

PSG Series



PSG Series

Product Description

Eaton's PSG Series of power supplies is designed to be a high-performance, high-quality line of products covering a majority of 12 Vdc and 24 Vdc control applications. With global certifications, a compact size and an impressive operating temperature range, the PSG Series fits a wide variety of applications at a competitive price.

Our expansive 22 model offering is able to provide solutions for most applications with PSG outputs ranging from 12 Vdc at 1.25 A up to 24 Vdc at 40 A, plus redundancy and buffer modules to ensure uptime.

Application Description

The PSG Series is a line of general-purpose power supplies for use in a wide variety of industrial control applications. Applications include communication networks, sensors, PLCs and many other electrical systems. Each model is equipped with the options of a rugged metal or plastic housing, heavy-duty screw or finger-safe terminals and a variety of protection features, making the PSG one of the most versatile industrial power supply lines on the market.

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Features, Benefits and Functions

- Universal input voltages: 100–240 Vac for single-phase units, 400–500 Vac for three-phase units
- General-purpose 12 Vdc and 24 Vdc adjustable output
- 150% power surge output
- Wide operating temperature range: –25 °C to +80 °C
- MTBF up to 1,000,000 hours ensures uptime and reliability
- Protection from overvoltage, overcurrent and over-temperature conditions
- Rugged aluminum and plastic housings provide the durability required to stand up to harsh environments
- All-metal DIN rail mounting hardware
- Heavy-duty screw and finger-safe terminals
- LED indicating light for DC OK simplifies troubleshooting
- Conformal coated electronics
- Hazardous Location Class I, Division 2 rated models
- UL/NEC® Class 2 rated model
- Redundancy modules keep loads up and running in the event of a device failure
- Buffer module has the stored power needed to keep loads running through a short duration power failure
- Three-year standard warranty

Standards and Certifications

- cULus listed—UL 508
- CSA listed—CSA 22.2 No. 107.1-01
- Hazardous Location, Class I, Div. 2, Groups A, B, C, D
- IEC
- EN
- NEC Class 2
- UL Class 2
- CE marked
- RoHS compliant

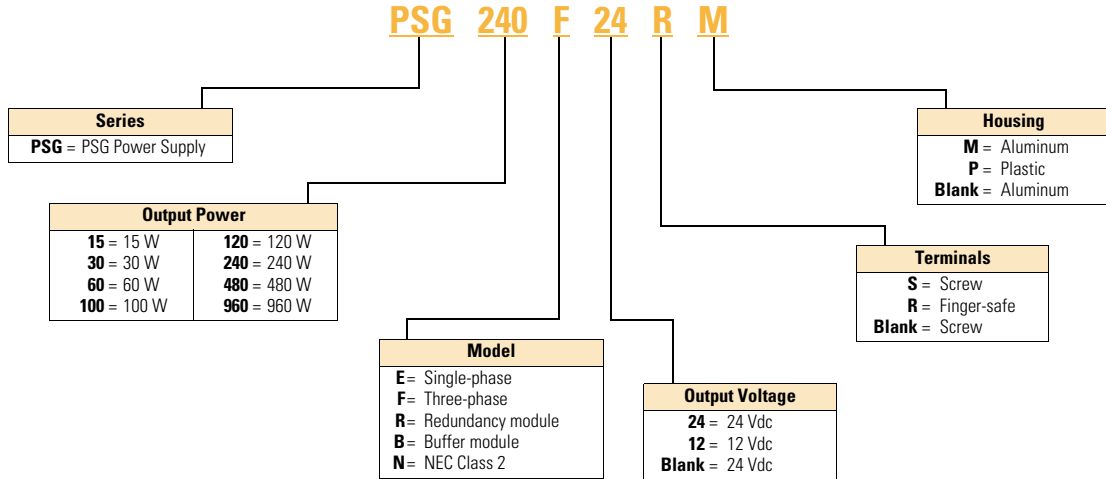


Note: Some models may not carry all certifications listed.

