

MS Series

Small-size Battery

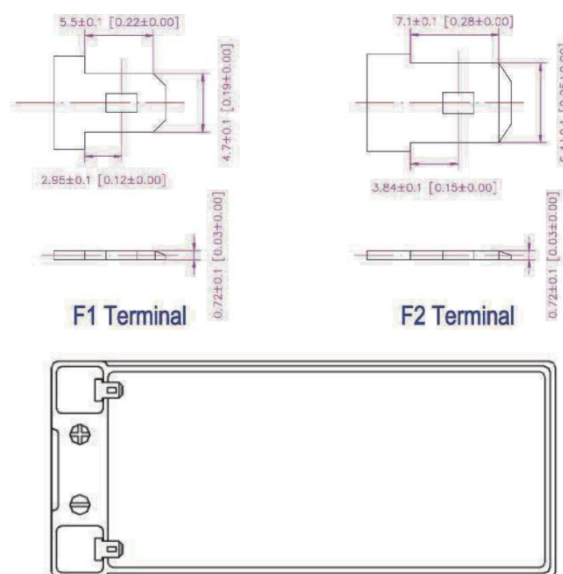
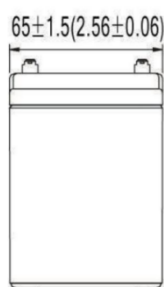
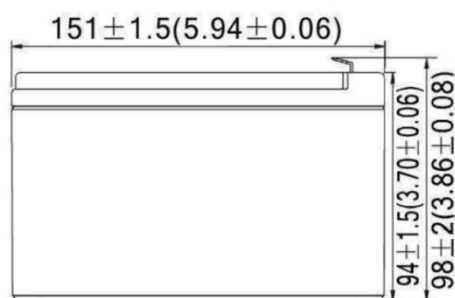
- 100% before shipment testing, stable and reliable long-term quality
- Patented grid alloy formula and updated manufacturing technique
- Completely sealed and maintenance-free, low self-discharge
- Excellent charging and re-charging acceptance
- Cycle use 2: More than 260 cycles at 100% DOD
- Floating & standby use: 3-5 years (Design life is based on ideal conditions; actual battery lifespan may vary with usage, maintenance, and environment.)

Application:

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

Construction:

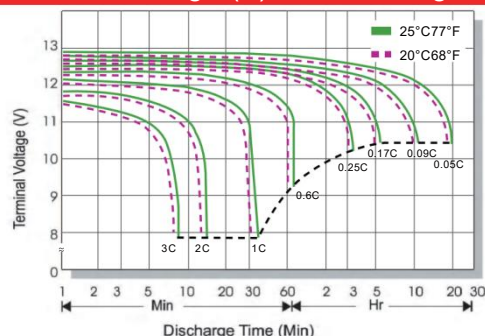
- Component Raw material
- Positive Lead dioxide
- Negative Lead
- Container UL94-HB
(Optional: UL94-V0)
- Cover UL94-HB
(Optional: UL94-V0)
- Sealant Epoxy
- Safety valve Rubber
- Terminal Copper
- Separator Fiber glass
- Electrolyte Sulfuric acid



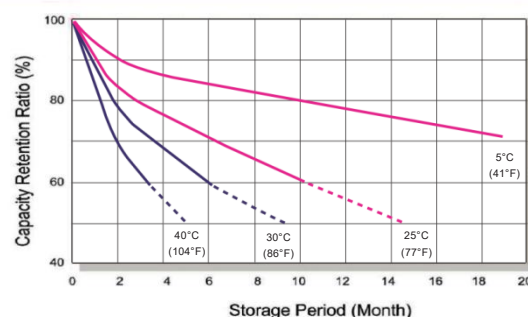
Specification:

Battery Model	MS 9-12 12V 9AH			
Designed Floating Life	3~5 Year			
Capacity (25°C)	20HR(0.45A,10.5V)	10HR(0.86A,10.5V)	5HR(1.44A,10.5V)	1HR(5.42A,10.5V)
	9.0 AH	8.60AH	7.2AH	5.42AH
Dimensions	Length	Width	Height	Total Height
	151 mm	65 mm	94 mm	98 mm
Approx. Weight	2.65Kg ±3%			
Internal Resistance	Full charged at 25°C : ≤16. 0 MΩ			
Self Discharge	2% of capacity declined per month at (25°C)			
max discharge current	35A			
Capacity Affected by Temp.(20HR)	40°C	25 °C	0 °C	-15°C
	102%	100%	85%	65%
Charge Voltage(25oC)	Cycle use		Float use	
	14.4-15.0V(-30mV/°C), max. Current: 2.70A		13.5-13.8V (-20mV/ °C)	

