

FSP240-P37P Series



FEATURES

- Class-I Design
- IEC 62368-1 safety approval
- EN55032 class B emission
- Remote ON control (options)
- Input power less than 0.5W at standby mode
- Peak power 480W

SAFETY STANDARD APPROVAL



*Please contact sales office for certificate schedule before design

DESCRIPTION

This AC-DC switching power supplies in a package of 180 x 84 x 36.5 mm is a Class-I (with Protection Earth) safety construction and feature with 0.5W low input power consumption at 0.2W load which is comply with Energy Star requirement. This PSU is capable of delivering 240 watts continuous power at convection cooling, and 480 watts peak power at 50°C operation temperature. Please note 7 CFM forced air cooling is required for enclosed form factor. Product is suitable for industry control applications.

INPUT SPECIFICATIONS

Input voltage:	85 to 264 VAC
Input frequency:	47-63 Hz
Input current:	2.6 A (rms) @ 240W for 110 VAC 1.3 A (rms) @ 240W for 220 VAC
Earth leakage current:	400 μ A max. @ 264 VAC
Touch current:	200 μ A max. @ 264 VAC
Remote ON (optional)	PSU is normally off and has no output voltage until a HIGH-level signal is input.

Vout



Remote ON



OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart.
Total output power:	240 watts maximum
Ripple and noise:	See rating chart
Protection:	
OVP	Auto recovery
OPP & Shorted	Auto recovery
OTP	Auto recovery

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	-20°C to +70°C
Storage temperature:	-40°C to +85°C
Relative humidity:	10% to 95% non-condensing
Derating:	See derating curve

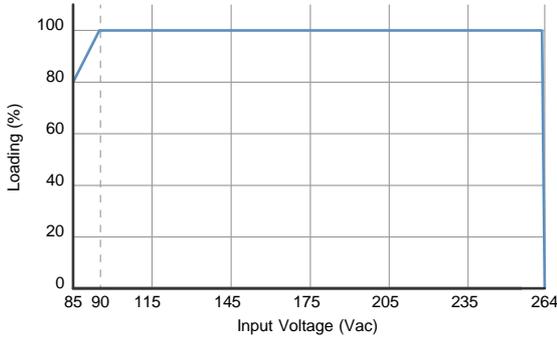
GENERAL SPECIFICATIONS

Fuse protection:	T6.3A, 250Vac
Operating altitude :	5000 meters above sea level
Efficiency:	Refer to rating table
Turn-On Delay Time	0.8sec maximum
Hold-up time:	20 mS minimum @ 110 VAC & 240W load
Line regulation:	\pm 1% maximum at full load
Inrush current:	15 A @ 110 VAC / 60 Hz or 30 A @ 220VAC / 50 Hz, at 25°C cold start
Power factor:	\geq 0.95 @ 110 VAC, \geq 0.90 @ 220 VAC
Withstand voltage:	3000 VAC from input to output 1500 VAC from input to ground, 1500 VAC from output to ground
Isolation resistance	Input to output 100M ohm @ 500Vdc
MTBF:	1200K hours mini. at 240W load and 50°C ambient temperature, calculated per Telcordia SR-332

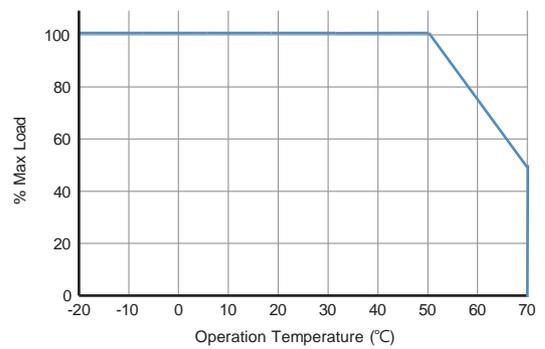
EMC Performance

EN55032 :	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, class D
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, \pm 8 KV air and \pm 4 KV contact
EN61000-4-3:	Radiated, Radio Frequency, Electromagnetic field (RS): 10 V/m
EN61000-4-4:	Fast transient/burst, \pm 2 KV
EN61000-4-5:	Surge, \pm 2 KV diff. \pm 4 KV com.
EN61000-4-6:	Conducted immunity, 3 V/m
EN61000-4-8:	Power Frequency Magnetic field, 1 A/m
EN61000-4-11:	Voltage dip immunity & voltage interruptions 30% reduction for 500mS, criteria A 100% reduction for 10mS, criteria A 100% reduction for 5000mS, criteria B

