



Wall Industries, Inc.

PSRL0402D Series
www.DataSheet4U.com
400 Watt with Airflow

Medical Approved Dual Output
AC/DC Switching Power Supply with Active PFC

FEATURES

- 2 Year Warranty
- Power Factor Corrected to EN61000-3-2 Class D
- 3.3/ 5/ 12/ 24V Dual Output Optional Combinations
- U-Chassis Type Drive Max 250W Under Air Convection
- U-Chassis & Enclosed with Built-in Fan Mechanical Options
- 1U Height Size and High Power Density: 6.25 Watts/cu Inches
- Both Medical & ITE Safety Approvals for the PSRL0402DM Series



E Type (Enclosed with built-in Fan): 9(L) x 5(W) x 1.6(H) inches.
U Type (U-Chassis Type): 8(L) x 5(W) x 1.6(H) inches.



SPECIFICATIONS: PSRL0402D 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	6.35A at 90VAC full load
Inrush Current	35A max @ 230VAC with full load and cold start.
Leakage Current	Medical degree 300µA; ITE degree 1.5mA.
Remote ON/OFF	Designated as RSW on the CN3, requires a low signal to inhibit output.

OUTPUT SPECIFICATIONS

Output Voltage	See Table
Output Power Range	400 Watts max with airflow. (See Note 4)
Output Adjustability	Output user adjustable ±5% minimum.
Total Regulation	±5%
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 exceed 5%.
Hold-Up Time	20ms min. at 80% of full load.
Overshoot	Turn-on/off not exceed 5% over nominal voltage.
Turn On Delay	1 second maximum at 120VAC.
Remote Sense	Designated as RS+ and RS- on the CN3.

PROTECTION

Over Voltage Protection	Latching down will occur when output voltage exceeds 130% and recycle AC input to reset.
Short Circuit Protection	Trip without damage and auto-recovery.
Over-Temperature Protection	Protected in the event of excessive operating ambient 85°C and automatic recovery.
Over-Power Protection	C.C. mode 110-140% and auto-recovery.
Input Voltage Protection	Power shut down under 80 ±5VAC, and recovered over 86VAC.
Input Circuit Protection (Primary)	Two T8A/250V fuses inserted.

GENERAL SPECIFICATIONS

Switching Frequency	30KHz fixed frequency
Efficiency	75% minimum (measuring at 230V and full load).
Withstand Voltage	1500 VAC input line to chassis (2mA DC cut off current); 4000VAC 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 will go high 100-500ms after regulation and goes low 1ms before loss of regulation.
Power Supply On	Green LED designated as LED 1 on the PCB.
Grounding Test	Apply 40A from ground pin to the earthed connection point. Max allowable resistance is 0.1 ohm.
LED Display	Bi-color green LED in front panel (E Type only). Any protection occurred or RSW applied low signal will emit orange.



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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	Frequency 5 ~ 50Hz, acceleration ± 7.35 m/(s x s) on X, Y, and Z axis.
Cooling	U Type (U-Chassis): 400W max with 23CFM airflow or 250W max under convection cooling. E Type (Enclosed with side built-in fan): 400W
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): 1.3Kg E Type (Enclosed with side built-in fan): 1.6Kg
Dimensions	U Type (U-Chassis): 8(L) x 5(W) x 1.6(H) inches. E Type (Enclosed with side built-in fan): 9(L) x 5(W) x 1.6(H) inches.
Warranty	2 years
SAFETY	
Emissions	FCC part15, CISPR 22 Class B, Conducted.
Safety Regulations	Approved to UL60950-1/ 60601-1, CSA C22.2 No. 60950-1-03/ 601.1-M90, TUV EN60950-1/ 60601-1, CE Mark (LVD) EN61204-3/ 60601-1-2/ 61000-3-2,3, and IEC61000-4 Series Regulations and CB.

