

TEST REPORT

Test type: _____ Type Test _____

Sample Name: Valve Regulate Lead-acid Battery

Model Type: _____ SPG121000W _____

Reporter: _____ Chen Chuanguo _____

Report Date: _____ 2014-03-24 _____

**Shandong Sacred Sun Power Sources CO.,Ltd
Inspection & Testing Center**

Test Report

Shandong Sacred Sun Power Sources Co.,Ltd
No1. Shengyang Road, Qufu ,Shandong, P.R.C

Report No. :SPS/201403012
Date :2014/03/24

The following information was submitted and identified by the manufacturer as:

Product manufacturer: Shandong Sacred sun Power Sources Co.,Ltd

Product name : Valve Regulate Lead-acid Battery

Product model range: SPG series

Product details: SPG12233W/ SPG12280W/ SPG12310W/ SPG12320W/ SPG12350W/
SPG12375W/ SPG12440W/ SPG12470W/ SPG12535W/ SPG12620W/
SPG12830W/ SPG121000W

Product tested : SPG121000W

Test result : - Please see the next page –

Chuanguo Chen, M.R./Operation Manager
Signed for and on behalf of
Shandong Sacred Sun Power Sources Co.,Ltd

The content of this file is in accordance with the original issued reports for reference only. This test report cannot be reproduced , except in full, without prior written permission of the company.

No1,Shengyang Road, Qufu city, Shandong Province, P.R.C

Tel:+86-537-4438666 Fax:+86-537-4411980

Test Report

Shandong Sacred Sun Power Sources Co.,Ltd
 No1. Shengyang Road, Qufu ,Shandong, P.R.C

Report No. :SPS/201403012
 Date :2014/03/24

Test result with IEC 60896-21/22:

Product safe operation in service	IEC 60896-21 test clause result				
6.1 Gas emission	Ge(float charge)= 0.00055(ml/ h • Ah) C ₃			Ge(over-charge)= 0.033(ml/ h • Ah)C ₃	
6.2 High current tolerance	Pass				
6.3 Short circuit and d.c. internal resistance	Short circuit=5560A internal resistance = 1.86mOhm				
6.4 Internal ignition from external spark sources	Pass				
6.5 Protection against ground short propensity	Pass				
6.6 Content and durability of required markings	Pass				
6.7 Material identification	Case: information still remain readable after exposure to chemical and remain in place			Cover: information still remain readable after exposure to chemical and remain in place	
6.8 Valve operation	Before: Pass			After: Pass	
6.9 Flammability rating of materials	BOX FR V0			Lid FR V0	
6.10 Intercellular connector performance	41.0°C				
Product performance in service	IEC 60896-21 test clause result				
6.11 Discharge capacity	104% C ₁₀	104% C ₈	103% C ₃	103% C ₁	102% C _{0.25}
6.12 Charge retention during storage	91.2%~92.9%				
6.13 Float service with daily discharges	518 Cycle	C _{af} =51.6%		C _{ab} =63.3%	
6.14 Recharge behavior	24h:>92.8%			168h:>98.9%	

The content of this file is in accordance with the original issued reports for reference only. This test report cannot be reproduced , except in full, without prior written permission of the company.

No1,Shengyang Road, Qufu city, Shandong Province, P.R.C

Tel:+86-537-4438666 Fax:+86-537-4411980

Test Report

Shandong Sacred Sun Power Sources Co.,Ltd
 No1. Shengyang Road, Qufu ,Shandong, P.R.C

Report No. :SPS/201403012
 Date :2014/03/24

Product durability in service	IEC 60896-21 test clause result	
6.15 Float service life at 40°C	N/A	
6.16 Impact of stress temperature of 55°C or 60°C	Days at C3 at 60°C: 270 to 280days	
6.17 Abusive over-discharge	$C_{aod}:0.93$	$C_{aoc}:0.97$
6.18 Thermal runaway sensitivity	168h/14.70V:42°C	168h/15.60V:43°C
6.19 Low temperature sensitivity	Cals:1.02-1.04	No damage
6.20 Dimensional stability at elevated internal pressure and temperature	The width charge:0.1mm The length charge:0.1mm	
6.21 Stability against mechanical abuse of units during installation	Pass	No leakage

Note: N/A=not available

The content of this file is in accordance with the original issued reports for reference only. This test report cannot be reproduced , except in full, without prior written permission of the company.

No1,Shengyang Road, Qufu city, Shandong Province, P.R.C

Tel:+86-537-4438666 Fax:+86-537-4411980