



# ALPHA HOUSE powered by MONBAT®

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## 8MVR160 TOP TERMINAL AGM VRLA

### 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



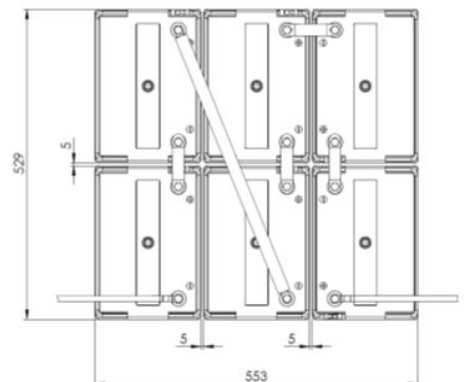
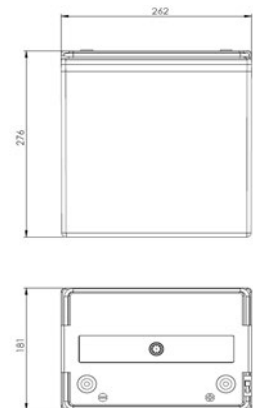
### TECHNICAL SPECIFICATIONS:

| Electrical specifications:  |   |
|---|---|
| Nominal voltage:  | 8V  |
| Number of cells:  | 4   |
| Rated capacity:   | 160 Ah (10 h rate to 1.80 Vpc at 20 °C)   |
| Internal resistance:  | 2.90 mOhm (IEC 60 896 -21/22)   |
| Short circuit current:  | 2 850 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<br>+15 °C to +25 °C (recommended)  |
| Venting valve:  | Rubber, one way, self resealing<br>- Opening pressure: 1.7 PSI<br>- Resealing pressure: 1.5 PSI |
| Internal gas recombination efficiency:  | more than 99%   |
| Flame arrestor:   | Available   |
| Central degassing system  | 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:  | Top   |
| Terminal sealing:   | Mechanical + epoxy double sealing   |
| Terminal type:  | Brass; Female; M8 thread  |
| Terminal torque:  | 7 Nm  |
| Transport terminal cover:   | Available   |
| Carrying Handles:   | Available (2)   |
| Connectors and bolts:   | Supplied as standard  |
| Applicable standards and recommendations:   |   |
| IEC 60896 - 21/22; EN 50272 - 2; IEC 61427 - 1/2; IEC 61056 - 1;<br>IEEE 1184; IEEE 1187; IEEE 1188 |   |
| Manufacture standards:  |   |
| ISO 9001; ISO 14001; OHSAS 18001; AQAP 2110   |   |

### PHYSICAL CHARACTERISTICS:

|        | SI Units | US Units    |
|--------|----------|-------------|
| Length | 262 mm   | 10.3 inches |
| Width  | 181 mm   | 7.1 inches  |
| Height | 276 mm   | 10.8 inches |
| Weight | 34 kg    | 75 lbs      |

### DRAWINGS:





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## PERFORMANCE CHARACTERISTICS

### DISCHARGE PERFORMANCE AT CONSTANT CURRENT DISCHARGE (AH) FOR BATTERY 8MVR160 AT 20°C

| Uf, Vpc | 5 min | 15 min | 30 min | 1h    | 2h    | 3h    | 4h    | 5h    | 6h    | 8h    | 10h   | 20h   |
|---------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.6     | 34.0  | 58.0   | 82.0   | 100.5 | 117.0 | 128.5 | 136.8 | 143.4 | 148.3 | 158.2 | 164.8 | 168.2 |
| 1.65    | 33.0  | 57.0   | 82.0   | 100.0 | 116.5 | 128.0 | 136.2 | 142.7 | 147.7 | 157.4 | 164.0 | 167.4 |
| 1.7     | 33.0  | 57.0   | 82.0   | 99.5  | 115.8 | 127.4 | 135.5 | 141.9 | 146.9 | 156.6 | 163.2 | 166.4 |
| 1.75    | 32.0  | 57.0   | 81.0   | 98.6  | 114.7 | 126.1 | 134.1 | 140.6 | 145.4 | 155.2 | 161.6 | 164.8 |
| 1.8     | 32.0  | 56.0   | 80.0   | 97.6  | 113.6 | 124.8 | 132.8 | 139.2 | 144.0 | 153.6 | 160.0 | 163.2 |
| 1.85    | 31.0  | 55.0   | 78.0   | 95.2  | 110.7 | 121.6 | 129.6 | 135.7 | 140.5 | 149.8 | 156.0 | 159.2 |

