

## 12V 180Ah Front Terminal AGM VRLA Battery

### Product characteristics:

- Valve-regulated lead-acid battery
- Stationary and reserve power applications
- EUROBAT design life definition: Very Long Life 12+ years
- Extremely long float life performance
- Superior cycling endurance
- Compact design with high energy density
- ETSI Rack integration
- Low installation cost, maintenance free product
- Sealed for leak-proof operation
- Delivered ready for use
- Non-hazardous cargo for ground, sea and air transport
- Fully recyclable product



### Technical specifications:

#### **Electrical specifications:**

- Nominal voltage: 12V
- Number of cells: 6
- Rated capacity: 180 Ah (10 h rate to 1.80 Vpc at 20 °C)

- Internal resistance: 4.1 mOhm (IEC 60 896 -21/22)
- Short circuit current: 3100 A (IEC 60 896 -21/22)
- Float charge voltage: 2.27 V per cell (Vpc) at 20 °C

#### **Design features:**

- Design life at 20 °C: Very Long Life 12+ years
- Plates: Tick Flat Pasted
- Active material: Very high purity virgin lead
- Grid alloy: Lead-Calcium-Tin alloy
- Electrolyte: Sulphuric acid, Analytical grade
- Separator: Absorbing Glass Mat (AGM)
- Operating temperature: -20 °C to +60 °C (maximum)  
+15 °C to +25 °C (recommended)
- Venting valve: Rubber, one way, self resealing  
- Opening pressure: 3 PSI  
- Resealing pressure: 2 PSI
- Internal gas recombination efficiency: more than 99%
- Central degassing system: Available
- Flame arrestor: Available
- Storage temperatures: -20 °C to +40 °C
- Self discharge: Less than 2.0% per month at 20°C
- Storability without recharging: Up to 6 months at 20°C
- Shelf life: Up to 1 year
- Container / lid material: Shock resistant ABS FR;  
flammability class UL94 V0
- Terminal position: Front
- Terminal sealing: Mechanical + epoxy double sealing
- Terminal type: Brass; Female; M8 thread
- Terminal torque: 7 Nm
- Terminal cover: Available
- Carrying Handles: Available (2)
- Connectors and bolts: Supplied as standard

#### **Applicable standards:**

- IEC 60896 - 21/22 • IEC 61427 - 1/2 • IEEE 1184
- EN 50272 - 2 • IEC 61056 - 1 • IEEE 1187 / 1188

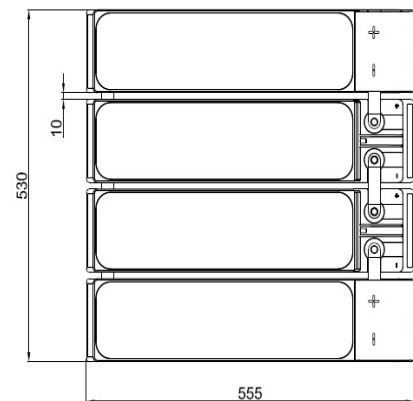
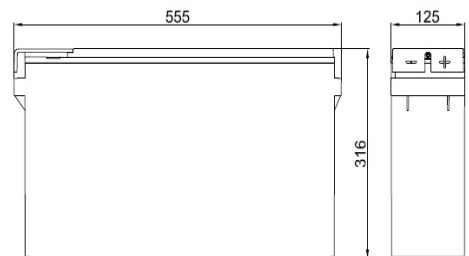
#### **Manufacture standards:**

- ISO 9001, ISO 14001, OHSAS 18001, AQAP 2110

### Physical characteristics:

|        | SI Units | US Units    |
|--------|----------|-------------|
| Length | 555 mm   | 21.8 inches |
| Width  | 125 mm   | 4.9 inches  |
| Height | 316 mm   | 12.4 inches |
| Weight | 58.5 kg  | 129 lbs     |

### Drawings:



*Performance characteristics:*

| BATTERY DISCHARGE PERFORMANCE AT 20 °C  |       |        |        |       |       |       |       |       |       |       |       |       |
|---|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Battery capacity at constant current discharge (Ah) for battery 12MVR180 at 20 °C |       |        |        |       |       |       |       |       |       |       |       |       |
| Uf, Vpc   | 5 min | 15 min | 30 min | 1 h   | 2 h   | 3 h   | 4 h   | 5 h   | 6 h   | 8 h   | 10 h  | 20 h  |
| 1.60  | 38    | 65     | 93     | 113.0 | 131.6 | 144.5 | 153.9 | 161.3 | 166.9 | 178.0 | 185.4 | 198.4 |
| 1.65  | 37    | 65     | 92     | 112.5 | 131.0 | 144.0 | 153.2 | 160.6 | 166.1 | 177.1 | 184.5 | 197.3 |
| 1.70  | 37    | 64     | 92     | 112.0 | 130.3 | 143.3 | 152.5 | 159.7 | 165.2 | 176.2 | 183.6 | 196.4 |
| 1.75  | 36    | 64     | 91     | 110.9 | 129.1 | 141.8 | 150.8 | 158.2 | 163.6 | 174.6 | 181.8 | 194.4 |
| 1.80  | 36    | 63     | 90     | 109.8 | 127.8 | 140.4 | 149.4 | 156.6 | 162.0 | 172.8 | 180.0 | 192.6 |
| 1.85  | 35    | 61     | 88     | 107.1 | 124.6 | 136.8 | 145.8 | 152.6 | 158.0 | 168.5 | 175.5 | 187.7 |

