



AC SERIES -Deep Cycle

AC12-18 (12V18AH)

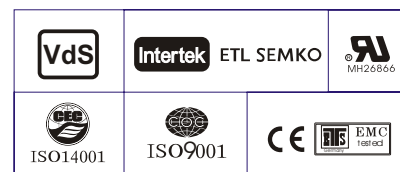
Specification

| | | |
|----------------------------------|---|-------------------------------|
| Nominal Voltage | 12V | |
| Nominal Capacity(10HR) | 18.0AH | |
| Dimension | Length | 181±2mm (7.13 inches) |
| | Width | 77±1mm (3.03 inches) |
| | Container Height | 167.5±1mm (6.59 inches) |
| | Total Height (with Terminal) | 167.5±1mm (6.59 inches) |
| Approx Weight | Approx 6.2 Kg (13.67 lbs) | |
| Terminal | T3 | |
| Container Material | ABS | |
| Rated Capacity | 19.3AH/0.965A | (20hr, 1.80V/cell, 25°C/77°F) |
| | 18.0AH/1.80A | (10hr, 1.80V/cell, 25°C/77°F) |
| | 15.8AH/3.16A | (5hr, 1.75V/cell, 25°C/77°F) |
| | 14.3AH/4.77A | (3hr, 1.75V/cell, 25°C/77°F) |
| | 11.6AH/11.6A | (1hr, 1.60V/cell, 25°C/77°F) |
| Max. Discharge Current | 270A (5s) | |
| Internal Resistance | Approx 15.0mΩ | |
| Operating Temp. Range | Discharge | -15~50°C (5~122°F) |
| | Charge | 0~40°C (32~104°F) |
| | Storage | -15~40°C (5~104°F) |
| Nominal Operating Temp. Range | 25±3°C (77±5°F) | |
| Cycle Use | Initial Charging Current less than 5.4A. Voltage | |
| | 14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C | |
| Standby Use | No limit on Initial Charging Current Voltage | |
| | 13.5V~13.8V at 25°C(77°F)Temp. Coefficient -20mV/°C | |
| Capacity affected by Temperature | 40°C (104°F) | 103% |
| | 25°C (77°F) | 100% |
| | 0°C (32°F) | 86% |
| Self Discharge | Synergy AC series batteries may be stored for up to 6 months at 25°C(77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter. | |



Applications

- ◆ Electric tools
- ◆ Vehicle in place of walking
- ◆ Lawn mowers
- ◆ Golf trolleys and golf cart
- ◆ Portable apparatus, lights and instruments;
- ◆ Electric toys
- ◆ Illumination light
- ◆ Fire alarms
- ◆ Portable power
- ◆ Wheelchairs
- ◆ Medical equipments.



Constant Current Discharge (Amperes) at 25 °C (77°F)

| F.V/Time | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|-------|
| 1.85V/cell | 26.4 | 22.2 | 19.4 | 13.9 | 11.1 | 8.99 | 5.58 | 4.35 | 3.53 | 2.87 | 2.50 | 2.04 | 1.70 | 0.956 |
| 1.80V/cell | 33.7 | 26.8 | 22.9 | 16.5 | 12.9 | 10.1 | 6.09 | 4.68 | 3.77 | 3.08 | 2.68 | 2.16 | 1.80 | 0.965 |
| 1.75V/cell | 37.0 | 29.3 | 24.6 | 17.1 | 13.4 | 10.5 | 6.32 | 4.77 | 3.85 | 3.16 | 2.75 | 2.20 | 1.82 | 0.974 |
| 1.70V/cell | 40.3 | 31.2 | 25.9 | 17.8 | 13.9 | 10.9 | 6.57 | 4.90 | 3.95 | 3.24 | 2.81 | 2.23 | 1.84 | 0.992 |
| 1.65V/cell | 43.5 | 33.2 | 27.5 | 18.8 | 14.2 | 11.2 | 6.75 | 5.11 | 4.09 | 3.33 | 2.87 | 2.27 | 1.87 | 1.004 |
| 1.60V/cell | 47.3 | 35.5 | 29.3 | 19.8 | 14.9 | 11.6 | 6.98 | 5.27 | 4.22 | 3.44 | 2.94 | 2.29 | 1.89 | 1.010 |

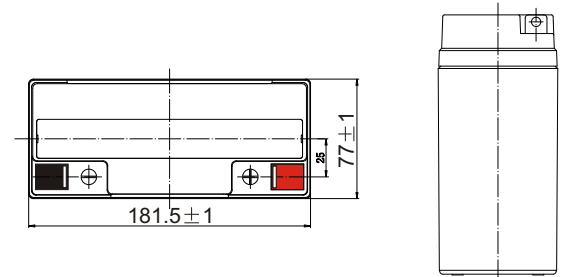
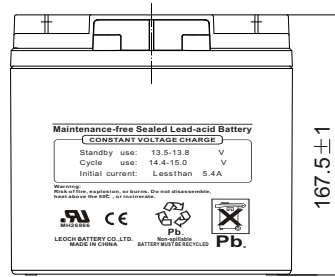
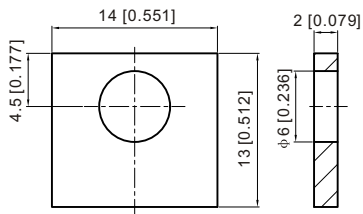
Constant Power Discharge (Watts) at 25 °C (77°F)

