



RT12180 (12V18Ah)

RT series is a general purpose battery with 5 years design life in float service . It meets with IEC and JIS standards .With up-dated AGM valve regulated technology and high purity raw materials, the RT series battery has reliable standby service life. It is suitable for UPS/EPS, medical equipment, emergency light and security systems applications.



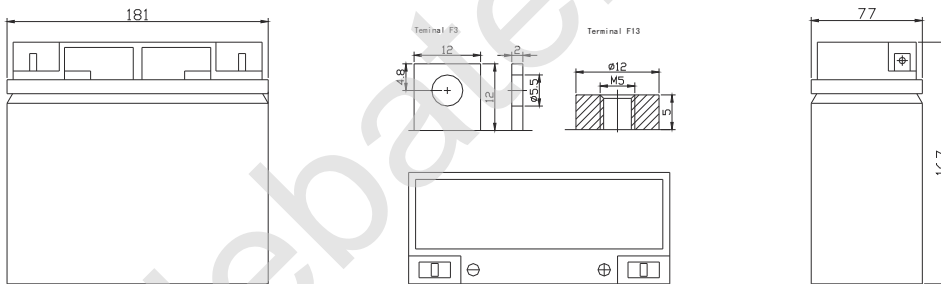
Specification

| | |
|--|---|
| Cells Per Unit | 6 |
| Voltage Per Unit | 12 |
| Capacity | 18Ah@20hr-rate to 1.75V per cell @25°C |
| Weight | Approx. 5.2 Kg(Tolerance ±4%) |
| Max. Discharge Current | 180 A (5 sec) |
| Internal Resistance | Approx. 14 mΩ |
| 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 |
| Float charging Voltage | 13.7 to 13.9 VDC/unit Average at 25°C |
| Recommended Maximum Charging Current Limit | 5.4 A |
| Equalization and Cycle Service | 14.6 to 14.8 VDC/unit Average at 25°C |
| Self Discharge | RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using. |
| Terminal | Faston F3/F13 |
| Constrainer Material | A.B.S. UL94-HB, UL94-V0 Optional. |



Dimensions

Unit: mm Dimension: 181(L) × 77(W) × 167(H)



Constant Current Discharge Characteristics : A(25°C)

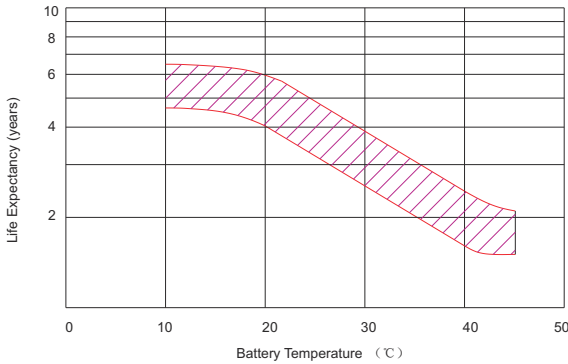
| F.V/Time | 5MIN | 10MIN | 15MIN | 30MIN | 1HR | 2HR | 3HR | 4HR | 5HR | 8HR | 10HR | 20HR |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V | 71.00 | 46.55 | 34.67 | 18.45 | 11.70 | 7.153 | 4.714 | 3.839 | 3.155 | 2.078 | 1.799 | 0.963 |
| 10.0V | 68.43 | 45.38 | 33.56 | 18.22 | 11.54 | 7.009 | 4.627 | 3.785 | 3.127 | 2.070 | 1.781 | 0.955 |
| 10.2V | 64.41 | 43.14 | 32.62 | 17.94 | 11.43 | 6.935 | 4.586 | 3.747 | 3.107 | 2.051 | 1.754 | 0.928 |
| 10.5V | 57.90 | 40.34 | 30.77 | 17.44 | 11.29 | 6.844 | 4.545 | 3.692 | 3.081 | 2.033 | 1.745 | 0.909 |
| 10.8V | 51.88 | 37.62 | 29.03 | 16.87 | 11.14 | 6.788 | 4.492 | 3.565 | 3.066 | 2.025 | 1.716 | 0.873 |
| 11.1V | 45.39 | 34.49 | 26.78 | 16.23 | 10.87 | 6.515 | 4.404 | 3.514 | 3.052 | 2.009 | 1.689 | 0.858 |

Constant Power Discharge Characteristics : W(25°C)

