

## Power Supply



### 6.1 General Purpose and Sensor Power Supplies

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# 6.1

## Power Supplies

### General-Purpose and Sensor Power Supplies

#### Power Supplies



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#### Product Selection Guide

##### Power Supply Series and Features



**PSG Series**

**ELC Series**

**easyRelay Power Series**

**Sensor Power Supplies**

**PSS Series**

##### Features

General-purpose 12 Vdc and 24 Vdc output for 1.25 A to 40 A loads  
 Single-phase and three-phase inputs up to 500 Vac  
 150% power surge output  
 Redundancy modules  
 Buffer module  
 DIN rail mount  
 Rugged metal and plastic housing options  
 Heavy-duty screw and finger-safe terminals  
 Hazardous Location Class I, Division 2 rated models  
 NEC® Class 2 rated model  
 Protection from overvoltage, overcurrent and overtemperature conditions

Compact, low cost 24 Vdc control for loads up to 2 A  
 Plastic enclosure can be DIN rail or panel mounted  
 Single-phase (100–240 Vac) input

Low profile power supplies for 12 Vdc or 24 Vdc applications  
 8 W, 30 W, 60 W or 100 W output power  
 easyRelay styling provides optimal panel aesthetics  
 Plastic enclosure can be DIN rail or panel mounted (with optional kit)  
 CSA Class 1, Division 2 qualified  
 Single-phase (100–240 Vac) input

27 Vdc supplies for tough sensor applications  
 Rugged housings with integrated junction box for mounting outside of electrical enclosures  
 Advanced diagnostic features

24 Vdc control for high startup loads  
 Peak current surge (boost/outrush) up to 6 times nominal current  
 Semi 47 approved  
 Long ride-through capability  
 Pluggable terminal connections  
 Single-phase and three-phase inputs up to 600 Vac

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PSG Series



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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.

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
- 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

- CE marked
- RoHS compliant



**Note:** Some models may not carry all certifications listed.

# 6.1

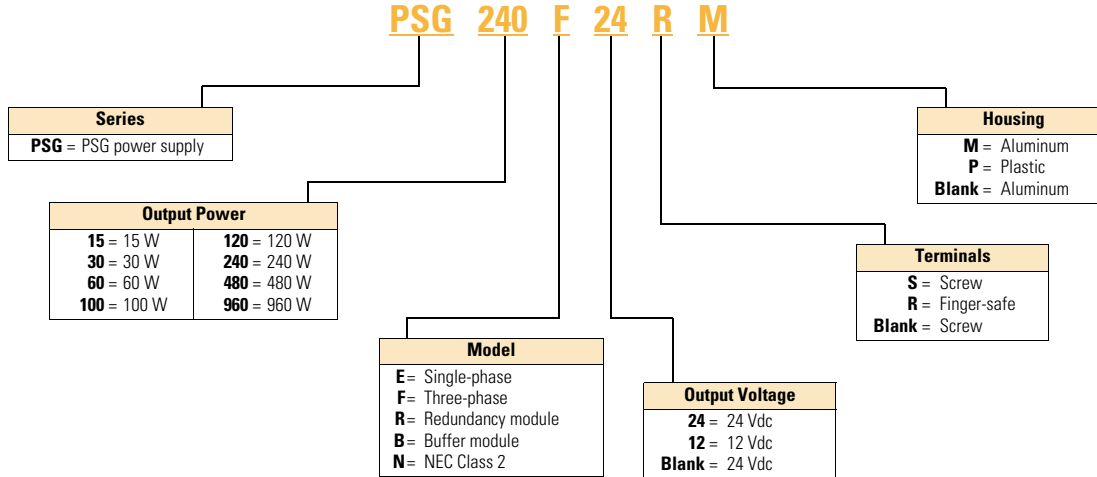
## Power Supplies

### General-Purpose and Sensor Power Supplies

#### 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-T6-6–V7-T6-13** for all available combinations.




**Product Selection**

**PSG Series**

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

Power	Description	Catalog Number
<b>Screw Type Terminals</b>		
<b>PSG100E12SM</b> 	12 Vdc output single-phase power supplies (100–240 Vac nominal input)	15 W 1.25 A output, plastic housing <b>PSG15E12SP</b>
		30 W 2.5 A output, plastic housings <b>PSG30E12SP</b>
		60 W 5 A output, aluminum housing <b>PSG60E12SM</b>
		100 W 8.33 A output, aluminum housing <b>PSG100E12SM</b>
<b>PSG60E</b> 	24 Vdc output single-phase power supplies (100–240 Vac nominal input)	60 W 2.5 A output, aluminum housing <b>PSG60E</b>
		60 W 2.5 A output, plastic housing <b>PSG60E24SP</b>
		120 W 5 A, aluminum housing <b>PSG120E</b>
		240 W 10 A, aluminum housing <b>PSG240E</b>
		480 W 20 A, aluminum housing <b>PSG480E</b>

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

Power	Description	Catalog Number
<b>Finger-Safe Terminals</b>		
<b>PSG60E24RM</b> 	24 Vdc output single-phase power supplies (100–240 Vac nominal input)	60 W 2.5 A output, aluminum housing <b>PSG60E24RM</b>
		120 W 5 A, aluminum housing <b>PSG120E24RM</b>
		240 W 10 A, aluminum housing <b>PSG240E24RM</b>
		480 W 20 A, aluminum housing <b>PSG480E24RM</b>
		60 W 2.5 A output, plastic housing, NEC Class 2 <b>PSG60N24RP</b>
<b>PSG480F24RM</b> 	24 Vdc output, three-phase power supplies (400–500 Vac nominal input)	60 W 2.5 A, aluminum housing <b>PSG60F24RM</b>
		120 W 5 A, aluminum housing <b>PSG120F24RM</b>
		240 W 10 A, aluminum housing <b>PSG240F24RM</b>
		480 W 20 A, aluminum housing <b>PSG480F24RM</b>
		960 W 40 A, aluminum housing <b>PSG960F24RM</b>
<b>PSG480B24RM</b> 	Module power supplies (24 Vdc input)	Buffer module, 480 W 20 A output, aluminum housing <b>PSG480B24RM</b>
		Redundancy module, 480 W <20 A output, aluminum housing <b>PSG480R24RM</b>
		Redundancy module, 960 W <40 A output, aluminum housing <b>PSG960R24RM</b>

## Technical Data and Specifications

## PSG Series

	Single-Phase PSG15E12SP	PSG30E12SP	PSG60E12SM	PSG100E12SM	PSG60E	PSG60E24SP	PSG60E24RM
<b>Input</b>							
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 <sup>①</sup>	<0.37 A	<0.7 A	<1.35 A	<2.5 A	1.1 A	<1.10 A	<1.4 A
Inrush current limitation <sup>①</sup>	<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
<b>Output</b>							
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.) <sup>①</sup>	>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
<b>Galvanic Isolation</b>							
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
<b>General/Physical Data</b>							
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**

<sup>①</sup> Ratings for single-phase models are at 115 Vac; three-phase models are at 400 Vac.

## PSG Series, continued

	Single-Phase PSG15E12SP	PSG30E12SP	PSG60E12SM	PSG100E12SM	PSG60E	PSG60E24SP	PSG60E24RM
<b>General/Physical Data, continued</b>							
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 <sup>2</sup> , 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
<b>Safety and Protection</b>							
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 <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27

## PSG Series, continued

	Single-Phase, continued						
	PSG60N24RP	PSG120E	PSG120E24RM	PSG240E	PSG240E24RM	PSG480E	PSG480E24RM
<b>Input</b>							
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	N/A	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 <sup>①</sup>	<1.5 A at 100 Vac	1.4 A	<2.2 A	2.9 A	<2.5 A	5.7 A	<5 A
Inrush current limitation <sup>①</sup>	<40 A	<80 A	<35 A	N/A	<35 A	N/A	<35 A
Internal fuse	T3.15 AH / 250 V	T3.15 AH / 250 V	T4 AH / 250 V	T6.3 AH / 250 V	T6.3 AH / 250 V	F10H / 250 A	T8 AH / 250 V
External fusing	6 A, 10 A or 16 A	6 A, 10 A or 16 A	6 A, 10 A or 16 A	10 A or 16 A	10 A or 16 A	10 A or 16 A	10 A or 16 A
Leakage current	<1 mA	<1 mA	<1 mA	<3.5 mA	<1 mA	<1 mA	<3 mA
<b>Output</b>							
Power	60 W	120 W	120 W	240 W	240 W	480 W	480 W
Nominal output voltage	24 Vdc ±2%	24 Vdc ±2%	24 Vdc ±2%	24 Vdc ±2%	24 Vdc ±2%	24 Vdc ±2%	24 Vdc ±2%
Adjustment range	22–28 Vdc	22–28 Vdc	24–28 Vdc	22–28 Vdc	24–28 Vdc	22–28 Vdc	22–28 Vdc
Nominal current	2.5 A	5 A	5 A	10 A	10 A	20 A	20 A
Startup with capacitive loads	Max. 8000 µF	Max. 10,000 µF	Max. 10,000 µF	Max. 10,000 µF	Max. 10,000 µF	Max. 10,000 µF	Max. 10,000 µF
Efficiency	>86% at 115 Vac, >87% at 230 Vac	>84% typ	>89% at 115 Vac, >90% at 230 Vac	>84% typ	>90% at 115 Vac and 230 Vac	>86% typ	>90% at 115 Vac and 230 Vac
Current surge	N/A	7.5 A	7.5 A	15 A	15 A	30 A	30 A
Current surge time	N/A	1 s (at 10 s intervals)	5 s	1 s (at 10 s intervals)	5 s	1 s (at 10 s intervals)	5 s
Residual ripple/peak switching (20 MHz)	<50 mVpp / <240 mVpp	<50 mV / <240 mVpp	<50 mVpp / <150 mVpp	<50 mV / <240 mVpp	<50 mVpp / <150 mVpp	<50 mV / <240 mVpp	<50 mVpp
Turn-on time	<3 s	<1 s	<1 s	<1 s	<1 s	<1 s	<1 s
Mains buffering at nominal load (typ.) <sup>①</sup>	>20 ms	>35ms	>20 ms	>20 ms	>20 ms	>20 ms	>20 ms
Parallel operation	PSG480R24RM / PSG960R24RM / With o-ring diode	PSG480R24RM / PSG960R24RM / With o-ring diode	PSG480R24RM / PSG960R24RM / With o-ring diode	PSG480R24RM / PSG960R24RM / With o-ring diode	PSG480R24RM / PSG960R24RM / With o-ring diode	PSG480R24RM / PSG960R24RM / With o-ring diode	PSG480R24RM / PSG960R24RM / With o-ring diode
<b>Galvanic Isolation</b>							
Input/output	4 k Vac	4 k Vac (type test) / 3 k Vac (routine test)	4 k Vac	4 k Vac (type test) / 3 k Vac (routine test)	4 k Vac	4 k Vac (type test) / 3 k Vac (routine test)	4 k Vac
Input/ground	1.5 k Vac	1.5 k Vac (type test) / 1.5 k Vac (routine test)	1.5 k Vac	1.5 k Vac (type test) / 1.5 k Vac (routine test)	1.5 k Vac	1.5 k Vac (type test) / 1.5 k Vac (routine test)	1.5 k Vac
Output/ground	1.5 k Vac	1.5 k Vac (type test) / 500 Vac (routine test)	1.5 k Vac	1.5 k Vac (type test) / 500 Vac (routine test)	1.5 k Vac	1.5 k Vac (type test) / 500 Vac (routine test)	1.5 k Vac
<b>General/Physical Data</b>							
Housing material	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	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	>800,000 hr	>800,000 hr	>800,000 hr	>300,000 hr	>500,000 hr	>300,000 hr	>500,000 hr
Dimensions (L)	120.6 mm	121 mm	121 mm	121 mm	121 mm	121 mm	121 mm
Dimensions (W)	32 mm	32 mm	50 mm	85 mm	85 mm	160 mm	144 mm
Dimensions (H)	119.3 mm	120 mm	123.1 mm	118.5 mm	124.1 mm	115 mm	118.6 mm
Weight (kg)	0.33	0.54	0.72	1.04	1.1	1.8	1.37
Terminals	Finger-safe, fixed	Screw	Finger-safe, removable	Screw	Finger-safe, removable	Screw	Finger-safe, fixed
Wire size	AWG 22–10	AWG 22–14	AWG 20–12	AWG 22–14	AWG 16–12	AWG 16–14 (input) AWG 12–10 (output)	AWG 18–10
Operating temperature	–20 °C to +80 °C	–20 °C to +75 °C	–20 °C to +80 °C	–20 °C to +75 °C	–20 °C to +80 °C	–20 °C to +75 °C	–25 °C to +75 °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**

