

PSC Series



6

PSC Series

Product Description

The PSC Compact series operates with universal AC input range and offers full power up to 55 °C. The output is adjustable from 24 to 28 volts and can support up to 3000 microfarads of load capacitance. All models in the series are certified according to IEC/EN/UL 60950-1 Information Technology Equipment (ITE) and UL 508 Industrial Control Equipment (ICE). The series is also fully compliant with RoHS Directive 2011/65/EU for environmental protection. NEC Class 2 and Limited Power Source (LPS) approvals are available for this product.

Application Description

The ultra-compact and competitively priced Eaton Compact DIN Rail Power Supply series is designed for industrial applications requiring highly reliable power supply within a tight space. Simple to operate with HMI displays and industrial ethernet.

Contents

Description	Page
PSL Series	V7-T6-4
PSC Series	
Catalog Number Selection	V7-T6-11
Product Selection	V7-T6-11
Technical Data and Specifications	V7-T6-12
Power Derating Curves	V7-T6-14
Dimensions	V7-T6-14
PSG Series	V7-T6-16
ELC Series	V7-T6-36
easyRelay Power Supply	V7-T6-39
Sensor Power Supply	V7-T6-43

Features, Benefits and Functions

- 30 W, 50 W and 100 W ratings
- Ultra-compact size
- Universal AC input voltage 100–240 Vac (120–375 Vdc)
- Up to 87% efficiency at 230 Vac
- Extreme low temperature cold start at –40 °C
- Overvoltage / overcurrent / over-temperature protections
- Under 100 W power output at 24 Vdc
- Wide operating temperature range: –20 °C to +70 °C
- Storage temperature: –20 °C to +85 °C
- MTBF greater than 350,000 hours ensures uptime and reliability
- Protection from overvoltage, short circuit, overcurrent and over temperature conditions
- Plastic housings provide the durability required to withstand harsh environments
- Finger-safe terminals
- LED indicating light for DC OK simplifies troubleshooting
- Redundancy modules keep loads up and running in the event of a device failure
- NEC Class 2 rated model ①
- 150% power surge output
- IP20 protection degree
- Earth connection is required
- A green LED indicates output is present

Standards and Certifications

- UL 508
- NEC Class 2
- CE marked
- RoHS compliant



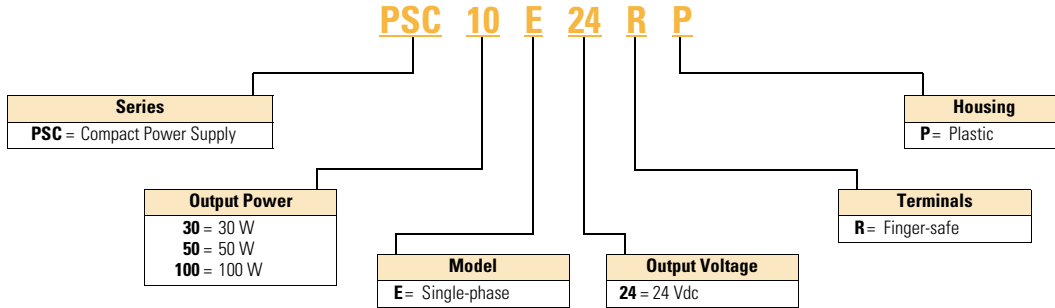
Note

- ① The NEC Class 2 model is certified as an NEC Class 2 power source. This means that after a small startup window, the power supply cannot exceed a maximum of 100 W under any circumstances, including overload, short-circuit or internal failure.

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.

PSC Series



Product Selection

PSC100E24RP

PSC Series



Power	Description	Catalog Number
24 Vdc output single-phase power supplies (100–240 Vac nominal input)	30 W, 1.25 A output, plastic housing	PSC30E24RP
	50 W, 2.1 A output, plastic housing	PSC50E24RP
	100 W, 4.0 A output, plastic housing	PSC100E24RP

