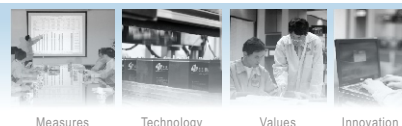




## VRLA Rechargeable Battery

# FTH190-12



Measures

Technology

Values

Innovation

## FEATURES

- Absorbent Glass Mat technology for efficient gas recombination
- Long life expectancy 15 years in float application
- Front accessible terminal for ease of assembly
- Carry handles for ease of installation
- Strengthened rib design to maintain structural integrity
- Flame-arrestor is installed to ensure safety
- Battery design allows for 48VDC configuration in a standard 23" rack
- One-way self-resealing safety valve for long life guarantee

## APPLICATION

- UPS
- Telecom
- Broadband
- Railroad Signal
- Electric Utility
- Central Office

## SPECIFICATIONS

|                             |                                                |                        |
|-----------------------------|------------------------------------------------|------------------------|
| Nominal Voltage             | 12V                                            |                        |
| Nominal Capacity(25°C)      | 10 Hour Rate (19A, 10.5V)                      | 190.0 Ah               |
|                             | 1 Hour Rate (115A, 10.5V)                      | 115.0 Ah               |
|                             | 15Min Rate (4560W, 9.6V)                       | 95.0 Ah                |
| Approx. Weight              | 64.06Kg(141.4lbs.)                             |                        |
| Terminals                   | I3 (M8 Female Thread) I2 is optional           |                        |
| Max. Discharge Current      | 1200 A (5 sec.)                                |                        |
| Max. Charge Current         | 45 A                                           |                        |
| Operating Temperature Range | Charge                                         | 0°C~40°C(32°F~104°F)   |
|                             | Discharge                                      | -20°C~50°C(-4°F~122°F) |
|                             | Storage                                        | -20°C~40°C(-4°F~104°F) |
| Self Discharge              | < 3% per month (25°C)                          |                        |
| Internal Resistance         | ≤ 3.0mΩ (Fully Charged )                       |                        |
| Float Voltage               | 2.25 to 2.30 VPC. Recommended 2.275 VPC @ 25°C |                        |
| Safety Valve                | Opening pressure 10~35 kPa                     |                        |

## CONTAINER MATERIAL

- Standard: ABS( UL 94-HB)  
Model Name: FTH190-12
- Optional: Flame Retardant ABS(UL 94-V0)  
Model Name: FTH190-12/FR

Certificate as below:



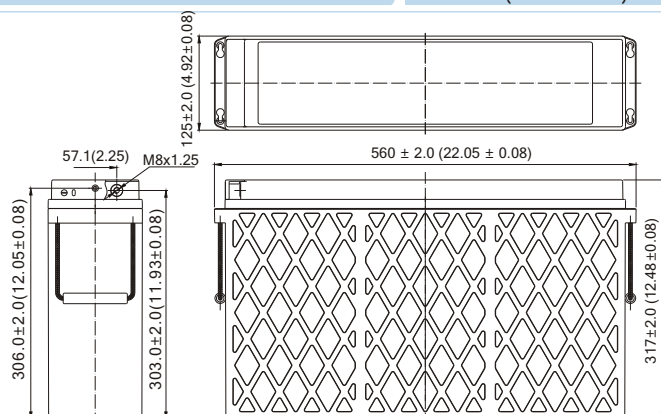
MH19884

Compliance of the standards as below:

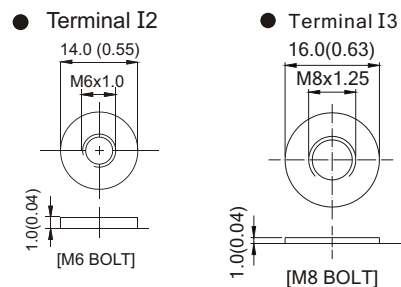
- IEC 60896-21/22 • BS 6290/4
- GB/T 19638.2 • Eurobat guide

## OUTER DIMENSIONS mm(inch)

| Length (L)          | Width (W)          | Container Height (H) | Total Height (TH)   |
|---------------------|--------------------|----------------------|---------------------|
| 560±2.0(22.05±0.08) | 125±2.0(4.92±0.08) | 317±2.0(12.48±0.08)  | 317±2.0(12.48±0.08) |

