

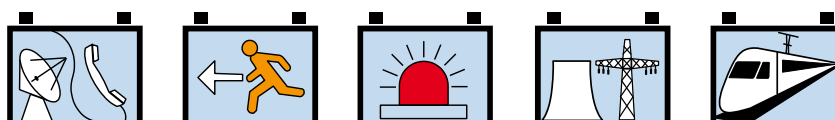


EverExceed[®]
power your applications

MICRO GEL RANGE VRLA



»Premium quality for uninterrupted communication«



www.everexceed.com



Maintenance-Free Rechargeable Sealed V.R.L.A. Lead Acid Batteries Capacities: 4.0AH to 26AH

MICRO GEL superior valve regulated lead acid (VRLA) rechargeable batteries are designed to provide outstanding performance in withstanding overcharge, over discharge, and resisting vibration and shock. With compact design, these batteries save installation space, while providing full and reliable power. The use of special sealing epoxies, groove case and cover construction, and long-sealing paths for posts and connectors, assures that the VRLA battery will offer exceptional leak resistance, and allows them to be used in any position.

Applicable Operating temperature range:

-40°C (-40°F) to +70°C (+158°F)

Ideal Operating temperature range:

+20°C (+68°F) to +32°C (+90°F)

Storage time from a fully charged condition:

24 months at 20°C / 68°F.

For each 9°C / 15°F rise, reduce the storage time by half.

Designed in Quality Manufacturing

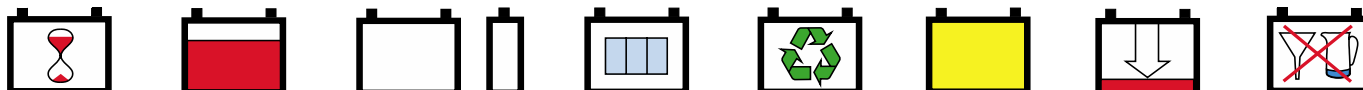
Quality manufacturing processes for the MICRO GEL Range VRLA design batteries incorporate the industry's latest advances in this class of batteries, making them ideal for a variety of applications.

No transport restrictions

☑ Surface transport. Classified as non-hazardous material as related to DOT-CFR Title 49 parts 171-189.

☑ Marine transport. Classified as non-hazardous material as per IMDG amendment 27.

☑ Air transport. Complies with IATA/ICAO, Special provision A67.



Innovative Features

- ☑ 5~8 years design life @ 20°C (68°F) ambient temperature, 80% remaining capacity;
- ☑ Exceptional energy storage capacity combined with long life - BCI Classification;
- ☑ Thickness positive plate plus optimized plate alloy to anti-corrosion;
- ☑ UL Recognized component;
- ☑ Spill-proof and leak-proof;
- ☑ Maintenance-free (no topping up) during the whole service life due to EverExceed GEL technology;
- ☑ Flame-arresting one-way pressure-relief vent for safe and long life;
- ☑ Proprietary Fixed Orifice Plate Pasting technology applying active materials on both sides of the grid for consistent cell-to-cell performance, higher capacity and uniform grid protection.
- ☑ Electrolyte in solid gel form will not stratify no equalization charge required;
- ☑ Sulfuric acid thixotropic gel, gel powder from Europe leading supplier to ensure the unique performance of gel battery;
- ☑ Increased durability and deep cycle ability for heavy duty applications;
- ☑ Fully tank formed grid Lead Calcium Tin plate ensures voltage matching between cells;
- ☑ Shelf life up to 2 years at 20°C (68°F), very low gassing due to internal gas recombination;
- ☑ Can be used in any orientation. Upright, side or end mounting recommended;
- ☑ Unique performance against high temperature.

Applications:

MICRO GEL Range VRLA batteries are designed for long life and high performance in:

- ☑ Solar / Photovoltaic
- ☑ Wind Generation
- ☑ Uninterrupted power supplies
- ☑ Telecom
- ☑ Security & fire alarm systems
- ☑ Medical equipment
- ☑ Power tools
- ☑ Consumer electronics

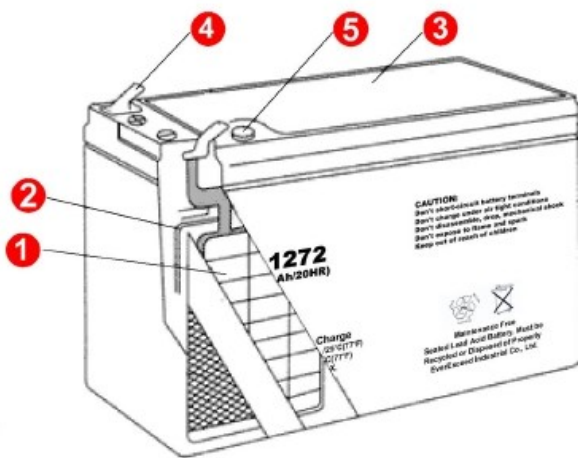
Specifications:

Nominal voltage	6 & 12 volts
Grid alloy	Lead Calcium Tin alloy
Plates	Flat pasted
Container/cover	ABS resin (flame retardant V-0 on request)
Terminal	Faston Tab No.187 & 250, Copper insert
Electrolyte	Diluted sulfuric acid
Specific	1.300
Charge voltage	Float 2.25-2.30 VPC, Cycling 2.40VPC @20°C
Vent	Self sealing (2 PSI operation)

CONSTRUCTION - The positive and negative grids are cast from a calcium / tin lead alloy to reduce grid growth and corrosion. The active material is manufactured from high purity lead (99.9999%) to minimize the negative effects of impurities.

