

**PS5R Standard Series — Switching Power Supplies**



**Key features of the PS5R standard series include:**

- Wide Power Range: 7.5W-240W
- Universal Input:  
7.5W-75W:85-264V AC/105-370V DC  
100W:100-120V AC/200-240V AC  
(Selectable) 240-370V DC  
120W-240W:85-264V AC/105-370V AC
- Fused Input
- Overcurrent/Overvoltage Protection
- Power Factor Correction (75W, 120W, 240W models)  
EN61000-3-3  
EN61000-3-2
- Voltage adjustment + 10%
- Spring-up Screw Terminal, IP20 (finger-safe)
- DIN rail or Panel Surface Mount
- Approvals:  
CE marked  
UL 508 Listed  
UL, c-UL  
TUV approved  
EMC Directives: EN50081-2  
EN50082-2  
EN61000-6-2  
LVD EN60950:2000

**L**  
Power Supplies



UL 508 Listed  
File # E177168



Cert. No.  
BL980213332392

**Part Numbers**

| Part Number | Item | Watts | Rated Voltage | Rated Current |
|-------------|------|-------|---------------|---------------|
| PS5R-A05    |      | 7.5   | 5V DC         | 1.5A          |
| PS5R-A12    |      |       | 12V DC        | 0.6A          |
| PS5R-A24    |      |       | 24V DC        | 0.3A          |
| PS5R-B05    |      | 15    | 5V DC         | 2.5A          |
| PS5R-B12    |      |       | 12V DC        | 1.2A          |
| PS5R-B24    |      |       | 24V DC        | 0.6A          |
| PS5R-C12    |      | 30    | 12V DC        | 2.5A          |
| PS5R-C24    |      |       | 24V DC        | 1.3A          |
| PS5R-D24    |      | 50    | 24V DC        | 2.1A          |
| PS5R-Q24    |      | 75    | 24V DC        | 3.1A          |
| PS5R-E24    |      | 100   | 24V DC        | 4.2A          |
| PS5R-F24    |      | 120   | 24V DC        | 5A            |
| PS5R-G24    |      | 240   | 24V DC        | 10A           |

