

PSR230/24 Power Supplies



Description

The PSR 24 Vdc switch-mode power supplies can tolerate a wide range of supply voltage and are distinguished by their high efficiency, compact dimensions, low weight, and low heat dissipation.

Available in 1.3 A, 2.5 A and 5 A DIN rail mounting packages, all units feature overvoltage and short circuit protection and interference suppression.

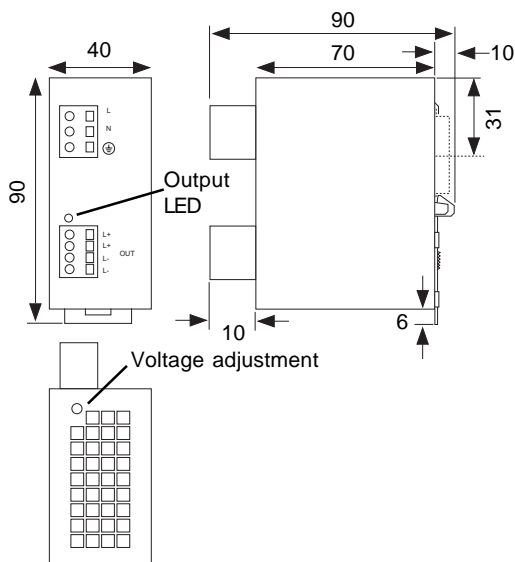
Features

- Wide input voltage range
- Long voltage fail bridging time
- Input surge protected
- Adjustable output voltage for lead resistance compensation
- Output protected against open or short circuit
- Operates up to 50 °C without derating
- Double terminals on output
- Over voltage protection on output
- Spring loaded terminals

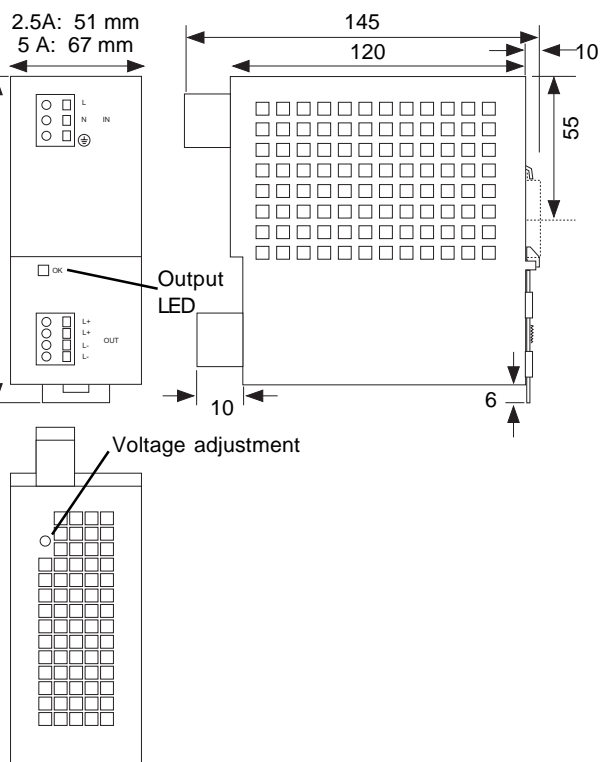
Physical

all dimensions in mm

1.3 A



2.5 A, 5 A



FUNCTIONALITY

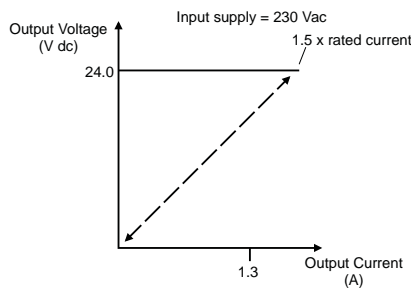
PSR power supplies are compact DIN rail mounting units suitable for most requirements for a 24 Vdc supply in a Trend building management system. They are single phase primary switch-mode supplies which tolerate a wide range of supply voltage and give high efficiency, low weight, and small size.

Input protection: The supply can withstand a break in mains supply of at least 20 ms. It is protected against input surges by a varistor, and against inrush current by means of a NTC (negative temperature coefficient) resistor.

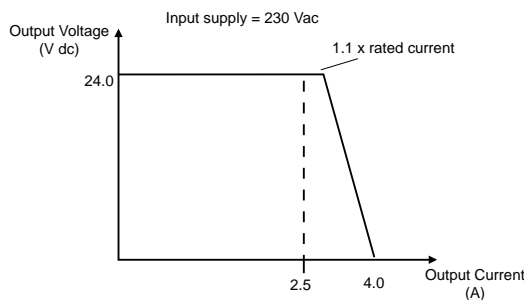
Output protection: The output circuit is continuously protected against short circuit and overload. The output voltage will be held at a constant value up to a multiple of the rated current.

