General

SINPRO

SPU46 series

V1.5

50W External Power Supply for General Purpose

The SPU46 series of AC/DC switching mode power supplies provide 50 Watts of continuous output power. All models meet FCC Part-15 class B and CISPR-22 class B emission Limits and are designed to comply with UL/c-UL marking conformity assessment. All units pass burn-in test at full load condition.

RoHS COMPLIANT

FEATURES:

* Wide Operating Voltage 90 to 264 VAC,47 to 63 Hz
* IEC-320-C14 Input Inlet
* Single Output
* Crowbar Mode Over Voltage Protection
* Efficiency level V
* 3 year warranty

APPLICATIONS:

* POS System
* AV Equipment
* Industrial PC
* Note PC
* Charger
* LED Lighting

APPROVALS:

c UL us CB FC PS E LPS

GENERAL SPECIFICATION:

* **Short Circuit Protection**: Auto Recovery
* **Cooling**: Free Air Convection
* **Protection Classes**: Class I
* **Safety**: UL 60950-1:2nd Edition, IEC 60950-1:2005 /A2:2013, EN60950-1:2006 /A2:2013, CSA C22.2 No.60950-1-07

Electrical Characteristics:

Symbol	Characteristic	Condition	Min.	Typ.	Max.	Unit
Vins	Safety Approval Input Voltage Range	Safety Approval & Specification in Label	100		240	VAC
Vin	Input Operate Voltage Range	Detail to see Fig.1	90		264	VAC
Fi	Input Frequency	Sine wave	47		63	Hz
Po	Output Power Range	See Rating Chart			50	W
Iil	Low Line Input Current	Full Load, Vin=100VAC		1.2		A
Iih	High Line Input Current	Full Load, Vin=240VAC		0.6		A
Irl	Low Line Input Inrush Current	Full Load, 25°C, Cool start, Vin=100VAC			53	A
Irh	High Line Input Inrush Current	Full Load, 25°C, Cool start, Vin=240VAC			127	A
Ik	Safety Ground Leakage Current	Vin=240VAC, Fi=60Hz			0.75	mA
η	Efficiency	Full Load, Vin=230VAC, Detail to see Rating Chart	See Rating Chart			
▵Voi	Line Regulation	Full Load, Vin=100~120VAC	0.5		1	%
▵VoL	Load Regulation	Vin=230VAC, 10~90% Load Change at Condition	3		5	%
OVP	Over Voltage Protection	Over Voltage Protection	112		132	%
OLP	Over Load Protection	Recovers automatically after fault condition is removed	110		150	%
ttr	Time of Transient Response	Io=Full Load to Half Load, Vin=110VAC			4	ms
thu	Hold-Up Time	Full Load, Vin=100VAC	See Rating Chart			
ts	Start-up time	Full Load, Vin=100~240VAC			2	s
Tc	Temperature Coefficient	Full load, Vin=100~240VAC			±0.04	%/°C
HV	Dielectric Withstanding Voltage (P-S)	Primary to Secondary			4242	VDC
Vpg	Dielectric Withstanding Voltage (P-G)	Primary to PE			2121	VDC
EMI	EMC Emission				B	Class

Environmental:

Symbol	Characteristic	Condition	Min.	Typ.	Max.	Unit
To	Operating Temperature	Detail to see Fig.2 (Derate linearly from 100% load at 40°C to 50% load at 70°C)	0		70	°C
Ts	Storage Temperature	10 ~ 95% RH	-40		85	°C
Ho	Operating Humidity	non-condensing	0		95%	RH
Hs	Storage Humidity		0		95%	RH
ESDa	Electro Static Discharge	Air Discharge, IEC61000-4-2			8	kV
ESDc	Electro Static Discharge	Contact Discharge, IEC61000-4-2			4	kV
MTBF	Mean Time Between Failure	Operating Temperature at 25°C, Calculated per MIL-HDBK-217F	100k			h
ELEV	Operating Altitude (Elevation)	All condition			2000	m
VBR	Vibration	10 ~ 500Hz, 10min./1cycle, 60min. each along X, Y, Z axes			5	G
Vsl	Surge Voltage	Line-Neutral			1	kV
Vsg	Surge Voltage	Line-PE & Neutral-PE			2	kV

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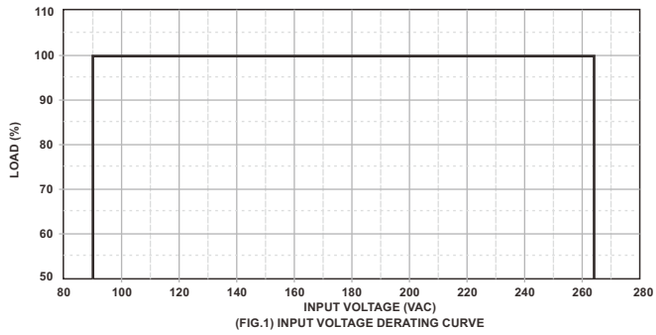
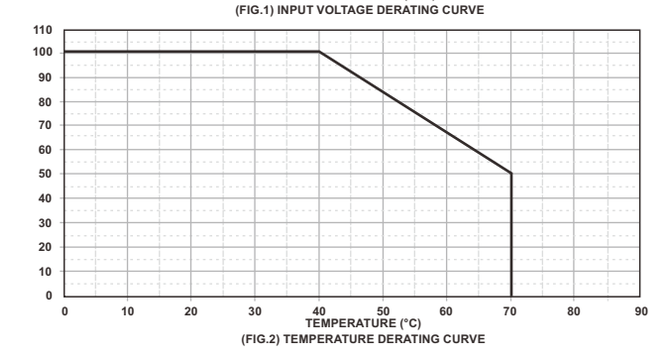
SPECIFICATION NOTE :

