



# DC140-12 (12V140Ah)

DC (Deep Cycle) series is specially designed for frequent cyclic discharge. By using strong grids and specially designed active material, the DC series battery offers 30% more cyclic life than the standby series. It is suitable for solar energy systems, marine and RV etc.



## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	140Ah@10hr-rate to 1.80V per cell @25°C
Weight	Approx. 41.5 Kg (Tolerance ± 1.5%)
Max. Discharge Current	1340 A (5 sec)
Internal Resistance	Approx. 4 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	40.2A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	VMF 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 F5/F12
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.



MH28539



G4M20206-0910-E-16



CERTIFICATE

Postcode: 421001  
is in conformity with

ISO 14001:2004 Standard



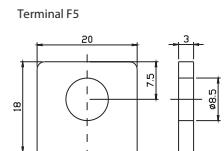
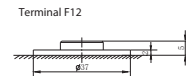
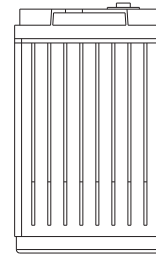
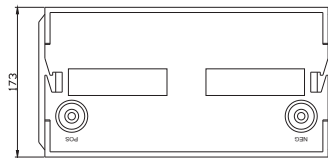
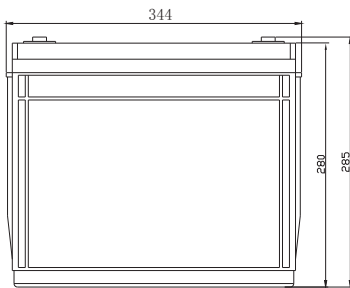
CERTIFICATE

Postcode: 421001  
is in conformity with

CHSAS 18001:1999 Standard

## Dimensions

Unit: mm Dimension: 344(L) × 173(W) × 285(H)



## Constant Current Discharge Characteristics: A (25°C)

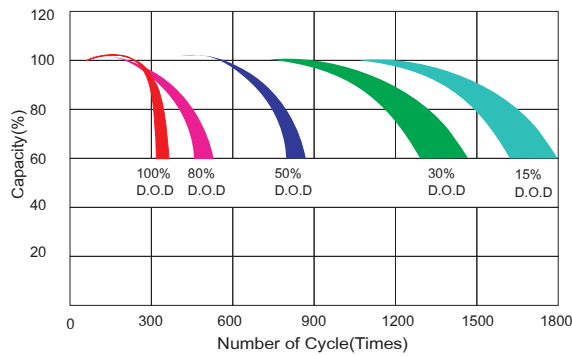
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	426.6	311.3	243.1	134.6	83.64	51.64	35.09	28.30	23.49	15.47	13.94	7.38
10.0V	414.2	296.2	238.1	132.9	82.53	50.60	34.44	27.89	23.28	15.41	13.81	7.24
10.2V	402.0	285.8	234.4	130.9	81.74	50.06	34.14	27.62	23.13	15.27	13.67	7.11
10.5V	360.9	263.7	223.1	127.3	80.74	49.41	33.83	27.21	22.94	15.13	13.53	6.97
10.8V	325.8	240.4	205.7	123.1	79.62	49.00	33.44	26.28	22.82	15.07	13.41	6.90
11.1V	278.2	214.9	184.5	118.4	77.73	47.03	32.78	25.90	22.66	14.95	13.26	6.62

## Constant Power Discharge Characteristics: W (25°C)

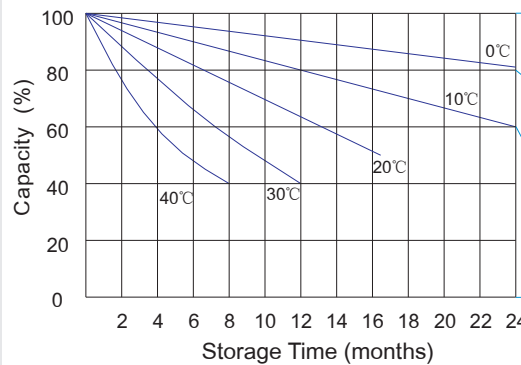
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	4412	3315	2674	1541	969.3	605.2	413.2	338.7	281.4	185.3	167.2	88.92
10.0V	4325	3214	2631	1525	960.4	597.8	407.0	333.9	278.9	184.6	165.9	87.38
10.2V	4276	3129	2601	1512	954.7	593.5	405.2	330.8	277.2	183.2	164.4	85.76
10.5V	3892	2914	2481	1481	948.6	586.0	401.9	326.3	275.0	181.6	162.8	84.14
10.8V	3545	2686	2294	1446	936.4	581.6	397.4	315.3	273.7	180.8	161.2	83.33
11.1V	3114	2428	2065	1406	922.4	559.9	390.8	310.8	272.7	179.5	159.4	80.35

All mentioned values are average values (Tolerance ± 2%).

### Life characteristics of cyclic use



### Storage characteristic



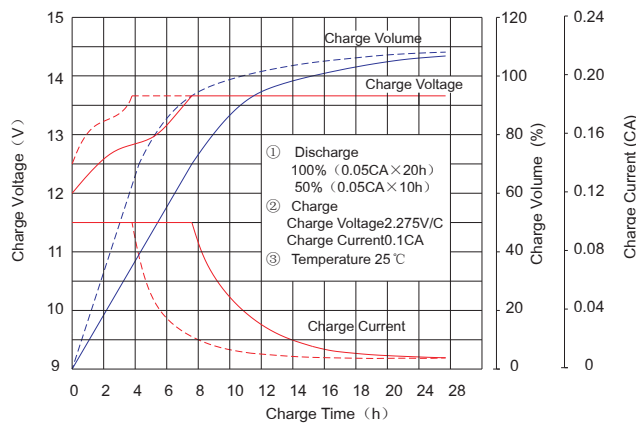
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is requires)

Supplementary charge required before use. This supplementary charge will help to recover the capacity and should be made as early as possible.

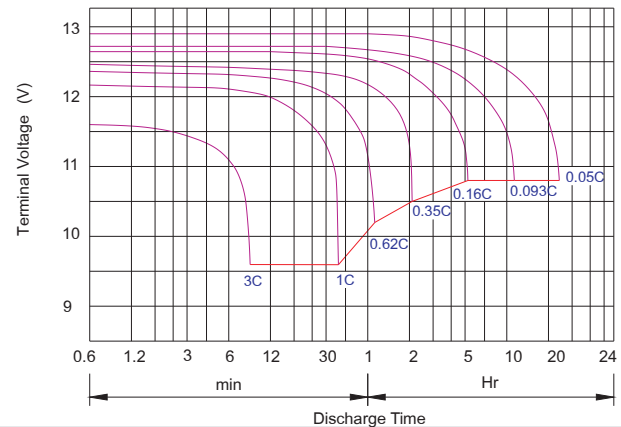
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

Supplementary charge and storage guidelines

### Charge characteristic Curve for standby 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

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

Charging Method:

Constant Voltage	-0.2Cx2h+14.4-14.7Vx24h, Max. Current 0.3C
Constant Current	-0.2Cx2h+0.1Cx7h+0.05Cx4h
Fast	-0.2Cx2h+0.3Cx3h

<b>Bolt</b>	M5	M6	M8
<b>Terminal</b>	F3 F4 F13 F18 T25 T26	F8 F11 F12-1 F15	F5 F9 F10 F12 F14 F16
<b>Torque</b>	6~7N·m	8~10N·m	10~12N·m

#### 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.