### DISCHARGE PERFORMANCE AT CONSTANT CURRENT DISCHARGE (A) FOR BATTERY 8MVR160 AT 20°C

| Uf, Vpc | 5 min | 15 min | 30 min | 1h    | 2h   | 3h   | 4h   | 5h   | 6h   | 8h   | 10h  | 20h  |
|---------|-------|--------|--------|-------|------|------|------|------|------|------|------|------|
| 1.6     | 405.0 | 230.0  | 165.0  | 100.5 | 58.5 | 42.8 | 34.2 | 28.7 | 24.7 | 19.8 | 16.5 | 14.0 |
| 1.65    | 394.0 | 230.0  | 164.0  | 100.0 | 58.2 | 42.7 | 34.0 | 28.5 | 24.6 | 19.7 | 16.4 | 14.0 |
| 1.7     | 392.0 | 228.0  | 163.0  | 99.5  | 57.9 | 42.5 | 33.9 | 28.4 | 24.5 | 19.6 | 16.3 | 13.9 |
| 1.75    | 388.0 | 227.0  | 162.0  | 98.6  | 57.4 | 42.0 | 33.5 | 28.1 | 24.2 | 19.4 | 16.2 | 13.7 |
| 1.8     | 384.0 | 224.0  | 160.0  | 97.6  | 56.8 | 41.6 | 33.2 | 27.8 | 24.0 | 19.2 | 16.0 | 13.6 |
| 1.85    | 375.0 | 218.0  | 156.0  | 95.2  | 55.4 | 40.5 | 32.4 | 27.1 | 23.4 | 18.7 | 15.6 | 13.3 |

### DISCHARGE PERFORMANCE AT CONSTANT POWER DISCHARGE W (PER CELL) FOR BATTERY 8MVR160 AT 20°C

| Uf, Vpc | 5 min | 15 min | 30 min | 1h    | 2h    | 3h   | 4h   | 5h   | 6h   | 8h   | 10h  | 20h  |
|---------|-------|--------|--------|-------|-------|------|------|------|------|------|------|------|
| 1.6     | 810.0 | 461.0  | 330.0  | 201.0 | 117.0 | 85.7 | 68.4 | 57.3 | 49.4 | 39.6 | 33.0 | 28.0 |
| 1.65    | 787.0 | 460.0  | 328.0  | 200.0 | 116.5 | 85.3 | 68.1 | 57.1 | 49.2 | 39.4 | 32.8 | 27.9 |
| 1.7     | 781.0 | 457.0  | 326.0  | 199.0 | 115.8 | 84.5 | 67.8 | 56.8 | 49.0 | 39.2 | 32.6 | 27.7 |
| 1.75    | 776.0 | 453.0  | 323.0  | 197.1 | 114.7 | 83.6 | 67.0 | 56.3 | 48.5 | 38.6 | 32.3 | 27.5 |
| 1.8     | 768.0 | 448.0  | 320.0  | 195.2 | 113.6 | 83.2 | 66.4 | 55.7 | 48.0 | 38.4 | 32.0 | 27.2 |
| 1.85    | 749.0 | 436.0  | 312.0  | 190.4 | 110.7 | 81.1 | 64.8 | 54.3 | 46.8 | 37.4 | 31.2 | 26.5 |

### 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  | 1.00  | 1.05  | 1.10  | 1.13  | 1.15  | 1.16  |
| From 1 to 20 hours   | 0.82   | 0.88 | 0.94  | 0.97  | 1.00  | 1.03  | 1.05  | 1.07  | 1.08  | 1.10  |

### BATTERY CHARGE CONDITIONS AT 20° 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:-3mV / cell / °C | 2.32 V per cell at 20 °C<br>Recommended: every 3 months for 24h during<br>long time float operation | 2.40 V per cell at 20°C;<br>Temperature correction:-4mV / cell / °C |

Float application: 0.20C<sub>10</sub> A / 2.27 V per cell at 20 °C

Cycling applications: 0.20C<sub>10</sub> A / 2.40 V per cell at 20 °C  
Recharge Ah input at least 105% from previous discharge Ah

