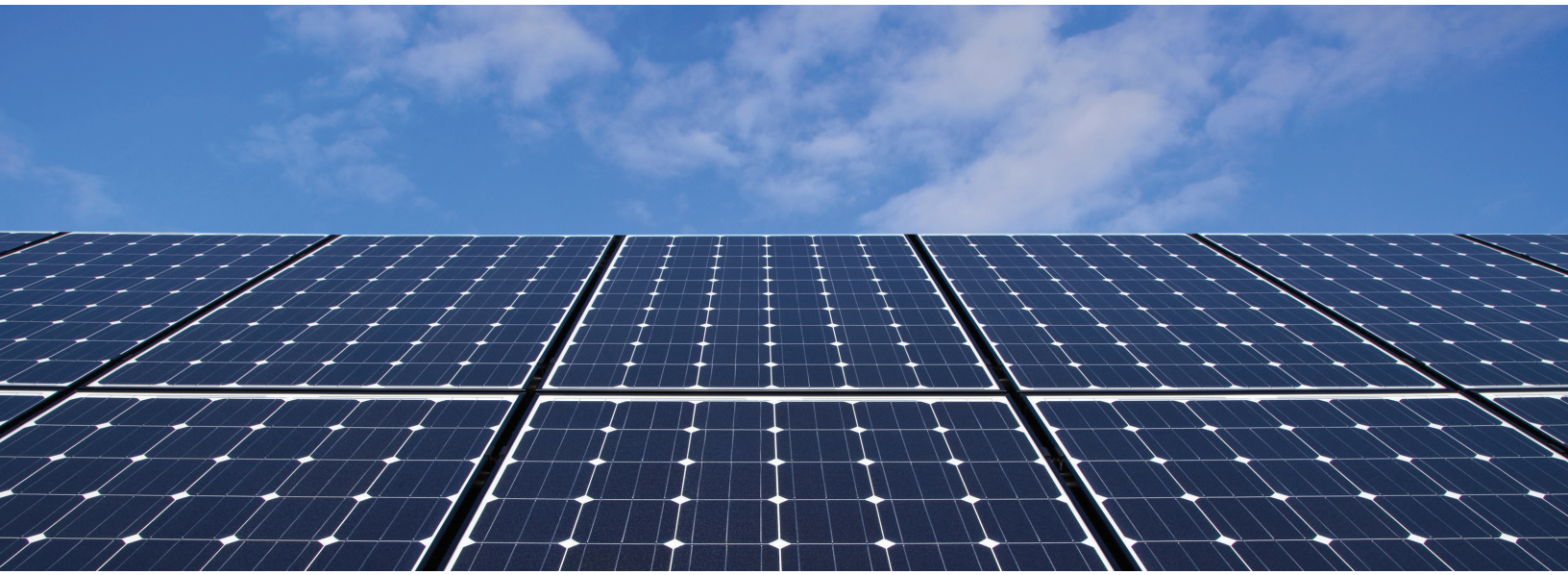
Tubular Gel (OPzV) Batteries

Stationary & Renewable Energy Applications



Discover®

BATTERIES SOLAR PV WIND GENSET

Overview

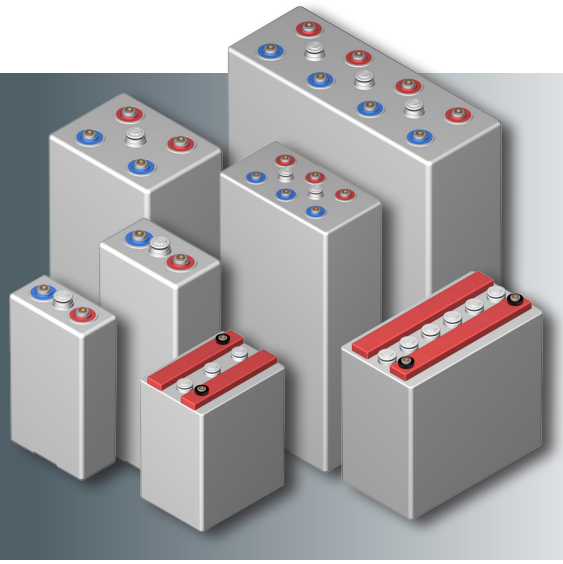
Valve Regulated Tubular Gel Batteries for Stationary & RES Applications

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

The proven cycle and float of Discover Advanced Tubular Plate technology, combined with maintenance-free 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.

