

#### MHB MS Series--Small-size batteries

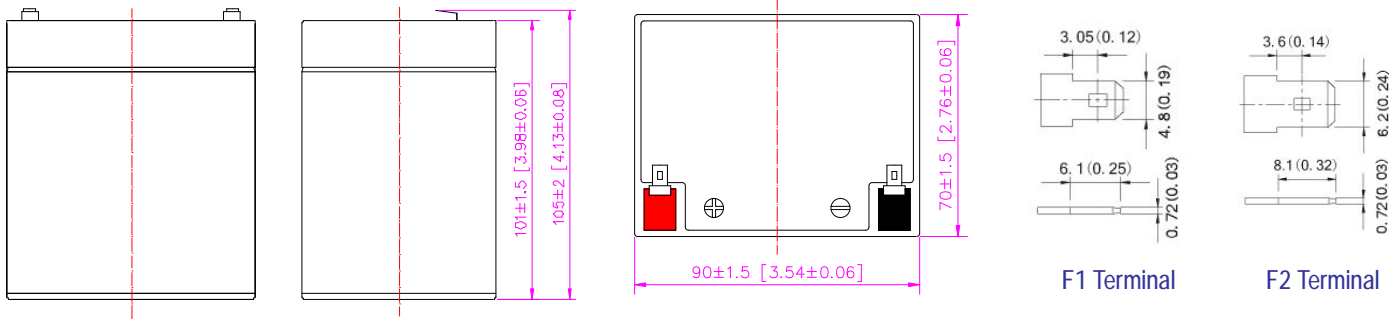
- 100% before shipment testing, stable and reliable long-term quality
- patented grid alloy formula and updated manufacturing technique
- completely sealed and maintenance-free, low self-discharge
- Excellent charging and re-charging acceptance
- Cycle use: More than 260 cycles at 100% DOD
- Floating & standby use: 3-5 years

#### Application:

- Alarm System
- Cable Television
- Communication Equipment
- Emergency Power System
- Security System
- Medical Equipment
- UPS
- Power tools
- Control Equipment
- Toys

#### Construction:

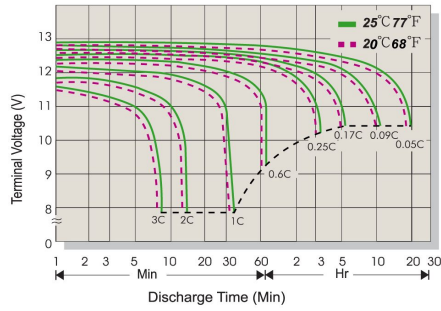
- Component .....Raw material
- Positive .....Lead dioxide
- Negative .....Lead
- Container .....ABS
- Cover .....ABS
- Sealant .....Epoxy
- Safety valve .... Rubber
- Terminal .....Copper
- Separator .....Fiber glass
- Electrolyte .....Sulfuric acid



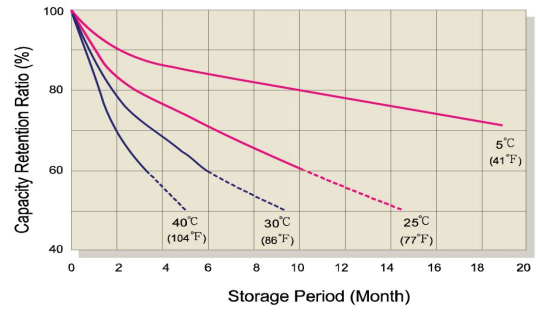
#### Speification:

Battery Model	MS 4-12 12V4.0AH			
Designed Floating Life	3~5 Years			
Capacity (25°C)	20HR(0.20A,10.5V)	10HR(0.385A,10.5V)	5HR(0.72A,10.5V)	1HR(2.40A,10.5V)
	4.00AH	3.85AH	3.60AH	2.40AH
Dimensions	Length	Width	Height	Total Height
	90mm (3.54inch)	70mm (2.76inch)	101mm (3.98inch)	105mm (4.13inch)
Approx. Weight	1.41Kg (3.151lbs) ±5%			
Internal Resistance	Full charged at 25°C : ≤40mΩ			
Self Discharge	2% of capacity declined per month at (25°C)			
Capacity Affected by Temp.(20HR)	40°C	25°C	0°C	-15°C
	102%	100%	85%	65%
Charge Voltage(25°C)	Cycle use		Float use	
	14.4-15.0V(-30mV/°C), max. Current: 1.20A		13.6-13.8V (-20mV/°C)	

