

### 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  $\mu$ 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
- RoHS Compliant Model Available (G suffix)



### SPECIFICATIONS

<p><b>Ac Input</b> 85-264 Vac, 47-63 Hz single phase.</p>	<p><b>Inhibit</b> Inhibit signal is pulled to the V1 output common to reduce average output voltage to less than 5% of nominal.</p>																
<p><b>Input Current</b> 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.</p>	<p><b>EMI/EMC Compliance</b> 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.</p>																
<p><b>Output Power</b> 150 W with convection cooling, 180 W with fan cooling. Peak ratings are for 60 s maximum duration, 10% duty cycle.</p>	<table border="1"> <thead> <tr> <th>EMI SPECIFICATIONS</th> <th>COMPLIANCE LEVEL</th> </tr> </thead> <tbody> <tr> <td>Conducted Emissions</td> <td>EN55011, Class B; FCC Class B</td> </tr> <tr> <td>Static Discharge</td> <td>EN61000-4-2, 6 kV contact 8 kV air</td> </tr> <tr> <td>RF Field Susceptibility</td> <td>EN61000-4-3, 3V/meter</td> </tr> <tr> <td>Fast Transients/Bursts</td> <td>EN61000-4-4, 2 kV, 5 kHz</td> </tr> <tr> <td>Surge Susceptibility</td> <td>EN61000-4-5, 1 kV diff, 2 kV com.</td> </tr> <tr> <td>Conducted RF Susceptibility</td> <td>EN61000-4-6, 3V</td> </tr> <tr> <td>Voltage Sags &amp; Surges</td> <td>EN61000-4-11</td> </tr> </tbody> </table>	EMI SPECIFICATIONS	COMPLIANCE LEVEL	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
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<p><b>Efficiency</b> Minimum 80% at full rated load with 230 Vac Input. Approximately 3% less at 115 Vac.</p>	<p><b>Inrush Current</b> Inrush 240 Vac is less than 37 A, averaged over the first ac halfcycle under cold start conditions. Limiting provided by internal thermistors.</p>																
<p><b>Hold-Up Time</b> Outputs will remain within regulation limits for 25 ms minimum from loss of ac input at full load, 10 ms before Power Fail indication.</p>	<p><b>Fan Output</b> 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.</p>																
<p><b>Output Regulation</b> Total regulation is the maximum deviation from the nominal voltage for all steady state loading conditions.</p>	<p><b>Thermal Shutdown</b> Provided as a standard feature. Designed to protect unit from prolonged over temperature.</p>																
<p><b>Overload Protection</b> Fully protected against short circuit and output overload. Short circuit protection is cycling type power limit.</p>	<p><b>Power Fail</b> TTL / CMOS compatible output goes low (&lt;0.5 V) 8 ms before output voltage drops more than 4% below nominal voltage upon loss of ac power.</p>																
<p><b>Minimum Load</b> No minimum load required to maintain output specifications.</p>	<p><b>Power Good</b> 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.</p>																
<p><b>Output Noise</b> 0.5% rms, 1% pk-pk, 20 MHz Bandwidth, differential mode. Measured with noise probe directly across output terminals of the power supply.</p>	<p><b>Medical Approvals</b> 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.</p>																
<p><b>Transient Response</b> Main Output - 500 <math>\mu</math>s typical response time for return to within 0.5% of final value for a 50% load step change, di/dt &lt; 0.2 A <math>\mu</math>s. Maximum voltage deviation is 3%.</p>	<p><b>Leakage Current</b> 70 <math>\mu</math>A, 132 Vac @ 60 Hz normal conditions. Single fault conditions, 130 <math>\mu</math>A, 254 Vac @ 50 Hz.</p>																
<p><b>Remote Sense</b> Standard feature on all models, includes open sense lead protection.</p>	<p><b>Design Verification Documents</b> The "Gold" series has undergone rigorous review and design analysis. The following product documentation is available upon request;</p> <ol style="list-style-type: none"> <li>1. MTBF study</li> <li>2. DVT Data</li> <li>3. EMC / Susceptibility test results</li> </ol>																
<p><b>Overvoltage Protection</b> Built in on all models.</p>																	
<p><b>Input Protection</b> Internal ac fuses provided on both lines on all units.</p>																	
<p><b>Voltage Adjustment</b> Output Voltage is adjustable +/- 5% with user adjustable potentiometer.</p>																	
<p><b>Temperature Coefficient</b> 0.03% / <math>^{\circ}</math>C typical on all outputs.</p>																	
<p><b>Overshoot</b> Less than 2% overshoot at turn-on under all conditions, less than 1% overshoot at turn-off under all conditions.</p>																	

