

Power Supply



6.1 General Purpose and Sensor Power Supplies

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## Power Supplies



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## General-Purpose and Sensor 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

|                                          | PSG Series                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ELC Series                                                                                                                                     | easyRelay Power Series                                                                                                                                                                                                                                                                                          | Sensor Power Supplies                                                                                                                                                       | PSS Series                                                                                                                                                                                                                                           |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Features</b>                          | General-purpose 12 Vdc and 24 Vdc output for 1.25 A to 40 A loads<br>Single-phase and three-phase inputs up to 500 Vac<br>150% power surge output<br>Redundancy modules<br>Buffer module<br>DIN rail mount<br>Rugged metal and plastic housing options<br>Heavy-duty screw and finger-safe terminals<br>Hazardous Location Class I, Division 2 rated models<br>NEC® Class 2 rated model<br>Protection from overvoltage, overcurrent and overtemperature conditions | Compact, low cost 24 Vdc control for loads up to 2 A<br>Plastic enclosure can be DIN rail or panel mounted<br>Single-phase (100–240 Vac) input | Low profile power supplies for 12 Vdc or 24 Vdc applications<br>8 W, 30 W, 60 W or 100 W output power<br>easyRelay styling provides optimal panel aesthetics<br>Plastic enclosure can be DIN rail or panel mounted (with optional kit)<br>CSA Class 1, Division 2 qualified<br>Single-phase (100–240 Vac) input | 27 Vdc supplies for tough sensor applications<br>Rugged housings with integrated junction box for mounting outside of electrical enclosures<br>Advanced diagnostic features | 24 Vdc control for high startup loads<br>Peak current surge (boost/outrush) up to 6 times nominal current<br>Semi 47 approved<br>Long ride-through capability<br>Pluggable terminal connections<br>Single-phase and three-phase inputs up to 600 Vac |
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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
- 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

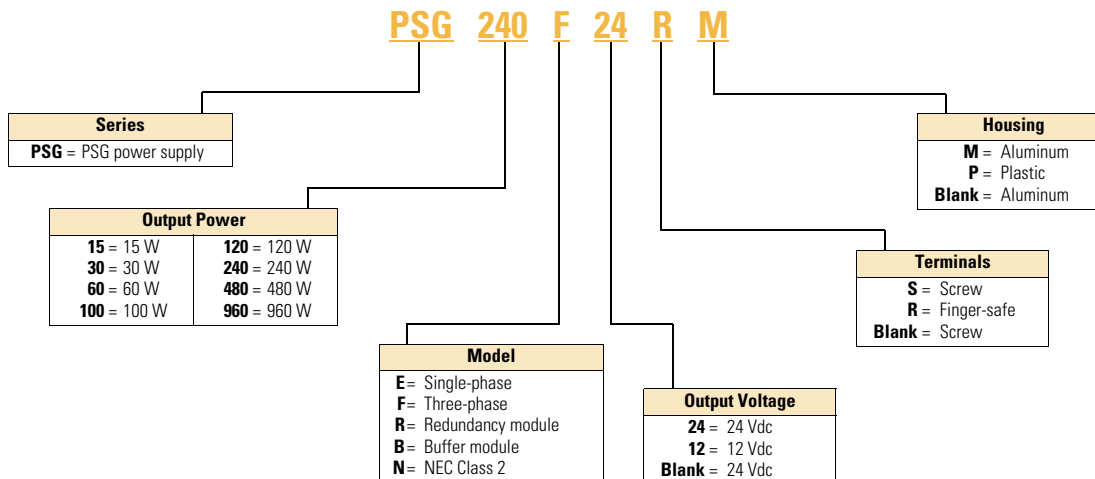


**Note:** Some models may not carry all certifications listed.

## 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><br> | 12 Vdc output single-phase power supplies (100–240 Vac nominal input) | 15 W 1.25 A output, plastic housing   |
|                                                                                                         |                                                                       | 30 W 2.5 A output, plastic housings   |
|                                                                                                         |                                                                       | 60 W 5 A output, aluminum housing     |
|                                                                                                         |                                                                       | 100 W 8.33 A output, aluminum housing |
| <b>PSG60E</b><br>      | 24 Vdc output single-phase power supplies (100–240 Vac nominal input) | 60 W 2.5 A output, aluminum housing   |
|                                                                                                         |                                                                       | 60 W 2.5 A output, plastic housing    |
|                                                                                                         |                                                                       | 120 W 5 A, aluminum housing           |
|                                                                                                         |                                                                       | 240 W 10 A, aluminum housing          |
|                                                                                                         |                                                                       | 480 W 20 A, aluminum housing          |

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><br>  | 24 Vdc output single-phase power supplies (100–240 Vac nominal input) | 60 W 2.5 A output, aluminum housing                     |
|                                                                                                           |                                                                       | 120 W 5 A, aluminum housing                             |
|                                                                                                           |                                                                       | 240 W 10 A, aluminum housing                            |
|                                                                                                           |                                                                       | 480 W 20 A, aluminum housing                            |
|                                                                                                           |                                                                       | 60 W 2.5 A output, plastic housing, NEC Class 2         |
| <b>PSG480F24RM</b><br> | 24 Vdc output, three-phase power supplies (400–500 Vac nominal input) | 60 W 2.5 A, aluminum housing                            |
|                                                                                                           |                                                                       | 120 W 5 A, aluminum housing                             |
|                                                                                                           |                                                                       | 240 W 10 A, aluminum housing                            |
|                                                                                                           |                                                                       | 480 W 20 A, aluminum housing                            |
|                                                                                                           |                                                                       | 960 W 40 A, aluminum housing                            |
| <b>PSG480B24RM</b><br> | Module power supplies (24 Vdc input)                                  | Buffer module, 480 W 20 A output, aluminum housing      |
|                                                                                                           |                                                                       | Redundancy module, 480 W <20 A output, aluminum housing |
|                                                                                                           |                                                                       | Redundancy module, 960 W <40 A output, aluminum housing |