Gel Separator is mat of random woven acid resistant glass fibres. "U wrapping" is employed to eliminate the risk of short circuits due to mousing and debris at the bottom of the cell.

The purpose of the separator is to maintain a constant distance between the positive and negative plates, thus removing the possibility of short circuits whilst allowing the active material to fully react with the electrolyte. The random weaving also results in an open structure, which offers minimal resistance to the flow of electrolyte during filling.



- ① **Plates:** calcium / tin lead alloy, optimized for high corrosion resistance;
- ② **Separator:** Highly porous glass micro-fibre separator, optimized for low internal resistance, for electrical separation of the positive and negative plates;
- ③ **Standard Housing:** Reinforced ABS (UL 94HB) container and cover;
Optional Housing: Flame-retardant reinforced ABS container and cover compliant with U.L.94 V-0 with an Oxygen limiting Index of greater than 28%;
- ④ **Terminals:** Faston Tab No.187, Faston Tab No.250,silver plated Copper female insert , Lead or silver plated, Copper Flag terminal;
- ⑤ **Valves:** Release gas in case of excess pressure and protects the cell against atmosphere.

ELECTROLYTE FILLING - Gelled electrolyte is filled into the cell by means of custom-built vacuum filling machines. To achieve reliable performance it is vitally important that the electrolyte achieves full penetration of the separators and plates therefore, vacuum cycling is utilized after the filling process. To ensure each cell has the correct amount of gel, the cells are first overfilled, the extra gel then removed. The V.R.L.A. Gel battery design and construction negates the need for electrolyte addition and the battery remains maintenance free throughout its design life.

SAFETY RELEASE VALVE - The battery will operate above atmospheric pressure under normal operating conditions, however the maximum pressure is governed by the safety one-way release valve. Open is activated by pressures in excess of approx. 2 PSI (14 Kpa), resealing at approx. 1.2 PSI (8.4Kpa).

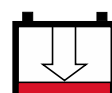
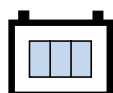
GAS RECOMBINATION - The gasses generated during normal operation of the battery are internally recombined. In fact more than 99% of the gas achieves recombination.

TERMINAL CONSTRUCTION - The contact quality between the terminal and the lead post is of vital importance during short duration / high Amp discharges. Elevated terminal temperatures are the result of poor contact, eventually causing seal degradation and electrolyte leaks. EverExceed's design and assembly technique for terminal casting ensures trouble free operation for the design life of the battery;



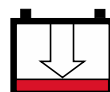
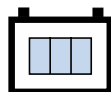
MICRO GEL Range General Specifications

Model No.	Nominal Voltage (V)	Rated Capacity 20hr Rate (Ah)	Outline Dimensions					Terminal Type
			Length (mm/inch)	Width (mm/inch)	Height (mm/inch)	Total Height (mm/inch)	Weight (kg/lbs)	
MG 6-4.0G	6	4.0	70/2.76	47/1.85	102/4.02	108/4.25	0.97/2.14	Faston Tab No. 187
MG 6-4.5G	6	4.5	70/2.76	47/1.85	102/4.02	108/4.25	1.00/2.20	Faston Tab No. 187
MG 6-7.2G	6	7.2	151/5.95	34/1.34	94/3.70	98/3.86	1.31/2.89	Faston Tab No. 187
MG 6-7.5G	6	7.5	151/5.95	34/1.34	94/3.70	98/3.86	1.45/3.20	Faston Tab No. 187
MG 6-9.0G	6	9	98/3.86	56/2.21	118/4.65	118/4.65	1.55/3.42	Faston Tab No. 187
MG 6-12G	6	12	151/5.95	50/2.01	94/3.70	98/3.86	1.90/4.19	Faston Tab No. 187
MG 6-14G	6	14	151/5.95	50/2.01	94/3.70	98/3.86	2.05/4.52	Faston Tab No. 187
MG 6-15G	6	15	108/4.25	72/2.83	140/5.51	140/5.51	2.55/5.62	Faston Tab No. 187
MG 12-4.0G	12	4.0	90/3.55	70/2.76	102/4.02	107/4.22	1.60/3.53	Faston Tab No. 187
MG 12-4.5G	12	4.5	90/3.55	70/2.76	102/4.02	107/4.22	1.70/3.75	Faston Tab No. 187
MG 12-5.0G	12	5	90/3.55	70/2.76	102/4.02	107/4.22	1.88/4.14	Faston Tab No. 187
MG 12-7.2G	12	7.2	151/5.95	65/2.56	94/3.70	98/3.86	2.40/5.29	Faston Tab No. 187
MG 12-7.5G	12	7.5	151/5.95	65/2.56	94/3.70	98/3.86	2.60/5.73	Faston Tab No. 187
MG 12-9.0G	12	9	151/5.95	65/2.56	94/3.70	98/3.86	3.20/7.05	Faston Tab No. 250
MG 12-12G	12	12	151/5.95	98/3.86	94/3.70	100/3.94	3.70/8.16	Faston Tab No. 250
MG 12-14G	12	14	151/5.95	98/3.86	94/3.70	100/3.94	3.90/8.60	Faston Tab No. 250
MG 12-18G	12	18	181/7.13	76/2.99	167/6.58	167/6.58	5.45/12.0	Flag or Insert
MG 12-20G	12	20	181/7.13	76/2.99	167/6.58	167/6.58	6.10/13.4	Flag or Insert
MG 12-22G	12	22	181/7.13	76/2.99	167/6.58	167/6.58	6.50/14.3	Flag or Insert
MG 12-26G	12	26	166/6.54	175/6.90	126/4.96	126/4.96	8.20/18.1	Flag or Insert



