Tubular Flooded (OPzS) Batteries

Stationary & Renewable Energy Applications

Discover®

BATTERIES SOLAR PV WIND GENSET

Overview

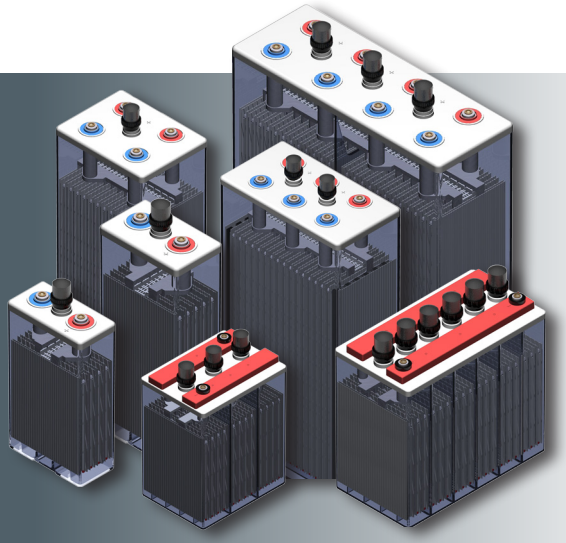
Vented Tubular Plate Batteries for Stationary & RES Applications

Discover® RE Tubular Flooded (OPzS) batteries provide maximum efficiency per discharge-charge cycle, and proven reliability in remote, high temperature, or unstable power network installations.

The proven cycle and float life of Discover Advanced Tubular Plate technology, combined with low maintenance needs, provides end users with the lowest overall cost of ownership versus high quality lead acid batteries designed for stationary and renewable energy applications.

Applications

- Emergency lighting
- Mini-grids
- Power generation & distribution
- Residential installation
- Telecommunications
- Traffic systems
- UPS systems
- Utilities



Certified Quality

- Compliant with IEC 61427 requirements for photovoltaic energy systems
- Compliant with IEC 60896-11 requirements for vented lead-acid batteries
- Conform to DIN 40736-1 specifications for OPzS cells and DIN 40737-3 for OPzS blocks
- Compliant to safety requirements of EN 50272-2 for stationary batteries
- Certified with ISO 9001, ISO 14001, BS OHSAS 18001

Benefits & Features

Long service life

Tubular positive plates, unique sliding pole design (in most models) and special alloy compositions offer superior cycle and service life in renewable and stationary applications.

Performance and reliability

Optimized design, high quality raw materials, and state-of-the-art production facilities ensure industry leading performance, that exceeds all applicable international standards.

Low maintenance

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

Space optimization

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

Safety

Compliant with Global standards and independent third party certification agencies.

Complete solution

Complete and ready to install systems, filled and charged or dry charged with all necessary accessories.

Optimum Total Cost of Ownership (TCO)

Low cost of ownership particularly in hybrid systems where using batteries can greatly reduce the Genset daily run time, resulting in fuel savings and less CO2 emission.

The ideal energy solution for Stationary & RES applications

Technical Benefits & Features

1 Positive Plates

- Tubular plate design
- Special low antimony lead allow (≤1.65% Sb)
- Red lead in-house production 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
- Robust 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