## Technical Data and Specifications

## PSG Series

|                                                        | Single-Phase<br>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,<br>>83% at 230 Vac | >85% at 115 Vac<br>and 230 Vac | >85% at 115 Vac<br>and 230 Vac | >85.5% at 115 Vac,<br>>87.5% at 230 Vac | >85% typ                                               | >86% at 115 Vac,<br>>87% at 230 Vac                 | >90% at 115 Vac<br>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<br>(20 MHz)             | <100 mVpp                           | <100 mVpp                      | <100 mVpp                      | <100 mVpp                               | <50 mV /<br><240 mVpp                                  | <50 mV /<br><240 mVpp                               | <50 mVpp /<br><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<br>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 /<br>PSG960R24RM /<br>With o-ring diode    | PSG480R24RM /<br>PSG960R24RM /<br>With o-ring diode | PSG480R24RM /<br>PSG960R24RM /<br>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) /<br>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) /<br>1.5 k Vac (routine<br>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) /<br>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,<br>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<br>PSG15E12SP                                                                                                                              | PSG30E12SP                                                                       | PSG60E12SM                                                                       | PSG100E12SM                                                                      | PSG60E                                                                           | PSG60E24SP                                                                                                               | PSG60E24RM                                                                       |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| <b>General/Physical Data, continued</b>            |                                                                                                                                                         |                                                                                  |                                                                                  |                                                                                  |                                                                                  |                                                                                                                          |                                                                                  |
| Power derating—<br>vertical mounting               | >50 °C derate<br>power by 2.5% / °C,<br>>70 °C derate<br>power by 4% / °C                                                                               | >50 °C derate<br>power by 2.5% / °C,<br>>70 °C derate<br>power by 4% / °C        | >50 °C derate<br>power by 2.5% / °C,<br>>70 °C derate<br>power by 4% / °C        | >50 °C derate<br>power by 2.5% / °C                                              | >50 °C derate<br>power by 2.5% / °C                                              | <0 °C to –20 °C derate<br>power by 1% / °C,<br>>50 °C derate<br>power by 2.5% / °C,<br>>70 °C derate<br>power by 4% / °C | >50 °C derate<br>power by 2.5% / °C                                              |
| Power derating—<br>horizontal mounting             | N/A                                                                                                                                                     | N/A                                                                              | N/A                                                                              | >50 °C derate<br>power by 2.5% / °C,<br>>70 °C derate power<br>by 4% / °C        | N/A                                                                              | N/A                                                                                                                      | >50 °C derate<br>power by 2.5% / °C                                              |
| Operating humidity                                 | <95% RH,<br>noncondensing                                                                                                                               | <95% RH,<br>noncondensing                                                        | <95% RH,<br>noncondensing                                                        | <95% RH,<br>noncondensing                                                        | <95% RH,<br>noncondensing                                                        | <95% RH,<br>noncondensing                                                                                                | <95% RH,<br>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<br>EN 60721                                                                                                                            | 3K3 according to<br>EN 60721                                                     | 3K3 according to<br>EN 60721                                                     | 3K3 according to<br>EN 60721                                                     | 3K3 according to<br>EN 60721                                                     | 3K3 according to<br>EN 60721                                                                                             | 3K3 according to<br>EN 60721                                                     |
| <b>Safety and Protection</b>                       |                                                                                                                                                         |                                                                                  |                                                                                  |                                                                                  |                                                                                  |                                                                                                                          |                                                                                  |
| Transient surge voltage                            | Varistor                                                                                                                                                | Varistor                                                                         | Varistor                                                                         | Varistor                                                                         | Varistor                                                                         | Varistor                                                                                                                 | Varistor                                                                         |
| Surge voltage protection against<br>internal surge | Yes                                                                                                                                                     | Yes                                                                              | Yes                                                                              | Yes                                                                              | Yes                                                                              | Yes                                                                                                                      | Yes                                                                              |
| Safety class                                       | Class I with ground<br>connection                                                                                                                       | Class I with ground<br>connection                                                | Class I with ground<br>connection                                                | Class I with ground<br>connection                                                | Class I with ground<br>connection                                                | Class I with ground<br>connection                                                                                        | Class I with ground<br>connection                                                |
| Shock                                              | 30 G (300 m/s <sup>2</sup> ) in all<br>directions according<br>to IEC 60068-2-27                                                                        | 30 G (300 m/s <sup>2</sup> ) in all<br>directions according<br>to IEC 60068-2-27 | 30 G (300 m/s <sup>2</sup> ) in all<br>directions according<br>to IEC 60068-2-27 | 30 G (300 m/s <sup>2</sup> ) in all<br>directions according<br>to IEC 60068-2-27 | 30 G (300 m/s <sup>2</sup> ) in all<br>directions according<br>to IEC 60068-2-27 | 30 G (300 m/s <sup>2</sup> ) in all<br>directions according<br>to IEC 60068-2-27                                         | 30 G (300 m/s <sup>2</sup> ) in all<br>directions according<br>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,<br>>87% at 230 Vac                 | >84% typ                                               | >89% at 115 Vac,<br>>90% at 230 Vac                 | >84% typ                                               | >90% at 115 Vac<br>and 230 Vac                      | >86% typ                                               | >90% at 115 Vac<br>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<br>(20 MHz)             | <50 mVpp /<br><240 mVpp                             | <50 mV /<br><240 mVpp                                  | <50 mVpp /<br><150 mVpp                             | <50 mV /<br><240 mVpp                                  | <50 mVpp /<br><150 mVpp                             | <50 mV /<br><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<br>load (typ.) <sup>①</sup> | >20 ms                                              | >35ms                                                  | >20 ms                                              | >20 ms                                                 | >20 ms                                              | >20 ms                                                 | >20 ms                                              |
| Parallel operation                                     | PSG480R24RM /<br>PSG960R24RM /<br>With o-ring diode | PSG480R24RM /<br>PSG960R24RM /<br>With o-ring diode    | PSG480R24RM /<br>PSG960R24RM /<br>With o-ring diode | PSG480R24RM /<br>PSG960R24RM /<br>With o-ring diode    | PSG480R24RM /<br>PSG960R24RM /<br>With o-ring diode | PSG480R24RM /<br>PSG960R24RM /<br>With o-ring diode    | PSG480R24RM /<br>PSG960R24RM /<br>With o-ring diode |
| <b>Galvanic Isolation</b>                              |                                                     |                                                        |                                                     |                                                        |                                                     |                                                        |                                                     |
| Input/output                                           | 4 k Vac                                             | 4 k Vac (type test) /<br>3 k Vac (routine test)        | 4 k Vac                                             | 4 k Vac (type test) /<br>3 k Vac (routine test)        | 4 k Vac                                             | 4 k Vac (type test) /<br>3 k Vac (routine test)        | 4 k Vac                                             |
| Input/ground                                           | 1.5 k Vac                                           | 1.5 k Vac (type test) /<br>1.5 k Vac (routine<br>test) | 1.5 k Vac                                           | 1.5 k Vac (type test) /<br>1.5 k Vac (routine<br>test) | 1.5 k Vac                                           | 1.5 k Vac (type test) /<br>1.5 k Vac (routine<br>test) | 1.5 k Vac                                           |
| Output/ground                                          | 1.5 k Vac                                           | 1.5 k Vac (type test) /<br>500 Vac (routine test)      | 1.5 k Vac                                           | 1.5 k Vac (type test) /<br>500 Vac (routine test)      | 1.5 k Vac                                           | 1.5 k Vac (type test) /<br>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,<br>removable                           | Screw                                                  | Finger-safe,<br>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)<br>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.

## General-Purpose and Sensor Power Supplies

## PSG Series, continued

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

## PSG Series, continued

|                                                        | Three-Phase<br>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<br>6 A, 10 A or 16 A           | 3 x circuit breakers<br>6 A, 10 A or 16 A           | 3 x circuit breakers<br>6 A, 10 A or 16 A           | 3 x circuit breakers<br>6 A, 10 A or 16 A           | 3 x circuit breakers<br>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<br>and 3 x 500 Vac              | >88% at 3 x 400 Vac<br>and 3 x 500 Vac              | >92% at 3 x 400 Vac<br>and 3 x 500 Vac              | >91% at 3 x 400 Vac<br>and 3 x 500 Vac              | >92% at 3 x 400 Vac<br>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<br>(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<br>load (typ.) <sup>①</sup> | >20 ms                                              | >20 ms                                              | >20 ms                                              | >20 ms                                              | >20 ms                                 |
| Parallel operation                                     | PSG480R24RM /<br>PSG960R24RM /<br>With o-ring diode | PSG480R24RM /<br>PSG960R24RM /<br>With o-ring diode | PSG480R24RM /<br>PSG960R24RM /<br>With o-ring diode | PSG480R24RM /<br>PSG960R24RM /<br>With o-ring diode | PSG960R24RM /<br>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)<br>AWG 16–12 (output)             | AWG 18–8 (input)<br>AWG 12–10 (output)              | AWG 18–8 (input)<br>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—<br>vertical mounting               | >50 °C derate power<br>by 2.5% / °C,<br>>70 °C derate power<br>by 5% / °C                                                                                | >50 °C derate power<br>by 2.5% / °C,<br>>70 °C derate power<br>by 5% / °C        | >50 °C derate power<br>by 2.5% / °C,<br>>70 °C derate power<br>by 5% / °C        | >50 °C derate power<br>by 2.5% / °C,<br>>70 °C derate power<br>by 5% / °C        | >50 °C derate power<br>by 2.5% / °C                                              |
| Power derating—<br>horizontal mounting             | >45 °C derate power<br>by 2.5% / °C,<br>>55 °C derate power<br>by 1.66% / °C,<br>>70 °C derate power<br>by 5% / °C                                       | >40 °C derate power<br>by 2.5% / °C,<br>>60 °C derate power<br>by 5% / °C        | >40 °C derate power<br>by 2.5% / °C,<br>>60 °C derate power<br>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<br>internal surge | 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                                                   |
| Shock                                              | 30 G (300 m/s <sup>2</sup> ) in all<br>directions according to<br>IEC 60068-2-27                                                                         | 30 G (300 m/s <sup>2</sup> ) in all<br>directions according to<br>IEC 60068-2-27 | 30 G (300 m/s <sup>2</sup> ) in all<br>directions according to<br>IEC 60068-2-27 | 30 G (300 m/s <sup>2</sup> ) in all<br>directions according to<br>IEC 60068-2-27 | 30 G (300 m/s <sup>2</sup> ) in all<br>directions according to<br>IEC 60068-2-27 |

