

TLP150 Medical Series

Single output



AC-DC POWER SUPPLIES

150 W AC-DC Universal Input Switch Mode Power Supplies

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NEW Product

- 150 W on main channel with only 200 LFM
- Low profile fits 1U applications
- Active PFC and EN61000-3-2 compliant
- Integrated control and monitoring features
- Overcurrent, overvoltage and overtemperature protection
- Compliance to EN55022-B conducted noise standard
- 12 V fan output
- 5 V standby output (optional)
- RoHS compliant



The TLP150 medical series offers up to 150 Watts of output power. Its 5" x 3" x 1.25" form-factor makes it suitable for use in low-profile applications. The main output channel is compatible with systems that implement distributed power and point-of-load architectures. It can also be used to power electromechanical devices such as relays, motors and pumps. An optional auxiliary output is also available for those systems that require 'standby' operation. The low earth leakage current makes these supplies suitable for use in medical equipment.



2 YEAR WARRANTY

All specifications are typical at nominal input, full load at 25°C unless otherwise stated

SPECIFICATIONS

OUTPUT SPECIFICATIONS

Total regulation (line and load)	Main output Auxiliary outputs Fan output	±3% ±5% ±10%
Turn-on delay	@ 120 Vac Input	2.0 s max.
Transient response	Main output 25% to 75% step at 0.5 A/μs	5.0% max. dev., 1 ms max. recovery to 1%
Temperature coefficient		±0.02%/°C
Overvoltage protection	Main outputs	125%, ±5%
Short circuit protection	Current limited	Continuous
Minimum output current	Singles	0 A
Fan voltage output	See Note 9	12 V @ 0.5 A
Standby output	See Note 9	5 V @ 1.0 A

INPUT SPECIFICATIONS

Input voltage range	Universal input	85-264 Vac
Input frequency range		47-63 Hz
Input surge current	264 Vac (cold start)	40 A max.
Safety ground leakage current	264 Vac, 50 Hz	150 μA
Input current	120 Vac @ 150 W 230 Vac @ 150 W	1.8 A rms 0.8 A rms
Input fuse	UL/IEC127	T3.15, 250 Vac In LIVE and NEUTRAL

EMC CHARACTERISTICS ⁽⁵⁾

Conducted emissions	EN55022, FCC part 15	Level B
Harmonic current	EN61000-3-2	Compliant
Correction		
ESD air	EN61000-4-2	Level 3

EMC CHARACTERISTICS (continued) ⁽⁵⁾

ESD contact	EN61000-4-2	Level 3
Radiated immunity	EN61000-4-3	Level 3
Fast transients	EN61000-4-4	Level 3
Surge	EN61000-4-5	Level 3
Conducted immunity	EN61000-4-6	Level 3

GENERAL SPECIFICATIONS

Hold-up time	85 Vac @ 60 Hz	20 ms @ 150 W
Efficiency	115 Vac @ 150 W 230 Vac @ 150 W	81% typ. 84% typ.
Isolation voltage	Input/output Input/chassis	4000 Vac 1500 Vac
Safety approvals (See Note 6)	UL/cUL UL2601-1/CSA22.2 No. 601-1 VDE EN60601-1/IEC60601-1	
Weight		260 g (9.2 oz)
MTBF (@ 25 °C)	Telcordia SR-332 MIL-HDBK-217F	900,000 hours min. 350,000 hours min.

ENVIRONMENTAL SPECIFICATIONS ⁽⁴⁾

Thermal performance	Operating ambient, (See derating curve)	0 °C to +70 °C
	Non-operating	-40 °C to +85 °C
	0 °C to 50 °C ambient, 200 LFM forced air	150 W
	0 °C to 50 °C ambient, convection cooled	100 W
	50 °C to 70 °C ambient, convection cooled	Derate linearly to 50% load
Relative humidity	Non-condensing	5-95% RH
Altitude	Operating	10,000 feet max.
	Non-operating	30,000 feet max.
Vibration (See Note 7)	5-500 Hz	2.4 G rms peak
Shock	per MIL-STD-810E	516.4 Part IV

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OUTPUT VOLTAGE	OUTPUT CURRENT			RIPPLE (3)	TOTAL REGULATION	MODEL NUMBERS (8,10,11)
	MIN	MAX (Free Air) (1,4)	MAX (Forced Air) (2,4)			
12 V	0 A	8.4 A	12.5 A	120 mV	±3.0 %	TLP150N-99S12J
24 V	0 A	4.2 A	6.3 A	240 mV	±3.0 %	TLP150N-99S24J

Notes

- Free air convection. Maximum continuous output power not to exceed 100 W. Refer to Figure 1 for the derating curve.
- 200 LFM forced air cooling from the ac input side. Maximum continuous output power not to exceed 150 W.
- Figure is peak-to-peak for room temperature rating. Output noise measurements are made across a 20 MHz bandwidth using a 6 inch twisted pair, terminated with a 10 μ F tantalum capacitor and a 0.1 μ F ceramic capacitor.
- CAUTION: Allow a minimum of 1 second after disconnecting line power when making thermal measurements. For optimum reliability no part of the heatsink should exceed 115 °C and no semi-conductor case temperature should exceed 120 °C.
- No external filtering required during conducted emissions testing but some applications may require additional filtering to achieve system compliance. Compliance with radiated EMI specifications may require mounting in a suitable enclosure.
- This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- Three orthogonal axes, random vibration 10 minutes for each axes, 2.4 G.
- Replace the 'J' at the end of the model number with 'FJ' when the optional standby output and/or remote ON/OFF control is required e.g. TLP150N-99S12FJ.
- 12 V (fan) present when main output is present. An optional 5 Vsb (standby) output is available whenever ac input is present, regardless of remote ON/OFF signal status.
- The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at <http://www.artesyn.com/powergroup/products.htm> to find a suitable alternative.

