CENTENNIAL AGM BATTERIES

CB12-215(12V215Ah)

Specification

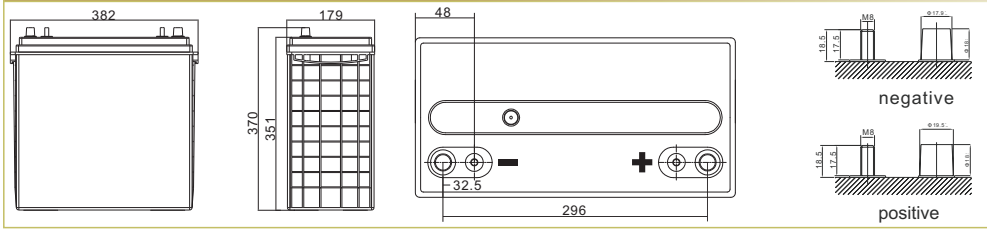
Cells Per Unit	3
Voltage Per Unit	6
Capacity	224Ah@20hr-rate to 1.75V per cell @25℃
Weight	Approx. 63.5 Kg/149.99Lbs (Tolerance±2%)
Internal Resistance	Approx. 5.0 mΩ
Terminal	F22
Max. Discharge Current	2100A (5 sec)
Cold Cranking Ampere(CCA)	850A
Cranking Ampere(CA)	1260A
Maximum Charging Current	63.0A
Reserve Capacity	490min@25A to 1.75V/Cell(25℃) 117min@75A to 1.75V/Cell(25℃)
Reference Capacity	C10 110.1AH C20 224.0AH
Float Charging Voltage	13.6 V~13.8 V @ 25℃ Temperature Compensation: -3mV/℃/Cell
Cycle Use Voltage	14.6 V~14.8 V @ 25℃ Temperature Compensation: -4mV/℃/Cell
Operating Temperature Range	Discharge: -20℃~60℃ Charge: 0℃~50℃ Storage: -20℃~60℃
Normal Operating Temperature Range	25℃±5℃
Self Discharge	RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25℃ and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25℃.Please charged batteries before using.
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.

The series is specially designed for frequent discharge deep cycle application.By using the specially designed active material,strong grids and thick plate construction,the series battery offers reliable performance in high load situations and could provide competitive cycle performance. Suitable for Electric Vehicle and Golf cart; Industrial equipment,Floor machines,Forklifts,Aerial lifts, and Robotics; Marine, RV, and no-idle solutions; Mobility and Medical equipment;and most outdoor application.

ISO 9001 ISO 14001 OHSAS 18001

MH 60419 G4M20206-0910-E-16

Dimensions



Length	382±1mm (15.0 inches)
Width	179±1mm (7.05 inches)
Height	351±1mm (13.8 inches)
Total Height	370±1mm (14.6 inches)
Terminal	Value
M5	6~7 N*m
M6	8~10 N*m
M8	10~12 N*m

Unit: mm

Constant Current Discharge Characteristics : A(25℃)

F.V/Time	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	370.4	212.9	131.2	80.10	57.10	45.10	37.70	26.60	22.00	11.70
1.65V	359.3	208.5	128.8	78.70	56.30	44.50	37.20	26.30	21.80	11.60
1.70V	344.8	202.6	125.5	76.90	55.10	43.70	36.60	25.90	21.50	11.40
1.75V	325.2	194.5	121.0	74.40	53.50	42.50	35.70	25.40	21.10	11.20
1.80V	298.9	183.5	114.8	71.00	51.30	41.00	34.50	24.60	20.50	11.00
1.85V	262.6	167.9	106.0	66.10	48.10	38.70	32.80	23.50	19.70	10.60

Constant Power Discharge Characteristics : W(25℃)

F.V/Time	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	648.0	387.0	245.0	152.0	109.0	86.60	72.60	52.00	43.30	23.00
1.65V	641.0	384.0	243.0	150.0	108.0	85.90	72.10	51.50	42.90	22.80
1.70V	621.0	376.0	238.0	147.0	106.0	84.50	71.00	50.80	42.40	22.60
1.75V	594.0	364.0	231.0	143.0	104.0	82.60	69.60	49.90	41.60	22.20
1.80V	554.0	347.0	220.0	137.0	99.60	79.80	67.50	48.50	40.50	21.70
1.85V	493.0	321.0	204.0	129.0	93.90	75.60	64.30	46.40	38.90	20.90