<sup>①</sup> Ratings for single-phase models are at 115 Vac; three-phase models are at 400 Vac.



PSG Series, continued

		Single-Phase, continued						
		PSG60N24RP	PSG120E	PSG120E24RM	PSG240E	PSG240E24RM	PSG480E	PSG480E24RM
<b>General/Physical Data, continued</b>								
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	>50 °C derate power by 2.5% / °C	>50 °C derate power by 2.5% / °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	>50 °C derate power by 2.5% / °C, >70 °C to 75 °C derate power by 5% / °C
Power derating— horizontal mounting	>50 °C derate power by 2.5% / °C, >70 °C derate power by 4% / °C	N/A	>50 °C derate power by 2.5% / °C	N/A	N/A	N/A	N/A	N/A
Operating humidity	<95% RH, noncondensing	<95% RH, noncondensing	<95% RH, noncondensing	<95% RH, noncondensing	<95% RH, noncondensing	<95% RH, noncondensing	<95% RH, noncondensing	<95% RH, noncondensing
Vibration	10 to 500 Hz, 0.35 mm acc. 30 m/s <sup>2</sup> , single amplitude (3 G max.) for 60 min. in each X, Y and Z directions, in accordance with IEC 60068-2-6	10 to 150 Hz, 0.35 mm acc. 50 m/s <sup>2</sup> , single amplitude (5G max.) for 90 min. in each X, Y and Z directions, in accordance with IEC 60068-2-6	10 to 150 Hz, 0.35 mm acc. 50 m/s <sup>2</sup> , single amplitude (5G max.) for 90 min. in each X, Y and Z directions, in accordance with IEC 60068-2-6	10 to 150 Hz, 0.35 mm acc. 50 m/s <sup>2</sup> , single amplitude (5G max.) for 90 min. in each X, Y and Z directions, in accordance with IEC 60068-2-6	10 to 150 Hz, 0.35 mm acc. 50 m/s <sup>2</sup> , single amplitude (5G max.) for 90 min. in each X, Y and Z directions, in accordance with IEC 60068-2-6	10 to 150 Hz, 0.35 mm acc. 50 m/s <sup>2</sup> , single amplitude (5G max.) for 90 min. in each X, Y and Z directions, in accordance with IEC 60068-2-6	10 to 150 Hz, 0.35 mm acc. 50 m/s <sup>2</sup> , single amplitude (5G max.) for 90 min. in each X, Y and Z directions, in accordance with IEC 60068-2-6	10 to 150 Hz, 0.35 mm acc. 50 m/s <sup>2</sup> , 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	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	3K3 according to EN 60721
<b>Safety and Protection</b>								
Transient surge voltage	Varistor	Varistor	Varistor	Varistor	Varistor	Varistor	Varistor	Varistor
Surge voltage protection against internal surge	Yes	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	Class I with ground connection
Shock	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27

## PSG Series, continued

	Three-Phase PSG60F24RM	PSG120F24RM	PSG240F24RM	PSG480F24RM	PSG960F24RM
<b>Input</b>					
Nominal voltage	3 x 400–500 Vac	3 x 400–500 Vac	3 x 400–500 Vac	3 x 400–500 Vac	3 x 400–500 Vac
AC input range	3 x 320–600 Vac	3 x 320–600 Vac	3 x 320–600 Vac	3 x 320–600 Vac	3 x 320–600 Vac
DC input range	450–800 Vdc	450–800 Vdc	450–800 Vdc	450–800 Vdc	450–800 Vdc
Frequency	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz
Nominal current <sup>①</sup>	<0.3 A	<0.5 A	<0.75 A	<1 A	<1.7 A
Inrush current limitation <sup>①</sup>	<30 A	<30 A	<40 A	<50 A	<40 A
Internal fuse	T 3.15 AH / 500 V, 600 V	T 3.15 AH / 500 V, 600 V	T 3.15 AH / 500 V, 600 V	T 3.15 AH / 500 V	T 4 AH / 500 V
External fusing	3 x circuit breakers 6 A, 10 A or 16 A	3 x circuit breakers 6 A, 10 A or 16 A	3 x circuit breakers 6 A, 10 A or 16 A	3 x circuit breakers 6 A, 10 A or 16 A	3 x circuit breakers 10 A or 16 A
Leakage current	<3.5 mA	<3.5 mA	<3.5 mA	<3.5 mA	<3.5 mA
<b>Output</b>					
Power	60 W	120 W	240 W	480 W	960 W
Nominal output voltage	24 Vdc ±2%	24 Vdc ±2%	24 Vdc ±2%	24 Vdc ±2%	24 Vdc ±2%
Adjustment range	24–28 Vdc	24–28 Vdc	24–28 Vdc	24–28 Vdc	24–28 Vdc
Nominal current	2.5 A	5 A	10 A	20 A	40 A
Startup with capacitive loads	Max. 10,000 µF	Max. 10,000 µF	Max. 10,000 µF	Max. 10,000 µF	Max. 10,000 µF
Efficiency	>86% at 3 x 400 Vac and 3 x 500 Vac	>88% at 3 x 400 Vac and 3 x 500 Vac	>92% at 3 x 400 Vac and 3 x 500 Vac	>91% at 3 x 400 Vac and 3 x 500 Vac	>92% at 3 x 400 Vac and 3 x 500 Vac
Current surge	3.75 A	7.5 A	15 A	30 A	60 A
Current surge time	5 s	5 s	5 s	5 s	5 s
Residual ripple/peak switching (20 MHz)	<50 mVpp	<50 mVpp	<150 mVpp	<150 mVpp	<240 mVpp
Turn-on time	<1 s	<1 s	<1 s	<1 s	<1.5 s
Mains buffering at nominal load (typ.) <sup>①</sup>	>20 ms	>20 ms	>20 ms	>20 ms	>20 ms
Parallel operation	PSG480R24RM / PSG960R24RM / With o-ring diode	PSG480R24RM / PSG960R24RM / With o-ring diode	PSG480R24RM / PSG960R24RM / With o-ring diode	PSG480R24RM / PSG960R24RM / With o-ring diode	PSG960R24RM / With o-ring diode
<b>Galvanic Isolation</b>					
Input/output	4 k Vac	4 k Vac	4 k Vac	4 k Vac	4 k Vac
Input/ground	2 k Vac	2 k Vac	2 k Vac	2 k Vac	2 k Vac
Output/ground	1.5 k Vac	1.5 k Vac	1.5 k Vac	1.5 k Vac	1.5 k Vac
<b>General/Physical Data</b>					
Housing material	Aluminum	Aluminum	Aluminum	Aluminum	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
MTBF	>500,000 hr	>500,000 hr	>300,000 hr	>500,000 hr	>300,000 hr
Dimensions (L)	121 mm	121 mm	121 mm	121 mm	121 mm
Dimensions (W)	50 mm	50 mm	70 mm	140 mm	255 mm
Dimensions (H)	117.3 mm	117.3 mm	117.3 mm	117.3 mm	117.3 mm
Weight (kg)	0.66	0.66	0.89	1.35	2.6
Terminals	Finger-safe, fixed	Finger-safe, fixed	Finger-safe, fixed	Finger-safe, fixed	Finger-safe, fixed
Wire size	AWG 18–12	AWG 18–12	AWG 18–12 (input) AWG 16–12 (output)	AWG 18–8 (input) AWG 12–10 (output)	AWG 18–8 (input) AWG 12–10 (output)
Operating temperature	–25 °C to +75 °C	–25 °C to +75 °C	–25 °C to +75 °C	–25 °C to +80 °C	–25 °C to +65 °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

**Note**

<sup>①</sup> Ratings for single-phase models are at 115 Vac; three-phase models are at 400 Vac.

