ABC40 Series

AC-DC Open Frame Power Supplies
Medical

The ABC40 Series of open-frame power supplies, with its wide universal 90-264 VAC input range and high power density, is available at 40 W of output power and a variety of single and multiple output voltages.

The high efficiency and high power density of the ABC family ensures minimal power loss in end-use equipment, thereby facilitating higher reliability, easier thermal management and meets regulatory approvals for environmentally-friendly end products.

These power supplies are ideal for telecom, datacom, industrial equipment and other applications.

Key Features & Benefits

- 4 x 2 x 1.2 Inch Form Factor
- Single to Triple Outputs
- Ultra High Efficiency > 85%
- Low conducted and radiated noise
- No Load Power < 0.3 W
- IEC Protection Class Options:
  - Class I: Earth pin J4 (no suffix)
  - Class II: No Earth pin (-2 suffix)
- RoHS Compliant
- Cover Kit Accessory Available

Applications

- Lighting
- Industrial Processing
- Applied Computing
- Instrumentation
- Automation Controls
- Robotics
- Wireless Communication
- Test and Measurement

1. MODEL SELECTION

MODEL[5]	OUTPUT VOLTAGE (VDC)	MAX LOAD (A) [2]	MINIMUM LOAD (A) [3]	RIPPLE & NOISE [4]
ABC40-1005G	5.1	8.0	0.0	1%
ABC40-1012G	12	3.5	0.0	1%
ABC40-1015G	15	2.7	0.0	1%
ABC40-1024G	24	1.7	0.0	1%
ABC40-1048G	48	0.83	0.0	1%
ABC40-3000G	5.2	6.0	0.5	1%
	12.5	2.0	0.1	1%
	-12.8	0.5	0.0	1%
ABC40-3001G	5.2	6.0	0.5	1%
	23.8	1.0	0.1	1%
	-12.8	0.5	0.0	1%
ABC40-3002G	5.2	6.0	0.5	1%
	14.6	1.5	0.1	1%
	-14.8	0.5	0.0	1%
ABC40-3003G[1]	3.3	6.0	1.0	1.5%
	5.2	3.0	0.1	1%
	-12.8	0.5	0.0	1%
Cover-40-XCB	Metal cover kit accessory			

NOTES:

1. For ABC40-3003G efficiency is 75% typical.
2. Maximum current per output channel. Do not exceed total output power rating.
3. Minimum load specified to meet cross regulation.
4. Ripple is peak to peak with 20 MHz bandwidth and 10 µF (Tantalum capacitor) in parallel with a 0.1 µF capacitor at rated line voltage and load ranges.
5. For Class II add suffix -2 (e.g.: ABC40-1012G-2).

2. INPUT SPECIFICATIONS

Specifications are for nominal input voltage, 25°C unless otherwise stated.

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Input Voltage	Universal	90 - 264 VAC
Input Frequency[6]		47 to 400 Hz
Input Current	120 VAC: 230 VAC:	0.85 A max. 0.45 A max.
No Load Power	Single output models Multi output models	< 0.3 W < 0.5 W
Inrush Current	120 VAC: 230 VAC:	30 A max. 60 A max.
Leakage Current	120 VAC: 230 VAC:	< 500 uA <1000 µA
Switching Frequency	Typical	67 Hz

6. Safety Approved: 47 to 63 Hz

3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Efficiency	Typical	85%
Hold Up Time	@ 120 VAC typical	>10 ms
Output Power	Derate output power linearly to 80% from 90 VAC to 80 VAC input.	40 W
Line Regulation		+/-0.3%
Load Regulation	V1: V2 & V3:	+/-0.5% +/-5%
Transient Response	50% to 100% load change, 50/60 Hz, 50% duty cycle, 0.1 A/µs	< 10%, recovery time < 5 ms
Rise Time		< 100 ms
Set Point Tolerance	V1: V2 & V3:	± 3% ± 5%
Output Voltage Adjustment	V1	± 10%
Over Current Protection	Typical above rating	130%
Over Voltage Protection	Typical for V1 only	130%
Short Circuit Protection	Short term, autorecovery	

4. ENVIRONMENTAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Operating Temperature	Refer to derating curve, Fig. 1 Start-up is guaranteed	-20 to 70°C -20 to 0°C
Storage Temperature		-40 to +85°C
Relative Humidity	Non Condensing	95%
Altitude	Operating: Non-Operating:	10,000 ft. 40,000 ft.
Reliability	MTBF according to Telcordia -SR332-Issue 3	1.87 million hours
Cooling	Convection	

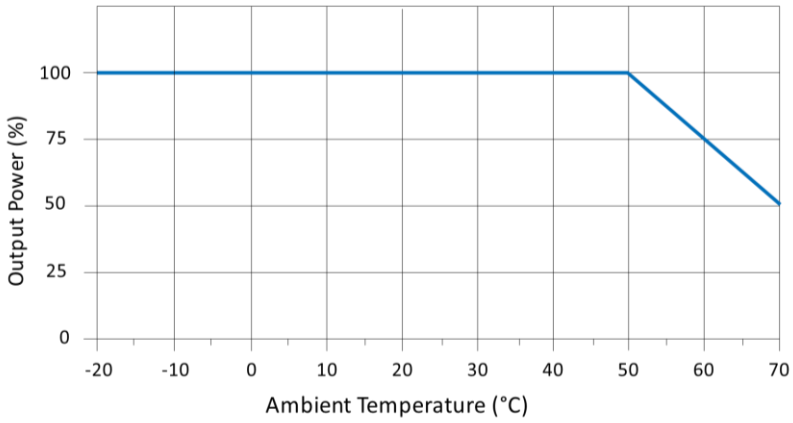

Figure 1. Output Power Vs. Temperature

5. EMC SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Conducted Emissions	EN55022-B, CISPR22-B, FCC PART15-B	
Radiated Emissions	EN55022-B, CISPR22-B, FCC PART15-B	To be controlled in end system
Harmonic Current	EN61000-3-2	Class A
AC Flicker	EN61000-3-3	Pass
Static Discharge	EN61000-4-2	Level 3
RF Field Susceptibility	EN61000-4-3	Level 3
Fast Transients/Bursts	EN61000-4-4	Level 3
Surge Susceptibility	EN61000-4-5	Level 3

6. SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Isolation Voltage	Input to Output	Min. 4242 VDC
Safety Standards	Approved to the latest edition of the following standards: CSA/UL EN60950-1, EN EN60950-1 and IEC EN60950-1. Class1 SELV.	
Agency Approvals	Nemko, UL, C-UL	
CE mark	Complies with LVD Directive	

7. CONNECTOR & PIN DESCRIPTION

CONNECTOR	PIN	DESCRIPTION / CONDITION		MANUFACTURER / PN
AC Input Connector	J1	Pin 1 Pin 2	AC Neutral AC Line	Molex: 26-60-4030 or equivalent Mating: 09-50-3031; Pins: 08-50-0106
DC Output Connector	J2	Pin 1,2 Pin 3,4 Pin 5 Pin 6	V1 RTN V3 V2	Tyco: 640445-6 or equivalent Mating: 647402-6; Pins: 3-647409-1
Signal Connector	J3	Pin 1 Pin 2	+V1 Sense -V1 Sense	Molex: 22-23-2021 or equivalent Mating: 22-01-2021
Earth	J4			Molex: 19705-4301 Mating: 190030001

8. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION
Weight	150 g (0.33 lbs.)
Dimensions	101.6 x 50.8 x 30.48 mm (4 x 2 x 1.2 inch)

