



Gel Battery For Solar and Remote Area Power Systems



GEL TECHNOLOGY SG (Solar-GEL) SERIES

2SG1400(2V1398AH/120 HR)

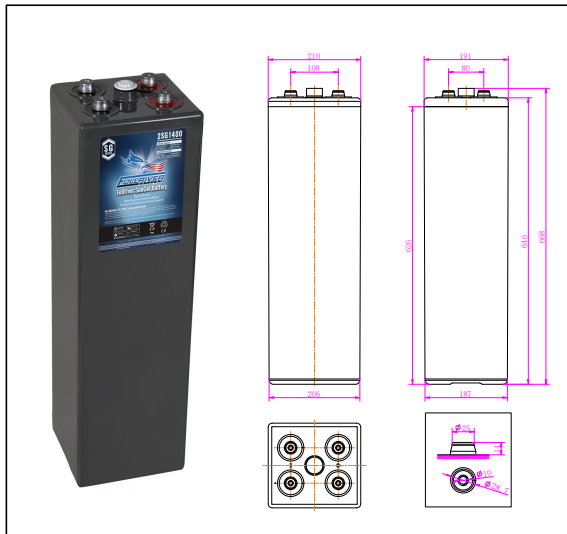


SG series batteries using revolutionary Solar-GEL long life plate technology has been designed specifically for solar applications. Solar applications are often remotely located and installed in the most extreme environmental conditions. To deliver a reliable service with a long operating life requires a unique blend of physical, structural and chemical characteristics. For this reason FSG series batteries is possibly the world's best solar battery.

General Features

- (1) Superior low current discharge performance.
- (2) Excellent Recovery from deep discharge and good deep discharge cycle capability.
- (3) The battery has a low self-discharge, keep over 60% of the rated capacity after 2years stored under 25°C.
- (4) Compliance with IEC61427 (1999) , AS 4086.1 (1993).

Outer Dimensions



Dimensions and Weight

Total Height..... 671 ±2mm (26.4 inches)
 Height..... 646 ±2mm (25.4 inches)
 Length..... 210 ±2mm (8.3 inches)
 Width..... 191 ±2mm (7.5 inches)
 Weight.....Approx. 67.1 Kg (147.9 lbs)

Performance Characteristics

Nominal Voltage..... 2V
 Nominal of cell..... 1
 Design life..... 20 years
 Nominal Capacity 77°F(25°C)
 120 hour rate to 1.80V..... 1398 AH
 100 hour rate to 1.80V..... 1313 AH
 20 hour rate to 1.80V..... 958 AH
 10 hour rate to 1.80V..... 888 AH
 Safety vent..... Self resealing 150 mbar
 Self-Discharge
2.5% of capacity declined per month at 25°C (77°F)
 Operating Temperature Range
 Discharge -40°C to 55°C (-40°F-131°F)
 Charge -10°C to 50°C (14°F-122°F)
 Storage -20°C to 40°C (-4°F-104°F)
 Nominal Operating Temperature Range.....25±3°C
 Max.Discharge Current 77°F(25°C)..... 1200 A(5S)
 Short Circuit Current..... 5000 A
 Internal Resistance0.38mΩ
 Container Material
ABS, Flame retardant to UL94-HB,UL94-V0 on request
 Terminal.....Threaded insert terminal M10

Charging Methods

Application	Charging method	Charging voltage at 25 °C	Temperature compensation coefficient of charging voltage	Max. charging current	Max. Charging time 25°C (h)	
					100% discharge	50% discharge
For standby power source	Constant voltage & Constant current charging (with current restriction)	2.25~2.275V	-3mV/°C	0.125C10	36	24
For Cycle service		2.40~2.45V	-4mV/°C	0.125C10	24	16

*Temperature compensation of charging voltage is not needed when using the batteries within 5°C to 35°C range.



Constant Current Discharge Characteristics: A(25°C)

F.V/Time	1h	2h	3h	5h	8h	10h	12h	24h	48h	72h	100h	120h
1.9	274	220	172	123.5	87.6	75.6	66.0	39.9	22.8	16.35	12.07	10.36
1.87	289	231	185	128.6	89.6	77.1	67.7	41.0	23.4	16.78	12.46	10.77
1.85	326	258	212	143.5	98.1	84.2	70.3	42.5	24.3	17.42	12.96	11.21
1.83	356	265	212	144.4	98.6	84.8	77.1	43.0	24.6	17.64	13.02	11.42
1.8	401	282	221	151.1	103.1	88.8	77.6	43.3	25.2	17.88	13.15	11.65
1.75	464	298	225	151.7	103.6	89.4	---	---	---	---	---	---
1.7	482	312	230	152.7	104.1	89.4	---	---	---	---	---	---
1.65	499	319	236	153.2	104.1	89.4	---	---	---	---	---	---

