

Medical



Test & Measurement



Industrial

FEATURES AND BENEFITS

300W Open Frame Power Supply

Approved to CSA/EN/IEC/UL60601-1, 3rd Edition

3.0" x 5.0" x 1.5" Size

Meets Class B Radiated & Conducted EMI, with Margin

PMBus Monitoring and Control Functionality

Meets Heavy Industrial and IEC60601-1-2 4th Edition Levels of EMC

Universal Input 85-264Vac, Class I and Class II Input Versions

Electrolytic Capacitor Life of >7 years

<1.0W No Load Input Power

>500,000 Hours MTBF

Approved to CSA/EN/IEC/UL66368-1

3 Year Warranty



MODEL SELECTION

Model Number ^{2,3}	Volts*	Output Current**			Standby Output	Fan Output	Total Output Power ⁵			Ripple & Noise ¹	Regulation	
		Convection	Conduction	Fan Cooled			Convection	Conduction	Fan Cooled		Line	Load
GU300S12K	12.0V	15.5A (184W)	19.5A (234W)	23.5A (284W)	5Vdc @ 2A (10W)	12Vdc @ 0.5A (6W)	200W	250W	300W	120mV pk-pk	± 1%	± 2%
GU300S15K	15.0V	12.3A (184W)	15.6A (234W)	19.0A (284W)						150mV pk-pk		
GU300S18K	18.0V	10.2A (184W)	13.0A (234W)	15.7A (284W)						180mV pk-pk		
GU300S24K	24.0V	7.7A (184W)	9.7A (234W)	11.8A (284W)						240mV pk-pk		
GU300S48K	48.0V	3.8A (184W)	4.9A (234W)	5.9A (284W)						480mV pk-pk		
GU300S56K	56.0V	3.3A (184W)	4.2A (234W)	5.0A (284W)						560mV pk-pk		

Notes:

1. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.
2. Other output voltages available, consult factory.
3. For input class II models, change the "K" in the model number to "C".
4. All specifications are typical at 230Vac, full load, at 25°C ambient unless noted.
5. Total output power includes 5Vsb and 12V fan output ratings.



INPUT

Input Voltage and Frequency	85-264Vac, 47-63Hz, 1. See derating curve for operation below 90Vac. (Safety Rated to 100-240Vac, $\pm 10\%$)
Input Current	115Vac: TBDA, 230Vac: TBDA
Inrush Current	264Vac, cold start: will not exceed 15A peak
Input Fuses	3.15A, 250Vac fuse in both line and neutral
Earth Leakage Current (Input-Earth)	<400 μ A@264Vac, 60Hz, NC
Earth Leakage Current (Output-Earth)	<80 μ A@264Vac, 60Hz, NC
Efficiency	12V-18V : 91%, typical 24V : 92%, typical 48V-56V : 93%, typical

Notes:

1. All specifications are typical at 230Vac input, full load, at 25°C ambient unless noted.

OUTPUT

Output Voltage	See models chart
Output Power	See models chart
Turn On Time	<1000ms
Hold-up Time	20ms / 100Vac at full load
Output Voltage Adjustment	+/-5% on main output only
Transient Response	500 μ s resp.time for return to w/in 0.5% of final value for any 50% load step from 5% to 100% of rated load, $\Delta i / \Delta t < 0.2A/\mu s$. Max. voltage deviation: +/-3.5%.
Minimum Load	None required
Line/Load Regulation	See models chart

Notes:

1. All specifications are typical at 230Vac input, full load, at 25°C ambient unless noted.

SAFETY

ITE/Industrial Safety	EN/IEC/UL62368-1
Medical Safety	EN/IEC/UL60601-1, 3 rd Edition

RELIABILITY

MTBF	>500,000 hours, full load, 110 & 220Vac input, 25°C ambient, per Telcordia 332 Issue 6, Stress Method.
Electrolytic Capacitor Life	>7 year life based on calculations at 115Vac/60Hz & 230Vac/50Hz, ambient 40°C at 24 hrs per day, 365 days/year, 6 power up cycles per day.

ISOLATION

Isolation Safety Rating	Input-Output: 4000Vac (2 MOPP) Input-Ground: 1500Vac (1 MOPP) Output-Ground: 1500Vac (1 MOPP)
Hipot Test Voltage	Input-Output: 4500Vac (2 MOPP) Input-Ground: 1900Vac (1 MOPP) Output-Ground: 1900Vac (1 MOPP)

ENVIRONMENT

Operating Temperature	-20 to +70°C, see derating curve for operation above 50°C and below -0°C.
Relative Humidity	5% to 95%, non-condensing
Weight	TBDg
Dimensions	76.2 x 127 x 38.1mm 3.0 x 5.0 x 1.5 inch
Cooling	Convection, Conduction, or Fan cooled (16cfm) to achieve applicable ratings detailed on the Model Selection table on pg. 1
Storage Temperature	-40 to +85°C
Vibration	Operating: 0.003g/Hz, 1.5grms overall, 3 axes, 10 min/axis, 1-500Hz. Non-Oper.: random waveform, 3 minutes per axis, 3 axes and Sine waveform, Vibration frequency/acceleration: 10-500Hz/1g, sweep rate of 1 octave / minutes, Vibration time of 10 sweeps / axes, 3 axes
Shock	Operating: Half-sine, 20gpk, 10mS, 3 axes, 6 shocks total Non-Operating: Half-sine waveform, impact acceleration of 50G, Pulse duration of 6 mS, Number of shocks: 3 for each of the three axis



