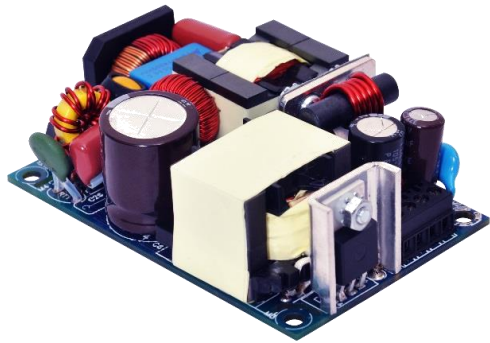


# ABC75 Series

Low Profile

Open Frame Power Supplies



The ABC75 Series of open frame power supplies feature a wide universal AC input range of 85 V – 264 VAC, offering 75 W of output power in a compact 3 x 2 x 1 inch 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 Form Factor
- 75 Watts with Convection Cooling
- Efficiency up to 93%
- -40 to 70°C Operating Temperature
- Thermal Shut-Down Feature
- 2 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<br>(CONVECTION) | MIN. LOAD | RIPPLE & NOISE <sup>1</sup> |
|----------------------------|--------------------------------|---------|---------------------------|-----------|-----------------------------|
| ABC75-1T12L<br>ABC75-1012L | Screw Terminal<br>Molex Header | 12 V    | 6.25 A                    | 0.0 A     | 1%                          |
| ABC75-1T15L<br>ABC75-1015L | Screw Terminal<br>Molex Header | 15 V    | 5.00 A                    | 0.0 A     | 1%                          |
| ABC75-1T24L<br>ABC75-1024L | Screw Terminal<br>Molex Header | 24 V    | 3.12 A                    | 0.0 A     | 1%                          |
| ABC75-1T30L<br>ABC75-1030L | Screw Terminal<br>Molex Header | 30 V    | 2.50 A                    | 0.0 A     | 1%                          |
| ABC75-1T48L<br>ABC75-1048L | Screw Terminal<br>Molex Header | 48 V    | 1.56 A                    | 0.0 A     | 1%                          |
| ABC75-1T58L<br>ABC75-1058L | Screw Terminal<br>Molex Header | 58 V    | 1.29 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<br>(Derate from 75 W @ 100 VAC to 65 W @ 85 VAC) | 85-264 VAC / 390 VDC <sup>3</sup> |
| Input Frequency     |                                                            | 47-63 Hz                          |
| Input Current       | 115 VAC:<br>230 VAC:                                       | 1 A max.<br>0.5 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                                                | > 0.95                            |
| Switching Frequency | Typical                                                    | 60 kHz                            |

<sup>1</sup> Ripple is peak to peak with 20 MHz bandwidth and 10  $\mu$ F (Tantalum capacitor) in parallel with a 0.1  $\mu$ F 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             | Convection cooled                                                         | 75 W                 |
| Efficiency               | 48 V, 58 V:                                                               | 93%                  |
|                          | 24 V, 30 V:                                                               | 91%                  |
|                          | 12 V, 15 V:                                                               | 90%                  |
| Hold-up Time             | Typical                                                                   | >16 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. |                      |
| 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 with spec deviation, see Fig 1. | -40 to +70°C<br>-40 to 0°C |
| Storage Temperature                |                                                    | -40 to +85°C               |
| Cooling                            | With natural convection cooling at 100 to 264 VAC  | 75 W                       |
| Relative Humidity                  | Noncondensing                                      | 5% to 95%                  |
| Altitude                           | Operating:<br>Nonoperating:                        | 16,000 ft<br>40,000 ft.    |
| Reliability                        | MTBF according to Telcordia -SR332-Issue 3         | 2.00 million hours         |

