

## Wall Industries, Inc.

### PSGE50 SERIES

88~264VAC (125~373VDC) Input  
Single Outputs  
Up to 52.8 Watts Output Power  
AC/DC Switching Power Supplies



#### FEATURES

- Single Output
- RoHS Compliant
- Universal AC Input / Full Range
- High Efficiency, Long Life, and High Reliability
- $\pm 10\%$  Output Voltage Adjustability
- Green Design, No-load Power Consumption  $< 0.5W$
- Energy Star Compliant
- Cooling by Free Air Convection
- Power ON with LED Indicator
- All Using 105°C Long Life Electrolytic Capacitors
- High Operating Temperature:  $-25^{\circ}C$  to  $+70^{\circ}C$
- 100% Full Load Burn-In Tested
- Withstand 5G Vibration Test
- Brown-out (Low AC Input Voltage) Protection
- Over Voltage, Over Load, and Short Circuit Protection



#### DESCRIPTION

The PSGE50 series of AC/DC switching power supplies offers up to 52.8 Watts of output power in a 3.90" x 3.21" x 1.40" enclosed case. This series has a universal input voltage range of 88~264VAC (125~373VDC) and single outputs of 3.3, 5, 12, 15, 24, and 48VDC. Some features include high efficiency up to 90%,  $\pm 10\%$  output adjustability, no-load power consumption  $< 0.5W$ , and a high operating temperature range of  $-25^{\circ}C$  to  $+70^{\circ}C$ . This series also has over voltage, short circuit, over load, and brown-out (low AC input voltage) protection. All models have been 100% full load burn-in tested and are RoHS and Energy Star compliant. This series also has UL 60950-1, TUV EN60950-1, and CE safety approvals.

**SPECIFICATIONS: PSGE50 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 Range	88 ~ 264VAC 125 ~ 373VDC (Withstand 300VAC surge for 5 seconds without damage)
Input Frequency	50Hz / 60Hz
AC Current	1.3A typ. at 115VAC; 0.5A typ. at 230VAC
Inrush Current	Cold Start 40A typ. at 230VAC

**OUTPUT SPECIFICATIONS**

Output Voltage	See Table
Output Power	See Table
Output Voltage Adjustability	±10%
Voltage Tolerance <i>(see note 2)</i>	3.3 VDC Output Model: ±3% 5 VDC Output Model: ±2% 12~48 VDC Output Models: ±1%
Load Regulation <i>(see note 3)</i>	See Table
Line Regulation	±0.5% (measured from low line to high line at full load)
Output Current	See Table
Ripple & Noise <i>(see note 1)</i>	See Table
Setup, Rise Time <i>(see note 5)</i>	1000ms, 80ms at 115VAC and full load 800ms, 80ms at 230VAC and full load
Hold-Up Time	>10ms at 115VAC and full load; >32ms at 230VAC and full load
Temperature Coefficient	±0.03% / °C (0~50°C)

**PROTECTION**

Short Circuit Protection	yes
Over Voltage Protection	115% ~ 150% rated output voltage Protection type: latch-off mode
Over Load Protection	>110% rated output power Protection Type: hiccup mode; recover automatically after fault condition is removed
Brown-Out Protection (Low AC Input Voltage)	yes

**GENERAL SPECIFICATIONS**

Efficiency	See Table	
Withstand Voltage	Input to Output	3000VAC (4242VDC) for 1 minute
	Input to FG	1500VAC (2121VDC) for 1 minute
	Output to FG	500VAC (707VDC) for 1 minute
Isolation Resistance	100MΩ at 500VDC (input to output, input to FG, output to FG)	
Leakage Current	< 2mA at 240VAC	

**ENVIRONMENTAL SPECIFICATIONS**

Working Temperature	-25°C to +70°C (see derating curve)
Storage Temperature	-40°C to +85°C
Working Humidity	20% to 90% RH (non-condensing)
Storage Humidity	10% to 95% RH
Vibration	10 ~ 500Hz, 5G 10min/1cycle, period for 60 minutes each along X,Y,Z axes.
Cooling	Free air convection
MTBF	420,400 hours (Compliance: MIL-HDBK-217F)

**PHYSICAL SPECIFICATIONS**

Weight, Packing	9.88oz (280g); 45pcs/14kg
Dimensions (L x W x H)	3.90 x 3.21 x 1.40 inches (99.0 x 81.5 x 35.5 mm)

**SAFETY & EMC *(see note 6)***

Safety Standards	UL60950-1, 2 <sup>nd</sup> Edition, TUV EN60950-1: 2006+A11 Approved
EMI Conduction & Radiation	EN55022: 1998+A1: 2000+A2: 2003 Class B
Harmonic Current	EN61000-3-2: 2000 Class A, EN61000-3-3: 1995+A1: 2001
EMS Immunity	EN61204-3: 2000, EN55024: 1998+A1: 2001+A2: 2003 light industry level, criteria A