Catalog Number Selection

Note: Catalog number selection breakdown shown below is for illustrative purposes only and not to be used to create new catalog number configurations.

PSG Series



Note: Not all combinations are available. See Pages **V7-T6-19–V7-T6-26** for all available combinations.

6.1

Power Supplies

General-Purpose and Sensor Power Supplies

Product Selection

PSG Series

Screw Type Terminals—Connections for those that require multiple types of terminations and lug connections.

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PSG100E12SM



12 Vdc output single-phase power supplies (100–240 Vac nominal input)

Power	Description	Catalog Number
Screw Type Terminals		
	15 W 1.25 A output, plastic housing	PSG15E12SP
	30 W 2.5 A output, plastic housings	PSG30E12SP
	60 W 5 A output, aluminum housing	PSG60E12SM
	100 W 8.33 A output, aluminum housing	PSG100E12SM

PSG60E



24 Vdc output single-phase power supplies (100–240 Vac nominal input)

	60 W 2.5 A output, aluminum housing	PSG60E
	60 W 2.5 A output, plastic housing	PSG60E24SP
	120 W 5 A, aluminum housing	PSG120E
	240 W 10 A, aluminum housing	PSG240E
	480 W 20 A, aluminum housing	PSG480E

Finger-Safe Terminals—Connections for those that require IP20 terminals for all your safety solutions

PSG60E24RM



24 Vdc output single-phase power supplies (100–240 Vac nominal input)

Power	Description	Catalog Number
Finger-Safe Terminals		
	60 W 2.5 A output, aluminum housing	PSG60E24RM
	120 W 5 A, aluminum housing	PSG120E24RM
	240 W 10 A, aluminum housing	PSG240E24RM
	480 W 20 A, aluminum housing	PSG480E24RM
	60 W 2.5 A output, plastic housing, UL/NEC Class 2	PSG60N24RP

PSG480F24RM



24 Vdc output, three-phase power supplies (400–500 Vac nominal input)

	60 W 2.5 A, aluminum housing	PSG60F24RM
	120 W 5 A, aluminum housing	PSG120F24RM
	240 W 10 A, aluminum housing	PSG240F24RM
	480 W 20 A, aluminum housing	PSG480F24RM
	960 W 40 A, aluminum housing	PSG960F24RM

PSG480B24RM



Module power supplies (24 Vdc input)

	Buffer module, 480 W 20 A output, aluminum housing	PSG480B24RM
	Redundancy module, 480 W <20 A output, aluminum housing	PSG480R24RM
	Redundancy module, 960 W <40 A output, aluminum housing	PSG960R24RM

