

ABC201 Series

Open Frame Power Supplies

The ABC201 Series of open-frame power supplies, with its wide universal 90-264 VAC input range and high power density, is available at 200 W of output power and a variety of single 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

- 5 x 3 x 1.5 Inch Form Factor
- 200 W with Forced-Air Cooling
- High Efficiency > 88%
- 12 V Fan & 5 V Standby Outputs
- Remote Sense
- IEC Protection Class Options:
 - Class I: Earthing Tab J4 (no suffix)
 - Class II: No Earthing Tab (-2 suffix)
- RoHS Compliant
- CE Marked

Applications

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



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1. MODEL SELECTION

| MODEL ³ | CONNECTOR | OUTPUT VOLTAGE | MAX LOAD CONVECTION ¹ | MAX LOAD 300 LFM ^{1, 4, 5} | MINIMUM LOAD | RIPPLE & NOISE ² |
|--------------------|---------------------------|----------------|----------------------------------|-------------------------------------|--------------|-----------------------------|
| ABC201-1005G | JST | 5.0 VDC | 26.0 A | 26.0 A | 0.0 A | 1% |
| ABC201-1T05G | Screw Terminal | 5.0 VDC | 26.0 A | 35.0 A | 0.0 A | 1% |
| ABC201-1012G | JST | 12 VDC | 13.33 A | 16.67 A | 0.0 A | 1% |
| ABC201-1T12G | Screw Terminal | 12 | 13.33 A | 16.67 A | 0.0 A | 1% |
| ABC201-1015G | JST | 15 | 10.66 A | 13.33 A | 0.0 A | 1% |
| ABC201-1T15G | Screw Terminal | 15 | 10.66 A | 13.33 A | 0.0 A | 1% |
| ABC201-1024G | JST | 24 | 6.66 A | 8.33 A | 0.0 A | 1% |
| ABC201-1T24G | Screw Terminal | 24 | 6.66 A | 8.33 A | 0.0 A | 1% |
| ABC201-1030G | JST | 30 | 5.33 A | 6.66 A | 0.0 A | 1% |
| ABC201-1T30G | Screw Terminal | 30 | 5.33 A | 6.66 A | 0.0 A | 1% |
| ABC201-1048G | JST | 48 | 3.33 A | 4.17 A | 0.0 A | 1% |
| ABC201-1T48G | Screw Terminal | 48 | 3.33 A | 4.17 A | 0.0 A | 1% |
| COVER-201-XBC | Metal cover kit accessory | | | | | |

¹ Combined output power from V1, VSTBY and VFAN should not exceed the total output power rating.

² Ripple is 2% up to 20% load and < 1% above 20% load. Ripple is peak to peak with 20 MHz bandwidth and 10 μ F (Tantalum capacitor) in parallel with a 0.1 μ F capacitor at rated line voltage and load ranges.

³ For Class II (without input Earth pin) add suffix -2 (e.g.: ABC201-1012G-2).

⁴ Fan output voltage tolerance is +/-20%. During V1 full load, VFAN needs min. 20 mA load to be within regulation band.

⁵ Peak current for fan output is 1 A.

2. INPUT SPECIFICATIONS

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

| PARAMETER | DESCRIPTION / CONDITION | SPECIFICATION |
|---------------------|---|--|
| Input Voltage | Universal | 90-264 VAC / 120-390 VDC |
| Input Frequency | | 47 to 63 Hz |
| Input Current | 120 VAC: 230 VAC: | 2.4 A max. 1.2 A max. |
| Inrush Current | 120 VAC: 230 VAC: | 35 A max. 65 A max. |
| Leakage Current | 120 VAC: 230 VAC: | < 150 μ A < 300 μ A |
| Power Factor | 120 VAC: 230 VAC: | 0.99 0.95 |
| Switching Frequency | PFC converter (variable) Resonant converter (variable) | 35 to 250 kHz, 90 kHz typical 35 to 250 kHz, 90 kHz typical |

3. OUTPUT SPECIFICATIONS

| PARAMETER | DESCRIPTION / CONDITION | SPECIFICATION |
|--------------------------|---|--------------------------------|
| Efficiency | 120 VAC: 230 VAC: | 84% typical 86% typical |
| Hold Up Time | 120 / 230 VAC | 10 ms |
| Output Power | Derate output power linearly to 80% from 90 V to 80 VAC input. Peak Power: 250 W for 0.2 s | 160 W to 200 W |
| Line Regulation | | +/-0.5% |
| Load Regulation | | +/-2.0% |
| Transient Response | Main output 50 to 100% load change, 50 Hz, 50% duty cycle, 0.1A / μ Sec | < 10%, recovery time < 5 ms |
| Rise Time | | < 100 ms |
| Set Point Accuracy | | \pm 1% |
| Voltage Adjustment | V1 | \pm 3 % |
| Over Voltage Protection | V1 only | 110 to 150 % |
| Over Current Protection | | 110% typical above rating |
| Short Circuit Protection | Short term, auto recovery | |