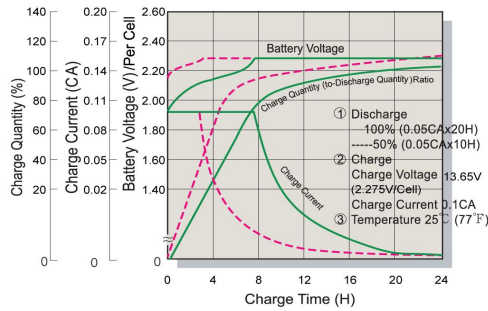
### Terminal Voltage (V) and Discharge Time



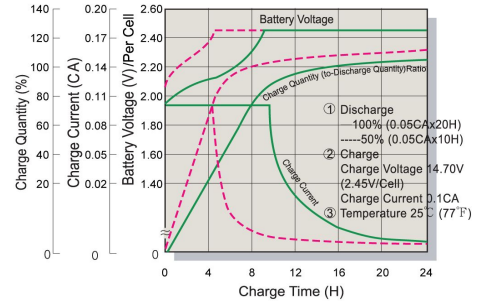
### Capacity Retention Characteristic



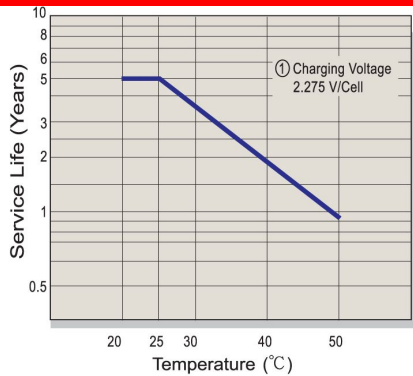
### Battery Voltage and Charge Time for Standby Use



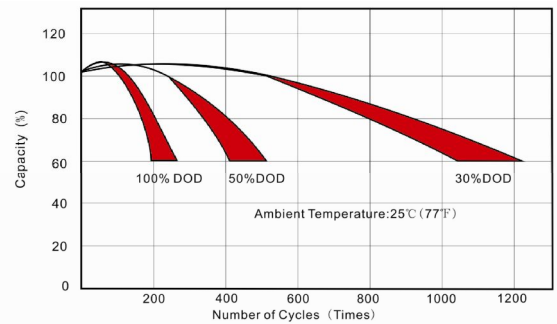
### Battery Voltage and Charge Time for Cycle Use



### Tickle(or Float) Service Life



### Cycle Service Life



### Constant Current Discharge (CC, Unit: A) at 25°C (77°F)

F.V/Time	5Min	10Min	15Min	30Min	1Hr	2Hr	3Hr	4Hr	5Hr	6Hr	10Hr	20Hr
1.85V/Cell	11.42	8.53	6.29	3.98	2.31	1.32	1.01	0.808	0.693	0.565	0.371	0.193
1.80V/Cell	11.64	8.70	6.41	4.05	2.35	1.35	1.03	0.823	0.707	0.576	0.378	0.196
1.75V/Cell	11.85	8.86	6.53	4.13	2.40	1.37	1.05	0.838	0.720	0.587	0.385	0.200
1.70V/Cell	12.92	9.39	6.93	4.29	2.44	1.40	1.07	0.853	0.733	0.597	0.392	0.204
1.67V/Cell	14.22	10.19	7.52	4.53	2.46	1.41	1.08	0.862	0.740	0.604	0.396	0.206
1.60V/Cell	15.41	10.72	7.91	4.73	2.49	1.43	1.09	0.872	0.748	0.610	0.400	0.208

### Constant Power Discharge (CP, Unit: W) at 25°C (77°F)

F.V/Time	5Min	10Min	15Min	30Min	1Hr	2Hr	3Hr	4Hr	5Hr	6Hr	10Hr	20Hr
1.85V/Cell	22.26	16.64	12.27	7.76	4.50	2.58	1.97	1.57	1.35	1.10	0.72	0.38
1.80V/Cell	22.69	16.96	12.51	7.90	4.59	2.63	2.01	1.60	1.38	1.12	0.74	0.38
1.75V/Cell	23.11	17.28	12.74	8.05	4.67	2.68	2.05	1.64	1.40	1.14	0.75	0.39
1.70V/Cell	25.20	18.31	13.51	8.37	4.75	2.72	2.08	1.66	1.43	1.16	0.76	0.40
1.67V/Cell	27.74	19.87	14.65	8.84	4.81	2.75	2.11	1.68	1.44	1.18	0.77	0.40
1.60V/Cell	30.05	20.91	15.42	9.22	4.86	2.78	2.13	1.70	1.46	1.19	0.78	0.41