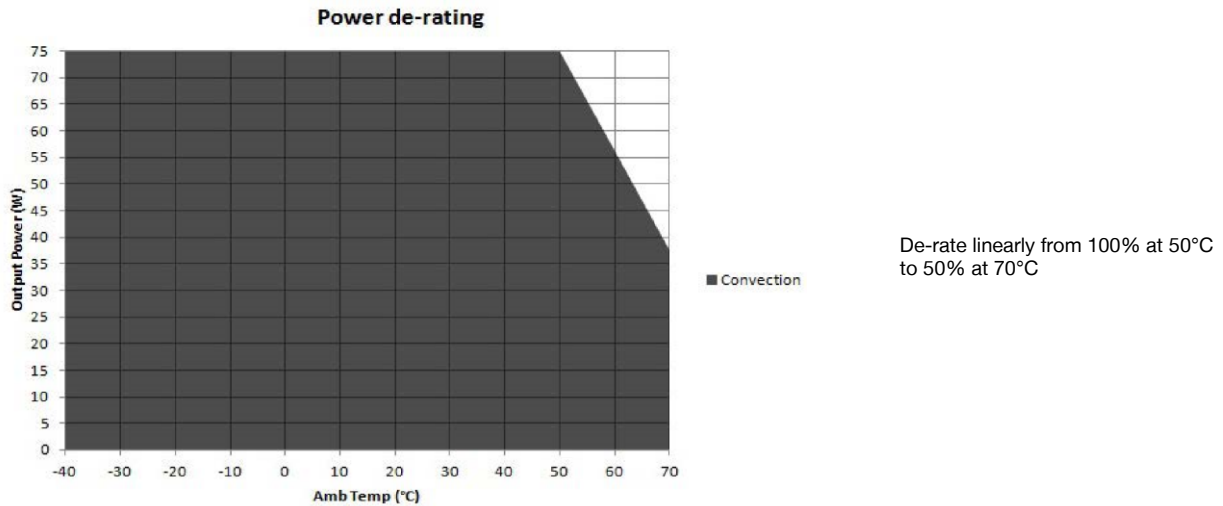


Figure 1. Derating Curve

## 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     | Screw Terminal (Option 1) | (Mating conn: Molex 1722561003) |
|                     |     | Pin 3, 4                | V1 +VE     | Molex Header (Option 2)   | 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 25.4 mm (3 x 2 x 1 inch)                 |
| Cooling    | 75 W with natural convection cooling at 100 to 264 VAC |

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

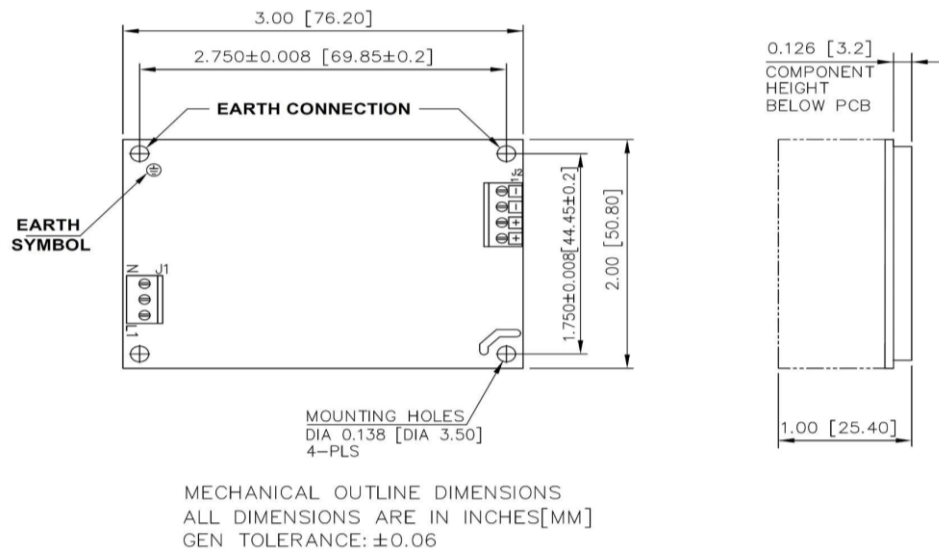


Figure 2. Mechanical Drawing - Screw Terminal (Option 1)

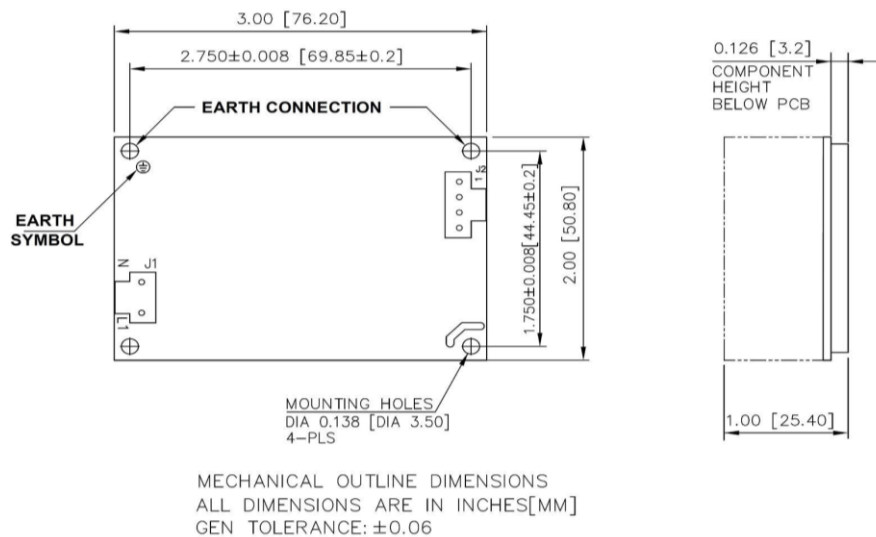


Figure 3 - Mechanical Drawing - Molex Header (Option 2)

**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.