## 6FM40 12V 40Ah（20hr）Sealed Lead Acid（SLA）Battery

The rechargeable batteries are lead－lead dioxide systems．The dilute sulfuric acid electrolyte is absorbed by separators and plates and thus immobilized．Should the battery be accidentally overcharged producing hydrogen and oxygen，special one－ way valves allow the gases to escape thus avoiding excessive pressure build－up． Otherwise，the battery is completely sealed and is，therefore，maintenance－free， leak proof and usable in any position．


Battery Construction

| Component | Positive plate | Negative plate | Container\＆Cover | Safety valve | Terminal | Separator | Electrolyte |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Raw material | Lead dioxide | Lead | ABS UL94 HB | Rubber | Copper | Fiberglass | Sulfuric acid |

## General Features

－Absorbent Glass Mat（AGM）technology for efficient gas recombination of up to $99 \%$ and freedom from electrolyte maintenance or water adding．
－Positive and negative plates in lead－ calcium－tin alloy
－Stable quality \＆high reliability
－Sealed construction
－Maintenance－free operation
－Low pressure venting system
－Low self discharge
－High rate discharge
－Valve Regulated Lead Acid（VRLA）battery
－V0 Class Flame－Retardant ABS（UL94V－0） container and cover is optional
－Six months shelf life at $25^{\circ} \mathrm{C}$
－Design life 3－5 years depend on temperature， float charging＊

Dimensions and Weight

| Length（mm／inch） | $199 / 7.83$ |
| :--- | :--- |
| Width（mm／inch） | $166 / 6.54$ |
| Height（mm／inch） | $171 / 6.73$ |
| Total Height（ $\mathrm{mm} /$ inch | $171 / 6.73$ |
| Approx．Weight（Kg／lbs） | $12.6 / 27.7$ |



## Performance Characteristics

Nominal Voltage

Number of cell
6
Design Life
8－10 years
Nominal Capacity $77{ }^{\circ} \mathrm{F}\left(25^{\circ} \mathrm{C}\right)$
20 hour rate（2A，10．5V）40Ah
10 hour rate（3．8A， 10.5 V ）38Ah
5 hour rate（ $6.8 \mathrm{~A}, 10.2 \mathrm{~V}$ ）34Ah
1 hour rate（40A，9．6V）21．33Ah
Internal Resistance
Fully Charged battery $77^{\circ} \mathrm{F}\left(25^{\circ} \mathrm{C}\right) \quad \leq 8 \mathrm{mOhms}$
Self－Discharge
$3 \%$ of capacity declined per month at $25^{\circ} \mathrm{C}$（average）
Operating Temperature Range

| Discharge | $-20 \sim 60^{\circ} \mathrm{C}$ |
| :--- | :--- |
| Charge | $-10 \sim 60^{\circ} \mathrm{C}$ |
| Storage | $-20 \sim 60^{\circ} \mathrm{C}$ |
| Max．Discharge Current $77^{\circ} \mathrm{F}\left(25^{\circ} \mathrm{C}\right)$ | $480 \mathrm{~A}(5 \mathrm{~s})$ |
| Short Circuit Current | 540 A |

Charge Methods：Constant Voltage Charge $77^{\circ} \mathrm{F}\left(25^{\circ} \mathrm{C}\right)$
Cycle use 14．4－14．8V
Maximum charging current 10．8A

Temperature compensation $\quad-30 \mathrm{mV} /{ }^{\circ} \mathrm{C}$
Standby use
Temperature compensation
$13.5-13.8 \mathrm{~V}$
$-20 \mathrm{mV} /{ }^{\circ} \mathrm{C}$
Discharge Rates in Watts to Various End Voltage at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$

| End Voltage | $\mathbf{1 . 8 0 V}$ | $\mathbf{1 . 7 5 V}$ | $\mathbf{1 . 7 0 V}$ | $\mathbf{1 . 6 7 V}$ | $\mathbf{1 . 6 5 V}$ | $\mathbf{1 . 6 0 V}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{1 0 ~ \mathrm { min }}$ | 133 | 149 | 159 | 163 | 163 | 166 |
| 15 min | 113 | 123 | 128 | 130 | 131 | 132 |
| $\mathbf{3 0} \mathrm{~min}$ | 73.8 | 75.8 | 76.5 | 76.7 | 77.0 | 77.3 |
| 60 min | 45.8 | 46.8 | 47.3 | 47.5 | 47.7 | 47.8 |
| 120 min | 28.7 | 29.2 | 29.5 | 29.7 | 29.8 | 30.0 |
| 180 min | 19.8 | 20.2 | 20.3 | 20.5 | 20.5 | 20.7 |
| 300 min | 13.6 | 13.7 | 13.8 | 13.9 | 13.9 | 14.0 |
| 600 min | 7.95 | 8.05 | 8.13 | 8.18 | 8.22 | 8.27 |
| 1200 min | 4.00 | 4.03 | 4.07 | 4.08 | 4.08 | 4.10 |

Discharge Rates in Amperes to Various End Voltage at $25^{\circ} \mathrm{C}\left(77^{\circ} \mathrm{F}\right)$

| End Voltage | $\mathbf{1 . 8 0 V}$ | $\mathbf{1 . 7 5 V}$ | $\mathbf{1 . 7 0 V}$ | 1.67 V | 1.65 V | 1.60 V |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 10 min | 77.0 | 86.2 | 92.3 | 94.2 | 94.4 | 96.2 |
| 15 min | 61.6 | 66.8 | 69.6 | 70.6 | 71.2 | 72.2 |
| 30 min | 37.5 | 38.5 | 38.9 | 39.0 | 39.1 | 39.2 |
| 60 min | 23.5 | 24.0 | 24.3 | 24.4 | 24.5 | 24.6 |
| 120 min | 14.4 | 14.7 | 14.8 | 14.9 | 15.0 | 15.1 |
| 180 min | 10.0 | 10.1 | 10.2 | 10.2 | 10.3 | 10.3 |
| 300 min | 6.76 | 6.82 | 6.87 | 6.90 | 6.93 | 6.97 |
| 600 min | 3.95 | 4.00 | 4.04 | 4.06 | 4.08 | 4.10 |
| 1200 min | 1.98 | 2.00 | 2.02 | 2.02 | 2.03 | 2.04 |

（Note）The above characteristics data are average values obtained within three charge／discharge cycles not the mimimum values．

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