- Welding with high quality alloy
- Optimized design

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

6 Electrolyte

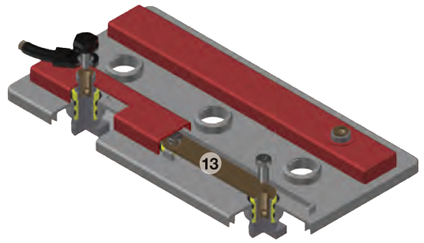
- High purity sulphuric acid

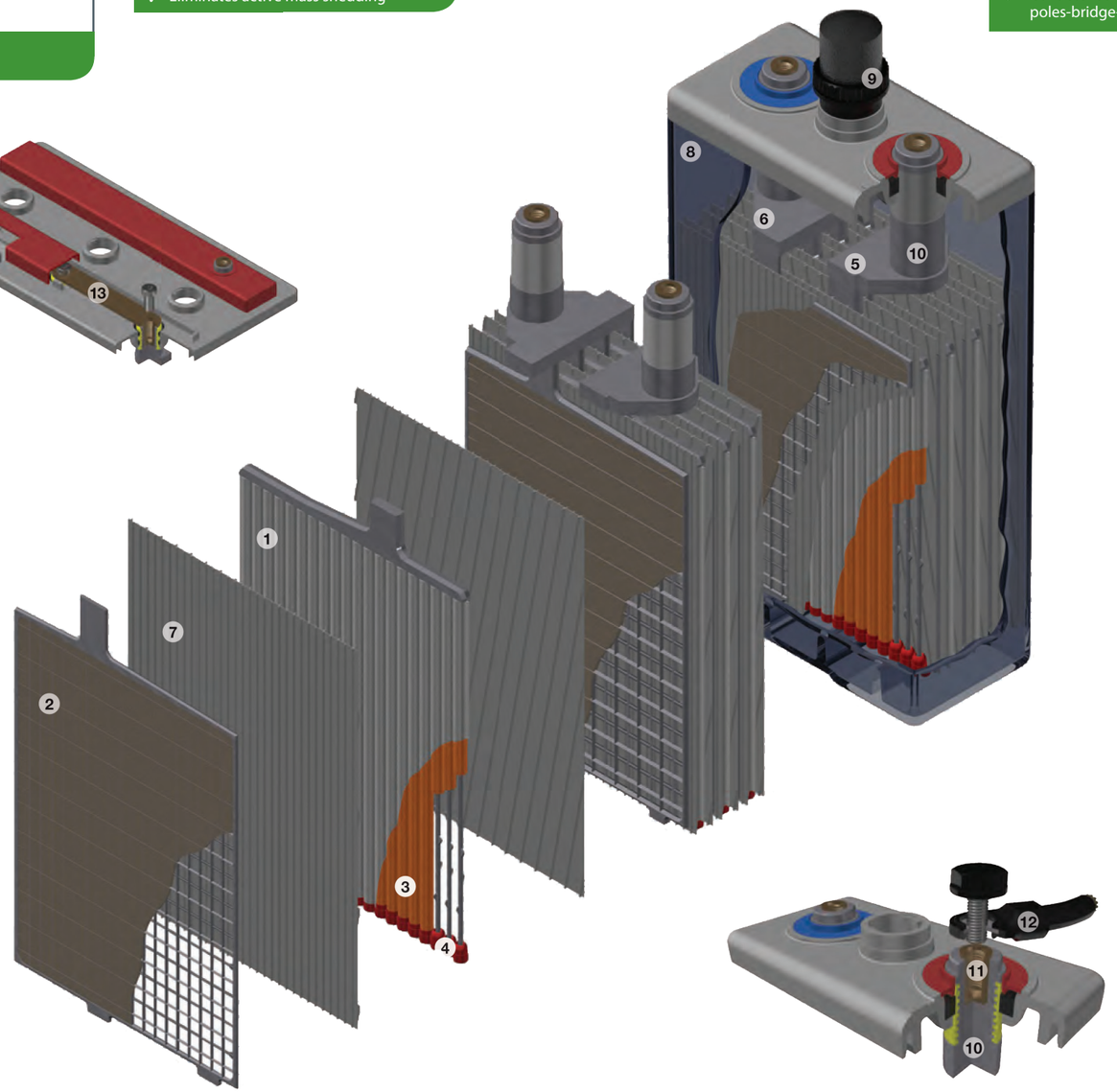
✓ Low self discharge rates
✓ Excellent performance on deep discharges

13 Monoblock Internal Intercell Connectors

- Copper bars premium design
- Outside of the container connection

✓ High conductivity
✓ Safe and long operational life





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

12 External Intercell Connectors

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

✓ Allow voltage measurements
✓ High conductivity
✓ Increased safety

8 Container / Lid

- High impact resistant, transparent SAN (Styrene Acrylonitrile) for the container
- Robust ABS (Acrylonitrile Butadiene Styrene) material for the lid
- Sealing between container-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