INPUT VOLTAGE DERATING CURVE



OUTPUT POWER DERATING CURVE



OUTPUT VOLTAGE/CURRENT RATING CHART

Model ⁽¹⁾	Output							Efficiency (typical) @ 115 / 230 Vac
	V1	Min. Current	Max. Current	Tolerance	Ripple & Noise ⁽²⁾	Max. Power	Peak Power ⁽³⁾	
FSP240-P37P-A24 FSP240-P37P-B24	24V	0A	10A	±5 %	200mV	240W	480W	89 / 92%
⁽⁴⁾ FSP240-P37P-A36 FSP240-P37P-B36	36V	0A	6.67A	±5 %	300mV	240W	480W	89 / 92%
⁽⁴⁾ FSP240-P37P-A48 FSP240-P37P-B48	48 V	0A	5A	±5 %	300mV	240W	480W	89 / 92%

NOTES:

1. PSU is the PCB form factor. Suffix " C" in model no. is for the enclosed form factor, e.g. FSP240-P37P-A24C.
2. Ripple and noise is maximum peak to peak voltage value measured at output within 20 MHz bandwidth, at rated line voltage and output load ranges, and with a 22 μF capacitor in parallel with a 0.1 μF ceramic capacitor across the output.
3. Refer to Fig. 1 and Fig. 2 for peak power definition.
4. Please check certificate schedule before design.

FIG 1. PEAK OUTPUT POWER

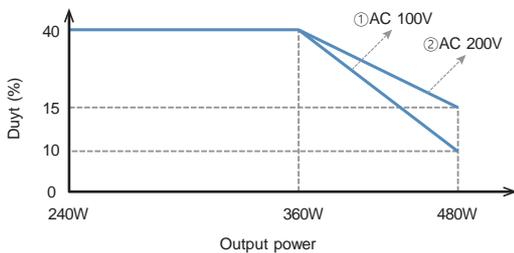
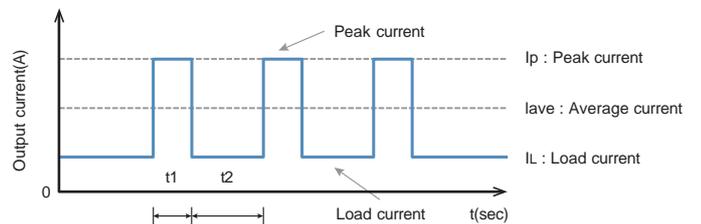


FIG 2. DESCRIPTION OF PEAK CURRENT



MODEL NO. RULE:

FSP 240 - P37P - A24 $\frac{C}{(1)}$ $\frac{S}{(2)}$

The suffix definition of model no.

- (1) Suffix C denotes the metal enclosed form factor.
- (2) Suffix S denotes the remote ON switch.

