POPzS

Batteries in the POPzS range has the highest levels of reliability and has been used in all solar and wind power plant application.

POPzS range offers high cycle consistency. Our batteries has increased capacity compared to the requirements of the DIN standard

Stationary POPzS batteries are used for energy storage in solar, wind and hybrid power plants. Characteristics of the battery life in the solar system is very different from a classic stationary battery. In solar system the battery is the energy storage, which is used at night, with no power from solar panels. Thus, in practice it is cycling with loading during the day and discharging at night. Bater's response to the needs of solar applications is the development of new types of cells well adapted to the way of working through the use a special type of separator and special additives to plates improving electrical parameters and life of cell.

MAIN FEATURES

- **capacity range: 266Ah ÷ 1000Ah (C_{10} U_{END}=1.80V/cell @ +20°C) is higher than DIN standard capacity,**
- **dimensions accordance to DIN 40736 standard,**
- **service life: 1500 cycles @ +20°C, DOD 70% or 12 ÷ 15 years**
- **high reliability,**
- **low maintenance**
- **electrolyte level quick and easy to control by translucent jars,**
- **cells equipped with patented BATER recombination plug results in:**
  - **low explosion risk,**
  - **topping-up interval a couple of years.**

TECHNICAL DATA

- operating mode:
  floating and cycles mode with daily cycle,
- recommended charging characteristic: IU acc. to EN 50272-2 and DIN 41773,
- stand-by floating mode recommended float charge voltage:
  2.25 V/cell ÷ 2,30 V/cell @ +20°C acc. to DIN 41773,
- boost charging: 2.4V/cell and 4 x I_{10} max. for 24h and t < +30 °C,
- maximum charging current: IU characteristic acc. to DIN 41773:
  - t < +25 °C unlimited ,
  - t > +25 °C 4 x I_{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.
- a couple of years topping-up interval with recombination plug,
- tray: special BATER tray. Tray are made of steel (square tubes) coated with polyethylene fluidization method. Resistance to electrostatic short circuit above 7kV,

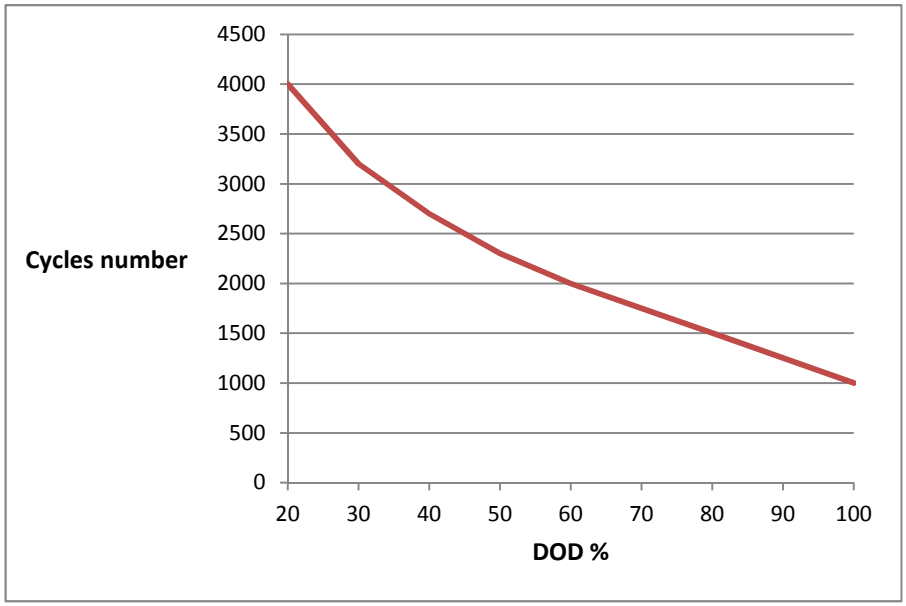
STANDARDS

- EN 60896
- DIN 40736, DIN 41773, DIN 41774, DIN 41775
- EN 50272-2:2003
- ISO 9001 i ISO 14001

Charging time IU characteristic

Charging characteristic "IU" 2.4 V/cell										
	Charging current I_{10} (10A/100Ah)					Charging current I_{20} (20A/100Ah)				
State of charge	60%	80%	95%	100%	Full of charge	60%	80%	95%	100%	Full of charge
DOD	Charging time [h]					Charging time [h]				
20%	< 0,5	0,5	1,5	2,6	16	< 0,5	<0,5	1	2,5	14
40%	< 0,5	2	3,5	4,6	17	<0,5	1	2	3,3	15
60%	2	4	5,5	6,6	18	1	2	3	4,3	16
80%	4	6	8	8,6	20	2	3	4	5,3	17
100%	6	8	10	10,6	24	3	4	5	6,3	18

Cycles number vs DOD (Deep Of Discharge)