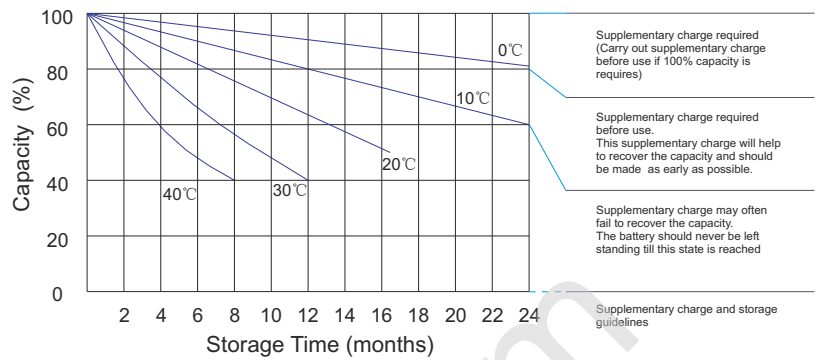
| F.V/Time | 5MIN | 10MIN | 15MIN | 30MIN | 1HR | 2HR | 3HR | 4HR | 5HR | 8HR | 10HR | 20HR |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V | 770.0 | 510.4 | 382.5 | 211.2 | 139.8 | 84.30 | 56.36 | 45.96 | 37.80 | 24.89 | 21.56 | 11.56 |
| 10.0V | 749.9 | 499.8 | 377.0 | 209.0 | 137.8 | 83.18 | 55.44 | 45.31 | 37.46 | 24.79 | 21.35 | 11.46 |
| 10.2V | 713.3 | 480.0 | 372.1 | 207.2 | 136.8 | 82.46 | 54.96 | 44.89 | 37.23 | 24.60 | 21.08 | 11.17 |
| 10.5V | 651.0 | 460.2 | 352.7 | 203.0 | 134.9 | 81.57 | 54.56 | 44.28 | 36.94 | 24.40 | 20.93 | 10.98 |
| 10.8V | 587.4 | 430.5 | 333.2 | 198.2 | 133.2 | 80.99 | 53.92 | 42.79 | 36.77 | 24.29 | 20.61 | 10.54 |
| 11.1V | 518.0 | 400.8 | 313.8 | 192.8 | 130.3 | 78.16 | 52.87 | 42.17 | 36.63 | 24.12 | 20.31 | 10.37 |

All mentioned values are average values (Tolerance ±2%).

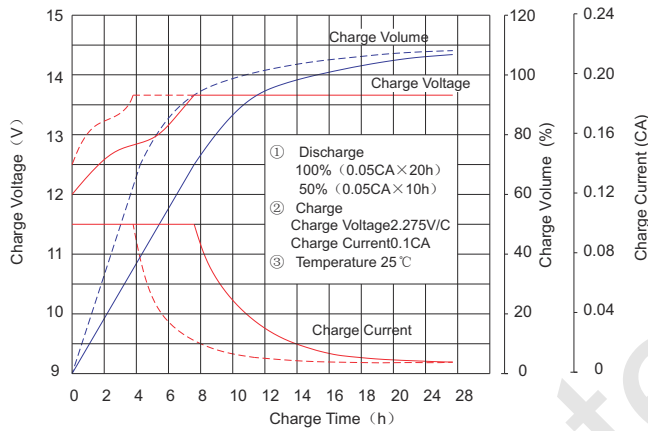
Effect of temperature on long term float life



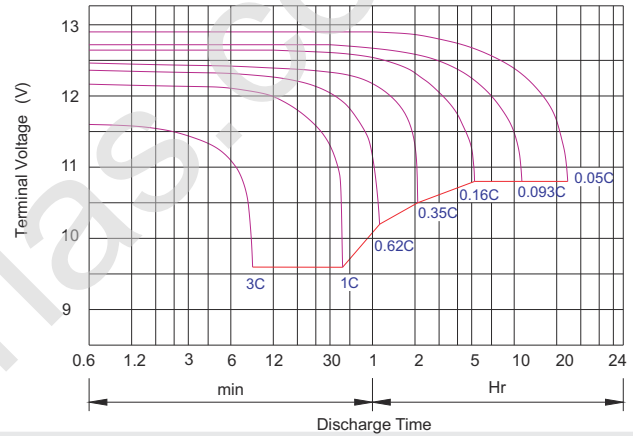
Storage characteristic



Charge characteristic Curve for standby use



Discharge characteristic Curve



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 Battery | 6V&12V | 50% | 70% | 83% | 85% | 90% | 98% | 100% | 102% | 104% | 105% |
| | 2V | 60% | 75% | 85% | 88% | 92% | 99% | 100% | 103% | 105% | 106% |
| AGM Battery | 6V&12V | 46% | 66% | 76% | 83% | 90% | 98% | 100% | 103% | 107% | 109% |
| | 2V | 55% | 70% | 80% | 85% | 92% | 99% | 100% | 104% | 108% | 110% |

Discharge Current VS. Discharge Voltage

| Final Discharge 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+14.4-14.7Vx24h, Max. Current 0.3C |
| Constant Current | -0.2Cx2h+0.1Cx12h |
| Fast | -0.2Cx2h+0.3Cx4h |

| Bolt | M5 | M6 | M8 |
|----------|-----------------------|------------------|-----------------------|
| Terminal | F3 F4 F13 F18 T25 T26 | F8 F11 F12-1 F15 | F5 F9 F10 F12 F14 F16 |
| Torque | 6-7N-m | 8-10N-m | 10-12N-m |

Maintenance & Cautions

Float Service:

- ※ Every month, recommend inspection every battery voltage.
- ※ Every three months, recommend equalization charge for one time.

Equalization charge method:

Discharge: 100% rate capacity discharge.

Charge: Max. current 0.3CA, constant voltage 14.4-14.7V charge 24h.

※ Effect of temperature on float charge voltage: -3mV/°C/Cell.

※ Length of service life will be directly affected by the number of discharge cycles, depth of discharge, ambient temperature and charging voltage.