## PSG Series, continued

|                                     | Redundancy Modules<br>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                                                                              |

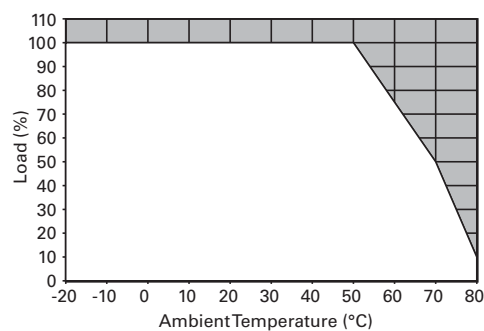
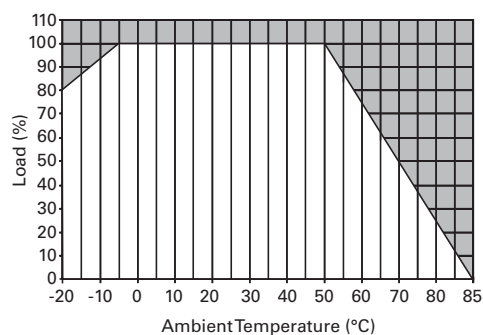
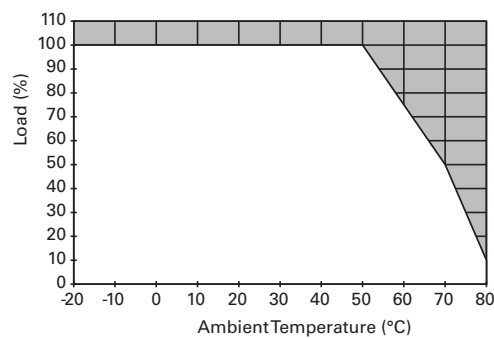
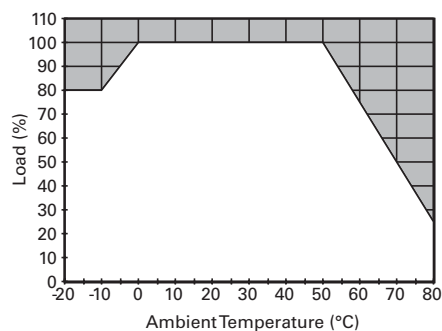
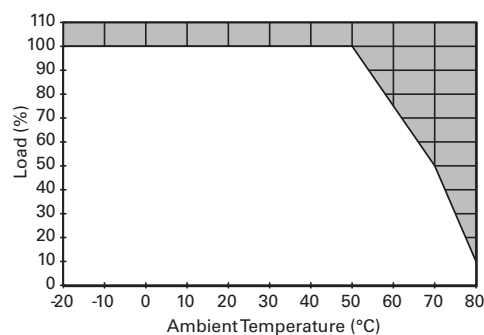
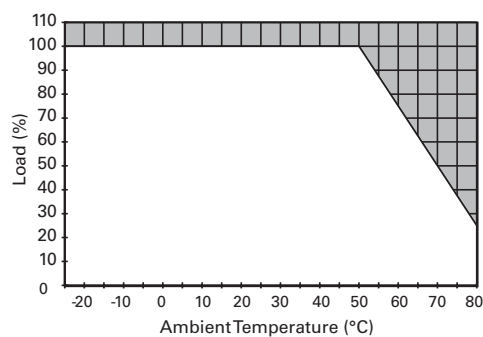
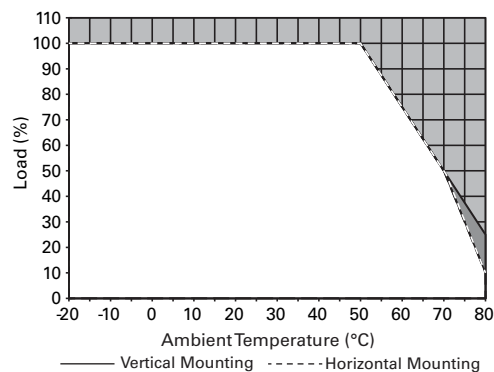
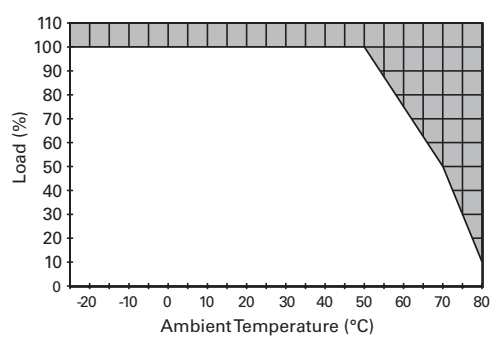
**Note**

<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.

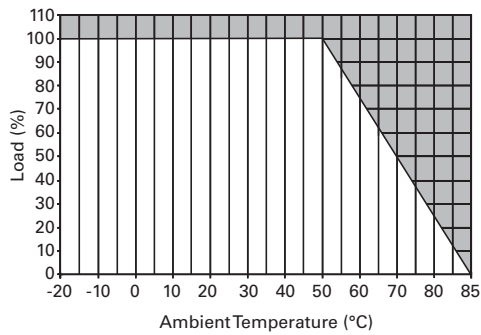
## PSG Series, continued

**Buffer Module  
PSG480B24RM**

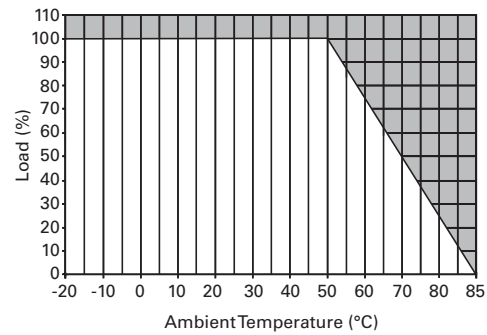
| <b>Input</b>                      |                                                                                                                                                                                            |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal voltage                   | 24 Vdc                                                                                                                                                                                     |
| DC input range                    | 22.8–28.8 Vdc                                                                                                                                                                              |
| Maximum voltage                   | 35 Vdc                                                                                                                                                                                     |
| Current                           | Charging mode: <0.6 A<br>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<br>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<br>Green LED on: unit is fully charged<br>Green LED blinking slowly: unit is charging<br>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<br>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                                                                                                                                                             |

**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**

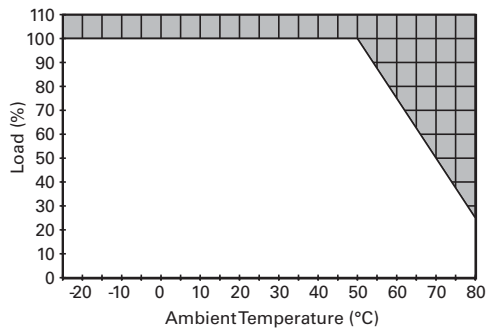
Vertical Mounting Position PSG120E



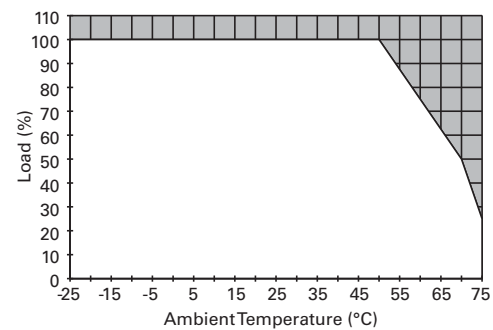
Vertical Mounting Position PSG480E



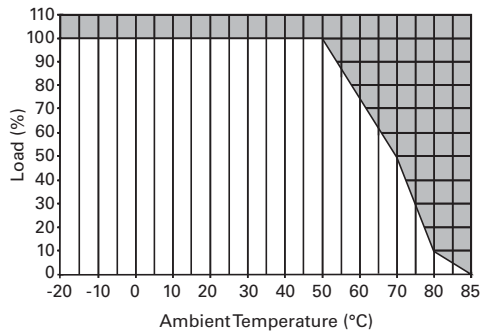
Vertical and Horizontal Mounting Position PSG120E24RM



