

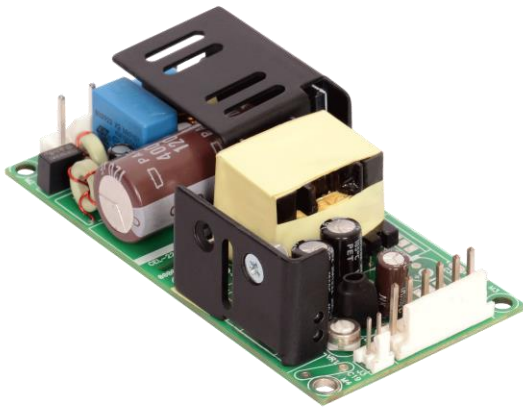
# ABC60 Series

## AC-DC Open Frame Power Supplies

The ABC60 Series of AC-DC open-frame power supplies, with its wide universal 90-264 VAC input range and high power density, is available at 60 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

- 50 - 65 W Convection Cooled
- 90 - 264 VAC Input
- -20 to 50°C Full Load Operation
- Form Factor 4 x 2 x 1.2 inches (101.6 x 50.8 x 30.48 mm)
- Single to Triple Outputs
- No Load Power < 0.3 W
- IEC Protection Class Options:
  - Class I: Earth pin J4 (no suffix)
  - Class II: No Earth pin (-2 suffix)
- Conducted EMI EN 55022-B, FCC Part 15 Level B
- ITE Safety Agency Approvals
- RoHS Compliant
- Cover Kit Accessory Available

### Applications

- Instrumentation
- Lighting
- Industrial Applications
- Applied Computing
- Renewable Energy
- Test and Measurement
- Robotics
- Wireless Communication

## 1. MODEL SELECTION

MODEL <sup>1</sup>	OUTPUT VOLTAGE (VDC) <sup>2</sup>	OUTPUT CURRENT MAX (A)	MINIMUM LOAD (A) <sup>3</sup>	RIPPLE & NOISE <sup>4</sup>	TOTAL REGULATION
ABC60-1005G	5.2	10.0	0.0	1.25%	± 0.8%
ABC60-1012G	12	5.4	0.0	1%	± 0.8%
ABC60-1015G	15	4.33	0.0	1%	± 0.8%
ABC60-1024G	24	2.7	0.0	1%	± 0.8%
ABC60-1048G	48	1.35	0.0	1%	± 0.8%
ABC60-3000G	5.2	8.0	0.5	1.25%	± 0.8%
	12.5	3.0	0.1	1%	± 5.3%
	-12.5	0.5	0.0	1%	± 5.3%
ABC60-3001G	5.2	8.0	0.5	1.25%	± 0.8%
	23.8	1.5	0.1	1%	± 5.3%
	-12.5	0.5	0.0	1%	± 5.3%
ABC60-3002G	5.2	8.0	0.5	1.25%	± 0.8%
	14.6	2.5	0.1	1%	± 5.3%
	-16.2	0.5	0.0	1%	± 5.3%
ABC60-3003G	3.3	6.0	1.0	1.5%	± 0.8%
	5.2	3.0	0.1	1%	± 5.3%
	-12.8	0.5	0.0	1%	± 5.3%
Cover-60-XCB <sup>5</sup>	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 <sup>6</sup>		47 to 400 Hz
Input Current	120 VAC: 230 VAC:	1.5 A max. 0.75 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

<sup>1</sup> Single output models deliver 65 W, except ABC60-1005G (50 W). Triple output models deliver 60 W, except ABC60-3003G (45 W).

<sup>2</sup> Maximum outputs for each output. Max power rating should not be exceeded.

<sup>3</sup> Minimum load specified to meet cross regulation.

<sup>4</sup> 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.

<sup>5</sup> When used in Cover Kit, de-rate output power to 70 % under all operating conditions.

<sup>6</sup> Safety Approved: 47 to 63 Hz

### 3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Efficiency <sup>7</sup>	Typical	85%
Hold Up Time	@ 120 VAC typical	>10 ms
Output Power <sup>8</sup>		50 - 65 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. Derating Curve

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

<sup>7</sup> For ABC60-3003G efficiency is 75% typical.