11 Pole Insert

- Brass insert
- Threaded female M10 terminal posts

✓ High conductivity
✓ Maximum torque retention

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 Sliding Poles

- Premium sliding design with rubber seal in the lid
- Corrosion resistance

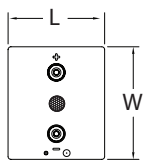
✓ Effectively prevents top lid cracks and acid leakages
✓ Positive plate's expansion is safely absorbed
✓ Optimum current conductivity
✓ Perfect sealing
✓ Allow impedance measurements
✓ Safe and long operational life

Product Range

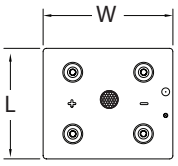
Type No.	NOMINAL CAPACITY					Kilo-Watt Hours (120 HRS)	Poles	MECHANICAL CHARACTERISTICS							
	240 HR	120 HR	100 HR	20 HR	10 HR			Length		Width		Height*		Weight	
	1.85VPC at 20°C / 68°F			1.75VPC at 27°C / 80°F				IN	MM	IN	MM	IN	MM	LB	KG
2 VOLT CELLS															
2VRE-400TF	197	187	183	139	126	0.37	2	4.1	103	8.1	206	15.0	380	30	14
2VRE-500TF	274	263	258	198	180	0.53	2	4.1	103	8.1	206	15.0	380	35	16
2VRE-600TF	310	300	294	237	215	0.60	2	4.1	103	8.1	206	15.0	380	39	18
2VRE-800TF	391	378	370	297	270	0.76	2	4.9	124	8.1	206	15.0	380	47	21
2VRE-900TF	470	454	445	356	324	0.91	2	5.7	145	8.1	206	15.0	380	57	26
2VRE-1100TF	574	553	542	436	396	1.11	2	4.9	124	8.1	206	19.5	496	63	28
2VRE-1300TF	686	661	648	521	474	1.32	2	5.7	145	8.1	206	19.5	496	74	34
2VRE-1500TF	780	750	735	595	541	1.50	2	6.5	166	8.1	206	19.5	496	85	39
2VRE-1800TF	948	904	886	670	609	1.81	2	5.7	145	8.1	206	26.4	671	93	42
2VRE-2000TF	1006	966	947	739	672	1.93	2	5.7	145	8.1	206	26.4	671	101	46
2VRE-2500TF	1286	1230	1205	920	836	2.46	4	7.5	191	8.3	210	26.4	671	132	60
2VRE-2600TF	1330	1278	1252	982	893	2.56	4	7.5	191	8.3	210	26.4	671	141	64
2VRE-3000TF	1546	1484	1454	1131	1028	2.97	4	9.2	233	8.3	210	26.4	671	161	73
2VRE-3200TF	1656	1592	1560	1225	1114	3.18	4	9.2	233	8.3	210	26.4	671	172	78
2VRE-3800TF	1985	1908	1870	1462	1329	3.82	4	10.8	275	8.3	210	26.4	671	201	91
2VRE-4400TF	2283	2216	2172	1785	1623	4.43	4	10.8	275	8.3	210	32.3	821	244	111
2VRE-4500TF	2294	2226	2181	1793	1630	4.45	4	10.8	275	8.3	210	32.3	821	254	115
2VRE-5500TF	2868	2770	2715	2176	1978	5.54	6	15.6	397	8.3	212	31.4	797	316	143
2VRE-5800TF	3019	2921	2863	2325	2114	5.84	6	15.6	397	8.3	212	31.4	797	328	149
2VRE-5900TF	3065	2972	2913	2405	2186	5.94	6	15.6	397	8.3	212	31.4	797	341	155
2VRE-7600TF	3917	3780	3704	2958	2689	7.56	8	19.2	487	8.3	212	31.4	797	406	184
2VRE-8200TF	4217	4076	3994	3219	2926	8.15	8	19.2	487	8.3	212	31.4	797	443	201
2VRE-9200TF	4769	4620	4528	3697	3361	9.24	8	22.7	576	8.3	212	31.4	797	507	230
6 & 12 VOLT BLOCKS															
6VRE-1500TF	252	242	237	195	177	1.45	2	9.2	233	8.8	224	14.9	378	91	41
6VRE-1700TF	293	283	277	237	215	1.70	2	10.7	272	8.1	205	14.3	363	104	47
6VRE-2300TF	403	389	381	316	287	2.33	2	15.0	380	8.1	205	14.3	363	134	61
6VRE-2400TF	422	408	400	343	312	2.45	2	15.0	380	8.1	205	14.3	363	148	67
12VRE-1000TF	91	86	84	69	63	1.03	2	10.7	272	8.1	205	14.3	363	83	38
12VRE-1600TF	137	132	129	113	103	1.58	2	10.7	272	8.1	205	26.1	363	109	49
12VRE-2300TF	199	191	187	165	150	2.29	2	15.0	380	8.1	205	14.3	363	154	70