## Specifications

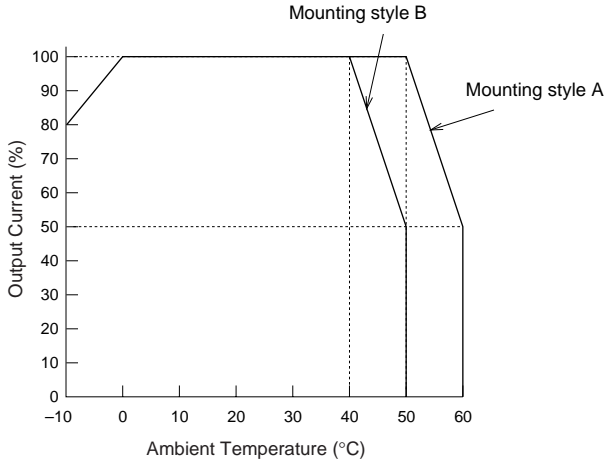
| Part Numbers                         | 5VDC output   | PS5R-A05   | PS5R-B05*                             | —                        | —   | —                                      | —  | —                                      | —  |            |
|--------------------------------------|---|--|---------------------------------------|--------------------------|---|--|--|--|--|------------|
|                                      | 12VDC output  | PS5R-A12   | PS5R-B12                              | PS5R-C12                 | —   | —                                      | —  | —                                      | —  |            |
|                                      | 24VDC output  | PS5R-A24   | PS5R-B24                              | PS5R-C24                 | PS5R-D24  | PS5R-Q24                               | PS5R-E24   | PS5R-F24                               | PS5R-G24                                 |            |
| <b>Output Capacity</b>               |   | 7.5W   | 15W                                   | 30W                      | 50W   | 75W                                    | 100W   | 120W                                   | 240W                                     |            |
| <b>Input</b>                         | <b>Input Voltage</b><br>(single-phase, 2-wire)  | 100 to 240VAC nominal (85 to 264V AC), 50/60Hz (47 to 63Hz)<br>110 to 340VDC nominal (105 to 370VDC) |                                       |                          |   |  | 100 to 120VAC, 50/60Hz<br>200 to 240VAC, 50/60Hz<br>(jumper selectable)<br>240 to 370VDC |  | 100 to 240VAC, 50/60Hz,<br>110 to 340VDC |            |
|                                      | <b>Input Current (typical)</b>  | 0.17A at 100VAC  | 0.3A at 100VAC                        | 0.68A at 100VAC          | 1.15A at 100VAC                                 | 1.1A                                   | 2.5A at 100VAC<br>1.5A at 200VAC   | 1.8A                                   | 4A at 100VAC                             |            |
|                                      | <b>Internal Fuse Rating</b>   | 2A   | 2A                                    | 3.15A                    | 3.15A   | 3.15A                                  | 4A   | 4A                                     | 6.3A                                     |            |
|                                      | <b>Inrush Current</b>   | 50A maximum (at cold start at 200V AC)   |                                       |                          |   | 70A maximum (at cold start at 230V AC) | 50A maximum (at cold start at 200V AC)   | 70A maximum (at cold start at 230V AC) |  |            |
|                                      | <b>Leakage Current (at no load)</b>   | 0.75mA maximum (60Hz, measured in conformance with UL, CSA, VDE)                                     |                                       |                          |   |  |  |  |  |            |
|                                      | <b>Typical Efficiency</b>   | 69% at 5V<br>73% at 12V<br>75% at 24V  | 69% at 5V<br>75% at 12V<br>79% at 24V | 75% at 12V<br>75% at 24V | 79% at 24V                                      | 83% at 24V DC                          | 85% at 24V   | 83% at 24V DC                          | 83% at 24V                               |            |
|                                      | <b>Oversvoltage Protection</b>  | Outputs turns off at 105% (typical)  |                                       |                          |   |  |  |  |  |            |
| <b>Output</b>                        | <b>Voltage and Current Ratings</b>  | 5V, 1.5A<br>12V, 0.6A<br>24V, 0.3A   | 5V, 2.5A<br>12V, 1.2A<br>24V, 0.6A    | 12V, 2.5A<br>24V, 1.3A   | 24V, 2.1A                                       | 24V, 3.1A                              | 24V, 4.2A  | 24V, 5A                                | 24V, 10A                                 |            |
|                                      | <b>Voltage Adjustments</b>  | ±10% (V.ADJ screw on top)  |                                       |                          |   |  |  |  |  |            |
|                                      | <b>Output Holding Time</b>  | 20ms minimum (at full rated input and output)  |                                       |                          |   |  |  |  |  |            |
|                                      | <b>Rise Time</b>  | 200ms maximum (at full rated input and output)   |                                       |                          |   |  |  |  |  | 150ms max. |
