

# MINT1175

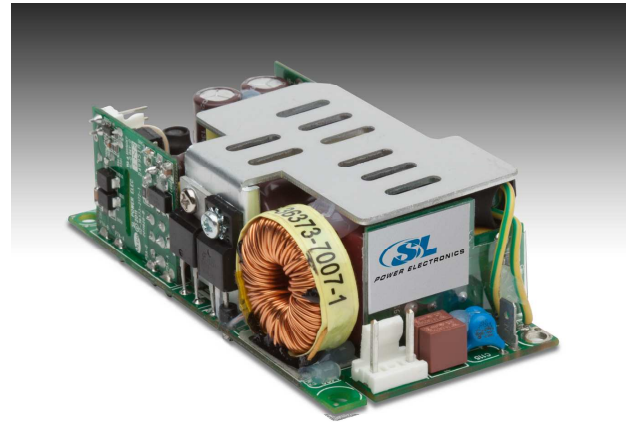
175W Single Output Series

Medical Power Supply



3 Year Warranty

- 2" x 4" x 1.3" Package
- For 1U Applications and Class I or Class II construction
- 175W w/air, 120W convection cooled
- Universal Input 90-264 VAC
- Average Efficiency meets Level V Requirements
- Approved to CSA/EN/IEC/UL60601-1, 3rd Edition 2 MOPP
- 12V fan output
- Efficiency 90% typical at Full Load
- **CE** Compliant (LVD, RoHS)



International Safety Agency Approvals



## Specifications

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

<b>AC Input</b>	100-240Vac +/- 10%, 47-63 Hz single phase 120-370 Vdc	<b>Turn On Time</b>	Less than 2 sec. @115Vac (inversely proportional to input voltage and thermistor temperature)
<b>Input Current</b>	115Vac: 2A, 230Vac: 1A	<b>Hold-up Time</b>	16mSec typical at 120W output load
<b>Inrush Current</b>	264Vac, cold start: will not exceed 50A	<b>Signals</b>	AC Power Fail, DC OK, and Inhibit
<b>Input Fuses</b>	F1, F2: 4A, 250VAC fuses provided on all models	<b>Overload Protection</b>	Hiccup Mode Type
<b>Earth Leakage Current</b>	<200µA@264Vac 60Hz for NC, <400 uA SFC	<b>Short Circuit Protection</b>	Provided – No damage to unit
<b>Efficiency</b>	90% typical at 115V	<b>Switching Frequency</b>	PFC: 65kHz typical
<b>Output Power</b>	175W continuous, with 200 lfm airflow, 120W convection cooled – See chart for specific voltage model ratings	<b>Overvoltage Protection</b>	OVP firing reduces output voltage to <50% of nominal in <50ms. See chart for trip range
<b>Transient Response</b>	50% load step. $\Delta i/\Delta t < 0.2A/\mu S$ Max Volt Deviation = 3%	<b>Isolation</b>	Input-Output: 4000Vac Input-Ground: 1800Vac, Output-Ground: 1500Vac
<b>Ripple and Noise</b>	See chart	<b>Operating Temperature</b>	-10 to +70°C Start Up at -40C and full load Derate output power to 50% at 70°C
<b>Output Voltage</b>	See chart	<b>Storage Temperature</b>	-40 to +85°C
<b>Voltage Adjustability</b>	+/-5% from nominal	<b>Operating Altitude</b>	-500 to 10,000 ft.
<b>Minimum Load</b>	Not required	<b>Non-operating Altitude</b>	-500 to 40,000 ft.
<b>Total Regulation</b>	+/- 3%. See chart	<b>Relative Humidity</b>	5% to 95%, non-condensing
<b>Vibration</b>	Operating: 0.003g <sup>2</sup> /Hz, 1.5g <sub>rms</sub> overall, 3 axes, 10 min/axis Non-Operating: 0.026 g <sup>2</sup> /Hz, 5.0g <sub>rms</sub> overall, 3 axes, 1 hr/axis	<b>Shock</b>	Operating: Half-sine, 20 g <sub>pk</sub> , 10 ms, 3 axes, 6 shocks total Non-Operating: Half-sine, 40 g <sub>pk</sub> , 10 ms, 3 axes, 6 shocks total
<b>Dimensions</b>	W: 2.0" x L: 4.0" x H: 1.3". Weight: 210 g	<b>ITE Safety Standards</b>	EN/CSA/UL/IEC 60601-1, 3 <sup>rd</sup> Edition

