

# General

**SINPRO**

## SPU131 series

V2.0

## 130W External Power Supply for General Purpose

The SPU131 series of AC/DC switching mode power supplies provide 130 Watts of continuous output power. All supplies are UL94V-1 min compliant. All models meet FCC Part-15 class B and CISPR-22 class B emission Limits and are designed to comply with UL/c-UL, TUV/GS and CE marking conformity assessment. All units are 100% burned in and tested.

**RoHS2**  
2011/65/EU



### FEATURES:

- \* Wide Operating Voltage 90 to 260 VAC, 47 to 63 Hz
- \* IEC-320-C14 Input Inlet
- \* Other Input/Output Configurations Available (contact Beta Dyne Sales)
- \* Active Power Factor Correction
- \* Single Output (Factory set, contact Beta Dyne Sales for other Voltage options)
- \* ON/OFF SWITCH (Optional)
- \* Crowbar Mode Over Voltage Protection
- \* DoE VI
- \* 3 year warranty

### APPLICATIONS:

- \* Printer
- \* Industrial PC
- \* Power Tools
- \* DC Motor
- \* AV Equipment
- \* LED Lighting

### GENERAL SPECIFICATION:

- \* **Short Circuit Protection:** Auto Recovery
- \* **Cooling:** Free Air Convection
- \* **Flammability Rating:** UL94V-1
- \* **Protection Classes:** Class I
- \* **Safety:** UL 60950-1:2nd Edition, EN60950-1:2006 /A2:2013, IEC 60950-1:2005 /A2:2013

### APPROVALS:



### 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		260	VAC
Fi	Input Frequency	Sine wave	47		63	Hz
PF	Power Factor Correction	Io=Full load, Vin=240VAC	0.95		1	
Po	Output Power Range	See Rating Chart			130	W
Iil	Low Line Input Current	Full Load, Vin=100VAC			1.58	A
Iih	High Line Input Current	Full Load, Vin=240VAC			0.64	A
Irl	Low Line Input Inrush Current	Full Load, 25°C, Cool start, Vin=100VAC			30	A
Irh	High Line Input Inrush Current	Full Load, 25°C, Cool start, Vin=240VAC			50	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			
ΔVoi	Line Regulation	Full Load, Vin=100~120VAC			1	%
ΔVoL	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	Full 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			3232	VDC
EMI	EMC Emission	Compliance to EN55022 (CISPR22)			B	Class

### Environmental:

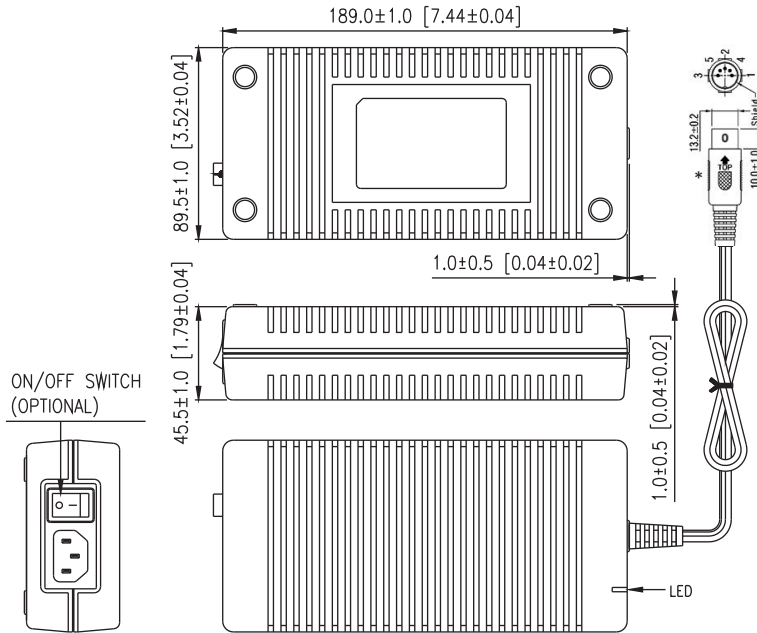
Symbol	Characteristic	Condition	Min.	Typ.	Max.	Unit
To	Operating Temperature	Detail to see Fig.2 (Derate linearly from 100% load at 40°C to 50% load at 70°C)	0		70	°C
Ts	Storage Temperature	10 ~ 95% RH	-40		85	°C
Ho	Operating Humidity	non-condensing	0		95%	RH
Hs	Storage Humidity		0		95%	RH
ESDa	Electro Static Discharge	Air Discharge, IEC61000-4-2			8	kV
ESDc	Electro Static Discharge	Contact Discharge, IEC61000-4-2			6	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