All specifications are typical at nominal input, full load at 25 $^{\circ}$ C unless otherwise stated

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:

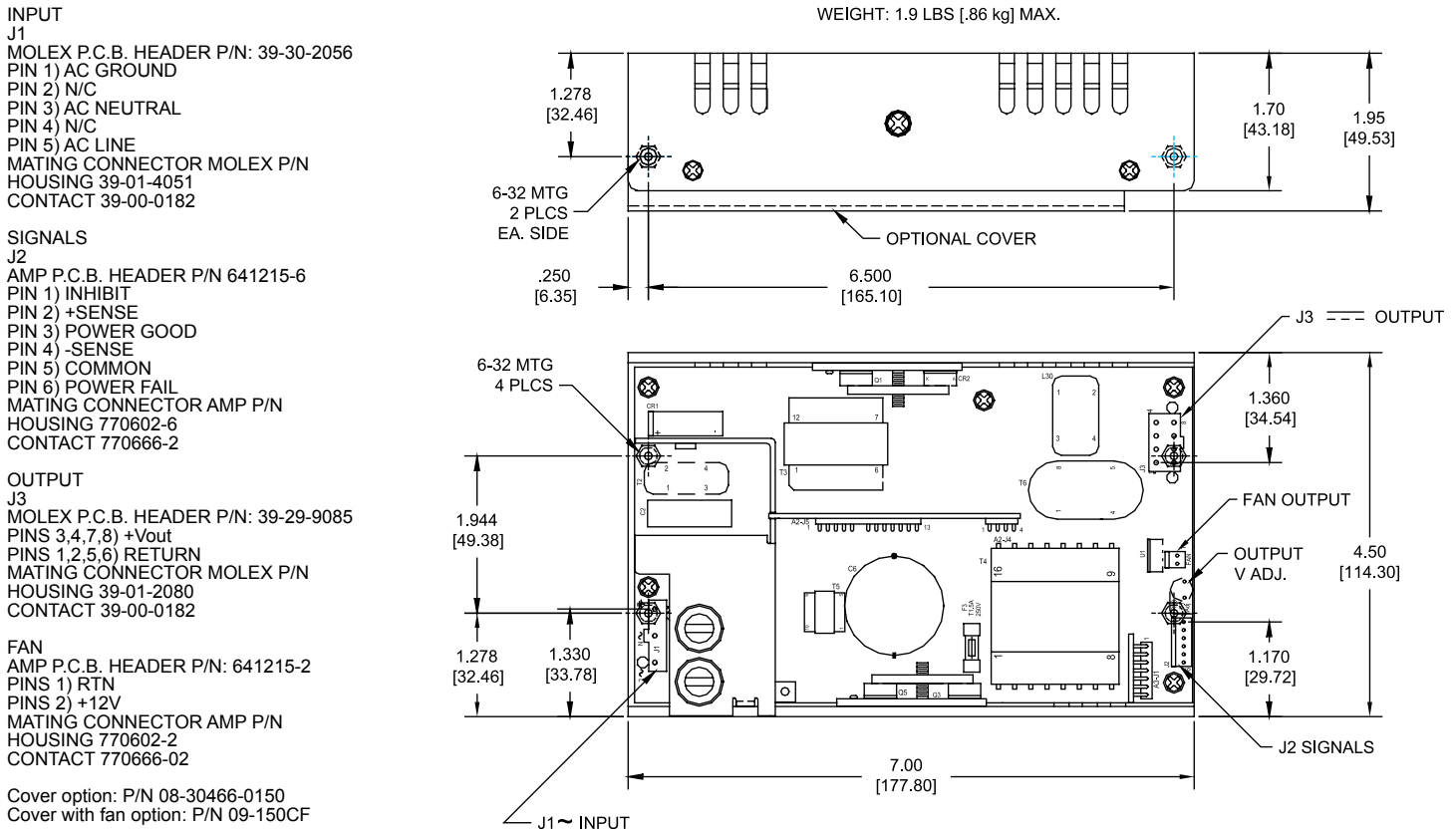
\* Add "G" suffix to part number for RoHS compliant model. Contact factory for availability.

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



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 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. Shock testing—half-sinusoidal, 10 ± 3 ms duration, ± 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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