Energy *in motion*

TAB OPzS

TAB
Tovarna akumulatorskih baterij, d.d.
Mežica - Slovenija

Low maintenance **TAB OPzS** vented **stationary batteries**

Let us lead you into the world of everlasting energy and introduce you with OPzS stationary blocks and cells produced in the conventional lead-acid technology.
The batteries are distinguished for:

- *high capacity*
- *long life time*
- *reduced maintenance*
- *low self-discharging*
- *quick and simple acid level control*
- *economical water consumption*
- *appropriate dimensions and weight*
- *the lowest and constant maintenance current.*

The individual cells (2V) and blocks (6V and 12V) are in translucent plastic containers made of styrenacrylnitril (SAN), a material which is extraordinary resistant to chemical influences and mechanical damage.
The stationary batteries of the type OPzS are manufactured according to the DIN 40736, EN 60896 and IEC 896-1 regulations.

Application
Stationary batteries of the OPzS type are intended for the supply of telecommunication facilities, computers, emergency lightning, alarm, control and monitoring systems in power plants and distribution stations, at railway stations, airports etc.
Due to their extremely low self-discharging they are suitable for plants supplied by solar cells.

Construction
The positive armored plate is of a tubular type, which means that the active substance (PbO_2) is contained in special gauntlet made of polyester fibres and hardened by an impregnation compound. Such construction prevents escaping of an active substance during the operation and ensures a long life time.
The grids of a positive and a negative plate are made of special low percentage (less than 2%) antimony alloy with addition agents for improvement of crystalline structure of casting.
Negative plates are pasted-type plates with special alloys maintaining porosity of an active substance during the operation.
As an electrolyte, a diluted sulphuric acid (H_2SO_4) with a density of 1.24 ± 0.01 kg/l at 20 degrees C , and at a maximum permitted level is used.
Separators separating the positive plates from the negative ones are made of microporous plastic material with a low electric resistance.
The cell containers are made of transparents, while lids of nontransparent SAN material (styrenacrylnitril).
In a special process, the lids are tightly sealed to the container. The terminal plugs are sealed with rubber seals. This prevents any escape of electrolyte from the cells.
Due to the transparent containers the electrolyte level is clearly visible, the maximum and minimum levels are marked on a self-adhesive acid-proof label on a container side.
A cell plug seals well (ceramic filter), and prevents leakage of any sulphuric acid vapours, however, it lets through hydrogen and oxygen.

Two versions of batteries are being manufactured:

a) *Dry-charge version: a battery has to be filled up with an electrolyte and supplementary charged before use. The plates are already formed and in a special process protected against oxidation. They can be stored without problems.*
b) *Electrolyte-charge: battery can be installed immediately, because it is already filled up with electrolyte and electrically charged as well. The capacity test has already been performed by the producer.*

Orders
In order that the batteries would meet all your demands, we kindly ask you to enclose the following data with your order:

- kind of consuming device (telephone plant, DC-AC converter, emergency lightning etc.)
- operating energy of the consumer (kW, kVA, cos Φ)
- minimum and maximum allowable rated voltage at consuming device (V)
- time diagram of a consumer load, and the required time autonomy (reserve)
- expected voltage drop in the supply lines
- surrounding temperature in the battery room (average, minimum, maximum)
- type of rectifier, its characteristics, regulating point I (A) or U (V), respectively, float voltage (V) (direct voltage of rapid-charging current Imax (A), float charging voltage)
- outline or dimensions of a battery room
- type of installation (welded, bolted, on wooden or metal racks, in case, on earthquake-proof racks)
- battery maintenance accessories (areometers, thermometers, jug…)
- battery type: filled up with electrolyte and electrically charged or dry-charge battery.

In case of problems with ordering we will be glad to advise and assist you in the selection of the suitable type of battery.

Operation-maintenance
It is recommended that the OPzS batteries are installed in the systems where they are constantly connected to the rectifier.