**SPECIFICATION NOTE :**

- Output can provide up to peak load when the power supply starts up. Continuous staying in more than rated load is not allowed.
- At factory, in 60% rated load condition, each output is checked to be within voltage accuracy.
- Line regulation is defined by changing  $\pm 10\%$  of input voltage from nominal line at rated load.
- Load regulation is defined by changing  $\pm 40\%$  of measured output load from 60% rated load.
- Ripple & noise is measured by using 20MHz bandwidth limited oscilloscope and terminated each output with a 0.47uF capacitor at rated load and nominal line.
- 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.
- Efficiency is measured at rated load, and nominal line.

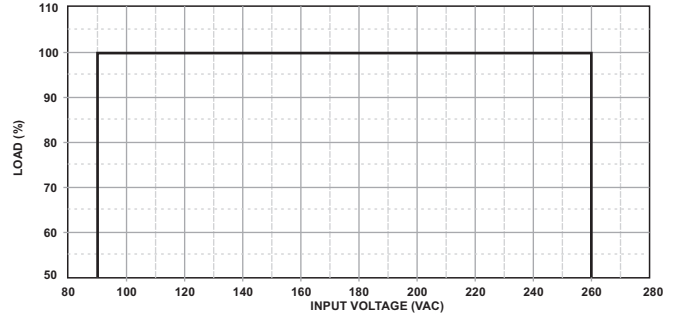
**MECHANICAL DIMENSIONS: ( UNIT: mm )**

Input Cord Not Included, Contact Beta Dyne Sales

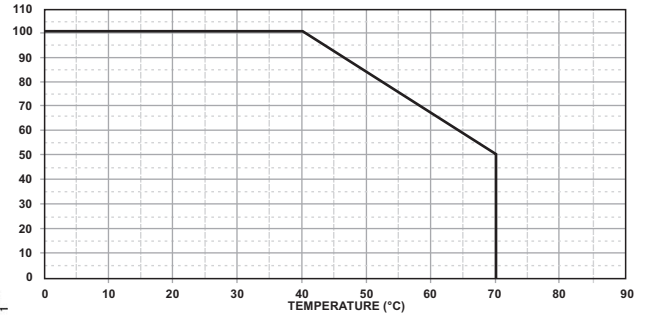


\* AC INLET  
IEC 320 C14

\*Other output connectors and input configurations are available.  
Contact Beta Dyne Sales for details.



(FIG.1) INPUT VOLTAGE DERATING CURVE



(FIG.2) TEMPERATURE DERATING CURVE

**OUTPUT PIN FUNCTIONS:**

- Return
  - Return
  - Vout
  - Return
  - Vout
- Shield = GND

**OUTPUT CABLE DETAILS :**

- SPU131-105~106 are required to use AWG#16\*5C/4FT output cable.
- SPU131-107~108 are required to use AWG#16\*4C/4FT output cable.
- SPU131-109~110 are required to use AWG#16\*2C/4FT output cable.
- SPU131-111~112 are required to use AWG#18\*2C/4FT output cable.
- The regulation and efficiency will be changed by modifying the output cable.

**PACKING :**

- Net weight: 778~800g approx.
- Optional output connectors available contact sales for details.

**Rating Chart:**

MODEL NO.	Output Voltage (Factory set, can't be adjusted. Contact Beta Dyne Sales for other options)	Output Current (A)	Maximum Output Power (W)	Ripple & Noise (mVp-p)	Total Regulation (%)	Typ. Efficiency (%)	Typ. No Load Consumption (W)	Hold-Up Time (ms)	Protection Mode
	(VDC)								
SPU131-105	12.0	10.84	130	100	$\pm 5$	88	0.21	16	Hiccup
SPU131-106	15.0	8.66	130	100	$\pm 5$	89	0.21	16	Hiccup
SPU131-107	18.0	7.22	130	100	$\pm 5$	89	0.21	16	Hiccup
SPU131-108	24.0	5.41	130	100	$\pm 3$	89	0.21	16	Hiccup
SPU131-109	30.0	4.33	130	100	$\pm 3$	89	0.21	16	Hiccup
SPU131-110	36.0	3.61	130	100	$\pm 3$	89	0.21	16	Hiccup
SPU131-111	48.0	2.70	130	100	$\pm 3$	89	0.21	16	Hiccup
SPU131-112	55.0	2.36	130	100	$\pm 3$	89	0.21	16	Hiccup