110 WATT SWITCHING POWER SUPPLIES

DESCRIPTION

The PUP110 series of AC/DC switching power supplies are for 110 watts of continuous output power. They are enclosed in a 94V-1 rated polyphenylene-oxide case with an IEC 320 inlet to mate with interchangeable cord for world-wide use. An on/off switch can be added at request. All models meet CISPR 22 and FCC class B emission limits, and comply with UL, CSA, IEC and CE requirements.

FEATURES

- **Single, dual, triple or quadruple outputs**
- **Optional output connectors**
- **Optional on/off switch**
- **Optional Power Fail Detect (PFD) signal**
- **100% burn-in**
- **Wide input range 85 to 264 VAC**
- **Input surge current protection**
- **Overvoltage protection**
- **Overcurrent protection**

PUP110 SERIES

CE (LVD+EMC)

Safety Standard Approvals：

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

TÜV EN60950-1

INPUT SPECIFICATIONS

Input voltage：	85 to 264 VAC
Input frequency：	47 to 63 Hz
Input current：	3.20A（rms）for 115VAC 1.80A（rms）for 230VAC
Leakage current：	0.40mA max. @ 115VAC, 60Hz 0.80mA max. @ 230VAC, 50Hz

OUTPUT SPECIFICATIONS

Output voltage/current：	See rating chart
Total output power：	110 watts maximum
Ripple and noise：	1% peak to peak maximum
Overvoltage protection：	Provided on output #1 only; set at 112 - 132% of its nominal output voltage
Overcurrent protection：	All outputs protected to short circuit conditions
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 500us after a 25% step load change
PFD signal (optional)：	TTL logic high for normal operation and TTL logic low upon loss of input power. This signal appears at least 1ms prior to +5V output dropping 5% below its nominal value. This signal also provides a minimum delay of 100ms after +5V is within regulation.

ENVIRONMENTAL SPECIFICATIONS

Operating temperature：	0℃ to +70℃
Storage temperature：	-40℃ to +85℃
Relative humidity：	5% to 95% non-condensing
Derating：	Derate from 100% at +50℃ linearly to 50% at +70℃

GENERAL SPECIFICATIONS

Switching frequency：	20K to 250KHz, varies with load and line
Efficiency：	70% minimum on single output models with Vo ≥ 12V, 65% minimum on the others
Hold-up time：	12 msec minimum at 110VAC
Line regulation：	±0.5% maximum at full load
Inrush current：	15 amps @ 115VAC, or 30 amps @ 230VAC, at 25℃ cold start
Withstand voltage：	3000VAC from input to output 1500VAC from input to ground 500VAC from output to ground
MTBF：	550,000 hours minimum at full load at 25℃ ambient , calculated per MIL-HDBK-217F, excluding DC fan

EMC performance (EN55024)

EN55022:	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
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, ± 8KV air and ± 4KV contact
EN61000-4-3:	Radiated immunity, 3V/m
EN61000-4-4:	Fast transient/burst, ± 1KV
EN61000-4-5:	Surge, ± 1KV diff., ± 2KV com.
EN61000-4-6:	Conducted immunity, 3Vrms
EN61000-4-8:	Magnetic field immunity, 1A/m
EN61000-4-11:	Voltage dips, 30% reduction for 500ms and >95% reduction for 10ms

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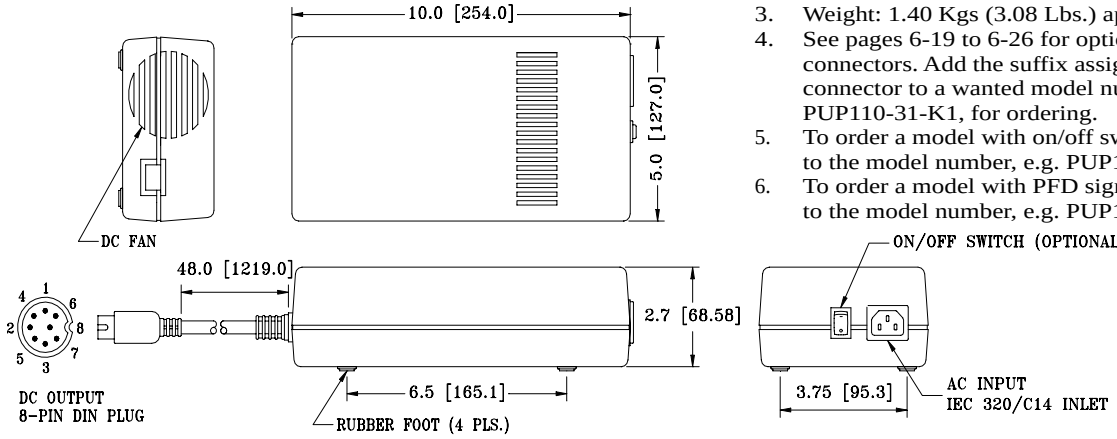
OUTPUT VOLTAGE/CURRENT RATING CHART