| F.V/Time | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|
| 1.85V/cell | 49.2 | 41.8 | 36.9 | 26.8 | 21.4 | 17.4 | 10.9 | 8.50 | 6.90 | 5.63 | 4.94 | 4.04 | 3.37 | 1.91 |
| 1.80V/cell | 62.0 | 49.8 | 43.0 | 31.2 | 24.7 | 19.4 | 11.8 | 9.11 | 7.34 | 6.02 | 5.28 | 4.27 | 3.56 | 1.93 |
| 1.75V/cell | 67.3 | 53.8 | 45.9 | 32.3 | 25.5 | 20.2 | 12.2 | 9.25 | 7.48 | 6.17 | 5.41 | 4.34 | 3.60 | 1.94 |
| 1.70V/cell | 72.3 | 57.1 | 47.9 | 33.5 | 26.5 | 20.8 | 12.7 | 9.49 | 7.67 | 6.31 | 5.52 | 4.40 | 3.63 | 1.98 |
| 1.65V/cell | 77.5 | 60.3 | 50.7 | 35.1 | 27.0 | 21.5 | 13.0 | 9.86 | 7.91 | 6.48 | 5.63 | 4.47 | 3.70 | 2.00 |
| 1.60V/cell | 82.7 | 63.7 | 53.4 | 36.7 | 27.9 | 22.0 | 13.3 | 10.1 | 8.13 | 6.66 | 5.74 | 4.50 | 3.74 | 2.01 |

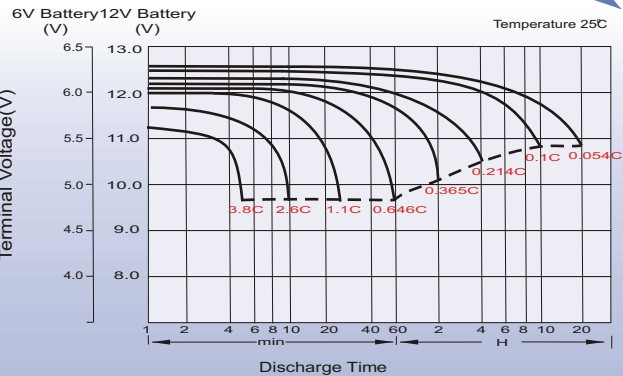
Dimensions

T3 Terminal

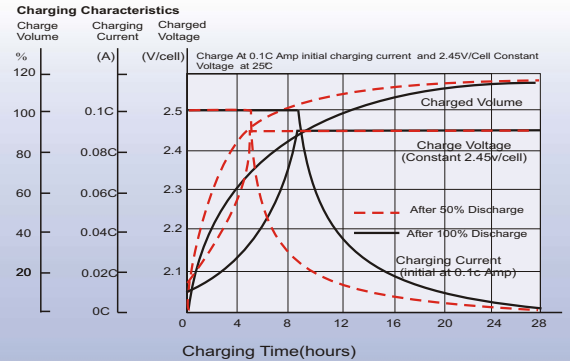
Unit: mm [inches]



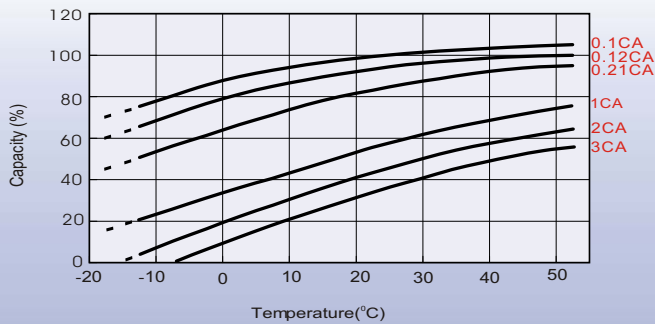
Discharge Characteristics



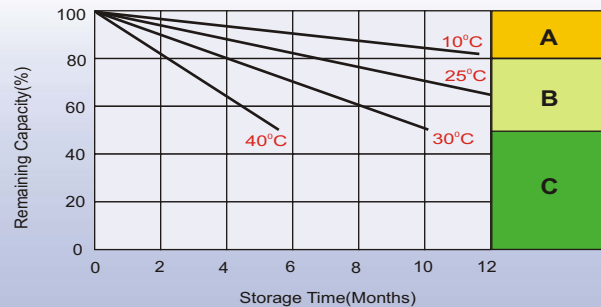
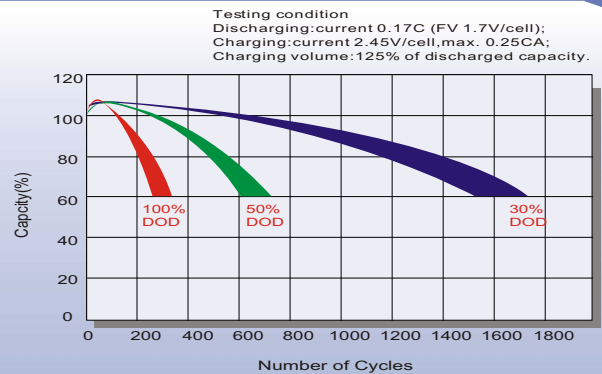
Charging Characteristics (cycle use)



Temperature Effects in Relation to Battery Capacity



Cycle Life in Relation to Depth of Discharge



Self Discharge Characteristics

- A** No supplementary charge required
(Carry out supplementary charge before use if 100% capacity is required.)
- B** Supplementary charge required before use. Optional charging way as below:
 1. Charged for above 3 days at limited current 0.25CA and constant volatge 2.25V/cell.
 2. Charged for above 20 hours at limited current 0.25CA and constant volatge 2.45V/cell.
 3. Charged for 8-10 hours at limited current 0.05CA .
- C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.

Sales Office

Innovative Energies Ltd
 1 Heremai Street, Auckland, New Zealand
 Ph: +64 9 8350700
 Email: info@innovative.co.nz
 www.innovative.co.nz