**MODEL SELECTION TABLE**

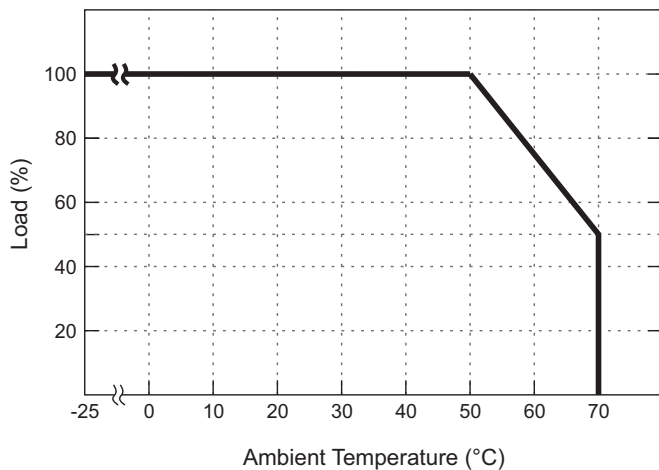
Model Number	Input Voltage Range	Output Voltage	Output Current	Load Regulation <sup>(3)</sup>	Output <sup>(1)</sup> Ripple & Noise	Output Power	Efficiency <sup>(4)</sup>
PSGE-50-3.3	88 ~264 VAC (125~373 VDC)	3.3 VDC	10A	±2.0%	100mVp-p	33W	78%
PSGE-50-5		5 VDC	10A	±1.0%	100mVp-p	50W	83%
PSGE-50-12		12 VDC	4.2A	±0.5%	120mVp-p	50.4W	88%
PSGE-50-15		15 VDC	3.4A	±0.5%	120mVp-p	51W	89%
PSGE-50-24		24 VDC	2.2A	±0.5%	120mVp-p	52.8W	90%
PSGE-50-48		48 VDC	1.1A	±0.5%	200mVp-p	52.8W	90%

**NOTES**

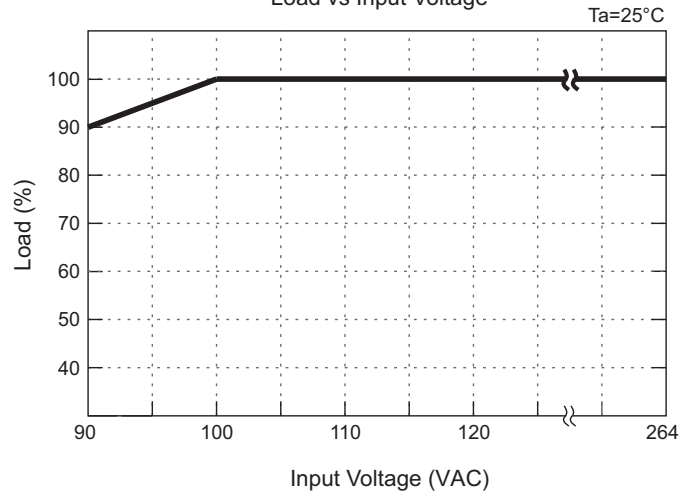
1. Ripple & noise is measured at 20MHz bandwidth by using a 12" twisted pair-wire terminated with a 0.1µF capacitor and a 47µF capacitor in parallel.
2. Tolerance includes set up tolerance, line regulation, and load regulation.
3. Load regulation is measured from 0% to 100% full load.
4. Typical value at 230VAC input voltage.
5. The length of the setup time is measured at first cold start; turning the power supply ON and OFF very quickly may lead to an increase in the setup time.
6. The power supply is considered a component which will be installed into final equipment. The final equipment must be re-confirmed that it still meets EMC directives.

**DERATING CURVES**

Load vs Temperature

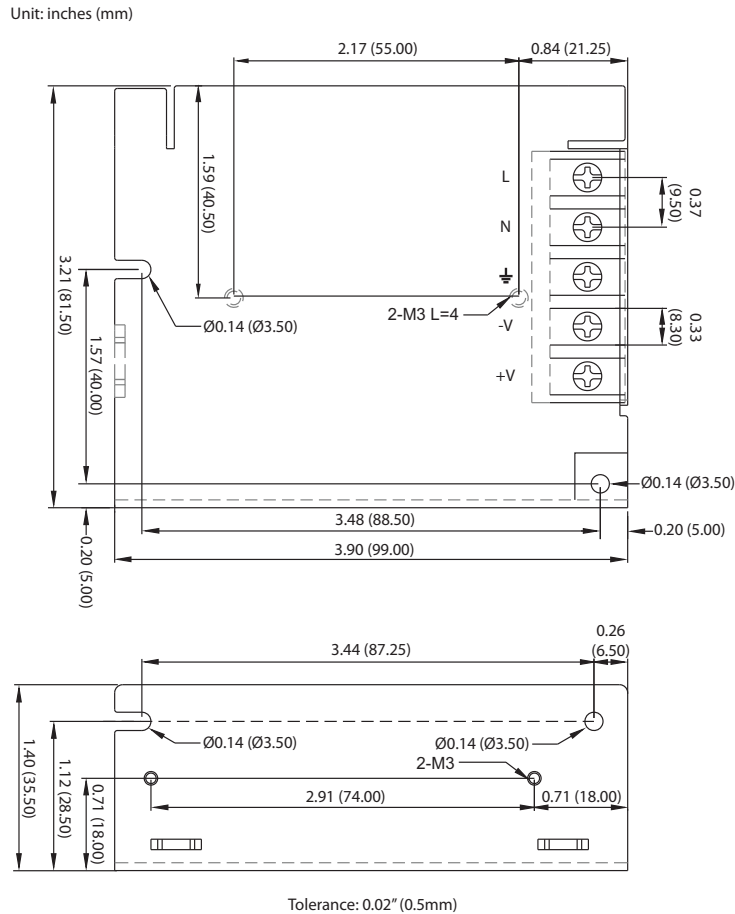


Load vs Input Voltage





**MECHANICAL DRAWING**



**COMPANY INFORMATION**

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001-2008 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

Contact **Wall Industries** for further information:

Phone: ☎ (603)778-2300  
 Toll Free: ☎ (888)587-9255  
 Fax: ☎ (603)778-9797  
 E-mail: [sales@wallindustries.com](mailto:sales@wallindustries.com)  
 Web: [www.wallindustries.com](http://www.wallindustries.com)  
 Address: 5 Watson Brook Rd.  
 Exeter, NH 03833