

# FSP300-K36 SERIES

### FEATURES

- Provide +5Vsb AUX power
- 1.5KVac withstand voltage between PE and RETURN
- Power failed indication (PFD)
- Output inhibit control
- High altitude 5000 meters operation
- OVP, OCP, OTP protection
- Isolated 12V fan driver
- Fast-on grounding pin

### SAFETY STANDARD DESIGN TO MEET



### DESCRIPTION

This AC-DC switching power supplies series in a package of 3 x 6 inches is a single output with +5Vsb PSU. The single main output is capable of delivering 300 watts continuous power at 10 CFM forced air cooling or 200 watts at convection cooling. Three form factors are supported as PCB, L-Bracket and Enclosed with fan assembly. They are designed for information technology and industrial application.

### INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	47-63 Hz
Input current:	3.2 A (rms) for 115 VAC 1.6 A (rms) for 230 VAC
Earth leakage current:	220 µA max. @ 264 VAC, 63 Hz
Inhibit input signal:	Requires an external TTL high level signal to inhibit outputs for standard models

### OUTPUT SPECIFICATIONS

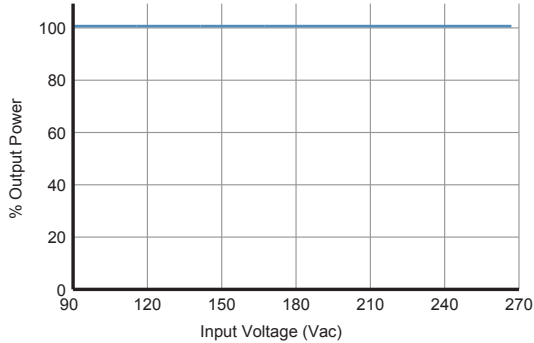
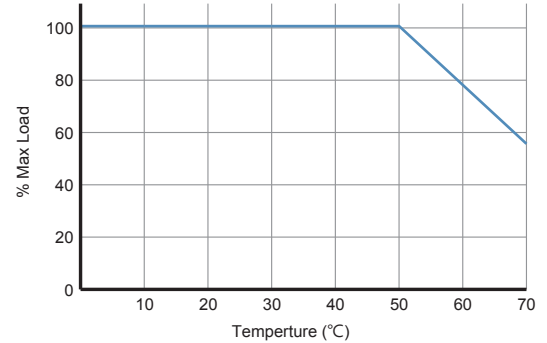
Output voltage/current:	See rating chart.
Total output power:	See rating chart.
Ripple and noise:	1% peak to peak maximum
Protection:	
OVP	Latch off
OCP & Shorted	Auto recovery
OTP	Latch off
Temperature coefficient:	All outputs ±0.04% /°C maximum
Transient response:	Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 us after a 25% step load change
Fan power:	12 V at 1.0 A maximum (isolated)
Aux power (+5Vsb)	5 V at 2.0 A maximum
PFD (Power Failed Indication):	TTL logic high for normal operation and TTL logic low upon loss of input power. This signal appears at least 1ms prior to V1 output dropping 5% below its nominal value. This signal also provides a minimum delay of 100 ms after V1 is within regulation

### ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	0°C to +70°C
Storage temperature:	-40°C to +85°C
Relative humidity:	5% to 95% non-condensing
Derating:	Derate from 100% at +50°C linearly to 50% at +70°C, applicable to convection and forced-air cooling conditions

### GENERAL SPECIFICATIONS

Switching frequency:	100 KHz (typical)
Efficiency:	87% minimum on all models
Hold-up time:	10 ms minimum at 110 VAC
Line regulation:	±0.5% maximum at full load
Inrush current:	20 A @ 115 VAC or 40 A @ 230 VAC, at 25°C cold start
Withstand voltage:	4242 VDC from input to output 2500 VDC from input to ground 707 VDC from output to ground
MTBF:	150,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F
EMC Performance	
EN55032:	Class B conducted, class B radiated
FCC:	Class B conducted, class B radiated
VCCI:	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, class A and D
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, ±8 KV air and ±4 KV contact
EN61000-4-3:	Radiated immunity, 3 V/m
EN61000-4-4:	Fast transient/burst, ±1 KV
EN61000-4-5:	Surge, ±1 KV diff., ±2 KV com
EN61000-4-6:	Conducted immunity, 3 Vrms
EN61000-4-8:	Magnetic field immunity, 1 A/m
EN61000-4-11:	Voltage dip immunity, > 95% reduction for 10 ms, criteria A 30% reduction for 500 ms, criteria A >95% reduction for 5000 ms, criteria B