Technical Data and Specifications

PSC Series

	PSC30E24RP	PSC50E24RP	PSC100E24RP
Input			
Nominal voltage	100–240 Vac / 50–60 Hz	100–240 Vac / 50–60 Hz	100–240 Vac / 50–60 Hz
AC input range	85–264 Vac	85–264 Vac	85–264 Vac
DC input range	120–375 Vdc	120–375 Vdc	120–375 Vdc
Input frequency range	47–63 Hz	47–63 Hz	47–63 Hz
Nominal current	<0.8 A at 115 Vac, <0.4 A at 230 Vac	<1.0 A at 115 Vac, <0.6 A at 230 Vac	<1.2 A at 115 Vac, <0.6 A at 230 Vac
Inrush current limitation	<35 A at 115 Vac, <60 A at 230 Vac	<35 A at 115 Vac, <60 A at 230 Vac	<35 A at 115 Vac, <60 A at 230 Vac
Mains buffering at nominal load	20 ms typ. at 115 Vac, 100 ms typ. at 230 Vac	20 ms typ. at 115 Vac, 90 ms typ. at 230 Vac	25 ms typ. at 115 Vac, 50 ms typ. at 230 Vac
Turn-on time	<3 sec. at 115 Vac, <1.6 sec. at 230 Vac	<3 sec. at 115 Vac, <1.5 sec. at 230 Vac	<3 sec. at 115 Vac, <1.5 sec. at 230 Vac
Internal fuse	T 3.15 A / 250 V	T 3.15 A / 250 V	T 3.15 A / 250 V
Leakage current	<1 mA at 240 Vac	<1 mA at 240 Vac	<1 mA at 240 Vac
Output			
Power	30 W	50 W	91.2 / 96 W
Nominal output voltage	24 Vdc ±2%	24 Vdc ±2%	24 Vdc ±2%
Adjustment range	24–28 Vdc (Maximum power ≤ 30 W)	24–28 Vdc (Maximum power ≤ 50 W)	22–24 Vdc (Maximum power ≤ 91.2W)
Nominal current	1.25 A	2.1 A	3.8 A
Derating	–10 °C to –20 °C (2% / °C), >55 °C (3.33% / °C) in Vertical	–10 °C to –20 °C (2% / °C), >55 °C (3.33% / °C) in Vertical	–10 °C to –20 °C (2% / °C), >55 °C (3.33% / °C) in Vertical
Power derating—horizontal mounting	N/A	N/A	N/A
Startup with capacitive loads	Max. 3,000 µF	Max. 3,000 µF	Max. 3,000 µF
Max. power dissipation idling / nominal load approx.	0.5 W / 4.5 W	0.5 W / 7 W	0.4 W / 10 W
Efficiency	87.0% typ. at 115 Vac, 88.0% typ. at 230 Vac	86.0% typ. at 115 Vac, 88.0% typ. at 230 Vac	87.0% typ. at 115 Vac, 89.0% typ. at 230 Vac
Residual ripple/peak switching (20 M Hz)	<75 mVpp	<75 mVpp	<75 mVpp
Parallel operation	PSG480R24RM / PSG960R24RM / With o-ring Diode	PSG480R24RM / PSG960R24RM / With o-ring Diode	PSG480R24RM / PSG960R24RM / With o-ring Diode
Galvanic isolation			
Input/output	3.0K Vac	3.0K Vac	3.0K Vac
Input/ground	3.0K Vac	3.0K Vac	3.0K Vac
Output/ground	0.5K Vac	0.5K Vac	0.5K Vac
General / physical data			
Housing material	Plastic (PC), enclosed	Plastic (PC), enclosed	Plastic (PC), enclosed
Signals	Green LED DC OK	Green LED DC OK	Green LED DC OK
MTBF	>350,000 hr	>350,000 hr	>350,000 hr
Dimensions (length)	75 mm	75 mm	75 mm
Dimensions (width)	21 mm	30 mm	45 mm
Dimensions (height)	89.5 mm	89.5 mm	100 mm
Weight (kg)	0.11 kg	0.18 kg	0.325 kg
Terminals	Finger safe	Finger safe	Finger safe
Wire size	AWG 22-12 / AWG 20-12	AWG 22-12 / AWG 20-12	AWG 22-12 / AWG 20-12
Operating temperature	–20 °C to +70 °C	–20 °C to +70 °C	–20 °C to +70 °C
Storage temperature	–40 °C to +85 °C	–40 °C to +85 °C	–40 °C to +85 °C
Operating humidity	5 to 95% RH	5 to 95% RH	5 to 95% RH

