



Medical



Test & Measurement



Industrial

FEATURES AND BENEFITS

300W Open Frame Power Supply	Approved to CSA/EN/IEC/UL60601-1, 3 rd 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 4 th 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:

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

- 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:

- 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 38.1 mm 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

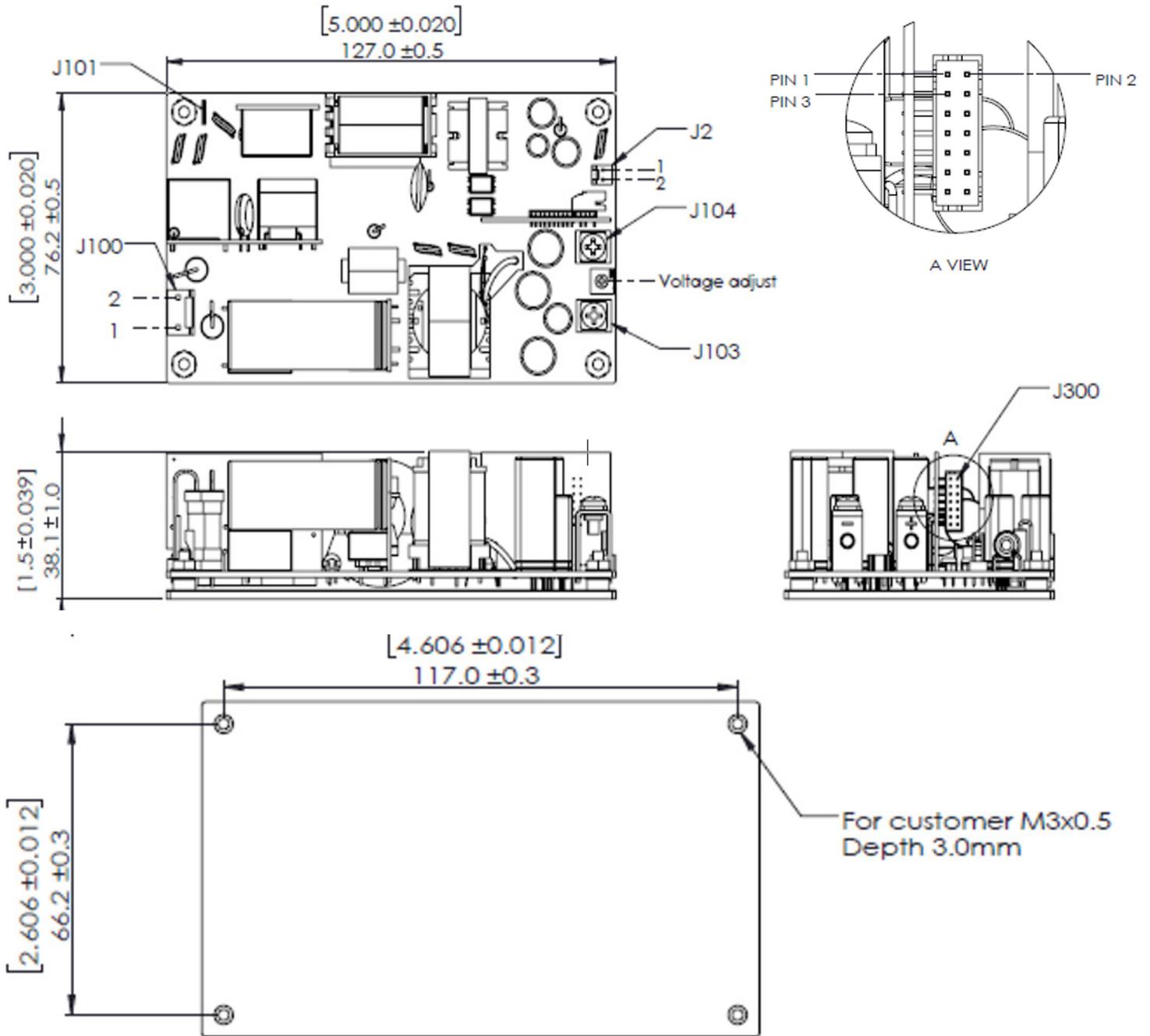
Conducted Emissions	EN55032, EN55011/CISPR11 Class B, FCC Part 15.107, Class B: 6db margin typ, at 115 and 230Vac
Radiated Emissions	EN55032, EN55011/CISPR11 Class B, FCC Part 15.109, Class B: 3db margin typ, at 115 and 230Vac
Electro-Static Discharge (ESD) Immunity on Power ports	EN55024/IEC61000-4-2, 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- PO.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					