**INPUT VOLTAGE DERATING CURVE**

**OUTPUT POWER DERATING CURVE**

**OUTPUT VOLTAGE/CURRENT RATING CHART**

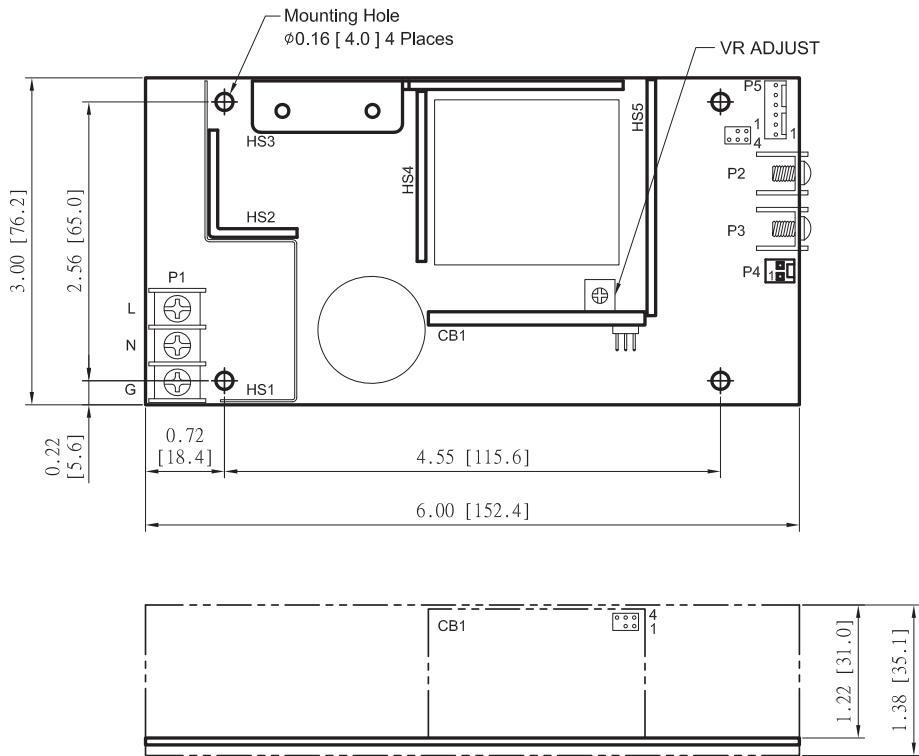
Model <sup>(1) (3)</sup>	Output							Efficiency 115/230 Vac (typical)
	V1	Min. Current	Max. Current at convection <sup>(2)</sup>	Max. Current at 10 CFM <sup>(2)</sup>	Tolerance	Ripple & Noise <sup>(4)</sup>	Max. Power	
FSP300-K36-12A	12 V	0 A	16.67 A	25.0 A	±2%	120 mV	200 / 300 W	89 / 91%
FSP300-K36-15A	15 V	0 A	13.34 A	20.0 A	±2%	150 mV	200 / 300 W	89 / 91%
FSP300-K36-19A	19 V	0 A	10.53 A	15.8 A	±2%	190 mV	200 / 300 W	88 / 90%
FSP300-K36-24A	24 V	0 A	8.34 A	12.5 A	±2%	240 mV	200 / 300 W	88 / 91%
FSP300-K36-30A	30 V	0 A	6.67 A	10.0 A	±2%	300 mV	200 / 300 W	89 / 91%
FSP300-K36-36A	36 V	0 A	5.56 A	8.34 A	±2%	360 mV	200 / 300 W	89 / 91%
FSP300-K36-48A	48 V	0 A	4.17 A	6.25 A	±2%	480 mV	200 / 300 W	89 / 91%