OUTPUT VOLTAGE / CURRENT RATING CHART

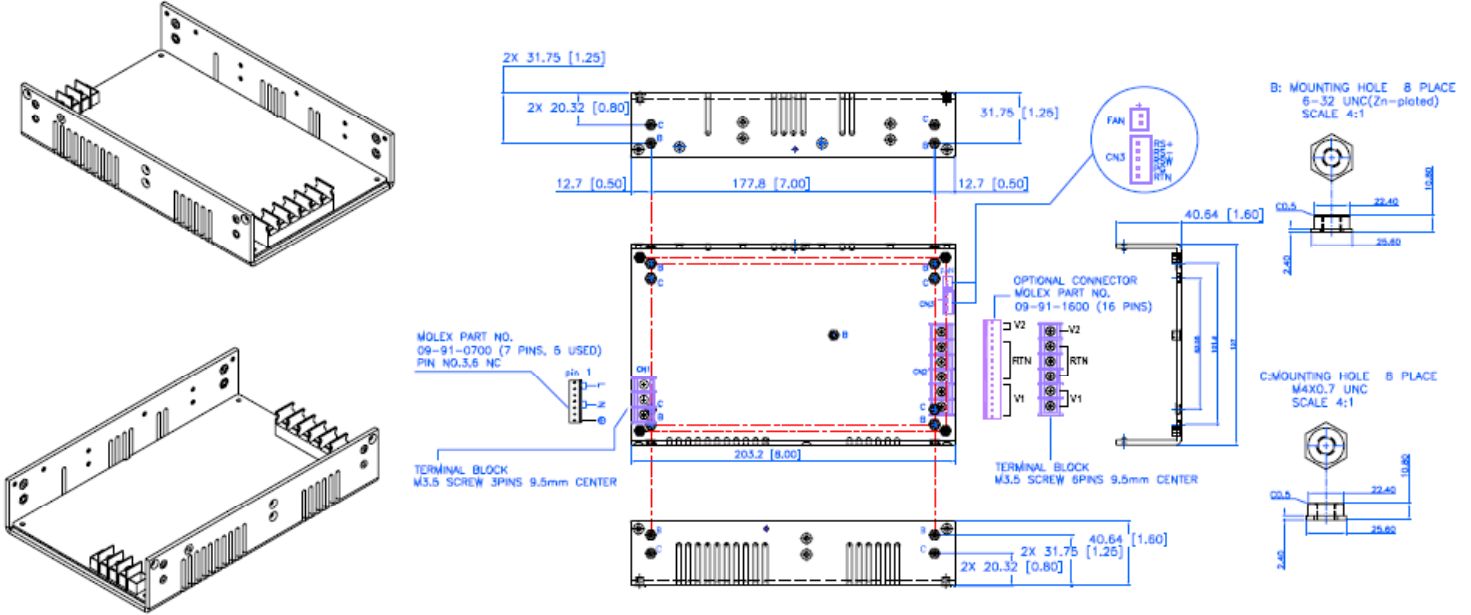
Model	Output Voltage Range	Output Current		Regulation	Ripple & Noise
		Convection	22.95CFM		
PSRL0402Dx-0312	V ₁ : +3.3 VDC	30A	40A	$\pm 5\%$	$\pm 1\%$
	V ₂ : +12 VDC	16.7A	25A	$\pm 5\%$	$\pm 1\%$
PSRL0402Dx-0324	V ₁ : +3.3 VDC	30A	40A	$\pm 5\%$	$\pm 1\%$
	V ₂ : +24 VDC	8.34A	12.5A	$\pm 5\%$	$\pm 1\%$
PSRL0402Dx-0512	V ₁ : +5 VDC	30A	40A	$\pm 5\%$	$\pm 1\%$
	V ₂ : +12 VDC	16.7A	25A	$\pm 5\%$	$\pm 1\%$
PSRL0402Dx-0524	V ₁ : +5 VDC	30A	40A	$\pm 5\%$	$\pm 1\%$
	V ₂ : +24 VDC	8.34A	12.5A	$\pm 5\%$	$\pm 1\%$
PSRL0402Dx-1224	V ₁ : +12 VDC	16.7A	25A	$\pm 5\%$	$\pm 1\%$
	V ₂ : +24 VDC	8.3A	12.5A	$\pm 5\%$	$\pm 1\%$

