

# GLD150 Gold Performance Medical Switchers

## 150 Watt Single Output



### 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.

#### 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.

#### Dc Output

Total regulation is the maximum deviation from the nominal voltage for all steady state loading conditions. Peak ratings are for 60 s maximum duration, 10% duty cycle.

#### 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,  $Dt/Dt < 0.2$  A  $\mu$ s. Maximum voltage deviation is 3%.

#### Remote Sense

Provided as a standard feature on all models.

#### 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.

#### Inhibit

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

### FEATURES:

- Compact 4.5" x 7" x 1.7" size
- Power factor corrected to IEC 1000-3-2 Class A
- Less than 300  $\mu$ A 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
- **CE** marked to LVD

#### 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.

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

#### Inrush Current

Inrush 240 Vac is less than 37 A, averaged over the first ac half-cycle 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 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  $\mu$ A, 132 Vac @ 60 Hz normal conditions. Single fault conditions, 130  $\mu$ A, 254 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

# GLD150 Medical Switchers 150 Watt Multiple Output

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

**Notes:**

- 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**

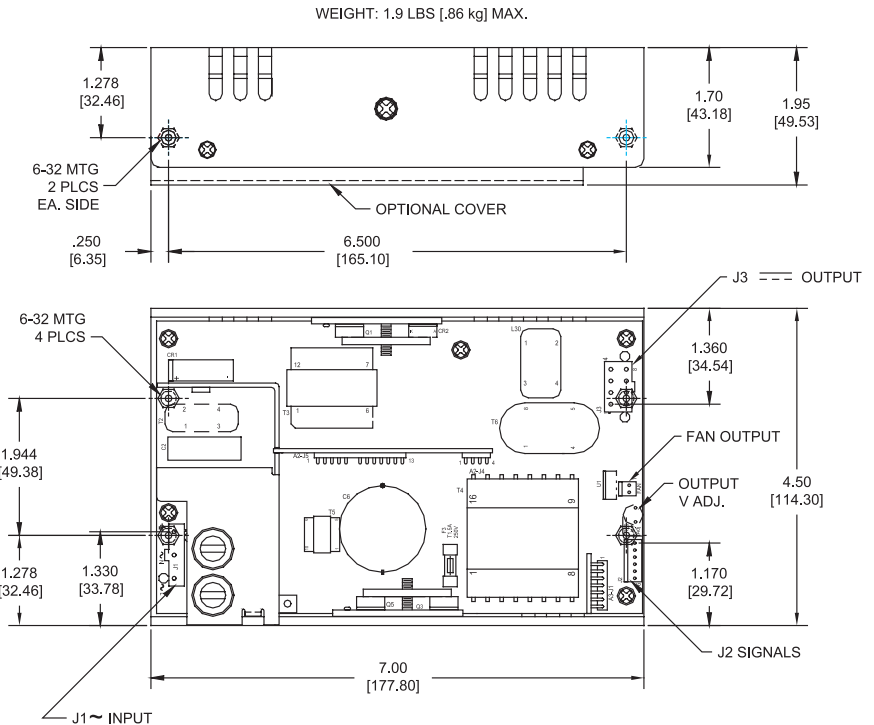
J2  
 AMP P.C.B. HEADER P/N 641215-6  
 PIN 1) INHIBIT  
 PIN 2) +SENSE  
 PIN 3) POWER GOOD  
 PIN 4) -SENSE  
 PIN 5) COMMON  
 PIN 6) POWER FAIL  
 MATING CONNECTOR AMP P/N  
 HOUSING 770602-6  
 CONTACT 770666-6

**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



| Environmental Specification | Operating                                       | Non-operating                                 |
|-----------------------------|---|---|
| Temperature (A)             | See individual specs                            | -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 g <sup>2</sup> /Hz | 5 g <sub>rms</sub> , 0.026 g <sup>2</sup> /Hz |

- A. Units should be allowed to warm up/operate under non-condensing conditions before application of power.
- B. 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.
- C. Shock testing—half-sinusoidal, 10 ± 3 ms duration, ± direction, 3 orthogonal axes, total 6 shocks.

