

Technical specification sheet

2006

SG^{PLUS} 2000H (12V200AH/C₂₀)

Power **Lead carbon** Premium Battery

SG SERIES
Solar Gel Deep Cycle



*** The color and the printed specifications of the products are subject to change without prior notice.

NEWMAX Solar gel batteries are true maintenance-free sealed batteries engineered specially to satisfy the need for frequent deep cycles from PVs and renewable energy storage applications. We are confident that our technology-intensive, long-lasting, and environment friendly SG batteries will provide stability and efficiency for your everyday renewable energy needs.

01	Longer Life	02	Maintenance Free	03	Leak Free	04	Safety
High density, anti-corrosion lead calcium alloy is used in harmony with the GEL electrolyte to reduce the sulfation effect significantly.		NEWMAX battery has a gas recombining design that doesn't need maintenance until the end of its life.		Gel Technology is applied to prevent leakage. They won't spill even if the battery is tipped upside down.		Specially designed anti-explosion filter and safety valves prevent gas leakage when overcharged.	

Technical feature



Fahrenheit-Schutz™ Heat Protection Case

Specially Formulated heat and flame resistant PP case material is used to effectively block ambient heat thus preventing heat related malfunctions such as thermal runaway. This proprietary high rigidity case material has heat deflection rating of 140°C.



MaxPress™ Grid Technology

Patent pending grid compressing technology which increase the density of the lead grain of the grids. The grain density is typically 400% greater than that of the conventional casting method. This up-to-date grid technology enables our batteries to survive even the toughest deep discharge and PSoc applications.



ThixoPure™ GEL Technology

Application of refined pure thixotropic colloidal silica GEL technology to battery electrolyte has greatly increased the cycle life by both preventing plate stratification and providing extra temperature protection against heat and cold. We are the first Korean company to successfully commercialize the GEL technology in the VRLA battery industry.



FlexSealing™ Anti Explosion Filter

Patent pending proprietary cap filtering and sealing technology. Battery cell caps are sealed simultaneously using specially designed O-ring and explosion filters to prevent leakage and gassing more effectively than ever before.



Active Carbon™

In every NEWMAX battery, proprietary active carbon additive is used in the active material for both positive and negative plates to enhance charge acceptance and cycle endurance. Active Carbon™ works to strengthen charge pathways to improve performance consistency and enhance performance at partial state of charge(PSoc) environment.

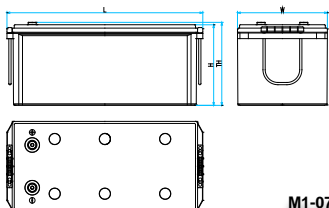
Operating temperature range

Discharge	Charge	Storage
-20°C~60°C	0°C~50°C	-20°C~60°C

General feature

Plate	Paste type
Battery type	Sealed and Maintenance free / Non-spillable construction design
Case/cover mat	High-stiffness engineering PP plastic (Heat Deflection Temp. 140°C) RoHS Compliant EU Directive 2002/95/EC
Safety performance	Safety valve & flame arrestor installation for explosion proof.
<ul style="list-style-type: none"> High quality, high reliability and low self discharge rate Exceptional deep discharge recovery performance 	
Flexibility design for multiple install positions (Position Free, GEL Technology)	
Designed in accordance with and published in compliance with applicable IEC and BS EN, KS stds.	
<ul style="list-style-type: none"> IEC 60896-21/22 Stationary lead-acid batteries – Valve regulated types BS EN 61427 Secondary cells and batteries for photovoltaic energy systems (PVES) KS C 8518 Stationary sealed lead-acid batteries – Valve regulated types 	

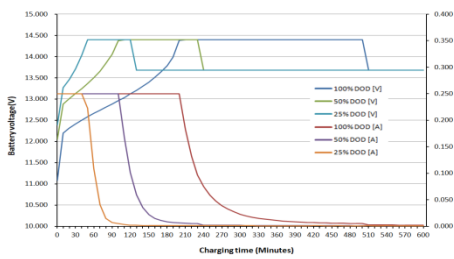
Standard



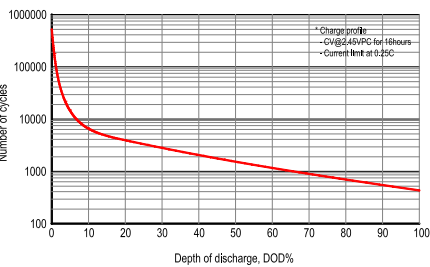
M1-07

Battery model	SG 2000H (12V200AH / 20 HOUR RATE)			
Capacity (@25℃)	C ₂₀ (1.80VPC)	C ₁₀ (1.80VPC)	C ₅ (1.70VPC)	C ₁ (1.60VPC)
	200Ah	185Ah	168Ah	122Ah
Dimensions (mm/inch)	Length	Width	Height	Total Height
	524(20.63)	241(9.49)	215(8.46)	221(8.70)
Weight (kg/lbs)	57.0kg(125.66lbs)±3%			
Internal resistance (mΩ)	≤2.50mΩ (25℃, 77°F)			
Max. discharge current (5sec)	1456 A	Max. discharge current(continuous)		546 A
Capacity affected by Temperature	@30℃(86°F)	@25℃(77°F)	@10℃(50°F)	@-10℃(14°F)
	105%	103%	95%	78%
Self discharge (@25℃,77F)	After 1 month ≤2%		After 3 month ≤6%	After 6 month ≤12%
Max. short duration discharge current (0.1sec)	3,640A±10%			
Recommended charging (@25℃) Solar system	1 st Bulk step	2 nd Absorption step		3 rd Floating step
	0.20~0.25C CC	2.40V/cell CV, (cut-off A : 0.005C ₂₀)		2.28V/cell CV

