



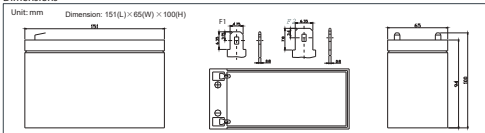
Specification

| | |
|--------------------------------------|--|
| Cells Per Unit | 6 |
| Voltage Per Unit | 12 |
| Capacity | 7.0Ah@20hr-rate to 1.75V per cell @25°C |
| Weight | Approx. 1.97 Kg(Tolerance ±4%) |
| Max. Discharge Current | 70A (5 sec) |
| Internal Resistance | Approx. 30 mΩ (Tolerance ± 10%) |
| 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 | 2.1 A |
| Equalization and Cycle Service | 14.6 to 14.8 VDC/unit Average at 25°C |
| Self Discharge | FORTUNER Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 5% per month at 25°C. Please charge batteries before using. |
| Terminal | Faston Tab 187(F1)/Faston tab 250(F2) |
| Constrainer Material | A.B.S. UL94-HB, UL94-V0 Optional. |



ISO9001:2000 Certificate

Dimensions



Constant Current Discharge Characteristics : A(25°C)

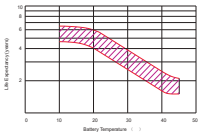
| F.V/T ime | 5MIN | 10MIN | 15MIN | 30MIN | 1HR | 2HR | 3HR | 4HR | 5HR | 8HR | 10HR | 20HR |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V | 25.01 | 16.40 | 12.21 | 6.501 | 4.549 | 2.573 | 1.833 | 1.493 | 1.227 | 0.808 | 0.700 | 0.375 |
| 10.0V | 24.11 | 15.99 | 11.82 | 6.417 | 4.489 | 2.521 | 1.799 | 1.472 | 1.216 | 0.805 | 0.693 | 0.371 |
| 10.2V | 22.69 | 15.20 | 11.49 | 6.319 | 4.446 | 2.495 | 1.783 | 1.457 | 1.208 | 0.798 | 0.682 | 0.361 |
| 10.5V | 20.40 | 14.21 | 10.84 | 6.145 | 4.392 | 2.462 | 1.767 | 1.436 | 1.198 | 0.791 | 0.679 | 0.353 |
| 10.8V | 18.27 | 13.25 | 10.23 | 5.942 | 4.331 | 2.442 | 1.747 | 1.387 | 1.192 | 0.787 | 0.667 | 0.339 |
| 11.1V | 15.99 | 12.15 | 9.435 | 5.716 | 4.228 | 2.344 | 1.713 | 1.367 | 1.187 | 0.781 | 0.657 | 0.334 |

Constant Power Discharge Characteristics : W(25°C)

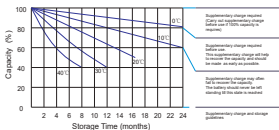
| F.V/T ime | 5MIN | 10MIN | 15MIN | 30MIN | 1HR | 2HR | 3HR | 4HR | 5HR | 8HR | 10HR | 20HR |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V | 271.2 | 179.8 | 134.8 | 74.41 | 54.39 | 30.32 | 21.92 | 17.87 | 14.70 | 9.678 | 8.383 | 4.494 |
| 10.0V | 264.2 | 176.1 | 132.8 | 73.64 | 53.59 | 29.92 | 21.56 | 17.62 | 14.57 | 9.641 | 8.304 | 4.458 |
| 10.2V | 251.3 | 169.1 | 131.1 | 73.00 | 53.19 | 29.66 | 21.37 | 17.46 | 14.48 | 9.568 | 8.197 | 4.343 |
| 10.5V | 229.3 | 162.1 | 124.2 | 71.51 | 52.48 | 29.34 | 21.22 | 17.22 | 14.36 | 9.488 | 8.140 | 4.270 |
| 10.8V | 206.9 | 151.7 | 117.4 | 69.82 | 51.79 | 29.13 | 20.97 | 16.64 | 14.30 | 9.446 | 8.016 | 4.099 |
| 11.1V | 182.5 | 141.2 | 110.6 | 67.90 | 50.65 | 28.11 | 20.56 | 16.40 | 14.25 | 9.379 | 7.897 | 4.034 |

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

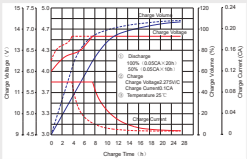
Effect of temperature on long term float life



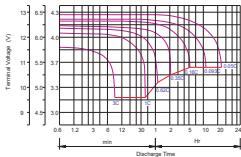
Storage characteristic



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 float | 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+2.4-0.45V/cellx24h, Max. Current 0.3C |
| Constant Current | -0.2Cx2h+0.1Cx12h |
| Fast | -0.2Cx2h+0.3Cx6h |

| Solt | MS | MS | MS |
|----------|-----------------------|---------------|-------------------|
| Terminal | 33 39 312 318 325 330 | 38 39 312 318 | 35 39 312 318 330 |
| Torque | 4.7Nm | 8.3Nm | 10.2Nm |

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 0.3C, 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 directly affected by the number of discharge cycles, depth of discharge, ambient temperature and charging voltage.