MICRO GEL Range Electrical Specifications

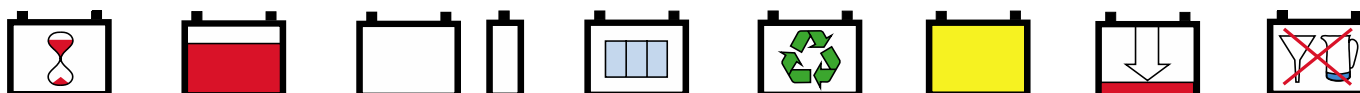
Model No.	Nominal Voltage (V)	Ampere Hour Capacity @20°C (68°F)					Internal Resistance (millionms)	Maximum Charge Amps	Maximum Discharge Amps (5 seconds)
		20Hr Rate 1.75VPC	10Hr Rate 1.75VPC	5Hr Rate 1.70VPC	3Hr Rate 1.70VPC	1Hr Rate 1.55VPC			
MG 6-4.0G	6	4.00	3.56	3.11	2.84	2.40	17.8	1.00	66.7
MG 6-4.5G	6	4.50	4.00	3.50	3.20	2.70	20.0	1.13	75
MG 6-7.2G	6	7.20	6.60	5.95	5.25	4.30	15.0	1.80	105
MG 6-7.5G	6	7.50	6.88	6.20	5.47	4.48	15.6	1.88	109
MG 6-9.0G	6	9.00	8.64	7.92	7.42	6.75	9.00	2.25	108
MG 6-12G	6	12.0	11.5	10.5	9.60	9.00	10.0	3.00	180
MG 6-14G	6	14.0	13.4	12.3	11.2	10.5	10.0	3.50	200
MG 6-15G	6	15.0	14.4	13.2	12.0	11.3	10.7	3.75	214
MG 12-4.0G	12	4.00	3.76	3.60	3.24	3.04	32.0	1.00	60.0
MG 12-4.5G	12	4.50	4.23	4.05	3.65	3.42	36.0	1.13	67.5
MG 12-5.0G	12	5.00	4.70	4.50	4.05	3.80	40.0	1.25	75
MG 12-7.2G	12	7.20	6.60	5.95	5.25	4.30	25.0	1.80	105
MG 12-7.5G	12	7.50	6.88	6.20	5.47	4.48	26.0	1.88	109
MG 12-9.0G	12	9.00	8.62	7.88	7.20	6.75	21.0	2.30	130
MG 12-12G	12	12.0	11.5	10.5	9.60	9.00	20.0	3.00	180
MG 12-14G	12	14.0	13.4	12.3	11.2	10.5	23.3	3.50	210
MG 12-18G	12	18.0	17.0	15.0	14.3	12.0	14.0	4.50	250
MG 12-20G	12	20.0	18.9	16.8	16.3	13.5	10.0	5.00	260
MG 12-22G	12	22.0	20.8	18.5	17.9	14.9	11.0	5.50	286
MG 12-26G	12	26.0	24.5	22.5	20.7	16.0	10.0	6.50	290



MICRO GEL Range Discharge Data Amps at 20°C (68°F)