|                                      | <b>Line Regulation</b>  | 0.4% maximum   |                                       |                          |   |  |  |  |  |            |
|                                      | <b>Load Regulation</b>  | 1.5% maximum   |                                       |                          |   |  |  |  |  |            |
|                                      | <b>Fluctuation due to Ambient Temperature Change</b>  | 0.05% maximum  |                                       |                          |   |  |  |  |  |            |
|                                      | <b>Ripple Voltage</b>   | 2% peak to peak maximum (including noise)  |                                       |                          |   |  |  |  |  |            |
|                                      | <b>Overload Protection</b>  | 120% typical (Zener-limiting)  |                                       |                          | 120% typical, auto reset                        |  |  |  |  |            |
|                                      | <b>Operation Indicator</b>  | LED  |                                       |                          |   |  |  |  |  |            |
| <b>Parallel Operation</b>            | PS5R-A  | PS5R-B   | PS5R-C                                | PS5R-D                   | PS5R-Q  | PS5R-E                                 | PS5R-F   | PS5R-G                                 |  |            |
|                                      | No  |  |                                       |                          | Yes   |  | No   | Yes                                    |  |            |
| <b>Dielectric Strength</b>           | Between input and output terminals: 3,000V AC, 1 minute<br>Between input terminals and housing: 2,000V AC, 1 minute<br>Between output terminal and housing: 500V AC, 1 minute |  |                                       |                          |   |  |  |  |  |            |
| <b>Insulation Resistance</b>         | Between input and output terminals/input terminals and housing: 100MΩ minimum (500V DC megger)  |  |                                       |                          |   |  |  |  |  |            |
| <b>Operating Temperature</b>         | -10 to +60°C (14° to 140°F) (see derating curves)   |  |                                       |                          |   |  |  |  |  |            |
| <b>Storage Temperature</b>           | -30 to +85°C (-22° to 185°F)  |  |                                       |                          |   |  |  |  |  |            |
| <b>Operating Humidity</b>            | 20 to 90% relative humidity (no condensation)   |  |                                       |                          |   |  |  |  |  |            |
| <b>Vibration Resistance</b>          | 45m/s <sup>2</sup> , 10 to 55Hz, 2 hours on each of 3 axes  |  |                                       |                          | 10 to 50Hz, 0.75mm p-p, 2 hrs on each of 3 axes |  |  |  |  |            |
| <b>Shock Resistance</b>              | 300m/s <sup>2</sup> (30G), 3 shocks in each of 6 directions   |  |                                       |                          |   |  |  |  |  |            |
| <b>Approvals</b>                     | Conforms to EMC Directives EN50081-2 & EN50082-2. LVD Directive EN60529 — Certified to EN60950. UL508 listed. UL, c-UL, TUV approved. CE marked. EN61000-3-2                  |  |                                       |                          |   |  |  |  |  |            |
| <b>Weight</b>                        | 150g  | 170g   | 360g                                  | 390g                     | 800g  | 600g                                   | 1200g  | 2000g                                  |  |            |
| <b>Termination</b>                   | Spring-up, fingersafe terminals with captive M3.5 screws  |  |                                       |                          |   |  |  |  |  |            |
| <b>IP protection</b>                 | IP20 (finger safe)  |  |                                       |                          |   |  |  |  |  |            |
| <b>Dimensions H x W x D (mm)</b>     | 75 x 45 x 70  | 75 x 45 x 95   | 75 x 90 x 95                          | 75 x 90 x 95             | 120 x 85 x 140                                  | 75 x 145 x 95                          | 120 x 115 x 140  | 120 x 200 x 140                        |  |            |
| <b>Dimensions H x W x D (inches)</b> | 2.95 x 1.77 x 2.76  | 2.95 x 1.77 x 3.74   | 2.95 x 3.54 x 3.74                    | 2.95 x 3.54 x 3.74       | 4.72 x 3.35 x 5.52"                             | 2.95 x 5.71 x 3.74"                    | 4.72 x 4.53 x 5.52   | 4.72 x 7.87 x 5.51                     |  |            |