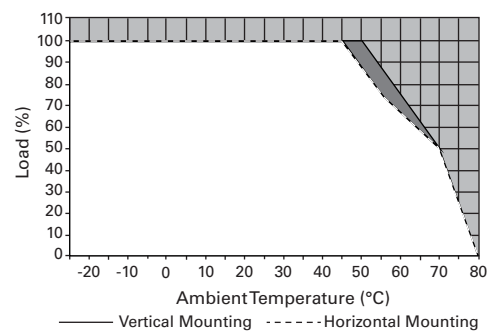
Vertical Mounting Position PSG480E24RM



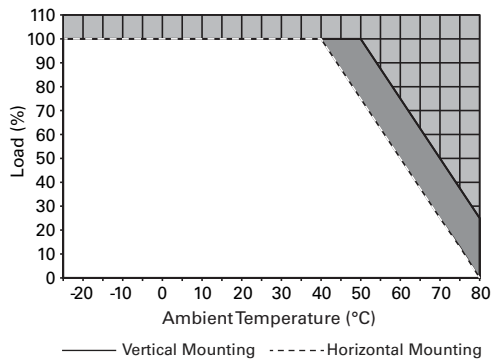
Vertical Mounting Position PSG240E



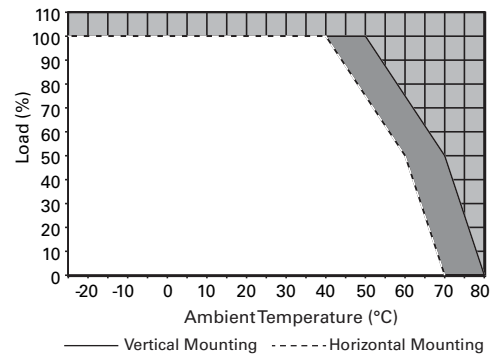
Vertical and Horizontal Mounting Position PSG60F24RM



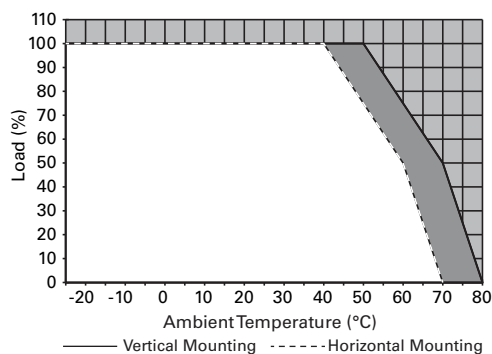
Vertical and Horizontal Mounting Position PSG240E24RM



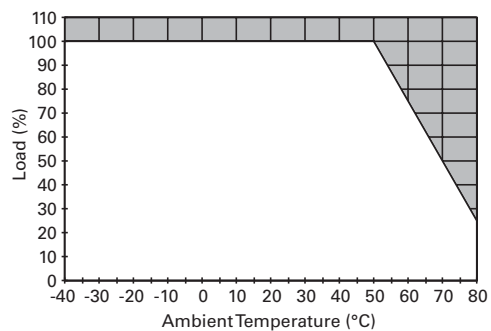
Vertical and Horizontal Mounting Position PSG120F24RM



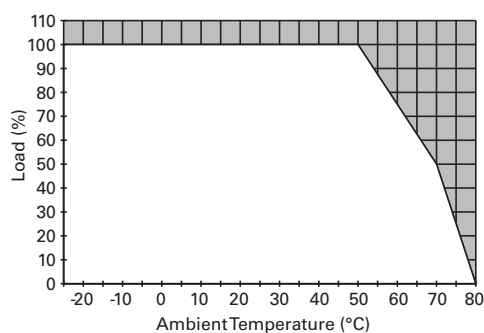
Vertical and Horizontal Mounting Position PSG240F24RM



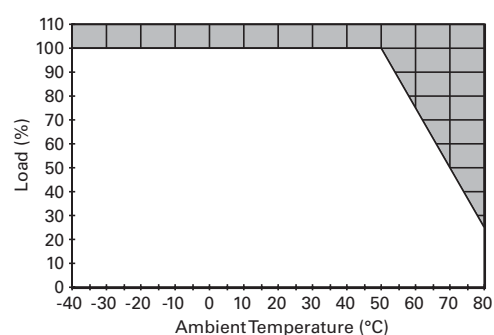
Vertical Mounting Position PSG480R24RM



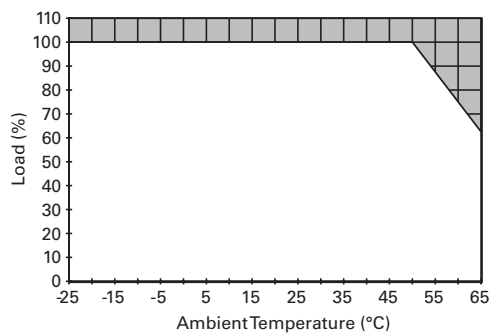
Vertical Mounting Position PSG480F24RM



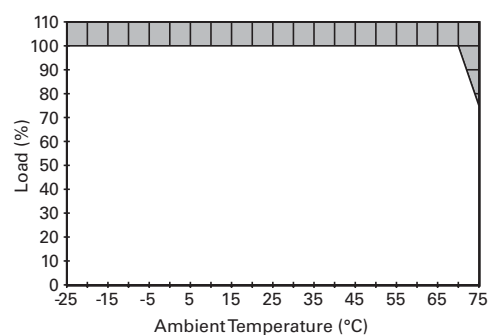
Vertical Mounting Position PSG960R24RM



Vertical Mounting Position PSG960F24RM

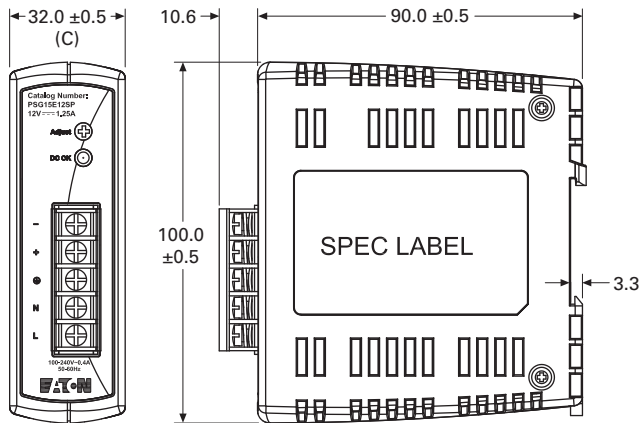
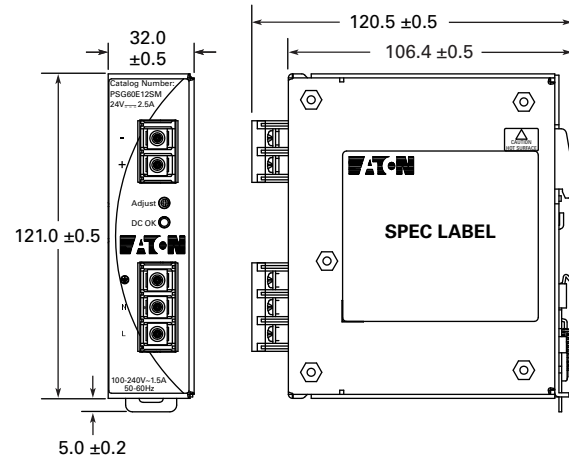
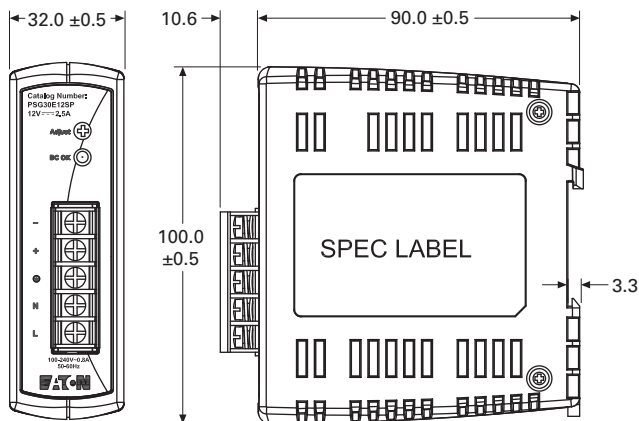
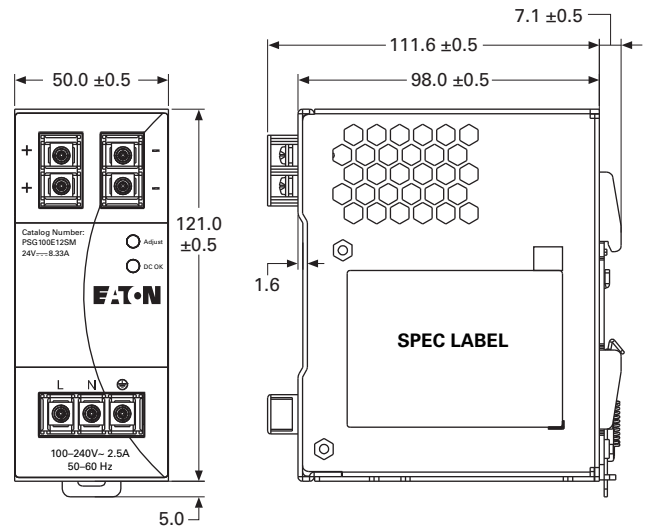