1. Output can provide up to peak load when the power supply starts up. Continuous staying in more than rated load is not allowed.
2. At factory, in 60% rated load condition, each output is checked to be within voltage accuracy.
3. Line regulation is defined by changing ±10% of input voltage from nominal line at rated load.
4. Load regulation is defined by changing ±40% of measured output load from 60% rated load.
5. The ripple is measured from peak to peak with a bandwidth-limit of 20MHz (Measured at the output connector with a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor).
6. Hold up time is measured from the end of the last charging pulse to the time which the main output drops down to low limit of main output at rated load and nominal line.
7. Efficiency is measured at rated load, and nominal line.

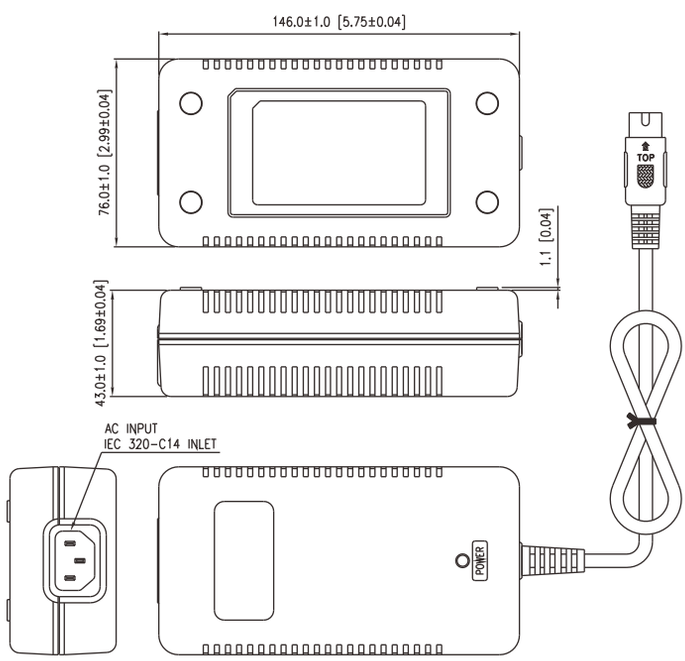


(FIG.1) INPUT VOLTAGE DERATING CURVE



(FIG.2) TEMPERATURE DERATING CURVE

MECHANICAL DIMENSIONS: (UNIT: mm [inch])



OUTPUT CABLE RECOMMEND :

1. Selected output connectors and wire, please refer to Appendix.
2. SPU46-105 is required to use AWG#18 / 3C + AWG#20 / 2C/4FT output cable.
3. SPU46-111 is required to use AWG#18 / 2C/4FT output cable.
4. The regulation and efficiency will be changed by modified output cable.

PACKING :

1. Net weight: 535~560g approx.
2. Optional output connectors available contact sales for details.

Rating Chart:

MODEL NO.	Setting Voltage Range (Factory setting, can't be adjusted)		Output Current (Based on the output volt.)		Maximum Output Power	Ripple & Noise	Total Regulation	Typ. Efficiency	Typ. No Load Consumption	Hold-Up Time	Protection Mode
	min	max	min	max							
	(VDC)	(VDC)	(A)	(A)	(W)	(mVp-p)	(%)	(%)	(W)	(ms)	
SPU46-102	5.0	5.99	8.00		40	60	±5	83.8	0.3	12	Hiccup
SPU46-103	6.0	8.0	5.62	7.50	45	80	±5	86	0.3	12	Hiccup
SPU46-104	8.0	11.0	4.09	5.62	45	110	±5	86	0.3	12	Hiccup
SPU46-105	11.0	13.0	3.46	4.09	45	130	±5	86	0.3	12	Hiccup
SPU46-106	13.0	16.0	2.81	3.46	45	150	±5	86	0.3	12	Hiccup
*SPU46-107	16.0	21.0	2.38	3.12	50	150	±5	86.7	0.3	12	Hiccup
SPU46-108	21.0	27.0	1.85	2.38	50	200	±5	86.7	0.3	12	Hiccup
SPU46-109	27.0	33.0	1.51	1.85	50	250	±4	86.7	0.3	12	Hiccup
SPU46-110	33.0	40.0	1.25	1.51	50	250	±4	86.7	0.3	12	Hiccup
SPU46-111	40.0	50.0	1.00	1.25	50	300	±3	86.7	0.3	12	Hiccup

[*] =MOQ is required. Please contact sales.