



# OPzS Batteries

## for Stationary Applications



# OPzS OVERVIEW

## Vented Tubular Plate Batteries for Stationary Applications

OPzS batteries are characterized by **low maintenance requirements, long service life and excellent capacity performance** while operating in high temperature or unstable power network, thus providing a premium **efficient and cost effective energy solution**.

Optimized design, according to DIN international standards, exclusive use of high quality raw materials, robust construction and state of the art, fully automatic manufacturing processes make this OPzS range the **ideal solution for stationary & renewable energy applications demanding high level of safety and reliability**.

### APPLICATIONS

Telecommunications

Power generation & distribution

Utilities

UPS systems

Emergency lightning

Transportation signaling



### CERTIFIED QUALITY

- Fully compliant with IEC 60896-11 requirements for vented lead-acid batteries
- Full conformity to DIN 40736-1 specifications for OPzS cells and DIN 40737-3 for OPzS blocks
- Compliant to the safety requirements of EN 50272-2 for stationary batteries
- Manufactured in IIB, certified with ISO 9001.

### QUALITY FEATURES & PRODUCT BENEFITS

#### Long service life

Tubular positive plates, unique pole design and special alloys composition offer a design life of 20 years for 2V cells and 18 years for 6V & 12V blocks as well as more than 1600 cycles at 80% Depth of Discharge.

#### Outstanding performance and reliability

Products of optimum design with use of high quality raw materials, fully automatic production facilities and cumulative experience on advanced battery manufacturing ensure remarkable performance, exceeding values as defined by the DIN international standards.

#### Minimum maintenance

Low maintenance design with reduced topping up needs. Transparent container for easy visual electrolyte level monitoring.

#### Space optimization

Racks designed for optimal space utilization, quick installation and easy battery maintenance. 2V, 6V and 12V blocks available for applications where space is limited.

#### Operational safety

Extensive compliance testing performed under European and Global norms and verified by independent 3rd party certification.

#### Complete battery solution

Complete and ready to install systems, batteries in filled and charged with all the necessary accessories. Extensive range of added value services.

#### Flexibility

Design and production of customized products and services, high volume orders handling capability, fast delivery.

#### Peace-of-mind

24x7 experienced pre-sales and after sales support, through IIB Global Partners.

#### Optimum Total Cost of Ownership (TCO)

Maximum lifetime value and cost efficiency.

**The ideal energy solution for stationary applications**

## TECHNICAL FEATURES & PRODUCT BENEFITS

### 1 Positive Plates

- Tubular plate design
- Special low antimony lead alloy ( $\leq 1.65\%$  Sb)
- Red Lead by 99.9% Pure Lead
- Dry Filling process

- ✓ Long cycle life
- ✓ Excellent cycling properties
- ✓ Quality and homogeneity
- ✓ High capacity performance
- ✓ Reduced corrosion
- ✓ Reduced self-discharge rate
- ✓ Increased tolerance even in cases of poor charging conditions

### 2 Negative Plates

- Paste mixture ensures high adherence and cohesion
- Pasted negative plates of grid design
- Optimized low antimony lead alloy
- Roust construction
- Long life expander

- ✓ Stability
- ✓ Long battery life

### 3 Gauntlet

- Highly microporous material
- Fine pore structure
- Low electrical resistance

- ✓ Effective active material retention
- ✓ Eliminates active mass shedding

### 4 Bottom Bar

- Ultrasonic welding

- ✓ Secured fit to the gauntlet
- ✓ Long battery life

### 5 Pole Bridge

- Automatic cast
- On strap optimized design

- ✓ Increased robustness and durability
- ✓ Consistent and uniform poles-bridge-plate block connection

### 6 Electrolyte

- High purity sulphuric acid with nominal density of 1.24+/-0.01 kg/l (20°C)
- On strap optimized design

- ✓ Low self discharge rates
- ✓ Excellent performance on deep discharges

### 7 Separators

- Manufactured from microporous silica-based PVC material
- Allow migration of ions during charge/discharge
- More acid in the surrounding area of the plates

- ✓ Proof against short circuits
- ✓ High temperature stability
- ✓ Mechanical strength
- ✓ Low internal resistance

### 8 Container / Lid

- High impact resistant, transparent SAN (Styrene Acrylonitrile) for the container
- Robust ABS (Acrylonitrile Butadiene Styrene) Material for lid with polyurethane Stobicoll resin
- 100% leakage quality control with high precision froehlich equipment

- ✓ Easy visual electrolyte level monitoring
- ✓ Long term leakage free warranty
- ✓ Unsurpassed mechanical strength
- ✓ Robust and durable battery construction

### 9 Vent Plugs

- Ceramic plugs available
- Low maintenance design
- Flame arresting
- Funnel plugs also available

- ✓ Efficient containment of acid fumes
- ✓ No electrolyte spillage
- ✓ Reduced water evaporation
- ✓ Funnel plugs allow topping-up and electrolyte density measuring without plug removal
- ✓ Increased safety