Characteristic curves

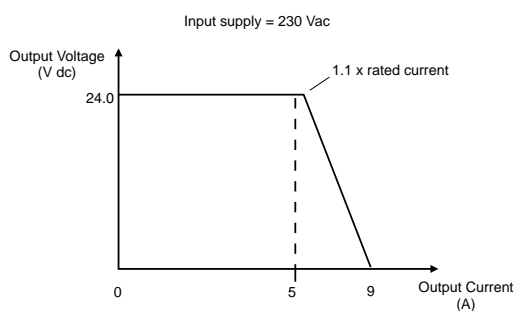
1.3A @ 230 Vac supply



2.5A @ 230 Vac supply



5A @ 230 Vac supply




Over voltage protection (OVP) is provided by monitoring the output voltage independent of the control circuit. The output is fully adjustable by means of a potentiometer which can be used to compensate for connector lead resistance (facility not provided on 1.3 A version). The output is rated as SELV (Safety Extra Low voltage), and the output is ungrounded for safe isolation; this enables flexible use on the Trend system.

Internal Protection: The unit is internally protected with a fuse-link. If this fuse operates there is a high probability that a fault is present in the unit.

Derating: In continuous overload conditions the power supply is switched off.

DISPOSAL

Please observe the current regulations and dispose according to the type of material i.e. as electronic scrap (printed circuit boards), plastics, steel, copper etc.



WEEE Directive :

At the end of their useful life the packaging and product should be disposed of via a suitable recycling centre.

Do not dispose of with normal household waste.
Do not burn.

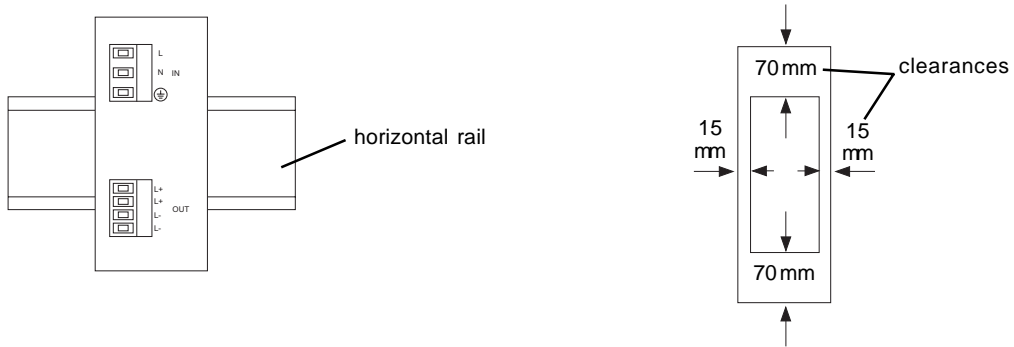
ORDER CODE

PSR230/24-1.3	24 Vdc, 30W (1.3 A) switch-mode power supply
PSR230/24-2.5	24 Vdc, 60W (2.5 A) switch-mode power supply
PSR230/24-5	24 Vdc, 120W (5 A) switch-mode power supply

INSTALLATION

The equipment must be disconnected from the electrical supply before installation or wiring is started.

Cooling: The unit must be mounted on a horizontally aligned mounting rail, and a minimum distance of 15 mm must be provided between the unit and any neighbouring components, 70 mm clearance must be allowed above and below the unit.



Protection: Due to the protection rating of IP20, the operation of this equipment is only permitted in dry areas.

The controller is installed in a control cubicle on a standard 35 mm DIN rail (DIN EN 50022).

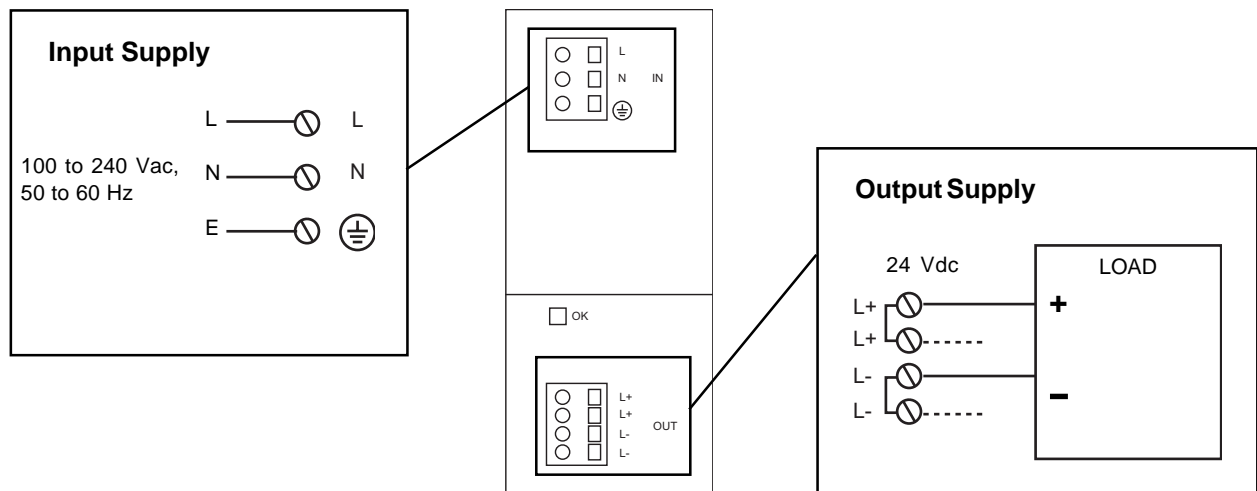
The installation procedure involves:

