Wall Industries, Inc.

PSRL5016X3 Series
Active PFC
300 Watt Single Output
AC/DC Switching Power Supply

FEATURES

- **RoHS Compliant**
- **Optional Top Cover Available**
- **Universal AC Input / Full Range**
- **Remote Sense & Remote On/Off**
- **High Power Density: 7.15 Watts/cu in.**
- **Power Factor Corrected to EN61000-3-2 Class D**
- **Approved to UL/CUL/TUV/CB/CE & Class B Emissions**
- **Providing Peak Power 700W within 500uS Duty Duration**
- **U-Chassis & Enclosed with Built-in Fan Mechanical Options**
- **Protections: Short Circuit/ Overload/ Over Voltage/ Over Temp**



U Type (U-Chassis): 7(L) x 4(W) x 2(H) inches
E Type (Enclosed with built-in fan): 8(L) x 4(W) x 2(H) inches

SPECIFICATIONS: ***PSRL5016X3 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 – 264VAC Full Range
Input Frequency	47 to 63Hz
Input Current	5A at 90VAC full load
Inrush Current	35A max @ 230VAC with full load and cold start.
Leakage Current	1.5mA @ 240VAC
Remote ON/OFF	Defined **INH** (Pin 4) on CON3, requiring a TTL low signal to inhibit output.
OUTPUT SPECIFICATIONS	
Output Voltage	See Table
Output Power Range	300 Watts max with airflow. (See Note 2)
Output Adjustability	Output user adjustable ±5% minimum.
Total Regulation	±1%
Output Current	See Table
Ripple & Noise (peak to peak)	±1%
Transient Response	Returns to within 1% in less than 2.5ms for a 50% load change and the peak transient does not excess 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 **V1S+** (Pin1) and **V1S-** (Pin2) on the CON3. Voltage compensates for up to 0.5V line drop.
PROTECTION	
Over Voltage Protection	Unit latching down when output 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	Hiccup mode 110-140% and auto-recovery.
Input Voltage Protection	Power shut down under 80 ±5VAC, and recovered over 86VAC.
Input Circuit Protection (Primary)	One 250V/ 8A fuse inserted.
GENERAL SPECIFICATIONS	
Efficiency	80% minimum (Measuring at 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 CON3 will go high 100-500ms after regulation and goes low 1ms before loss of regulation.
Grounding Test	Apply 25A from ground pin of the three prong plug to the far most earth. Max allowable resistance is 0.1 ohm.
LED Display	Bi-color **LED1** emit green for Power On and emit orange when protection is enabled or INH is applied a low signal.

SPECIFICATIONS (CONTINUED)	
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): 22CFM forced airflow to achieve maximum power. **E Type** (Enclosed with built-in fan): Self cooled by built-in fan.
Fan Drive	12VDC/400mA is available to drive an external fan.
MTBF	100,000 hours (according to MIL-HBK-217F) at 30°C.
PHYSICAL SPECIFICATIONS	
Weight	**U Type** (U-Chassis): 950g **E Type** (Enclosed with built-in fan): 1050g
Dimensions	**U Type** (U-Chassis): 7(L) x 4(W) x 2(H) inches. **E Type** (Enclosed with built-in fan): 8(L) x 4(W) x 2(H) inches.
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, & IEC61000-4 Series Regulations and CB.

MODEL SELECTION TABLE

U-Chassis Models (U Type)					
Model	**Output Voltage Range**	**Preset Voltage**	**Output Current**	**Regulation**	**Ripple & Noise**
PSRL5016U3-12	12 - 15 VDC	12 VDC	25A	±1%	±1%
PSRL5016U3-18	16 - 21 VDC	18 VDC	18.75A	±1%	±1%
PSRL5016U3-24	22 - 30 VDC	24 VDC	13.64A	±1%	±1%
PSRL5016U3-36	31 - 41 VDC	36 VDC	9.68A	±1%	±1%
PSRL5016U3-48	42 - 55 VDC	48 VDC	7.15A	±1%	±1%

