DIN Rail Mountable Switching Power Supply

Output Power 300 watts



Technical Data Installation and Operation

DEFINITION OF MODELS

SPD24300Ix

24 : Output Voltage
- 24 .... 24Vdc output
- 48 .... 48Vdc output

x : Blank .... Screw Terminal type
- B ..... Detachable Connector type

Fig. 1

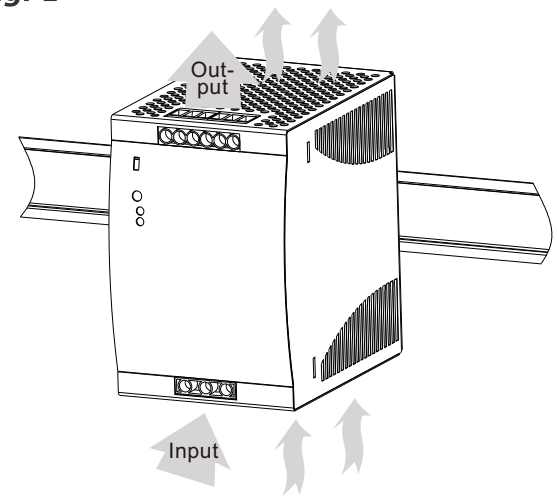


Fig. 2

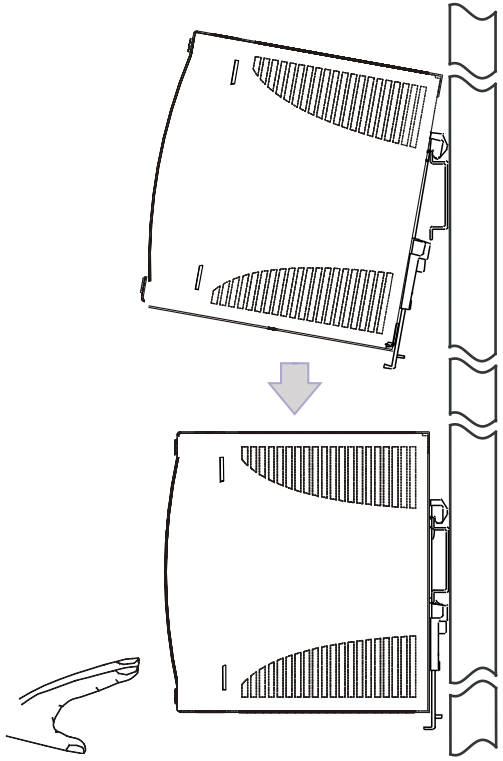
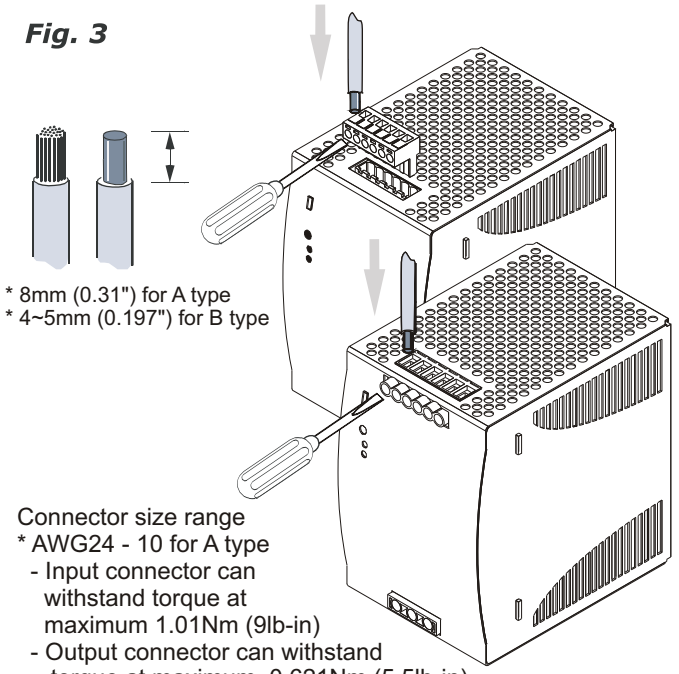


