

### Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	18.0Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 5.0 Kg/11.03 Lbs (Tolerance ±4%)
Internal Resistance	Approx. 14.0 mΩ
Terminal	F3/F13
Max. Discharge Current	180A (5 sec)
Maximum Charging Current	5.4A
Reserve Capacity	20.0min@25A to 1.75V/Cell(25°C) 2.5min@75A to 1.75V/Cell(25°C)
Reference Capacity	C10 16.8AH C20 18.0AH
Float Charging Voltage	13.7 V~13.9 V @ 25°C Temperature Compensation: -3mV/°C/Cell
Cycle Use Voltage	14.6 V~14.8 V @ 25°C Temperature Compensation: -4mV/°C/Cell
Operating Temperature Range	Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C
Normal Operating Temperature Range	25°C ±5°C
Self Discharge	RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C. Please charged batteries before using.
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.



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



ISO 9001



ISO 14001



OHSAS 18001

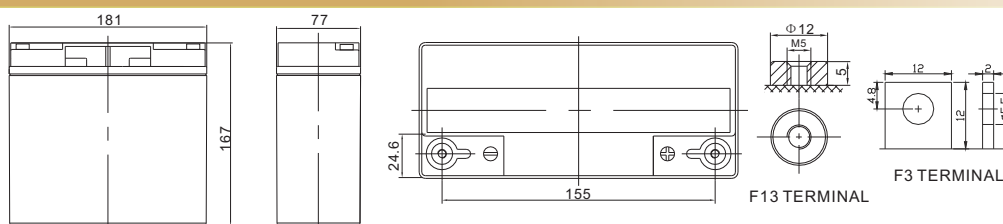


MH 60419



G4M20206-0910-E-16

### Dimensions



Length	181±1.5mm (7.13 inches)
Width	77±1.5mm (3.03 inches)
Height	167±1.5mm (6.57 inches)
Total Height	167±1.5mm (6.57 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°C)

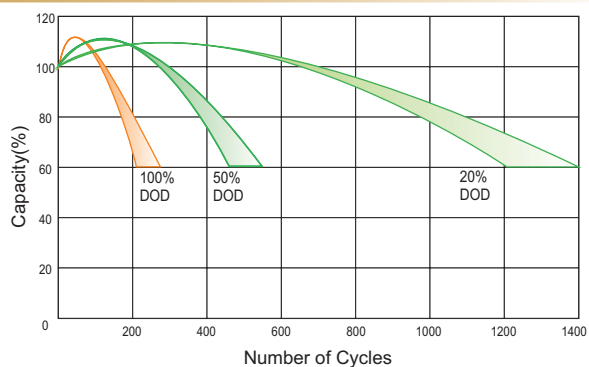
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	69.22	45.61	33.99	19.67	11.40	6.73	4.89	3.89	3.29	2.20	1.79	0.93
1.65V	66.72	44.25	33.10	19.24	11.19	6.63	4.83	3.85	3.25	2.17	1.77	0.92
1.70V	63.47	42.47	31.93	18.67	10.91	6.50	4.74	3.78	3.20	2.14	1.75	0.91
1.75V	59.29	40.16	30.41	17.92	10.54	6.32	4.62	3.70	3.13	2.11	1.72	0.90
1.80V	54.02	37.22	28.45	16.95	10.06	6.10	4.47	3.58	3.04	2.05	1.68	0.88
1.85V	47.54	33.53	25.97	15.72	9.44	5.80	4.27	3.44	2.93	1.98	1.63	0.86

### Constant Power Discharge Characteristics : W(25°C)

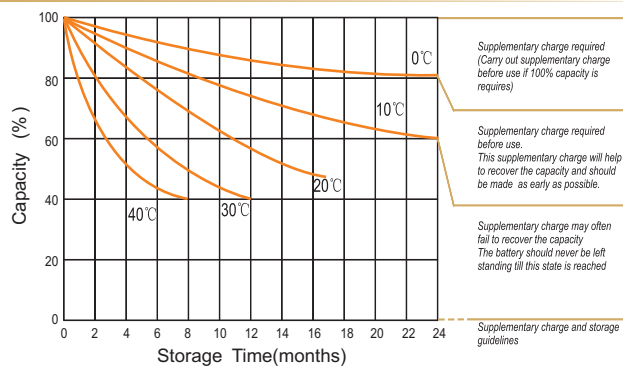
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	119.2	78.70	60.32	36.27	21.64	12.94	9.48	7.59	6.43	4.35	3.57	1.86
1.65V	117.9	78.37	59.97	36.00	21.46	12.84	9.41	7.53	6.39	4.32	3.54	1.85
1.70V	113.4	76.06	58.36	35.13	21.00	12.63	9.27	7.42	6.30	4.27	3.50	1.83
1.75V	107.8	73.22	56.38	34.07	20.39	12.35	9.08	7.28	6.19	4.20	3.44	1.81
1.80V	99.97	69.03	53.49	32.55	19.56	11.97	8.82	7.09	6.04	4.11	3.37	1.77
1.85V	89.54	63.30	49.53	30.48	18.48	11.45	8.47	6.82	5.83	3.98	3.27	1.73

(Note) The above characteristics data are average values obtained within three charge/discharge cycle not the minimum values.