Discharge Data Time in minutes													
Part No.	Final VPC	5	10	15	20	25	30	45	60	90	120	180	240
MG 6-4.0G	1.80	14.0	9.78	7.09	5.74	5.13	4.40	3.21	2.58	1.87	1.50	1.04	0.84
	1.75	15.5	10.7	7.60	6.08	5.31	4.52	3.31	2.62	1.91	1.53	1.06	0.85
	1.67	17.5	11.7	8.05	6.32	5.47	4.65	3.63	2.68	1.95	1.55	1.06	0.85
MG 6-4.5G	1.80	15.7	11.0	7.98	6.46	5.77	4.95	3.61	2.90	2.10	1.69	1.17	0.94
	1.75	17.4	12.0	8.55	6.84	5.97	5.08	3.72	2.95	2.15	1.72	1.19	0.96
	1.67	19.7	13.2	9.06	7.11	6.15	5.23	4.08	3.01	2.19	1.74	1.19	0.96
MG 6-7.2G	1.80	22.6	16.0	12.0	9.58	8.14	7.70	6.14	4.85	3.30	2.64	1.78	1.56
	1.75	25.1	17.2	13.0	9.94	8.57	8.12	6.28	4.91	3.38	2.69	1.80	1.58
	1.67	28.4	18.7	13.7	10.3	8.78	8.5	6.41	5.01	3.41	2.72	1.81	1.59
MG 6-7.5G	1.80	23.5	16.7	12.5	10.0	8.48	8.02	6.40	5.05	3.44	2.75	1.85	1.63
	1.75	26.1	17.9	13.5	10.4	8.93	8.46	6.54	5.11	3.52	2.80	1.88	1.65
	1.67	29.6	19.5	14.3	10.7	9.15	8.85	6.68	5.22	3.55	2.83	1.89	1.66
MG 6-9.0G	1.80	28.4	20.0	15.4	12.1	11.3	10.6	7.73	6.08	4.15	3.31	2.24	1.95
	1.75	31.6	21.5	16.2	12.5	11.6	10.8	7.88	6.17	4.22	3.38	2.27	1.98
	1.67	35.7	23.5	17.2	13.0	12.5	11.0	8.03	6.29	4.28	3.41	2.29	2.00
MG 6-12G	1.80	37.8	26.7	20.2	16.1	15.0	14.1	10.3	8.11	5.53	4.41	2.98	2.60
	1.75	42.1	28.7	21.6	16.6	15.5	14.4	10.5	8.22	5.63	4.50	3.03	2.64
	1.67	47.6	31.3	22.9	17.3	16.6	14.7	10.7	8.39	5.71	4.55	3.05	2.66
MG 6-14G	1.80	44.1	31.2	23.6	18.8	17.5	16.5	12.0	9.46	6.45	5.15	3.48	3.03
	1.75	49.2	33.5	25.1	19.4	18.2	16.8	12.3	9.59	6.57	5.25	3.54	3.10
	1.67	55.5	36.5	26.7	20.2	19.4	17.4	12.5	9.79	6.68	5.32	3.56	3.12
MG 6-15G	1.80	47.3	33.4	25.3	20.1	18.8	17.7	12.9	10.1	6.91	5.52	3.73	3.25
	1.75	52.7	35.9	26.9	20.8	19.5	18.0	13.2	10.3	7.04	5.63	3.79	3.32
	1.67	59.5	39.1	28.6	21.6	20.8	18.6	13.4	10.5	7.16	5.70	3.81	3.34
MG 12-4.0G	1.80	14.0	9.78	7.09	5.74	5.13	4.40	3.21	2.58	1.87	1.50	1.04	0.84
	1.75	15.5	10.7	7.60	6.08	5.31	4.52	3.31	2.62	1.91	1.53	1.06	0.85
	1.67	17.5	11.7	8.05	6.32	5.47	4.65	3.63	2.68	1.95	1.55	1.06	0.85
MG 12-4.5G	1.80	15.7	11.0	7.98	6.46	5.77	4.95	3.61	2.90	2.10	1.69	1.17	0.94
	1.75	17.4	12.0	8.55	6.84	5.97	5.08	3.72	2.95	2.15	1.72	1.19	0.96
	1.67	19.7	13.2	9.06	7.11	6.15	5.23	4.08	3.01	2.19	1.74	1.19	0.96

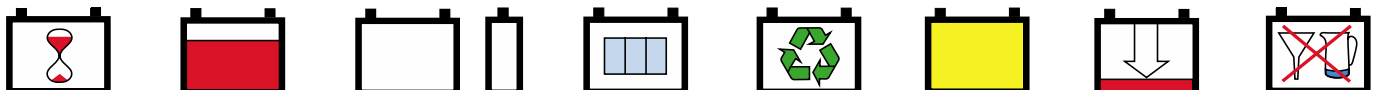
Actual battery performance data may be +/-5% of figures shown above.



MICRO GEL Range Discharge Data Amps at 20°C (68°F)

