastic sheathing, and bi-directional recombination plug with flame arrestor – RegPlug2.

In addition to the long service life in stand-by parallel operation the OGi Perfect range also offers high cycle consistency. Our batteries has increased capacity compared to the requirements of the DIN standard

Due to high reliability the main usage areas are telecommunication equipment, power station and power distribution, airport, railway, control systems, emergency lighting, UPS with long back-up.

MAIN FEATURES

- **capacity range C_{10}, U_{END}=1.80V/cell @ +20°C:**
  cell 2V: 75Ah ÷ 1440Ah,
  is higher than DIN standard capacity,
- **dimensions accordance to DIN 40739, DIN 40734,**
- **service life: over 20 years @ +20°C,**
- **high reliability,**
- **low maintenance,**
- **cells equipped with patented BATER recombination plug RecPlug2 results in:**
  - **low explosion risk,**
  - **no need for refilling water loses.**

TECHNICAL DATA

- operating mode:
  stand-by parallel and floating, switch or battery (charge/discharge),
- recommended charging characteristic IU acc. to EN 50272-2 and DIN 41773,
- stand-by parallel mode recommended float charge voltage:
  2.23 V/cell ± 1% @ +20°C,
- boost charging:
  2.40V/cell for max. charging current 4 x I_{10}, time 24h and t < +30 °C,

Charging characteristic "IU" 2.4 V/cell					
	Charging current I_{10} (10A/100Ah)				
State of charge	60%	80%	95%	100%	Full of charge
DOD	Charging time [h]				
20%	< 0.5	0.5	1.5	2,6	16
40%	< 0.5	2	3.5	4,6	17
60%	2	4	5.5	6,6	18
80%	4	6	8	8,6	20
100%	6	8	10	10,6	24

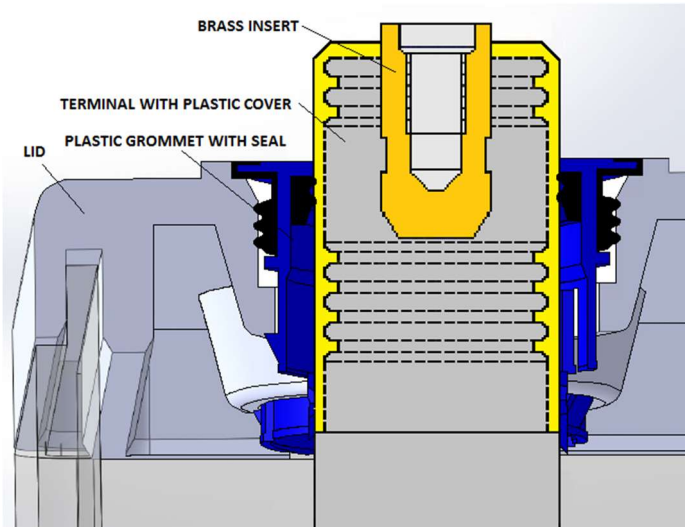
- maximum charging current:
  - t < +25°C unlimited,
  - t > +25 °C max. 4xI_{10},
- float voltage compensation in function of temperature: –2 mV/°C ÷ –4mV/°C,
- ventilation requirements: acc. to EN 50272-2
- operating temperature range:
  - recomended:
    +15°C ÷ +25°C,
  - maximum long term operating temperature:
    +30°C (with ventilation assured - reduced service life),
  - maximum short term operating temperature (for hours):
    +50°C (with ventilation assured - reduced service life),
  - minimum long term operating temperature:
    +5°C (operating in lower temperature is not preferred according to possibility battery freezing in discharge case)
- self-discharge <3%/month @ +20 °C acc to EN 60896-21.
- 12-15 years topping-up interval with recombination plug,
- stands and racks: special BATER racking and bases. Bases are made of steel (square tubes) coated with polyethylene fluidization method. Resistance to electrostatic short circuit above 7kV. We project and produce structures according to customer documentation, or perform individual project for the special rooms or spaces.