Model (2)	Output #1 Vnom.	Imin.	Imax.	Tol.	Output #2 (1) Vnom.	Imin.	Imax.	Ipeak.	Tol.	Output #3 Vnom.	Imin.	Imax.	Tol.	Output #4 Vnom.	Imin.	Imax.	Tol.	Maximum Output Power
PUP110-10	5V	0A	22A	5%		(N/A)					(N/A)				(N/A)			110W
PUP110-12	12V	0A	9.0A	4%		(N/A)					(N/A)				(N/A)			110W
PUP110-13	15V	0A	7.5A	3%		(N/A)					(N/A)				(N/A)			110W
PUP110-14	24V	0A	4.5A	3%		(N/A)					(N/A)				(N/A)			110W
PUP110-16	30V	0A	3.6A	3%		(N/A)					(N/A)				(N/A)			110W
PUP110-18	48V	0A	2.3A	3%		(N/A)					(N/A)				(N/A)			110W
PUP110-23	+5V	0A	10A	5%	+12V	0A	5A	9.0A	5%		(N/A)				(N/A)			110W
PUP110-31	+5V	0A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	1A	5%		(N/A)			110W
PUP110-32	+5V	0A	10A	5%	+15V	0A	4A	7.5A	5%	-15V	0A	1A	5%		(N/A)			110W
PUP110-40	+5V	0A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	1A	5%	-5V	0A	1A	5%	110W
PUP110-41	+5V	0A	10A	5%	+15V	0A	4A	7.5A	5%	-15V	0A	1A	5%	+24V	0A	1A	5%	110W
PUP110-42	+5V	0A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	1A	5%	+12V	0A	1A	5%	110W
PUP110-45	+5V	0A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	1A	5%	+24V	0A	1A	5%	110W
PUP110-45-1	+5V	2A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	1A	5%	+24V	1.5A	3A	10%	110W
PUP110-45-2	+5V	0A	10A	5%	+24V	0A	3A	5.0A	5%	-12V	0A	1A	5%	+12V	0A	1A	5%	110W
PUP110-46	+5V	0A	10A	5%	+15V	0A	4A	7.5A	5%	-15V	0A	1A	5%	-5V	0A	1A	5%	110W

Notes: (1) Peak output current with 10% maximum duty cycle for less than 60 seconds. Total peak power must not exceed 130 watts.
(2) The output #1 of model PUP110-45-1 needs a minimum current of 2A to support the other outputs at their maximum rated loads.

MECHANICAL SPECIFICATIONS



NOTES:
1. Dimensions show in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Weight: 1.40 Kgs (3.08 Lbs.) approx.
4. See pages 6-19 to 6-26 for optional output connectors. Add the suffix assigned for a selected connector to a wanted model number, e.g. PUP110-31-K1, for ordering.
5. To order a model with on/off switch, add suffix “S” to the model number, e.g. PUP110-31-K1-S.
6. To order a model with PFD signal, add suffix “PF” to the model number, e.g. PUP110-31-K1-PF.

PIN CHART

PIN / MODEL	1	2	3	4	5	6	7	8
PUP110-10 PUP110-12 PUP110-13 PUP110-14 PUP110-16 PUP110-18	RETURN	RETURN	OUTPUT #1	RETURN	OUTPUT #1	RETURN	OUTPUT #1	N.C. or PFD
PUP110-23	COMMON RETURN	N.C.	OUTPUT #1	N.C.	OUTPUT #2	COMMON RETURN	OUTPUT #1	N.C. or PFD
PUP110-31 PUP110-32	COMMON RETURN	OUTPUT #3	OUTPUT #1	N.C.	OUTPUT #2	COMMON RETURN	OUTPUT #1	N.C. or PFD
PUP110-40 PUP110-41 PUP110-42 PUP110-45 PUP110-45-1 PUP110-45-2 PUP110-46	COMMON RETURN	OUTPUT #3	OUTPUT #1	OUTPUT #4	OUTPUT #2	COMMON RETURN	OUTPUT #1	N.C. or PFD