Discharge Data Time in minutes													
Part No.	Final VPC	5	10	15	20	25	30	45	60	90	120	180	240
MG 12-5.0G	1.80	17.4	12.2	8.87	7.18	6.41	5.50	4.01	3.22	2.33	1.88	1.30	1.04
	1.75	19.3	13.3	9.50	7.60	6.63	5.64	4.13	3.28	2.39	1.91	1.32	1.06
	1.67	21.9	14.7	10.1	7.90	6.83	5.81	4.53	3.34	2.43	1.93	1.32	1.07
MG 12-7.2G	1.80	22.6	16.0	12.0	9.58	8.14	7.70	6.14	4.85	3.3	2.64	1.78	1.56
	1.75	25.1	17.2	13	9.94	8.57	8.12	6.28	4.91	3.38	2.69	1.81	1.58
	1.67	28.4	18.7	13.7	10.3	8.78	8.50	6.41	5.01	3.41	2.72	1.81	1.59
MG 12-7.5G	1.80	23.5	16.7	12.5	10.0	8.48	8.02	6.40	5.05	3.44	2.75	1.85	1.63
	1.75	26.1	17.9	13.5	10.4	8.93	8.46	6.54	5.11	3.52	2.80	1.88	1.65
	1.67	29.6	19.5	14.3	10.7	9.15	8.85	6.68	5.22	3.55	2.83	1.89	1.66
MG 12-9.0G	1.80	28.4	20.0	15.4	12.1	11.3	10.6	7.73	6.08	4.15	3.31	2.24	1.95
	1.75	31.6	21.5	16.2	12.5	11.6	10.8	7.88	6.17	4.22	3.38	2.27	1.98
	1.67	35.7	23.5	17.2	13.0	12.5	11.0	8.03	6.29	4.28	3.41	2.29	2.00
MG 12-12G	1.80	37.8	26.7	20.2	16.1	15.0	14.1	10.3	8.11	5.53	4.41	2.98	2.60
	1.75	42.1	28.7	21.6	16.6	15.5	14.4	10.5	8.22	5.63	4.50	3.03	2.64
	1.67	47.6	31.3	22.9	17.3	16.6	14.7	10.7	8.39	5.71	4.55	3.05	2.66
MG 12-14G	1.80	44.1	31.2	23.6	18.8	17.5	16.5	12.0	9.46	6.45	5.15	3.48	3.03
	1.75	49.2	33.5	25.1	19.4	18.2	16.8	12.3	9.59	6.57	5.25	3.54	3.10
	1.67	55.5	36.5	26.7	20.2	19.4	17.4	12.5	9.79	6.68	5.32	3.56	3.12
MG 12-18G	1.80	54.8	39.8	31.3	26.0	21.1	17.4	15.5	11.6	8.76	7.15	4.37	3.59
	1.75	61.4	41.9	34.6	27.8	22.1	18.2	16.6	12.5	8.91	7.60	4.47	3.68
	1.67	70.0	45.7	36.7	28.9	22.7	18.6	16.9	12.8	9.09	7.68	4.49	3.69
MG 12-20G	1.80	60.9	44.2	34.8	28.9	23.4	19.3	17.2	12.9	9.73	7.94	4.86	3.99
	1.75	68.2	46.6	38.4	30.9	24.6	20.2	18.4	13.9	9.90	8.44	4.97	4.10
	1.67	77.8	50.8	40.8	32.1	25.2	20.7	18.8	14.2	10.1	8.53	4.99	4.11
MG 12-22G	1.80	67.0	48.6	38.3	31.8	25.7	21.2	18.9	14.2	10.7	8.73	5.35	4.39
	1.75	75.0	51.3	42.2	34.0	27.1	22.2	20.2	15.3	10.9	9.28	5.47	4.51
	1.67	85.6	55.9	44.9	35.3	27.7	22.8	20.7	15.6	11.1	9.38	5.49	4.52
MG 12-26G	1.80	75.4	54.7	43.8	38.8	33.1	27.2	18.4	15.2	10.4	9.72	6.53	4.81
	1.75	83.9	59.6	46.9	41.0	34.2	27.9	19.0	15.5	10.7	9.89	6.66	4.90
	1.67	94.6	65	49.7	42.7	35.3	28.7	19.4	15.8	10.8	10.1	6.67	4.91

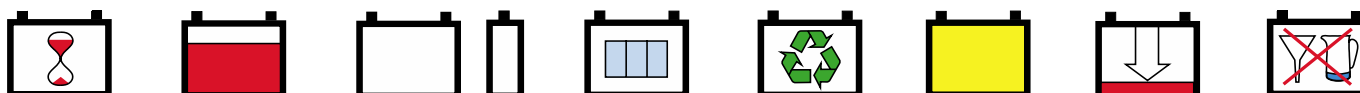
Actual battery performance data may be +/-5% of figures shown above.



MICRO GEL Range Discharge Data Watts per cell at 20°C (68°F)

