



## AC/DC 400W Enclosed Switching Power Supply

**EFO-PS400UP60L-4.2**

### FEATURES AND BENEFITS

- AC input: 90~264Vac
- Built-in Active PFC, PF>0.93
- Output protections: OLP/SCP/OTP/OPP
- No fan suitable for quiet environment
- 100% full load burn-in test
- Long life and high reliability
- High efficiency up to 90% Conformal coating
- Low profile, 30mm
- 3 years warranty

### INPUT SPECIFICATIONS

ITEM	OPERATING CONDITIONS		MIN	TYPE	MAX	UNIT
INPUT VOLTAGE RANGE	AC input		90	---	264	VAC
INPUT VOLTAGE FREQUENCY			47	---	63	Hz
INPUT CURRENT			---	---	5	A
INRUSH CURRENT	220VAC	Cold start	---	80	---	
POWER FACTOR	115VAC	Full load	0.93	---	---	---
	230VAC	Full load	0.95	---	---	---

### PRODUCT SPECIFICATIONS

Part No	EFO-PS400UP60L-4.2
Output Power (W)	400
Output Voltage Adjustable Range (V)	4.15-5.1
Nominal Output Voltage And Current (Vo/Io)	4.2V/80A
Efficiency At 230VAC (%) Typ.	90
Dimensions	235.00 x 60.00 x 30.00 mm
Weight	660g
Case Material	Metal (AL5052, SGCC)
Cooling Method	Free air convection (Fixed to aluminum heatshink of customer's system)
Wide Operating Ambient Temperature	-40°C to +85°C
Certification	UL/CE



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### OUTPUT SPECIFICATIONS

ITEM	OPERATING CONDITIONS		MIN	TYPE	MAX	UNIT
DC OUTPUT			---	4.2	---	V
OUTPUT PRE SET VOLTAGE			4.15	---	4.25	
VOLTAGE ADJ. RANGE			4.15	---	5.1	V
PEAK LOAD	220VAC	LAST 50MS	---	90	---	A
RATED CURRENT			---	80	---	A
CURRENT RANGE NOTE 1			0	---	80	
OUTPUT VOLTAGE ACCURACY			---	±2.0	---	%
LINE REGULATION			---	±0.5	---	%
LOAD REGULATION			---	±2	---	%
OVERSHOOT AND UNDERSHOOT			---	---	5	mV
RIPPLE & NOISE NOTE 2	0~65°C		---	---	150	mV
TEMPERATURE COEFFICIENT			---	±0.03	---	%/°C
SET-UP TIME	110VAC	Full Load	---	---	2.5	S
	220VAC	Full Load	---	---	1	S
HOLD-UP TIME	220VAC	80% Load	10	---	1	ms
OVER POWER	425W~550W, Hiccup mode, auto recovery					
OVER-CURRENT	80A~110A, Hiccup mode, auto recovery					
SHORTED CIRCUIT	Long-term mode, auto recovery					
OVER TEMPERATURE	105°C±5°C (detect on Q1/D1 batten); shut down, auto recovery after the temperature goes down					

Note: \*1.All parameters NOT specially mentioned are measured at rated input, rated load and 25°C of ambient temperature;

2.Measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF parallel capacitor.



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## GENERAL SPECIFICATIONS

ITEM		OPERATING CONDITIONS	MIN	TYPE	MAX	UNIT
WITHSTAND VOLTAGE	PRIMARY-SECONDARY	10mA	---	3.0K	---	VAC
	PRIMARY-PG		----	1.5K	---	VAC
	SECONDARY-PG		---	0.5K	---	VDC
LEAKAGE CURRENT	INPUT-PG	264VAC Input	---	---	3.5	mA
	INPUT - OUTPUT		---	---	0.25	mA
ISOLATION RESISTANCE		10MΩ				
OPERATING TEMPERATURE		No condensing (refer to the derating curve)	-40	---	+85	°C
STORAGE TEMPERATURE		No condensing (refer to the derating curve)	-40	---	+85	°C
OPERATING HUMIDITY		Non-condensing	20	---	90	%RH
STORAGE HUMIDITY		Non-condensing	10	---	95	%RH
SAFETY STANDARD		GB9493-2001; EN60950-1:2006				
MTBF		MIL-HDBK-217F@25°C	Full load		>200,000 Hrs	

## ELECTROMAGNETIC COMPATIBILITY (EMC)

EMISSIONS	EMI Conduction & Radiation	EN55022, EN55024, FCC Part 15, Class B
	Harmonic current	EN61000-3-2 CLASS D
IMMUNITY	ESD	EN61000-4-2
	RS	EN61000-4-3
	EFT	EN61000-4-4
	Surge	EN61000-4-5
	CS	EN61000-4-6
	PFMF	EN61000-4-8
	Voltage dip, short interruption and voltage variation	EN61000-4-11

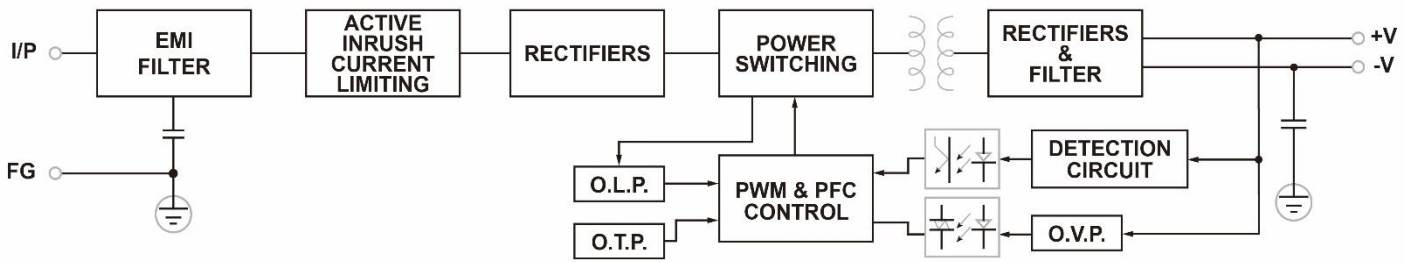
Note: \*The SPS is considered a component which will be installed into final equipment. We cannot guarantee that the final equipment will meet EMC directives. Final product manufactures must be re-confirm that their product meets EMC directives. If the EMC performance needed to be improved, please add EMC filter.