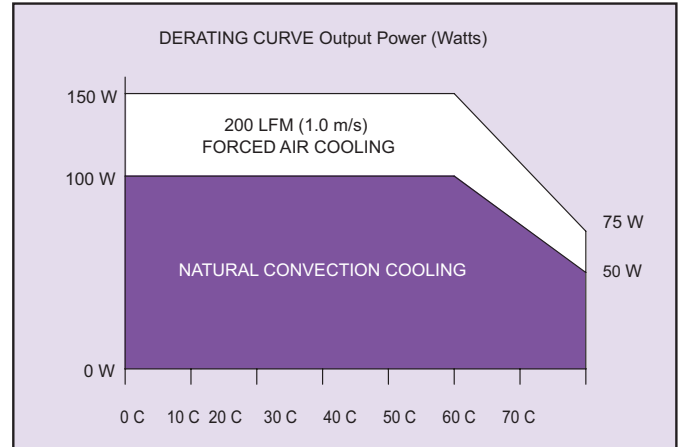


Figure 1: Derating Curve

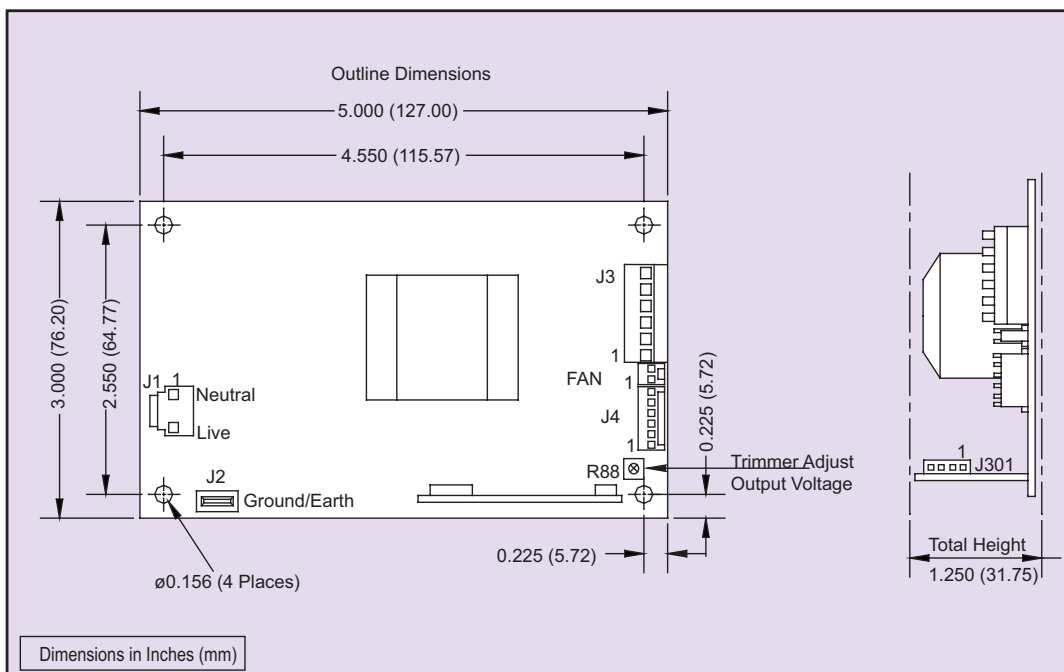


Figure 2: Mechanical Drawing

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For the most current data and application support visit www.artesyn.com/powergroup/products.htm

NEW Product

J1	Molex 09-65-2038 (5273 series) void pin 2 or equivalent	Molex 09-52-4034 (5239 series) or equivalent with Molex 08-52-0072 (2478 series) or equivalent crimp terminals
J3	Molex 09-65-2068 (5273 series) or equivalent	Molex 09-52-4064 (5239 series) or equivalent with Molex 08-52-0072 (2478 series) or equivalent crimp terminals
J301 (optional)	Leoco 2421P04H000 (2421 series) or equivalent	Leoco 2420S04000 (2420 series) or equivalent with Leoco 2453TPH00V1 (2453T series) or equivalent crimp terminals or JST EHR-4 (EH series) or equivalent with JST SEH-001T-P0.6 (EH series) or equivalent crimp terminals
Fan	Molex 22-23-2021(6373 series) or equivalent	Molex 22-01-3027 (2695 series) or equivalent with Molex 08-50-0113 (2759 series) or equivalent crimp terminals

J1 PIN CONNECTIONS

Pin 1	Neutral
Pin 3	Live

J2 TAB CONNECTION

Tab	Ground/Earth
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J3 PIN CONNECTIONS

Pin 1	RTN	Main Return
Pin 2	RTN	Main Return
Pin 3	RTN	Main Return
Pin 4	Vo	+Main Output
Pin 5	Vo	+Main Output
Pin 6	Vo	+Main Output

J4 PIN CONNECTIONS

Pin 1	-S	-Vo Remote Sense
Pin 2	DC OK	DC Power Good Signal
Pin 3	PW OK	Power Good
Pin 4	LS	Load Share Signal
Pin 5	+S	+Vo Remote Sense
Pin 6	SGND	Signal Common

FAN PIN CONNECTIONS

Pin 1	+12 V	Fan Voltage
Pin 2	+SGND	Return

J301 PIN CONNECTIONS (Optional)

Pin 1	5 Vsb	Standby Voltage
Pin 2	SGND	Signal Common
Pin 3	Reserved	Do Not Connect
Pin 4	PS OFF	Remote ON/OFF Signal

International Safety Standard Approvals



VDE EN60601-1/IEC60601-1



UL2601-1/CSA22.2 No. 601-1

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