Discharge Data Time in minutes													
Part No.	Final VPC	5	10	15	20	25	30	45	60	90	120	180	240
MG 6-4.0G	1.80	23.6	16.4	11.6	9.42	8.40	7.23	5.27	4.33	3.16	2.57	1.80	1.46
	1.75	26.1	17.4	12.4	10.0	8.64	7.35	5.39	4.39	3.24	2.60	1.81	1.48
	1.67	29.6	18.8	13.6	10.8	9.24	7.86	5.71	4.56	3.34	2.68	1.85	1.49
MG 6-4.5G	1.80	26.5	18.5	13.1	10.6	9.45	8.13	5.93	4.87	3.56	2.89	2.02	1.64
	1.75	29.4	19.6	14.0	11.2	9.72	8.27	6.06	4.94	3.64	2.93	2.04	1.66
	1.67	33.3	21.2	15.3	12.1	10.4	8.84	6.42	5.13	3.76	3.01	2.08	1.68
MG 6-7.2G	1.80	44.2	29.7	20.6	16.6	13.7	12.7	8.16	7.33	4.93	3.96	3.04	2.32
	1.75	48.2	30.9	21.2	17.1	14.2	13.5	8.48	7.54	5.06	4.08	3.06	2.35
	1.67	49.8	33.4	23.3	18.5	15.1	14.3	8.96	7.84	5.19	4.19	3.17	2.38
MG 6-7.5G	1.80	46.0	30.9	21.5	17.3	14.3	13.2	8.50	7.64	5.14	4.13	3.17	2.42
	1.75	50.2	32.2	22.1	17.8	14.8	14.1	8.83	7.85	5.27	4.25	3.19	2.45
	1.67	51.9	34.8	24.3	19.3	15.7	14.9	9.33	8.17	5.41	4.36	3.30	2.48
MG 6-9.0G	1.80	53.2	37.6	28.4	22.6	19.2	16.8	14.5	11.5	7.95	6.35	4.33	3.81
	1.75	57.7	39.4	29.6	22.8	19.6	17.5	14.6	11.6	8.03	6.41	4.36	3.85
	1.67	65.1	42.6	31.1	23.5	20.0	17.7	14.7	11.8	8.17	6.45	4.38	3.88
MG 6-12G	1.80	70.9	50.2	36.8	29.3	24.9	22.7	18.8	15.1	10.4	8.37	5.72	5.02
	1.75	79.0	52.5	39.2	30.1	25.9	23.1	19.0	15.3	10.6	8.51	5.77	5.11
	1.67	89.4	56.7	43.1	32.4	27.6	24.0	20.1	15.9	10.9	8.74	5.87	5.19
MG 6-14G	1.80	79.3	56.7	44.4	36.0	29.9	27.0	22.0	16.9	12.1	10.5	6.46	5.39
	1.75	89.4	59.5	48.7	39.1	31.1	28.3	23.3	18.1	13.1	11.2	6.63	5.51
	1.67	101	64.2	53.5	42.2	33.1	30.2	24.6	18.9	13.5	11.5	6.74	5.60
MG 6-15G	1.80	85.0	60.7	47.6	38.6	32.0	28.9	23.6	18.1	13.0	11.3	6.92	5.78
	1.75	95.8	63.7	52.2	41.9	33.3	30.3	25.0	19.4	14.0	12.0	7.10	5.90
	1.67	108	68.8	57.3	45.2	35.5	32.4	26.4	20.2	14.5	12.3	7.22	6.00
MG 12-4.0G	1.80	23.6	16.4	11.6	9.42	8.40	7.23	5.27	4.33	3.16	2.57	1.80	1.46
	1.75	26.1	17.4	12.4	10.0	8.64	7.35	5.39	4.39	3.24	2.60	1.81	1.48
	1.67	29.6	18.8	13.6	10.8	9.24	7.86	5.71	4.56	3.34	2.68	1.85	1.49
MG 12-4.5G	1.80	26.5	18.5	13.1	10.6	9.45	8.13	5.93	4.87	3.56	2.89	2.02	1.64
	1.75	29.4	19.6	14.0	11.2	9.72	8.27	6.06	4.94	3.64	2.93	2.04	1.66
	1.67	33.3	21.2	15.3	12.1	10.4	8.84	6.42	5.13	3.76	3.01	2.08	1.68

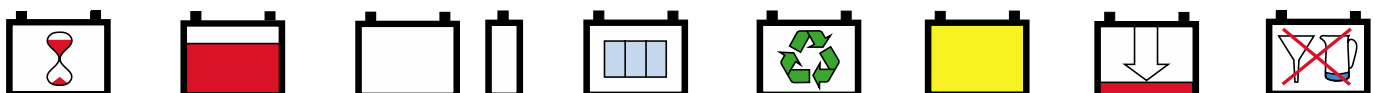
Actual battery performance data may be +/-5% of figures shown above.



MICRO GEL Range Discharge Data Watts per cell at 20°C (68°F)