*Includes installed connectors and shrouds.

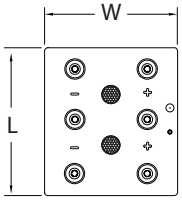
Drawings



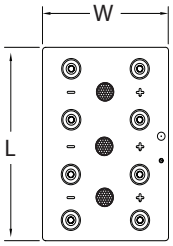
2V - 2 Pole



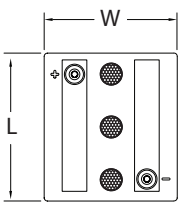
2V - 4 Pole



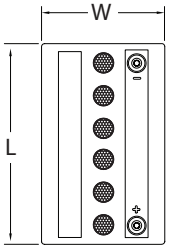
2V - 6 Pole



2V - 8 Pole



6V Block



12V Block

DISCOVER®
ENERGY CORP.

Challenging situations require inspired actions and solutions. Battery Ingenuity is what we do. Our inventiveness and ingenuity are stimulated by the demands our customers face competing in an ever more productive, more competitive, lower-carbon, greener economy.

We work with equipment manufacturers and end users of Motive Equipment, Stationary Power and Renewable Energy Systems to eliminate user related issues, reduce maintenance costs, and provide measurable productivity and performance gains. Extensive field experience drives us to innovate, optimize and manufacture lead acid and lithium battery technologies for worldwide distribution through our knowledge based sales and service network.

This is how we meet the world demand for quality power within lower economic and environmental footprints.

Discover® EV Traction Dry Cell Batteries provide superior high integrity and reliability. The maintenance-free, traction plate construction, designed to deliver excellent run time and very good cycle life in hard, high rate discharging applications with repeated deep discharging, makes the EV Series the definitive choice for robust Traction applications.

Discover® EV Traction GEL Batteries provide superior integrity and reliability. The maintenance-free, thick plate construction, designed to deliver excellent cycle life and very good run times at high operating voltages in tough industrial use with regular discharges, makes the EV Gel Series an excellent choice for robust industrial applications.

Discover® Advanced Energy Systems provide excellent productivity gains through enhanced cycling, charge time, weight and volume improvements in stationary and mobile applications versus lead acid technology. Dramatic improvement in cycle and float life and greater than 95% charge efficiency, combined with nearly zero maintenance requirements provides end users with significant cost of ownership savings. Discover's battery management systems are combined with safe and robust lithium iron phosphate technology to deliver safety and reliability. Data logging, cell balancing, charge and discharge controls, communication and information management features are integrated within most models.

Discover® Tubular OPzS & OPzV (Flooded and Gel) batteries provide maximum efficiency per discharge-charge cycle, and proven reliability in remote, high temperature, or unstable power network installations. The proven cycle and float life of Discover Advanced Tubular Plate technology, combined with low maintenance needs, provides end users with the lowest overall cost of ownership versus other high quality lead acid batteries designed for stationary and renewable energy applications.

Innovative Technology
Proven Expertise
Best in Class Solutions

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