Technical Data and Specifications

PSG Series

	Single-Phase PSG15E12SP	PSG30E12SP	PSG60E12SM	PSG100E12SM	PSG60E	PSG60E24SP	PSG60E24RM
Input							
Nominal voltage	100–240 Vac	100–240 Vac	100–240 Vac	100–240 Vac	100–240 Vac	100–240 Vac	100–240 Vac
AC input range	85–264 Vac	85–264 Vac	85–264 Vac	85–264 Vac	85–264 Vac	85–264 Vac	85–264 Vac
DC input range	120–375 Vdc	120–375 Vdc	120–375 Vdc	120–375 Vdc	120–375 Vdc	120–375 Vdc	120–375 Vdc
Frequency	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz
Nominal current ^①	<0.37 A	<0.7 A	<1.35 A	<2.5 A	1.1 A	<1.10 A	<1.4 A
Inrush current limitation ^①	<30 A	<30 A	<50 A	<100 A	30 A	<40 A	<20 A
Internal fuse	T3.15 AH / 250 V	T3.15 AH / 250 V	T3.15 AH / 250 V	T3.15 AH / 250 V	T3.15 AH / 250 V	T3.15 AH / 250 V	T3.15 AH / 250 V
External fusing	4 A or 6 A	4 A or 6 A	6 A, 10 A or 16 A	6 A, 10 A or 16 A	6 A, 10 A or 16 A	6 A, 10 A or 16 A	6 A, 10 A or 16 A
Leakage current	<1 mA	<1 mA	<1 mA	<1 mA	<1 mA	<1 mA	<1 mA
Output							
Power	15 W	30 W	60 W	100 W	60 W	60 W	60 W
Nominal output voltage	12 Vdc ±2%	12 Vdc ±2%	12 Vdc ±2%	12 Vdc ±2%	24 Vdc ±2%	24 Vdc ±2%	24 Vdc ±2%
Adjustment range	11–14 Vdc	11–14 Vdc	11–14 Vdc	11–14 Vdc	22–28 Vdc	22–28 Vdc	24–28 Vdc
Nominal current	1.25 A	2.5 A	5 A	8.33 A	2.5 A	2.5 A	2.5 A
Startup with capacitive loads	Max. 5000 µF	Max. 6600 µF	Max. 8000 µF	Max. 10,000 µF	Max. 8000 µF	Max. 8000 µF	Max. 8000 µF
Efficiency	>84% at 115 Vac, >83% at 230 Vac	>85% at 115 Vac and 230 Vac	>85% at 115 Vac and 230 Vac	>85.5% at 115 Vac, >87.5% at 230 Vac	>85% typ	>86% at 115 Vac, >87% at 230 Vac	>90% at 115 Vac and 230 Vac
Current surge	1.875 A	3.75 A	7.5 A	12.495 A	3.75 A	3.75 A	3.75 A
Current surge time	3 s	3 s	3 s	3 s	1 s (at 10 s intervals)	3 s	5 s
Residual ripple/peak switching (20 MHz)	<100 mVpp	<100 mVpp	<100 mVpp	<100 mVpp	<50 mV / <240 mVpp	<50 mV / <240 mVpp	<50 mVpp / <150 mVpp
Turn-on time	<2.5 s	<2.5 s	<2.5 s	<0.6s	<2.5 s	<3 s	<2s
Mains buffering at nominal load (typ.) ^①	>22 ms	>22 ms	>22 ms	>22 ms	>20 ms	>20 ms	>20 ms
Parallel operation	With o-ring diode	With o-ring diode	With o-ring diode	With o-ring diode	PSG480R24RM / PSG960R24RM / With o-ring diode	PSG480R24RM / PSG960R24RM / With o-ring diode	PSG480R24RM / PSG960R24RM / With o-ring diode
Galvanic Isolation							
Input/output	4 k Vac	4 k Vac	4 k Vac	4 k Vac	4 k Vac (type test) / 3 k Vac (routine test)	4 k Vac	4 k Vac
Input/ground	1.5 k Vac	1.5 k Vac	1.5 k Vac	1.5 k Vac	1.5 k Vac (type test) / 1.5 k Vac (routine test)	1.5 k Vac	1.5 k Vac
Output/ground	1.5 k Vac	1.5 k Vac	1.5 k Vac	1.5 k Vac	1.5 k Vac (type test) / 500 Vac (routine test)	1.5 k Vac	1.5 k Vac
General/Physical Data							
Housing material	Plastic	Plastic	Aluminum	Aluminum	Aluminum	Plastic	Aluminum
Signals	Green LED for DC OK	Green LED for DC OK	Green LED for DC OK	Green LED for DC OK	Green LED for DC OK	Green LED for DC OK	Green LED for DC OK
MTBF	>1,000,000 hr	>1,000,000 hr	>800,000 hr	>800,000 hr	>800,000 hr	>800,000 hr	>1,000,000 hr
Dimensions (L)	100 mm	100 mm	121 mm	121 mm	121 mm	120.6 mm	121 mm
Dimensions (W)	32 mm	32 mm	32 mm	50 mm	32 mm	32 mm	32 mm
Dimensions (H)	100.6 mm	100.6 mm	120 mm	118.7 mm	120 mm	113 mm	125 mm
Weight (kg)	0.18	0.2	0.33	0.64	0.37	0.33	0.37
Terminals	Screw	Screw	Screw	Screw	Screw	Screw	Finger-safe, removable
Wire size	AWG 22–14	AWG 22–14	AWG 22–14	AWG 18–24	AWG 22–14	AWG 22–14	AWG 22–12
Operating temperature	–20 °C to +75 °C	–20 °C to +75 °C	–20 °C to +75 °C	–20 °C to +75 °C	–20 °C to +75 °C	–20 °C to +75 °C	–20 °C to +80 °C
Storage temperature	–25 °C to +85 °C	–25 °C to +85 °C	–25 °C to +85 °C	–25 °C to +85 °C	–25 °C to +85 °C	–25 °C to +85 °C	–25 °C to +85 °C