CONSTRUCTION

➢ **positive plate** –the grid of the tubular positive plate consists of several lead spines which are joined together by the upper frame. Spines are being die-casted. These thin lead spines, which are equipped with small concentric vanes, are covered with acid permeable tubes. Between the lead spins and tubes is the active positive material. Tubes are being wet-filled. A special lead alloy which is used for positive plate. ➢ **negative plate** – a lead grid pasted with active material forms the negative plate. Gride are being die-casted, ➢ **separators** - **Daramic** poliethylen, low resistance, high acid proof, microporus material. ➢ **terminals** – are being made from corosion resistant lead aloy with brass inserted designed to give minimum resistance.	
➢ **container** – the cell container is made of translucent polypropylene, ➢ **lid** – is made of grey polypropylene and equipped with well proven seal for leakage-proof insulation of the terminal construction. Lid and container are being welded, ➢ **connection** – fully insulated flexible copper with full insulated screw with measurements hole, ➢ **electrolyte** – sulphuric acid withe a density 1,24kg/dm^3 @+20^{o}C max level and full charged cell.	
➢ **plug** – standard or ➢ **recombination plug RecPlug1** • elimination of necessity of electrolyte refilling, • increased work safety of cells with liquid electrolyte (electrolyte fumes and gas poisoning compounds are not released to environment), • limiting of ventilation, battery rooms provided with cells with recombination plugs have smaller ventilation requirements.	

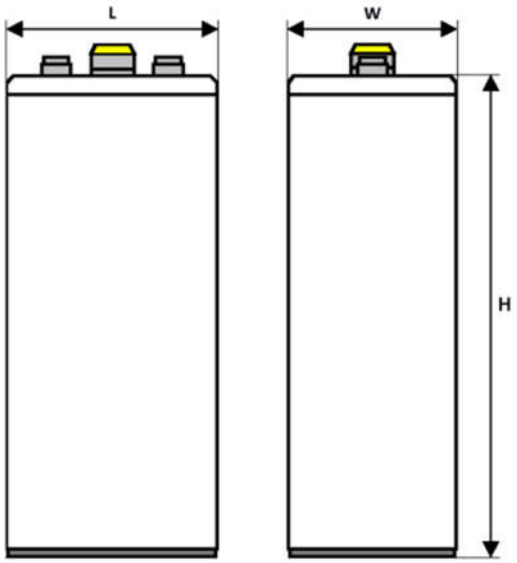
DIMENSIONS AND TECHNICAL DATA

@ +20°C

No	Cell type	Volt.	Capacity				Charging current	Length	Width	Height	Weight
			C_{100} (2) Ue=1,85 V/ogn.	C_{24} Ue=1,83 V/ogn.	C_{10}(2) Ue=1,80 V/ogn.	C_{nom} (1) Ue=1,80 V/ogn.	I_{nom} (1)	L	W	H	wet +/-5%
		[V]	[Ah]				[A]	[mm]			[kg]
1	3 POPzS 240	2	325	280	240	240	24,0	198	83	470	18,5
2	4 POPzS 320	2	424	377	320	320	32,0	198	101	470	23,3
3	5 POPzS 400	2	540	472	400	400	40,0	198	119	470	29,0
4	4 POPzS 500	2	725	624	500	500	50,0	198	101	720	35,2
5	5 POPzS 625	2	906	778	625	625	62,5	198	119	720	43,2
6	6 POPzS 750	2	1090	934	750	750	75,0	198	137	720	53,3
7	7 POPzS 875	2	1270	1087	875	875	87,5	198	155	720	64,2
8	8 POPzS 1000	2	1450	1243	1000	1000	100	198	173	720	72,5

(1) Nominal and parameters according to DIN 40736

(2) Capacity C_{10} after 10 cycles



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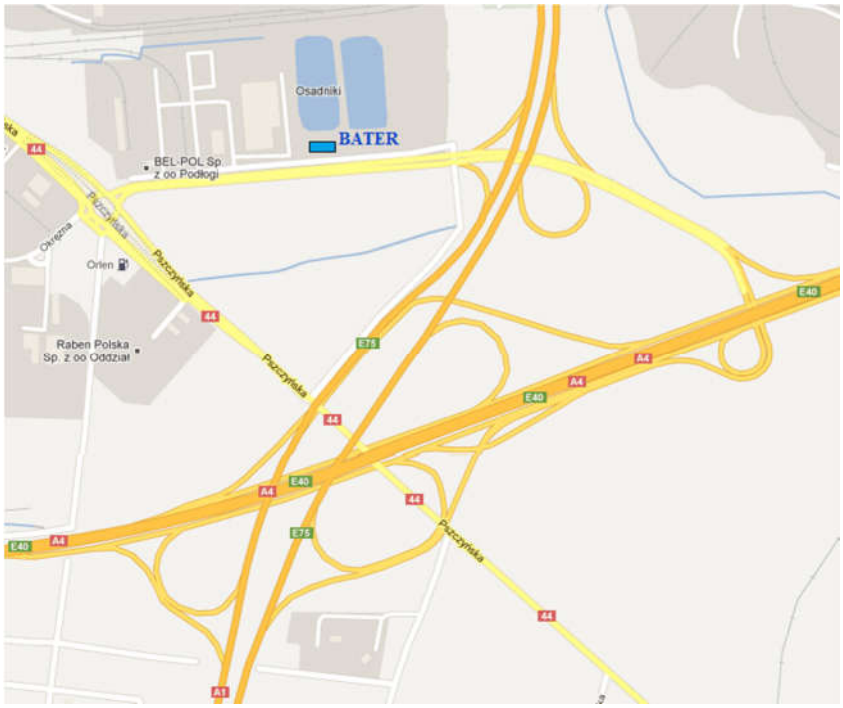

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