**NOTES:**

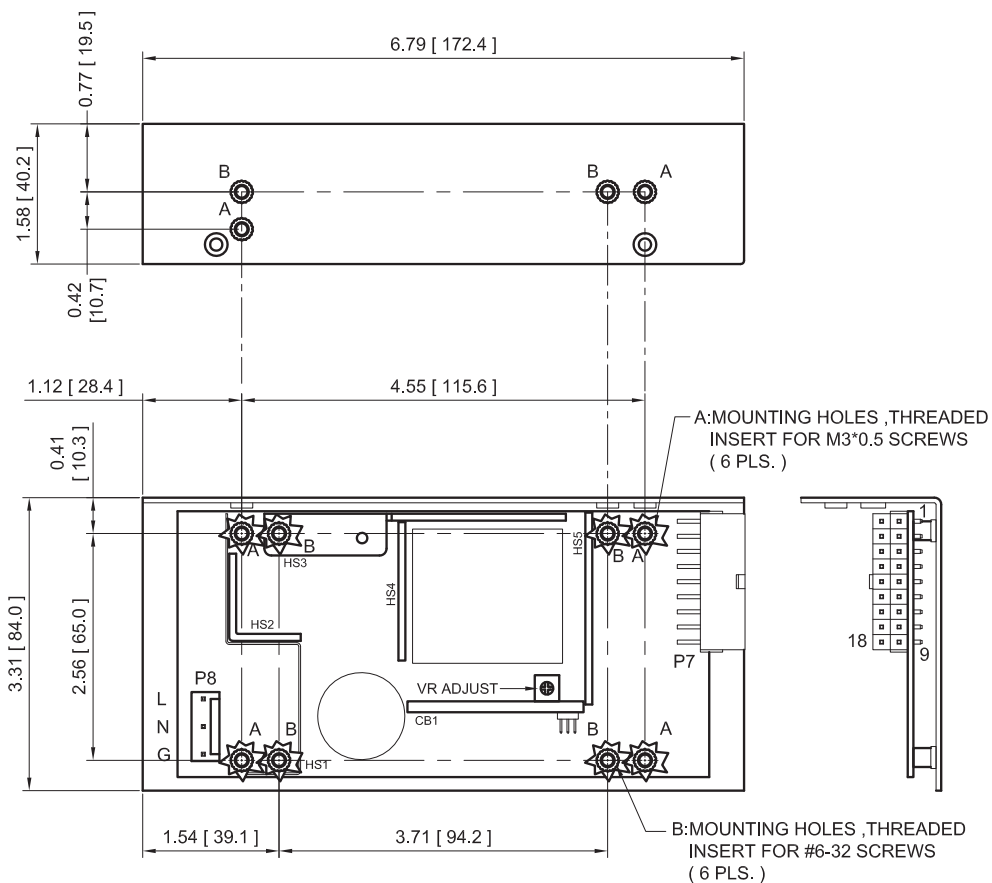
- Suffix "A" in model numbers denotes PCB constructed form. Change suffix "A" to "B" for L-bracket form, e.g. FSP300-K36-12B. Change suffix "A" to "C" for enclosed form, e.g. FSP300-K36-12C.
- 200 W without moving air or 300 W with 10 CFM forced air provided by user.
- Standby power output 5 V at 2 A.
- 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 10  $\mu$ F tantalum capacitor in parallel with a 0.1  $\mu$ F ceramic capacitor across the output.