Fig. 3



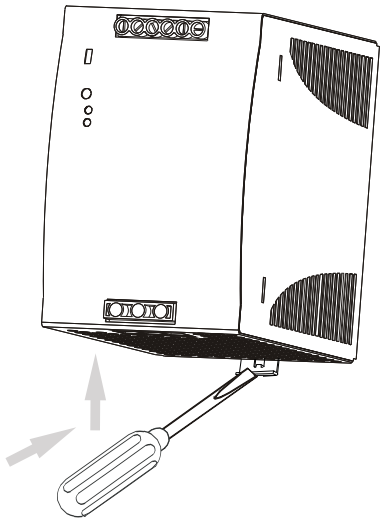
* 8mm (0.31") for A type
* 4~5mm (0.197") for B type

Connector size range
* AWG24 - 10 for A type
- Input connector can withstand torque at maximum 1.01Nm (9lb-in)
- Output connector can withstand torque at maximum 0.621Nm (5.5lb-in)

* AWG24 - 12 for B type
- Input connector can withstand torque at maximum 0.50Nm (4.5lb-in)
- Output connector can withstand torque at maximum 0.79Nm (7lb-in)

Use copper conductors only, 60/75 °C (140/167 °F)
Max. surrounding air temperature of 50 °C (122 °F) for UL 508

Fig. 4



Safety notes

Read Instructions!

Before working with this unit, read these instructions carefully and completely. Make sure that you have understood all the information!

Disconnect system from supply network

Before any installation, maintenance or modification work: Disconnect your system from the supply network. Ensure that cannot be re-connected inadvertently!

Before start of operation

Ensure appropriate installation

Warning! Improper installation / operation impair safety and result in operational difficulties or complete failure of the unit.
The unit must be installed and put into service appropriately by qualified personnel. Compliance with the relevant regulations must be ensured. Before operation is begun the following conditions must be ensured, in particular:

- Connection to main power supply in compliance with VDE0100 and EN50178.
- With stranded wires: all strands must be secured in the terminal blocks (Potential danger of short circuit).
- Unit and power supply cables must be properly fused; if necessary a manually controlled disconnecting element must be used to disengage from supply mains.
- The non-fused earth conductor must be connected to the " ⏚ " terminal (protection class 1).
- All output lines must be rated for the power supply output current and must be connected with the correct polarity.
- Sufficient air-cooling must be ensured.
- Use in a pollution degree 2 environment.
- This equipment is suitable for use in class I, division 2, groups A, B, C, and D or non hazardous locations only.
- Warning-explosion hazard-substitution of components may impair suitability for class I, division 2.
- Warning-explosion hazard-do not disconnect equipment unless power has been switched off or it is known to be the non-hazardous area.

In operation: No modifications!

As long as the unit is in operation: do not modify the installation! The same applies also to the secondary side. Risk of electric arcs and electric shock (fatal)!

Only (dis) connect plug connectors when the power is off!

Convection cooling

Do not cover any ventilation holes!
Leave sufficient space around the unit **for cooling!**
See supplementary sheet "Technical Data" and Fig. 1

Warning: High voltage! Store energy!

The unit contains unprotected conductors carrying a lethal high voltage, and components storing substantial amounts of energy. Improper handling may result in an electric shock or serious burn!

- The unit must not be opened except appropriately trained personnel!
- Do not introduce any object into the unit!
- Keep away from fire and water!

Installation

Application

This unit is a primary switched-mode power supply designed **for use in panel-board installations or building-in applications** where access to the supply is restricted (shock-hazard protection). It must only be installed and put into service appropriately by qualified personnel.

Mounting

Mounting

Permissible mounting position: see Fig. 1 keep free ventilation hole, leave space for cooling! Recommended to have 25mm free space at all sides for ventilation / cooling:
see supplementary sheet "Technical Data".