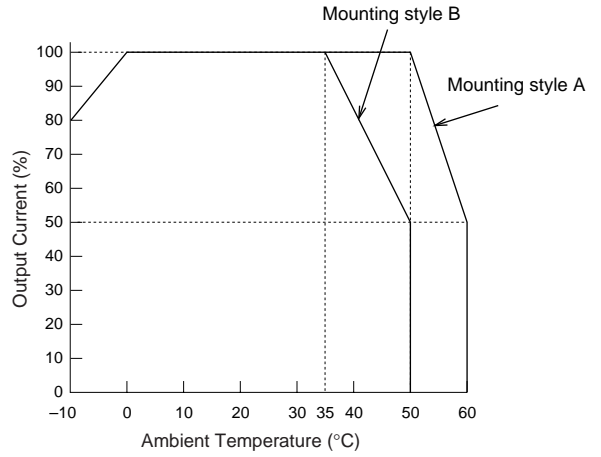
1. For dimensional drawings, see page L-12.
2. For usage instructions, see page L-11.
3. \*12.5W for 5VDC model.

**Temperature Derating Curves**

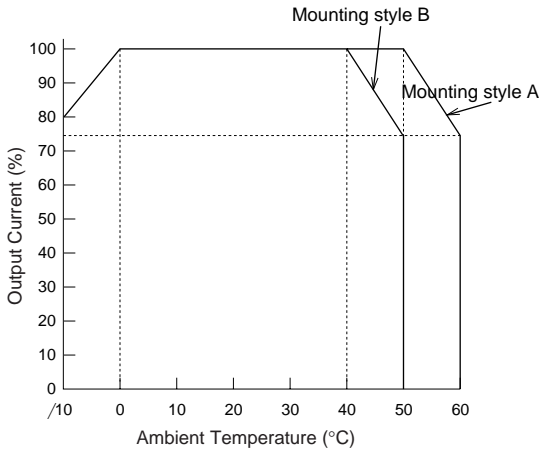
**PS5R-A/B**



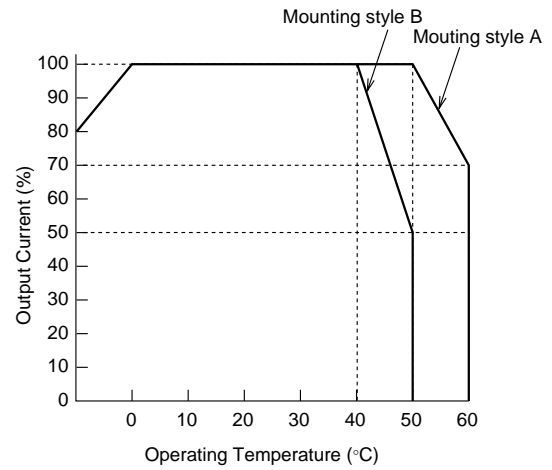
**PS5R-C/D**



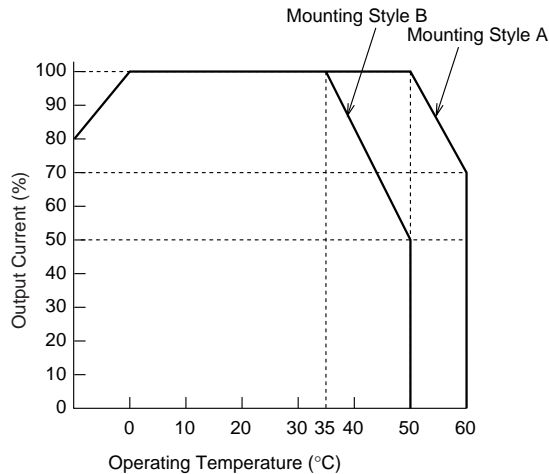
**PS5R-E**



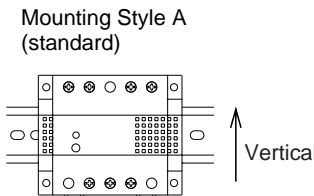
**PS5R-Q**



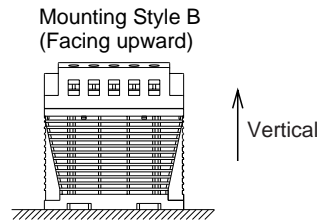
**PS5R-F/G**



**A Mounting**



**B Mounting**





**L**

**Power Supplies**

## Accessories

### Part Numbers: PS5R Accessories

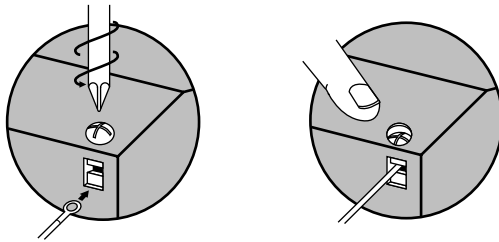
| Appearance  | Description       | Part Number |
|---|-------------------|-------------|
|  | DIN rail (1000mm) | BNDN1000    |
|  | DIN rail end clip | BNL5        |