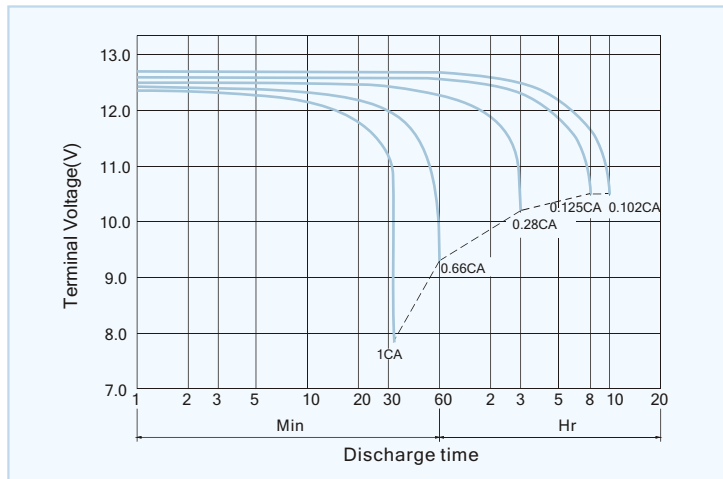


## TERMINAL TYPE

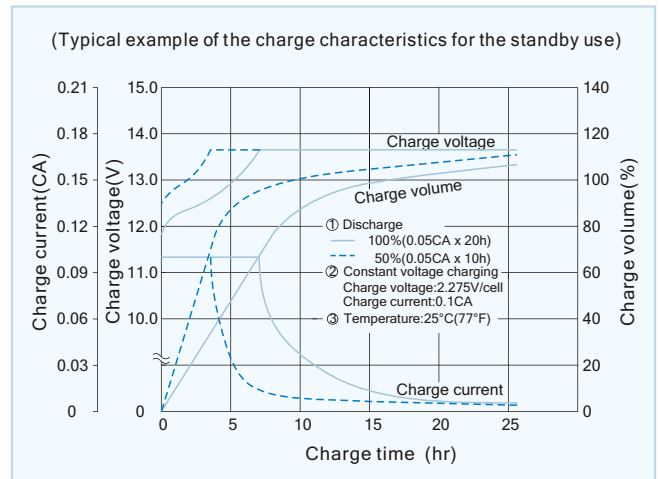


Terminal Hardware Initial Torque:  
I2(5.5Nm±5%), I3(10.0Nm±5%)

### FTH190-12 (FTH190-12/FR) discharge characteristics (25°C/77°F)



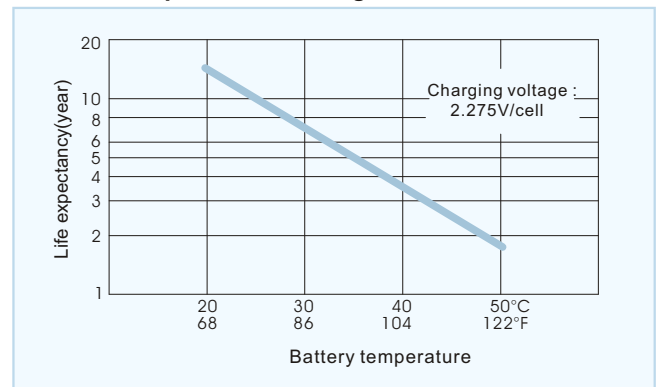
### Battery Charging Characteristics



### Charging Procedure

| Application              | Charging method                                                         | Charging Voltage at 25°C (V/cell) | Temperature compensation coefficient of charging voltage (mV/°C/cell) | Max. charging current (CA) | Charging time 0.1CA, 25°C (h) |               | Temp (°C)       |
|--------------------------|-------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------------------|----------------------------|-------------------------------|---------------|-----------------|
|                          |                                                                         |                                   |                                                                       |                            | 100% discharge                | 50% discharge |                 |
| For standby power Source | Constant voltage & Constant current charging (with current restriction) | 2.25~2.30                         | -3                                                                    | 0.2                        | 24                            | 20            | 0~40 (32~104°F) |
| For cycle service        |                                                                         | 2.40~2.50                         | -4                                                                    | 0.2                        | 16                            | 10            |                 |

