GEM600



600W Single Output Economy/Technology Switchers

Commercial and Medical

2 Year Warranty

- •600W Single Output AC-DC Power Supply
- •Universal Input 90-264 VAC
- •Standard: Active PFC, OVP, Power Fail and Inhibit (low)
- Modified and Customized Designs also available
- •Complies with EMI/RFI Standards
- •Approved to EN/IEC/UL/CSA 60950-1 for ITE
- •Approved to EN/IEC/UL60601-1 for Medical
- .C € Compliant (LVD, RoHS)







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Specifications	All Specifications are typical at nominal input, full load at 25°C unless otherwise stated.
AC Input	Turn On Time
90-264VAC, 47-63 Hz single phase.	Less than 2 seconds under all rated load conditions.
Input Current	Hold-up Time
120VAC: 9A, 230VAC: 4.5A.	≥20 ms from loss of AC input at 600W load, 120VAC input.
Inrush Current Limited by internal thermistor. The inrush at 240VAC, averaged the first AC half-cycle under cold start conditions will not exceed	
Input Fuse	Output Overload & Short Circuit Protection
F1, F2: 12A, 250VAC fuses provided on all models.	Foldback, then cycle-by-cycle current limiting, automatic recovery.
Power Factor	Overvoltage Protection
0.99 typical, 0.96 minimum.	Latching type, recycle AC input to reset. See chart for trip levels.
Earth Leakage Current	Ripple and Noise
120VAC: 75μA max. NC, 120μA max. SFC.	1% pk-pk max., 20MHz BW, differential mode. Measured with noise
264VAC: 160μA max. NC, 300μA max. SFC.	probe directly across output terminals.
Output Power	ITE Safety Standards
600W continuous.	CSA/EN/IEC/UL 60950-1
Peak Output Power	Medical Safety Standards
650W for 1 minute, 10% duty cycle.	EN/IEC/UL 60601-1
Output Voltage	Efficiency
See chart.	>80% typical at full rated load
Voltage Adjustability	Switching Frequency
Adjustable potentiometer, capable of ±5% change from nominal	140KHz main inverter and 70kHz PFC (synchronized).
Minimum Load	MTBF
Not required.	208K hours per Telcordia.
Total Regulation	Overtemperature Protection
See chart.	Automatic.
Transient Response	Weight
500µs max., 50% load step, $\Delta i/\Delta t < 0.2A/µs$.	3.75 lbs. (1.70kg)
Enclosure Dimensions See outline drawing	SignalsAC Power Fail:TTL "0" 10ms before the output drops to <97% of nom.

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	Output Parameters										
Model Number	Volts (V)	Output Current Nominal	Peak	Ripple & Noise	Total Regulation	OVP Threshold					
GEM600-24G	24V	25.0A	27.0A	240mV	±1.0%	30.0 ± 2V					
GEM600-28G	28V	21.5A	23.5A	280mV	±1.0%	33.0 ± 3V					
GEM600-36G	36V	16.7A	18.0A	360mV	±1.0%	43.0 ± 3V					
GEM600-48G	48V	12.5A	13.5A	480mV	±1.0%	56.0 ± 4V					

Environmental Specifications								
Operating Temperature	Temperature Coefficient							
-20° to 70°C. Derate output power for operation above 50°C. Fan integral to the power supply.	0.03% per °C typical on all units.							
Storage Temperature	Output Power Derating							
-40 to +85°C	Derate Output Power by 2.5% per °C up to 70°C maximum.							
Relative Humidity	Thermal Shutdown							
5% to 95%, non-condensing	Provided to avoid prolonged over-temperature condition.							
VibrationOperating:0.003 g²/Hz, 1.5 grms overall, 3 axes, 10 min. / axisNon-Operating:0.026 g²/Hz, 5.0 grms overall, 3 axes, 1 hr. / axis	Operating Altitude -500 to 10,000 ft.							
ShockOperating:Half-sine, 20 g_{pk} , 10 ms, 3 axes, 6 shocks totalNon-Operating:Half-sine, 40 g_{pk} , 10 ms, 3 axes, 6 shocks total	Non-operating Altitude -500 to 40,000 ft.							