- Clip unit to rail
- Wire input supply
- Wire output supply to load (cable must be rated for 3 x nominal output current)
- Switch on input supply
- Adjust output voltage if required
- Test system

Full installation details are given on the PSR230/24 installation instructions TG200566.

Note that the equipment is not suitable for use in medical equipment designated for 'patient auxiliary' use because leakage current limits are exceeded

CONNECTIONS



SPECIFICATION

Electrical

Input Supply

Rated Voltage	:100 to 240 Vac (230 Vac nominal)
Frequency	:50 to 60 Hz
Voltage range	:90 to 264 Vac
Current consumption	
1.3 A	:0.3 A typical at 230 Vac
2.5 A	:0.6 A typical at 230 Vac
5 A	:1.2 A typical at 230 Vac

Inrush Current

1.3 A	:<15 A p
2.5 A, 5 A	:<50 A p

Leakage Current

1.3 A	:900 μ A typical
2.5 A	:700 μ A typical
5 A	:550 μ A typical

Mains failure hold up time :>20 ms at 230 Vac

Internal fuse

1.3 A	:2 AT (250 Vac)
2.5 A	:1.6 AT (250 Vac)
5 A	:4 AT (250 Vac)

Output Supply

Voltage :24 Vdc

Voltage tolerance

1.3 A	:1%
2.5A, 5 A	:2%

Current

1.3 A	:1.3 A at 24 Vdc
2.5 A	:2.5 A at 24 Vdc
5 A	:5 A at 24 Vdc

Voltage range :22.0 to 28.8 Vdc

Adjustment accuracy :3% maximum

Ripple :<100 mV (peak to peak up to 20 Mhz)

Current limit :see characteristics page 2

1.3 A	:approximately 1.5 x nominal current
2.5 A	:approximately 1.1 x nominal current
5 A	:approximately 1.1 x nominal current

Overvoltage protection: max. 40 Vdc

No load operation :yes

Feedback protection :max. 30 Vdc

LED :(green) indicates output volts present

Efficiency

1.3 A	:83 % typical
2.5 A	:90% typical
5 A	:88% typical

Mechanical

Dimensions

1.3 A	:40 x 95 x 90* mm
2.5 A	:51 x 130 x 145* mm
5 A	:67 x 130 x 145* mm
	* with terminals

Weight

1.3 A	:310 g
2.5 A	:600 g
5 A	:750 g

Connections

:two part connectors, spring loaded terminals for 0.08 to 2.5 mm² cross sectional area (28 to 14 AWG), solid or stranded, cables. Stripped length 8 to 9 mm (0.33").

Input connections :blue

Output connections: :black

Fixing :35 mm DIN rail mounting (DIN EN 50022)

Environmental

Operating Temperature:-10 to +70 °C

Derating

1.3 A	: -3%/° >50 °C
2.5 A, 5 A	: -3%/° >55 °C

Storage Temperature :-25 to +85 °C

Humidity :30 to 85 %RH non-condensing

Extended Storage

:Equipment containing capacitors should be connected to the input supply for at least 5 minutes every two years

Cooling

:Housing surface temperature must not exceed +80 °C. Natural convection - horizontal mounting position. Spacing to adjacent component left/right 15 mm, above/below 70 mm

EMC

Emissions :EN 61000-6-3

Immunity :EN 61000-6-2

Safety

:EN 60950

Standards

:UL60950 CAN/CSA C22.2 No 60950
 :UL 2601-1 CAN/CSA C22.2 No 601.1
 :UL 1012 CAN/CSA C22.2 No 107.1
 :UL 508 CAN/CSA C22.2 No 14-M91

Type

:Encapsulated housing for installation in control cubicle

Protection :IP20 to EN60529

Safety Class :1

Safety Extra Low Voltage :SELV

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