

SIN12-5 (12V5.0Ah)

SIN12-5 is a general purpose battery with 5 years floating design life, meet with IEC, JIS standard. With heavy duty grid, thickness plates, special additives, Sin series battery have long and reliable standby service life.

SINERGY
BATTERIES

Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	5.0Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 1.60 Kg
Max. Discharge Current	50 A (5 sec)
Internal Resistance	Approx. 35 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	13.7 to 13.9 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	1.5 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	Faston Tab 187(F2)
Container Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V2 can be available upon request.



MH28539



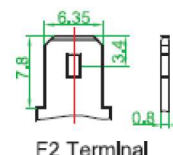
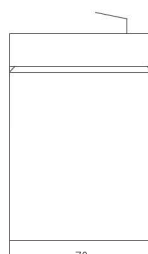
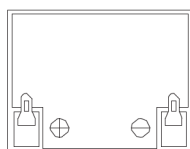
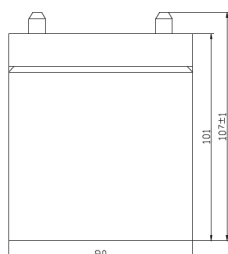
G4M20206-0910-E-16



ISO9001:2000 Certificate

Dimensions

Unit: mm Dimension: 90(L)×70(W)×107(H)



F2 Terminal

CONSTANT CURRENT DISCHARGE CHARACTERISTICS : A(25°)

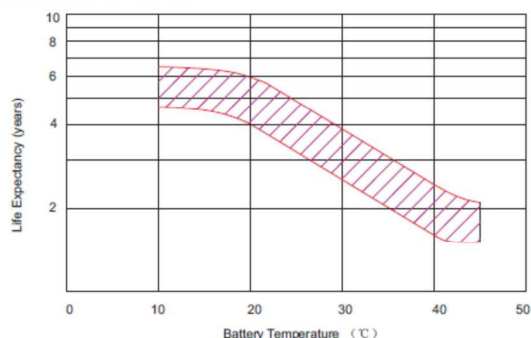
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	20.33	13.33	10.45	5.865	3.485	2.007	1.364	1.092	0.906	0.577	0.500	0.281
10.0V	19.60	13.00	10.11	5.790	3.390	1.967	1.339	1.076	0.891	0.575	0.495	0.270
10.2V	18.44	12.35	9.832	5.701	3.358	1.946	1.327	1.066	0.881	0.570	0.487	0.265
10.5V	16.58	11.55	9.274	5.544	3.292	1.920	1.315	1.055	0.871	0.565	0.485	0.257
10.8V	14.86	10.77	8.750	5.361	3.233	1.905	1.300	1.050	0.862	0.562	0.477	0.242
11.1V	13.00	9.876	8.072	5.157	3.146	1.828	1.274	1.041	0.853	0.558	0.469	0.238

CONSTANT POWER DISCHARGE CHARACTERISTICS : W(25°C)

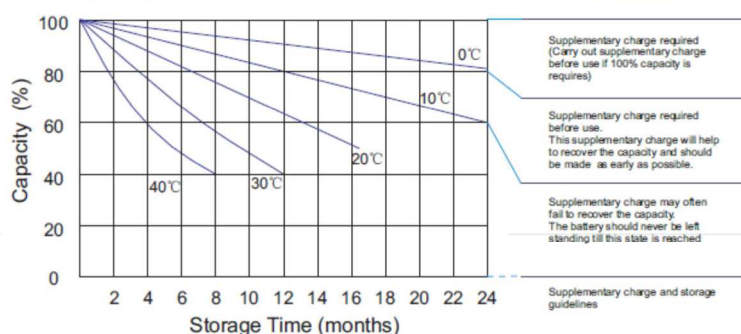
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	213.88	141.78	111.85	67.14	40.47	23.42	15.94	12.92	10.73	6.913	5.988	3.362
10.0V	208.31	138.83	110.25	66.44	39.87	23.22	15.91	12.89	10.68	6.886	5.931	3.242
10.2V	198.14	133.34	108.79	65.87	39.58	23.07	15.85	12.78	10.57	6.835	5.875	3.182
10.5V	180.85	127.84	103.13	64.52	39.04	22.88	15.79	12.66	10.45	6.777	5.814	3.093
10.8V	163.16	119.59	97.43	62.99	38.41	22.70	15.60	12.62	10.34	6.747	5.726	2.913
11.1V	143.88	111.34	91.77	61.26	37.69	21.91	15.30	12.49	10.24	6.700	5.640	2.866

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

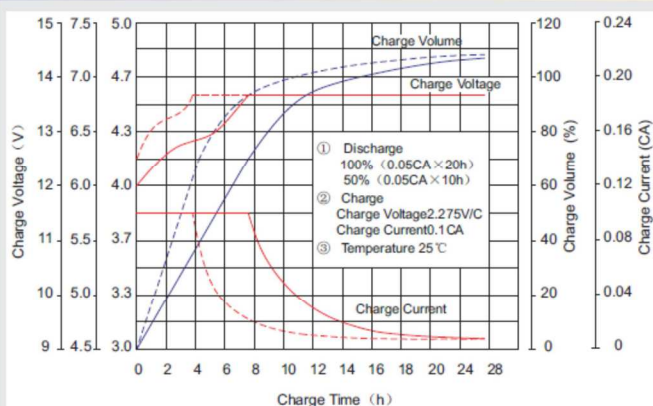
Effect of temperature on long term float life



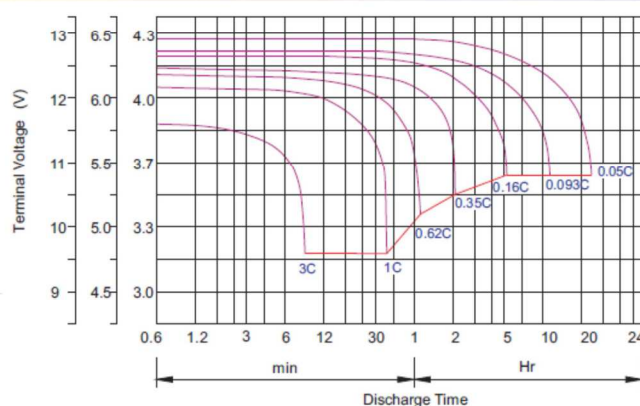
Storage characteristic



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

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

Float Service:

※ Every month, recommend inspection every battery voltage.
※ Every three months, recommend equalization charge for one time.
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/°C/Cell.
※ Length of service life will be directly affected by the number of discharge cycles, depth of discharge, ambient temperature and charging voltage.