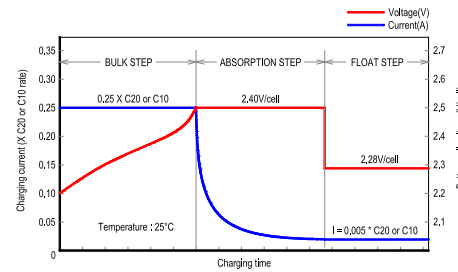
DOD % vs charging time curve (@25°C)



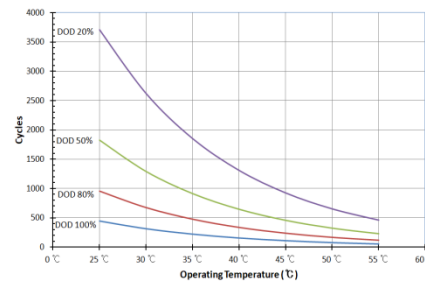
Cycle life vs detail DOD% (@25°C)



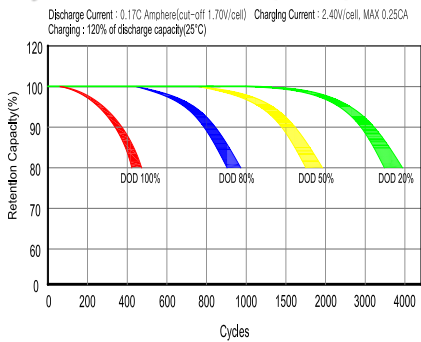
Solar charging characteristics (@25°C)



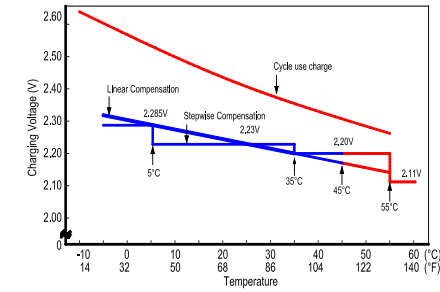
Relationship between cycle life & temp.



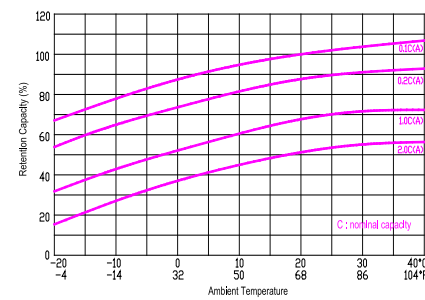
Cycle life characteristics (@25°C)



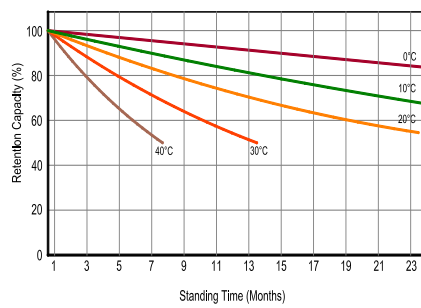
Relationship between charging voltage & temp.



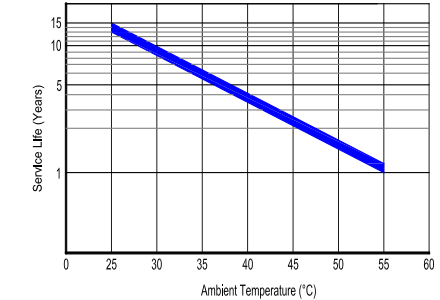
Effect of temperature on capacity



Self discharge



Relationship between Floating life & temp.



Constant current discharge ratings – Amperes per cell @ 25°C

V/cell	Minutes						Hours					
	5	10	15	20	30	40	1	3	5	8	10	20
1.85V	166	162	159	154	131	118	93.9	43.7	28.8	19.3	17.0	9.17
1.80V	241	231	205	185	155	135	105	47.3	31.4	20.6	18.5	10.0
1.75V	280	259	225	199	161	143	110	47.8	32.3	21.0	18.5	10.0
1.70V	318	283	242	212	168	148	114	49.3	33.7	21.5	18.5	10.0
1.65V	354	307	259	224	177	152	117	51.1	33.9	21.9	18.6	10.1
1.60V	397	337	279	239	188	160	122	52.7	35.2	22.3	18.8	10.2

Constant power discharge ratings – Watts per cell @ 25°C

V/cell	Minutes						Hours					
	5	10	15	20	30	40	1	3	5	8	10	20
1.85V	306	299	294	284	246	224	178	84.0	55.7	37.5	33.1	17.9
1.80V	435	416	370	336	285	250	197	90.3	60.2	39.7	35.9	19.4
1.75V	490	461	403	360	294	264	206	91.1	61.7	40.4	35.9	19.4
1.70V	540	482	432	380	305	271	212	93.8	64.2	41.7	36.0	19.4
1.65V	593	529	455	398	318	276	221	96.6	65.0	42.6	36.2	19.6
1.60V	648	564	482	419	336	289	223	99.4	66.6	42.7	36.6	19.8