

Panel Mount SMPS

SPA-400-24 Series

INSTRUCTION MANUAL

TCD210173AB

Autonics

Thank you for choosing our Autonics product.

Read and understand the instruction manual and manual thoroughly before using the product.

For your safety, read and follow the below safety considerations before using.

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

Keep this instruction manual in a place where you can find easily.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Follow Autonics website for the latest information.

Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ Warning Failure to follow instructions may result in serious injury or death.

- Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)**
Failure to follow this instruction may result in personal injury, economic loss or fire.
- Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**
Failure to follow this instruction may result in explosion or fire.
- Install on the device panel, and ground to the F.G. terminal separately.**
Failure to follow this instruction may result in fire or electric shock.
- Do not connect, repair, or inspect the unit while connected to a power source.**
Failure to follow this instruction may result in fire or electric shock.
- Check 'Connections' before wiring.**
Failure to follow this instruction may result in fire.
- Do not disassemble or modify the unit.**
Failure to follow this instruction may result in fire or electric shock.

⚠ Caution Failure to follow instructions may result in injury or product damage.

- When connecting the F.G. terminal, use AWG 14 (2.1 mm²) cable or over and tighten the terminal screw with a tightening torque of 0.7 to 0.9 N·m.**
Failure to follow this instruction may result in fire or malfunction due to contact failure.
- Use the unit within the rated specifications.**
Failure to follow this instruction may result in shortening the life cycle of the product, fire, or product damage.
- Use dry cloth to clean the unit, and do not use water or organic solvent.**
Failure to follow this instruction may result in electric shock or fire.
- Keep metal chip, dust, and wire residue from flowing into the unit.**
Failure to follow this instruction may result in fire or product damage.
- Do not touch the product during operation or for a certain period of time after stopping.**
Failure to follow this instruction may result in burns.
- Upon occurrence of an error, disconnect the power source.**
Failure to follow this instruction may result in fire or product damage.

Cautions during Use

- Follow instructions in 'Cautions during Use'.
Otherwise, it may cause unexpected accidents.
- Do not connect the output voltage neither in serial nor in parallel.
- Since there is no harmonic suppression or power factor correction circuit, install the circuit separately if necessary.
- Since using the condenser input method, power factor is in the range of 0.4 to 0.6.
When using distribution board or transformer, check the capacity of the input voltage.

$$\text{Input apparent power[VA]} = \frac{\text{Output active power[W]}}{\text{Power factor} \times \text{Efficiency}}$$

- Even though a noise filter is installed inside the product, the product can be affected by noise depending on the installation location or wiring.
- If the internal fuse is damaged, please contact our A/S center.
- To ensure the reliability of the product, install the product on the panel or metal surface vertically to the ground.
- Install the unit in the well ventilated place.

- Do not use near the equipment which generates strong magnetic force or high frequency noise.
- This unit may be used in the following environments.
 - Indoors (in the environment condition rated in 'Specifications')
 - Altitude max. 2,000m
 - Pollution degree 2
 - Installation category II

Specifications

Model		SPA-400-24
Output power		400.8 W
Input condition	Voltage ⁽⁰¹⁾	200 - 240 VAC~ (permissible voltage: 190 - 264 VAC~)
	Frequency	50 / 60 Hz
	Efficiency ⁽⁰²⁾ (typical)	≥ 85% (10 min after power ON)
	Current consumption ⁽⁰²⁾ (typical)	≤ 4.6 A
	Leakage current ⁽⁰²⁾ (typical)	≤ 1 mA
	Inrush current protection ⁽⁰²⁾ (typical)	40 A
Output characteristics	Voltage	24 VDC≡
	Current	16.7 A
	Voltage adjustment range ⁽⁰³⁾	≤ ±5%
	Input variation	≤ ±0.5%
	Load variation	≤ ±1%
	Temperature drift	360 mV
	Ripple noise	≤ 290 mV
	Start-up time ⁽⁰²⁾ (typical)	1,800 to 2,300 ms
Protection	Hold time ⁽⁰²⁾ (typical)	≥ 17 ms
	Over-current protection	110 to 160% (recovers automatically after the cause for over current is removed)
	Over-voltage protection ⁽⁰³⁾	27 - 33 VDC≡
	Temperature rising limit	Yes
	Remote control	Yes (output voltage ON for shorting, output voltage OFF for open)
Product Components		•Product •Instruction manual
Certification		CE UK
Unit weight (package)		≈ 885 g (≈ 975 g)

Indicator	Output indicator (green)
Insulation resistance	Between all input terminals and F.G.: ≥ 100 MΩ (at 500VDC= megger)
Dielectric strength	Between all input and output terminals: 3,000 VAC~ 50/60 Hz for 1 min Between the charging part and the F.G.: 2,000 VAC~ 50/60 Hz for 1 min
Vibration	0.75 mm amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 2 hours
EMS	EN61000-6-2 compliant
EMI	EN61000-6-4 compliant
Safety standards	EN60950, EN50178
Ambient temperature	-10 to 50 °C, storage: -20 to 75 °C (no freezing or condensation)
Ambient humidity	20 to 90%RH, storage: 20 to 90%RH (no freezing or condensation)
Fan life cycle	70,000 hours (based on 40 °C of ambient temperature)

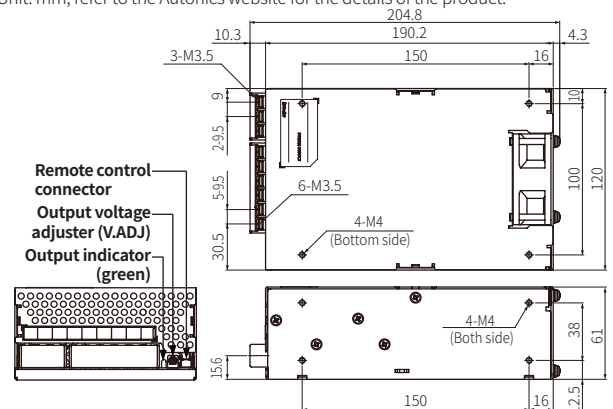
(01) Since there is no separate input overvoltage protection for the voltage over the rated input voltage range, supplying overvoltage may result in product damage.

(02) It is for 220 VAC~, 100% load.

(03) Use the output voltage adjusting volume within the voltage variable range. If the voltage exceeds the output voltage range, overvoltage protection function is activated and the output is cut off.

Dimensions

- Unit: mm, refer to the Autonics website for the details of the product.



Connections

- Wire: AWG 18 to 16, Torque: 0.7 to 0.9 N·m

Mark	Function
N, L	Input power
FG	F.G. frame ground
-	GND, output power (-)
+	+24V, output power (+)