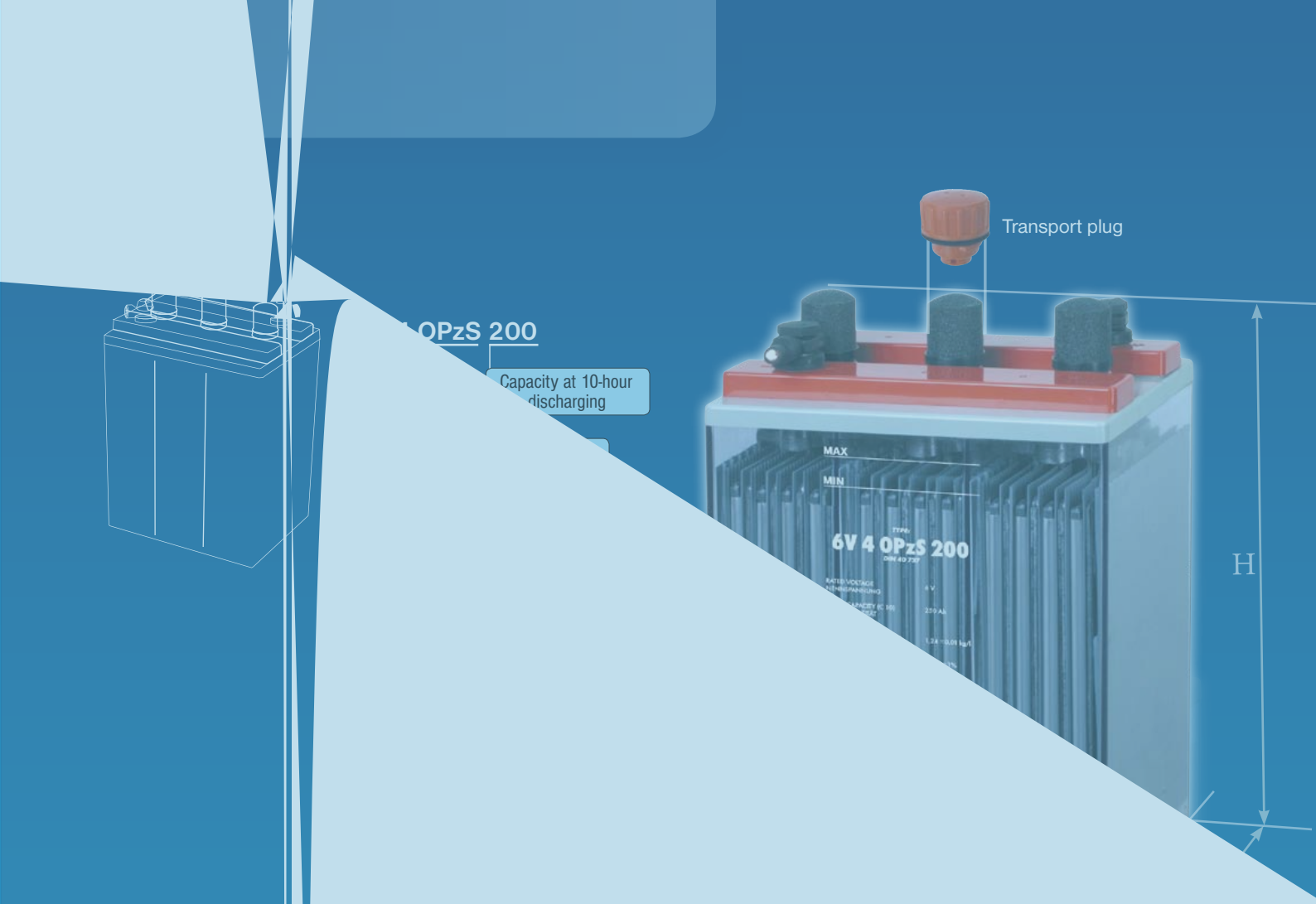
The battery can be float-charged with voltage of 2.23 to 2.25 V/cell, or, in case of rapid charging after discharge, with voltage of 2.35 to 2.40 V/cell.

Rapid charging usually lasts another 3-5 hours after the voltage has already reached 2.35 to 2.40 V/cell.
After that, an automatic switchover to the constant maintaining voltage of 2.23 to 2.25 V/cell takes place.

Battery maintenance is reduced to a mimimum and required only from time to time.