Applications

- Emergency lighting
- Mini-grids
- Power generation & distribution
- Residential installations
- Transportation signaling
- Telecommunications
- Traffic systems
- UPS systems
- Utilities



Certified Quality

- "Long Life" according to Eurobat classification
- Conform with IEC 60896-21 and compliant to IEC 60896-22
- Compliant with IEC 61427 requirements for photovoltaic energy systems
- Optimized for deep discharge recovery in accordance to DIN 43539T5 Part 5
- Conform to DIN 40742 specifications for OPzV cells and DIN 40744 for OPzV blocks
- Compliant to safety requirements of EN 50272-2 for stationary batteries
- Certified to 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 Energy 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.

Maintenance-free

Maintenance-free design without water topping-up needs.

Space optimization

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

Safety

Compliant with Global Standards and verified by independent third party certification agencies.

Complete solution

Complete and ready to install systems with all the necessary accessories. Flame retardant containers and battery management systems are available upon request.

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
- Optimized Lead Calcium Tin Alloy reducing hydrogen evolution
- Red lead in-house production by Pure Lead
- Dry filling with Red Lead

✓ Long cycle life
✓ Excellent cycling properties
✓ Quality and homogeneity
✓ High capacity performance
✓ Reduced self-discharge

14 Pole Washers

- Color coded pole washers

✓ Easy polarity recognition

13 Internal Monoblock Intercell Connectors

- Copper bars premium design

✓ High conductivity
✓ Safe and long operational life

12 Terminals

- Threaded female M10 terminal posts

✓ High conductivity
✓ Maximum torque retention
✓ Easy installation

11 External Intercell Connectors

- Flexible
- Copper
- Fully insulated
- Fixed with plasticized safety screw and probe hole on the top

✓ Allow voltage measurements
✓ High conductivity
✓ Safe and long operational life

2 Negative Plates

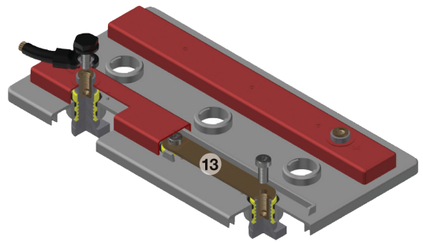
- Pasted negative plates of grid design
- Optimized Lead Calcium Tin Alloy
- Robust construction