## PSG Series, continued

	Three-Phase, continued				
	PSG60F24RM	PSG120F24RM	PSG240F24RM	PSG480F24RM	PSG960F24RM
<b>General/Physical Data, continued</b>					
Power derating— vertical mounting	>50 °C derate power by 2.5% / °C, >70 °C derate power by 5% / °C	>50 °C derate power by 2.5% / °C, >70 °C derate power by 5% / °C	>50 °C derate power by 2.5% / °C, >70 °C derate power by 5% / °C	>50 °C derate power by 2.5% / °C, >70 °C derate power by 5% / °C	>50 °C derate power by 2.5% / °C
Power derating— horizontal mounting	>45 °C derate power by 2.5% / °C, >55 °C derate power by 1.66% / °C, >70 °C derate power by 5% / °C	>40 °C derate power by 2.5% / °C, >60 °C derate power by 5% / °C	>40 °C derate power by 2.5% / °C, >60 °C derate power by 5% / °C	N/A	N/A
Operating humidity	<95% RH, noncondensing	<95% RH, noncondensing	<95% RH, noncondensing	5 to 95% RH, noncondensing	5 to 95% RH, noncondensing
Vibration	10 to 500 Hz, 0.35 mm acc. 30 m/s <sup>2</sup> , single amplitude (3 G max.) for 60 min. in each X, Y and Z directions, in accordance with IEC 60068-2-6				
Pollution degree	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
<b>Safety and Protection</b>					
Transient surge voltage	Varistor	Varistor	Varistor	Varistor	Varistor
Surge voltage protection against internal surge	Yes	Yes	Yes	Yes	Yes
Safety class	Class I with ground connection				
Shock	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/s <sup>2</sup> ) in all directions according to IEC 60068-2-27

## PSG Series, continued

	Redundancy Modules	
	PSG480R24RM	PSG960R24RM
<b>Input</b>		
Nominal voltage	24–48 Vdc	24–48 Vdc
DC input range	22–60 Vdc	22–60 Vdc
Nominal current	<20 A	<40 A
Inrush current limitation	<25 A	<50 A
<b>Output</b>		
Nominal output voltage	Vin–0.65 V (typ.)	Vin–0.65 V (typ.)
Nominal current	<20 A	<40 A
Efficiency	>97% typ.	>97% typ.
<b>Galvanic Isolation</b>		
Input/ground	1.5 k Vac	1.5 k Vac
Output/ground	1.5 k Vac	1.5 k Vac
<b>General/Physical Data</b>		
Housing material	Aluminum	Aluminum
Signals <sup>①</sup>	Green LED for DC Vin1 OK and DC Vin2 OK	Green LED for DC Vin1 OK and DC Vin2 OK
MTBF	>800,000 hr	>800,000 hr
Dimensions (L)	121 mm	121 mm
Dimensions (W)	50 mm	50 mm
Dimensions (H)	122.1 mm	122.1 mm
Weight (kg)	0.375	0.515
Terminals	Finger safe—fixed	Finger safe—fixed
Wire size	AWG 12–10	AWG 12–10
Operating temperature	–40 °C to +80 °C	–40 °C to +80 °C
Storage temperature	–40 °C to +85 °C	–40 °C to +85 °C
Power de-rating—vertical mounting	> 50 °C de-rate power by 2.5% / °C	> 50 °C de-rate power by 2.5% / °C
Power de-rating—horizontal mounting	N/A	N/A
Operating humidity	< 95% RH, noncondensing	< 95% RH, noncondensing
Vibration	10 to 500 Hz, 0.35 mm acc. 30m/s <sup>2</sup> , single amplitude (3 G max.) for 60 min. in each X, Y and Z directions, in accordance with IEC 60068-2-6	10 to 500 Hz, 0.35 mm acc. 30m/s <sup>2</sup> , single amplitude (3 G max.) for 60 min. in each X, Y and Z directions, in accordance with IEC 60068-2-6
Pollution degree	2	2
Climatic class	3K3 according to EN 60721	3K3 according to EN 60721
<b>Safety and Protection</b>		
Safety class	Class 2 with ground connection	Class III with ground connection
Shock	30 G (300 m/S <sup>2</sup> ) in all directions according to IEC 60068-2-27	30 G (300 m/S <sup>2</sup> ) in all directions according to IEC 60068-2-27

**Note**

<sup>①</sup> The LED will turn on when the Vin1 and Vin2 > 18 V ±5% (for 24 V system) or > 36 V ±5% (for 48 V system) and not more than 30 V (for 24 V system) or not more than 60 V (for 48 V system), the relay contacts will be closed. If Vin1 and Vin2 is under or over this range, the LED will be turned off.

## PSG Series, continued

**Buffer Module  
PSG480B24RM**

<b>Input</b>	
Nominal voltage	24 Vdc
DC input range	22.8–28.8 Vdc
Maximum voltage	35 Vdc
Current	Charging mode: <0.6 A Discharging mode: 20 A max.
Power (standby mode)	2.5 W average
Maximum signal (inhibit)	35 V / 10 mA
Max inrush current	< 20 A
Charging time	< 30s
<b>Output</b>	
Nominal voltage	24 Vdc typ.
DC adjustment range	Switch = "Fix 22V": Buffering starts if terminal voltage falls below 22 V Switch = "Vin-1V" (Factory Setting): Buffering starts if terminal voltage is decreased by >1 V
Maximum voltage	35 Vdc
Current	20 A max.
buffering time	250 ms min. at 24 V/20 A load, 5 s min. at 24 V/1 A load
Maximum signal	35 V / 10 mA
PARD (20MHz)	<200 mVpp
Galvanic isolation	
Input/ground	1.5 k Vac
Output/ground	1.5 k Vac
Signal/ground	1.5 k Vac
<b>General/Physical Data</b>	
Housing material	Aluminum
Signals	Green LED off: unit is discharged or Vin < 22 Vdc Green LED on: unit is fully charged Green LED blinking slowly: unit is charging Green LED blinking quickly: unit is discharging
MTBF	>800,000 hr
Parallel connection	Yes
Series connection	No
Dimensions (L)	121 mm
Dimensions (W)	70 mm
Dimensions (H)	120.1 mm
Weight (kg)	0.76
Terminals	Finger safe—fixed
Wire Size	Input / Output: AWG 12–10 Signal: AWG 24–10
Operating temperature	–25 °C to +75 °C
Storage temperature	–25 °C to +85 °C
Power de-rating—vertical mounting	>70 °C de-rate power by 5% / °C
Operating humidity	< 95% RH, noncondensing
Vibration	10 to 500 Hz, 0.35 mm acc. 30 m/s <sup>2</sup> , single amplitude (3 G max.) for 60 min. in each X, Y and Z directions, in accordance with IEC 60068-2-6
Pollution degree	2
<b>Safety and Protection</b>	
Shock	30 G (300 m/S <sup>2</sup> ) in all directions according to IEC60068-2-27
Safety class	Class I with ground connection

# 6.1

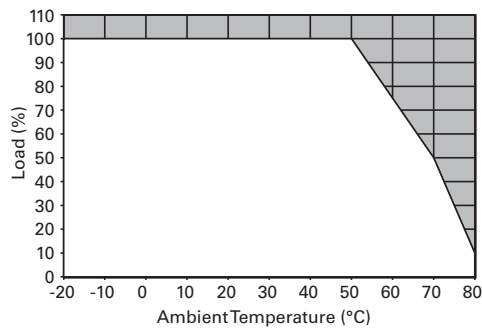
## Power Supplies

### General-Purpose and Sensor Power Supplies

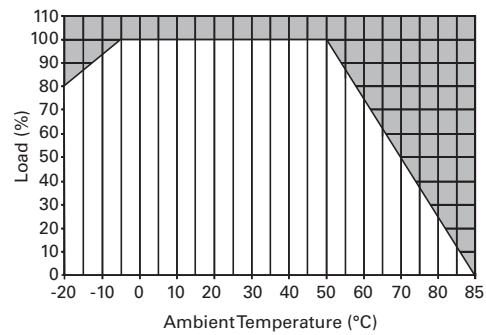
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#### Power Derating Curves

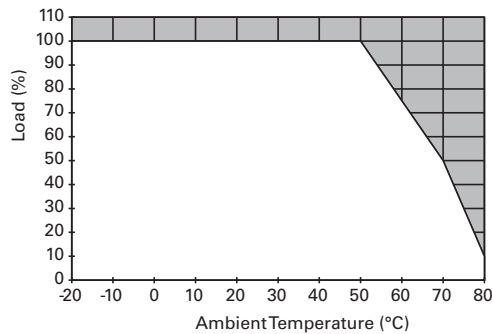
Vertical Mounting Position PSG15E12SP



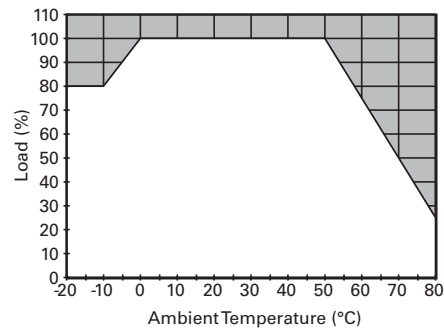
Vertical Mounting Position PSG60E



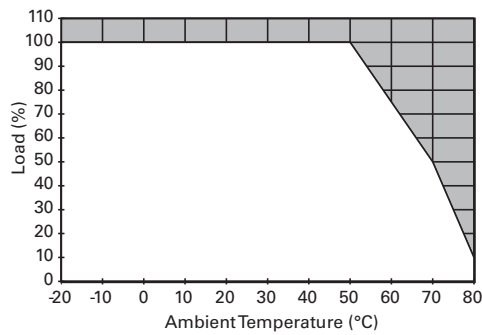
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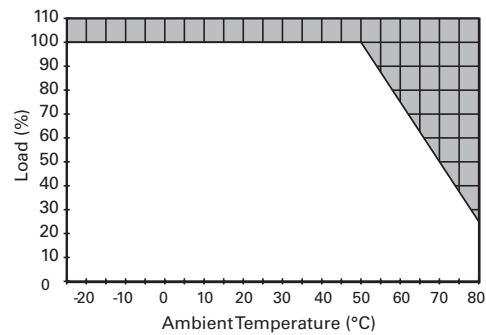
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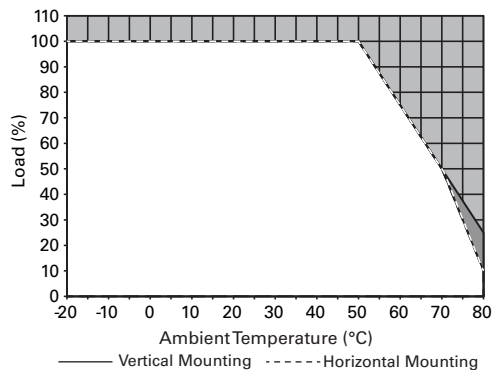
Vertical Mounting Position PSG60E12SM



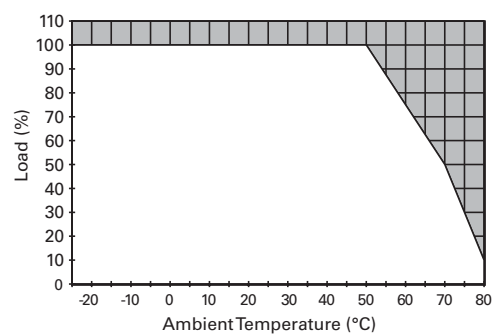
Vertical and Horizontal Mounting Position PSG60E24RM



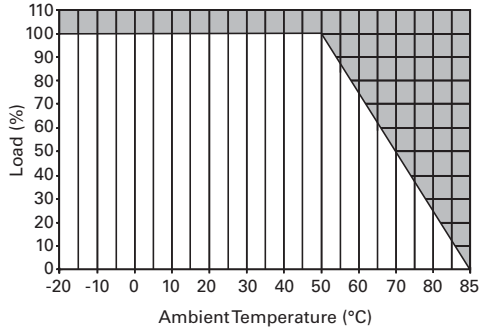
Vertical and Horizontal Mounting Position PSG100E12SM



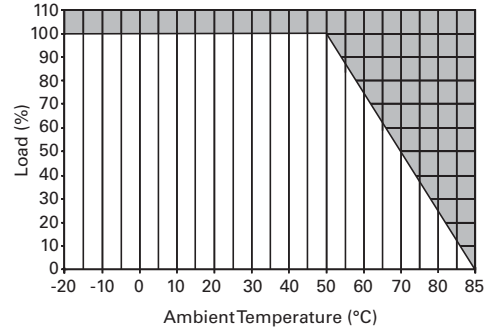
Vertical and Horizontal Mounting Position PSG60N24RP



