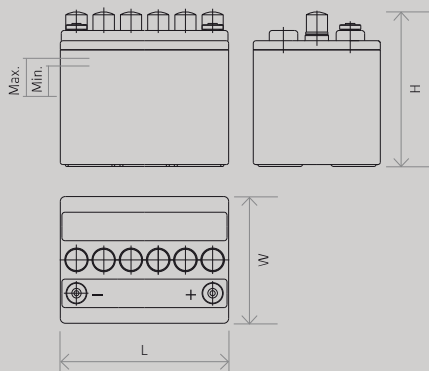


TAB OPzS

TECHNICAL DATA AND DIMENSIONS

6V 4 OPzS 200

↑ Rated voltage
↑ Number of positive plate
↑ Type of plates
↑ Capacity at 10-hour discharging



LOW MAINTENANCE TAB OPzS VENTED STATIONARY BATTERIES



TERMINAL POST BOLTED VERSION



TERMINAL POST WELDED VERSION



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.

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 minimum and required only from time to time.

AT NORMAL OPERATION, ONLY SOME DISTILLED 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 DETAIL INFORMATION PLEASE CHECK OUR OPERATION MANUAL.

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, $\cos \Phi$)
- » 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 I_{max} (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.



CONSTRUCTION

The positive armored plate is of a tubular type, which means that the active substance (PbO₂) 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 (H₂SO₄) 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 transparent SAN, while lid of nontransparent SAN or ABS material (SAN for blocks, ABs for 2V cells). 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:

- » **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.
- » **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.

IMPROVED DESIGN FOR BOLTED VERSION TERMINAL POST

New type of pole for stationary applications has a **special design** with embraced injected plastic around pre-machined lead part in the sealing area.

PLANE AND CLEAN SURFACE OF PLASTIC PART IN COMBINATION WITH RUBBER SEALING RING ENSURES PERFECT SEAL. LONG PLASTIC INJECTED PART ALLOWS POLE GROWTH AND MOVING UPWARDS BY THE GROWTH OF POSITIVE PLATE. SUCH CONSTRUCTION ENSURES TIGHT POLE BUSHING WITHOUT ANY CORROSION OR DETERIORATION DURING BATTERY LIFE.

TAB OPzS CELLS

CHARGING

OPzS cells (block)*

IU - CHARACTERISTIC

- » I_{max} without limitation

FLOAT CHARGE

- » U = 2,23 V/cell ± 1 %, between 10 °C and 30 °C
- » ΔU/ΔT = -0,004 V/K below 10 °C in the monthly average

BOOST CHARGE

- » U = 2,35 to 2,40 V/cell, time limited

CHARGING TIME UP TO 92 %

- » 6h with 1,5*I₁₀ initial current, 2,23 V/cell, 50 % C₁₀ discharged

DISCHARGE CHARACTERISTICS

OPzS cells (block)*

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

OPzS cells (block)*

EVERY 6 MONTH

- » Check battery voltage, pilot block voltage, temperature

EVERY 12 MONTH

- » Take down battery voltage, block voltage, temperature

OPERATIONAL DATA

OPzS cells (block)*

DESIGN LIFE

- » Up to 20 years (18 years)* at 20 °C

WATER REFILLING INTERVAL

- » More than 2 years at 20 °C

IEC 896-1 CYCLES

- » 1500 (1200)*

SELF-DISCHARGE

- » Approx. 2 % 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 EN 50272-2

MEASUREMENTS ACCORDING

- » DIN 40 737 part 1

TESTS ACCORDING

- » IEC 896-1

SAFETY STANDARDS

- » VDE 0510 part 2 and EN 50272-2

TRANSPORT

- » No dangerous goods during road transport



Uf V/cell	1,80	1,77	1,75	1,67	IEC 896-1		Dimensions (mm)			Weight (kg)		Nº of Poles	
	Discharging (h)	10	5	3	1	Ri (mΩ)	Isc (A)	L	W	H	Dry		Wet
CELL TYPE													
2 OPzS 100	107	94	82	60	1,48	1350	103	206	420	8,7	13,7	2	
3 OPzS 150	155	136	117	86	1,08	1845	103	206	420	11	16	2	
4 OPzS 200	208	180	158	115	0,84	2376	103	206	420	13	18	2	
5 OPzS 250	259	224	197	144	0,69	3887	124	206	420	16	22	2	
6 OPzS 300	310	268	234	171	0,58	3438	145	206	420	18	26	2	
5 OPzS 350	380	325	280	205	0,64	3137	124	206	536	20	29	2	
6 OPzS 420	454	389	336	245	0,55	3641	145	206	536	24	34	2	
7 OPzS 490	532	454	392	286	0,48	4169	166	206	536	28	39	2	
6 OPzS 600	640	544	477	348	0,45	4466	145	206	711	35	50	2	
8 OPzS 800	853	727	638	466	0,33	6035	210	191	711	46	65	4	
10 OPzS 1000	1065	909	796	581	0,26	7720	210	233	711	57	80	4	
12 OPzS 1200	1278	1088	954	696	0,23	8814	210	275	711	66	93	4	
12 OPzS 1500	1613	1381	1196	873	0,23	8605	210	275	861	88	119	4	
16 OPzS 2000	2143	1838	1591	1162	0,17	12042	212	397	837	115	160	6	
20 OPzS 2500	2675	2295	1988	1452	0,13	15007	212	487	837	145	200	8	
24 OPzS 3000	3208	2752	2382	1739	0,12	17390	212	576	837	170	240	8	

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.

3 OPzS 150