Note

^① Ratings for single-phase models are at 115 Vac; three-phase models are at 400 Vac.

6.1

Power Supplies

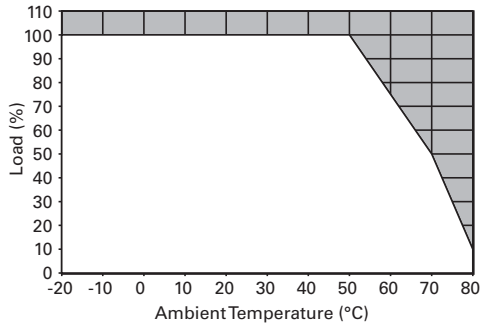
General-Purpose and Sensor Power Supplies

PSG Series, continued

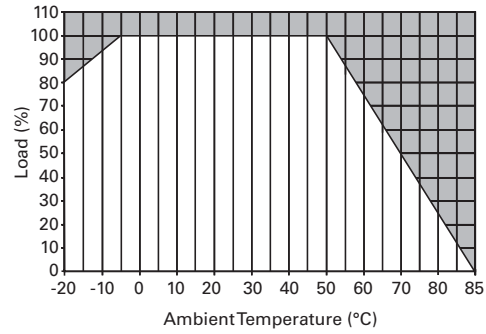
	Single-Phase PSG15E12SP	PSG30E12SP	PSG60E12SM	PSG100E12SM	PSG60E	PSG60E24SP	PSG60E24RM
General/Physical Data, continued							
Power derating— vertical mounting	>50 °C derate power by 2.5% / °C, >70 °C derate power by 4% / °C	>50 °C derate power by 2.5% / °C, >70 °C derate power by 4% / °C	>50 °C derate power by 2.5% / °C, >70 °C derate power by 4% / °C	>50 °C derate power by 2.5% / °C	>50 °C derate power by 2.5% / °C	<0 °C to –20 °C derate power by 1% / °C, >50 °C derate power by 2.5% / °C, >70 °C derate power by 4% / °C	>50 °C derate power by 2.5% / °C
Power derating— horizontal mounting	N/A	N/A	N/A	>50 °C derate power by 2.5% / °C, >70 °C derate power by 4% / °C	N/A	N/A	>50 °C derate power by 2.5% / °C
Operating humidity	<95% RH, noncondensing	<95% RH, noncondensing	<95% RH, noncondensing	<95% RH, noncondensing	<95% RH, noncondensing	<95% RH, noncondensing	<95% RH, noncondensing
Vibration	10 to 150 Hz, 0.35 mm acc. 50 m/s ² , single amplitude (5G max.) for 90 min. in each X, Y and Z directions, in accordance with IEC 60068-2-6						
Pollution degree	2	2	2	2	2	2	2
Climatic class	3K3 according to EN 60721	3K3 according to EN 60721	3K3 according to EN 60721	3K3 according to EN 60721	3K3 according to EN 60721	3K3 according to EN 60721	3K3 according to EN 60721
Safety and Protection							
Transient surge voltage	Varistor	Varistor	Varistor	Varistor	Varistor	Varistor	Varistor
Surge voltage protection against internal surge	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Safety class	Class I with ground connection	Class I with ground connection	Class I with ground connection	Class I with ground connection	Class I with ground connection	Class I with ground connection	Class I with ground connection
Shock	30 G (300 m/s ²) in all directions according to IEC 60068-2-27	30 G (300 m/s ²) in all directions according to IEC 60068-2-27	30 G (300 m/s ²) in all directions according to IEC 60068-2-27	30 G (300 m/s ²) in all directions according to IEC 60068-2-27	30 G (300 m/s ²) in all directions according to IEC 60068-2-27	30 G (300 m/s ²) in all directions according to IEC 60068-2-27	30 G (300 m/s ²) in all directions according to IEC 60068-2-27

