

SIN12-120 DC [12V 120AH]

DC (Deep Cycle) series batteries provide superior high integrity and reliability. It is specially designed for frequent cyclic charge and discharge. By using strong grids, thick plate and specially active material are designed for repeated deep-discharge applications. The DC series batteries offer 30% more cyclic life than the standby series. It is suitable for solar and wind renewable energy storage, mobility and medical equipment, V, telecom, broadband and cable TV, UPS systems etc..



Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	120Ah@10hr-rate to 1.80V per cell @25°C
Weight	Approx. 32.0 Kg
Max. Discharge Current	1150 A (5 sec)
Internal Resistance	Approx. 4.2 mΩ
Operating Temperature Range	Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C
Normal Operating Temperature Range	25°C±5°C
Float charging Voltage	13.6 to 13.8 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	34.5 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	SINERGY Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using.
Terminal	Terminal F12 (M8)
Container Material	A.B.S. (UL94-HB) , Flammability resistance of UL94-V1 can be available upon request.



MH28539



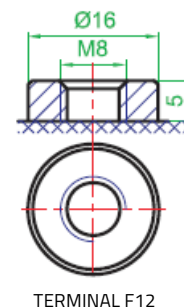
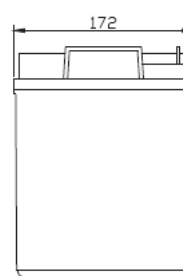
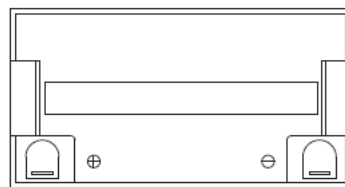
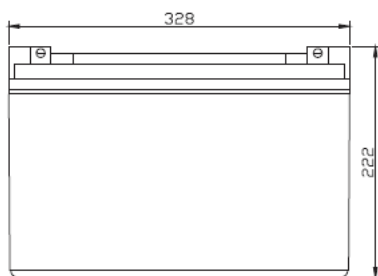
G4M20206-0910-E-16



ISO9001:2000 Certificate

Dimensions

Unit: mm Dimension: 328(L) × 172(W) × 222(H)



TERMINAL F12

CONSTANT CURRENT DISCHARGE CHARACTERISTICS : A(25°)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	384.8	272.2	217.7	135.2	78.00	44.34	30.65	25.12	20.56	14.16	11.97	6.59
10.0V	373.7	259.0	213.2	133.0	77.64	44.01	30.53	25.00	20.44	14.05	11.86	6.47
10.2V	362.6	249.9	209.9	131.8	76.92	43.67	30.29	24.88	20.32	13.93	11.74	6.35
10.5V	325.6	230.6	199.8	128.5	76.20	43.34	30.18	24.65	20.07	13.82	11.63	6.23
10.8V	293.9	210.3	184.2	122.9	74.40	42.56	29.36	24.07	19.71	13.59	11.51	6.11
11.1V	250.9	187.9	165.2	115.1	70.68	40.67	28.06	22.91	18.87	13.01	11.17	5.75

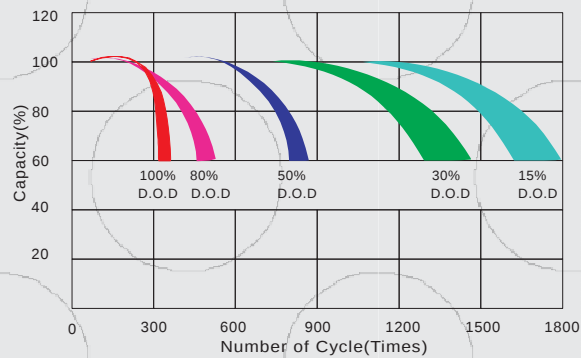
CONSTANT POWER DISCHARGE CHARACTERISTICS : W(25°)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	3980	2899	2395	1541	901	522.6	364.7	299.4	245.3	169.1	143.1	79.0
10.0V	3902	2810	2356	1522	899	519.8	364.8	299.0	244.6	168.3	142.2	77.6
10.2V	3857	2736	2330	1512	892	516.7	363.2	298.4	243.8	167.2	140.9	76.2
10.5V	3511	2548	2222	1476	884	513.0	361.8	295.6	240.9	165.8	139.5	74.7
10.8V	3198	2349	2054	1415	868	506.4	352.0	288.8	236.5	163.0	138.2	73.3
11.1V	2809	2123	1849	1329	831	487.6	336.8	274.9	226.4	156.1	134.0	69.0