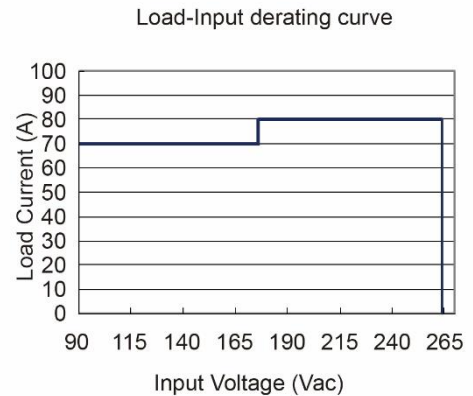
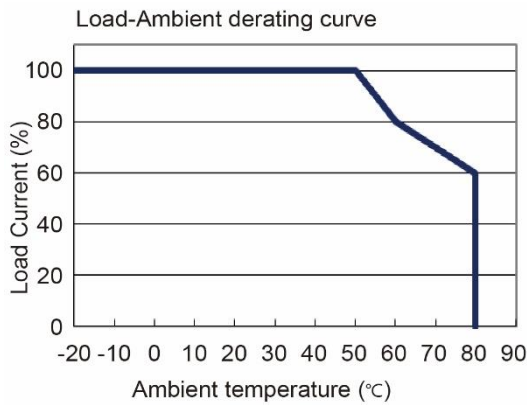
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## BLOCK DIAGRAM



## PRODUCT CHARACTERISTIC CURVE



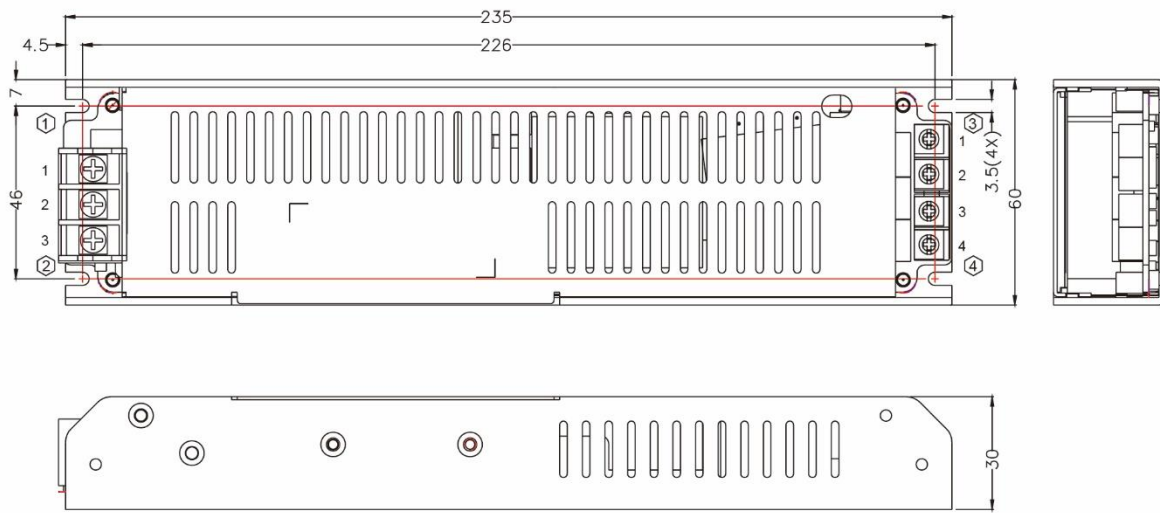
Note: PSU fixed to aluminum plate of customer's system, plate>400\*400\*2mm



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## MECHANICAL SPECIFICATION



Mounting Position	Mounting Type	Mounting Position Number	Screw Type	Lmax	Mounting Torque (max)
Bottom Mounting	Fixing by screws	①—④	M3	4.0mm	8Kgf.cm (max)

Remark: For safety purpose, the screw length inside the PSU housing should follow above table. (Refer the drawing on right side.)

### 1. Instructions for AC input connectors

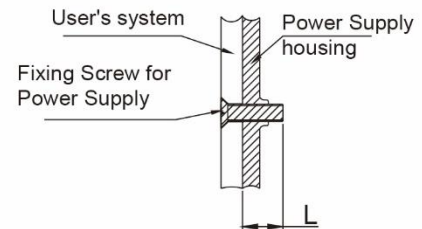
Part number	Input	Connector Type
CON1	L	Pitch 9.5mm/3pin/flat base
	N	
	⊖	

### 2. Instructions for DC output connectors

Part number	Output	Connector Type
1/2	V-	Terminal/ 7.11bf.in/
3/4	V+	-40—105°C

### Instructions:

- 1.Dimension unit
- 2.The unmarked tolerance of overall dimension is  $\pm 1\text{mm}$
- 3.Choose the best mounting type of the module



drawing