## Auxiliary Signals

<b>AC Power Fail:</b> During normal operation, stays HIGH. Signal goes LOW with 5mSec warning before loss of output from AC failure	<b>DC OK:</b> Open collector logic signal goes and stays HIGH 100mSec to 500 mSec after main output reaches regulation
<b>Inhibit:</b> Connect to inhibit pin to output common to inhibit the DC output	

## Model Number Key

MINT 1 175 A 12 06 K 01

<b>Model:</b>	"01" = Standard Model, 02 and higher indicates a modified model.
<b>Input Connector:</b>	"K" = Class I input; "C" = Class II Input
<b>Output Connector:</b>	"06" = 6 pin header for output connector. Other options available, consult factory.
<b>Output Voltage:</b>	"12" = 12V, "24" = 24V, etc.
<b>Configuration:</b>	"A" = First Generation
<b>Output Power:</b>	"175" = 175W
<b># of Outputs:</b>	"1" = Single output
<b>Product Family:</b>	"M" = Medical, "I" = Internal, "NT" = New Technology

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## Output Parameters

Model Number	Volts (V)	Output Current Convection	Output Current with 200LFM	Fan Output (see Note 1)	Ripple & Noise (see Note 2)	Total Regulation	OVP Threshold (see note 3)
MINT1175A1206K01	12 V	11.7 A	14.6 A	12V/0.4A	0.5%RMS, 1.2% pk-pk	±3%	14.0 ± 1.1V
MINT1175A1506K01	15 V	9.3 A	11.7 A	12V/0.4A	0.5%RMS, 1% pk-pk	±3%	18.5 ± 1.5V
MINT1175A2406K01	24 V	5.8 A	7.3 A	12V/0.4A	0.5%RMS, 1% pk-pk	±3%	28.0 ± 2.5V
MINT1175A4806K01	48 V	2.9 A	3.6 A	12V/0.4A	0.5%RMS, 1% pk-pk	±3%	55.0 ± 4.0V
MINT1175A5606K01	56 V	2.5 A	3.1 A	12V/0.4A	0.5%RMS, 1% pk-pk	±3%	59.0 ± 1.0V

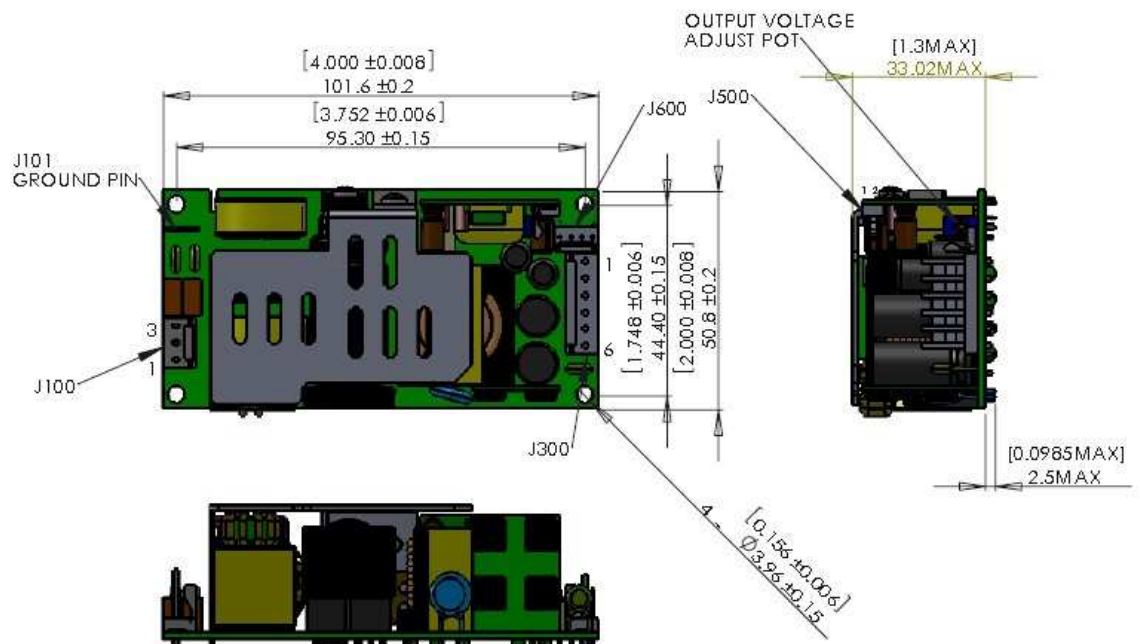
- Notes:
- Total convection power is 120 Watts.
  - Measured with noise probe directly across output terminals, and load terminated with 0.1µF ceramic and 10µF low ESR capacitors.
  - Output adjustment on 56V model will not exceed 56.2 volts.