Power Derating Curves

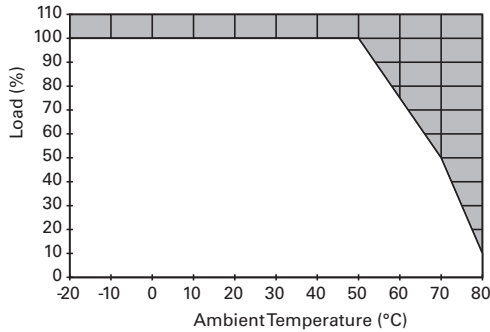
Vertical Mounting Position PSG15E12SP



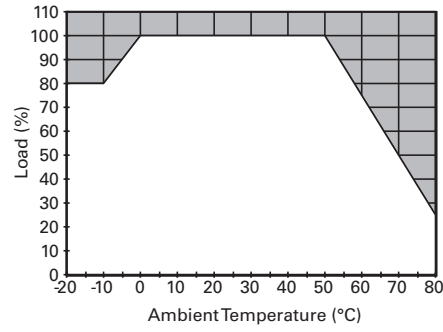
Vertical Mounting Position PSG60E



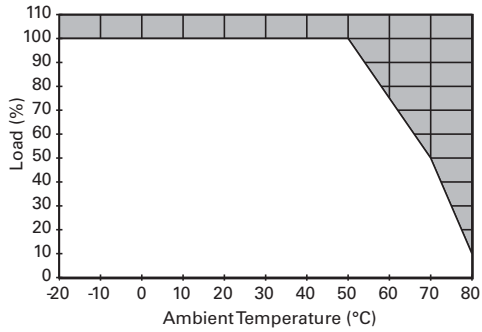
Vertical Mounting Position PSG30E12SP



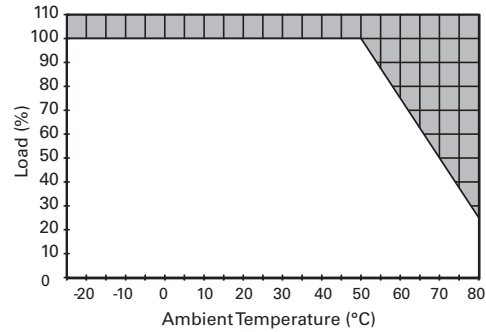
Vertical Mounting Position PSG60E24SP



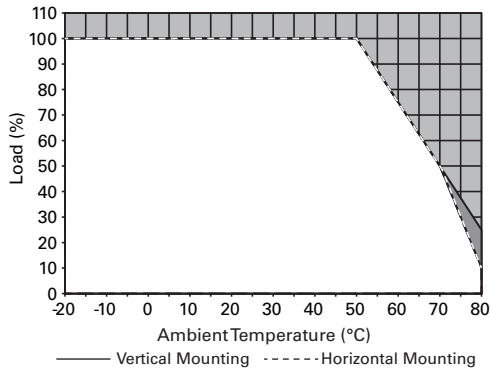
Vertical Mounting Position PSG60E12SM



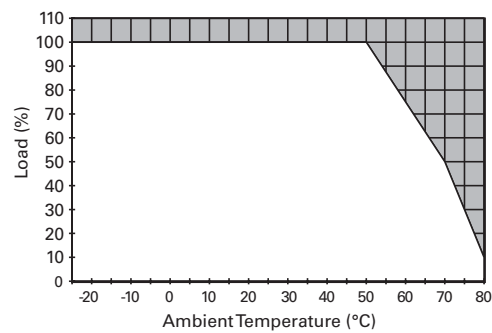
Vertical and Horizontal Mounting Position PSG60E24RM