## Installation Instructions

### Time-Saving Spring-up Terminals


The innovative terminals on the PS5R series use a special, spring-loaded screw. This makes installation as easy as pushing down and turning with a screwdriver. Installation time is cut in half since the screws do not need to be backed out to install wiring. The screws are held captive once installed and are 100% finger-safe. Screw terminals accept bare wire or ring or fork connectors.

1. Insert the wire connector into the slot on the side of the power supply.
2. Using a Phillips screwdriver, push down and turn the screw.

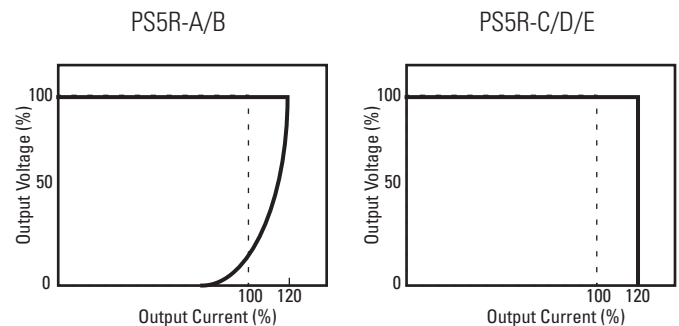


The wire is now connected, and the screw terminal is finger-safe!

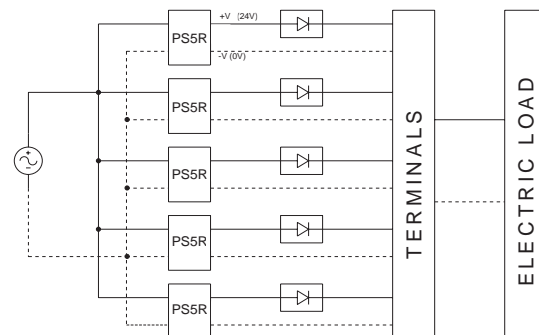
### Front Panel (terminals)

| Terminal  | Name                | Description  |
|---|---------------------|--|
| V. ADJ  | Voltage adjustment  | Adjusts within $\pm 10\%$ ; turn clockwise to increase output voltage      |
| DC ON   | Operation indicator | Green LED is lit when output voltage is on                                 |
| +V, -V  | DC output terminals | +V: Positive output terminal<br>-V: Negative output terminal               |
|  | Frame ground        | Ground this terminal to reduce high-frequency currents caused by switching |
| L, N  | Input terminals     | Accept a wide range of voltages and frequencies (no polarity at DC input)  |
| NC  | No connection       | Do <i>not</i> insert wires here, as this may damage the power supply       |

### Overcurrent Protection Characteristics



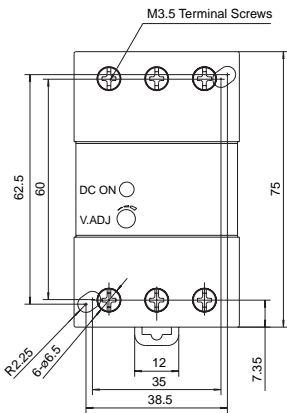
### Parallel Operation



Parallel operation only recommended for PS5R-Q24, PS5R-F24 and PS5R-G24.

