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We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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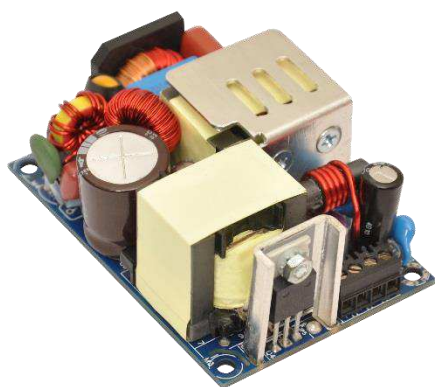
# ABC120 Series

## Low Profile Open Frame Power Supplies

The ABC120 Series of open frame power supplies feature a wide universal AC input range of 85 V – 264 VAC, offering 120 W of output power in a compact footprint, with a variety of isolated 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.

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



### Key Features & Benefits

- 3 x 2 x 1 Inch Footprint
- 120 Watts with Forced Air Cooling
- Efficiencies up to 93%
- -40 to 70°C Operating Temperature
- Thermal Shut-Down Feature
- 3.00 Million Hours, Telcordia -SR332-Issue 3
- Standby Power < 0.3 W
- RoHS Compliant
- CE Marked

### Applications

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

## 1. MODEL SELECTION

| MODEL NUMBER                 | DESCRIPTION                    | VOLTAGE | MAX. LOAD (CONVECTION) | MAX. LOAD (300 LFM) | MIN. LOAD | RIPPLE & NOISE <sup>1</sup> |
|------------------------------|--------------------------------|---------|------------------------|---------------------|-----------|-----------------------------|
| ABC120-1T12L<br>ABC120-1012L | Screw Terminal<br>Molex Header | 12 V    | 8.33 A                 | 10.0 A              | 0.0 A     | 1%                          |
| ABC120-1T15L<br>ABC120-1015L | Screw Terminal<br>Molex Header | 15 V    | 6.66 A                 | 8.0 A               | 0.0 A     | 1%                          |
| ABC120-1T24L<br>ABC120-1024L | Screw Terminal<br>Molex Header | 24 V    | 4.16 A                 | 5.0 A               | 0.0 A     | 1%                          |
| ABC120-1T30L<br>ABC120-1030L | Screw Terminal<br>Molex Header | 30 V    | 3.33 A                 | 4.0 A               | 0.0 A     | 1%                          |
| ABC120-1T48L<br>ABC120-1048L | Screw Terminal<br>Molex Header | 48 V    | 2.08 A                 | 2.5 A               | 0.0 A     | 1%                          |
| ABC120-1T58L<br>ABC120-1058L | Screw Terminal<br>Molex Header | 58 V    | 1.72 A                 | 2.07 A              | 0.0 A     | 1%                          |
| COVER-120-XBC <sup>2</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 (see derating under output power) | 85-264 VAC / 390 VDC <sup>3</sup> |
| Input Frequency     |   | 47-63 Hz                          |
| Input Current       | 115 VAC:<br>230 VAC:                        | 1.2 A max.<br>0.65 A max.         |
| No Load Power       | Typical                                     | < 0.3 W                           |
| Inrush Current      | 115 VAC:<br>230 VAC:<br>264 VAC:            | 25 A<br>45 A<br>75 A              |
| Power Factor        | @ Full Load, Active PFC                     | > 0.95                            |
| Switching Frequency | Typical                                     | 60 kHz                            |

<sup>1</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>2</sup> When used in Cover Kit, de-rate output power to 70 % under all operating conditions

<sup>3</sup> Functional, not approved.



### 3. OUTPUT SPECIFICATIONS

| PARAMETER                | DESCRIPTION / CONDITION  | SPECIFICATION                          |
|--------------------------|--|--|
| Output Power             | Forced cooling (with 300 LFM):<br>Convection cooling<br>(de-rate linearly to 80 W @ 85 VAC): | 120 W<br>100 W (for input 100-264 VAC) |
| Efficiency               | 48 V, 58 V:<br>24 V, 30 V:<br>12 V, 15 V:  | 93%<br>91%<br>90%                      |
| Hold-up Time             | Typical  | >10 ms                                 |
| Line Regulation          |  | +/-0.5%                                |
| Load Regulation          |  | +/-1%                                  |
| Transient Response       | 25% step load change, at 0.1A/uS slew rate,<br>50% duty cycle, 50 Hz = 4%                    | recovery time < 5 ms                   |
| Voltage Adjustment       |  | +/-3%                                  |
| Rise Time                | Typical  | 55 ms                                  |
| Set Point Tolerance      |  | +/-1%                                  |
| Over Current Protection  |  | > 110%                                 |
| Over Voltage Protection  | Latch type (AC recycling required)   | 110 to 140%                            |
| Short Circuit Protection | Hiccup mode  |  |