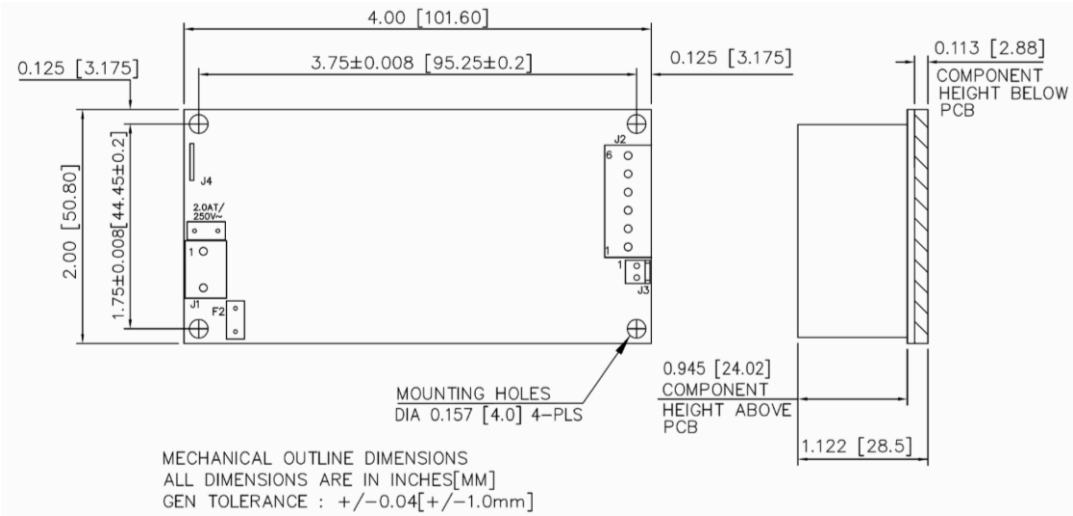

Figure 2. Mechanical Drawing ABC40-1xxxG

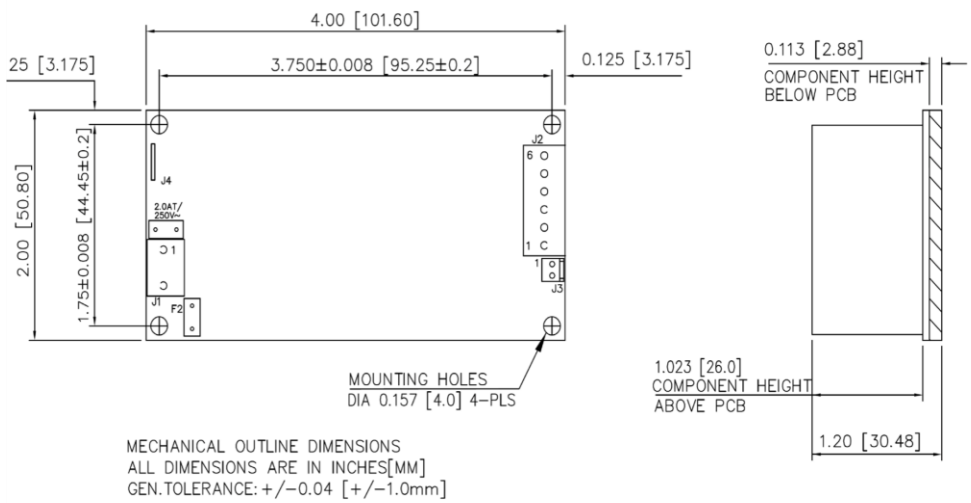

Figure 3. Mechanical Drawing ABC40-3xxxG

NOTES: In case the PCB is mounted in a metal enclosure, using metal hardware ensure the following:

1 Stand off, used to mount PCB has OD of 5.4 mm max.
2 Screws, used to fix PCB on stand off, have head dia of 6.0 mm max.
3 Washer, if used, to have dia of 6.5 mm max.

For more information on these products consult: tech.support@psbel.com

NUCLEAR AND MEDICAL APPLICATIONS - Products are not designed or intended for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems.
TECHNICAL REVISIONS - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.

bel POWER SOLUTIONS & PROTECTION
a bel group

Asia-Pacific +86 755 298 85888
Europe, Middle East +353 61 225 977
North America +1 408 785 5200