Snap on support rail (See Fig. 2)

- Tilt the unit slightly rearwards.
- Fit the unit over top hat rail.
- Slide it downward until it hits the stop.
- Press against the bottom front side for locking.
- Shake the unit slightly to check the locking action.

Front elements

Operation indicator

The green LED lights up while the PSU working properly.

DC output low indicator

The red LED lights up while the output voltage is too low.

Potentiometer

Setting the output voltage.

Connection / Internal fuse

Connection

- Data for permitted loads, cable cross-sections and stripping: see enclosed leaflet " Technical Data " (See Fig. 3).
- Use only commercial cables designed for the indicated voltage and current values!
- With flexible cables: make sure that all stranded cable are secured in the terminal.
- Ensure proper polarity at output terminals!

Grounding

- **Do not operate without PE connection!** To comply with EMC and safety standards (CE mark, approvals), the unit must only be operated if the PE terminal ⏚ is connected to the non-fused earth conductor.
- Secondary side is not earthed; if necessary the ⊕ or ⊖ terminal can be earthed optionally.

Internal fuse

The internal input fuse serves to protect the unit and must not be replaced by the user. In case of an internal defect, the unit must be returned to the manufacturer for safety reasons.

Removal

Removal from DIN Rail

Insert a flat screwdriver into the slot in the clamp. Pull down the clamp out until the clamp clicks, and turn the switching power supply bottom out. (See Fig. 4)

Technical Data

All specifications are typical at norminal line, full load, 25℃; Unless otherwise noticed.

Output Power	Vo [V]	Io [A]	Eff. [typ.]	Inrush Current	
				115Vac	230Vac
300	24	12.5	89%	< 35A	< 65A
	48	6.25	90%		

General Specification

Isolation	3000 Vac / 4242 Vdc
Isolation Resistance	100 M ohm
Operation amb. Temperature	-30 ~ +71 ℃
Storage Temperature	-40 ~ +85 ℃
Derating	+56 ~ +71 ℃ (see Fig. 5)
Relative Humidity	20 - 95% RH
Cooling	Free air convection
Temperature Coefficient	0.03% / ℃
Dimension	L124.5 x W83.5 x D123.6 [mm] for A type L143.5 x W83.5 x D123.6 [mm] for B type
Weight	1400g

Input Specification

Input Voltage Rated	115/230 Vac (Auto Select)
Input Voltage Range	115 Vac (90 ~ 132 Vac), 230 Vac (180 ~ 264 Vac), or 210 ~ 375 Vdc
Rated Input Current	6.0/3.0 A
Line Frequency	47-63 Hz
Power Factor	0.75@230 Vac

Output Specification

Output Accuracy	+0 ~ 1%
Line Regulation	±0.5%
Load Regulation	±1% for single mode ±5% for parallel mode
Ripple & Noise	100 mV
Voltage Trim Range	22.5 ~ 28.5 Vdc for 24V models 47 ~ 56 Vdc for 48V models
DC ON Indicator	Green LED
DC LOW Indicator	Red LED
Parallel Operation	3 unit max.
Turn on time	<1000ms
Voltage Fall time	<150ms
Voltage Rise time	<150ms
Hold up time	>25ms
Case material	Metal

Control And Protection

Input Internal Fuse	T8A / 250 Vac
Output Short Circuit	Fold Forward
Output Over Load	120 % ~ 145 %

Approvals And Standard

UL / cUL	UL 508 Listed, UL 60950-1 Recognized ISA 12.12.01
TUV.	EN 60950-1 EN 61558-1, EN 61558-2-17
CE	EN 61000-6-3, EN 55022 class B EN 61000-3-2, EN61000-3-3 EN 61000-6-2, EN 55024 EN 61000-4-2, -3, -4, -5, -6, -8, -11 EN 61204-3

Fig. 5 Derating