| Discharge performance at constant current discharge (A) for battery 12MVR180 at 20 °C |       |        |        |       |      |      |      |      |      |      |      |      |
|---|-------|--------|--------|-------|------|------|------|------|------|------|------|------|
| Uf, Vpc   | 5 min | 15 min | 30 min | 1 h   | 2 h  | 3 h  | 4 h  | 5 h  | 6 h  | 8 h  | 10 h | 20 h |
| 1.60  | 456   | 259    | 185    | 113.0 | 65.8 | 48.2 | 38.5 | 32.3 | 27.8 | 22.3 | 18.5 | 9.92 |
| 1.65  | 448   | 258    | 185    | 112.5 | 65.5 | 48.0 | 38.3 | 32.1 | 27.7 | 22.1 | 18.5 | 9.86 |
| 1.70  | 441   | 257    | 184    | 112.0 | 65.2 | 47.8 | 38.1 | 31.9 | 27.5 | 22.0 | 18.4 | 9.82 |
| 1.75  | 436   | 255    | 182    | 110.9 | 64.5 | 47.3 | 37.7 | 31.6 | 27.3 | 21.8 | 18.2 | 9.72 |
| 1.80  | 432   | 252    | 180    | 109.8 | 63.9 | 46.8 | 37.4 | 31.3 | 27.0 | 21.6 | 18.0 | 9.63 |
| 1.85  | 421   | 246    | 176    | 107.1 | 62.3 | 45.6 | 36.5 | 30.5 | 26.3 | 21.1 | 17.6 | 9.39 |

| Discharge performance at constant power discharge (W per cell) for battery 12MVR180 at 20 °C |       |        |        |       |       |      |      |      |      |      |       |       |
|--|-------|--------|--------|-------|-------|------|------|------|------|------|-------|-------|
| Uf, Vpc  | 5 min | 15 min | 30 min | 1 h   | 2 h   | 3 h  | 4 h  | 5 h  | 6 h  | 8 h  | 10 h  | 20 h  |
| 1.60   | 912   | 518    | 371    | 226.1 | 131.6 | 96.4 | 77.0 | 64.5 | 55.6 | 44.5 | 37.1  | 19.84 |
| 1.65   | 886   | 517    | 369    | 225.0 | 131.0 | 96.0 | 76.6 | 64.2 | 55.4 | 44.3 | 36.9  | 19.73 |
| 1.70   | 879   | 514    | 367    | 223.9 | 130.3 | 95.0 | 76.2 | 63.9 | 55.1 | 44.1 | 36.7  | 19.64 |
| 1.75   | 873   | 510    | 364    | 221.8 | 129.1 | 94.1 | 75.4 | 63.3 | 54.5 | 43.5 | 36.4  | 19.44 |
| 1.80   | 864   | 504    | 360    | 219.6 | 127.8 | 93.6 | 74.7 | 62.6 | 54.0 | 43.2 | 36.0  | 19.26 |
| 1.85   | 842   | 491    | 351    | 214.2 | 124.6 | 91.2 | 72.9 | 61.1 | 52.7 | 42.1 | 35.10 | 18.77 |

| Temperature correction factor of capacity at constant current discharge |        |      |       |       |       |       |       |       |       |       |  |
|---|--------|------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| Discharge time  | -10 °C | 0 °C | 10 °C | 15 °C | 20 °C | 25 °C | 30 °C | 35 °C | 40 °C | 45 °C |  |
| From 5 to 59 minutes  | 0.70   | 0.80 | 0.90  | 0.95  | 1     | 1.05  | 1.10  | 1.13  | 1.15  | 1.16  |  |
| From 1 to 20 hours  | 0.82   | 0.88 | 0.94  | 0.97  | 1     | 1.03  | 1.05  | 1.08  | 1.09  | 1.10  |  |

| BATTERY CHARGE CONDITIONS AT 20 °C   |   |  |  |
|--|---|--|--|
| Charge regime: constant voltage and limited current (IU)                   |   |  |  |
| Charge current limit   | Float charge voltage  | Equalization charge voltage  | Boost charge voltage   |
| 0.1 – 0.25C <sub>10</sub> A<br>Recommended: 0.20C <sub>10</sub> A          | 2.27 V per cell at 20 °C;<br>Temperature correction:<br>-3 mV / cell / °C | 2.32 V per cell at 20 °C<br>Recommended: every 3 months for<br>24h during long time float operation  | 2.40 V per cell at 20 °C<br>Temperature correction:<br>-4 mV / cell / °C |
| <b>Float application:</b> 0.20C <sub>10</sub> A / 2.27 V per cell at 20 °C |   | <b>Cycling applications:</b> 0.20C <sub>10</sub> A / 2.40 V per cell at 20 °C;<br>Recharge Ah input at least 105% from previous discharge Ah |  |

