



VRLA Battery

MS9-12 12V 9Ah

MS Series SLA Battery

MHB MS Series--Small-size batteries

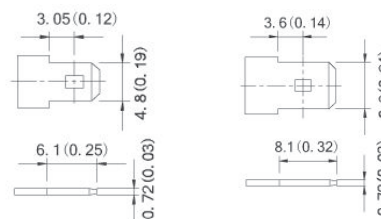
- 100% before shipment testing, stable and reliable long-term quality
- patented grid alloy formula and updated manufacturing technique
- completely sealed and maintenance-free, low self-discharge
- Excellent charging and re-charging acceptance
- Cycle use: More than 260 cycles at 100% DOD
- Floating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

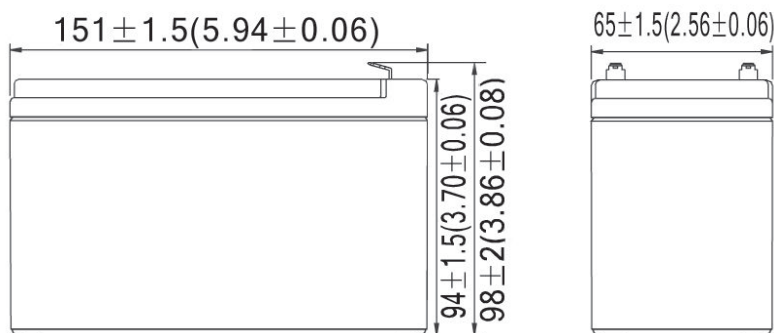
Construction:

- ComponentRaw material
- PositiveLead dioxide
- NegativeLead
- ContainerABS
- CoverABS
- SealantEpoxy
- Safety valve Rubber
- TerminalCopper
- SeparatorFiber glass
- ElectrolyteSulfuric acid



F1 Terminal

F2 Terminal



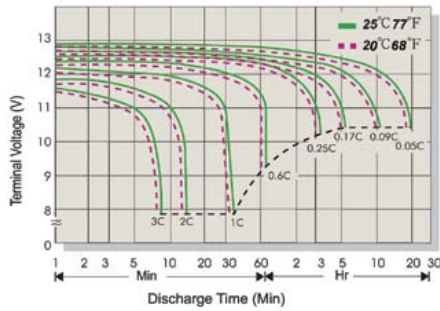
Specification:

| Battery Model | MS 9 - 12 12V 9AH | | | |
|----------------------------------|---|-------------------|-----------------------|------------------|
| Designed Floating Life | 3~5 Years | | | |
| Capacity@(40°C) | 20HR(0.45A,10.5V) | 10HR(0.80A,10.5V) | 5HR(1.48A,10.5V) | 1HR(4.31A,10.5V) |
| | 9.00AH | 8.00AH | 7.40AH | 4.31AH |
| Dimensions | Length | Width | Height | Total Height |
| | 151mm (5.94inch) | 65mm (2.56inch) | 94mm (3.70inch) | 98mm (3.86inch) |
| Approx. Weight | 2.60Kg (5.66 lbs) ± 5% | | | |
| Internal Resistance | Full charged at 25°C: ≤ 22 mΩ | | | |
| Self Discharge | 3% 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 | |
| | 14.4-14.7V(-30mV/°C), max. Current: 2.70A | | 13.5-13.8V (-20mV/°C) | |

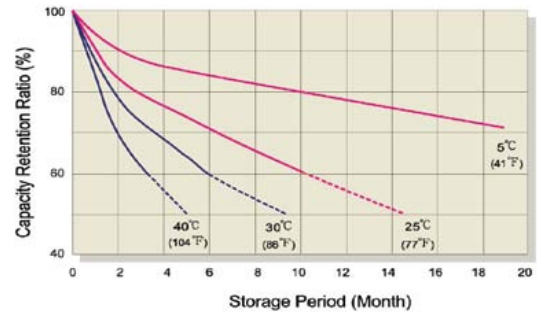
FUJIAN MINHUA POWER SOURCE CO., LTD.