Vertical Mounting Position PSG480B24RM



**Dimensions**

Approximate Dimensions in mm

**Note:** Dimensions are for reference only.**PSG15E12SP****PSG60E12SM****PSG30E12SP****PSG100E12SM**

# 6.1

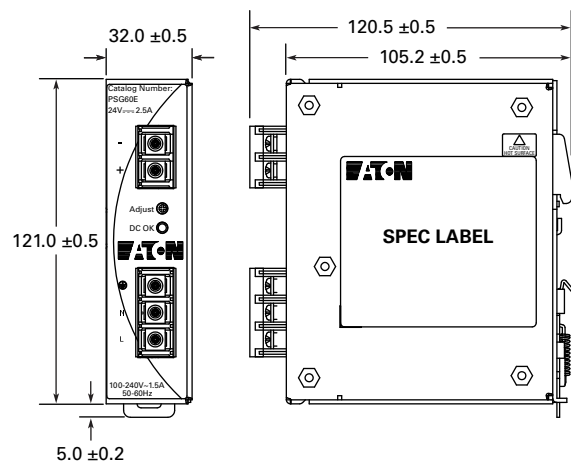
## Power Supplies

### General-Purpose and Sensor Power Supplies

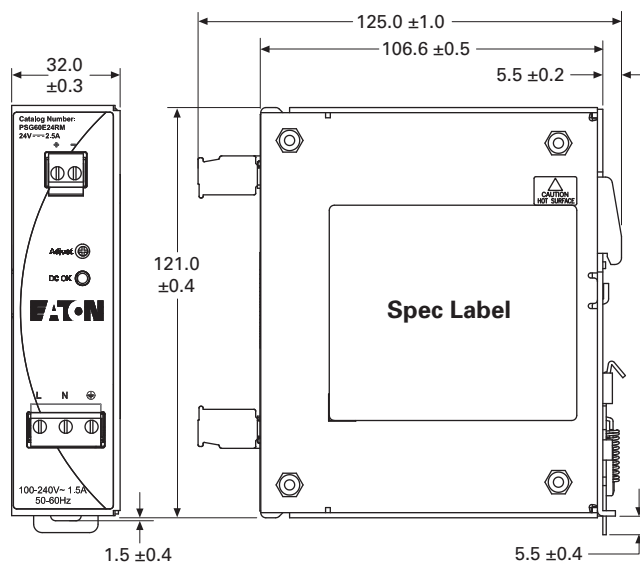
Approximate Dimensions in mm

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

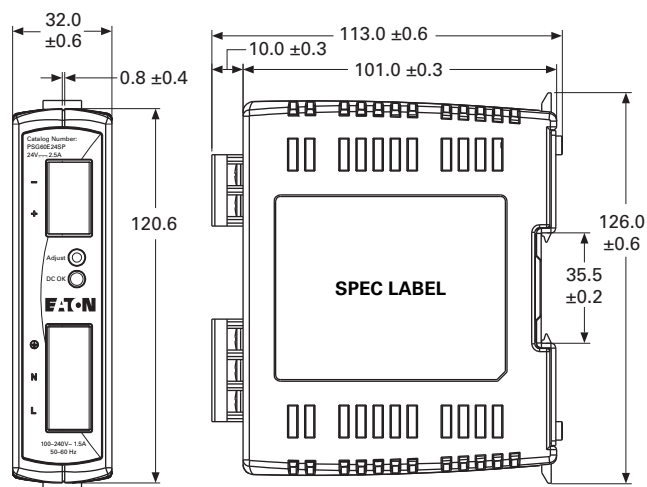
#### PSG60E



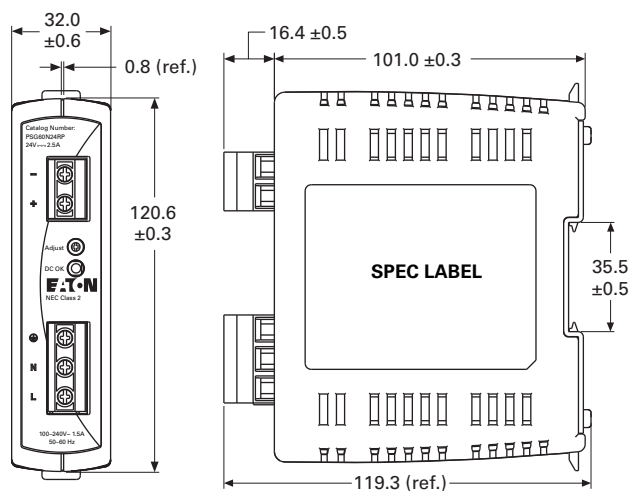
#### PSG60E24RM



#### PSG60E24SP



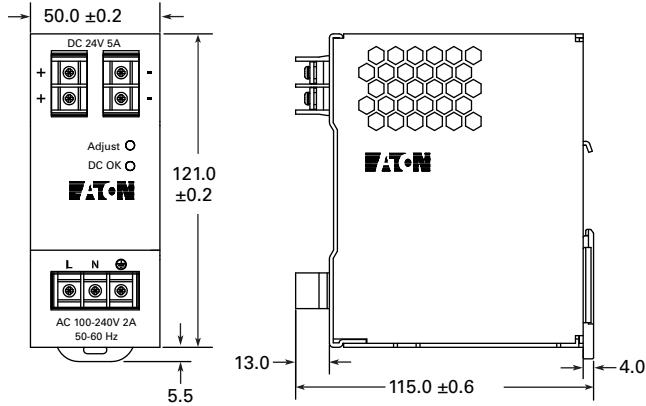
#### PSG60N24RP



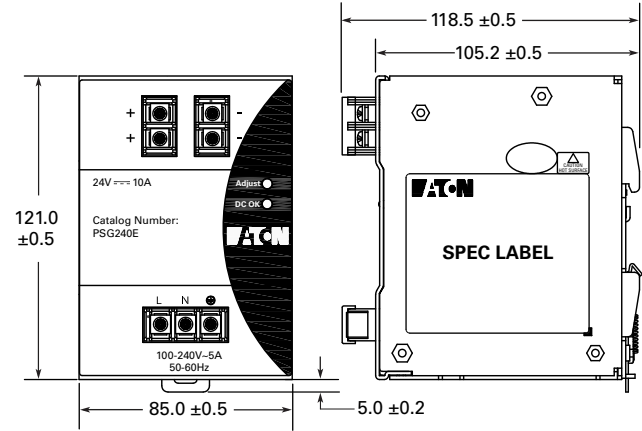
Approximate Dimensions in mm

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

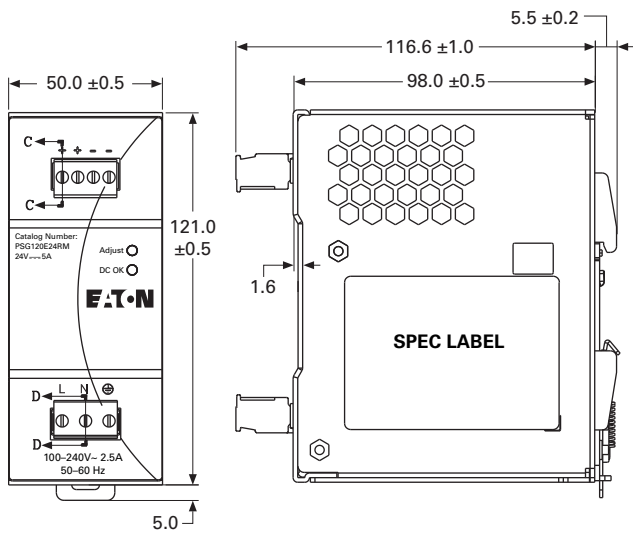
### PSG120E



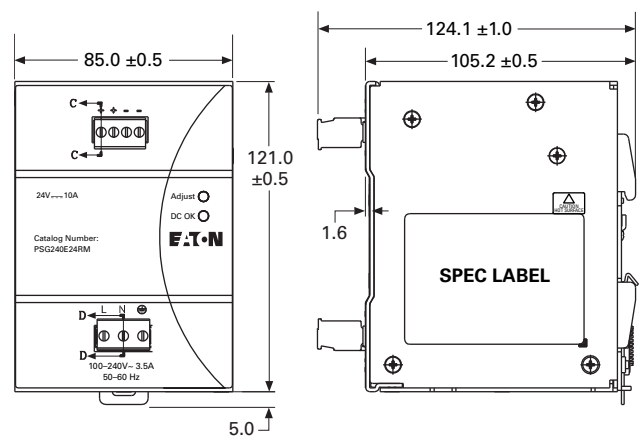
### PSG240E



### PSG120E24RM



### PSG240E24RM



# 6.1

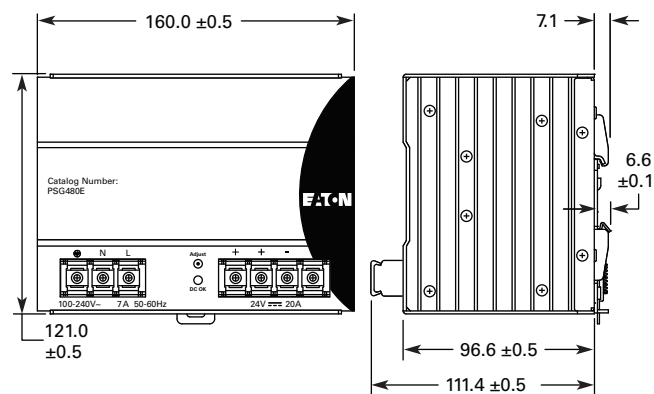
## Power Supplies

### General-Purpose and Sensor Power Supplies

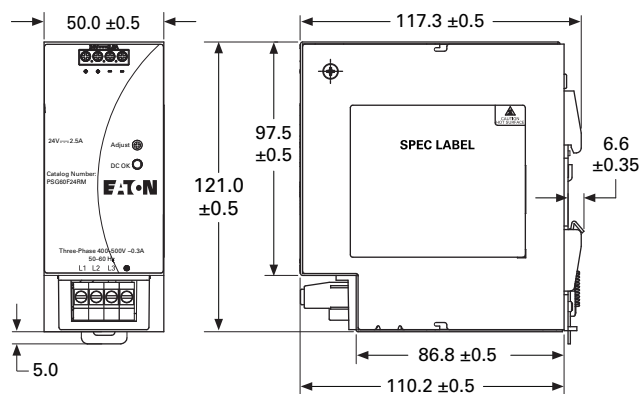
Approximate Dimensions in mm

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

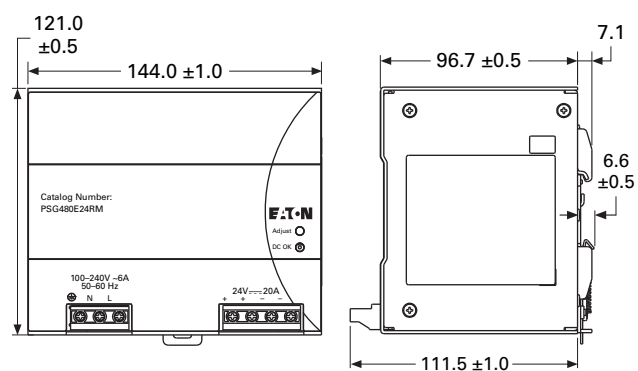
#### PSG480E



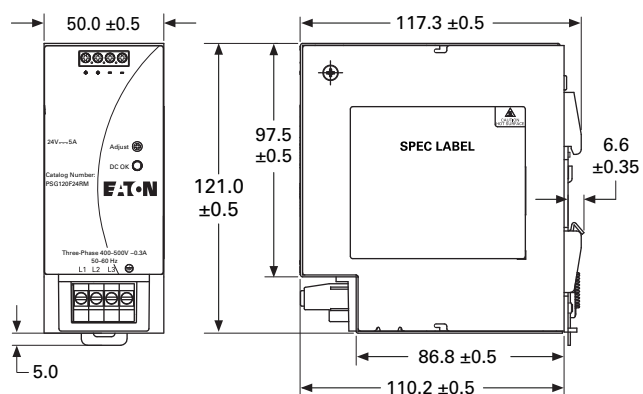
#### PSG60F24RM



#### PSG480E24RM



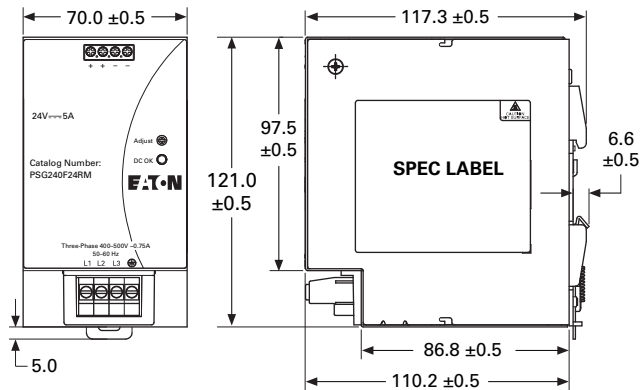
