



# FT12-160D (12V160Ah)

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	160Ah@10hr-rate to 1.80V per cell @25°C
Weight	Approx. 49.0 Kg (Tolerance $\pm 1.5\%$ )
Max. Discharge Current	1600 A (5 sec)
Internal Resistance	Approx. 4 m $\Omega$
Operating Temperature Range	Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C
Normal Operating Temperature Range	25°C $\pm$ 5°C
Float charging Voltage	13.6 to 13.8 VDC/unit Average at 25°C
Recommended Maximum Charging Current	48 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	RITAR 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 F9
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

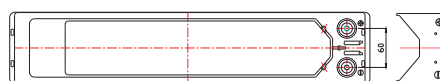
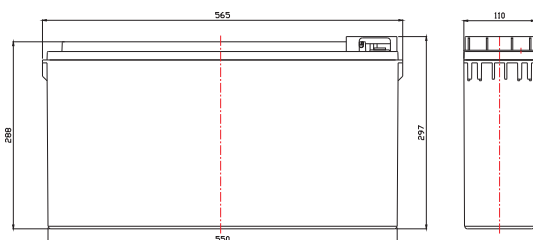
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is in conformity with

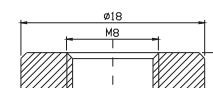
OHSAS 18001:1999 Standard

## Dimensions

Unit: mm Dimension: 565(L)  $\times$  110(W)  $\times$  297(H)



Terminal F9



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

F.V/Time	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	270.4	160.8	99.9	61.66	41.90	33.79	28.05	18.47	16.65	8.81
10.0V	264.9	158.7	98.5	60.42	41.13	33.31	27.80	18.40	16.49	8.65
10.2V	259.2	156.3	97.6	59.78	40.76	32.97	27.61	18.24	16.32	8.49
10.5V	246.8	152.0	96.4	59.00	40.40	32.49	27.39	18.07	16.16	8.32
10.8V	227.5	146.9	95.07	58.51	39.93	31.37	27.25	18.00	16.01	8.24
11.1V	204.1	141.4	92.81	56.16	39.15	30.92	27.05	17.85	15.83	7.90

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

F.V/Time	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	2997	1840	1157	722.6	493.3	404.4	336.0	221.2	199.7	106.2
10.0V	2954	1821	1147	713.7	486.0	398.7	333.0	220.4	198.1	104.3
10.2V	2921	1805	1140	708.6	483.8	395.0	331.0	218.7	196.3	102.4
10.5V	2790	1768	1133	699.7	479.9	389.7	328.3	216.9	194.4	100.5
10.8V	2604	1727	1118	694.5	474.5	376.5	326.8	215.9	192.5	99.50
11.1V	2371	1679	1101	668.5	466.6	371.1	325.6	214.4	190.4	95.94

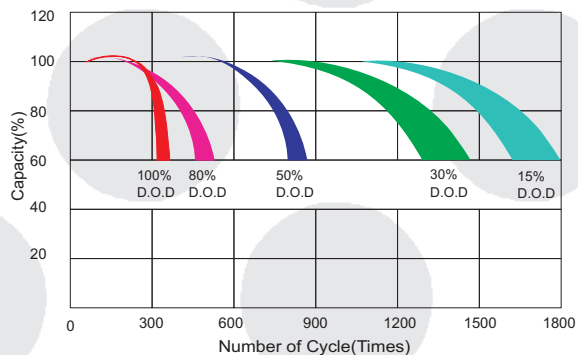
All mentioned values are average values (Tolerance  $\pm 2\%$ ).

# FT12-160D

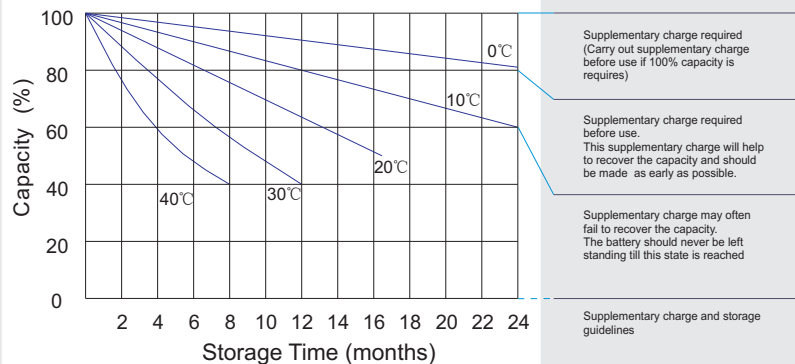
12V160Ah



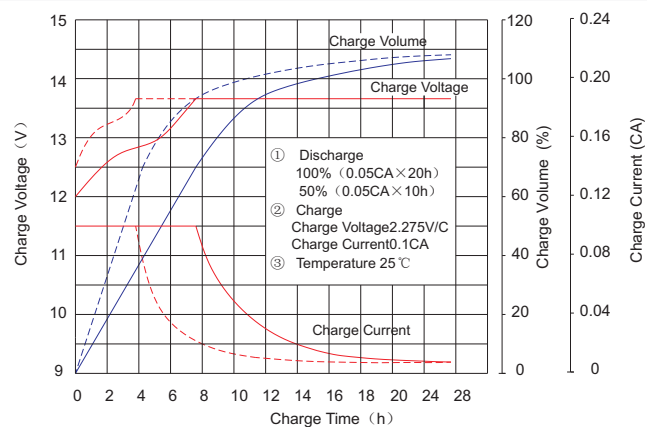
Life characteristics of cyclic use



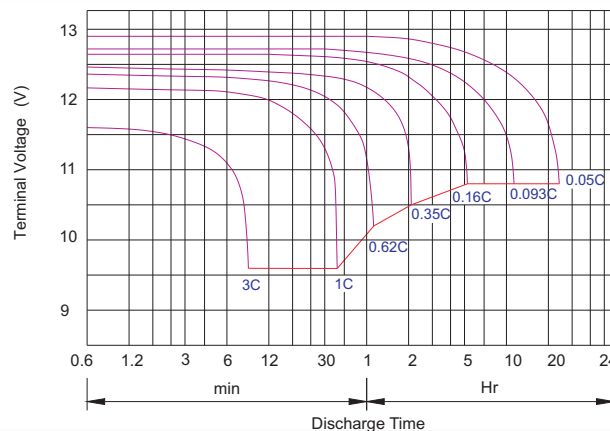
Storage characteristic



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

**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

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

## 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.