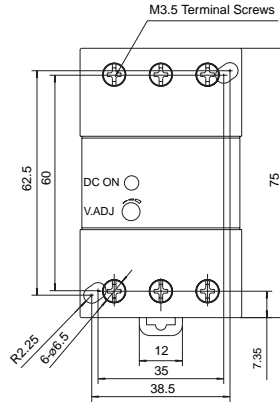
Dimensions

**PS5R-A (7.5W)**



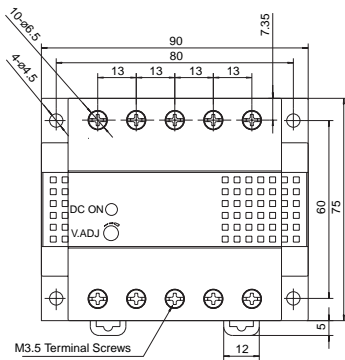
Height 75.0 mm  
Width 45.0 mm  
Depth 70.0 mm

**PS5R-B (15W)**



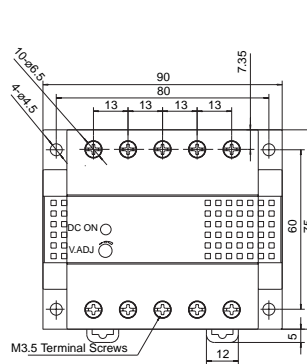
Height 75.0 mm  
Width 45.0 mm  
Depth 95.0 mm

**PS5R-C (30W)**



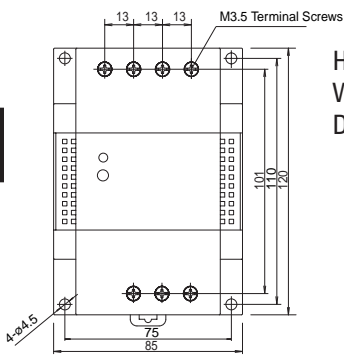
Height 75.0 mm  
Width 90.0 mm  
Depth 95.0 mm

**PS5R-D (50W)**



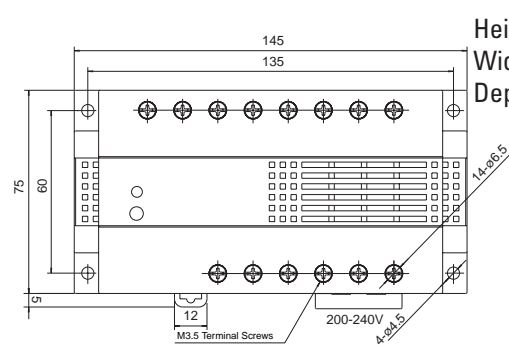
Height 75.0 mm  
Width 90.0 mm  
Depth 95.0 mm

**PS5R-Q (75W)**



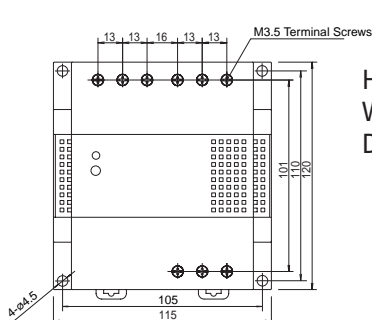
Height 120.0 mm  
Width 85.0 mm  
Depth 140.0 mm

**PS5R-E (100W)**



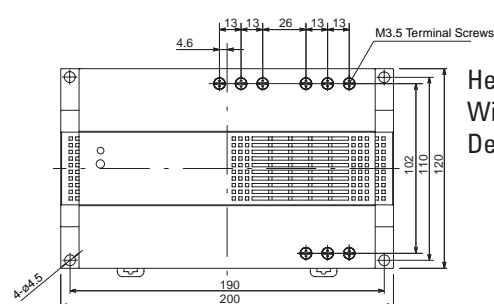
Height 75.0 mm  
Width 145.0 mm  
Depth 95.0 mm

**PS5R-F (120W)**



Height 120.0 mm  
Width 115.0 mm  
Depth 140.0 mm

**PS5R-G (240W)**



Height 120.0 mm  
Width 200.0 mm  
Depth 140.0 mm

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