

DESCRIPTION

The TMP110 series of AC/DC switching power adapters 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 11 and FCC class B emission limits, and are designed for medical applications.

FEATURES

- 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

INPUT SPECIFICATIONS

Input voltage : 85 to 264 VAC
Input frequency : 47 to 63 Hz
Input current : 3.20A (rms) for 115 VAC
1.80A (rms) for 230VAC
Leakage current : 90 μ A max. @ 115VAC, 60Hz
150 μ A 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 $\pm 0.04\%/^{\circ}\text{C}$ maximum
Transient response : Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 μ s 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.

TMP110 SERIES



Safety Standard Approvals :



UL 2601-1
CSA C22.2 No. 601.1



TÜV EN60601-1

ENVIRONMENTAL SPECIFICATIONS

Operating temperature : 0 $^{\circ}\text{C}$ to +70 $^{\circ}\text{C}$
Storage temperature : -40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$
Relative humidity : 5% to 95% non-condensing
Derating : Derate from 100% at +50 $^{\circ}\text{C}$ linearly to 50% at +70 $^{\circ}\text{C}$

GENERAL SPECIFICATIONS

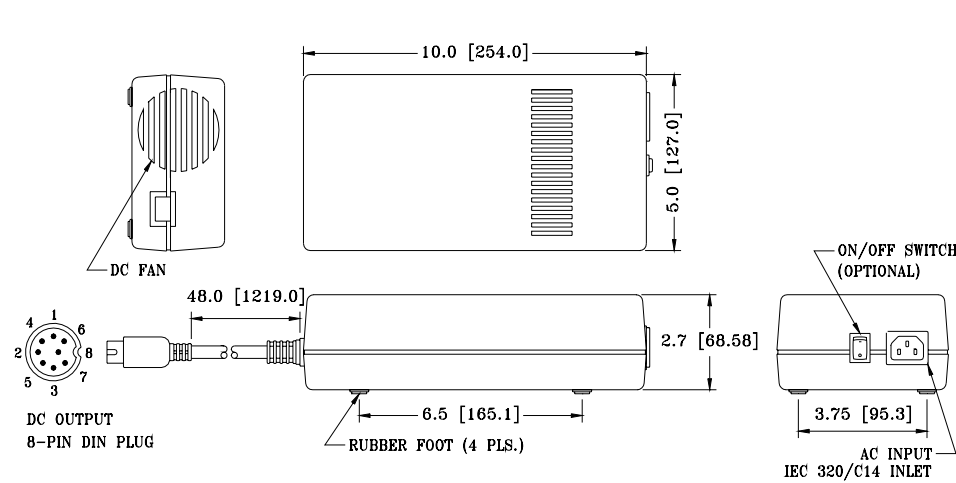
Switching frequency : 20KHz to 250KHz, varies with load and line
Efficiency : 70% minimum on single output models with $V_o \geq 12\text{V}$, 65% minimum on the others
Hold-up time : 12 msec minimum at 110VAC
Line regulation : $\pm 0.5\%$ maximum at full load
Inrush current : 15 amps @ 115VAC, or 30 amps @ 230VAC, at 25 $^{\circ}\text{C}$ cold start
Withstand voltage : 4000VAC from input to output 1500VAC from input to ground 500VAC from output to ground
MTBF : 550,000 hours minimum at full load at 25 $^{\circ}\text{C}$ ambient, calculated per MIL-HDBK-217F, excluding DC fan.
EMC Performance (EN60601-1-2: 2001)
EN55011 : 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, $\pm 8\text{KV}$ air and $\pm 6\text{KV}$ contact
EN61000-4-3 : Radiated immunity, 3V/m for 80~2500MHz
EN61000-4-4 : Fast transient/burst, $\pm 2\text{KV}$
EN61000-4-5 : Surge, $\pm 1\text{KV}$ diff, $\pm 2\text{KV}$ com.
EN61000-4-6 : Conducted immunity, 3Vrms
EN61000-4-8 : Magnetic field immunity, 3A/m
EN61000-4-11 : Voltage dips, 30% reduction for 500ms, 60% reduction for 100ms and >95% reduction for 10ms

OUTPUT VOLTAGE/CURRENT RATING CHART

Product No.	Output #1				Output #2 (1)					Output #3				Output #4				Output Power
	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Ipeak	Tol	Vnom.	Imin.	Imax.	Tol	Vnom.	Imin.	Imax.	Tol.	
TMP110-D23	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	(N/A)				(N/A)				110W
TMP110-T31	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	2A	5%	(N/A)				110W
TMP110-T32	+5V	0.8A	10A	5%	+15V	0A	4A	7.5A	5%	-15V	0A	2A	5%	(N/A)				110W
TMP110-Q40	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	2A	5%	-5V	0A	2A	5%	110W
TMP110-Q41	+5V	0.8A	10A	5%	+15V	0A	4A	7.5A	5%	-15V	0A	2A	5%	+24V	0A	2A	5%	110W
TMP110-Q42	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	2A	5%	+12V	0A	2A	5%	110W
TMP110-Q45	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	2A	5%	+24V	0A	2A	5%	110W
TMP110-Q45-1	+5V	2.0A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	2A	5%	+24V	1.5A	3A	10%	110W
TMP110-Q45-2	+5V	0.8A	10A	5%	+24V	0A	3A	5.0A	5%	-12V	0A	2A	5%	+12V	0A	2A	5%	110W
TMP110-Q46	+5V	0.8A	10A	5%	+15V	0A	4A	7.5A	5%	-15V	0A	2A	5%	-5V	0A	2A	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 TMP110-Q45-1 needs a minimum current of 2A to support the other outputs at their maximum rated loads.

MECHANICAL SPECIFICATIONS



NOTES:

1. Dimensions shown in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Weight: 1.40 Kgs (3.08 Lbs.) approx.
4. Standard output connector is an 8-pin at 270° male DIN plug. For other output connector options, please consult factory.
5. To order a model with on/off switch, add suffix "S" to the product number. e.g. TMP110-T31-S.
6. To order a model with PFD signal, add suffix "PF" to the product number, e.g. TMP110-T31-PF.

PIN CHART

Product No.	PIN	1	2	3	4	5	6	7	8
TMP110-D23		COMMON RETURN	N.C.	OUTPUT #1.	N.C.	OUTPUT #2.	COMMON RETURN	OUTPUT #1	N.C. or PFD
TMP110-T31	TMP110-T32	COMMON RETURN	OUTPUT #3	OUTPUT #1.	N.C	OUTPUT #2.	COMMON RETURN	OUTPUT #1	N.C. or PFD
TMP110-Q40	TMP110-Q41	COMMON RETURN	OUTPUT #3	OUTPUT #1.	OUTPUT #4	OUTPUT #2..	COMMON RETURN	OUTPUT #1	N.C. or PFD.
TMP110-Q42	TMP110-Q45								
TMP110-Q45-1	TMP110-Q45-2								
TMP110-Q46									