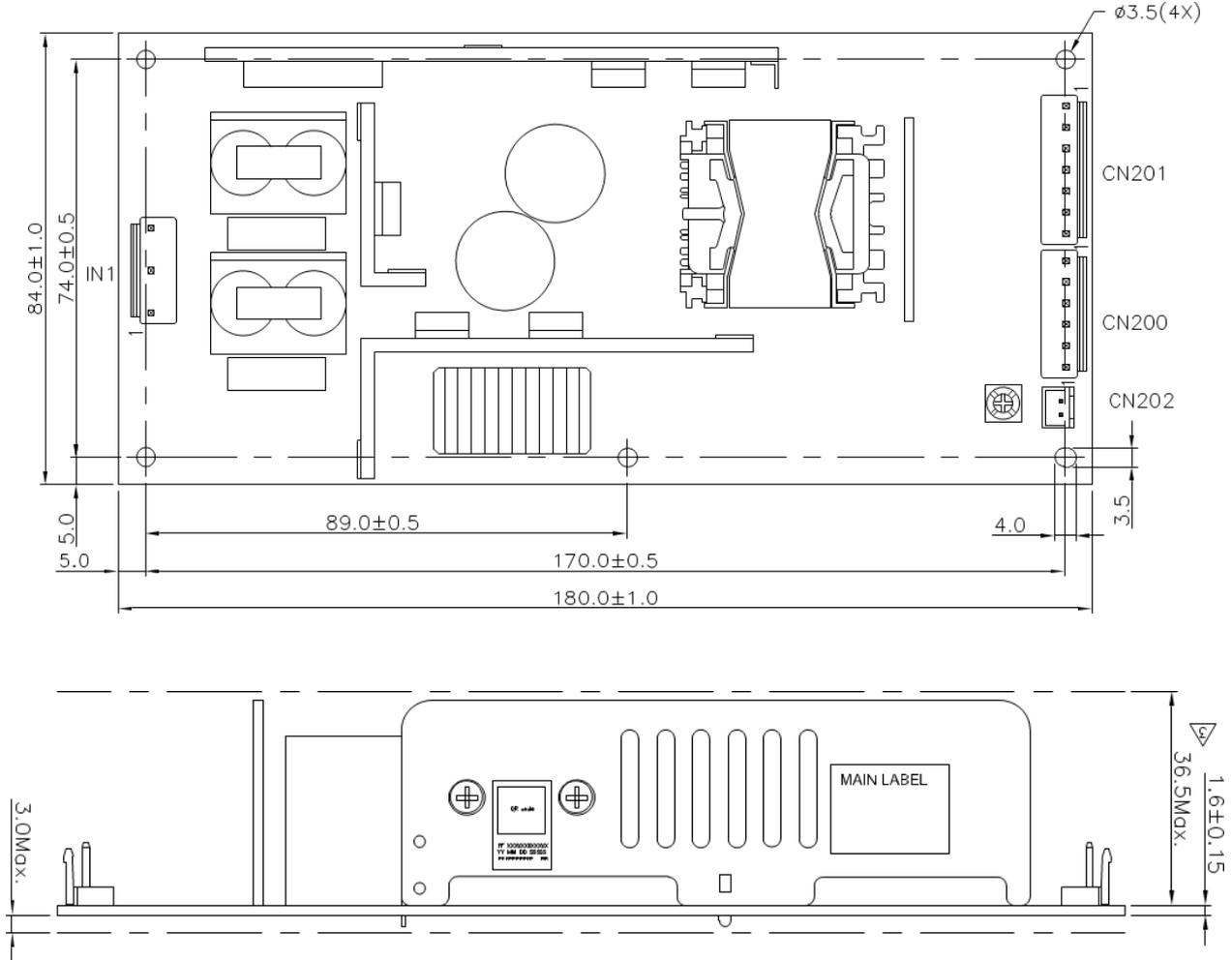
Definitions:

- Peak output power [W] = Peak current [A] * Output voltage [V]
- $t1 \leq 10$ sec
- $I_p \leq$ Rated peak current
- $Duty = t1/(t1+t2) \times 100[\%] \leq 40\%$
- $I_{ave} = (I_p \times t1 + I_L \times t2)/(t1+t2) \leq$ Rated current

MECHANICAL SPECIFICATIONS

PCB form factor

FSP240-P37P-A Series



Pin assignment:

