

# PBB2P-120W Series

AC/DC Din Rail Power Supply with IEC Input



## FEATURES

- 120W output power
- 12/24/48 Vdc output voltages
- Universal AC input voltage range
- Built-in constant current circuit for reactive loads
- High power density
- Operate from -30°C to +70°C with -40°C Cold Start
- Reduced no-load power consumption
- Compliance with DOE VI Energy Standard
- Compliance to SEMI F47 @ 200 Vac

## DESCRIPTION

Powerbox's PBB2P Series DIN rail power supply series is designed for cost sensitive users who need to fulfill essential features needed for many general industrial applications, without compromising on quality and reliability. The convection-cooled PBB2P Series will operate full power from -30°C to +50°C, then de-rating up to +70°C at 230 Vac. It can operate in constant current mode, making it suitable for inductive and capacitive loads.

## SPECIFICATIONS

| MODEL                   | PBB2P-120W-IEC-12V  | PBB2P-120W-IEC-24V                                     | PBB2P-120W-IEC-48V                                     |
|-------------------------|---|--|--|
| <b>INPUT</b>            |   |  |  |
| Input Voltage Range     | 90-264 Vac  |  |  |
| Nominal Input Frequency | 50-60 Hz  |  |  |
| Input Current           | 2.1 A typ. @ 115 Vac, 1.3 A typ. @ 230 Vac                          |  |  |
| Efficiency at 100% Load | 86% typ. @ 230 Vac  | 88.5% typ. @ 230 Vac                                   | 89.5% typ. @ 230 Vac                                   |
| Leakage Current         | < 0.5 mA @ 240 Vac  |  |  |
| <b>OUTPUT</b>           |   |  |  |
| Output Voltage          | 12 Vdc  | 24 Vdc   | 48 Vdc   |
| Output Voltage Range    | 10.8 - 13.2 Vdc   | 21.6 - 26.4 Vdc  | 43.2 - 52.8 Vdc  |
| Output Current          | 10.0 A  | 5.0 A  | 2.5 A  |
| Output Power            | 120 W max   |  |  |
| Line Regulation         | ± 0.5% @ 115 Vac & 230 Vac  |  |  |
| PAR (20MHz)             | < 120 mVpp @ 0°C to +70°C<br>< 360 mVpp @ -30°C to 0°C              | < 150 mVpp @ 0°C to +70°C<br>< 450 mVpp @ -30°C to 0°C | < 200 mVpp @ 0°C to +70°C<br>< 600 mVpp @ -30°C to 0°C |
| Hold-up Time            | 10 ms typ. @ 115 Vac (100% load)   16 ms typ. @ 230 Vac (100% load) |  |  |

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| MODEL                    | PBB2P-120W-IEC-12V  | PBB2P-120W-IEC-24V               | PBB2P-120W-IEC-48V               |
|--------------------------|---|----------------------------------|----------------------------------|
| <b>MECHANICAL</b>        |   |                                  |                                  |
| Case Cover / Chassis     | SGCC / Aluminum   |                                  |                                  |
| Dimensions (L x W x D)   | 151 x 46 x 159 mm (5.94 x 1.81 x 6.26 inch)   |                                  |                                  |
| Mounting Rail            | Standard TS35 DIN Rail in accordance with EN 60715  |                                  |                                  |
| Input Connector          | IEC Socket (with 2M IEC power cable)  |                                  |                                  |
| Output Connector         | 4 Pins (Rated 300 V / 20 A)   |                                  |                                  |
| Wire Output              | AWG 18-12 (Current rating can refer to "AWG Wire Table")  |                                  |                                  |
| Unit Weight              | 0.53 kg (1.17 lb)   |                                  |                                  |
| <b>ENVIRONMENTAL</b>     |   |                                  |                                  |
| Operating Temperature    | -30°C to +70°C (-40°C Cold Start)   |                                  |                                  |
| Storage Temperature      | -40°C to +85°C  |                                  |                                  |
| Power De-rating          | > 40°C de-rate power by 1.67 % / °C @ 115 Vac > 50°C de-rate power by 2.5 % / °C @ 230 Vac            |                                  |                                  |
| Cooling System           | Convection  |                                  |                                  |
| Operating Humidity       | 20 to 90% RH (Non-Condensing)   |                                  |                                  |
| Operating Altitude       | 0 to 5,000 Meters (16,400 ft.)  |                                  |                                  |
| <b>PROTECTIONS</b>       |   |                                  |                                  |
| Overvoltage              | < 17.4 V, SELV Output,Latch Mode  | < 33.6 V, SELV Output,Latch Mode | < 64.8 V, SELV Output,Latch Mode |
| Overload / Overcurrent   | 105 - 150% of rated load current, Auto-recovery Continuous current limit Mode <sup>5</sup> (Vo > 80%) |                                  |                                  |
| Over Temperature         | Latch Mode  |                                  |                                  |
| Short Circuit            | Hiccup Mode, Non-Latching (Auto-Recovery when the fault is removed)                                   |                                  |                                  |
| Protection Against Shock | Class I with PE <sup>6</sup> connection   |                                  |                                  |
| Galvanic Isolation       | Input to Output   | 3.0 KVac                         |                                  |
|                          | Input to Ground   | 2.0 KVac                         |                                  |
|                          | Output to Ground  | 1.0 KVac                         |                                  |
| <b>RELIABILITY</b>       |   |                                  |                                  |
| MTBF                     | Telcordia > 700,000 hrs   SR-332 I/P: 115 Vac & 230 Vac, O/P: 100% load, Ta: 25°C                     |                                  |                                  |
| Expected Cap Life Time   | 10 years (230 Vac, 50% load @ 40°C)   |                                  |                                  |

