



Wall Industries, Inc.

PSRL5017R3 Series
Up to 300 Watts
Single Output with Active PFC
AC/DC Switching Power Supply

FEATURES

- 2 Year Warranty
- Optional Top Cover Available
- Universal AC Input / Full Range
- Optional N+1 Active Current Sharing
- Peak Power 900W within 500uS duty duration
- Power Factor Corrected to EN61000-3-2 Class D
- High Power Density (Max. 9.1 Watts per cubic inch)
- Approved to UL/CUL/TUV/CB/CE & Class B Emissions
- U-Chassis & Enclosed with Built-in Fan Mechanical Options



PSRL5017R3 Series: 8(L) x 4.33(W) x 2.5(H) inches



SPECIFICATIONS: PSRL5017R3 Series

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
 We reserve the right to change specifications based on technological advances.

INPUT SPECIFICATIONS

| | |
|-----------------|---|
| Input Voltage | 90 - 264 VAC Full Range (PSRL5017Rx8 800W Series: 180 - 264 VAC only). |
| Input Current | 5A at 90VAC and full load. |
| Input Frequency | 47 to 63Hz |
| Inrush Current | 70A max. @ 230VAC with full load cold start. |
| Leakage Current | 3.5mA max. @ 240VAC. |
| Remote ON/OFF | Designated as RSW on CN3, requires a low signal to inhibit output. |

OUTPUT SPECIFICATIONS

| | |
|-------------------------------|---|
| Output Voltage | See Table |
| Output Power Range | 300 Watts max with airflow. (See Note 4) |
| Output Adjustability | Output user adjustable ±5% minimum. |
| Total Regulation | ±1% |
| Output Current | See Table |
| Ripple & Noise (peak to peak) | See Table |
| Transient Response | Returns to within 1% in less than 2.5ms for a 50% load change and the peak transient does not exceed 5%. |
| Hold-Up Time | 20ms min. at 80% of full load. |
| Overshoot | Turn-On & Off overshoot < 5% over nominal voltage. |
| Turn On Delay | 1 second maximum at 120VAC. |
| Remote Sense | Designated as RS+ and RS- on CN3. Voltage compensates for up to 0.5V line drop. (Not available for current sharing models). |

PROTECTION

| | |
|-----------------------------|--|
| Over Voltage Protection | Unit latching down when output voltage exceeds 130% and recycle AC input to reset. |
| Short Circuit Protection | Trip without damage and auto-recovery. |
| Over-Temperature Protection | Unit protected of excessive operating ambient 85°C and automatic recovery. |
| Over-Power Protection | Fold back mode 110-140% and auto-recovery. |
| Input Voltage Protection | Power shut down under 80 ±5VAC, and recovered over 86VAC |
| Input Fusing Protection | A T10A/250V fuse inserted in primary. |

GENERAL SPECIFICATIONS

| | |
|-------------------|---|
| Efficiency | 70% for 3.3V, 75% for 5V, 80% for 12V, and 83% minimum for other outputs @ 230VAC and full load. |
| Withstand Voltage | 1500 VAC input line to chassis (10mA DC cut off current); 3000VAC between primary and secondary windings. Primary to core 1500VAC. All for 3 seconds. |
| Burn In | 45 ±5°C for one hour @ 230VAC with full load. |
| PFC | Active power factor correction meets EN61000-3-2 class D. |
| Power Good | Designated as PG on the CN3 and TTL high 100-500ms after regulation. It goes low at least 1ms before loss of regulation for Power on Reset signal. |
| Grounding Test | Apply 25A from ground pin of the three prong plug to the far most earth. Max allowable resistance is 0.1 ohm. |