## EMI/EMC Compliance

Conducted Emissions	EN55011/22 Class B, FCC Part 15, Subpart B, Class B
Radiated Emissions	EN55011/22 Class B, FCC Part 15, Subpart B, Class A w/6db margin
Static Discharge Immunity	EN61000-4-2, Criteria A, 6kV Contact Discharge, 8kV air discharge
Radiated RF Immunity	EN61000-4-3, 3V/m, Criteria A
EFT/Burst Immunity	EN61000-4-4, 2kV/5kHz, Criteria A
Line Surge Immunity	EN61000-4-5, 1kV differential, 2kV common-mode, Criteria A
Conducted RF Immunity	EN61000-4-6, 3Vrms, Criteria A
Power Frequency Magnetic Field Immunity	EN61000-4-8, 3A/m, Criteria A
Voltage Dip Immunity	EN61000-4-11, ) 0% Vnominal, 0.5cycle, 40% Vnominal, 5 cycles, 70% Vnominal, 25 cycles, Criteria A
Line Harmonic Emissions	EN61000-3-2, Class A, B, C & D
Flicker Test	EN61000-3-3, Complies (dmax<6%)

## Mechanical Drawing and Connector Information

<b>INPUT CONNECTOR (J100):</b>	
PIN 1)	AC LINE
PIN 2)	EMPTY
PIN 3)	AC NEUTRAL
Mating Conn:	Molex 09-50-3031, pins = 08-52-0072
<b>GROUND (J101)</b>	
FG	0.250" FASTON TAB
Mating Conn:	Molex 01-90020001
<b>DC OUTPUT CONNECTOR (J300):</b>	
PIN 1)	+Vout
PIN 2)	+Vout
PIN 3)	+Vout
PIN 4)	-Vout
PIN 5)	-Vout
PIN 6)	-Vout
Mating Conn:	AMP 640250-6, pins = 640252-1
<b>FAN OUTPUT CONNECTOR (J500):</b>	
PIN 1)	12V Fan
PIN 2)	RTN
Mating Conn:	Molex 1375820-2, pins = 1375819
<b>SIGNAL CONNECTOR (J600):</b>	
PIN 1)	Inhibit
PIN 2)	PF/DC OK
PIN 3)	Common
PIN 4)	Common
Mating Conn:	Molex 1375820-4, pins = 1375819



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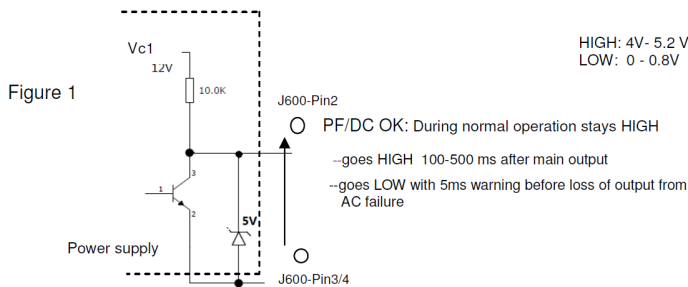
## Auxiliary Signal Description and Functionality

### Fan Output – J500:

J500 provides a 12V@0.4mA output to support a system cooling fan. The fan output is always available when AC input is present, so it also can be used for a 12V standby output is so desired.

### AC Power Failure/DC OK And Inhibit Signals – J600:

#### AC Power Failure/DC OK

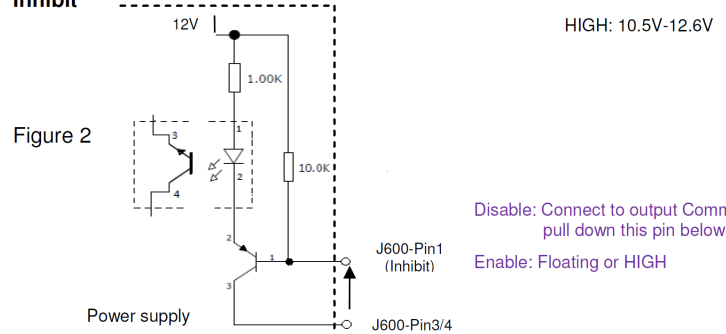


AC Power failure and DC OK signals use the same pin ,so the signals can be used as follows:

DC OK: Pin2 = HIGH & Pin1 = HIGH

AC Power Failure: Pin2 = LOW & Pin1 = LOW

#### Inhibit



## Timing sequence