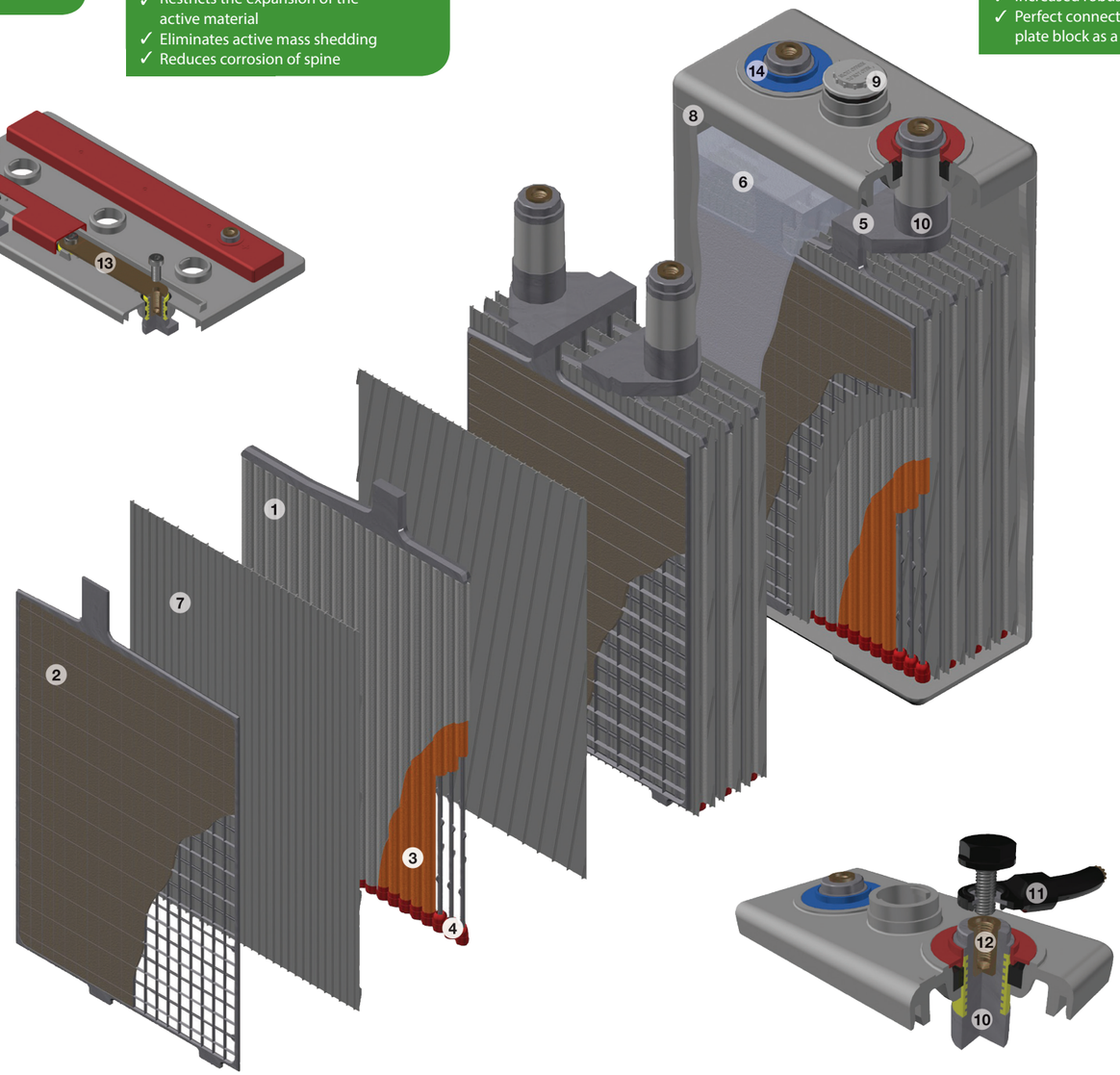
✓ Stability
✓ Reduced corrosion

3 Gauntlet

- Highly porous woven material
- Increased diameter with high Positive Active Mass (PAM)

✓ High capacity performance
✓ Better utilization of active material
✓ Restricts the expansion of the active material
✓ Eliminates active mass shedding
✓ Reduces corrosion of spine





4 Bottom Bar

- Secure fitment with gauntlet

✓ Growth of positive spine into bottom bars cavity is easily accommodated

5 Terminal Bridge

- Manufactured with high quality, robust materials following certified processes

✓ Consistent and uniform pole bridge composition
✓ Increased robustness and durability
✓ Perfect connection for poles-bridge-plate block as a whole

6 Electrolyte

- Immobilized in GEL form
- World class equipment for GEL production and battery filling

✓ Durability without acid stratification or dendrite growth
✓ Good performance on deep discharges

7 Separators

- High porosity grade material

✓ Low internal resistance
✓ Good ionic circulation
Proof against short circuits

8 Container / Lid

- Heavy duty ABS material
- Optionally flame retardant (Class V0) ABS material
- Thick wall container

✓ Unsurpassed mechanical strength
✓ Robust and durable battery construction

9 Valve

- Pressure relief
- Integral flame arrestor

✓ Maintenance-free design
✓ No water topping-up needs

10 Sliding Poles

- Premium sliding design with brush insert and rubber seal in the lid
- Hardness and acid resistance

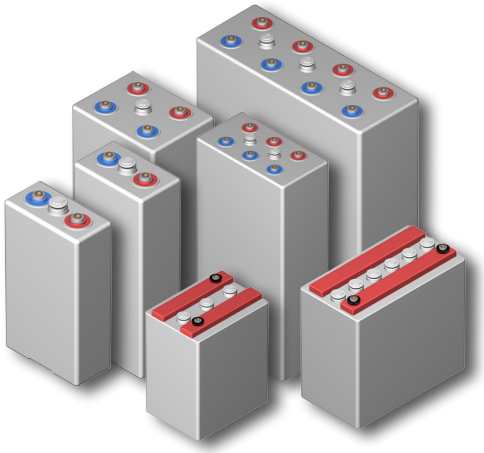
✓ Effectively prevents top lid cracks and acid leakages
✓ Positive plate's expansion is safely absorbed
✓ Optimum current conductivity
✓ Perfect sealing
✓ Allow impedance measurements
✓ Safe and long operational life