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

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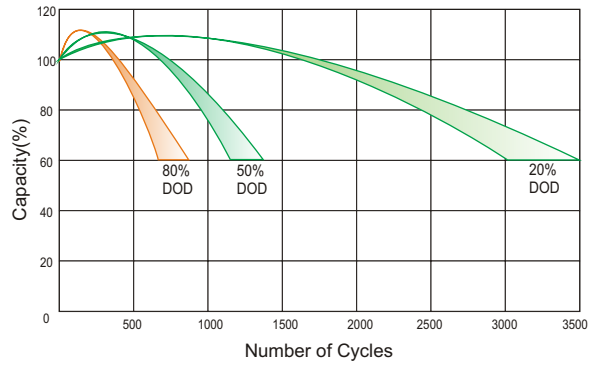
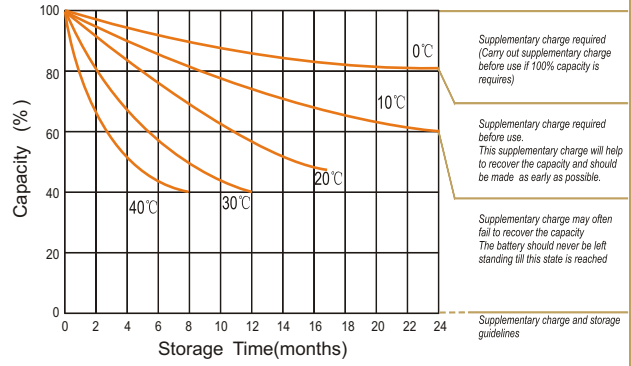
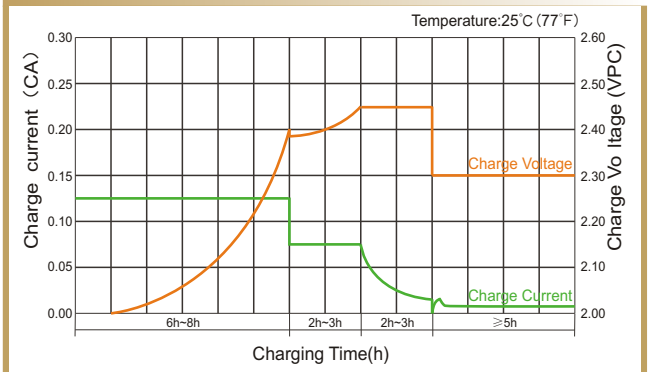
Cycle Life in Relation to Depth of Discharge



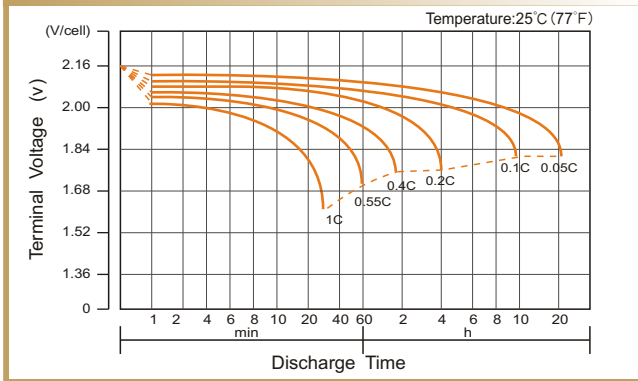
Storage Characteristics



Charge Characteristic Curve for Cycle Use(IIUU)



Discharge Characteristics Curve



CHARGE VOLTAGES

	Battery Voltage			
Charge Stage	**12V**	**24V**	**36V**	**48V**
Bulk	14.6	29.2	43.8	58.4
Absorption	14.6	29.2	43.8	58.4
Float	13.6	27.2	40.8	54.4
TC Factor:(-3mV℃/cell） or （-4mV℃/cell）				

Capacity Factors With Different Temperature

Battery Type		-20°C	-10°C	0°C	5°C	10°C	20°C	25°C	30°C	40°C	45°C
GEL	6V&12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
Battery	2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM	6V&12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
Battery	2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

Discharge Current VS. Discharge Voltage

Final D ischarge Voltage V /cell	1.75V	1.70V	1.60V
Discharge Current (A)	（A）≤0.2C	0.2C＜（A）＜1.0C	（A）≥1.0C

Charge the batteries at least once every six months, if they are stored at 25℃.

Charging Method:

Constant Voltage	-0.2Cx2h+2.4-2.45V/cellx24h,Max. Current 0.3C
Constant Current	-0.2Cx2h+0.1Cx12h
Fast	-0.2Cx2h+0.3Cx4h

Maintenance & Cautions

Cycle Service

▶Avoid battery overcharge, especially in series connection use.
▶Charge with recommended voltage.Ensure battery fully recharges. In general, recharge capacity should be 1.1-1.15 times discharge capacity.
▶Effect of temperature on cycle charge voltage: -4mV/°C / Cell
▶The length of cycle service will be affected by depth of discharge, ambient temperature discharge rate, and the manner in which the battery is recharged. Generally speaking, the most important factor is depth of discharge.

Float Service:

▶Every month, recommend inspection of every battery's voltage.
▶Every three months, recommend a one time equalization charge.
Equalization charge method:
Discharge - 100% rate capacity discharge
Charge - Max. current 0.3C, constant voltage 2.4-2.45V/Cell charge 24h.
▶Effect of temperature on float charge voltage: -3mV/℃/Cell.
▶Length of service life will be affected by the number of discharge cycles depth of discharge, ambient temperature ,and charging voltage