STANDARDS

- EN 60896
- DIN 40739, DIN 41773, DIN 41774, DIN 41775
- EN 50272-2:2003
- ISO 9001 i ISO 14001

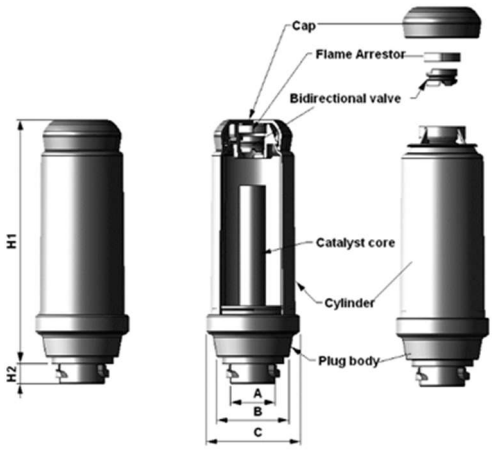
CONSTRUCTION

- **positive plate –** a lead grid pasted with active material forms the negative plate. Gride are being die-casted. A special lead alloy which is used for negative grid has an Sb portion 1,7%.
- **negative plate** – a lead grid pasted with active material forms the negative plate. Gride are being die-casted. A special lead alloy which is used for negative grid has an Sb portion 1,7%.
- **separators** – Daramic, poliethylen, low resistance, high acid proof, microporus material.
- **container** – the cell container is made of transparent SAN,
- **lid** – is made of grey ABS and equipped with well proven seal for leakage-proof insulation of the terminal construction. Lid and container are being glued and is proof against the escape of gas or leakage of electrolite,kwasu siarkowego o ciężarze właściwym 1,24kg/dm3 w temperaturze +20oC przy poziomie maksymalnym, w pełni naładowanego ogniwa.
- **terminals** – with outer labyrinths thread and plastic sheathing are being made from corosion resistant lead aloy with brass inserted designed to give minimum resistance and maximum hermetic.,**terminals sealing –** plastic grommet with special seal,
- **bi-directional recombination plug RecPlug3 / 2**
  - eliminates of necessity of electrolyte refilling,
  - increased work safety of cells with liquid electrolyte (electrolyte fumes and gas poisoning compounds are not released to environment),
  - preventing explosions there is no possibility of effusion of gases,that would cause explosion, the construction makes impossible also penetration of fire from outside,
- limiting of ventilation, battery rooms provided with cells with recombination plugs have smaller ventilation requirements,limiting of ventilation, battery rooms provided with cells with recombination plugs have smaller ventilation requirements.
- **electrolyte –** sulphuric acid withe a density 1,24kg/dm3 @+20oC/max level/full charged cell.



Terminal sealing

with outer labyrinths thread and plastic sheathing are being made from corosion resistant lead aloy with brass inserted designed to give minimum resistance and maximum hermetic. The design of terminals ensures the cell is sealed in accordance to the requirments for VRLA batteries.



Bi-directional recombination plug RecPlug2

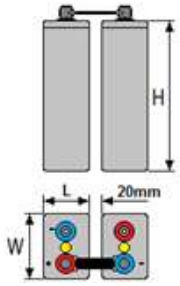
When using lead acid battery as a result of electrolysis of an aqueous electrolyte solution are separated hydrogen and oxygen. These gases in air may form explosive mixtures. Additionally the electrolysis reduces the amount of water in the electrolyte, which must be relatively frequently replenish in the battery. The conversion of hydrogen and oxygen in steam is an exothermic process. The heat emitted during the recombination process inside the sealed battery significantly accelerates the degradation of the lead electrodes immersed in an electrolyte. Therefore, the process is preferably carried away from the recombination with the electrodes, thus increasing the life of the entire battery. The innovative design of the gases generated during the electrolysis of water from the electrolyte when it reaches the plug in a controlled manner are converted into steam. Water vapor then condenses on the walls of plug. After cooling, as the water flows back into the battery. In order to achieve the most efficient gas recombination plug except the construction of a special catalyst system was also used bidirectional valves which automatically regulate the pressure inside the unit to achieve the best value. In order to maintain safe operation of the system pressure regulator over is mounted flame arrestor in the plug in addition to the single fuse hydrogen, in the form of a ceramic flame screen. In such designed plug gas emissions is minimal and safe for the surrounding environment. New recombination plug with two-way valve system, while maintaining the proper operation, maintenance reduces the frequency of replenishing the electrolyte level in the battery. New design of recombination plug increases the safety of the battery in areas with limited ventilation while maintaining the level of gas recombination at the highest possible level.

