LEAD ACID (AGM) BATTERY

MR9-12

Specification

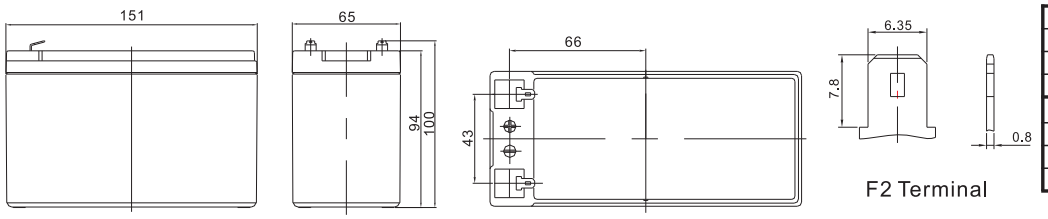
Cells Per Unit	6
Voltage Per Unit	12V
Nominal Capacity	9Ah@20hour-rate to 1.75V per cell @25℃
Weight	Approx. 2.30 Kg (Tolerance±5.0%)
Internal Resistance	≤22 mΩ(Full Charge Condition @25℃)
Terminal	Default F2,F1 Optional
Max. Discharge Current	90A (5 sec)
Short Circuit Current	450A
Design Life	6~8 years
Max. Charging Current	2.7 A
Reference Capacity	C_3 6.75Ah C_5 7.65Ah C_{10} 8.41Ah C_{20} 9.00Ah
Standby Use Voltage	13.7 V~13.9 V @ 25℃ Temperature Compensation: -3mV/℃/Cell
Cycle Use Voltage	14.6 V~14.8 V @ 25℃ Temperature Compensation: -4mV/℃/Cell
Operating Temperature Range	Discharge: -20℃~60℃ Charge: 0℃~50℃ Storage: -20℃~60℃
Normal Operating Temperature Range	25℃±5℃
Self Discharge	Marvel Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25℃ and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25℃.Please charge batteries before using.
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.

MR series is a general purpose battery with 6~8 years design life in float service. It meets with IEC, JIS, BS ,GB/T and YD/T standards. With advanced AGM valve regulated technology and high purity raw material, the MR series battery maintains high consistency for better performance and reliable standby service life. It is suitable for UPS/EPS, medical equipment, emergency light and security system applications.

ISO 9001 ISO 14001 ISO 45001

MH 28539 BSTXD210316008517EC

Dimensions



Length	151±1.5mm (5.94 inches)
Width	65±1.5mm (2.56 inches)
Height	94±1.5mm (3.70 inches)
Total Height	100±1.5mm (3.94 inches)
Terminal	Value
M5	6~7 N*m
M6	8~10 N*m
M8	10~12 N*m

Unit: mm

Constant Current Discharge Characteristics : A (25℃)

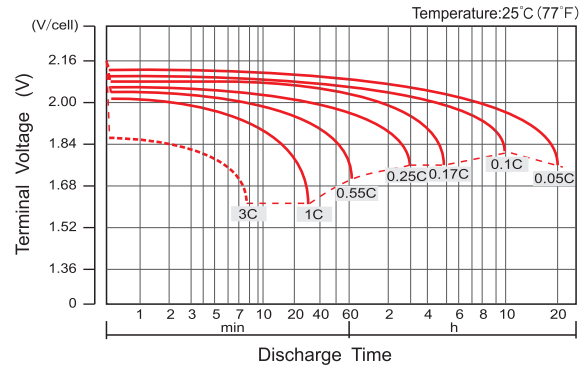
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	35.17	24.62	17.62	10.12	5.499	3.376	2.538	2.049	1.698	1.093	0.887	0.469
1.65V	32.71	23.26	16.85	9.716	5.310	3.268	2.460	1.994	1.654	1.080	0.877	0.461
1.70V	29.51	21.41	15.78	9.287	5.137	3.161	2.393	1.939	1.611	1.064	0.863	0.456
1.75V	26.44	19.60	14.68	8.876	4.950	3.050	2.321	1.890	1.570	1.049	0.852	0.450
1.80V	23.21	17.74	13.56	8.484	4.760	2.941	2.250	1.835	1.530	1.031	0.841	0.446
1.85V	18.43	14.50	11.25	7.307	4.270	2.695	2.080	1.706	1.426	0.968	0.792	0.423

Constant Power Discharge Characteristics : W/Cell (25℃)