Constant Power Discharge Characteristics: W/cell(25°C)

F.V/Time	1h	2h	3h	5h	8h	10h	12h	24h	48h	72h	100h	120h
1.9	537	434	340	244.4	174.7	151.6	136.6	76.5	44.2	31.04	23.29	20.21
1.87	589	470	379	265.2	185.4	160.9	138.5	77.5	44.9	31.60	24.05	21.00
1.85	630	497	412	280.7	192.6	167.0	144.7	81.0	46.9	32.71	25.01	21.87
1.83	683	509	411	284.3	195.6	168.3	148.2	83.0	48.0	33.35	25.39	22.27
1.8	763	542	428	287.8	198.5	169.6	150.3	83.7	48.9	34.65	25.55	22.83
1.75	878	568	430	291.4	200.5	173.6	---	---	---	---	---	---
1.7	897	586	436	295.1	202.2	175.1	---	---	---	---	---	---
1.65	926	594	441	296.1	202.7	175.6	---	---	---	---	---	---

Design Life and Temperature

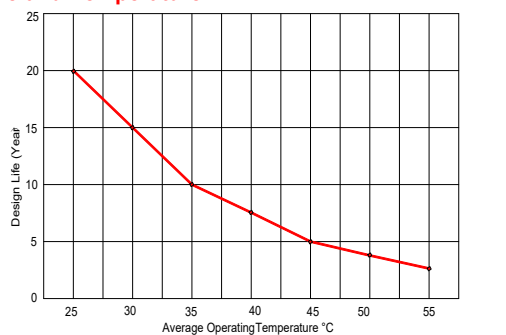


Figure 1: Design Life Vs. Temperature

Capacity and Temperature

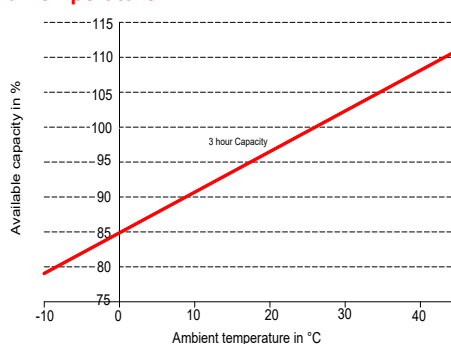


Figure 2: Capacity Vs Ambient temperature

Capacity Retention Characteristic

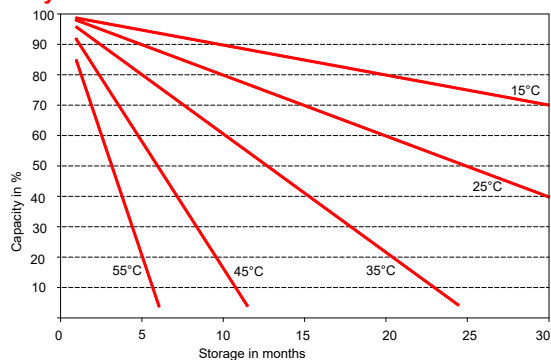


Figure 3: Self-discharge in relation to the storage temperature.

Cycle Service Life

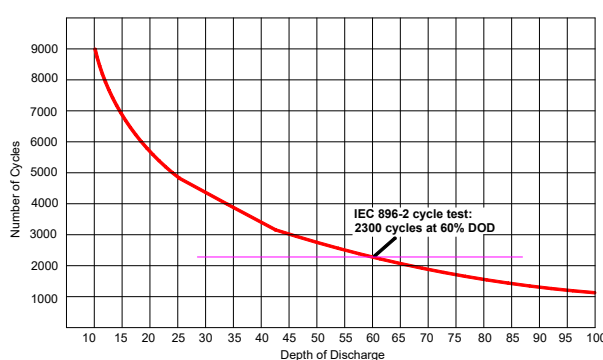


Figure 4: FSG Series, Number of Cycles vs. Depth of Discharge (DOD)

Contact Information

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Other Fullriver battery ranges:

- DC Series : AGM Battery For Deep Cycle service*
- HC Series : AGM Battery For High Cranking service*
- HGXL Series : 2V AGM Stationary batteries*
- HGHL Series : AGM Batteries for High Rate Service*
- FAT Series : Front Access Terminal Batteries for Telecom/IT Applications*
- DCG Series : Gel Battery For Deep Cycle service*
- HGL Series : AGM Battery For General Purpose service*