4. ENVIRONMENTAL SPECIFICATIONS

| PARAMETER | DESCRIPTION / CONDITION | SPECIFICATION |
|-----------------------|---|--|
| Operating Temperature | Refer to derating curve (<i>Figure 1</i>) Start-up is guaranteed | -20 to 70°C -20 to 0°C |
| Storage Temperature | | -40 to 70° C |
| Cooling | 5 V model Other models | Convection: 300 LFM: 130 W 175 W Convection: 300 LFM: 160 W 200 W |
| Humidity | Non Condensing | 95% |
| Altitude | Operating: Non-Operating: | 10,000 ft. 40,000 ft. |
| Reliability | MTBF according to Telcordia –SR332-Issue 3 | 1.6 million hours |

5. EMC SPECIFICATIONS

| PARAMETER | DESCRIPTION / CONDITION | SPECIFICATION |
|-------------------------|---|--------------------------------|
| Conducted Emissions | EN55022-B, CISPR22-B, FCC PART15, EN60601-1-2 | Class B |
| Radiated Emissions | EN55022-B, CISPR22-B, FCC PART15-B | To be controlled in end system |
| Harmonic Current | EN61000-3-2 | Class D |
| 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 |
| AC Flicker | EN61000-3-3: | Pass |

6. SAFETY SPECIFICATIONS

| PARAMETER | DESCRIPTION / CONDITION | SPECIFICATION |
|-------------------|---|---------------|
| Isolation Voltage | Input to Output: | Min. VDC |
| Safety Standards | Approved to the latest edition of the following standards: CSA/UL60950-1, EN60950-1 and IEC60950-1 | |
| Agency Approvals | Nemko, UL, C-UL | |
| CE mark | Complies with LVD Directive | |

7. SIGNALS

| PARAMETER | DESCRIPTION / CONDITION |
|-------------------|--|
| Power Good Signal | TTL signal goes high after main output is in regulation band. Delay is 0.1 to 0.3 sec. |
| Power Fail Signal | TTL signal goes low 1 msec advance before output goes out of regulation due to mains failure |
| Remote ON / OFF | To turn-on power supply short J3 pin 4 to pin 6 (PSU is shipped in this configuration) |
| Remote Sense | Compensates for 200 mV cable drop |

8. CONNECTOR & PIN DESCRIPTION

| CONNECTOR | PIN | DESCRIPTION / CONDITION | MANUFACTURER / PN |
|---------------------|-----|--|---|
| AC Input Connector | J1 | Pin 1 AC Neutral Pin 2 AC Line | Molex: 26-60-4030 or equivalent; Mating: 09-50-3031; Pins: 08-50-0106 |
| DC Output Connector | J2 | Pin 1,2,3 RTN Pin 4,5,6 Vout | Option 1: Tyco: 2-1776112-3 or equivalent Mating: 13 AWG wire Option 2: JST: B6P-VH-B (LF) (SN) or B6P-VH (LF) (SN) or equivalent Mating: VHR-6M; Pins: SVH-41T-P1.1 |
| Signals & Aux Power | J3* | Pin 1 +VE Remote Sense Pin 2 VFAN (+12 V/0.5 A) Pin 3 -VE Remote Sense Pin 4 Remote ON/OFF Pin 5 VSTBY (+5 V/1 A, +/-5%) Pin 6 RTN (Signal) Pin 7 Power Fail Pin 8 Power Good | Molex: 22-23-2081 or equivalent Mating: 22-01-2087, Pins: 08-50-0113 |
| Earthing Tab | J4 | | Molex: 19705-4301 or equivalent Mating: 190030001 |

* PSU is supplied with J3 housing, pin-4 and pin-6 shorted to enable main output without remote on/off feature.