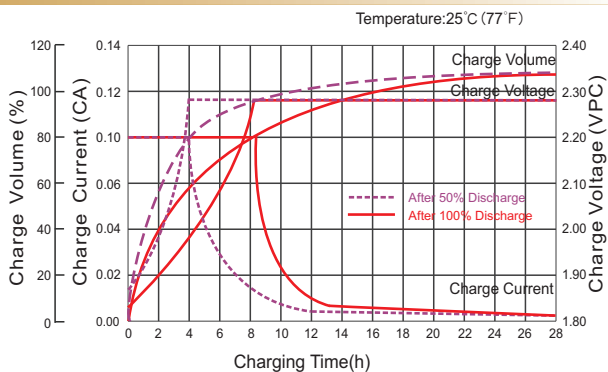
### Cycle Life in Relation to Depth of Discharge



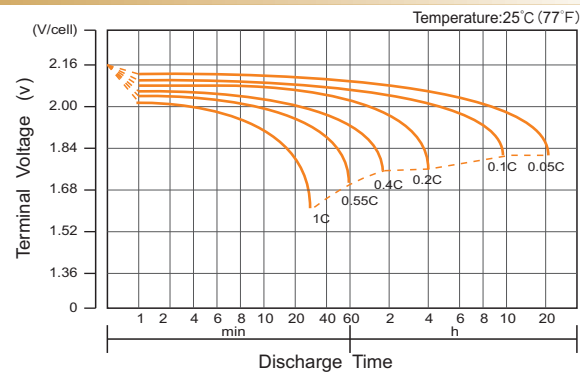
### Storage Characteristics



### Charge Characteristic Curve For Standby Use(IU)



### Discharge Characteristics Curve



### CHARGE VOLTAGES

Charge Stage	Battery Voltage			
	12V	24V	36V	48V
Bulk	14.6	29.2	43.8	58.4
Absorption	14.6	29.2	43.8	58.4
Float	13.6	27.2	40.8	54.4
TC Factor: (-3mV/°C /cell) or (-4mV/°C /cell)				

### Capacity Factors With Different Temperature

Battery Type	-20°C	-10°C	0°C	5°C	10°C	20°C	25°C	30°C	40°C	45°C
GEL 6V&12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
Battery 2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM 6V&12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
Battery 2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

### Discharge Current VS. Discharge Voltage

Final D ischarge Voltage V /cell	1.75V	1.70V	1.60V
Discharge Current (A)	(A) ≤ 0.2C	0.2C < (A) < 1.0C	(A) ≥ 1.0C

Charge the batteries at least once every six months, if they are stored at 25°C.

Charging Method:

Constant Voltage	-0.2Cx2h+2.4-2.45V/cellx24h, Max. Current 0.3C
Constant Current	-0.2Cx2h+0.1Cx12h
Fast	-0.2Cx2h+0.3Cx4h

### Maintenance & Cautions

Cycle Service
<ul style="list-style-type: none"> <li>▶ Avoid battery overcharge, especially in series connection use.</li> <li>▶ Charge with recommended voltage. Ensure battery fully recharges. In general, recharge capacity should be 1.1-1.15 times discharge capacity.</li> <li>▶ Effect of temperature on cycle charge voltage: -4mV/°C / Cell</li> <li>▶ The length of cycle service will be affected by depth of discharge, ambient temperature, discharge rate, and the manner in which the battery is recharged. Generally speaking, the most important factor is depth of discharge.</li> </ul>
Float Service:
<ul style="list-style-type: none"> <li>▶ Every month, recommend inspection of every battery's voltage.</li> <li>▶ Every three months, recommend a one time equalization charge.</li> </ul>
Equalization charge method:
Discharge - 100% rate capacity discharge
Charge - Max. current 0.3C, constant voltage 2.4-2.45V/Cell charge 24h.
▶ Effect of temperature on float charge voltage: -3mV/°C /Cell.
▶ Length of service life will be affected by the number of discharge cycles, depth of discharge, ambient temperature, and charging voltage