

# **GLD150 Gold Performance Medical Switchers**

150 Watt Multiple Output

## PERFORMANCE MEDICAL SWITCHERS

## **FEATURES:**

- Compact 4.5" x 7" x 1.7" size
- Power factor corrected to IEC 1000-3-2 Class A
- Less than 300 μA leakage
- EMI compliance to CISPR11, FCC Class B
- Power fail and remote sense standard
- Medical Approved to UL2601-1, IEC601-1/60601-1 and CSA-C22.2 No. 601.1
- 2 year warranty
- RoHS Compliant Model Available (G suffix)



## **SPECIFICATIONS**

## Ac Input

85-264 Vac, 47-63 Hz single phase.

#### Input Current

2.8 A line current maximum, at 90 Vac, 60 Hz with full rated load, power factor .99 typical, .96 minimum. Input current harmonic content meets the requirements of IEC1000-3-2.

#### **Output Power**

150 W with convection cooling, 180 W with fan cooling. Peak ratings are for 60 s maximum duration, 10% duty cycle.

#### Efficiency

Minimum 80% at full rated load with 230 Vac Input. Approximately 3% less at 115 Vac.

## Hold-Up Time

Outputs will remain within regulation limits for 25 ms minimum from loss of ac input at full load, 10 ms before Power Fail indication.

### **Output Regulation**

Total regulation is the maximum deviation from the nominal voltage for all steady state loading conditions.

#### **Overload Protection**

Fully protected against short circuit and output overload. Short circuit protection is cycling type power limit.

## Minimum Load

No minimum load required to maintain output specifications.

#### **Output Noise**

0.5% rms, 1% pk-pk, 20 MHz Bandwidth, differential mode. Measured with noise probe directly across output terminals of the power supply.

### **Transient Response**

Main Output - 500  $\mu$ s typical response time for return to within 0.5% of final value for a 50% load step change, di/dt< 0.2 A  $\mu$ s. Maximum voltage deviation is 3%.

## Remote Sense

Standard feature on all models, includes open sense lead protection.

## Overvoltage Protection

Built in on all models.

## Input Protection

Internal ac fuses provided on both lines on all units.

## Voltage Adjustment

Output Voltage is adjustable +/- 5% with user adjustable potentiometer.

## Temperature Coefficient

0.03% / °C typical on all outputs.

#### Overshoot

Less than 2% overshoot at turn-on under all conditions, less than 1% overshoot at turn-off under all conditions.

#### Inhibi

Inhibit signal is pulled to the V1 output common to reduce average output voltage to less than 5% of nominal.

## **EMI/EMC Compliance**

All models include built-in EMI filtering to meet the EMC requirements of IEC601-1. Unless otherwise stated, all tests are done at full load and 115 and 230 Vac input.

	<u> </u>
EMI SPECIFICATIONS	COMPLIANCE LEVEL
Conducted Emissions Static Discharge RF Field Susceptibility Fast Transients/Bursts Surge Susceptibility Conducted RF Susceptibility Voltage Sags & Surges	EN55011, Class B; FCC Class B EN61000-4-2, 6 kV contact 8 kV air EN61000-4-3, 3V/meter EN61000-4-4, 2 kV, 5 kHz EN61000-4-5, 1 kV diff., 2 kV com. EN61000-4-6, 3V EN61000-4-11

## Inrush Current

Inrush 240 Vac is less than 37 A, averaged over the first ac halfcycle under cold start conditions. Limiting provided by internal thermistors.

## Fan Output

An additional 12 Vdc, 250 mA output suitable for powering a dc fan is included in all models. The fan output is both current limited and thermally protected.

#### Thermal Shutdown

Provided as a standard feature. Designed to protect unit from prolonged over temperature.

#### Power Fail

TTL / CMOS compatible output goes low  $(<0.5\,\mathrm{V})$  8 ms before output voltage drops more than 4% below nominal voltage upon loss of ac power.

## Power Good

TTL / CMOS compatible output goes high more than 100 ms after V1 reaches regulation and should assure that sufficient energy is stored in the input section to provide normal power fail/shutdown.

## **Medical Approvals**

All models are Certified to be in compliance with the applicable requirements of UL2601-1, CSA-C22.2 No. 601.1, IEC601-1/60601-1.

## Leakage Current

 $70~\mu\text{A},\,132$  Vac @ 60~Hz normal conditions. Single fault conditions,  $130~\mu\text{A},\,254~\text{Vac}$  @ 50~Hz.

