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**BATTERY  
RANGE SUMMARY**

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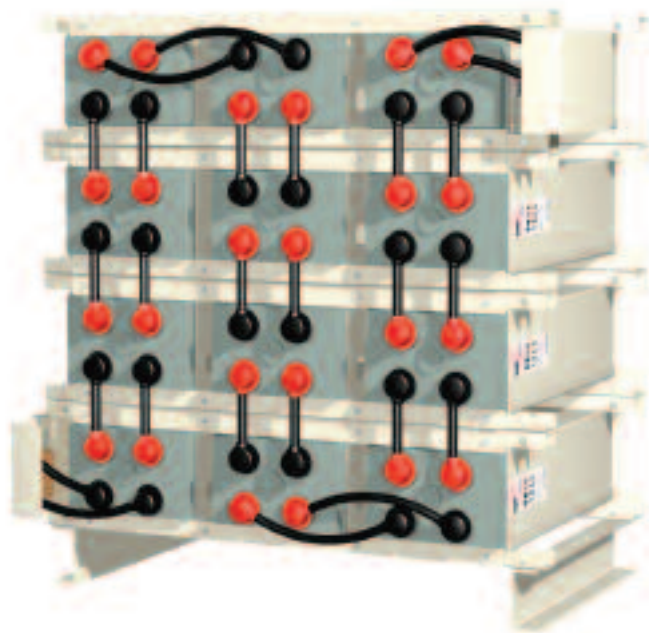
The PowerSafe<sup>®</sup> GFM battery range offers the solution for large capacity, valve regulated lead acid battery requirements. PowerSafe GFM battery's modular design concept, with its integral racking system, provides a cost effective, compact battery solution combined with a quick, simple on site installation process. PowerSafe GFM batteries provide excellent performance and service life across an extensive range of applications including, telecommunications, power generation sites, both low and high rate UPS and emergency lighting.

PowerSafe GFM batteries are designed using proven gas recombination technology which removes the need for regular water addition by regulating the emission of hydrogen and oxygen during charging. Oxygen evolved at the positive plates diffuses through microporous separators to the negative plates, and, by a series of chemical reactions within the cell, recombines to form water. Each cell incorporates its own safety valve that allows the controlled release of gas when pressure builds up within the cell.

The use of gas recombination technology for lead acid batteries has completely changed the concept of standby power. This technology provides the user with the freedom to use lead acid batteries in a wide range of applications.

**Features & Benefits**

- Capacity range: 200Ah – 2000Ah
- Long design life
- Front connections provide excellent maintenance access
- 100% nominal C<sub>10</sub> capacity check prior to dispatch



## Construction

- Positive and negative plates in lead-tin-calcium alloy
- Separator - low resistance microporous glass fiber. The electrolyte is absorbed within this material, preventing acid leakage in case of accidental damage
- Cells housed in steel modules complete with integral racking system
- Terminals with a large surface area copper insert to provide maximum conductivity
- Self-regulating pressure relief valve with integral flame arrestor
- Ring burn terminal seal or grommet with secondary epoxy resin seal

## Installation & Operation

- Recommended float charge voltage 2.280Vpc at 20°C or 2.265Vpc at 25°C
- The PowerSafe® GFM range is designed for horizontal installation and can be installed safely within equipment rooms. A separate dedicated battery room is not necessary
- Six months shelf life at 20°C, after which a freshening charge is required
- Reduced maintenance: no water addition required throughout operation life

## Standards

- Designed to be compliant with International Standard IEC 60896-11 and BS6290 Part 2
- Classified as "High Performance" according to the Eurobat Guide 1999
- UL recognized component MH27851
- Meets the criteria for "non-spillable" batteries. Non-spillable batteries are exempted from U.S. and International dangerous goods regulations for ground, sea and air transportation, see applicable regulations and provisions of the U.S. DOT, ICAO, IATA and IMDG.
- All cells are proven to have 100% rated C10 capacity in the factory prior to dispatch
- The management systems governing the manufacture of this product are ISO™ 9001:2000 and ISO 14001:2004 certified

## General Specifications

PowerSafe® GFM Module Type	Nominal Voltage (V)	Cell Type	Nominal Capacity (Ah)		Nominal Dimensions			Typical Weight <sup>(3)</sup> kg	Short Circuit Current (A)	Internal Resistance (mΩ)	Terminal	
			C <sub>10</sub> to 1.80Vpc	C <sub>5</sub> to 1.75Vpc	Length mm	Depth <sup>(1)</sup> mm	Overall Height <sup>(2)</sup> mm				Type	No. of pillars Pos/Neg
6GFM200	12	GFM200	200	200	570	366	218	89	2758	4.38	M8 F	1/1
6GFM300	12	GFM300	300	300	570	514	218	121	3751	3.21	M8 F	1/1
6GFM400	12	GFM400	400	400	683	514	218	163	4093	2.97	M8 F	1/1
6GFM500	12	GFM500	500	500	843	514	218	192	4250	2.88	M8 F	1/1
6GFM500A	12	GFM500A	500	500	859	514	218	197	4584	2.71	M8 F	1/1
6GFM600	12	GFM600	600	600	957	514	218	220	4886	2.49	M8 F	1/1
3GFM800	6	GFM800	800	800	681	514	218	151	6105	0.99	M8 F	2/2
3GFM1000	6	GFM1000	1000	1000	801	514	218	188	7100	0.85	M8 F	2/2
2GFM1500	4	GFM1500	1500	1500	610	558	278	211	9623	0.42	M8 F	2/2
3GFM1500	6	GFM1500	1500	1500	872	558	278	315	9623	0.63	M8 F	2/2
2GFM2000	4	GFM2000	2000	2000	740	558	278	269	11201	0.36	M8 F	3/3
3GFM2000	6	GFM2000	2000	2000	1069	558	278	402	11201	0.54	M8 F	3/3

### Notes:

<sup>(1)</sup> The depth shown in the table is for cell only. Add 40mm for overall depth including pillars. For front protection panel add an additional 86mm.

<sup>(2)</sup> To calculate the total height of a battery stack multiply the module height by the number of modules in the stack and add 80mm for the base support except for GFM1500 and 2000 modules where 100mm must be added.

<sup>(3)</sup> The typical weight of the module excludes the connectors, terminal plates and base support.

## Module Layout



The Modular design provides excellent flexibility for further combinations of capacity, voltage and footprint in addition to those in the table above.



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