www.mhb-battery.com

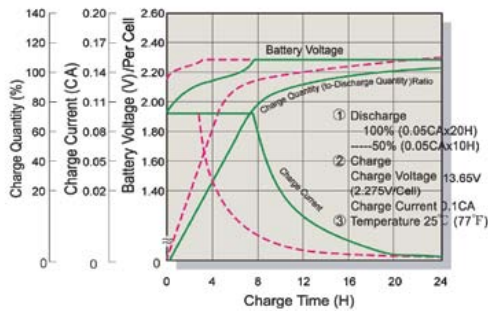
Terminal Voltage (V) and Discharge Time



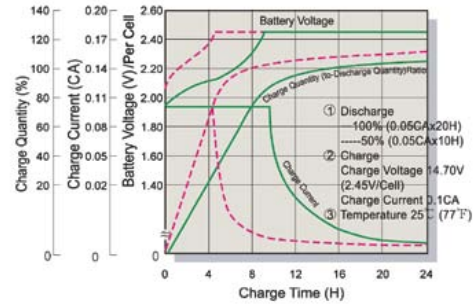
Capacity Retention Characteristic



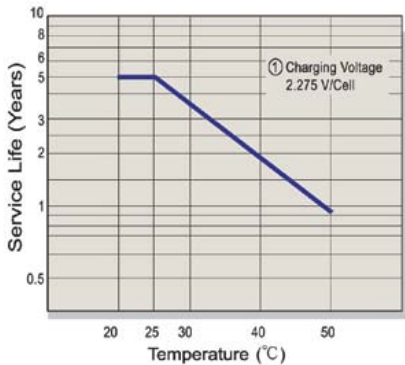
Battery Voltage and Charge Time for Standby Use



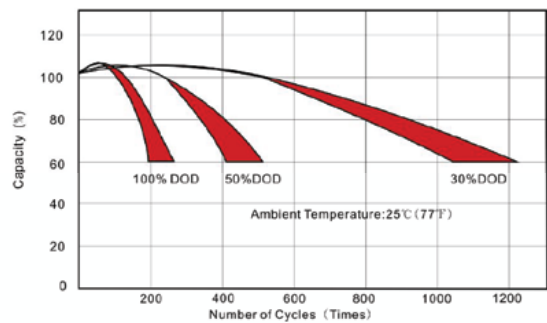
Battery Voltage and Charge Time for Cycle Use



Tickle(or Float) Service Life



Cycle Service Life



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

| F.V/Time | 5Min | 10Min | 15Min | 30Min | 1Hr | 2Hr | 3Hr | 4Hr | 5Hr | 6Hr | 10Hr | 20Hr |
|------------|-------|-------|-------|-------|------|------|------|-------|-------|-------|-------|-------|
| 1.85V/Cell | 26.56 | 19.37 | 15.03 | 9.38 | 5.34 | 2.98 | 2.28 | 1.817 | 1.560 | 1.272 | 0.834 | 0.433 |
| 1.80V/Cell | 27.06 | 19.74 | 15.32 | 9.56 | 5.44 | 3.03 | 2.32 | 1.852 | 1.590 | 1.296 | 0.850 | 0.442 |
| 1.75V/Cell | 27.57 | 20.12 | 15.60 | 9.74 | 5.54 | 3.09 | 2.36 | 1.887 | 1.620 | 1.320 | 0.866 | 0.450 |
| 1.70V/Cell | 30.05 | 21.32 | 16.54 | 10.13 | 5.64 | 3.14 | 2.40 | 1.920 | 1.648 | 1.344 | 0.881 | 0.458 |
| 1.67V/Cell | 33.09 | 23.13 | 17.94 | 10.70 | 5.70 | 3.18 | 2.43 | 1.940 | 1.666 | 1.358 | 0.891 | 0.463 |
| 1.60V/Cell | 35.84 | 24.34 | 18.88 | 11.15 | 5.76 | 3.21 | 2.46 | 1.961 | 1.684 | 1.373 | 0.900 | 0.468 |

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

| F.V/Time | 5Min | 10Min | 15Min | 30Min | 1Hr | 2Hr | 3Hr | 4Hr | 5Hr | 6Hr | 10Hr | 20Hr |
|------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| 1.85V/Cell | 51.78 | 37.78 | 29.31 | 18.30 | 10.40 | 5.80 | 4.44 | 3.54 | 3.04 | 2.48 | 1.63 | 0.85 |
| 1.80V/Cell | 52.77 | 38.50 | 29.87 | 18.65 | 10.60 | 5.91 | 4.52 | 3.61 | 3.10 | 2.53 | 1.66 | 0.86 |
| 1.75V/Cell | 53.76 | 39.22 | 30.43 | 19.00 | 10.80 | 6.02 | 4.61 | 3.68 | 3.16 | 2.57 | 1.69 | 0.88 |
| 1.70V/Cell | 58.60 | 41.58 | 32.25 | 19.75 | 10.99 | 6.13 | 4.69 | 3.74 | 3.21 | 2.62 | 1.72 | 0.89 |
| 1.67V/Cell | 64.52 | 45.11 | 34.99 | 20.86 | 11.11 | 6.20 | 4.74 | 3.78 | 3.25 | 2.65 | 1.74 | 0.90 |
| 1.60V/Cell | 69.89 | 47.46 | 36.00 | 21.75 | 11.23 | 6.26 | 4.79 | 3.82 | 3.28 | 2.68 | 1.76 | 0.91 |