DIMENSIONS AND TECHNICAL DATA

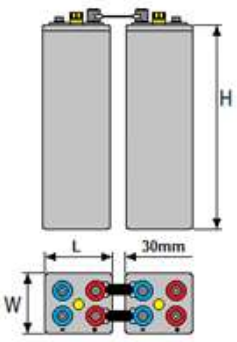
No	Cell type	Nom volt.	Capacity					Charging current	Length	Width	Heiht	Weight	
			C_{10} (2) Uend =1.80 V/cell	C_5 Uend =1.75 V/cell	C_3 Uend =1.75 V/cell.	C_1 Uend =1.67 V/cell.	C_{nom} (1) Uend =1.80 V/cell	I_{nom} (1)	L	W	H	C_{10} (2) Uend =1.80 V/cell	C_5 Uend =1.75 V/cell
		[V]	[Ah]					[A]	[mm]			[kg]	
1	OGi 75	2	83	78	58	53	75	7,5	103	206	369	7,00	10,40
2	OGi 100	2	108	103	83	68	100	10	103	206	369	8,20	11,60
3	OGi 125	2	138	126	113	88	125	12,5	103	206	369	9,50	13,10
4	OGi 150	2	168	149	138	108	150	15	103	206	369	11,20	14,90
5	OGi 175	2	198	173	168	98	175	17,5	103	206	369	12,20	15,80
6	OGi 200	2	231	202	171	131	200	20	103	206	369	13,90	18,30
7	OGi 225	2	257	221	207	157	225	22,5	103	206	369	15,90	19,70
8	OGi 250	2	278	248	228	178	250	25	124	206	369	17,20	21,80
9	OGi 275	2	312	271	257	212	275	27,5	145	206	369	19,50	23,30
10	OGi 300	2	330	302	275	200	300	30	145	206	369	22,30	25,60
11	OGi 325	2	356	323	301	226	325	32,5	145	206	485	24,30	28,10
12	OGi 350	2	383	347	298	233	350	35	145	206	485	21,90	28,20
13	OGi 400	2	408	338	293	208	400	40	145	206	660	27,00	40,50
14	OGi 480	2	492	417	352	272	480	48	145	206	660	30,80	44,10
15	OGi 560	2	576	476	391	316	560	56	145	206	660	34,40	47,30
16	OGi 640	2	661	556	476	346	640	64	145	206	660	38,10	50,80
17	OGi 720	2	700	595	515	385	720	72	145	206	660	41,80	54,10
18	OGI 800	2	829	689	586	429	800	80	210	191	660	50,40	67,20
19	OGi 880	2	896	756	653	476	880	88	210	191	660	54,10	70,70
20	OGi 960	2	928	788	685	656	960	96	210	191	660	57,70	74,00
21	OGi 1040	2	1076	896	776	776	1040	104	210	233	660	62,20	83,00
22	OGi 1120	2	1126	946	826	826	1120	112	210	233	660	66,10	86,70
23	OGi 1200	2	1156	976	856	856	1200	120	210	233	660	69,70	90,00
24	OGi 1280	2	1326	1106	963	976	1280	128	210	275	660	74,60	99,50
25	OGi 1360	2	1356	1136	993	1006	1360	136	210	275	660	78,30	103,00
26	OGi 1440	2	1396	1176	1033	1046	1440	144	210	275	660	81,90	106,30
27	OGi 1520*	2	1576	1316	1130	836	1520	152	210	360	661	88,20	121,50
28	OGi 1600*	2	1656	1396	1210	876	1600	160	210	360	661	91,80	124,70
29	OGi 1680*	2	1736	1456	1265	936	1680	168	210	360	661	95,40	128,10
30	OGi 1760*	2	1786	1506	1315	986	1760	176	210	360	661	99,20	131,50
31	OGi 1840*	2	1806	1526	1335	1006	1840	184	210	360	661	103,00	134,80
32	OGi 1920*	2	1846	1566	1375	1046	1920	192	210	360	661	106,40	138,20
33	OGi 2000*	2	2066	1716	1716	1166	2000	200	210	440	661	112,30	153,60
34	OGi 2080*	2	2146	1796	1796	1146	2080	208	210	440	661	116,00	157,00
35	OGi 2160*	2	2216	1866	1627	1216	2160	216	210	440	661	119,70	160,30
36	OGi 2240*	2	2246	1896	1657	1246	2240	224	210	440	661	123,40	163,51
37	OGi 2320*	2	2276	1926	1687	1276	2320	232	210	440	661	127,10	167,10
38	OGi 2400*	2	2306	1956	1717	1206	2400	240	210	440	661	130,80	169,59

(1) Parametry znamionowe zgodnie z normą DIN 40739, DIN 40734,

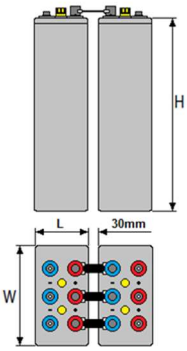
(2) Pojemność Q_{10} po 10 cyklach



OGi75 ÷OGI720



OGi800 ÷OGI1440



OGi1520 ÷OGI2400

BATTERY STANDS

Bater is a manufacturer of all types of corrosion resistant stands for OGi Perfect batteries. The stands are made of square tube and covered with polyethylene by fluidization. We design housing in accordance with customer's documentation or carry out our own project individually according to the target room dimension.