9. MECHANICAL SPECIFICATIONS

| PARAMETER | DESCRIPTION / CONDITION |
|------------|--|
| Weight | 325 g (0.72 lbs.) |
| Dimensions | 127.0 x 76.2 x 38.1 mm (5 x 3 x 1.5 inch) |
| Cooling | Convection: 83 W; 300 LFM: 175 W (5 V model) Convection: 160 W; 300 LFM: 200 W (other models) |

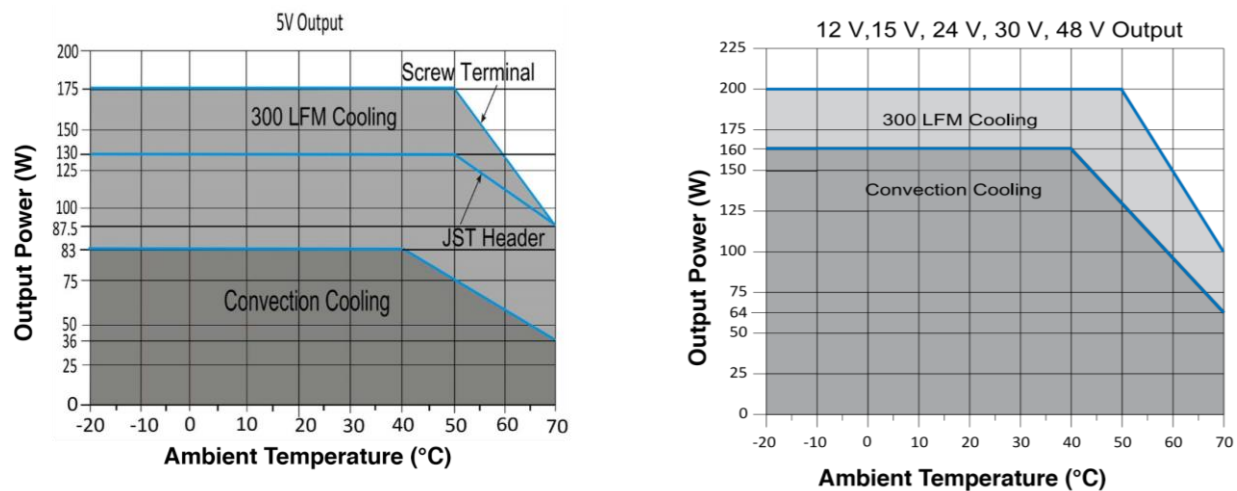


Figure 1 - Output Power Vs. Temperature

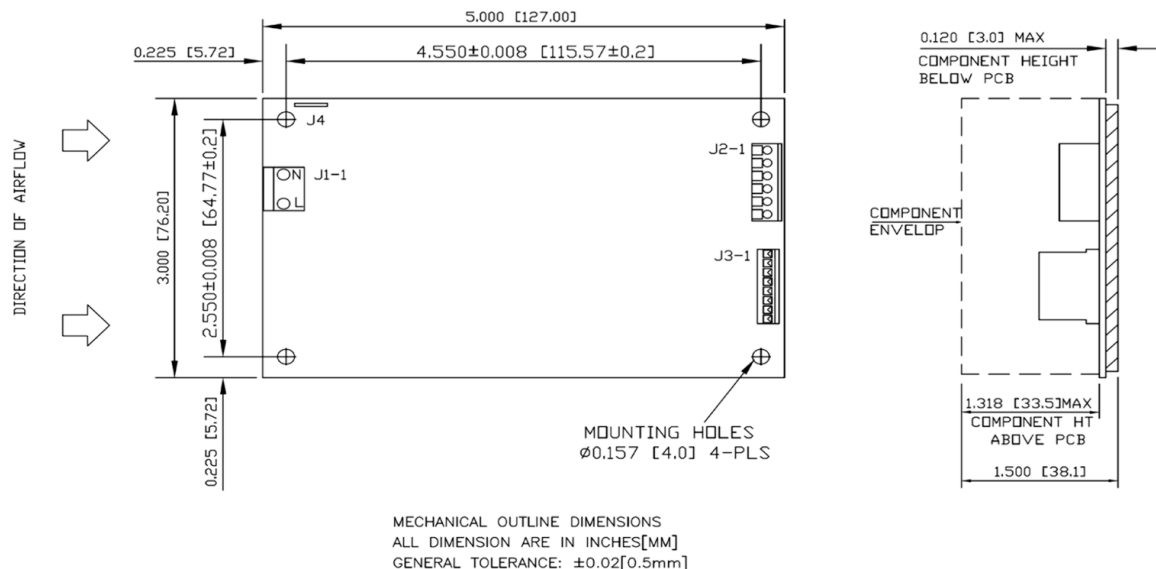


Figure 2 - Mechanical Drawing

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.