\*5 Constant current limit protection for inductive and capacitive load applications

\*6 PE: Primary Earth

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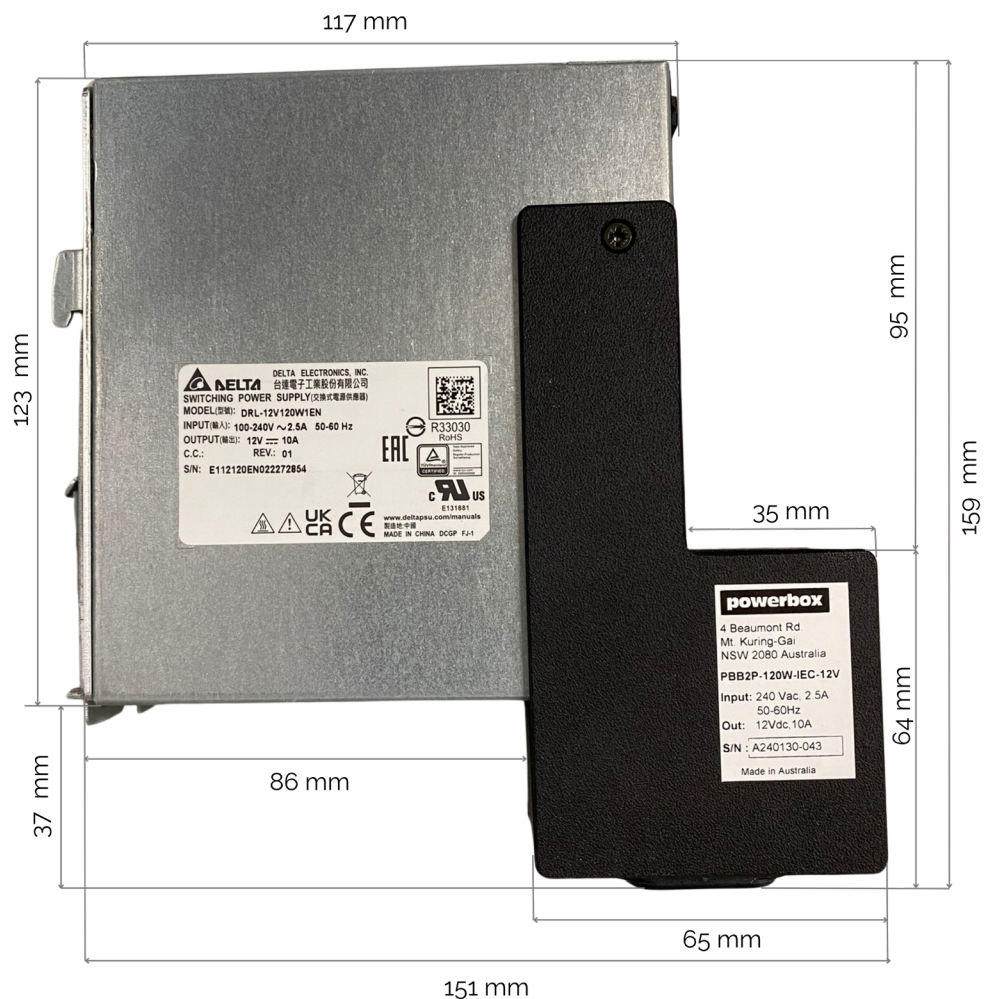
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|                   |   |                    |                    |
|-------------------|---|--------------------|--------------------|
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| STANDARDS         |   |                    |                    |
| EMC               | AS/NZS CISPR32  |                    |                    |
| Electrical Safety | IEC 62368-1, IEC 61010-1 & -2 -201  |                    |                    |
| CE                | In conformance with EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU |                    |                    |

## SELECTION TABLE

| MODEL              | OUTPUT     | IEC SOCKET | DELTA POWER SUPPLY |
|--------------------|------------|------------|--------------------|
| PBB2P-120W-IEC-12V | 12V / 10A  | Y          | DRL-12V120W1EN     |
| PBB2P-120W-IEC-24V | 24V / 5A   | Y          | DRL-24V120W1EN     |
| PBB2P-120W-IEC-48V | 48V / 2.5A | Y          | DRL-48V120W1EN     |

## ILLUSTRATIONS



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