### 4. EMC SPECIFICATIONS

| PARAMETER                          | DESCRIPTION / CONDITION  | SPECIFICATION        |
|------------------------------------|--|----------------------|
| Conducted Emissions                | EN55032-B, CISPR22-B, FCC PART15-B   | Pass                 |
| Radiated Emissions                 | EN 55032 A;<br>with external core (King core K5B RC 25x12x15-M in input cable) | Pass<br>Level B      |
| 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      |

### 5. SAFETY SPECIFICATIONS

| PARAMETER          | DESCRIPTION / CONDITION   | SPECIFICATION        |
|--------------------|---|----------------------|
| Isolation Voltage  | Input to Output: (For ITE application)<br>Input to GND:   | 3000 VAC<br>1500 VAC |
| Safety Standard(s) | Approved to the latest edition of the following standards:<br>CSA/UL60950-1, EN60950-1 and IEC60950-1; Class1 SELV. |                      |
| Agency Approvals   | Nemko, UL, C-UL, CCC  |                      |
| CE mark            | Complies with LVD Directive   |                      |

## 6. ENVIRONMENTAL SPECIFICATIONS

| PARAMETER                          | DESCRIPTION / CONDITION  | SPECIFICATION              |
|------------------------------------|--|----------------------------|
| Operating Temperature <sup>4</sup> | Startup guaranteed (derate linearly above 50°C to 70°C, see Fig 1.)  | -40 to +70°C<br>-40 to 0°C |
| Storage Temperature                |  | -40 to +85°C               |
| Cooling                            | Forced: with 300LFM (refer mechanical drawing)<br>Convection: for input 100-264 VAC (derate linearly to 80 W @ 85 VAC) | 120 W<br>100 W             |
| Relative Humidity                  | Noncondensing  | 5% to 95%                  |
| Altitude                           | Operating:<br>Non-operating:   | 16,000 ft<br>40,000 ft.    |
| Reliability                        | MTBF according to Telcordia -SR332-Issue 3   | 3.00 million hours         |

