



MD SERIES
12MD-12 (12V12AH)

FEATURES

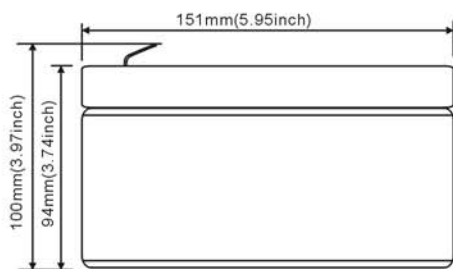
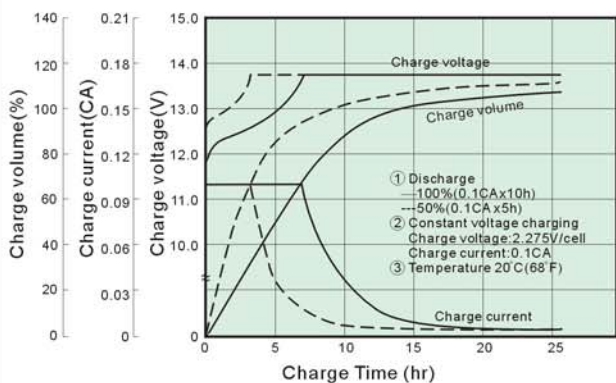
- *Maintenance Free
- *Leak Proof/ Spill Proof
- *Gas Recombination
- *Absorbed Electrolyte
- *Float/ Cycle Use
- *Low Self Discharge Rate
- *Safety Valve
- *Lead Calcium Alloy
- *Useable In Any Position
- *Rugged Design
- *Available Flame Retardant Material(Optional)

Nominal Voltage		
Rated Capacity (20 Hour Rate)		
Dimensions	Length	151mm (5.95inches)
	Width	98mm (3.86inches)
	Height	94mm (3.74inches)
	Total Height	100mm (3.97inches)
	Weight	4kg(8.8lbs)
Standard Terminals	ST1/ST2(FASTON TAB No.187/250)	

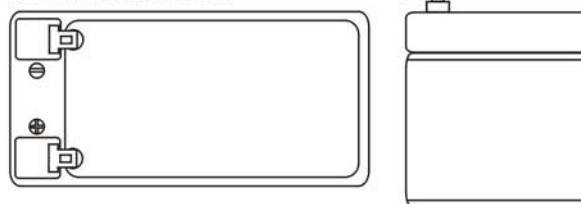
VRLA 12V12Ah - Specifications				
Nominal Voltage	Rated Capacity @20hr rate	Maximum Charge Rate	Maximum Discharge- Amps 5sec.	Internal Resistance
12V	12Ah	3Amps	100Amps	12Mili Ohms
Capacity@ 77F(25C)	12.00Ah @ 20 hour rate (0.6A) to 1.75 volts per cell			
	11.60Ah @ 10 hour rate (1.16A) to 1.75 volts per cell			
	11.00Ah @ 5 hour rate (2.2A) to 1.75 volts per cell			
	9.60Ah @ 3 hour rate (3.2A) to 1.75 volts per cell			
	8.10Ah @ 1 hour rate (8.1A) to 1.75 volts per cell			
Operating Temperature Range	Discharge	-4°F (-20°C) to +140°F (60°C)		
	Charge	14°F (-10°C) to +122°F (50°C). (with temperature compensation)		
Recommended Operating Temperature Range	+68°F (20°C) to +77°F (25°C)			
Charging (Constant Voltage)	Cycle use	Initial Current 3.6Amps (recommended).		
	Float use	Voltage 14.5-14.9Volts @77F (25C) Voltage 13.6-13.8Volts @77F (25C)		
Self Discharge @ 77F (25C)	Capacity after 3 month storage	90%		
	Capacity after 6 month storage	80%		
	Capacity after 12 month storage	60%		
CCB Battery may be stored for up to 12 months at 77F(25°C) and then a freshing charge is required. For higher temperatures the time interval will be shorter.				
Capacity affected by Temperature (20 hour rate)	104°F (40°C)	102%		
	77°F (25°C)	100%		
	32°F (0°C)	85%		
	58°F (-15°C)	65%		
Charge Method (Constant Voltage)	Cycle use (Repeating use)	Initial current	2.8A or smaller	
		Control voltage	14.5V to 14.9V	
	Trickle use	Initial current	1.1A or smaller	
		Control voltage	13.6V to 13.8V	

