SHYAM ELECTRONICS & MAGNETICS

SPECIFICATION

PRODUCT ID: SEM-1220-P2

AC/DC ADAPTER (WALL MOUNT PLUG IN TYPE) 12VDC@2.0Amp

DOCUMENT NO- SEM/TEST-R/SEM-1220-P2

Prep By _____ **Checked. by_____** **App. By_____**

Technical Specifications Date-10/10/2024

Product- Adapter (S.M.P.S BASED) 12VDC-2.0Amp Constant Voltage output @ input voltage range 100VAC -280VAC 50Hz/60Hz

Product ID---SEM-1220-P2

CONTENTS

1. Scope: This document contains electrical specification, mechanical specification and safety & etc. requirement.

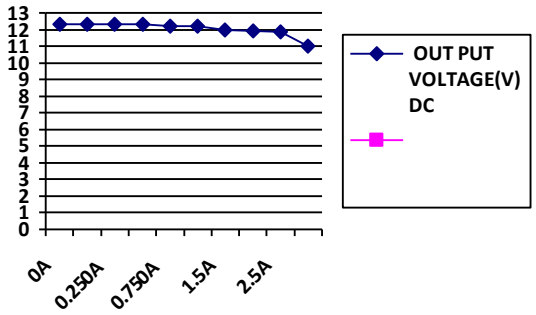
2. Electrical Specification:

2. 1 AC input characteristics:

SN	Test	Specifications
2.1.1	Rated input voltage	100VAC-280V AC
	Maximum operating voltage range	90VAC- 290VAC
	Input voltage withstand capacity	**300VAC**
2.1.2	Input frequency	47Hz- 60Hz
2.1.3	Input current	<0.700A (ON FULL LOAD & COMPLETE INPUT VOLTAGE RANGE)
2.1.4	Input inrush current	<20A/10ms@230VAC INPUT VOLTAGE Cold Start 45℃
2.1.5	No load loss	<300mW (AT COMPLETE INPUT VOLTAGE RANGE)

2.2 DC output characteristics:

SN	Test	Specifications
2.2.1	Output voltage	12.0VDC (MIN-11.40 VDC –MAX-12.60VDC)
2.2.2	Output current	2.0Amp DC (0A-2.5A Max.)

2.2.3	VICurve@100vac-280vac input	
2.2.4	LINE and Load REGULATION <+/- 5%	INPUT---100VAC—280VAC OUT PUT---12.0VDC—12.6VDC AT NO LOAD 11.40VDC—12.2VDC AT 2.0Amp LOAD
2.2.5	Ripple and noise	**Noise≤280mVpeak-peak, Ripple≤120mV** at all input voltage range with no load & full load, testing probe with 10uf electrolytic and 0.1uf ceramic disk capacitor)

2.2.6	Output Indication	Red indication on output side
2.2.7	Hold up time	>10mSec. at 230vac input
2.2.8	Overshoot and undershoot <10%	<1.0V @MAINS POWER ON-OFF on full load and 280vac input
2.2.9	Turn on delay	<4 Sec. on all input range & 2.0amp output load
2.2.10	Rise time	<20msec.
2.2.11	Efficiency	≥70% on all input range & 2.0amp output load

2.3 Safety characteristics:

SN	Test	Specifications
2.3.1	Hi-Pot test Input (AC) – output(S) Shorted	3KVDC for 60seconds @5ma trip current setting
2.3.2	Insulation resistance Input (AC) – output(S) Shorted	>100M ohm @500VDC Tested with 500VDC Megger
2.3.3	Leakage Current Maximum 0.25mA	≤0.25mA@280Vac Input

2.4 Protection characteristics:

SN	Test	Specifications
2.4.1	Over current protection	2.5 AMP Maximum.
2.4.2	Over voltage protection	Maximum output voltage<12.8vdc.
2.4.3	Short circuit protection	At short-circuit output voltage will be zero and system Will be remain to on-off internally. After short-circuit removal system will operates normally.
2.4.4	Surge Immunity	4.0kv passed in Differential and Common mode.

2.5 Environmental:

SN	Test	Specifications
2.5.1	Operating temperature and humidity	-8℃～45℃ 20%～95%H
2.5.2	Storage temperature and humidity	-8℃～50℃ 15%～80%H
2.5.3	Vibration test	10 to 55Hz sweep at acceleration of 10.0G (Breadth 1.0mm) for 1hour at all three perpendicular axis X-Y-Z- No damage occurred and device worked normal
2.5.4	Drop Test	The cabinet is not damaged or open and work normally after dropping from 1 meter height for 3 time on concrete floor

2.6 Reliability requirement:

SN	Test	Specifications
2.6.1	High temperature operating	Tested up to 4.5 hours in 45℃ temperature closed chamber on maximum output load and rated input voltage.
2.6.2	Low temperature Operating	Tested up to 4.5 hours in -8℃ temperature closed chamber on maximum output load and rated input voltage.
2.6.3	High temperature and humidity test	Tested for 24hours in 35℃- 45℃ temperature and 90%~95% humidity on maximum output load and rated input voltage. There is no specific sign of abnormality and product operates normally.

3.0—Mechnical specification

3.1 Input side- AC 3 pin plug in wall mount type, two pin for live & neutral as per IS standards, Third pin dummy for better hold in socket.

3.2 Output side- Two core parallel P.V.C sheathed cable 14/38 SWG 1.25Mtr length
Dc Jack- Barrel locks type connector 2.1mm*5.5mm

3.3 Adapter enclosure dimensions- 82mm*47mm*62mm (L*W*H)

3.4 Total required accommodated space -105mm*65mm*62mm (L*W*H)

3.5 Adapter enclosure Material---- PC Black, Flame rating UL94V.0/V.1

3.6 Adapter Weight----------104gram

Product Images

The End