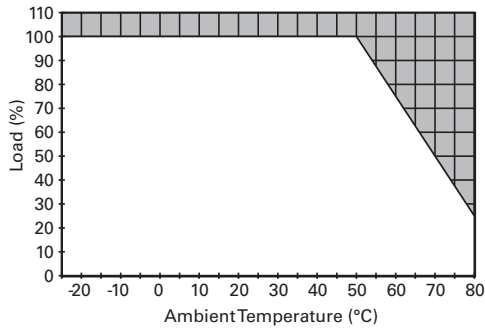
Vertical Mounting Position PSG120E



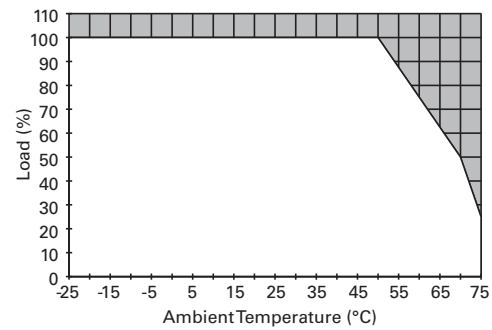
Vertical Mounting Position PSG480E



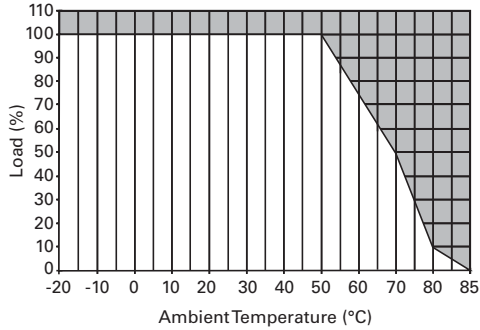
Vertical and Horizontal Mounting Position PSG120E24RM



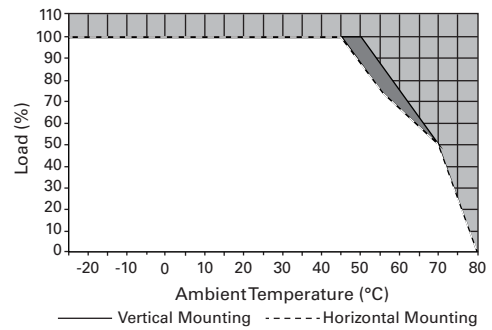
Vertical Mounting Position PSG480E24RM



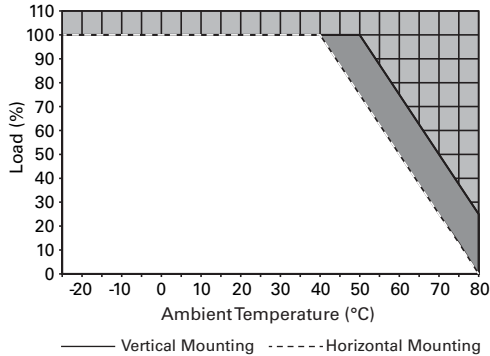
Vertical Mounting Position PSG240E



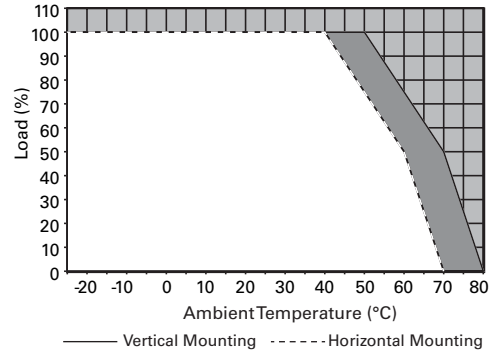
Vertical and Horizontal Mounting Position PSG60F24RM



Vertical and Horizontal Mounting Position PSG240E24RM



Vertical and Horizontal Mounting Position PSG120F24RM



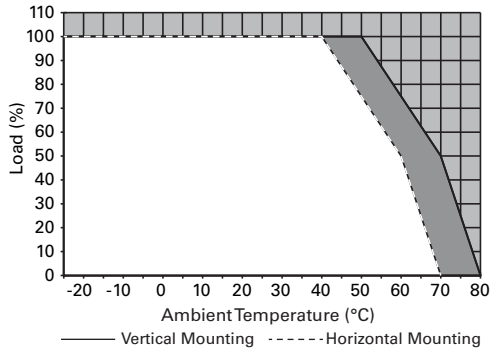
# 6.1

## Power Supplies

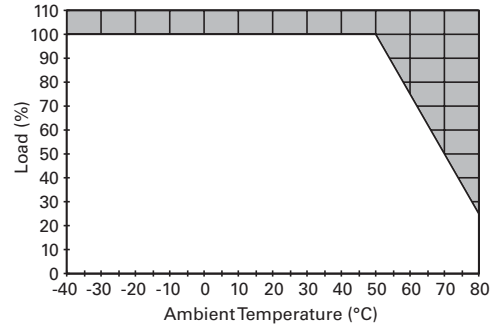
### General-Purpose and Sensor Power Supplies

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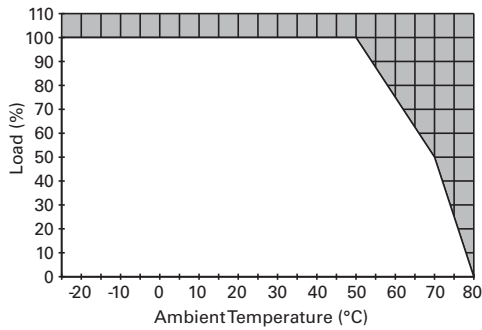
Vertical and Horizontal Mounting Position PSG240F24RM