<sup>8</sup> Derate output power linearly to 80% from 90 VAC to 80 VAC input.



Asia-Pacific  
+86 755 298 85888

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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:	4242 VDC
Safety Standards	Approved to the latest edition of the following standards: CSA/UL60950-1, EN60950-1 and IEC60950-1; 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
DC Output Connector	J2	Pin 1,2	V1
		Pin 3,4	RTN
		Pin 5	V3
		Pin 6	V2
Signal Connector	J3	Pin 1	+V1 Sense
		Pin 2	-V1 Sense
Earth	J4		

## 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)

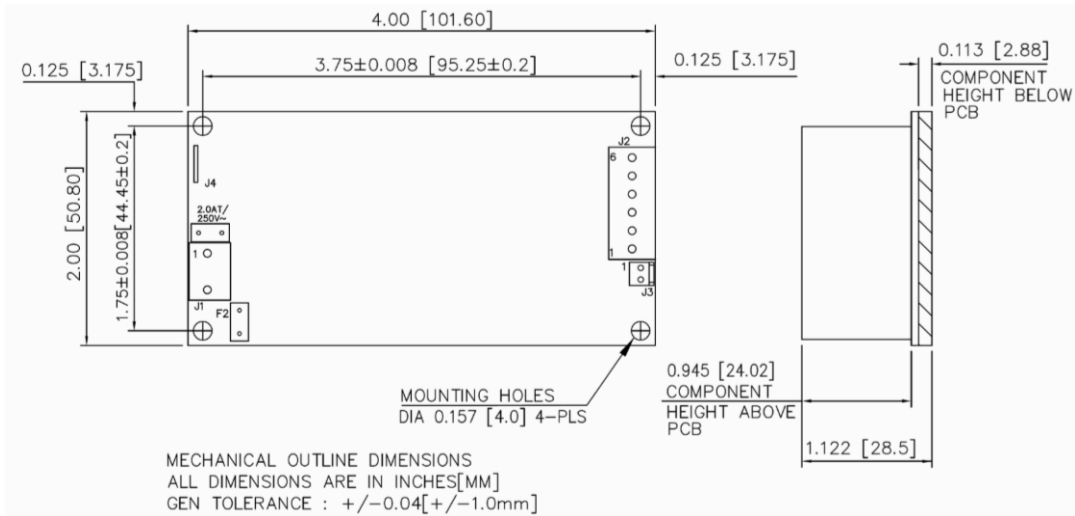


Figure 2. Mechanical Drawing ABC60-1xxxG

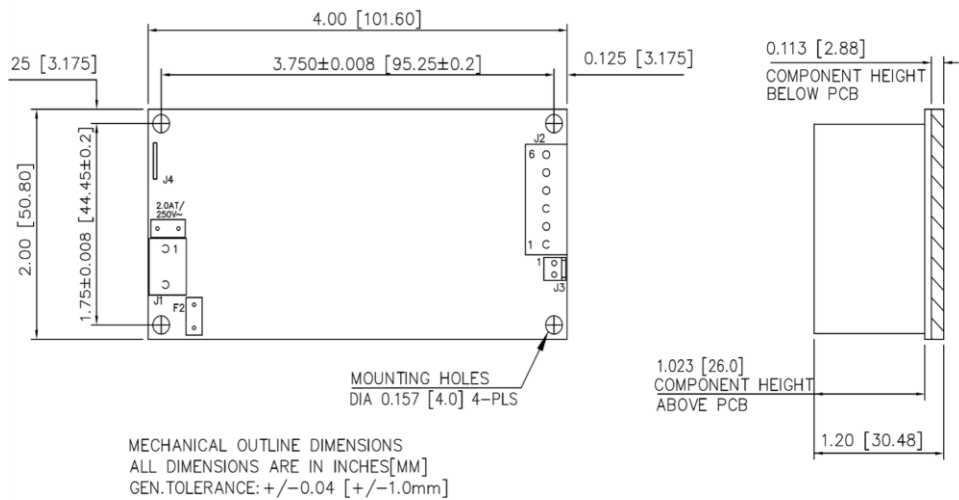


Figure 3. Mechanical Drawing ABC60-3xxxG

**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](mailto: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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