

# Modular Switching Power Supply SPM5 DIN Rail Mountable

# Technical Data Installation and Operation

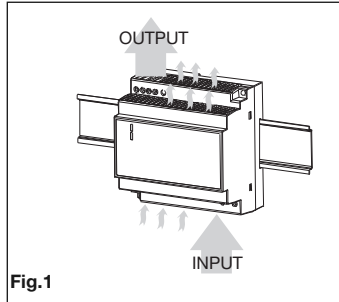


Fig.1

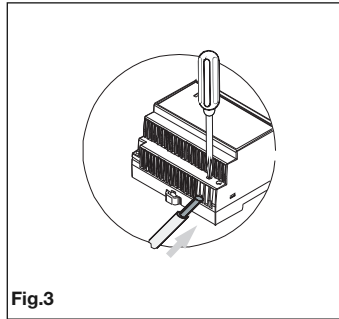


Fig.3

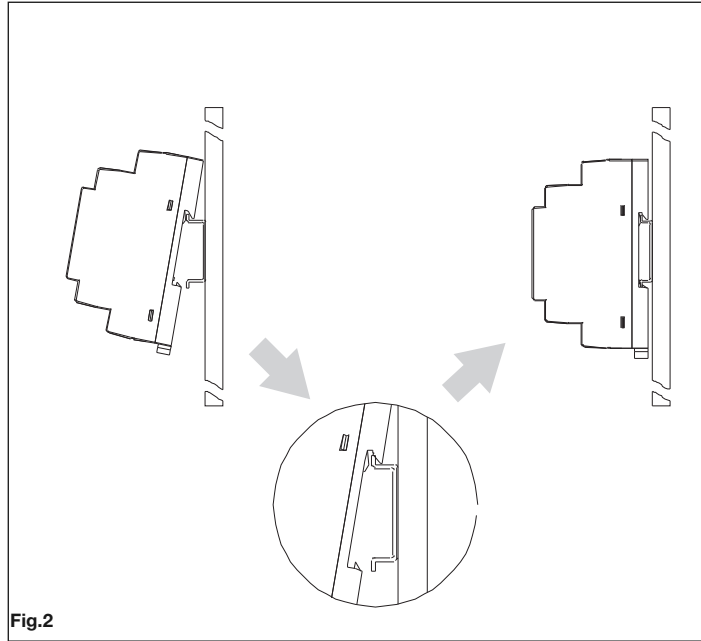


Fig.2

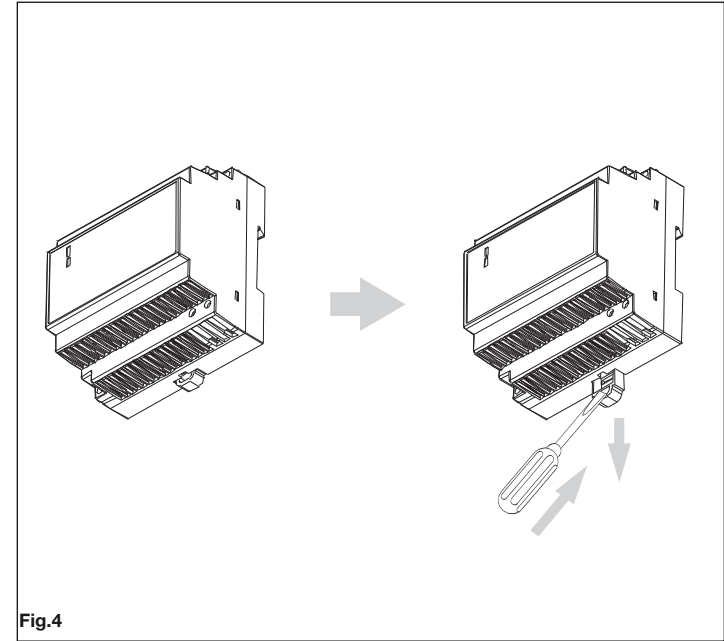


Fig.4

## 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**  
**Caution!**

This unit is a built-in and electrostatically sensitive device (ESD), so must be installed in the airtight distributor box that conform to the safety approval. The unit covers/chassis are designed to protect only skilled personnel from hazards and must not be made user accessible. Improper installation / operation may 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 VDE01000 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.  
• 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.