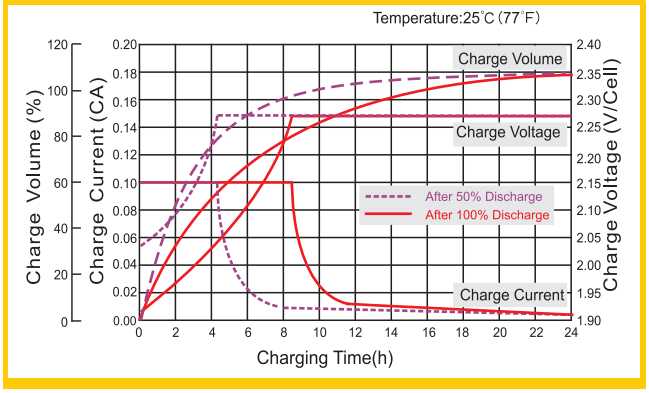
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	58.30	41.84	30.80	18.38	10.33	6.399	4.848	3.934	3.273	2.134	1.744	0.923
1.65V	54.85	40.30	29.89	17.83	10.04	6.225	4.718	3.842	3.200	2.114	1.726	0.909
1.70V	50.61	37.78	28.41	17.22	9.770	6.053	4.610	3.751	3.127	2.087	1.702	0.899
1.75V	46.35	35.21	26.82	16.62	9.470	5.868	4.491	3.669	3.059	2.062	1.681	0.890
1.80V	41.57	32.43	25.12	16.05	9.161	5.687	4.369	3.577	2.991	2.031	1.662	0.882
1.85V	33.69	26.97	21.14	13.96	8.267	5.239	4.057	3.337	2.798	1.911	1.567	0.838

(Note) The above characteristics data are average values obtained within three charge/discharge cycle not the minimum values.
The battery must be fully charged before the capacity test. The C_{20} should reach 95% after the first cycle and 100% after the third cycle.

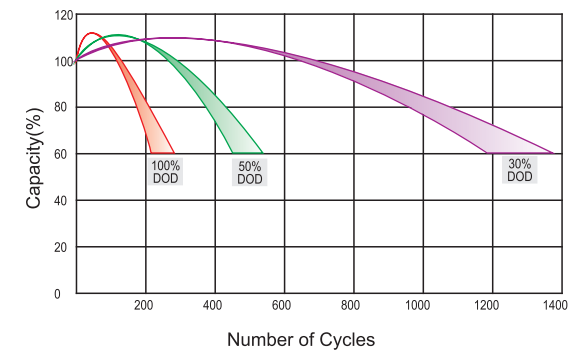
Discharge Characteristics Curve



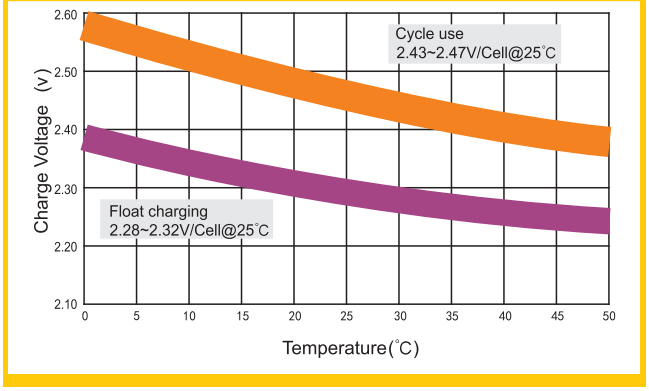
Charge Characteristic Curve For Standby Use(IU)



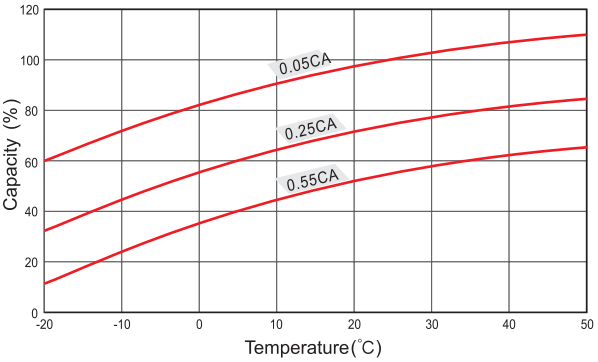
Cycle Life In Relation To Depth Of Discharge



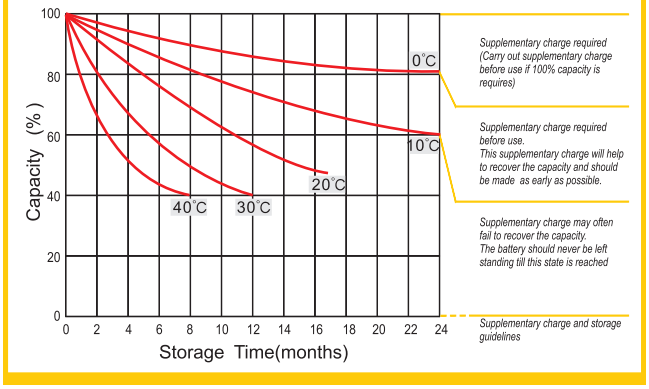
Relationship Between Charging Voltage And Temperature



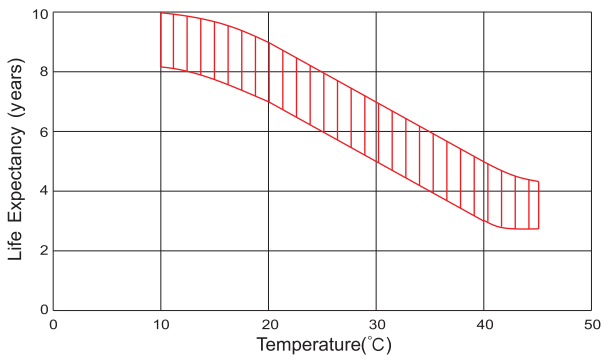
Temperature Effects On Capacity



Storage Characteristics



Effect Of Temperature On Long Term Life



Life Characteristics Of Standby Use