

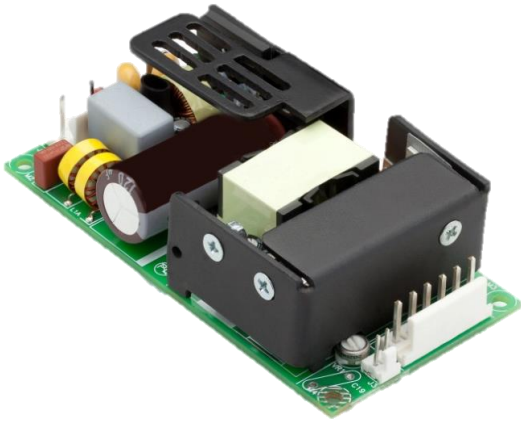
ABC40 Series

AC-DC Open Frame Power Supplies

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



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1. MODEL SELECTION

MODEL ¹	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 ⁵	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			

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 µA < 1000 µA
Switching Frequency	Typical	67 kHz

¹ For Class II add suffix -2 (e.g.: ABC40-1012G-2).

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 ABC40-3003G efficiency is 75% typical.

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/ μ s	< 10%, recovery time < 5 ms
Rise Time		< 100 ms
Set Point Tolerance	V1: V2 & V3:	\pm 3% \pm 5%
Output Voltage Adjustment	V1	\pm 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. Derating Curve

De-rate linearly from 100% at 50°C to 75% at 70°C



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5. EMC SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Conducted Emissions	EN55032-B, CISPR22-B, FCC PART15-B	Pass
Radiated Emissions	EN 55032 B	Pass
Input Current Harmonics	EN 61000-3-2	Class D
Voltage Fluctuation and Flicker	EN 61000-3-3	Pass
ESD Immunity	EN 61000-4-2	Level 3, Criterion A
Radiated Field Immunity	EN 61000-4-3	Level 3, Criterion A
Electrical Fast Transient Immunity	EN 61000-4-4	Level 3, Criterion A
Surge Immunity	EN 61000-4-5	Level 3, Criterion A
Conducted Immunity	EN 61000-4-6	Level 3, Criterion A
Magnetic Field Immunity	EN 61000-4-8	Level 3, Criterion A
Voltage Dips, Interruptions	EN 61000-4-11	Criterion A & B

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 AC Line Pin 2 AC Neutral	Molex: 26-60-4030 or equivalent Mating: 09-50-3031; Pins: 08-50-0106
DC Output Connector	J2	Pin 1,2 V1 Pin 3,4 RTN Pin 5 V3 Pin 6 V2	Tyco: 640445-6 or equivalent Mating: 647402-6; Pins: 3-647409-1
Signal Connector	J3	Pin 1 +V1 Sense Pin 2 -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)

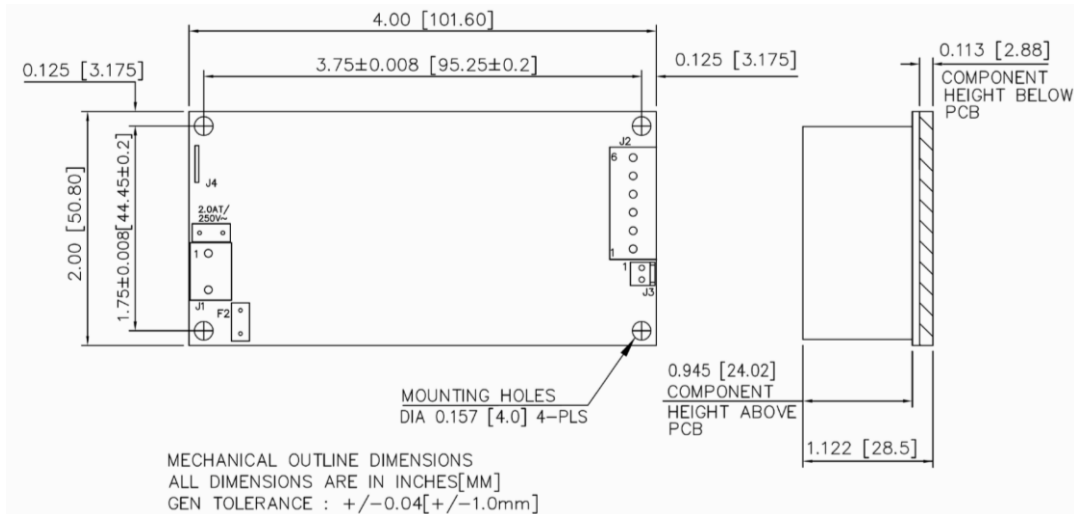


Figure 2. Mechanical Drawing ABC40-1xxxG



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.

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[ABC40-3003G](#) [ABC40-1015G](#)