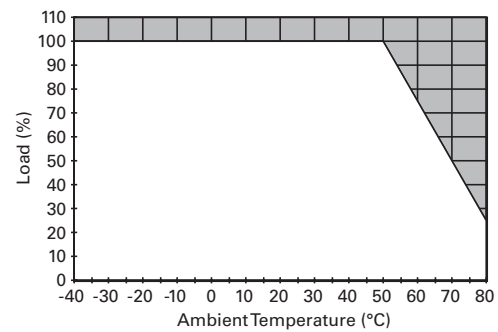
Vertical Mounting Position PSG480R24RM



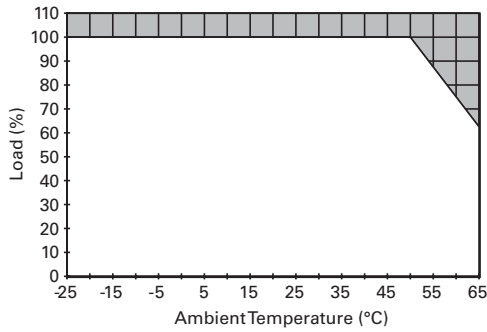
Vertical Mounting Position PSG480F24RM



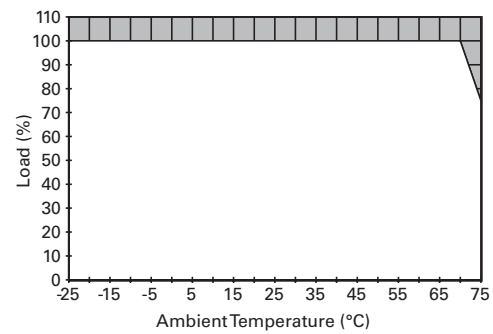
Vertical Mounting Position PSG960R24RM



Vertical Mounting Position PSG960F24RM



Vertical Mounting Position PSG480B24RM



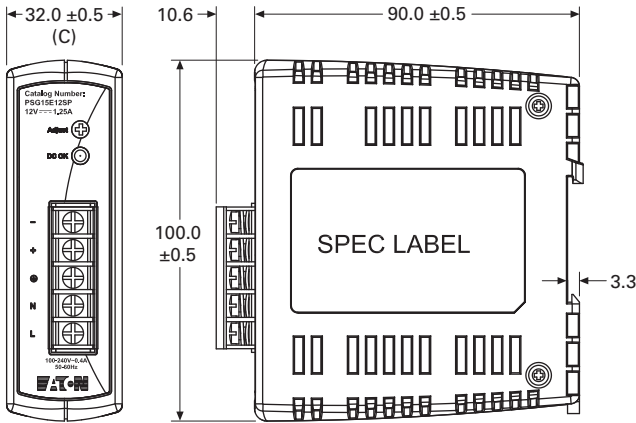


**Dimensions**

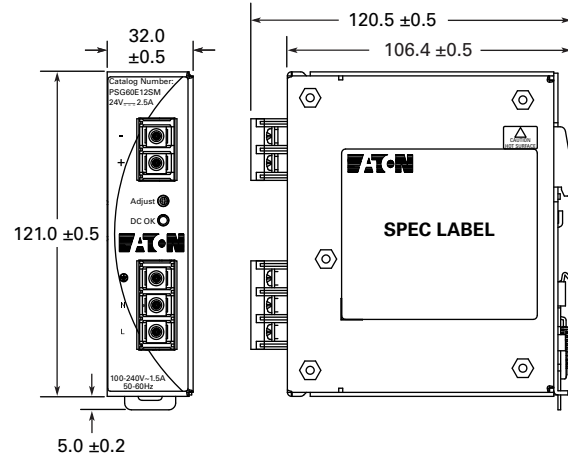
Approximate Dimensions in mm

**Note:** Dimensions are for reference only.

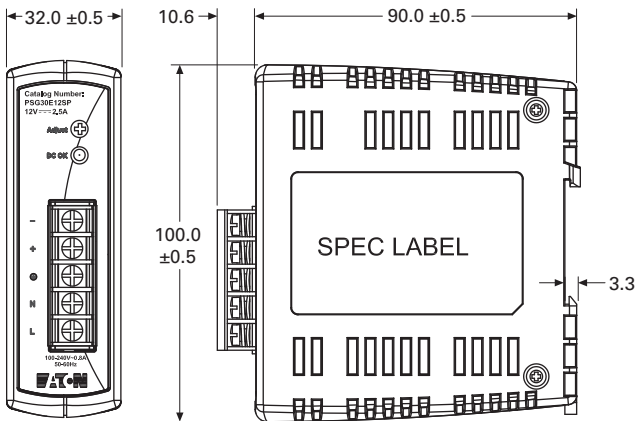
**PSG15E12SP**



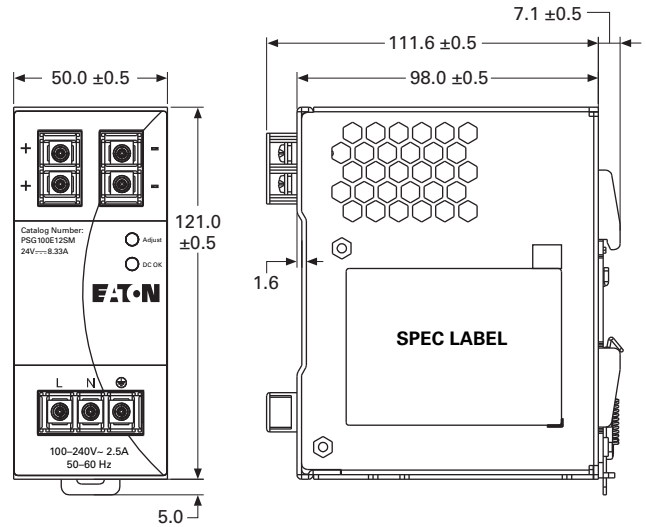
**PSG60E12SM**



**PSG30E12SP**



**PSG100E12SM**



# 6.1

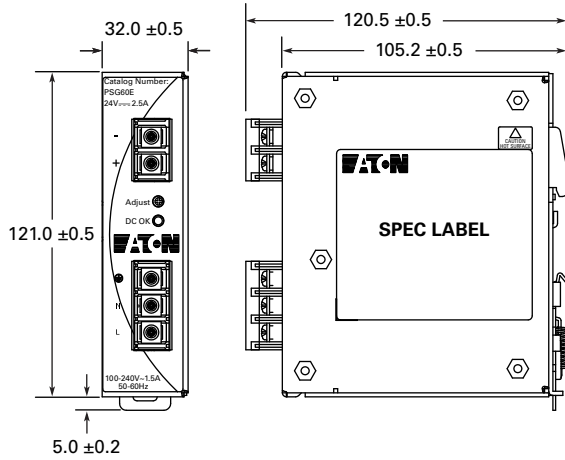
## Power Supplies

### General-Purpose and Sensor Power Supplies

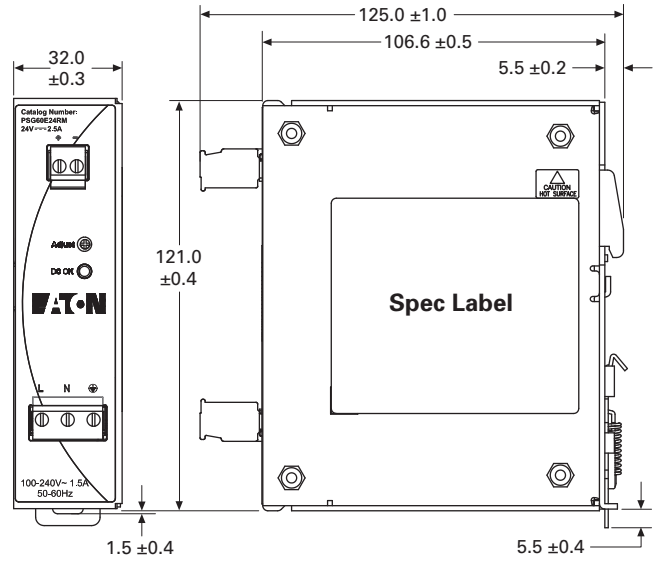
Approximate Dimensions in mm

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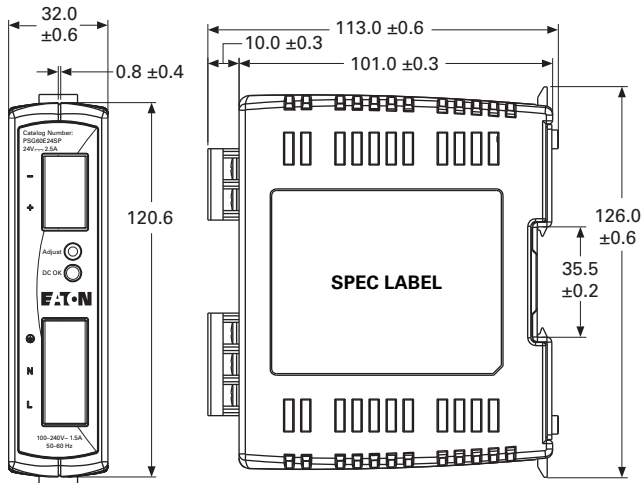
#### PSG60E



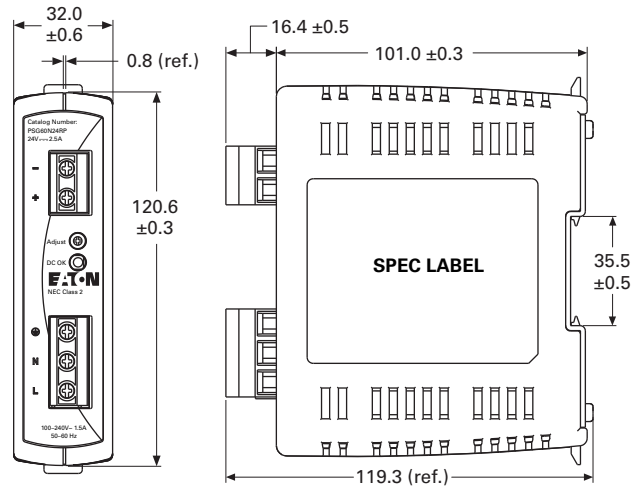
#### PSG60E24RM



#### PSG60E24SP



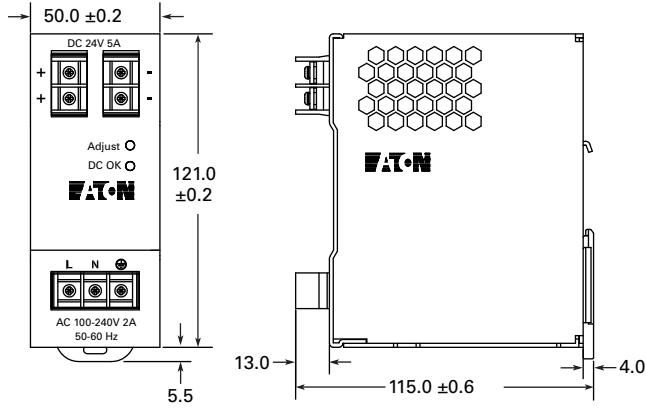
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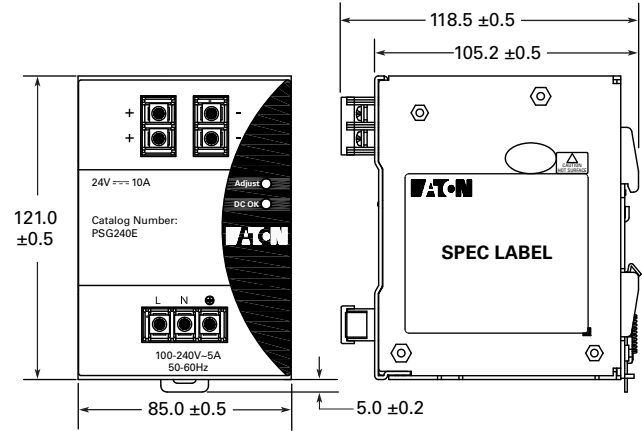
Approximate Dimensions in mm