### 10 Poles

- Premium design with rubber seal in the lid
- Corrosion resistance
- Automatically casted

- ✓ Effectively prevents top lid cracks and acid leakages
- ✓ Positive plate's expansion is safely absorbed
- ✓ Optimum current conductivity
- ✓ Perfect sealing
- ✓ Allow impedance measurements
- ✓ Safe and long operational life

### 11 Pole Insert

- Brass insert
- Threaded female M10 terminal posts

- ✓ High conductivity
- ✓ Maximum torque retention
- ✓ Tin coated

### 12 External Intercell Connectors

- Flexible
- Copper
- Fully insulated
- Fixed with plastic head bolt safety screw and probe hole on the top

- ✓ High conductivity
- ✓ Allow voltage measurements
- ✓ Increased safety
- ✓ Rubber coated copper bars

### 13 Monoblocks' Internal Intercell Connectors

- Copper bars premium design
- Outside of the container connection

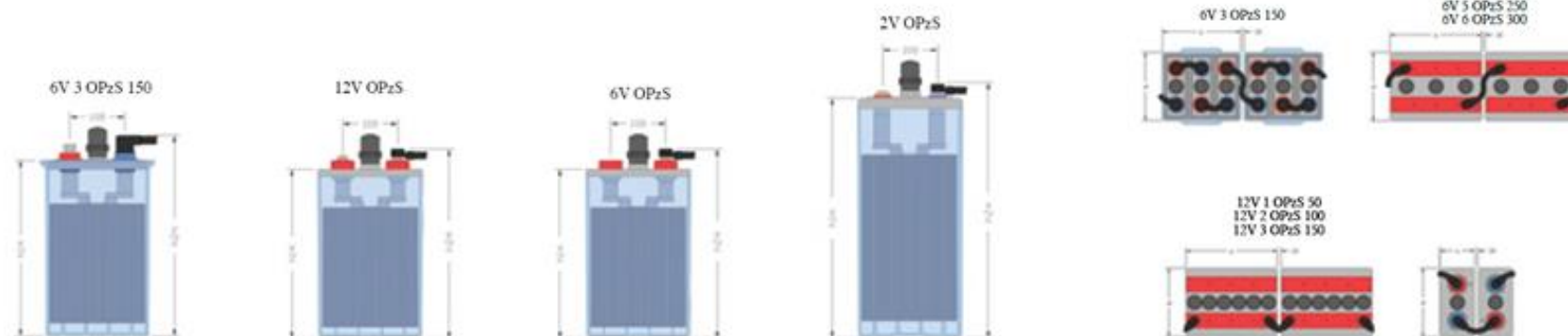
- ✓ High conductivity
- ✓ Safe and long operational life
- ✓ Rubber coated copper bars

## PRODUCT RANGE

Cells	Type	Positive Plates Number / Size (AH)	Number of Poles	Nom. Capacity (Ah at 20°C)				Length (mm)	Width (mm)	Height <sub>1</sub> (mm)	Height <sub>2</sub> ** (mm)	Poles Dist. (mm)	Wet weight. (approx kg)	Dry weight. (approx kg)	Internal Resistance (mOhm)	Short Circuit Current (A)	
				C10 (Ah) 1.80 Vpc	C5 (Ah) 1.75 Vpc	C3 (Ah) 1.75 Vpc	C1 (Ah) 1.75 Vpc										
Cells	2V 2 OPzS 100	2	50	2	126	106	91	60	103	206	355	369	-	14	8	1.620	1240
	2V 3 OPzS 150	3		2	180	153	131	88	103	206	355	369	-	16	11	1.083	1860
	2V 4 OPzS 200	4		2	215	186	161	110	103	206	355	369	-	18	13	0.847	2380
	2V 5 OPzS 250	5		2	270	234	203	138	124	206	355	369	-	21	15	0.671	3000
	2V 6 OPzS 300	6		2	324	281	243	165	145	206	355	369	-	26	19	0.575	3500
Blocks	6V 3 OPzS 150	3	50	6	177	154	133	88	272	205	332	361	-	41	30	1.138	1760
	6V 4 OPzS 200	4		6	215	190	165	112	272	205	332	361	-	47	35	0.900	2240
	6V 5 OPzS 250	5		6	287	250	216	142	380	205	332	361	-	61	44	0.760	2660
	6V 6 OPzS 300	6		6	312	277	242	161	380	205	332	361	-	67	51	0.667	3040
	12V 1 OPzS 50	1	50	12	63	55	48	32	272	206	332	361	-	38	24	3.226	620
	12V 2 OPzS 100	2		12	103	93	83	58	272	205	332	361	-	49	38	1.613	1260
	12V 3 OPzS 150	3		12	150	137	122	86	380	205	332	361	-	70	53	1.138	1780

\* Cells type according to DIN 40736-1 and monoblocks type according to DIN 40737-3 \*\* includes installed connectors and shrouds.

## DRAWINGS



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