EMI/EMC Compliance	
RF Emissions	EN55011/22 and FCC Part 15, radiated Class A, conducted Class B.
Static Discharge Immunity	EN61000-4-2, 6kV Contact Discharge, 8kV air discharge
Radiated RF Immunity	EN61000-4-3, 3V/m.
EFT/Burst Immunity	EN61000-4-4, 2kV/5kHz
Line Surge Immunity	EN61000-4-5, 1kV differential, 2kV common-mode
Conducted RF Immunity	EN61000-4-6, 3V
Power Frequency Magnetic Field Immunity	EN61000-4-8, 3A/m
Voltage Dip Immunity	EN61000-4-11, see EN60601-1-2: 2001 chart below.
Line Frequency Harmonics	EN61000-3-2, Class A
Voltage Fluctuations/Flicker	EN61000-3-3, Complies (clause 5b)

EN60601-1-2: 2001 Voltage Sag Compliance									
Voltage Test Level Input Voltage	Voltage Dip Input Voltage	Duration Periods	Output Voltage Deviation						
100VAC	<5 VAC	10mS	<3.5%						
100VAC	40 VAC	100mS	<3.5%						
100VAC	70 VAC	500mS	<3.5%						
240VAC	<12 VAC	10mS	<3.5%						
240VAC	96 VAC	100mS	<3.5%						
240VAC	168 VAC	500mS	<3.5%						

Note:

During 100mS voltage dip (5 cycles at 40%VAC), the AC Power Fail warning may trigger. During low line 100mS voltage dip, reduced loading to 50% rated load is required to meet the deviation requirement and regulation.

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Connector Information

INPUT CONNECTOR (TB1):								
Option:	Pin 1	Pin 2	Pin 3	Manufacturer's P/N:				
Α	AC Line	Neutral	Ground	EBY P/N 6002-03-N-01				
Т	Ground	Neutral	AC Line	Phoenix Contact P/N 1706785				
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MATING CONNECTORS:							
Option:	Mate For:		Manufacturer's P/N:				
С	TB2, TB3		Phoenix Contact P/N 1913523				
All	J4		AMP P/N 1375820-4				

All other options' connector is a terminal block or has a direct wire connection.



DC OUTPUT CONNECTORS (TB2, TB3):								
Option:	TB2 All Pins	TB3 All Pins	Manufacturer's P/N:					
Α	+Vout	-Vout	EBY P/N 6002-03-N-01					
В	+Vout	-Vout	Bussbar #10-32UNC x 0.375 Screw					
С	+Vout	-Vout	Phoenix Contact P/N 1998959					
D	+Vout	-Vout	Phoenix Contact P/N 1731721					

SIGNAL CONNECTOR (J4) (all options):									
Pin 1	Pin 1 Pin 2 Pin 3 Pin 4 Manufacturer's P/N:								
Pwr Good	Pwr Fail	N/C	Inhibit	AMP P/N 640456-4					

"T" Option Input Connector:



"A" Option Output Connectors:

"A" Option Input Connector:

"D" Option Output Connector:

Mode	Numbe	r Co	onfig	urati	on				
Model	GEN			<u>)0</u>			X	¥ 	GROHS COMPLIANTVALUE-ADDED CONFIGURATIONS:Blank = Standard ModelOPTIONAL DIODE:Blank = NoneD = N+1 OR'ing DiodeOUTPUT CONNECTOR:A = EBY P/N 6002-03-N-01B = Buss Bars 10-32 UNC x 0.375 SCREWSC = Phoenix Contact P/N 1998959D = Phoenix Contact P/N 1731721INPUT CONNECTOR:A = EBY P/N 5000-03-N-12T = Phoenix Contact P/N: 1706785OUTPUT VOLTAGE:24 = 24Vdc @ 31.2A28 = 28Vdc @ 26.8A36 = 36Vdc @ 20.8A48 = 48Vdc @ 17.0AOUTPUT POWER
									MODEL SERIES





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NOTES: Unless otherwise specified.

AX MOUNTING SCREW DEPTH .25" [6.4] FROM OUTSIDE OF CHASSIS.





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Mechanical Specifications

Commercial and Medical





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