| SPECIFICATIONS (CONTINUED) | |
|---|---|
| GENERAL SPECIFICATIONS (CONTINUED) | |
| Current Sharing | Designated as CSH on the CN3, optional single wired for forced current sharing function and parallel up to 4 units within 10% accuracy at full load. |
| Current Monitor | Designated as CMN on the CN3 is a 0.5V to 3VDC output voltage to represent 0% to 100% output current. |
| LED Display | Bi-color LED1 emit Green for Power On and emit Orange when protection is enabled or RSW is applied a low signal. |
| ENVIRONMENTAL SPECIFICATIONS | |
| Operating Temperature | 0°C to +70°C ambient, de-rating at 2.5% per degree from 50°C to 70°C. |
| Storage Temperature | -20°C to +85°C |
| Operating Humidity | 5% to 90% RH, non-condensing |
| Storage Humidity | 5% to 95% RH, non-condensing |
| Vibration | 5 ~ 50Hz, acceleration 7.35 m/(s x s) on X, Y, and Z axis. |
| Cooling | U Type (U-Chassis): 30CFM to achieve maximum power for all models except PSRL5017R3 Series which is convection cooled. E Type (Enclosed with built-in fan): Self cooled by built-in fan. |
| MTBF | 150,000 hours (according to MIL-HBK-217F) at 30°C. |
| PHYSICAL SPECIFICATIONS | |
| Weight | U Type (U-Chassis): 1350 grams E Type (Enclosed with built-in fan): 1450 grams |
| Dimensions | U Type (U-Chassis): 8(L) x 4.33(W) x 2.5(H) inches. E Type (Enclosed with built-in fan): 9.17(L) x 4.25(W) x 2.5(H) inches. |
| Warranty | 2 years |
| SAFETY | |
| Emissions | FCC part15, CISPR 22 Class B, Conducted. |
| Safety Regulations | Approved to UL60950-1, CSA C22.2 No. 60950-1-03, TUV EN60950-1, CE Mark (LVD) EN61000-3-2,3, and IEC61000-4 Series Regulations and CB. |

OUTPUT VOLTAGE / CURRENT RATING CHART

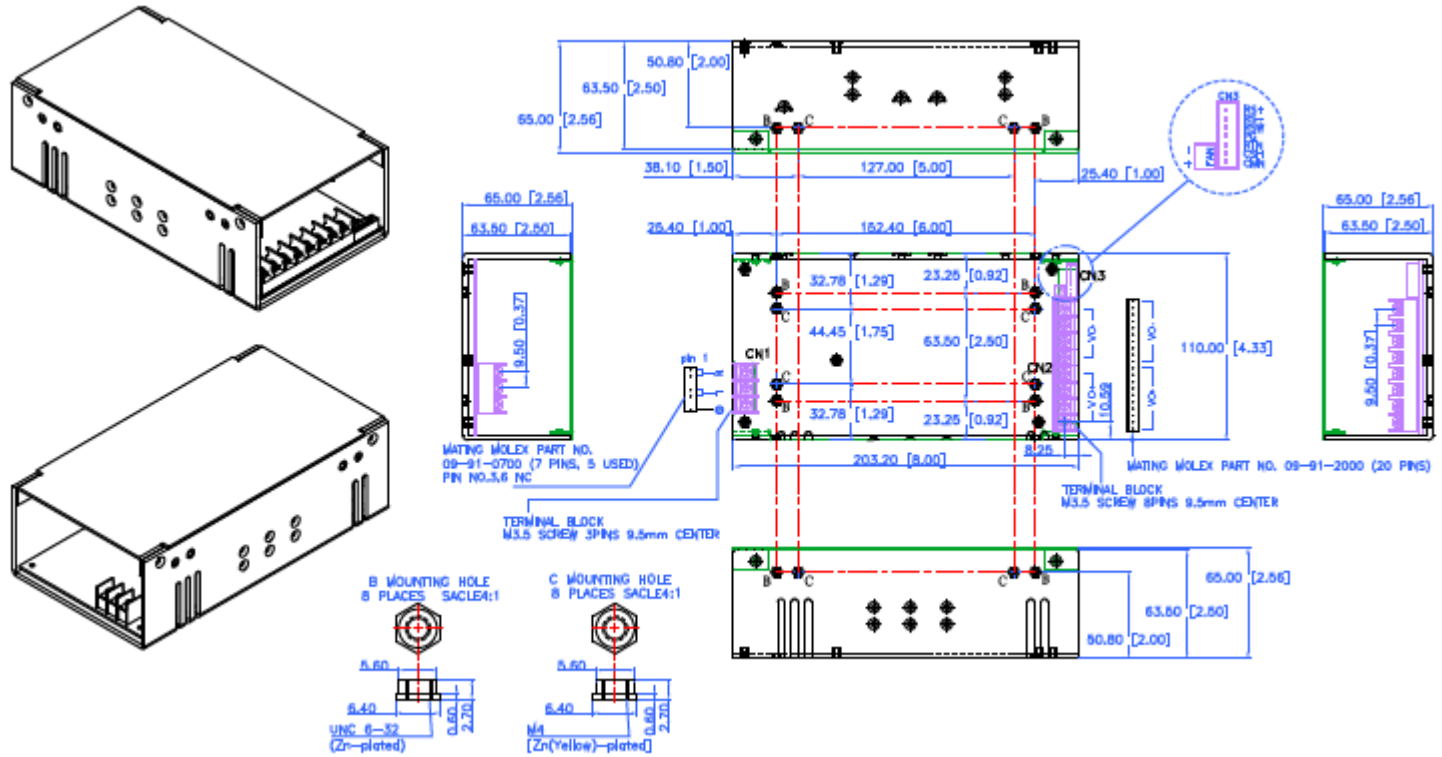
| Model | Output Voltage Range | Preset Voltage | Output Current | Regulation | Ripple & Noise | Output Power |
|--------------------------|----------------------|----------------|----------------|------------|----------------|--------------|
| PSRL5017RU3-03(I) | 2 – 3.3 VDC | 3.3 VDC | 50A | ±1% | 50mV | 165W |
| PSRL5017RU3-05(I) | 5 – 6 VDC | 5 VDC | 45A | ±1% | 50mV | 225W |
| PSRL5017RU3-12(I) | 12 – 15 VDC | 12 VDC | 25A | ±1% | ±1% | 300W |
| PSRL5017RU3-16(I) | 16 – 21 VDC | 18 VDC | 18.75A | ±1% | ±1% | 300W |
| PSRL5017RU3-24(I) | 22 – 30 VDC | 24 VDC | 13.63A | ±1% | ±1% | 300W |
| PSRL5017RU3-36(I) | 31 – 47 VDC | 36 VDC | 9.67A | ±1% | ±1% | 300W |
| PSRL5017RU3-48(I) | 48 – 56 VDC | 48 VDC | 6.25A | ±1% | ±1% | 300W |