NOTES

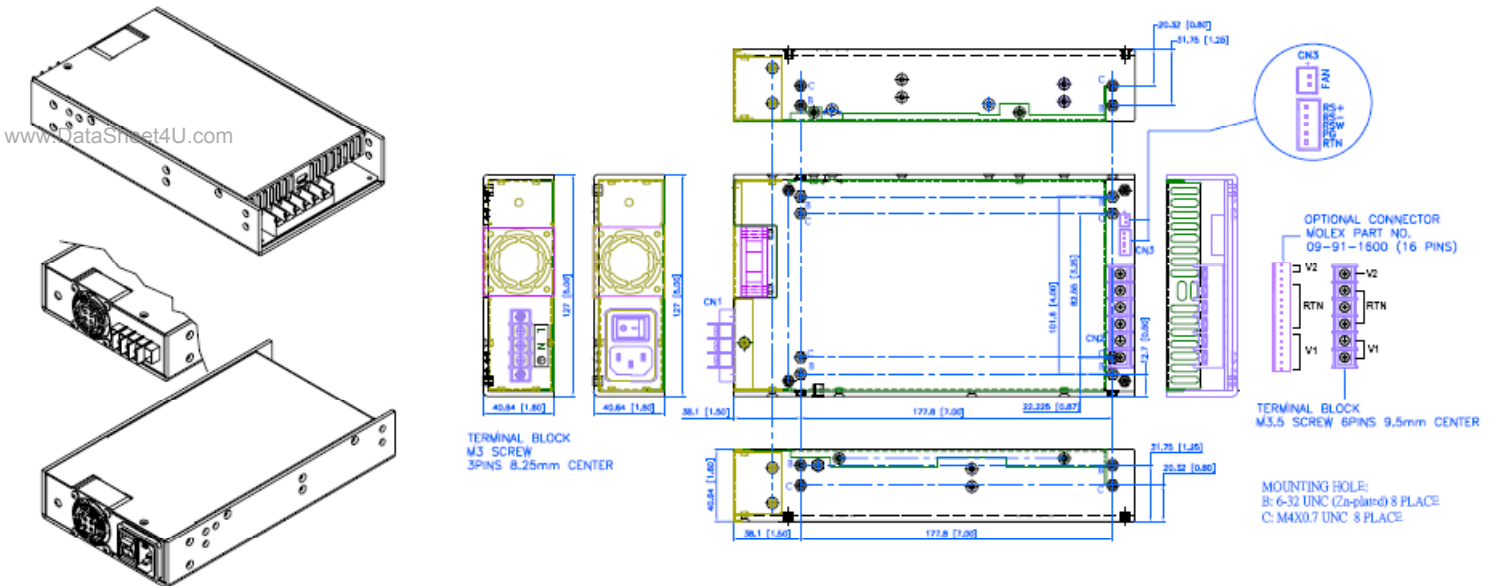
- PSRL0402D Series is designated as PSRL0402Dx-y where x can be U-chassis (Type U), U-chassis with top cover (Type C), or Enclosed with side built-in Fan (Type E), y can be 0312, 0324, 0512, 0524 and 1224 for output voltage.
- 10% minimum load is required for all outputs to maintain the ripple and regulation.
- Output is fully isolated.
- Total combined power of V1 and V2: 400W max. with 22.95 CFM forced air and 250W convection cooling for PSRL0402DU-1224; 400W for PSRL0402DE-1224 by self-cooling. 300W max. with 22.95 CFM forced air and 200W convection cooling for other PSRL0402DU-y models; 300W for other PSRL0402DE-y models by self-cooling.

MECHANICAL DRAWINGS

PSRL0402DU Series (U-Chassis Type): 8(L) x 5(W) x 1.6(H) inches; Weight: 1.3kg; Option: Top Cover.



PSRL0402DE Series (Enclosed with built-in Fan Type): 9(L) x 5(W) x 1.6(H) inches; Weight: 1.6kg.



Output Pin Assignment			
	V1	V2	RTN
Howder	Pins 1 – 2	Pin 6	Pins 3 – 5
Molex	Pins 1 – 6	Pins 14 – 16	Pins 7 – 13



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I/O CONNECTOR PIN ASSIGNMENT

Input Connector (CN1):

PSRL0402DU Series: mating Molex Part No. 09-91-0700 equivalent (7 pin, 5 used), or Howder Terminal block (HD-121-3P).

PSRL0402DE Series: IEC320 or equivalent Snap-in mounting type or DINKLE Terminal block (DT-35-A02W-03).

Output Connector (CN2):

Mating Molex 16 pins (09-91-1600), or Howder (HD-121-6P) M3.5, 8 pins terminal block, 9.5MM Center.

Output Pin Assignment:

(See table)

Logic signal connectors (CN3):

Mating JST XHP-9 or equivalent (CHYAO SHIUNN JS-2001-05) Mating Pins: JST SXH-002T-P0.6 for AWG 30 to 26.

Mounting Inserts:

6-32, M4 4 Places individually with maximum penetration 0.15 inches on bottom side and 0.25 inch on both sides

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