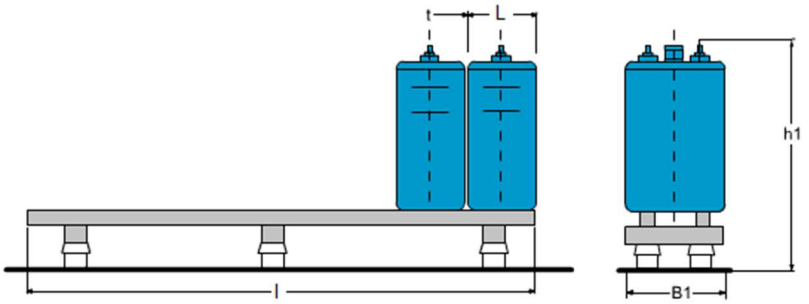
CONSTRUCTION

- *purpose: to put together any type of battery cells on one or more levels,*
- *construction: made of closed metal profiles. Produced sets are fully welded,*
- *corrosion protection: protected against electrolyte by a coating made of high quality polyethylene thicker than 1 mm, immersed in fluidized bed reactor on our modern technological line,*
- *resistance to electrostatic short circuit above 7kV,*
- *separation from the ground:*
  **insulators made of ABS plastic with adjustable height,*
  or
  **reinforced foot with adjustable height*
- *location of cells: on carrier brackets, which spacing can be adjusted to their width. Versatile design of stands enables the use of additional stands brackets for cells of more than 200kg.*

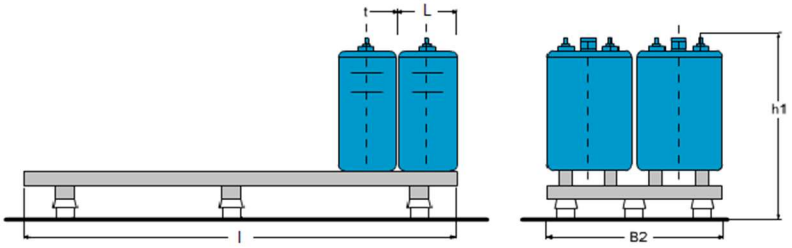
DIMENSIONS AND TECHNICAL DATA OF BATTERY STANDS

Lp	Cell type	B1	B2	h1	t
1	OGi 75	250	500	610	20
2	OGi 100	250	500	610	20
3	OGi 125	250	500	610	20
4	OGi 150	250	500	610	20
5	OGi 175	250	500	610	20
6	OGi 200	250	500	610	20
7	OGi 225	250	500	610	20
8	OGi 250	250	500	610	20
9	OGi 275	250	500	610	20
10	OGi 300	250	500	610	30
11	OGi 325	250	500	725	30
12	OGi 350	250	500	725	30
13	OGi 400	250	500	940	30
14	OGi 480	250	500	940	30
15	OGi 560	250	500	940	30
16	OGi 640	250	500	940	30
17	OGi 720	250	500	940	30
18	OGI 800	250	470	940	30
19	OGi 880	250	470	940	30
20	OGi 960	250	470	940	30
21	OGi 1040	320	550	940	30
22	OGi 1120	320	550	940	30
23	OGi 1200	320	550	940	30
24	OGi 1280	320	640	940	30
25	OGi 1360	320	640	940	30
26	OGi 1440	320	640	940	30
27	OGi 1520*	262	830	1070	30
28	OGi 1600*	262	830	1070	30
29	OGi 1680*	262	830	1070	30
30	OGi 1760*	262	830	1070	30
31	OGi 1840*	262	830	1070	30
32	OGi 1920*	262	830	1070	30
33	OGi 2000*	262	960	1070	30
34	OGi 2080*	262	960	1070	30
35	OGi 2160*	262	960	1070	30
36	OGi 2240*	262	960	1070	30
37	OGi 2320*	262	960	1070	30
38	OGi 2400*	262	960	1070	30

l = N x (L+ t)
(N - ilość ogniw)



Single-row stands



Double-row stands

Head quater

BATER sp.z o.o.
ul. Dźwigowa 63,
01-376 Warszawa
tel.: +48 22 664 87 87
fax: +48 22 664 87 87
e-mail: biuro@bater.pl
www.bater.pl

Mechanical factory

ul. Dźwigowa 63,
01-376 Warszawa
tel.: +48 22 664 87 87 w.41
fax: +48 22 664 87 87
GPS 52°13.07N, 20°54.86E

Battery factory Bater Gliwice

ul. Pszczyńska 311,
44-100 Gliwice
tel.: +48 32 232 12 40
fax: +48 32 232 12 40 w. 29
e-mail: biuro@bater.pl
GPS 50°16.14N, 18°43.19E