### Effect Of Temperature On Long Term Float Life



### Constant power discharge characteristics at 25 °C/77 °F

Unit: W

| Discharge Time<br>F.V. (V/cell) | 5 Min | 10 Min | 15 Min | 30 Min | 45 Min | 1 Hr | 2 Hr | 3 Hr  | 4 Hr  | 5 Hr  | 8 Hr  | 10 Hr | 20 Hr |
|---------------------------------|-------|--------|--------|--------|--------|------|------|-------|-------|-------|-------|-------|-------|
| 1.90V                           | 3947  | 3080   | 2824   | 1983   | 1461   | 1164 | 717  | 515.3 | 420.6 | 355.7 | 253.4 | 202.8 | 107.6 |
| 1.85V                           | 4705  | 3640   | 3338   | 2200   | 1607   | 1280 | 778  | 562.8 | 453.1 | 384.6 | 271.9 | 218.0 | 114.1 |
| 1.80V                           | 5458  | 4030   | 3771   | 2357   | 1722   | 1359 | 815  | 583.2 | 468.8 | 398.8 | 275.1 | 225.7 | 118.2 |
| 1.75V                           | 6042  | 4460   | 4094   | 2456   | 1794   | 1394 | 831  | 591.4 | 477.1 | 404.4 | 279.5 | 228.0 | 120.1 |
| 1.70V                           | 6567  | 4865   | 4357   | 2514   | 1812   | 1405 | 839  | 596.7 | 481.2 | 405.8 | 280.4 | 228.5 | 120.2 |
| 1.65V                           | 6953  | 5250   | 4514   | 2555   | 1841   | 1414 | 846  | 602.0 | 485.3 | 407.3 | 282.1 | 229.4 | 120.5 |
| 1.60V                           | 7280  | 5550   | 4560   | 2582   | 1848   | 1415 | 849  | 603.8 | 486.3 | 408.0 | 283.0 | 229.8 | 120.6 |

### Constant current discharge characteristics at 25 °C/77 °F

Unit: A

| Discharge Time<br>F.V. (V/cell) | 5 Min | 10 Min | 15 Min | 30 Min | 45 Min | 1 Hr  | 2 Hr | 3 Hr | 4 Hr | 5 Hr | 8 Hr  | 10 Hr | 20 Hr |
|---------------------------------|-------|--------|--------|--------|--------|-------|------|------|------|------|-------|-------|-------|
| 1.90V                           | 338   | 262    | 241    | 168    | 122    | 97.0  | 59.8 | 42.9 | 35.0 | 29.6 | 21.12 | 16.90 | 8.97  |
| 1.85V                           | 414   | 316    | 295    | 187    | 135    | 106.7 | 64.9 | 46.9 | 37.8 | 32.1 | 22.66 | 18.16 | 9.51  |
| 1.80V                           | 493   | 355    | 339    | 202    | 145    | 113.5 | 67.9 | 48.6 | 39.1 | 33.2 | 22.93 | 18.81 | 9.85  |
| 1.75V                           | 560   | 401    | 367    | 211    | 152    | 117.1 | 69.3 | 49.3 | 39.8 | 33.7 | 23.29 | 19.00 | 10.01 |
| 1.70V                           | 625   | 444    | 396    | 218    | 155    | 118.9 | 69.9 | 49.7 | 40.1 | 33.8 | 23.37 | 19.04 | 10.02 |
| 1.65V                           | 679   | 487    | 417    | 224    | 158    | 120.5 | 70.5 | 50.2 | 40.4 | 33.9 | 23.51 | 19.11 | 10.04 |
| 1.60V                           | 728   | 525    | 426    | 228    | 160    | 121.2 | 70.8 | 50.3 | 40.5 | 34.0 | 23.58 | 19.15 | 10.05 |

All data and artworks shall be changed without prior notice, BB reserves the right to explain and update the information contained herein.

For operation, please refer to the instruction from technical manual.

Trial A/0 REV. Feb. 2020

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