BATTERY CHARGING CHARACTERISTICS

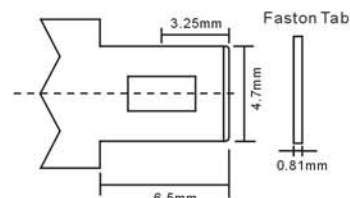
(Typical example of charge characteristic for the standby use)



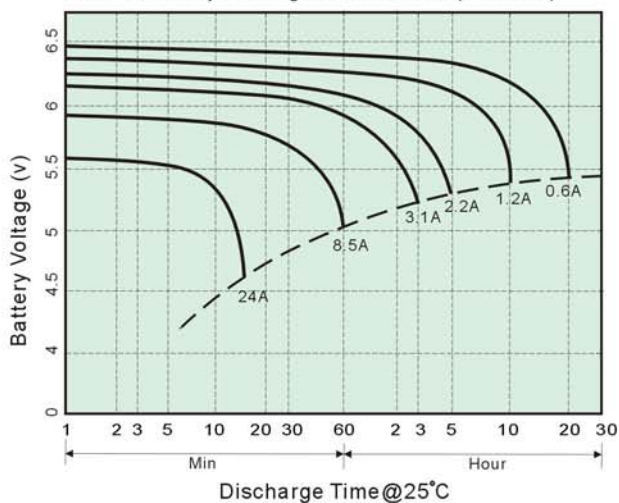
OUTER DIMENSIONS



6.5mm=0.256inch
4.7mm=0.187inch
3.25mm=0.128inch
0.81mm=0.032inch



12MD-12 Battery discharge characteristics (25 C/77 F)

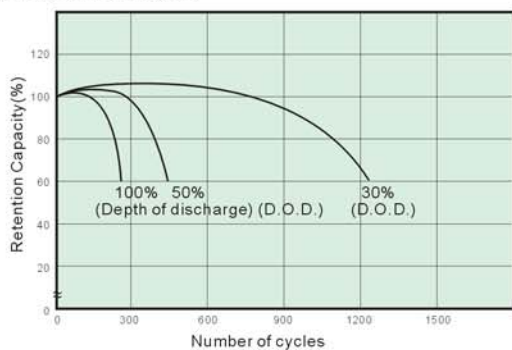


Constant power discharge characteristics at 25 C/77 F

End V/cell	Discharge time							
	5Min	10Min	15Min	30Min	1Hr	3Hr	5Hr	10Hr
1.75V	78	52	40	22	14.3	6.8	4.3	2.4
1.70V	81	54	41	22.4	15	7.2	4.5	2.5
1.60V	84.5	55	41.3	22.6	15.7	7.4	4.7	2.6

Battery Life Characteristics of Cyclic Use

Testing Conditions: Discharge Current: 0.25C Amp (F.V. 1.7V/cell)
Charging Current: 0.1C Amp
Charging Volume: 120% OF Discharge Capacity
Ambient Temperature: 20 C (68 F)



Charging Procedure

Application	Charging method	Charging Voltage at 20°C (V/cell)	Temperature compensation coefficient of charging voltage (mV/C cell)	Max. charging current (CA)	Charging time 0.1CA, 20°C (h)		Temp (°C)
					100% discharge	50% discharge	
For standby power Source	Constant voltage & Constant current charging	2.25~2.30	-3	0.2	24	20	0~40 (32~104 F)
For cycle service	(with current restriction)	2.40~2.0	-4	0.2	16	10	

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