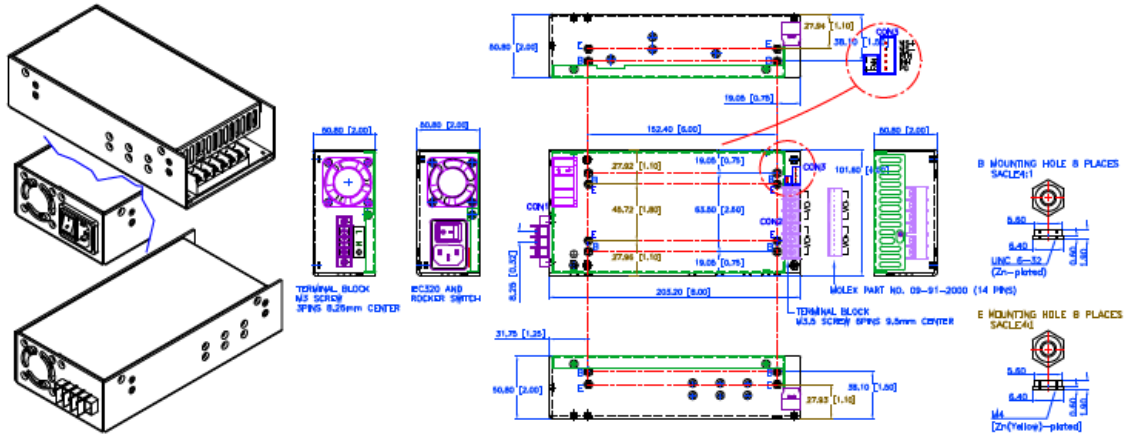
Enclosed with Built-in Fan Models (E Type)					
Model	**Output Voltage Range**	**Preset Voltage**	**Output Current**	**Regulation**	**Ripple & Noise**
PSRL5016E3-12	12 - 15 VDC	12 VDC	25A	±1%	±1%
PSRL5016E3-18	16 - 21 VDC	18 VDC	18.75A	±1%	±1%
PSRL5016E3-24	22 - 30 VDC	24 VDC	13.64A	±1%	±1%
PSRL5016E3-36	31 - 41 VDC	36 VDC	9.68A	±1%	±1%
PSRL5016E3-48	42 - 55 VDC	48 VDC	7.15A	±1%	±1%

NOTES

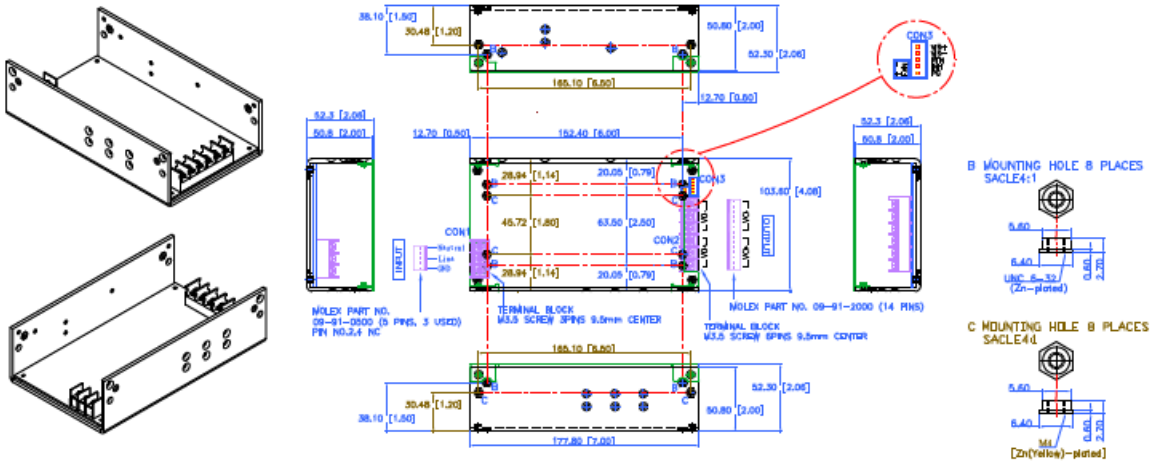
1. E Type Models (Enclosed with built-in fan): Self-cooled by built-in fan;
   U Type Models (U-Chassis): 22 CFM forced airflow to achieve maximum power.
2. Providing peak current for 500uS with standard models, longer duty duration should contact manufacture.
3. All output ranges are covered in agencies certification and preset voltage will be set as standard mode if any request other than standard output then should contact us in advance.
4. 1% minimum load is required to maintain the ripple and regulation.
5. Ripple and noise is measured from 10KHZ to 20MHz bandwidth at output terminals with parallel 0.1µF ceramic and 22µF electrolytic capacitors.
6. Output is fully isolated.
7. Optional Top cover available please call factory for ordering details.

MECHANICAL DRAWINGS

E Type (Enclosed with built-in Fan Type): 8(L) x 4(W) x 2(H) inches; Weight: 1050g



U Type (U-Chassis Type): 7(L) x 4(W) x 2(H) inches; Weight: 950g; Option: Top Cover



I/O CONNECTOR PIN ASSIGNMENT

AC Input Connector (CON1):
U Type: Mating Molex Part No. 09-91-0500 equivalent (5 pin, 3 used), or M3, 3 pins terminal block 8.25mm center.
E Type: IEC320 or equivalent Snap-in mounting type or M3.5, 6 pins Terminal block 9.5mm center.

Output Connector (CON2):
Mating Molex 14 pins (09-91-2000), or Howder (HD-121-6P) M3.5, 6 pins terminal block, 9.5MM Center.

Output Pin Assignment:
(See table at right).

Output Pin Connection		
	Howder	Molex
Vo+	Pins 1 – 3	Pins 1 – 7
Vo-	Pins 4 – 6	Pins 8 – 14

Logic signal connectors (CON3):
Mating JST XHP-5 or equivalent (CHYAO SHIUNN JS-2001-05).
Mating Pins: JST SXH-002T-P0.6 for AWG 30 to 26.

Mounting Inserts:
4 Places 6-32. Max. Penetration 0.13” on bottom side and 4 places 0.25” on both sides.

Fan Drive:
Mating JST XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02).