General-Purpose and Sensor Power Supplies

PSC Series, continued

	PSC30E24RP	PSC50E24RP	PSC100E24RP
General / physical data, continued			
Vibration			
Operating	IEC60068–2–6, sine wave: 10 Hz to 500 Hz at 19.6 m/s ² ; displacement of 0.35 mm, 60 min. per axis for all X, Y, Z directions	IEC60068–2–6, sine wave: 10 Hz to 500 Hz at 19.6 m/s ² ; displacement of 0.35 mm, 60 min. per axis for all X, Y, Z directions	IEC60068–2–6, sine wave: 10 Hz to 500 Hz at 19.6 m/s ² ; displacement of 0.35 mm, 60 min. per axis for all X, Y, Z directions
Non-operating	IEC60068–2–6, Random: 5 Hz to 500 Hz (2.09 Grms); 20 min. per axis for all X, Y, Z directions	IEC60068–2–6, Random: 5 Hz to 500 Hz (2.09 Grms); 20 min. per axis for all X, Y, Z directions	IEC60068–2–6, Random: 5 Hz to 500 Hz (2.09 Grms); 20 min. per axis for all X, Y, Z directions
Shock (operating)			
Operating	IEC60068–2–27, half sine wave: 10 G for a duration of 11 ms, shock for 1 direction (X axis)	IEC60068–2–27, half sine wave: 10 G for a duration of 11 ms, shock for 1 direction (X axis)	IEC60068–2–27, half sine wave: 10 G for a duration of 11 ms, shock for 1 direction (X axis)
Non-operating	IEC60068–2–27, half sine wave: 50 G for a duration of 11 ms, 3 shocks for each 3 directions	IEC60068–2–27, half sine wave: 50 G for a duration of 11 ms, 3 shocks for each 3 directions	IEC60068–2–27, half sine wave: 50 G for a duration of 11 ms, 3 shocks for each 3 directions
Pollution degree	2	2	2
Altitude	2000 m	2000 m	2000 m
Certification and protection			
Safety entry low voltage	SELV (EN 60950)	SELV (EN 60950)	SELV (EN 60950)
Electrical safety (of information technology equipment)	N/A	N/A	N/A
Industrial control equipment	UL/C–UL listed to UL 508	UL/C–UL listed to UL 508	UL/C–UL listed to UL 508
Class 2 power supply	UL/C–UL listed to UL 508	UL/C–UL listed to UL 508	UL/C–UL listed to UL 508
CE	In conformance with EMC directive 2014/30/EU and low-voltage directive 2014/35/EU	In conformance with EMC directive 2014/30/EU and low-voltage directive 2014/35/EU	In conformance with EMC directive 2014/30/EU and low-voltage directive 2014/35/EU
Immunity	EN 55024, EN 61000–6–1, EN 61000–6–2 (EN 61000–4–2, 3, 4, 5, 6, 8, 11)	EN 55024, EN 61000–6–1, EN 61000–6–2 (EN 61000–4–2, 3, 4, 5, 6, 8, 11)	EN 55024, EN 61000–6–1, EN 61000–6–2 (EN 61000–4–2, 3, 4, 5, 6, 8, 11)
Emissions	EN 55032, EN 55011, EN 61000–3–3, EN 61000–6–3, EN 61000–6–4	EN 55032, EN 55011, EN 61000–3–3, EN 61000–6–3, EN 61000–6–4	EN 55032, EN 55011, EN 61000–3–3, EN 61000–6–3, EN 61000–6–4
RoHS compliant	Yes	Yes	Yes
Safety and protection			
Current limitation at short–circuits approx.	N/A	N/A	N/A
Surge voltage protection against internal surge voltages	No	No	No
Protection degree	IP20	IP20	IP20
Safety class	Class I with primary earth connection	Class I with primary earth connection	Class I with primary earth connection

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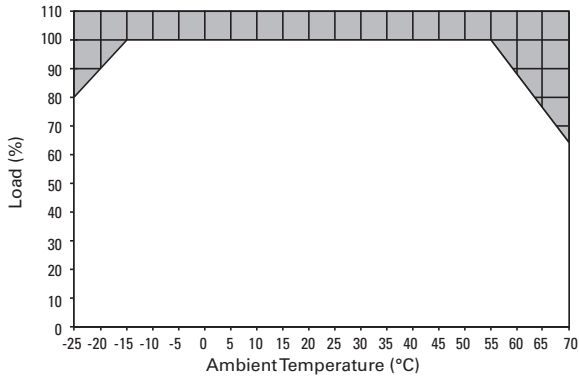
Power Supplies

General-Purpose and Sensor Power Supplies

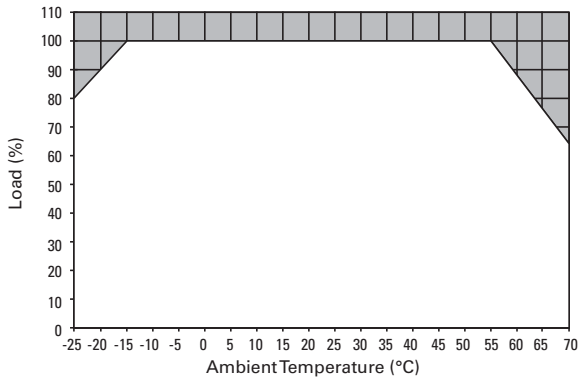
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Power Derating Curves