#### **Design Verification Documents**

The "Gold" series has undergone rigorous review and design analysis. The following product documentation is available upon request;

- 1. MTBF study
- 2. DVT Data
- 3. EMC / Susceptibility test results

Medical Model	RoHS Suffix*	Output Voltage	Output Current (A)	Output Current (B)	Voltage Adjustment	Total Regulation	OVP Setpoint	Ripple and Noise
GLD150-12	G	12 V	12.5 A	15 A	± 5%	2%	14 ± 1.1 V	1%
GLD150-15	G	15 V	10 A	12 A	± 5%	2%	18.5 ± 1.5 V	1%
GLD150-24	G	24 V	6.2 A	7.5 A	± 5%	2%	28 ± 2.5 V	1%
GLD150-28	G	28 V	5.3 A	6.4 A	± 5%	2%	34 ± 2.8 V	1%
GLD150-48	G	48 V	3.2 A	3.75 A	± 5%	2%	55 ± 4.0 V	1%

#### Notes:

- \* Add "G" suffix to part number for RoHS compliant model. Contact factory for availability.
- A. Maximum continuous current rating for unrestricted convection cooling.
- B. Maximum continuous current rating with 150 LFM air or peak rating.
- C. Add "C" suffix for cover option and derate convection rating to 130 W.

## **GLD150 MECHANICAL SPECIFICATIONS**

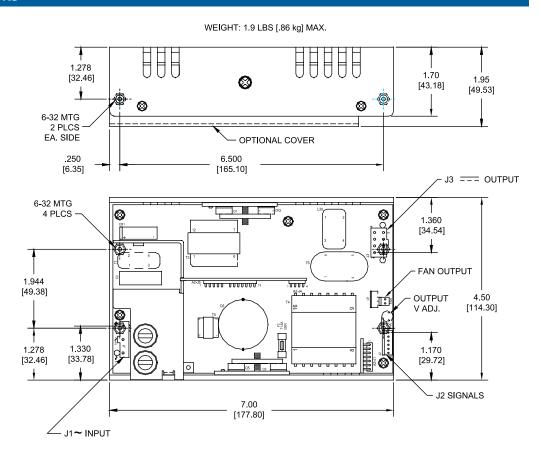
INPUT J1 MOLEX P.C. B. HEADER P/N: 39-30-2056 PIN 1) AC GROUND PIN 2) N/C PIN 3) AC NEUTRAL PIN 4) N/C PIN 5) AC LINE MATING CONNECTOR MOLEX P/N HOUSING 39-01-4051 CONTACT 39-00-0182

SIGNALS
J2
AMP P.C.B. HEADER P/N 641215-6
PIN 1) INHIBIT
PIN 2) +SENSE
PIN 3) POWER GOOD
PIN 4) -SENSE
PIN 5) COMMON
PIN 6) POWER FAIL
MATING CONNECTOR AMP P/N
HOUSING 770602-6
CONTACT 770666-2

OUTPUT J3 MOLEX P.C.B. HEADER P/N: 39-29-9085 PINS 3,4,7,8) +Vout PINS 1,2,5,6) RETURN MATING CONNECTOR MOLEX P/N HOUSING 39-01-2080 CONTACT 39-00-0182

FAN AMP P.C.B. HEADER P/N: 641215-2 PINS 1) RTN PINS 2) +12V MATING CONNECTOR AMP P/N HOUSING 770602-2 CONTACT 770666-02

Cover option: P/N 08-30466-0150 Cover with fan option: P/N 09-150CF



ENVIRONMENTAL SPECIFICATIONS	OPERATING	NON-OPERATING
Temperature (A, D)	0 to +50°C	-40 to +85°C
Humidity (A)	0 to 95% RH	0 to 95% RH
Shock (B)	20 g <sub>pk</sub>	40 g <sub>pk</sub>
Altitude	-500 to 10,000 ft	-500 to 40,000 ft
Vibration (C)	1.5 g <sub>rms′</sub> 0.003 g²/Hz	5 g <sub>rms</sub> ,0.026 g²/Hz

- A. Units should be allowed to warm up/operate under non-condensing conditions before application of power.
- B. Shock testing—half-sinusoidal,  $10\pm3$  ms duration,  $\pm$  direction, 3 orthogonal axes, total 6 shocks.
- C. Random vibration—10 to 2000Hz, 6dB/octave roll-off from 350 to 2000Hz, 3 orthogonal axes. Tested for 10 min./axis operating and 1 hr./axis non-operating.
- D. Derate output power to 50% at 70°C.

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## SL Power:

<u>GLD150-48</u> <u>GLD150-24</u> <u>GLD150-15</u> <u>GLD150-12</u> <u>GLD150-12G</u> <u>GLD150-15G</u> <u>GLD150-48G</u> <u>GLD150-24G</u> <u>08-</u> 30466-0150G