**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)!

**Convection cooling**  
**Do not cover** any ventilation holes!  
**Leave sufficient space** around the unit for cooling! (See Fig. 1)

**Warning: High voltage! Energy storage!**  
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).

### 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.  
**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**  
Indicates whether the unit is working properly. Green LED is lit on if the voltage at the output terminal is more than 75%.  
**DC output low indicator**  
Red LED lightens up while the voltage at the output terminal is 70% to 90% of the rated.  
**Trimmer Pot**  
It is used in order to fine adjust the output voltage, within a specified range to compensate possible voltage drops on the lines.

### Connection / Internal fuse

**Connection**  
Data for permitted loads, cable cross-sections and stripping: see enclosed table " 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!  
**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 unit the clamp clicks, and turn the switching power supply bottom out. (See Fig. 4)

## Technical Data

All specifications are typical at nominal line, full load, 25°C ; Unless otherwise noticed.

General Specification			
Insulation voltage	3.000Vac		
Insulation resistance	100MΩ		
Ambient temperature	-25°C to 71°C	-13°F to 160°F	
Derating (>61°C to +71°C)	2.5%/°C	1.4%/°F	
Ambient humidity	90%RH		
Storage temperature	-25°C to +85°C	-13°F to 185°F	
Dimensions L x W x H (mm)	91 x 89.9 x 56.8		3.582" x 3.54" x 2.236"
Cooling	Free air convection		
Case material	Plastic		
Weight	320g		
Protection degree	IP20		
Output Specification			
Line regulation	±1% max.		
Load regulation	±1%		
Output Voltage accuracy	±1%		
Ripple and Noise	50mV		
Temperature Coefficient	±0.02% / °C		
Hold up time	V <sub>i</sub> = 115Vac		
	5V & 12V model	16ms	
	15V & 24V model	10ms	
	V <sub>i</sub> = 230Vac	60ms	
Minimum load	0%		
Transient recovery time (50% load step changed)	1ms		
Voltage trim range	Models	Min.	Max.
	5V	5Vdc	5.5Vdc
	12V	12Vdc	14Vdc
	15V	13.5Vdc	16.5Vdc
	24V & 24VS	24Vdc	28Vdc
DC ON indicator	Models	Min.	Max.
	5V	3Vdc	-
	12V	9Vdc	-
	15V	13Vdc	-
	24V & 24VS	18Vdc	-
DC LOW indicator	Models	Min.	Max.
	5V	3.2Vdc	3.7Vdc
	12V	8.8Vdc	9.3Vdc
	15V	12Vdc	12.5Vdc
	24V & 24VS	18Vdc	19Vdc
Rated input voltage	100/240VAC		
Voltage range			
AC in	100 - 240 Vac		
DC in	120 - 370 Vdc		
Line frequency	47 - 63Hz		
Inrush current	V <sub>i</sub> = 115Vac	1yp: 25A Max: 30A	
	V <sub>i</sub> = 230Vac	1yp: 40A Max: 60A	
Control And Protection			
Input Fuse	T3, 15A/250Vac internal (non replaceable by user)		
Output Short Circuit	Fold forward		
Rated Overload Protection			
	5V, 12V, 15V & 24V	110-150%	
	24V S	102-108%	
Approvals And Standard			
UL / cUL	UL508 listed, UL1310 Class 2 power supply (241S model), UL60950-1 Recognized		
TUV	EN60950-1		
CE	EN61000-6-3, EN55022 class B, EN61000-3-2, EN61000-3-3, EN61000-6-2, EN55024, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11		