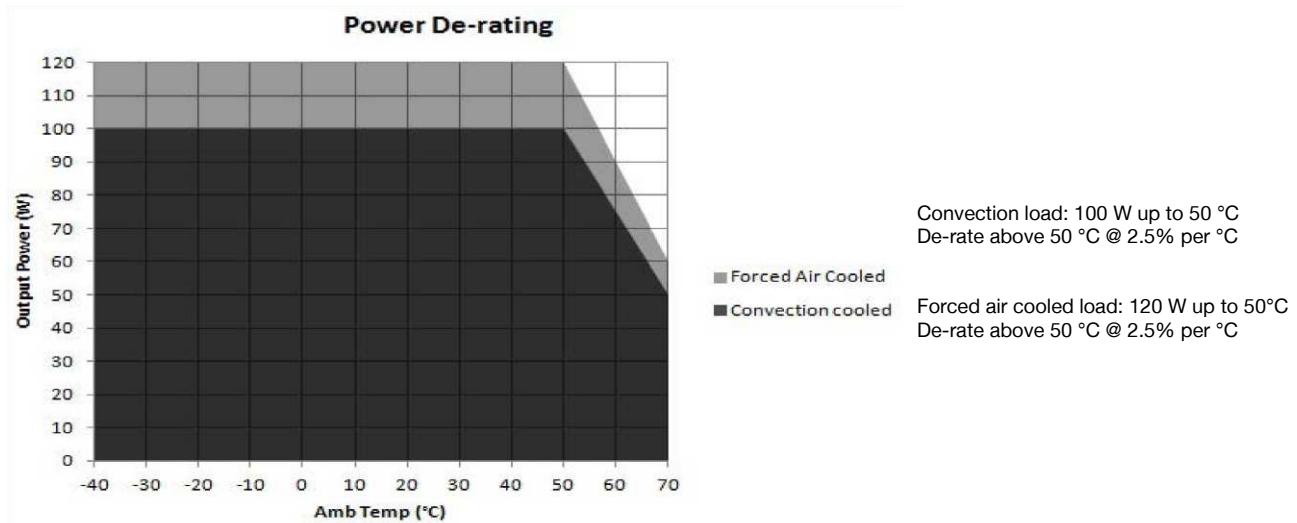


Figure 1. Derating Curve

## 7. CONNECTOR & PIN DESCRIPTIONS

| CONNECTOR           | PIN | DESCRIPTION / CONDITION | MANUFACTURER / PN                           |
|---------------------|-----|-------------------------|---|
| AC Input Connector  | J1  | Pin 1 AC Line           | Screw Terminal (Option 1) Molex: 39357-0003 |
|                     |     | Pin 2 Not Fitted        | Tyco-2-1776112-3                            |
|                     |     | Pin 3 AC Neutral        | Molex Header (Option 2) Molex: 1722861103   |
| DC Output Connector | J2  | Pin 1, 2 V1 -VE         | (Mating conn: Molex 1722561003)             |
|                     |     | Pin 3, 4 V1 +VE         | Molex: 39357-0004                           |
|                     |     |                         | Tyco-2-1776112-4                            |
|                     |     |                         | Molex: 1722861104                           |
|                     |     |                         | (Mating conn: Molex 1722561004)             |

## 8. MECHANICAL SPECIFICATIONS

| PARAMETER  | DESCRIPTION / CONDITION                   |
|------------|---|
| Weight     | 150 g                                     |
| Dimensions | 76.2 x 50.8 x 30.1 mm (3 x 2 x 1.18 inch) |

<sup>4</sup> Output ripple can be more than 10% of the output voltage.

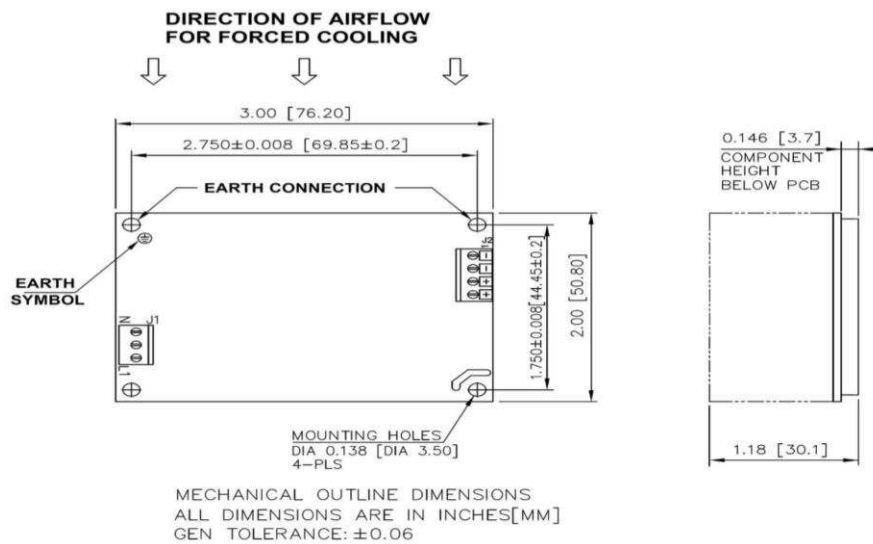


Figure 2. Mechanical Drawing - Screw Terminal (Option 1)

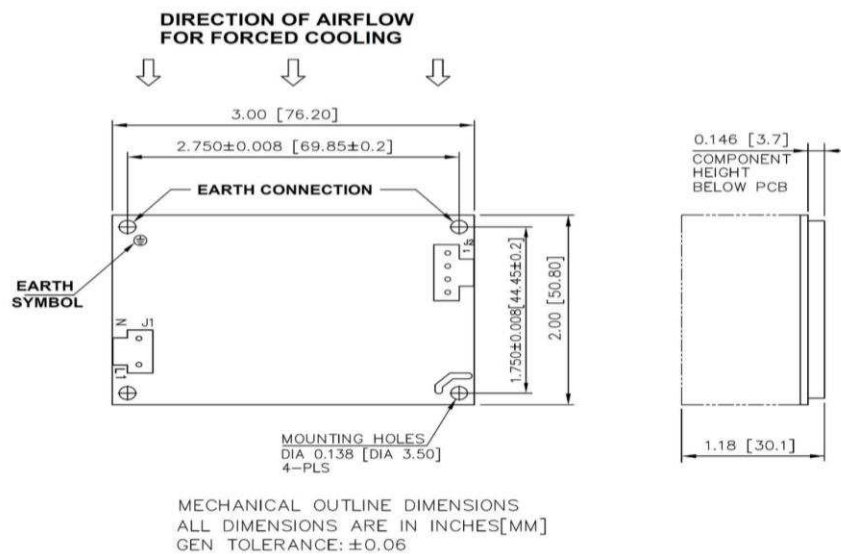


Figure 3 - Mechanical Drawing - Molex Header (Option 2)

**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.