NOTES

- The PSRL5017R3 Series is designated as PSRL5017R_{xw-yz} where x = **U** (U-chassis), w = **3** for output power from 165W - 300W, y = **03, 05, 12, 16, 24, 36, or 48** for output voltage, and z can be **blank** or **I** where **I** denotes forced current sharing option (output with internal OR-ring diode). See PSRL5017R-I Series for forced current sharing.
- E Type (Enclosed with built-in fan) is not available for the PSRL5017R3 Series. Please see PSRL5017R5, PSRL5017R6, or PSRL5017R8 Series for E Type.
- All output ranges are covered in agency certifications and preset voltage will be set as standard models. If any request is not preset output, then please contact us in advance.
- U-Chassis type needs external forced airflow min. 30 CFM to achieve maximum power, except PSRL5017RU3-_{yz} which are convection cooled.
- Ripple & noise are measured from 10KHZ to 20MHz bandwidth at output with parallel 0.1uF ceramic and 22uF electrolytic capacitors.
- Providing peak power to 900W within 500uS for all models, longer duty duration need contact manufacturer.
- 1% minimum load is required to maintain the ripple and regulation.
- Cover is optional for U-Chassis Type. Please call factory for ordering details.
- Output is fully isolated.

MECHANICAL DRAWINGS

PSRL5017RU3 Series (U-Chassis Type): 8(L) x 4.33(W) x 2.5(H) inches; Weight: 1350g; Option: Top Cover.



| Output Pin Connection | | |
|-----------------------|------------|--------------|
| | Howder | Molex |
| Vo+ | Pins 1 – 4 | Pins 1 – 10 |
| Vo- | Pins 5 – 8 | Pins 11 – 20 |

I/O CONNECTOR PIN ASSIGNMENT

AC Input Connector (CN1):

Enclosed Type: IEC320 or equivalent Snap-in mounting type or DINKLE Terminal block Part No. DT-35-A02W-03 (3 pin).
 U-Chassis Type: Mating Molex Part No. 09-91-0700 or equivalent (7 pin, 5 used) or Howder Terminal block Part No. HD-121-3P.

Output Connector (CN2):

Mating Molex Part No. 09-91-2000 (20 pin) or Howder Terminal block Part No. HD-121-8P (8 pin).

Output Pin Assignment:

Optional two types - Molex: VO+ (Pins 1-10), VO- (Pins 11-20) ; Howder: VO+ (Pins 1-4), VO- (Pins 5-8).

Logic signal connectors (CN3):

Mating JST XHP-7 or equivalent (CHYAO SHIUNN JS-2001-07).

Fan Drive:

12VDC/500mA Mating JST XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02).

Mounting Inserts:

6-32, M4 4 Places individually with maximum penetration 0.2 inch on bottom side and 0.25 inch on both sides.