PROTECTION

Overvoltage Protection – Main Output	120% - 140% of nominal output voltage. Default is Latching, requiring AC Power Cycle to reset. Digital control via PMBus or I ² C can allow selection of latching or auto recovery, and variation of overvoltage trip levels
Overvoltage Protection – 5V standby Output	120% - 150% of nominal output voltage. Latching. Requires AC Power Cycle to reset
Overvoltage Protection – 12V Fan Output	120% - 150% of nominal output voltage. Latching. Requires AC Power Cycle to reset
Short Circuit Protection	All outputs - Hiccup Mode
Overload Protection – Main Output	120% - 160% or rated output current value, hiccup mode. Digital control via PMBus or I ² C can allow selection of latching or auto recovery, and variation of overload trip levels
Overload Protection – 5V standby Output	Trips between 2.8A and 5.0A, hiccup mode, with no load on 12V output
Overload Protection – 12V Fan Output	Trips between 0.6A and 1.0A, hiccup mode, with no load on 5V output
Overtemperature Protection	Will shut down upon an over-temperature condition, auto recovery. Digital control via PMBus or I ² C can allow selection of latching or auto recovery.

Notes:

- Specifications are for convection rating at factory settings at 115 Vac input, 25°C ambient unless otherwise stated
- For DC input an external DC safety rated fuse must be used