Vertical and Horizontal Mounting Position PSG100E12SM



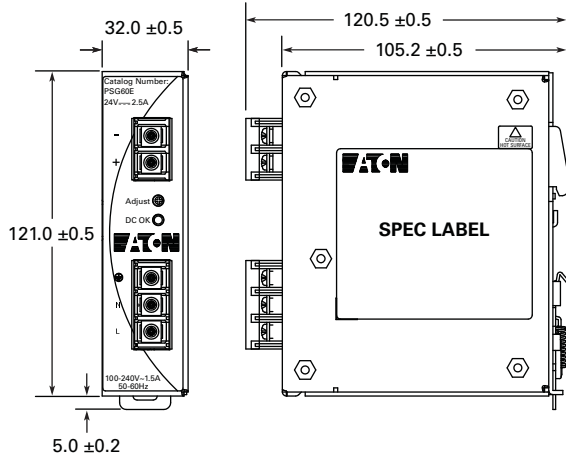
Vertical and Horizontal Mounting Position PSG60N24RP



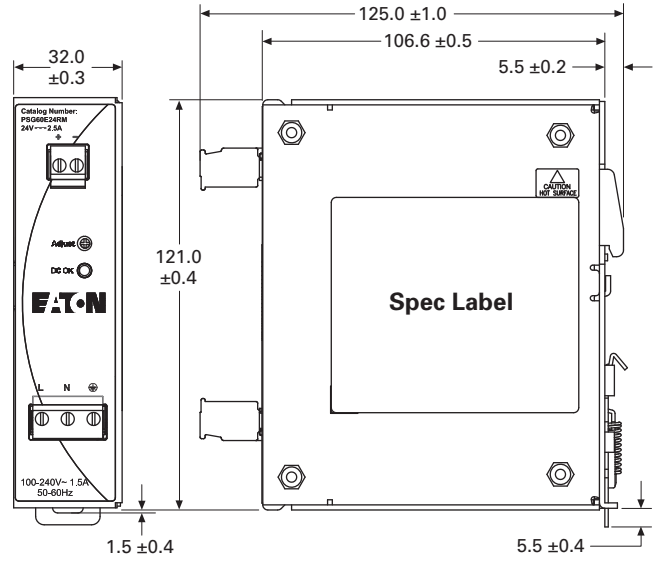
Approximate Dimensions in mm

Note: Dimensions are for reference only.

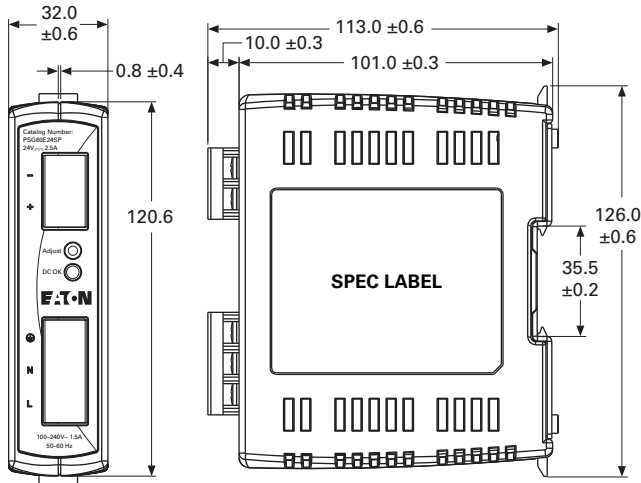
PSG60E



PSG60E24RM



PSG60E24SP



PSG60N24RP