**Note:** Dimensions are for reference only.

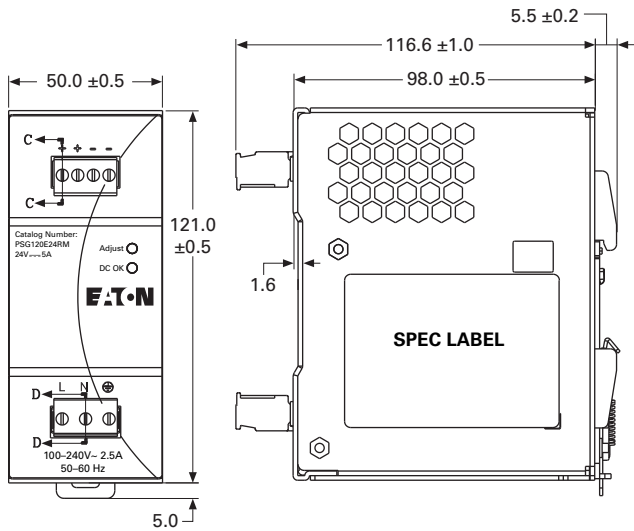
**PSG120E**



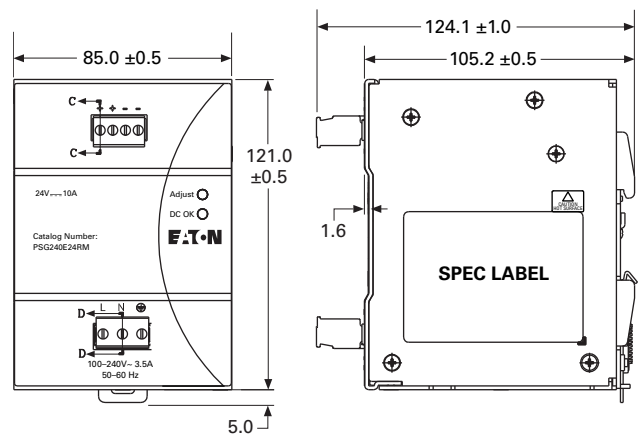
**PSG240E**



**PSG120E24RM**



**PSG240E24RM**



# 6.1

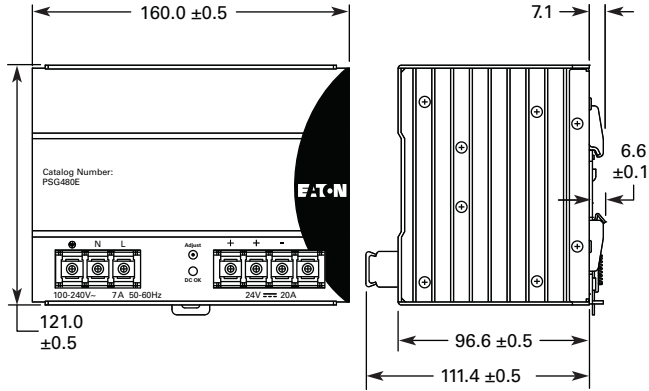
## Power Supplies

### General-Purpose and Sensor Power Supplies

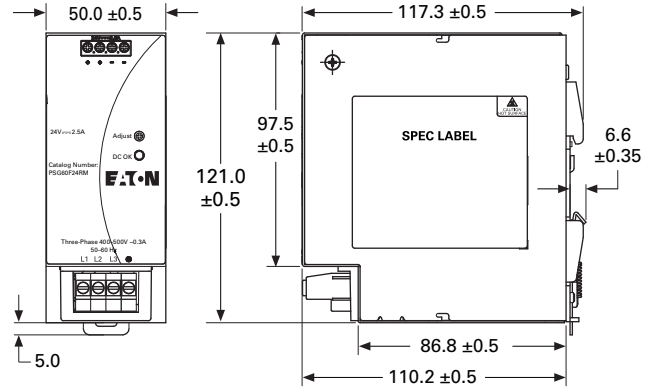
Approximate Dimensions in mm

**Note:** Dimensions are for reference only.

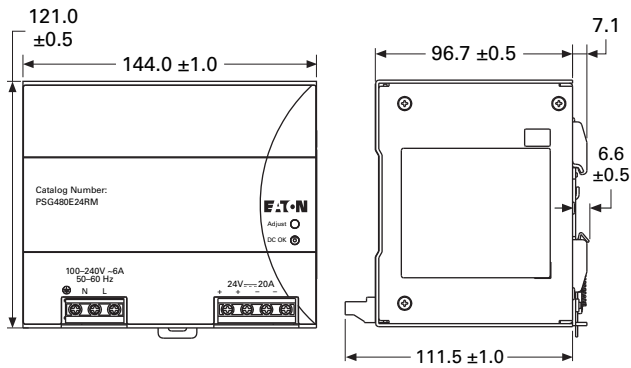
**PSG480E**



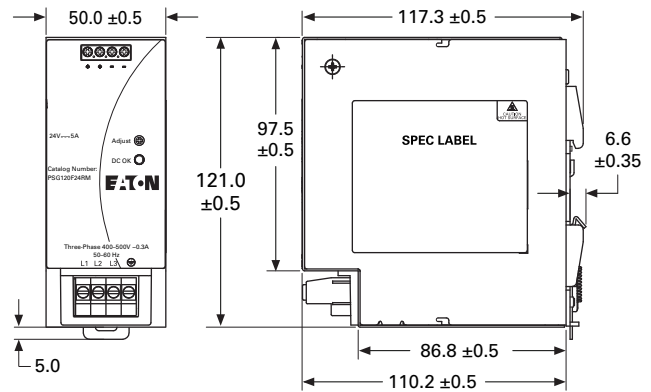
**PSG60F24RM**



**PSG480E24RM**



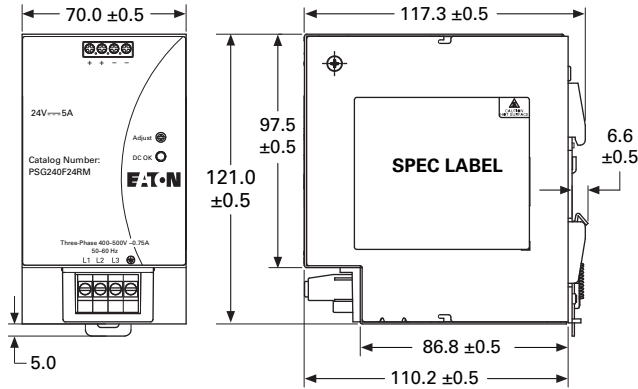
**PSG120F24RM**



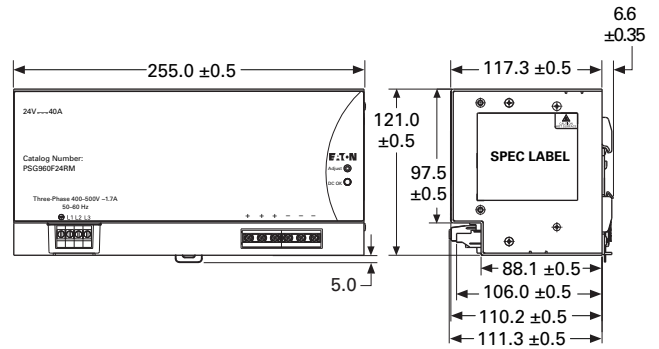
Approximate Dimensions in mm

**Note:** Dimensions are for reference only.

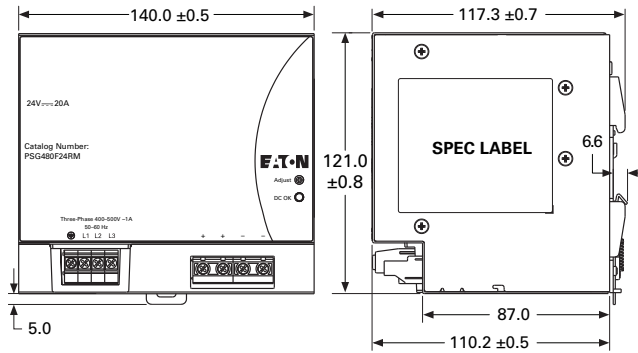
**PSG240F24RM**



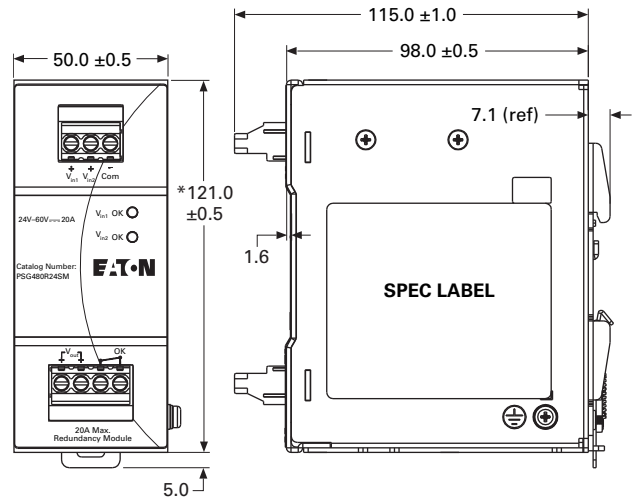
**PSG960F24RM**



**PSG480F24RM**



**PSG480R24RM**



# 6.1

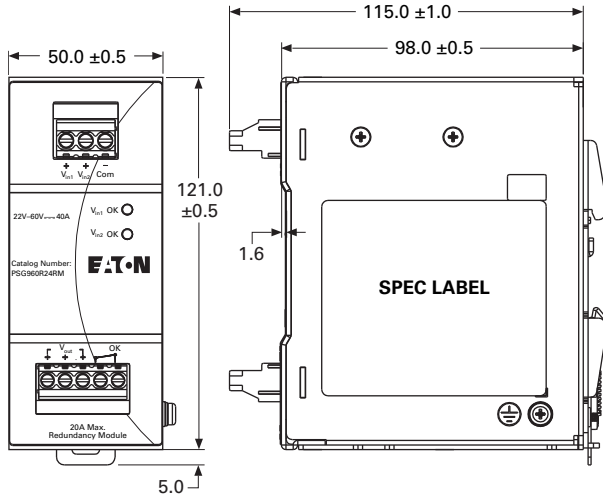
## Power Supplies

### General-Purpose and Sensor Power Supplies

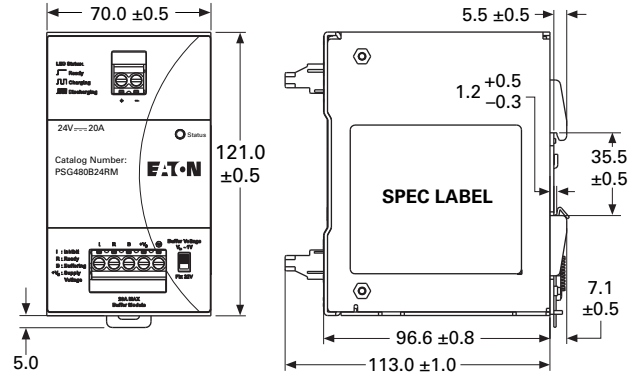
Approximate Dimensions in mm

**Note:** Dimensions are for reference only.

#### PSG960R24RM



#### PSG480B24RM



ELC Series



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ELC Series

Product Description

Eaton’s ELC power supplies are the perfect products for those applications requiring a very compact and low-cost source for 24 Vdc power. While these products were developed to be a perfect match for our Eaton Logic Controllers, they can be used in a variety of applications.

The lightweight, DIN rail mounted enclosures, wide input voltage range and robust screw terminals make these power supplies easy to install and use. They are available in 1 A and 2 A models.

Features, Benefits and Functions

- Universal input voltage: 85–264 Vac
- Compact size, with common depth and height across models allows for common panel depths and family consistency
- ELC styling provides maximum aesthetic appeal when used with Eaton Logic Controllers
- Front-mounted pressure plate screw terminals for a robust connection
- Removable finger-safe protective cover for terminals
- Power ON indication LED
- Integrated mounting hardware for panel mounting or DIN rail mounting

Standards and Certifications

- cULus listed
- CE marked
- RoHS compliant



## Product Selection

## ELC-PS01

## ELC Series



Description	Catalog Number
24 watt, 1 amp power supply	ELC-PS01
48 watt, 2 amp power supply	ELC-PS02

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## Technical Data and Specifications

## ELC Series

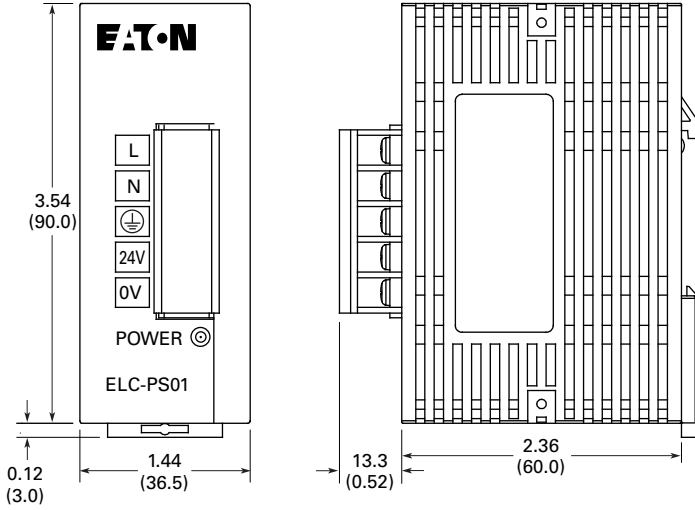
Capacity	ELC-PS01 24 W	ELC-PS02 48 W
<b>Input</b>		
Nominal voltage	100–240 Vac	100–240 Vac
Voltage range	85–264 Vac	85–264 Vac
Frequency	47–63 Hz	47–63 Hz
<b>Output</b>		
Nominal output voltage	24 Vdc ± 3%	24 Vdc ± 3%
Nominal current	1 A	2 A
Efficiency	78% to 87% typical at full load	78% to 87% typical at full load
Residual ripple/peak switching (20 MHz)	< 100 mV typical at full load	< 240 mV typical at full load
<b>General/Physical Data</b>		
Housing material	Plastic	Plastic
Dimensions (D)	60 mm	60 mm
Dimensions (W)	36.5 mm	55 mm
Dimensions (H)	90 mm	90 mm
Weight (g)	158	250
Operating temperature	0 °C to +55 °C	0 °C to +55 °C
Storage temperature	–25 °C to +70 °C	–25 °C to +70 °C
Operating humidity	50% to 95% RH, noncondensing	50% to 95% RH, noncondensing
Pollution degree	2	2
<b>Approvals/Certifications</b>		
	UL 508, CE, RoHS, EMC directive 89/336/EEC, low voltage directive 73/23/EEC	UL 508, CE, RoHS, EMC directive 89/336/EEC, low voltage directive 73/23/EEC
<b>Safety and Protection</b>		
Overload/short circuit protection	Auto recovery	Auto recovery