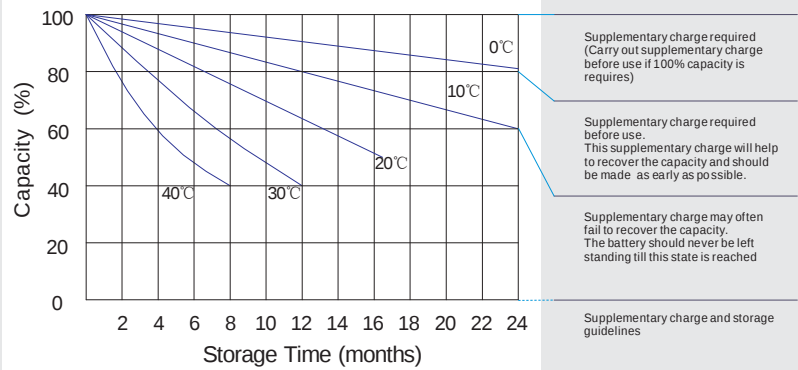
All mentioned values are average values.

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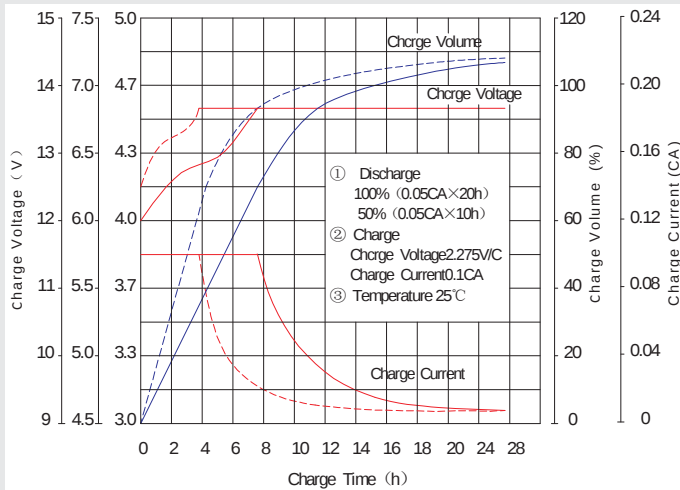
Life characteristics of cyclic use



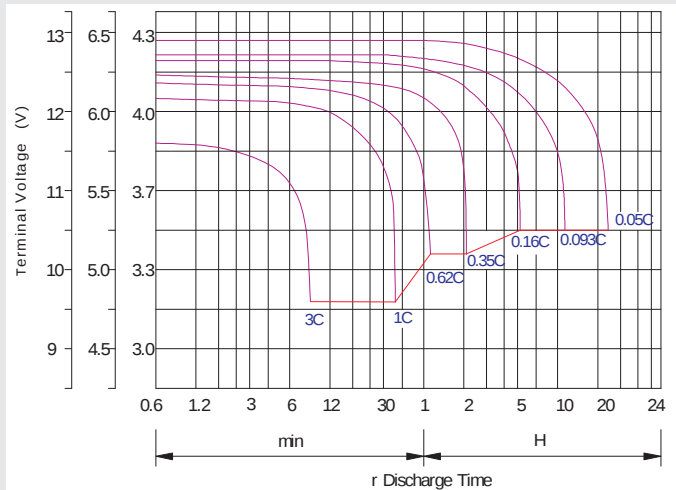
Storage characteristic



Charge characteristic curve for cyclic use



Discharge characteristic curve



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 Battery	6V&12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
	2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM Battery	6V&12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
	2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

Discharge Current VS. Discharge Voltage

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

Maintenance & Cautions

Cycle service

- ※ Avoid battery over discharge, especially battery series connection use.
- ※ Charged with recommend voltage, ensure battery can be full recharged.
- In general, recharge capacity should be 1.1-1.15 times discharge capacity.
- ※ Effect of temperature on cycle charge voltage: -4mV/°C/Cell.
- ※ There are a number of factors that will affect the length of cyclic service.
- The most significant are depth of discharge, ambient temperature, discharge rate, and the manner in which the battery is recharged.
- Generally speaking, the most important factors is depth of discharge.

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

Charging Method:

Constant Voltage	-0.2Cx2h+2.4~2.45V/Cellx24h,Max. Current 0.3CA
Constant Current	-0.2Cx2h+0.1CAx12h
Fast	-0.2Cx2h+0.3CAx4.0h