1. IN1: JST B3P5-VH or EQU

Pin No.	Function
1	L
2	
3	N
4	
5	FG

2. CN 200: JST B6P-VH or EQU
CN 201: JST B7P-VH or EQU

Pin No.	Function
CN 200	V +
CN 201	V-

3. CN202: JST B2B-XH-A or EQU

Pin No.	Function
1	R / C+
2	R / C-

*Optional function

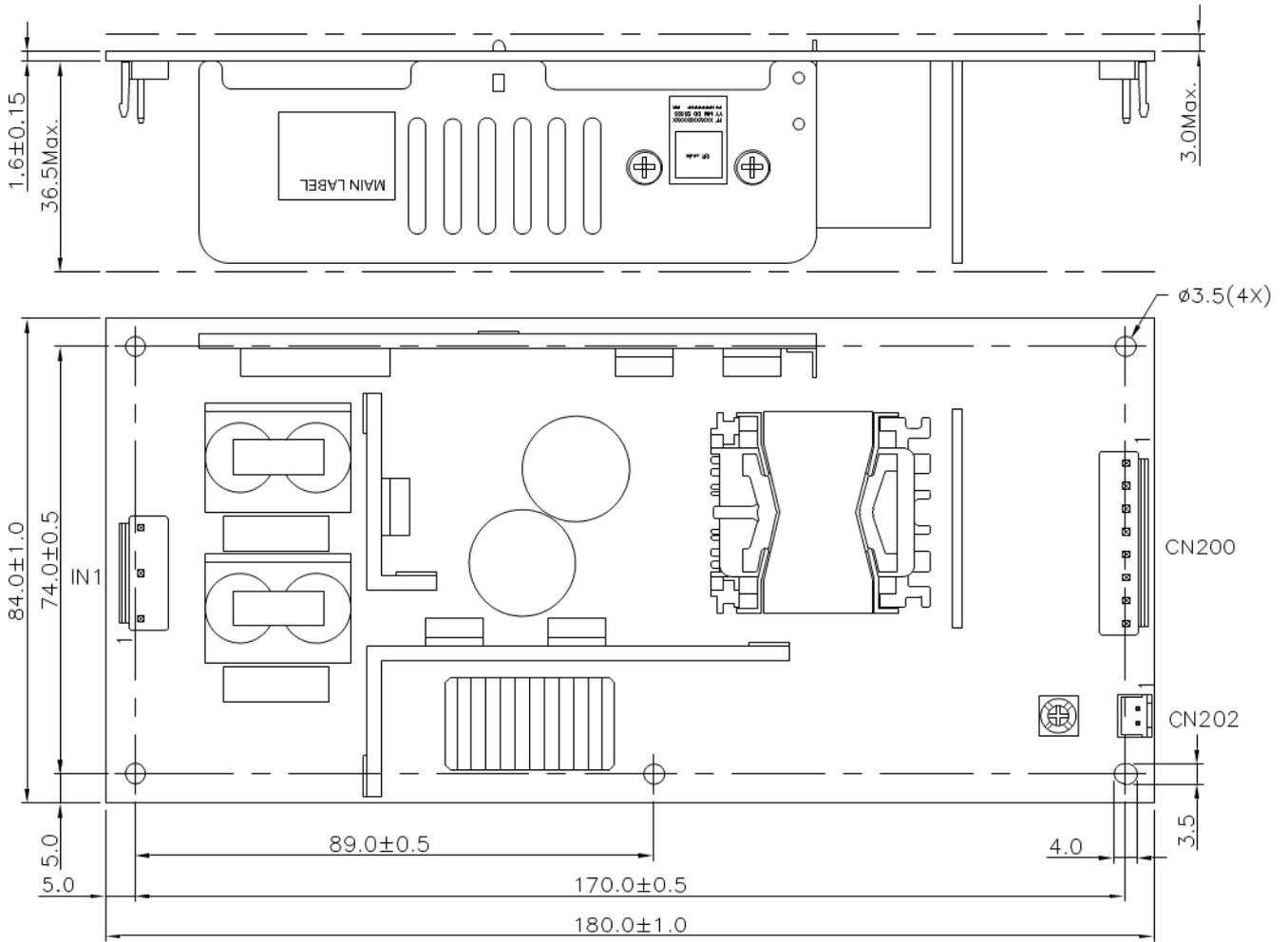
NOTES:

1. Dimension showed in mm.
2. To ensure compliance with level B emissions, connect the two PCB mounting holes with metallic standoffs to the chassis.
3. Weight: PCB form factor 450 grams (0.992 lbs.) approx.