Discharge Data Time in minutes													
Part No.	Final VPC	5	10	15	20	25	30	45	60	90	120	180	240
MG 12-5.0G	1.80	29.4	20.6	14.6	11.8	10.5	9.03	6.59	5.41	3.96	3.21	2.24	1.82
	1.75	32.7	21.8	15.5	12.4	10.8	9.19	6.73	5.49	4.04	3.25	2.27	1.84
	1.67	37.0	23.6	17.0	13.4	11.5	9.82	7.13	5.70	4.18	3.34	2.31	1.87
MG 12-7.2G	1.80	44.2	29.7	20.6	16.6	13.7	12.7	8.16	7.33	4.93	3.96	3.04	2.32
	1.75	48.2	30.9	21.2	17.1	14.2	13.5	8.48	7.54	5.06	4.08	3.06	2.35
	1.67	49.8	33.4	23.3	18.5	15.1	14.3	8.96	7.84	5.19	4.19	3.17	2.38
MG 12-7.5G	1.80	46.0	30.9	21.5	17.3	14.3	13.2	8.50	7.64	5.14	4.13	3.17	2.42
	1.75	50.2	32.2	22.1	17.8	14.8	14.1	8.83	7.85	5.27	4.25	3.19	2.45
	1.67	51.9	34.8	24.3	19.3	15.7	14.9	9.33	8.17	5.41	4.36	3.30	2.48
MG 12-9.0G	1.80	53.2	37.6	28.4	22.6	19.2	16.8	14.5	11.5	7.95	6.35	4.33	3.81
	1.75	57.7	39.4	29.6	22.8	19.6	17.5	14.6	11.6	8.03	6.41	4.36	3.85
	1.67	65.1	42.6	31.1	23.5	20.0	17.7	14.7	11.8	8.17	6.45	4.38	3.88
MG 12-12G	1.80	70.9	50.2	36.8	29.3	24.9	22.7	18.8	15.1	10.4	8.37	5.72	5.02
	1.75	79.0	52.5	39.2	30.1	25.9	23.1	19.0	15.3	10.6	8.51	5.77	5.11
	1.67	89.4	56.7	43.1	32.4	27.6	24.0	20.1	15.9	10.9	8.74	5.87	5.19
MG 12-14G	1.80	79.3	56.7	44.4	36.0	29.9	27.0	22.0	16.9	12.1	10.5	6.46	5.39
	1.75	89.4	59.5	48.7	39.1	31.1	28.3	23.3	18.1	13.1	11.2	6.63	5.51
	1.67	101	64.2	53.5	42.2	33.1	30.2	24.6	18.9	13.5	11.5	6.74	5.60
MG 12-18G	1.80	102	72.8	57.1	46.3	38.4	34.7	28.3	21.7	15.6	13.6	8.30	6.94
	1.75	115	76.4	62.6	50.3	39.9	36.4	30.0	23.3	16.8	14.4	8.52	7.08
	1.67	130	82.6	68.8	54.2	42.6	38.9	31.7	24.2	17.4	14.8	8.66	7.20
MG 12-20G	1.80	102	72.8	57.1	46.3	38.4	34.7	28.3	21.7	15.6	13.6	8.30	6.94
	1.75	115	76.4	62.6	50.3	39.9	36.4	30.0	23.3	16.8	14.4	8.52	7.08
	1.67	130	82.6	68.8	54.2	42.6	38.9	31.7	24.2	17.4	14.8	8.66	7.20
MG 12-22G	1.80	113	80.9	63.4	51.4	42.7	38.6	31.4	24.1	17.3	15.1	9.22	7.71
	1.75	128	84.9	69.6	55.9	44.3	40.4	33.3	25.9	18.7	16.0	9.47	7.87
	1.67	144	91.8	76.4	60.2	47.3	43.2	35.2	26.9	19.3	16.4	9.62	8.00
MG 12-26G	1.80	145	105	81.7	72.4	61.8	50.7	34.4	29.1	20.0	18.9	12.8	9.50
	1.75	161	112	86.8	76.0	63.4	51.6	35.2	30.4	20.4	19.2	12.9	9.59
	1.67	182	121	95.0	82.0	67.7	55.1	37.2	31.6	21.2	19.7	13.2	9.77

Actual battery performance data may be +/-5% of figures shown above.



Battery Life

Battery Life depends on a number of key factors, these include:

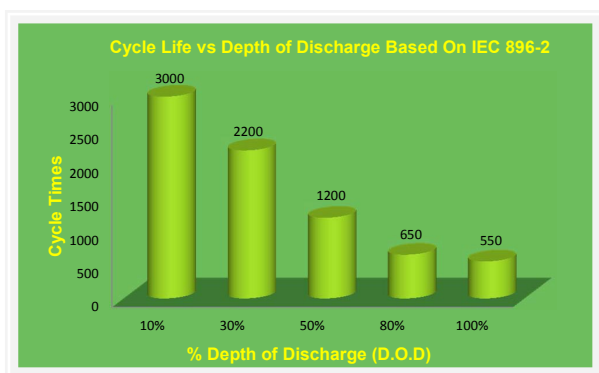
- 📦 Operating temperature of the battery;
- 📦 Actual use of the products i.e. Float or cycle service;
- 📦 Method of charging;
- 📦 Correct sizing etc.

Float Service

The float service is effected by the factors listed above and the number / depth of discharge the battery suffers during its life time. Basically the more discharges suffered and the deeper the discharges, the shorter battery life.

Cycle Service

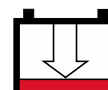
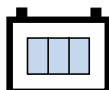
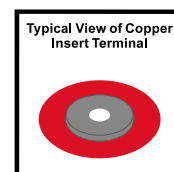
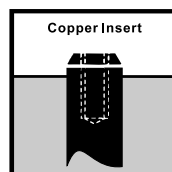
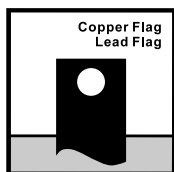
Giving due consideration to the above key factors, the actual life of a battery in cycle service is dependent on the depth of discharge of each cycle. The greater the depth of discharge of each cycle the lesser the number of cycles available from the battery.