### MECHANICAL SPECIFICATIONS

PCB constructed Form

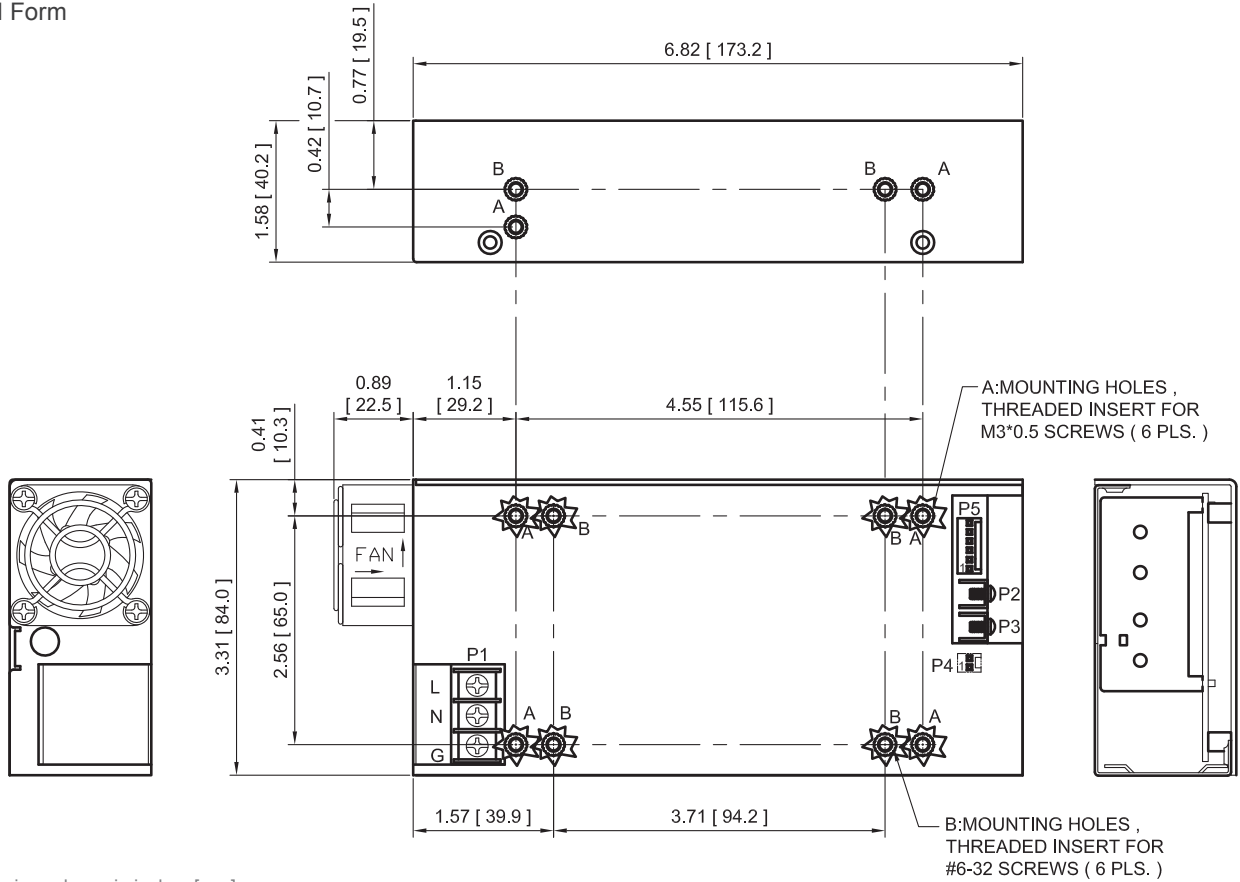


L-bracket Form



### MECHANICAL SPECIFICATIONS

Enclosed Form



**NOTES:**

1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1 is Dinkle DT-35-B01W-03 with M3, nickel-plated screws.
4. Output connector P2 and P3: M3 x 0.5 screw connections
5. Fan connector P4: Molex header 22-04-1021 or equivalent, mating with Molex housing 22-01-1022 or equivalent.
6. Connectors P5: Molex header 22-04-1061 or equivalent, mating with Molex housing 22-01-1062 or equivalent.
7. Option output connector P7: Molex header 39-30-1180 or equivalent, mating with Molex housing 39-01-2185 or equivalent.
8. Option input connector P8: Molex header 26-60-4050 or equivalent, mating with Molex housing 09-50-8050 or equivalent.
9. Maximum penetration depth of fixing screws is 4 mm from the outer surface of chassis.

**CONNECTOR PIN CHART:**

CONNECTOR	P1 (AC)			P2	P3	P5	
PIN NO.	1	2	3			1	2
OUTPUT	Live	Neutral	Ground	+V1	Common Return	+12V Fan (isolated)	Common Return

CONNECTOR	P5					
PIN NO.	1	2	3	4	5	6
OUTPUT	-Sense	+Sense	PFD	Inhibit	+5V Standby	Common Return

**CONNECTOR PIN CHART (Optional to instead of P2, P3, P4, P5)**

CONNECTOR	P7							
PIN NO.	1	2	3 ~ 8	9	10	11	12 ~ 17	18
OUTPUT	+5V Standby	Inhibit	+V1	Fan Return	Standby Return	PFD	Common Return	+12V Fan

CONNECTOR	P8		
PIN NO.	L	N	G
OUTPUT	Live	Neutral	Ground

**WEIGHT:**

1. 510 grams (1.12 lbs.) approx. for PCB constructed form,
2. 612 grams (1.35 lbs.) approx. for L-bracket form,
3. 744 grams (1.64 lbs.) approx. for Enclosed form.