MOLL OPzS.block.solar

MOLL BATTERIEN

Technical Specification for Vented Lead-Acid Batteries (VLA)

1. Application

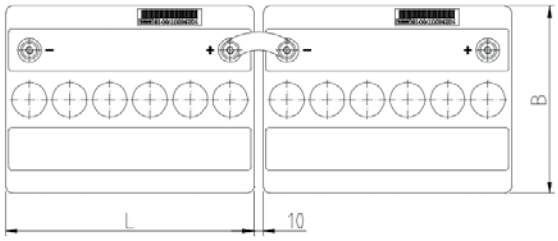
Low-maintenance OPzS.block.solar batteries are used to store electrical energy in smaller solar photovoltaic installations. Due to the robust tubular plate design OPzS.block.solar batteries are excellently suited for highest requirements regarding cycling ability and long lifetime.

2. Technical data (Reference temperature 20 °C)

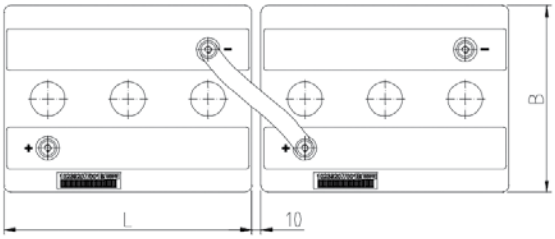
MOLL Type	$C_{1\,h}$ Ah	$C_{10\,h}$ Ah	$C_{20\,h}$ Ah	$C_{72\,h}$ Ah	$C_{100\,h}$ Ah	$C_{120\,h}$ Ah	$C_{240\,h}$ Ah	R_i 1) mΩ	I_k 2) kA	Length mm	Width mm	Height mm	Weight (dry) kg	Weight (filled) kg
U_e [V/cell]	1,67	1,80	1,80	1,80	1,80	1,80	1,80							
12V 1 OPzS.block.solar 70	31	56	64	70	71	72	74	16,62	0,75	272	205	385	29,5	41,0
12V 2 OPzS.block.solar 140	63	109	125	137	140	140	144	8,91	1,40	272	205	385	38	47,6
12V 3 OPzS.block.solar 220	95	167	192	211	215	217	222	6,27	1,99	380	205	385	51	69,4
6V 4 OPzS.block.solar 290	127	223	254	282	287	289	295	2,47	2,52	272	205	385	33	46,5
6V 5 OPzS.block.solar 360	159	279	318	352	359	361	369	2,09	2,98	380	205	385	41,7	60,4
6V 6 OPzS.block.solar 430	191	334	382	424	431	434	444	1,82	3,42	380	205	385	48,5	66,5

1, 2) Internal resistance R_i and short circuit current I_k according to IEC 60896-11. Height is the maximum height between container bottom and top of the bolt in assembled condition. All values given in the table represent maximum values without voltage loss of connectors on the basis of 100 % DOD.
Please consider item 7.

3. Terminal positions



12V 1 OPzS.block.solar 70 to
12V 3 OPzS.block.solar 220



6V 4 OPzS.block.solar 290 to
6V 6 OPzS.block.solar 430

Terminals are designed as female poles with brass inlay M10 for flexible insulated copper cables with cross-section 25, 35, 50, 70, 95 or 120 mm² or solid insulated copper connectors with a cross-section of 90, 150 or 300 mm².

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4. Design

Positive electrode	tubular plate with woven polyester gauntlet and solid grids made of a corrosion-resistant PbSbSnSe-low antimony alloy
Negative electrode	grid-plate made of low antimony alloy with long-life expander material
Separation	microporous separator
Electrolyte	sulphuric acid with a density of 1.24 kg/l (20 °C)
Container	high impact, translucent SAN (Styrene acrylonitrile), UL-94 rating: HB
Lid	high impact, grey coloured SAN (Styrene acrylonitrile), UL-94 rating: HB
Plugs	labyrinth plugs to arrest aerosols, optional ceramic plugs or ceramic funnel plugs according to DIN 40740
Pole-bushing	100 % gas- and electrolyte-proof, sliding plastic-coated “Panzerpol”
Protection class	IP 25 according to EN 60529, protected from contact according to VBG 4

5. Installation

OPzS.block.solar batteries are designed for indoor applications.

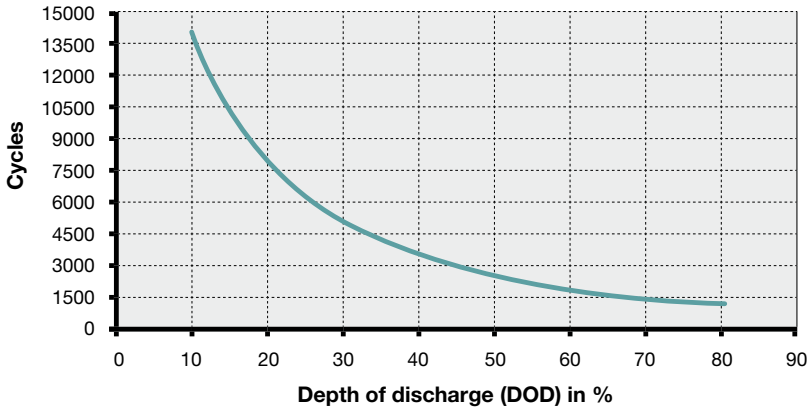
6. Maintenance

Every 6 months	check battery voltage, cell voltages and temperatures
Every 12 months	check connections, record battery voltage, cell voltages and temperatures (according to operation instructions)

7. Operational data

Depth of discharge (DOD)	max. 80 % (U_e = 1.91V/cell for discharge times >10 h; 1.80V/cell for 1 h), deep discharges of more than 80 % DOD have to be avoided
Charge current	5 x I_{10} to 0.01 x I_{10}
Floating voltage	2.23V/cell
Charge voltage at cyclic operation	
DOD per day < 20 % C_{10}	2.30V to 2.35 V/cell
DOD per day > 20 % C_{10}	2.35V to 2.40 V/cell
Adjustment of charge voltage	no adjustment necessary if battery temperature is between 10 °C and 30 °C in the monthly average, otherwise ΔU/ΔT = -0.003V/cell per °C
Recharge to 100 %	within a period of 1 up to 4 weeks
IEC 61427 cycles	2700 (A+B)
Battery temperature	-20 °C to 55 °C, recommended temperature range: 10 °C to 30 °C
Self-discharge	approx. 3 % per month at 20 °C

8. Number of cycles as function of depth of discharge



9. Transport

Batteries are not subject to ADR (road transport), if the conditions of Special Provision 598 (Chapter 3.3) are observed. These cells/batteries are dangerous goods on sea transport. Declaration and packaging must comply with the requirements of IMDG-Codes.

10. Standards

Test standards	IEC 60896-11, IEC 61427
Safety standard, ventilation	EN 50272-2

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