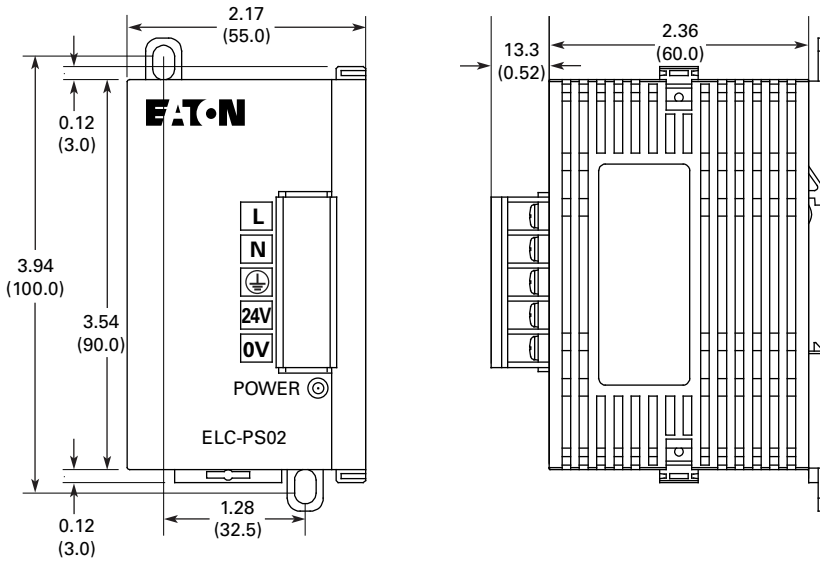
**Dimensions**

Approximate Dimensions in Inches (mm)

**ELC-PS01 Power Supply**



**ELC-PS02 Power Supply**



#### easyRelay Power Supply



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### easyRelay Power Supply

#### Product Description

Eaton’s easyRelay power supplies are the perfect products for those applications requiring a low amperage 24 Vdc power source. While these products were developed to be a perfect match for our easyRelay products, they can be used in a variety of applications.

#### Features, Benefits and Functions

- Universal input voltage: 85–264 Vac, 50/60 Hz
- Wide operating temperature range (–25 °C to +55 °C)
- Power ON / diagnostics LED: continuous light on—fault-free operation; flashing LED—short circuit overload on voltage output
- Optional mounting hardware for panel mounting (EZB4-101-GF1) or standard DIN rail mounting
- Finger-safe, side-entry screw clamp terminals for clean wiring
- Primary switched-mode power supplies
- Output voltages can be connected in parallel to increase power output or for redundant operation to achieve greater system availability
- Safety extra low voltage (SELV to EN 55 022)
- Radio interference Class B to EN 55 011 and EN 55 022 for use in industrial and public networks

#### Standards and Certifications





- UL listed
- CSA certified
- CE marked
- RoHS compliant
- CSA Class I, Division 2 rated for groups A, B, C, D



## Product Selection

**easyRelay Power Supply Units**

Rated input voltage 100–240 Vac, single-phase.

	<b>Input Voltage Range</b>	<b>Rated Output Voltage</b>	<b>Output Voltage Setting Range</b>	<b>Rated Output Power</b>	<b>Rated Output Current</b>	<b>Catalog Number</b>
<b>EASY200-POW</b> 	100–240 Vac	24 Vdc/12 Vdc	—	8 W	0.35 A / 20 mA	<b>EASY200-POW</b>
<b>EASY400-POW</b> 	100–240 Vac	24 Vdc	—	30 W	1.25 A	<b>EASY400-POW</b>
<b>EASY500-POW</b> 	100–240 Vac	24 Vdc	—	60 W	2.5 A	<b>EASY500-POW</b>
<b>EASY600-POW</b> 	100–240 Vac	24 Vdc	—	100 W	4.2 A	<b>EASY600-POW</b>

## Technical Data and Specifications

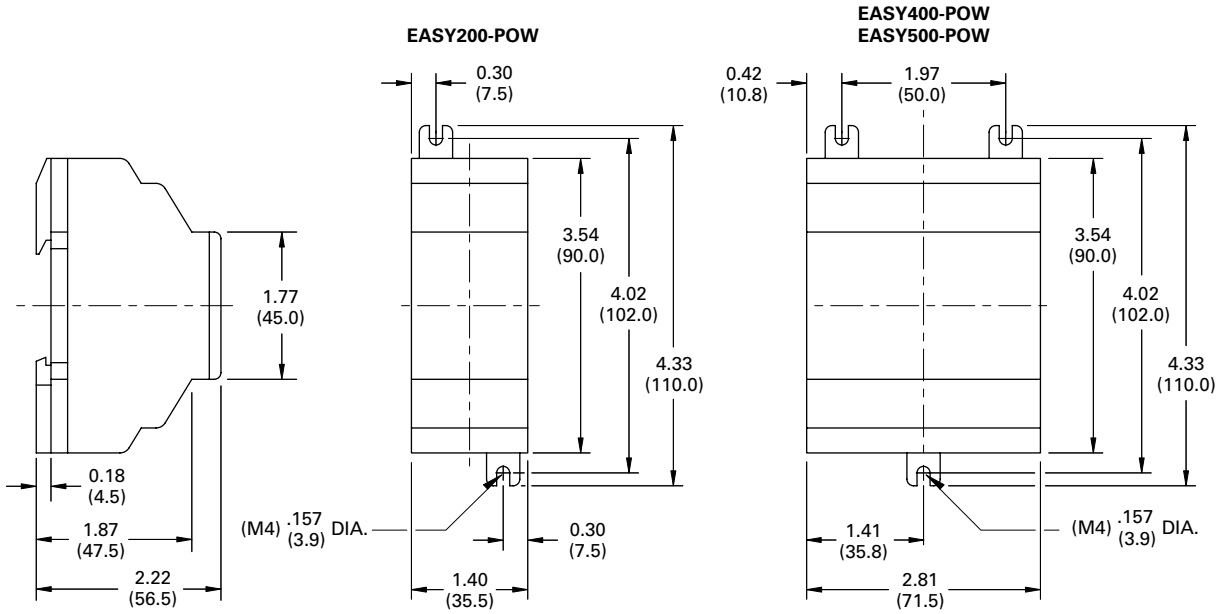
## easyRelay Series

Capacity	EASY200-POW 8 W	EASY400-POW 30 W	EASY500-POW 60 W	EASY600-POW 100 W
<b>Input</b>				
Nominal voltage	100–240 Vac	100–240 Vac	100–240 Vac	100–240 Vac
Voltage range	85–264 Vac	85–264 Vac	85–264 Vac	85–264 Vac
Frequency	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz
<b>Output</b>				
24 Vdc				
Nominal output voltage	24 Vdc $\pm$ 3%	24 Vdc $\pm$ 3%	24 Vdc $\pm$ 3%	24 Vdc $\pm$ 3%
Nominal current	0.35 A	1.25 A	2.5 A	4.2 A
12 Vdc				
Nominal output voltage	12 Vdc	—	—	—
Nominal current	20 mA	—	—	—
<b>General/Physical Data</b>				
Housing material	Plastic	Plastic	Plastic	Plastic
Dimensions (D)	2.22 in (56.5 mm)	2.22 in (56.5 mm)	2.22 in (56.5 mm)	2.22 in (56.5 mm)
Dimensions (W)	1.40 in (35.5 mm)	2.81 in (71.5 mm)	2.81 in (71.5 mm)	4.23 in (107.5 mm)
Dimensions (H)	3.54 in (90 mm)	3.54 in (90 mm)	3.54 in (90 mm)	3.54 in (90 mm)
Operating temperature	–25 °C to +55 °C	–25 °C to +55 °C	–25 °C to +55 °C	–25 °C to +55 °C
Storage temperature	–40 °C to +70 °C	–40 °C to +70 °C	–40 °C to +70 °C	–40 °C to +70 °C
Pollution degree	2	2	2	2
Connection cables				
Solid	0.2–4.0 mm <sup>2</sup> (AWG 22–12)	0.2–4.0 mm <sup>2</sup> (AWG 22–12)	0.2–4.0 mm <sup>2</sup> (AWG 22–12)	0.2–4.0 mm <sup>2</sup> (AWG 22–12)
Flexible	0.2–2.5 mm <sup>2</sup> (AWG 22–12)	0.2–2.5 mm <sup>2</sup> (AWG 22–12)	0.2–2.5 mm <sup>2</sup> (AWG 22–12)	0.2–2.5 mm <sup>2</sup> (AWG 22–12)
<b>Approvals/Certifications</b>				
	UL, CE, RoHS, CSA, EN 50178m IEC/EN 60947	UL, CE, RoHS, CSA, EN 50178m IEC/EN 60947	UL, CE, RoHS, CSA, EN 50178m IEC/EN 60947	UL, CE, RoHS, CSA, EN 50178m IEC/EN 60947
<b>Safety and Protection</b>				
Overload/short circuit protection	Yes	Yes	Yes	Yes
Overcurrent limitation form	0.3 A	1.4 A	2.8 A	4.6 A
Degree of protection	IP20	IP20	IP20	IP20
RFI suppression	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4
Potential isolation (prim./sec.)	Yes, SELV, (to EN 600950, VDE 805)	Yes, SELV, (to EN 600950, VDE 805)	Yes, SELV, (to EN 600950, VDE 805)	Yes, SELV, (to EN 600950, VDE 805)

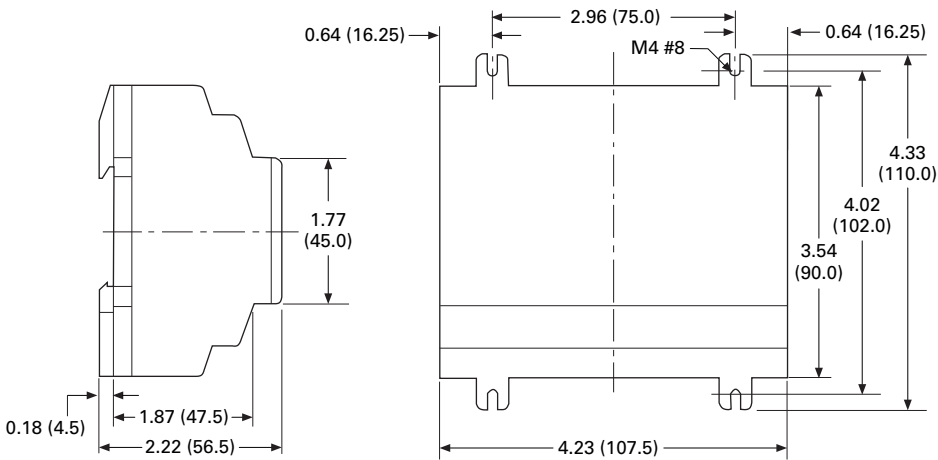
**Dimensions**

Approximate Dimensions in Inches (mm)

**EASY200-PO W, EASY400-POW and EASY500-POW Series**



**EASY600-POW Series**



#### Sensor Power Supply



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#### Sensor Power Supply

##### Product Description

Eaton’s sensor power supply was specially designed to be used with the 200 Series and E68 Series zero pressure accumulation systems, but is also suitable for use in a wide variety of applications. The unit delivers 100 W output at 27 Vdc and supports easy, Class II wiring. The power supply is a tamper-proof, rugged component easily mounted to a conveyor side-channel or support. Internal components are fully encapsulated in a strong die-cast housing to stand up to rugged handling, ensuring flawless performance in any material handling environment.