MECHANICAL SPECIFICATIONS

PCB form factor

FSP240-P37P-B Series



Pin assignment of IN1

Pin No.	Function	Wafer
1	AC/L	JST B3P5-VH or EQUIVALENT
2		
3	AC/N	
4		
5	FG	

Pin assignment of CN200

Pin No.	Function	Wafer
1	-V	JST B8P-VH or EQUIVALENT
2		
3		
4		
5	+V	
6		
7		
8		

Pin assignment of CN202

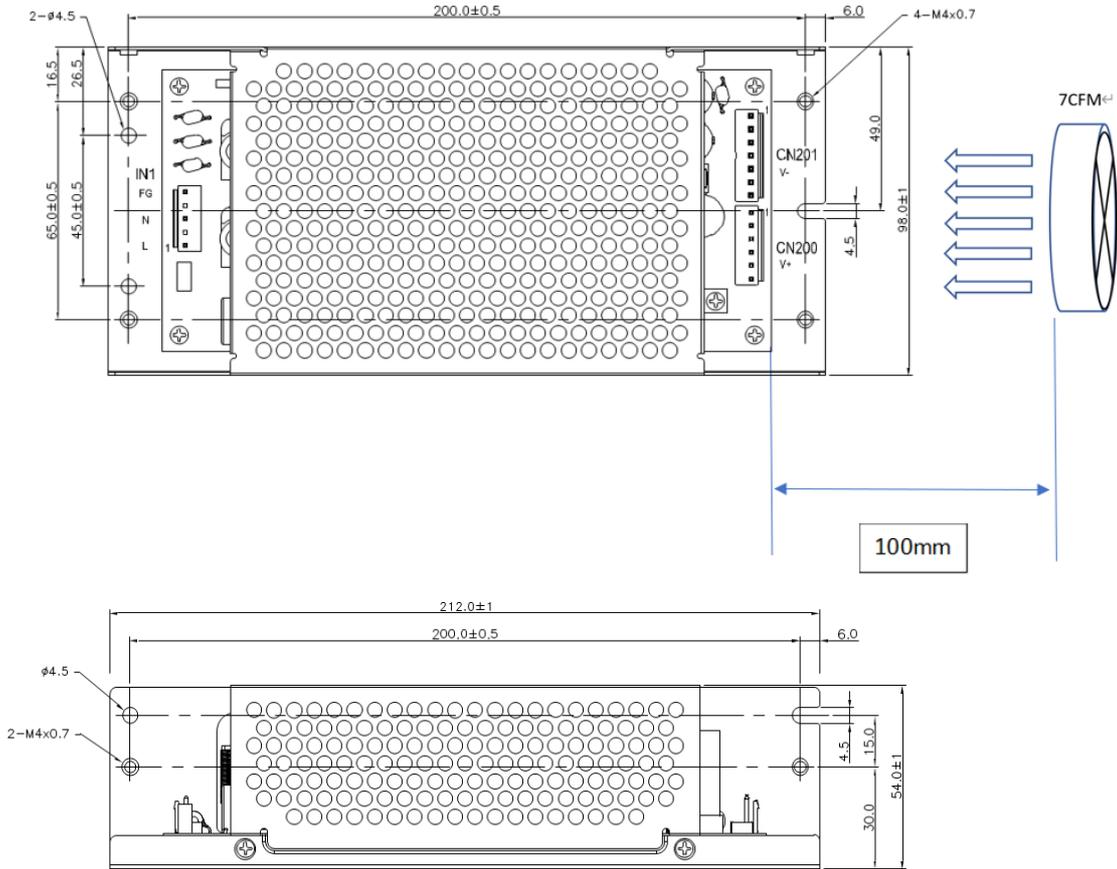
Pin No.	Function	Wafer
1	R/C+	JST B2B-XH-A or EQUIVALENT
2	R/C-	

NOTES:

1. Dimension showed in mm.
2. To ensure compliance with level B emissions, connect the two PCB mounting holes with metallic standoffs to the chassis.
3. Weight: PCB form factor 450 grams (0.992 lbs.) approx.

MECHANICAL SPECIFICATIONS

Enclosed form factor



Note:

1. Connectors information, please refer to PCB form factor. They are the same connectors and pin assignment.
2. Dimension showed in mm.
3. Weight: 692 grams (1.524 lbs.) approx.