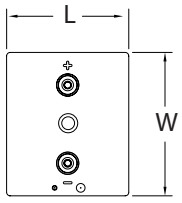
Product Range

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-600TG	307	305	301	246	224	0.61	2	4.1	103	8.1	206	15.0	382	44	20
2VRE-800TG	382	380	376	308	280	0.76	2	4.9	124	8.1	206	15.0	382	53	24
2VRE-900TG	459	457	452	370	336	0.91	2	5.7	145	8.1	206	15.0	382	62	28
2VRE-1100TG	567	564	556	446	405	1.13	2	4.9	124	8.1	206	19.6	498	68	31
2VRE-1300TG	681	678	668	535	486	1.36	2	5.7	145	8.1	206	19.6	498	82	37
2VRE-1600TG	797	793	782	624	567	1.59	2	6.5	166	8.1	206	19.6	498	93	42
2VRE-1900TG	987	982	968	759	690	1.96	2	5.7	145	8.1	206	26.5	673	110	50
2VRE-2600TG	1313	1306	1287	1012	920	2.61	4	7.5	191	8.3	210	26.5	673	150	68
2VRE-3200TG	1643	1635	1610	1265	1150	3.27	4	9.2	233	8.3	210	26.5	673	181	82
2VRE-3900TG	1979	1969	1938	1518	1380	3.94	4	10.8	275	8.3	210	26.5	673	214	97
2VRE-4400TG	2238	2227	2197	1782	1620	4.45	4	10.8	275	8.3	210	32.4	824	265	120
2VRE-5900TG	2981	2966	2927	2376	2160	5.93	6	15.7	399	8.4	214	31.5	799	364	165
2VRE-7400TG	3723	3704	3655	2970	2700	7.41	8	19.2	487	8.3	212	31.5	799	441	200
2VRE-8900TG	4483	4461	4402	3564	3240	8.92	8	22.7	576	8.3	212	31.5	799	529	240
6 & 12 VOLT BLOCKS															
6VRE-1600TG	268	267	264	227	206	1.60	2	10.7	272	8.1	205	14.6	371	106	48
6VRE-2000TG	337	335	331	283	257	2.01	2	15.0	380	8.1	205	14.6	371	139	63
6VRE-2400TG	404	402	398	340	309	2.41	2	15.0	380	8.1	205	14.6	371	154	70
12VRE-800TG	67	66	65	56	51	0.79	2	10.7	272	8.1	205	14.6	371	95	43
12VRE-1600TG	133	132	131	112	102	1.58	2	10.7	272	8.1	205	14.6	371	115	52
12VRE-2400TG	200	199	197	168	153	2.39	2	15.0	380	8.1	205	14.6	371	159	72

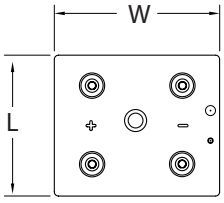
*Includes installed connectors and shrouds.

Drawings

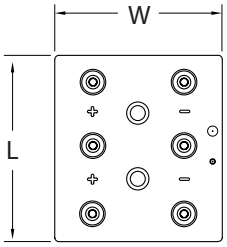




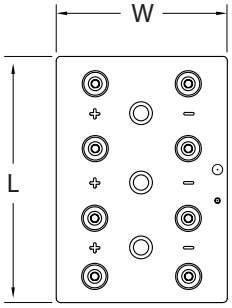
2V - 2 Pole



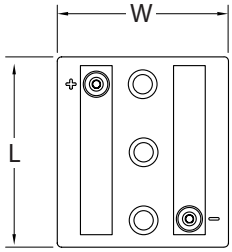
2V - 4 Pole



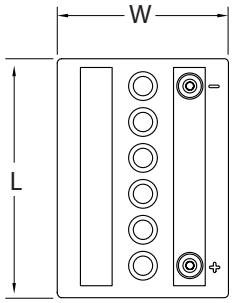
2V - 6 Pole



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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