#### PSG120F24RM



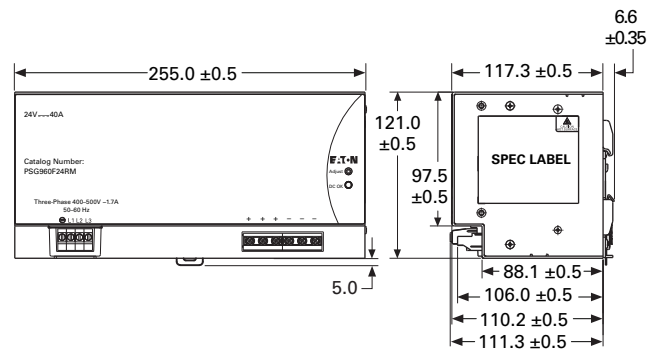
Approximate Dimensions in mm

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

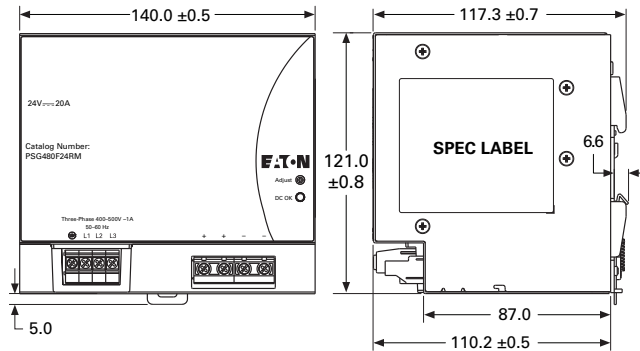
### PSG240F24RM



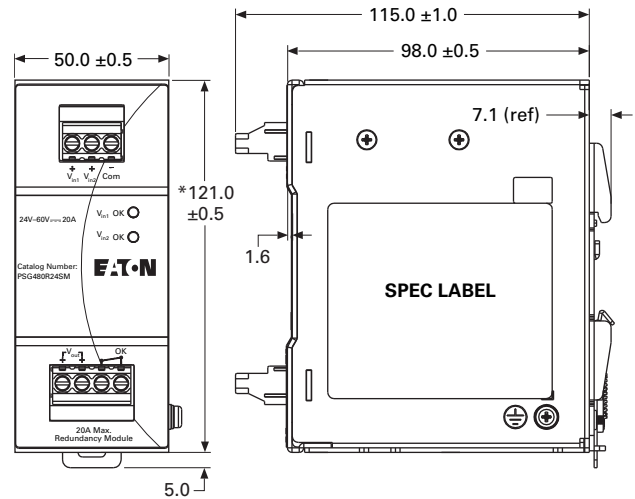
### PSG960F24RM



### PSG480F24RM



### PSG480R24RM



# 6.1

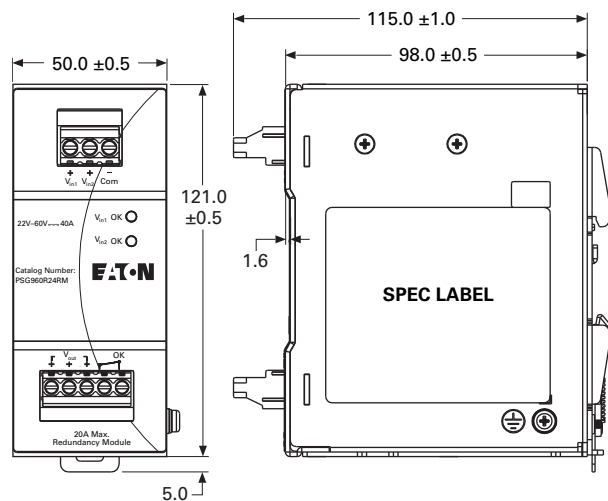
## Power Supplies

### General-Purpose and Sensor Power Supplies

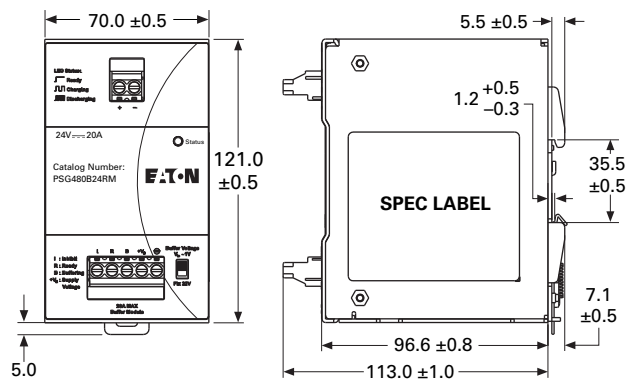
Approximate Dimensions in mm

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

#### PSG960R24RM



#### PSG480B24RM



ELC Series



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| ELC Series                        |          |
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| Technical Data and Specifications | V7-T6-24 |
| Dimensions                        | V7-T6-25 |
| easyRelay Power Supply            | V7-T6-26 |
| Sensor Power Supply               | V7-T6-30 |
| PSS Series                        | V7-T6-33 |

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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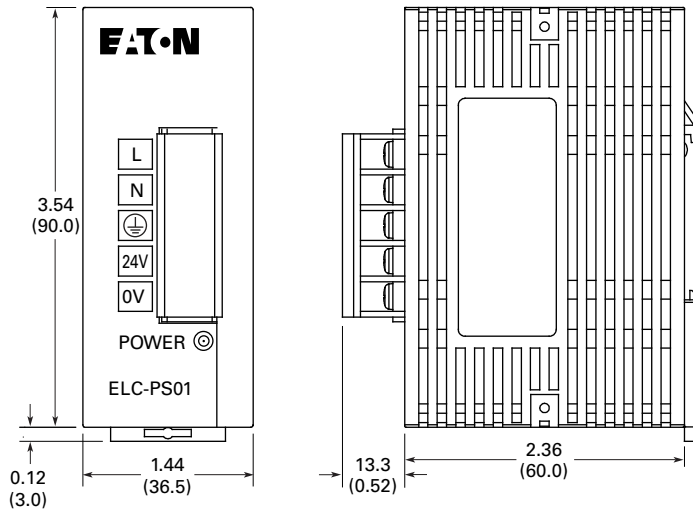
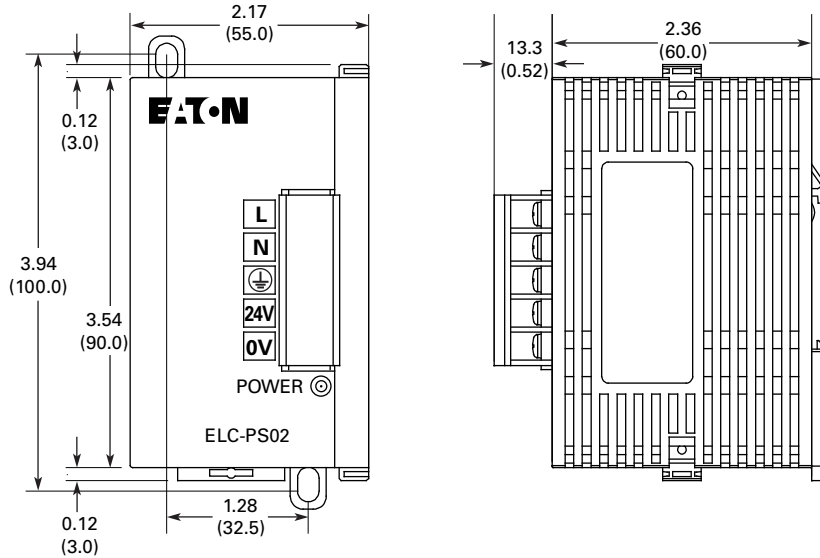
## Technical Data and Specifications

## ELC Series

| Capacity                                | ELC-PS01<br>24 W                                                            | ELC-PS02<br>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 $\pm$ 3%                                                             | 24 Vdc $\pm$ 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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## Contents

## Description

| Description                       | Page     |
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| Product Selection                 | V7-T6-27 |
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| Dimensions                        | V7-T6-29 |
| Sensor Power Supply               | V7-T6-30 |
| PSS Series                        | V7-T6-33 |

## 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.

|                                                                                     | Input Voltage Range | Rated Output Voltage | Output Voltage Setting Range | Rated Output Power | Rated Output Current | Catalog Number     |
|-------------------------------------------------------------------------------------|---------------------|----------------------|------------------------------|--------------------|----------------------|--------------------|
| <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> |
|  |                     |                      |                              |                    |                      |                    |