EMI/EMC COMPLIANCE

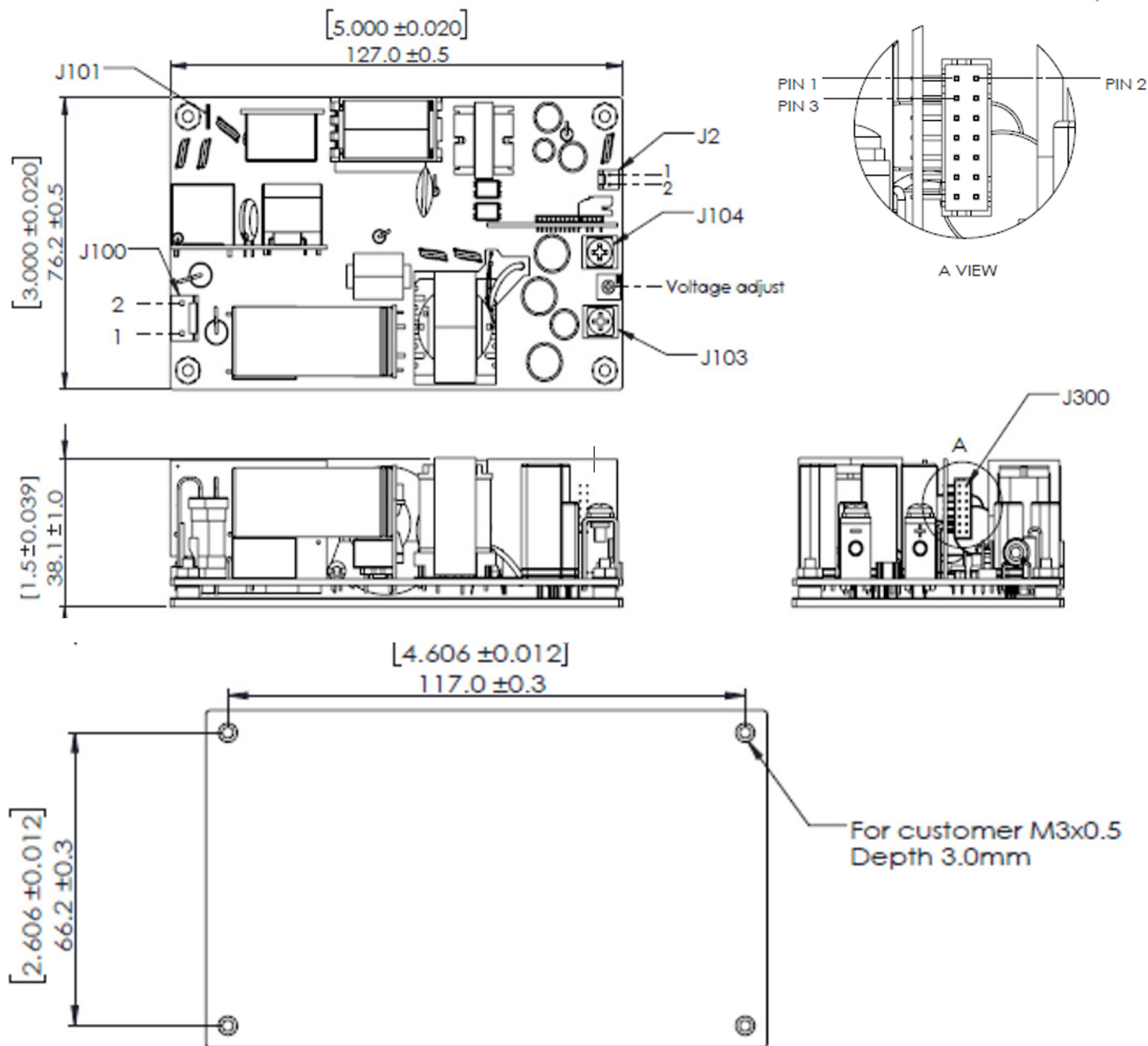
Conducted Emissions	EN55032, EN55011/CISPR11 Class B, FCC Part 15.107, Class B: 6db margin typ, at 115 and 230Vac
Radiated Emissions	EN55032, EN55011/CISPR11 Class B, FCC Part 15.109, Class B: 3db margin typ, at 115 and 230Vac
Electro-Static Discharge (ESD) Immunity on Power ports	EN55024/IEC61000-4-2, Level 4: +/- 8kV contact, +/- 15kV air, Criteria A IEC60601-1-2, 4 th Edition, Table 4
Radiated RF EM Fields Susceptibility³	EN55022/EN61000-4-3, 10V/m, 80MHz-2.7GHz, 80% AM at 1kHz IEC60601-1-2, 4 th Edition, Table 4
EFT/Burst Immunity	EN55024/IEC61000-4-4, Level 4, +/- 4kV, 100KHz rep rate, 40A, Criteria A IEC60601-1-2, 4 th Edition, Table 5
Surges, Line to Line (Diff Mode) and Line to GND (CMN Mode)	EN55024/IEC61000-4-5, Level 4, +/-2kV DM, +/-4kV CM, Criteria A Surpasses IEC60601-1-2, 4 th Edition requirements.
Conducted RF Immunity	EN55022/IEC61000-4-6, 3V – Level 4, 0.15 to 80Mhz; and 6V in ISM and amateur radio bands between 0.15Mhz and 80Mhz, 80% AM at 1KHz IEC60601-1-2, 4 th Edition, Table 5
Power Frequency Magnetic Field Immunity	EN55024/IEC1000-4-8, Level 4: 30A/m, 50/60 Hz IEC60601-1-2, 4 th Edition, Table 4
Voltage Dip Immunity	EN55024/IECEN61000-4-11: –100% dip for 10 mS, at 0, 45, 90, 135, 180, 225, 270 and 315 degrees, –100% dip for 20mS, 0 deg., Criteria A –100% dip for 5000mS (250/300 cycles), Criteria A –60% dip for 100mS, Criteria A –30% dip for 500mS, Criteria A IEC60601-1-2, 4 th Edition, Table 5
Harmonic Current Emissions	EN55011/EN61000-3-2, Class A
Flicker Test	EN61000-3-3
Common Mode Noise: High Freq. (100Khz-20 Mhz)	10mA pk-pk
Common Mode Noise: Low Frequency (50-120 Hz)	5.0V pk-pk

Notes:

- The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
- All specifications are typical at nominal input, full load, at 25 °C ambient unless noted. Consult factory for information regarding testing for or usage underspecial environments.
- Consult factory for Table 9 compliance information.



MECHANICAL DRAWING





CONNECTOR INFORMATION

Connector Information						
	CONN	PIN#	ASSIGNMENT	CONNECTOR	MATING CONNECTOR	MATING PIN
INPUT	J100	1	LINE	TE-CONNECTIVITY 641937-1	TE-CONNECTIVITY 640250-3	TE-CONNECTIVITY 640250-2
		2	NEUTRAL			
	J101		GND	Zierick 836	MOLEX 01-90020001	
OUTPUT	J104		Vmain+	METAL TERMINAL	MOLEX 19141-0058/0063/0083	
	J103		Vmain RTN	METAL TERMINAL	MOLEX 19141-0058/0063/0083	
	J2	1	Vfan+	TE-CONNECTIVITY 640456-2	TE-CONNECTIVITY 1375820-2	TE-CONNECTIVITY 1375819
		2	Vfan RTN			
	J300	1	RTN	Sullins: SWR204-NRTN-D07- RA-GA (JST-MFG: S14B-PHDSS - B(LF) (SN))	Sullins: SWH204-NULN-D07- UU-WH (JST-WFG: PHDR-14VS)	Sullins: SWT204 SERIES TERMINAL (JST-MFG: SPHD-001T- P0.5)
		2	S+			
		3	FAN CONTROL			
		4	RTN			
		5	S-			
		6	#SMB ALERT			
		7	ADDR _ MODE			
		8	ON _ OFF			
		9	EXT _ BIAS			
		10	SDA			
		11	RTN			
		12	SCL			
		13	5VSB			
		14	5VSB			

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