CAPACITY WITHDRAWN	CYCLES
100%	550
80%	650
50%	1200
30%	2200
10%	3000

MICRO GEL Batteries have excellent charge retention characteristics, meaning that the self-discharge rate is low, less than 3% per month at 20°C (68°F). The state of discharge of a battery can be determined by the open circuit voltage of the battery to ensure the battery do not over discharge while in storage. To ensure the battery does not over discharge during storage, or when not in use, it is necessary to understand what is meant by fully discharged. Typically a battery is fully discharged when the open circuit voltage reaches 1.92 VPC. The higher the discharge current the quicker the battery reaches a fully discharge state, and the lower current the longer it takes. When the battery has been discharged the battery must be recharged immediately to 100% capacity.

Final Acceptable Discharge	
Discharge Current	Final Discharge Voltage Per Cell (VPC)
Up to 0.1 CA	1.75
0.11 to 0.17 CA	1.70
1.18 to 0.25 CA	1.67
0.26 to 0.6 CA	1.60



Supplementary Charge

It may be necessary to give the batteries a re-refresh charge during the storage of the batteries, maximum recommended storage times are detailed below, if storage exceeds these times or the open circuit voltage of a battery being stored falls below 12.40 volts per battery (6.2 volts per battery) then it is recommended that the batteries be given a re-refresh charge immediately at 2.25-2.35 VPC for no less than 12 hours.

Storage Temperature	
20°C (68°F) or less	Every 9 months
20°C (68°F) – 30°C (86°F)	Every 6 months
30°C (86°F) – 40°C (104°F)	Every 3 months

In discharging a battery, lead sulphate (sulphation) is formed. If the battery is recharged as soon as discharging is completed then the lead sulphate is converted to active material and acid. However, on self-discharge the lead sulphate that is formed may not become reversible again. That is it cannot be recovered. The lower the voltage that a battery is allowed to fall to under self-discharge the more likely it is that the sulphate formation will not be able to be reversed and the battery will be damaged beyond recovery.

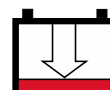
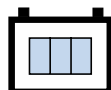
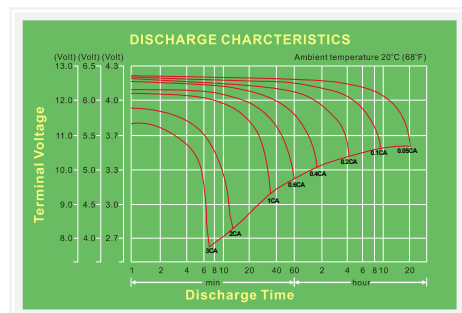
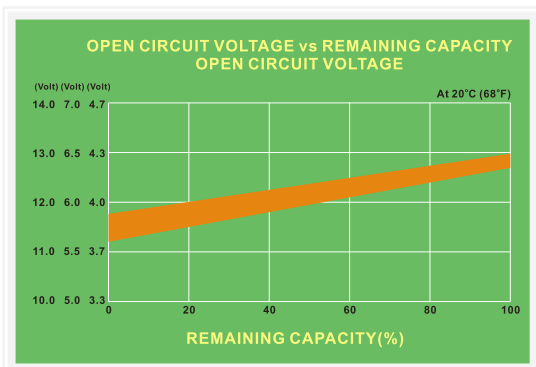
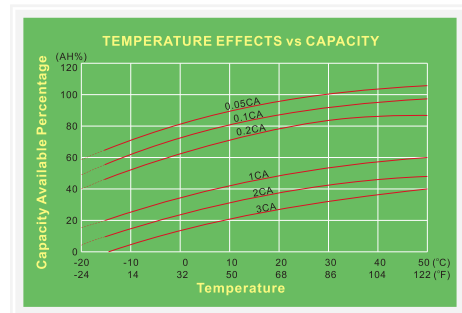
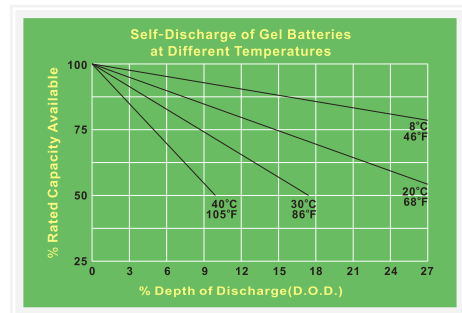
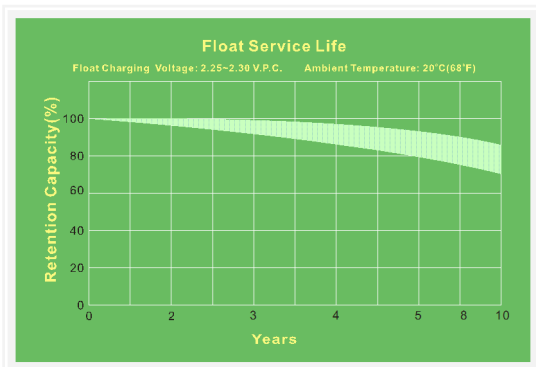
Precautions Against over Self-discharge

The batteries should be stored in a cool, dry place 25°C (77°F) or below.

The batteries should not be stored in direct sunlight.

The batteries should not be subjected to an external heat source.

An adequate stock control system should be introduced.



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