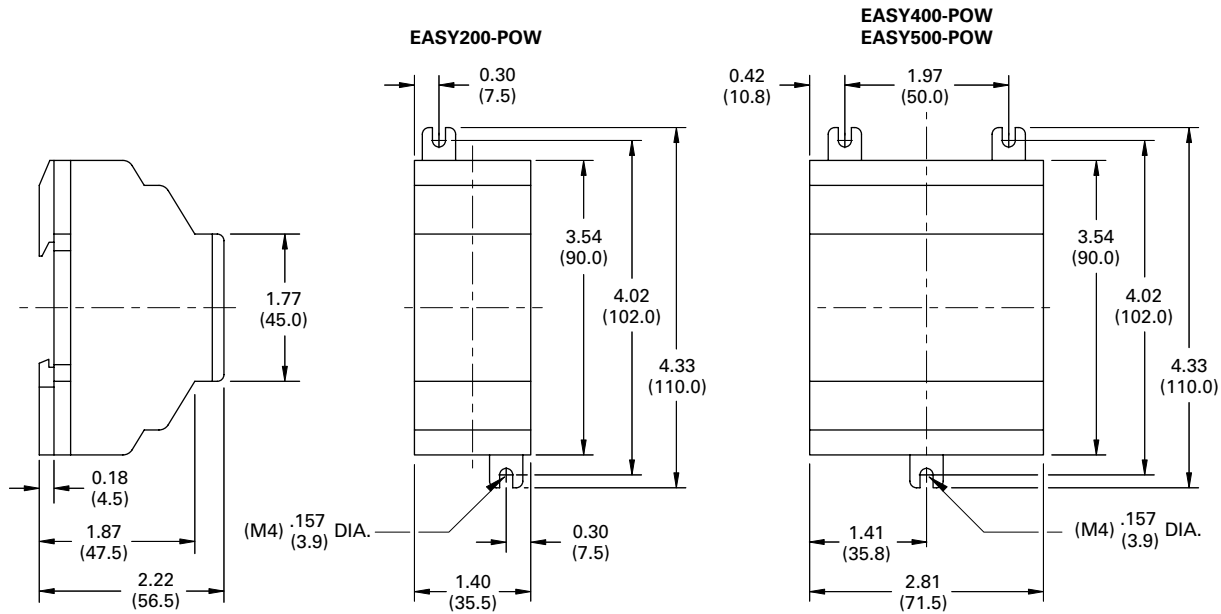
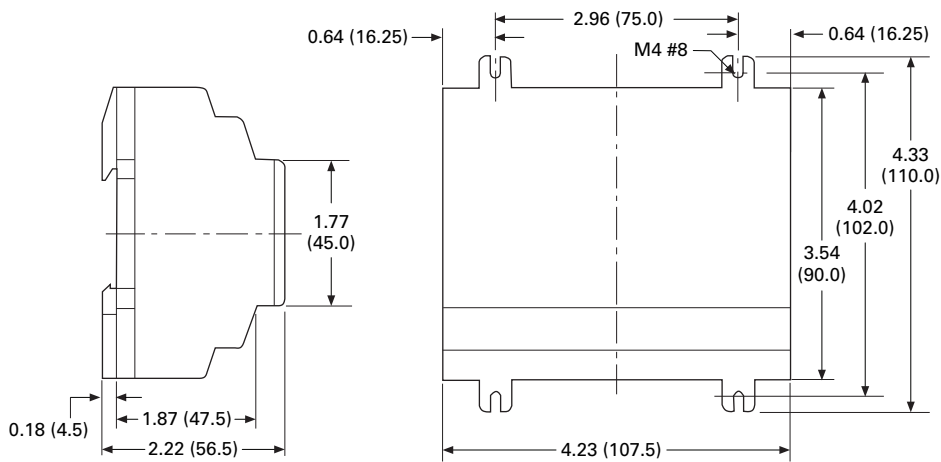
## Technical Data and Specifications

## easyRelay Series

| Capacity                          | EASY200-POW<br>8 W                                    | EASY400-POW<br>30 W                                   | EASY500-POW<br>60 W                                   | EASY600-POW<br>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,<br>EN 50178m IEC/EN 60947          | UL, CE, RoHS, CSA,<br>EN 50178m IEC/EN 60947          | UL, CE, RoHS, CSA,<br>EN 50178m IEC/EN 60947          | UL, CE, RoHS, CSA,<br>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,<br>IEC 61000-6-1, 2, 3, 4 | EN 55011, EN 55022 Class B,<br>IEC 61000-6-1, 2, 3, 4 | EN 55011, EN 55022 Class B,<br>IEC 61000-6-1, 2, 3, 4 | EN 55011, EN 55022 Class B,<br>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



## Contents

## Description

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| Sensor Power Supply               |          |
| Product Selection                 | V7-T6-31 |
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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



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

## Technical Data and Specifications

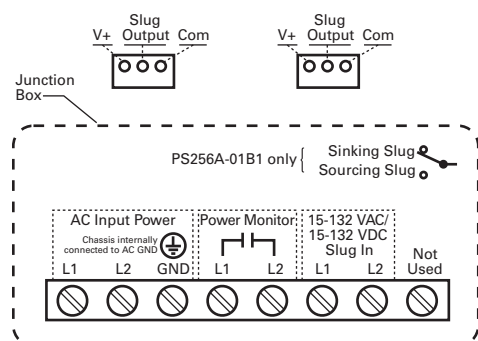
## Sensor Power Supply

| 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<br>(cycle power to reset), diode protected                                                                                                    | Short circuit, overload and overvoltage protection<br>(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;<br>short circuit protection for loads less than 32 Vac or Vdc<br>(auto reset)                                                             | Sinking only; 100 W output; short circuit, overload and<br>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:<br>Two three-position finger protected barrier strips;<br>AC line input, DC fail indication and slug input:<br>8-position screw terminal strip inside conduit entry box | Main output/slug output:<br>Two three-position finger protected barrier strips;<br>AC line input, DC fail indication and slug input:<br>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.

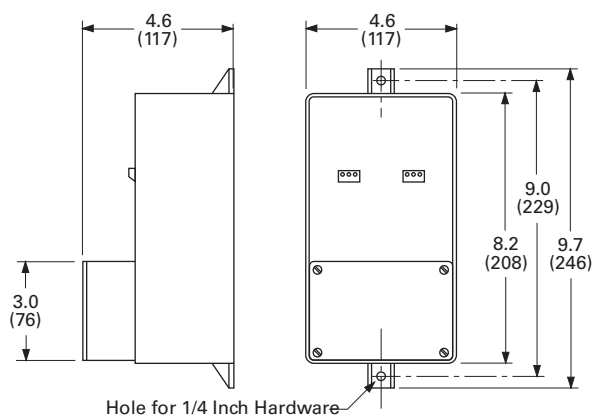
② Stocked product, typical order quantities guaranteed in stock.

**Wiring Diagram****Sensor Power Supply**

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**Dimensions**

Approximate Dimensions in Inches (mm)

**Sensor Power Supply**

PSS Series



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| Sensor Power Supply               | V7-T6-30 |
| PSS Series                        |          |
| Catalog Number Selection          | V7-T6-34 |
| Product Selection                 | V7-T6-34 |
| Technical Data and Specifications | V7-T6-35 |

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

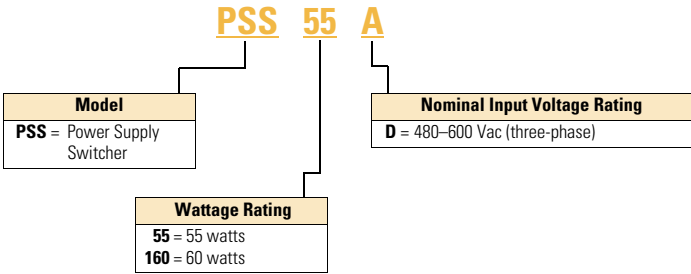
Standards and Certifications

- cCSAus



Catalog Number Selection

PSS Series Power Supply



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**

| Capacity                  | PSS55D<br>55 W                        | PSS160D<br>160 W                      |
|---------------------------|---------------------------------------|---------------------------------------|
| <b>Input</b>              |                                       |                                       |
| Voltage                   | 480–600 Vac<br>three-phase            | 480–600 Vac<br>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.<br>Software in micro controller | None.<br>Software in micro controller |
| Overcurrent               | 10 A typical 24 V<br>for >300 ms      | 13 A typical 24 V<br>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      |

## PSS Series, PSS10E–PSS55D, continued

| Capacity                                 | PSS55D<br>55 W                                                                                           | PSS160D<br>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<br>in Inches (mm) | 2.32 x 6.19 x 6.00<br>(59 x 157 x 154)                                                                   | 5.44 x 2.5 x 6.68<br>(138 x 63 x 170)                                                                    |
| Weight (kg)                              | 2.45 (1.1)                                                                                               | 2.6 (1.18)                                                                                               |
| Mounting and recommended<br>clearance    | TS35 rail with optional PSSDIN<br>Kit or chassis; leave 4 in.<br>(10 cm) free space on venting<br>sides. | TS35 rail with optional PSSDIN<br>Kit or chassis; leave 4 in.<br>(10 cm) free space on venting<br>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                                                                                                   |