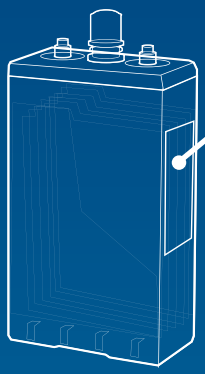
At normal operation, only some destilled water has to be added once in a 2-3 year period and, if necessary, the surface of cells has to be cleaned. All stated voltage values are valid for the temperature range from 15 to 25 degrees C. Out of this range, the corrections given by the battery producer are necessary.

For more detail information please check our operation manual.


OPzS 200
Capacity at 10-hour discharging
Transport plug
MAX
MIN
6V 4 OPzS 200
H

TAB OPzS - Cells

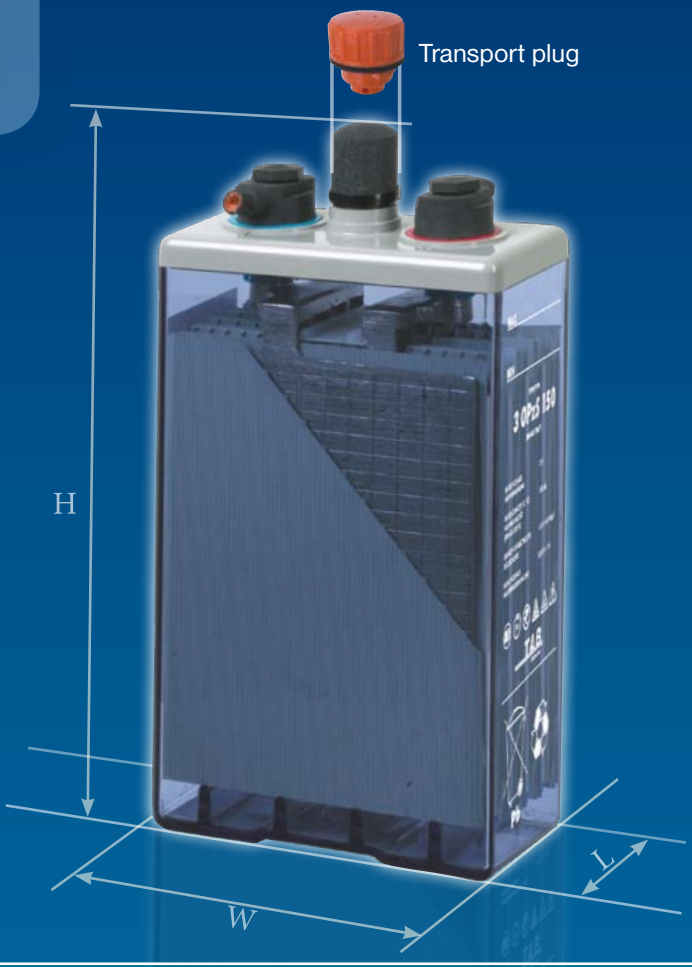
Technical Data



Meaning of the specification:

3 OPzS 150

- 150 — Capacity at 10-hour discharging
- OPzS — Armored OPzS plates
- 3 — Number of positive plates



Technical Specification

Uf V/cell	1,80	1,77	1,75	1,67	IEC 896-1		Dimensions			Weight	
Discharging Time (h)	10	5	3	1	Ri	Isc	L	W	H	Dry	With Acid
Cell Type	Ah				mΩ	A	mm			kg	
2 OPzS 100	107	94	82	60	1,5	1300	103	206	420	8,7	13,7
3 OPzS 150	155	136	117	86	1,15	1739	103	206	420	11	16
4 OPzS 200	208	180	158	115	0,74	2703	103	206	420	13	18
5 OPzS 250	259	224	197	144	0,63	3175	124	206	420	16	22
6 OPzS 300	310	268	234	171	0,52	3846	145	206	420	18	26
5 OPzS 350	380	325	280	205	0,58	3448	124	206	536	20	29
6 OPzS 420	454	389	336	245	0,53	3774	145	206	536	24	34
7 OPzS 490	532	454	392	286	0,48	4167	166	206	536	28	39
6 OPzS 600	640	544	477	348	0,47	4255	145	206	711	35	50
8 OPzS 800	853	727	638	466	0,4	5000	191	210	711	46	65
10 OPzS 1000	1065	909	796	581	0,3	6667	233	210	711	57	80
12 OPzS 1200	1278	1088	954	696	0,29	6897	275	210	711	66	93
12 OPzS 1500	1613	1381	1196	873	0,29	6897	275	210	861	88	119
16 OPzS 2000	2143	1838	1591	1162	0,18	11111	397	212	837	115	160
20 OPzS 2500	2675	2295	1988	1452	0,16	12500	487	212	837	145	200
24 OPzS 3000	3208	2752	2382	1739	0,15	13330	576	212	837	170	240