##### Features, Benefits and Functions

- Integrated AC junction box for one-step mounting and wiring without the need for additional accessories
- Built-in DC power health contact allows easy monitoring of power supply status
- Unitized design features a tamper-proof encapsulated construction to reduce the risk of damage associated with conventional open control-panel type construction
- Built-in slug-release input converts an AC or DC input to the appropriate DC signal for integration with the 200 Series and E68 Series zero pressure accumulation systems
- Dual output connection terminals to make it easy and convenient to locate the power supply at the center of the cable run
- Power switch protected against accidental operation
- Power in and out indicators show status at a glance
- Conduit entry box for NEC compliance
- Simple mounting with two 1/4-inch bolts
- Rugged die-cast housing
- Fully encapsulated electronics

##### Standards and Certifications

- UL listed
- CSA approved



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## Product Selection

## PS256 A

## Sensor Power Supply



Output	Slug Input	Type	Slug Output	Catalog Number
<b>Operating Voltage 105–132 Vac</b>				
27 Vdc, 100 W; short circuit, overload and overvoltage protection (cycle power to reset)	15–132 Vac/Vdc 3 mA minimum	Standard For use with 200 Series and E68 systems	Sinking or sourcing, switch selectable; 80 mA maximum; short circuit protection for loads less than 32 Vac or Vdc (auto reset)	<b>PS256 A-01B1</b> ②
	15–132 Vac/Vdc 3 mA minimum	High current slug For use with solenoid valve systems requiring full current slug signals	Sinking only; 100 W output; short circuit, overload and overvoltage protection (cycle power to reset) ①	<b>PS256 A-04B1</b> ②

## Technical Data and Specifications

## Sensor Power Supply

Description	PS256 A-01B1	PS256 A-04B1
Input power	144 W, maximum inrush 30 A from cold start	144 W, maximum inrush 30 A from cold start
Input voltage	105–132 Vac	105–132 Vac
Input current (full load)	105 Vac–1.92 A, 115 Vac–1.65 A, 132 Vac–1.5 A	105 Vac–1.92 A, 115 Vac–1.65 A, 132 Vac–1.5 A
Output power	100 W	100 W
Output voltage	27 Vdc	27 Vdc
Output protection	Short circuit, overload and overvoltage protection (cycle power to reset), diode protected	Short circuit, overload and overvoltage protection (cycle power to reset), diode protected
Regulation	± 3%	± 3%
Slug input	15–132 Vac/Vdc	15–132 Vac/Vdc
Slug output	Sinking or sourcing, switch selectable; 80 mA maximum; short circuit protection for loads less than 32 Vac or Vdc (auto reset)	Sinking only; 100 W output; short circuit, overload and overvoltage protection (cycle power to reset) ①
Indicators	Red LED: AC In; Green LED: DC Out	Red LED: AC In; Green LED: DC Out
DC fail indication output	NO contact, solid-state relay, 80 mA maximum	NO contact, solid-state relay, 80 mA maximum
Temperature range	–13 ° to 131 °F (–25 ° to 55 °C)	–13 ° to 131 °F (–25 ° to 55 °C)
Vibration	20 g	20 g
Enclosure material	Die-cast aluminum	Die-cast aluminum
Enclosure rating	NEMA 1	NEMA 1
Connections	Main output/slug output: Two three-position finger protected barrier strips; AC line input, DC fail indication and slug input: 8-position screw terminal strip inside conduit entry box	Main output/slug output: Two three-position finger protected barrier strips; AC line input, DC fail indication and slug input: 8-position screw terminal strip inside conduit entry box

## Notes

- ① Total output power of supply is 100 W. Total supply output power (100 W) = main output power + slug output power.  
 ② Stocked product, typical order quantities guaranteed in stock.

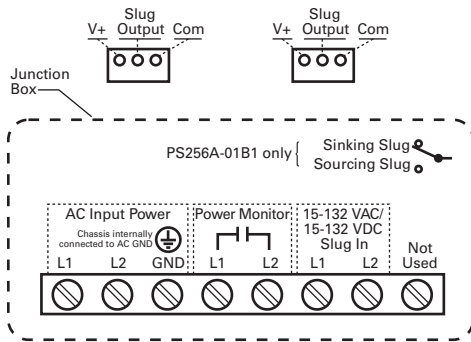
# 6.1

## Power Supplies

### General-Purpose and Sensor Power Supplies

#### Wiring Diagram

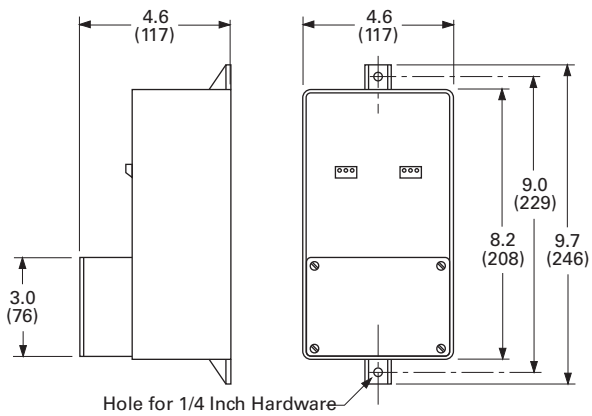
##### Sensor Power Supply



#### Dimensions

Approximate Dimensions in Inches (mm)

##### Sensor Power Supply





PSS Series



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**PSS Series**

**Product Description**

Eaton’s PSS Series of power supplies is designed to work in a variety of applications. They also work in most control applications that require 24 Vdc. All of the PSS power supplies are designed to provide the highest “outrush” current in the industry for units of their size.

**Application Description**

The PSS line of power supplies is specifically designed to work with the S801 and S811 solid-state reduced voltage starters. They can also serve in a variety of other applications, including support of sensors, operator interfaces, PLCs, communication networks, heaters and lights, and in many other industrial applications where 24 Vdc power supplies are required.

**Features**

- High current outrush capability in all units
- Semiconductor F47 approved
- Long ride-through capability designed in
- Wide operating temperature range
- Multiple 24 Vdc terminals for easy wiring
- Removable terminal connections
- IP20 fingerproof design

**Benefits**

- 24 Vdc control enhances personnel and equipment safety
- IP20 design improves personnel safety
- Removable terminal connectors make installation and repair quick and easy
- High current outrush capability allows use of smaller power supplies in many applications and ensures stable output during high power demand cycles
- Due to long ride-through time, the power supply can maintain the control power system during brownout and blackout conditions

**Standards and Certifications**

- cCSAus
- 

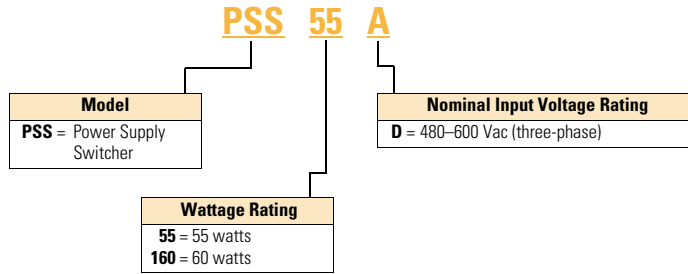
# 6.1

## Power Supplies

General-Purpose and Sensor Power Supplies

### Catalog Number Selection

#### PSS Series Power Supply



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### Product Selection

PSS55D



#### PSS Series Power Supply

Steady-State Current (Amps)	Steady-State Wattage	Input Voltage	Catalog Number
2.3	55 W	480-600	PSS55D
6.7	160 W	480-600	PSS160D

**Technical Data and Specifications****PSS Series, PSS10E–PSS55D**

<b>Capacity</b>	<b>PSS55D 55 W</b>	<b>PSS160D 160 W</b>
<b>Input</b>		
Voltage	480–600 Vac three-phase	480–600 Vac three-phase
Input current (rms)	0.07 A/phase	0.66 A/phase
Frequency	47–63 Hz	47–63 Hz
Voltage range	± 10%	± 10%
Inrush current	15 A	5.9 A
Overvoltage	Varistor	Varistor
Internal input fuse	(3)KTK-R-3/4, 600 V	(3)KTK-R-3/4, 600 V
External fusing	Not required	Not required
<b>Output</b>		
Voltage nominal	24 Vdc	24 Vdc
Voltage regulation	± 3.5%	± 0.5%
Current nominal	2.3 A	6.7 A
Voltage adj. range	None	None
Current surge	10 A	20 A
Current surge time	180 ms	1 sec
Hold up time	30 ms	30 ms
Max. load capacitance	10,000 µF	10,000 µF
Switching frequency	61 kHz	61 kHz
Efficiency at max. load	85%	88%
Output ripple	± 1%	± 1%
<b>Protection</b>		
Short circuit	Auto restart	Auto restart
Overvoltage	No	No
Undervoltage	No	No
Overtemperature	None. Software in micro controller	None. Software in micro controller
Overcurrent	10 A typical 24 V for >300 ms	13 A typical 24 V for >1 s
<b>Galvanic Isolation</b>		
Input to output	4 kV	4 kV
Input/output to rail	4 kV	4 kV
Input to ground	2.0 kV	2.0 kV
Output to ground	250 V	250 V
<b>Special Features</b>		
Cooling	Convection	Convection
Load sharing	Maximum 5 units	Maximum 5 units
Redundancy	Maximum 2 units	Maximum 2 units
Analog outputs	None	None
Fault relay	Form C, 12 A at 125 Vac / 24 Vdc	Form C, 12 A at 125 Vac / 24 Vdc

# 6.1

## Power Supplies

### General-Purpose and Sensor Power Supplies

#### PSS Series, PSS10E–PSS55D, continued

Capacity	PSS55D 55 W	PSS160D 160 W
<b>Wire Size</b>		
Input	20–14 AWG	20–14 AWG
Output	20–14 AWG	20–14 AWG
I/O	None	None
<b>Indications</b>		
Indicators	Green LED (DC on)	Green LED (DC on)
<b>Physical Data</b>		
Dimensions		
Length x Width x Depth in Inches (mm)	2.32 x 6.19 x 6.00 (59 x 157 x 154)	5.44 x 2.5 x 6.68 (138 x 63 x 170)
Weight (kg)	2.45 (1.1)	2.6 (1.18)
Mounting and recommended clearance	TS35 rail with optional PSSDIN Kit or chassis; leave 4 in. (10 cm) free space on venting sides.	TS35 rail with optional PSSDIN Kit or chassis; leave 4 in. (10 cm) free space on venting sides.
<b>Environmental Performance</b>		
Storage temperature	–40 to +85 °C	–40 to +85 °C
Operating temperature	–25 to +50 °C	–25 to +50 °C
Storage humidity	5 to 95%	5 to 95%
Operating humidity	20 to 85% noncondensing	20 to 85% noncondensing
<b>Approvals/Certifications</b>		
	cCSAus	cCSAus