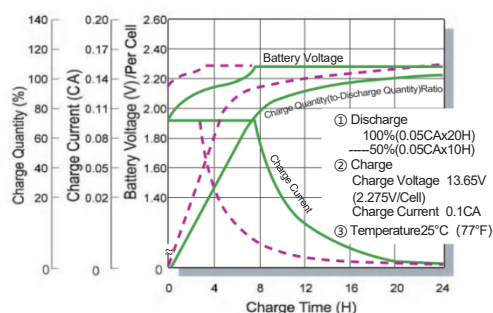
Terminal Voltage (V) and Discharge Time



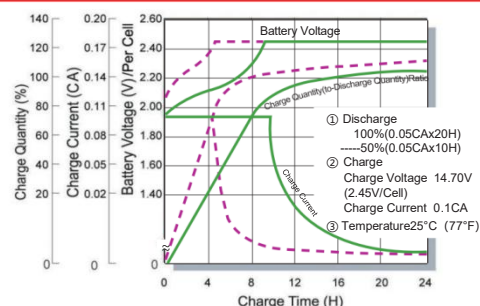
Capacity Retention Characteristic



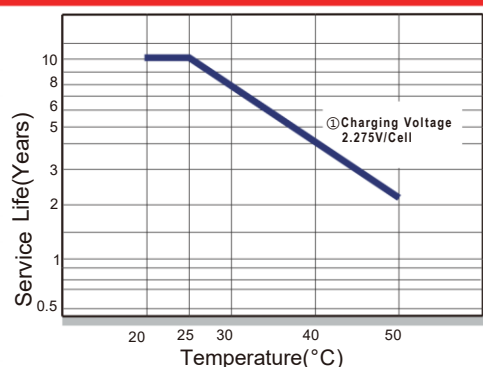
Battery Voltage and Charge Time for Standby Use



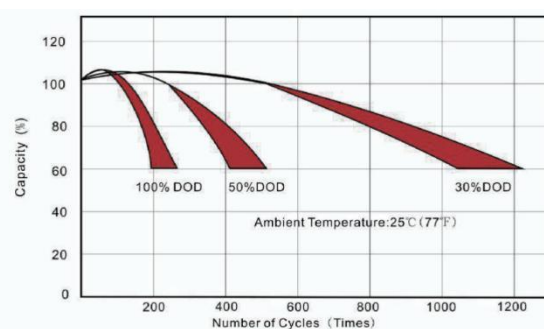
Battery Voltage and Charge Time for Cycle Use



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	29.0	17.9	14.2	9.0	5.22	3.02	2.32	1.82	1.39	1.27	0.83	0.43
1.80V/Cell	29.6	18.2	14.4	9.1	5.32	3.08	2.36	1.85	1.41	1.30	0.85	0.44
1.75V/Cell	30.1	18.6	14.7	9.3	5.42	3.13	2.41	1.89	1.44	1.32	0.86	0.45
1.70V/Cell	32.9	19.7	15.6	9.7	5.52	3.19	2.45	1.92	1.47	1.34	0.88	0.46
1.67V/Cell	36.2	21.4	16.9	10.2	5.58	3.22	2.48	1.94	1.48	1.36	0.89	0.46
1.60V/Cell	39.2	22.5	17.8	10.6	5.64	3.26	2.50	1.96	1.50	1.37	0.90	0.47

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	53.1	32.8	26.3	16.4	9.81	5.71	4.43	3.54	2.68	2.47	1.63	0.85
1.80V/Cell	54.2	33.4	26.8	16.7	10.00	5.82	4.51	3.61	2.73	2.51	1.67	0.87
1.75V/Cell	55.2	34.0	27.3	17.0	10.19	5.92	4.60	3.68	2.78	2.56	1.70	0.89
1.70V/Cell	60.1	36.1	29.0	17.7	10.38	6.03	4.68	3.74	2.83	2.61	1.73	0.90
1.67V/Cell	66.2	39.1	31.5	18.7	10.49	6.09	4.74	3.78	2.86	2.63	1.75	0.91
1.60V/Cell	71.7	41.2	33.1	19.5	10.60	6.16	4.78	3.82	2.89	2.66	1.76	0.92