DESCRIPTION

This series AC-DC switching power supplies build in low standby power feature, input power less than 0.5W at no load condition. PSU in a package of 2 x 4 x 1.3 inches are capable of delivering 150 watts continuous power at 7.5 CFM forced air cooling or 100 watts at convection cooling. The units are constructed on a printed circuit board. They are designed for information technology and industrial applications.

FSP150-K24 SERIES

RoHS

CE

FEATURES

- Low profile 2 x 4 x 1.3 inch
- No load power consumption less than 0.5W
- High altitude 5000 meters operation
- Option Power Fail Detect (PFD) output signal
- Output voltage sense detection
- OVP, OCP, OTP protection
- Isolated 12V fan driver

SAFETY STANDARD APPROVAL

UL 60950-1, CSA C22.2 No. 60950-1

TÜV EN 60950-1

INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	47-63 Hz
Input current:	1.7 A (rms) for 115 VAC
	0.85 A (rms) for 230 VAC
Earth leakage current:	275 μA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart.
Total output power:	150W
Protection:	
Over voltage:	Latch off
Over current:	Auto recovery
Over temperature:	Latch off
Temperature coefficient:	All outputs ±0.04% /℃ 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 0.5 A maximum (isolated)

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	0℃ to +70℃
Storage temperature:	-20℃ to +85℃
Relative humidity:	5% to 95% non-condensing
Derating:	Derate from 100% at +50℃ linearly to 50% at +70℃, applicable to convection and forced-air cooling conditions

GENERAL SPECIFICATIONS

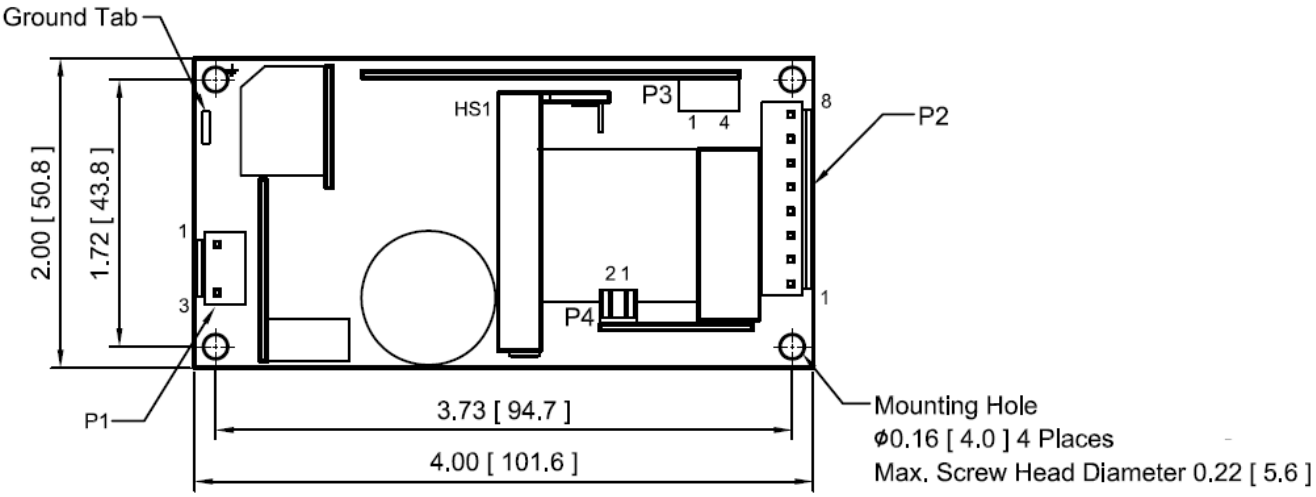
Switching frequency:	133 KHz (typical)
Power factor:	0.9 minimum
Efficiency:	See rating chart.
Hold-up time:	10 ms minimum at 120 VAC
Line regulation:	±0.5% maximum at full load
Inrush current:	80 A @ 115 VAC, at 25℃ cold start
	160 A @ 230 VAC, at 25℃ cold start
Withstand voltage:	3000 VAC from input to output, 1500 VAC from input to ground, 500 VAC from output to ground
MTBF:	250,000 hours at full load at 25℃ ambient, calculated per MIL-HDBK-217F
EMC Performance	
EN55022 / 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, 30% reduction for 500 ms, criteria A >95% reduction for 10 ms, criteria A >95% reduction for 5000 mS, criteria B

OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output								Efficiency
	V1	Min. Load	Max. Current convection	Max. Current 7.5 CFM	Peak(1) Current	Tol.	Ripple & Noise(3)	Max. Power(2)	Max. Power 115/230 Vac (typical)
FSP150-K24-12	12 V	0 A	8.35 A	12.50 A	14.0 A	±2%	120 mV	100 W / 150 W	89 / 91%
FSP150-K24-15	15 V	0 A	6.70 A	10.00 A	11.0 A	±2%	150 mV	100 W / 150 W	88 / 90%
FSP150-K24-18	18 V	0 A	5.56 A	8.34 A	9.2 A	±2%	180 mV	100 W / 150 W	90 / 91%
FSP150-K24-24	24 V	0 A	4.20 A	6.25 A	7.0 A	±2%	240 mV	100 W / 150 W	88 / 90%
FSP150-K24-30	30 V	0 A	3.34 A	5.00 A	5.6 A	±2%	300 mV	100 W / 150 W	89 / 91%
FSP150-K24-36	36 V	0 A	2.78 A	4.17 A	4.6 A	±2%	360 mV	100 W / 150 W	89 / 91%
FSP150-K24-48	48 V	0 A	2.10 A	3.13 A	3.5 A	±2%	480 mV	100 W / 150 W	88 / 90%

NOTES:
1. Peak output current with 10% duty cycle maximum for less than 15 seconds, average power not to exceed maximum power rating.
2. The first value of max. power is at convection cooling. The second value is with 7.5 CFM forced air provided by user.
3. 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 μF tantalum capacitor in parallel with a 0.1 μF ceramic capacitor across the output.

MECHANICAL SPECIFICATIONS



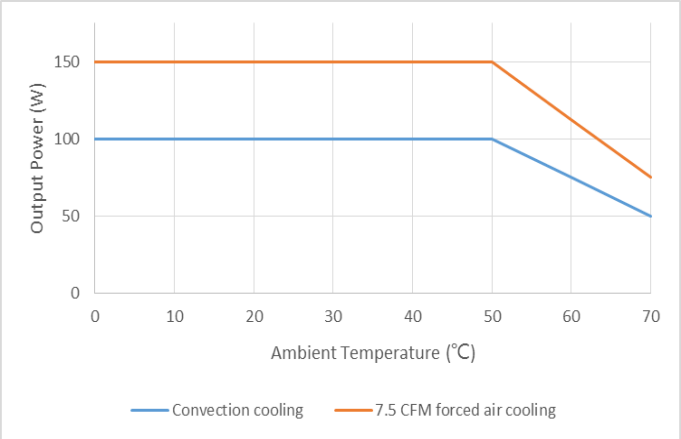
NOTES:
1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1: JST header P/N V3P-VH-B, mating with JST housing P/N VHR-3N or equivalent.
4. Output connector P2: JST header P/N V8P-VH-B, mating with JST housing P/N VHR-8N or equivalent.
5. Connector P3: JST header B4B-PH-K-S (LF) (SN) , mating with JST housing PHR-4 or equivalent.
6. FAN connector P4: JST header B2B-PH-K-S (LF) (SN) , mating with JST housing PHR-2 or equivalent.
7. Ground tab is 0.25 [6.35] × 0.032 [0.8] fast-on connector.

INTERFACE SIGNALS

PFD:
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.

Standard product is no PFD output feature. Please inform sales contact before ordering if PFD is necessary.

OUTPUT POWER DERATING CURVE



PIN CHART

CONNECTOR	P1			P2								P3				P4	
PIN NO.	1	2	3	1	2	3	4	5	6	7	8	1	2	3	4	1	2
OUTPUT	Neutral	---	Live	Common Return				+V1				Common Return	PFD	-Sense	+Sense	Fan +12V	Fan Return (Isolated)

Weight: 200 grams (0.44 lbs.) approx.

ORDERING INFORMATION:

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