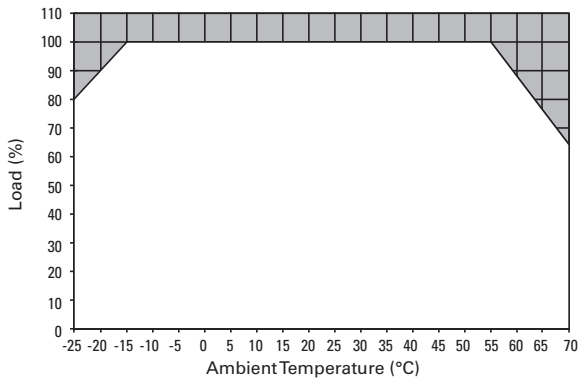
Vertical Mounting Position PSC30E24RP



Vertical Mounting Position PSC50E24RP



Vertical Mounting Position PSC100E24RP

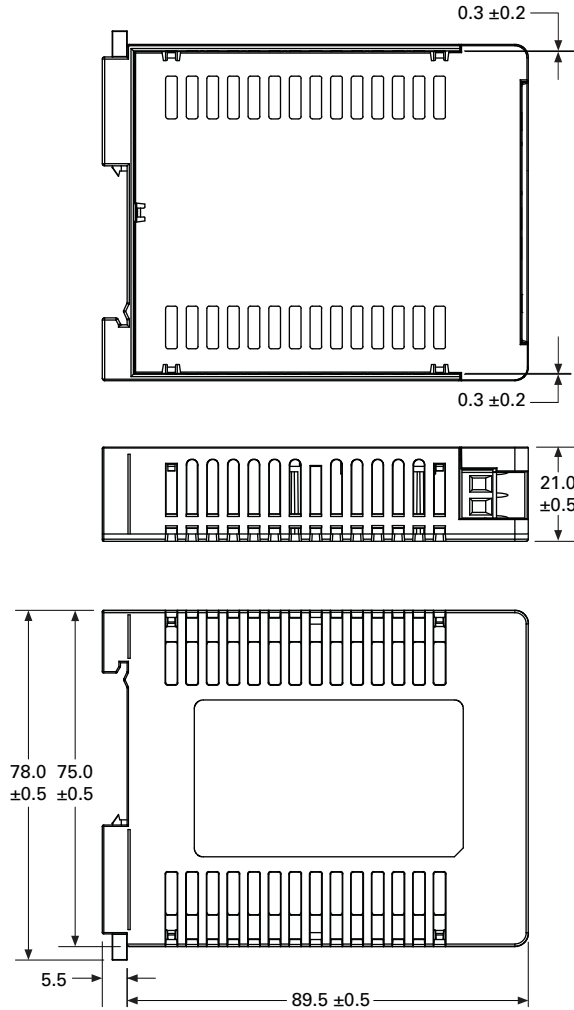


Dimensions

Approximate Dimensions in mm

Note: Dimensions are for reference only.

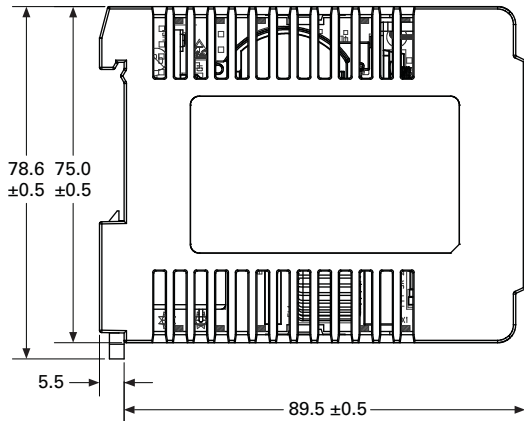
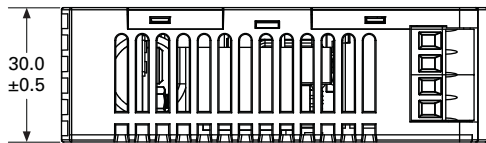
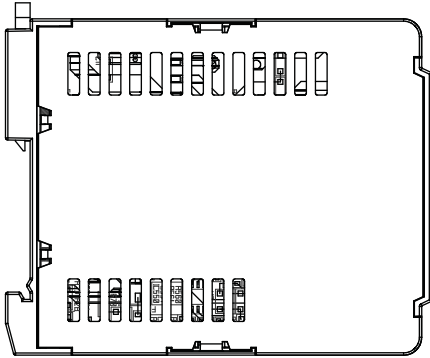
PSC30E24RP



Approximate Dimensions in mm

Note: Dimensions are for reference only.

PSC50E24RP



PSC100E24RP