Electrolyte density: 1,24 ± 0,01kg/l at 20°C

All measures and weights are within standard production tolerances. Electrical values are approximative. Technical modifications are reserved without prior notice.

Type Overview

TAB OPzS

welded version

bolted version

TAB OPzS stationary blocks and cells produced in the conventional lead-acid technology.

Stationary batteries of the OPzS type are intended for the supply of telecommunication facilities, computers, emergency lightning, alarm, control and monitoring systems in power plants and distribution stations, at railway stations, airports etc.

Applications

TAB OGi

TAB OGi block batteries are robust vented lead-acid batteries designed for industrial applications in power supply with high safety requirements.

TAB OGi block batteries can be used for both long duration discharge (10 hours) and short duration discharge (few minutes). The main areas of application are DC power supply systems in power stations , UPS systems, industrial systems and emergency power supply systems. They can also be used for engine starting and PV power systems.

Applications

TAB UPS

TAB UPS batteries are robust and for high discharge - performances optimised lead-acid batteries.

The main application for TAB UPS are Uninterruptable Power Supplies (UPS) in the size of 50 to 250kVA. The battery is perfectly suited to start diesel engines for the auxiliary power supply.

Applications

Technical Specification

Design	
positive electrode	robust-plate with circular bars in a corrosion-resistant PbSe alloy < 2% Sb
negative electrode	flat plate with long life expander and low antimony alloy.
separation	microporous separator
electrolyte	sulphuric acid of 1,28 kg/l,
lid	SAN in dark grey colour
container	high impact, transparent SAN
blocks with blind cells	4V, 6V, 8V, 10V
plugs	labyrinth plugs for arresting aerosol, optional ceramic plug or ceramic funnel plug according to DIN 40740
pole sealing	100% gas- and electrolyte-tight, sliding-pole
pole	M10, brass insert
connector	flexible insulated copper cable, with cross-section of 35, 50, 70, 95 or 120 mm^2
kind of protection	IP 25 regarding DIN 40 050, touch protected according VBG 4
Charging	
IU - characteristic	Imax without limitation U = 2,25 –2,27 V/cell between 10°C and 55°C dU/dT = -0,004 mV/°K below 10°C in the monthly average
boost charge	U = 2,35 to 2,40V/cell, time limited
charging time up to 92%	6 h with 1,5*I10 initial current, 2.25 V/cell, 50% C10 discharged
Discharge characteristics	
reference temperature	20°C
initial capacity	100%
depth of discharge	- normally up to 80% - more than 80% DOD or discharges beyond final discharge voltages (dependent on discharge current) have to be avoided
Maintenance	
every 6 month	check battery voltage, pilot block voltage, temperature
every 12 month	take down battery voltage, block voltage, temperature,
Operational data	
operational life	>12 years at 20°C > 6 years at 30°C > 3 years at 40°C
water refilling interval	more than 3 years at 20°C
IEC 896-1 cycles	800
self-discharge	approx. 3% per month at 20°C
operational temperature	-20°C to 55°C
recommended	10°C to 30°C
ventilation requirement	f1=0,5 (low-antimony alloy) according VDE 0510 part 2
measurements according	DIN 40 737 part 3
tests according	IEC 896-1,
applicable standards	VDE 0510, part 2
transport	no dangerous goods during road transport

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Tovarna akumulatorskih baterij, d.d.
Mežica - Slovenija

Certificate of Approval

Awarded to

Tovarna Akumulatorskih Baterij
Mežica Slovenija

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Certification

ISO 9001
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