

Single-Phase Slim Power Controllers



SPR1 Series CATALOG

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

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

Features

- Slim and elegant design
- LED display allows real-time monitoring of control input, load voltage, load current, load power, load resistance, and heat-sink temperature
- Stable control with feedback control (constant current, constant voltage, constant power)
- Communication output models available: RS485 (Modbus RTU)
- Parameter configuration via PCs (RS485): Free device management software (DAQMaster)
- Various alarm functions (alarm output) : over current, over voltage, heater disconnection, fuse break, heat-sink over heat, diode (SCR) error
- Easy installation with mounting brackets
- Easy fuse replacement and maintenance
- High performance SCR (IXYS) diode

Ordering Information

This is only for reference, the actual product does not support all combinations. For selecting the specified model, follow the Autonics website.

SPR 1 - ① ② ③ ④ ⑤

① Rated load voltage

- 1: 110 VAC~
- 2: 220 VAC~
- 3: 380 VAC~
- 4: 440 VAC~

② Rated load current

Number: Rated load current (unit: A)

③ Option output

- N: Alarm output
- T: Alarm output + RS485 comm. output

④ Feedback control

- N: Normal control
- F: Normal, feedback control (constant current / constant voltage / constant power)

⑤ Fuse

- N: None
- F: Supports fuse

Product Components

- Product (+ 11-pin connector)
- Instruction manual

Software

Download the installation file and the manuals from the Autonics website.

■ DAQMaster

It is the comprehensive device management program for Autonics' products, providing parameter setting, monitoring and data management.

Specifications

Model	SPR1-1 □	SPR1-2 □	SPR1- □	SPR1-4 □
Control phase	Single-phase			
Rated load voltage	110 VAC~ 50 / 60 Hz	220 VAC~ 50 / 60 Hz	380 VAC~ 50 / 60 Hz	440 VAC~ 50 / 60 Hz
Rated load current	25 / 35 / 50 / 70 / 100 / 150 A			
Display method	3-digit 7segment LED			
Indicators	Operation / manual control indicator (green) Alarm / output / unit (V, A) indicator (red)			
Auto control input	Current: DC 4 - 20 mA, voltage: 1 - 5 VDC≐, contact (non-voltage): ON / OFF, contact (voltage): 5 - 12 VDC≐, communication: RS485			
Manual control input	External adjuster (10 kΩ), output control adjuster (OUT ADJ)			
Digital input (DI)	RUN / STOP selectable, AUTO / MAN selectable, RESET			
Alarm output	250 VAC~ 3 A, 30 VDC≐ 3 A, 1c resistance load			
RS485 comm. output	Modbus RTU method			
Cooling method	Rated load current 25 / 35 / 50 A: natural cooling Rated load current 70 / 100 / 150 A: forced air cooling (with cooling fan)			
Unit weight (packaged)	Rated load current 25 / 35 / 50 A: ≈ 1.3 kg (≈ 1.6 kg) Rated load current 70 A: ≈ 1.35 kg (≈ 1.65 kg) Rated load current 100 / 150 A: ≈ 2.8 kg (≈ 3.2 kg)			
Approval	CE			

Control method	Phase control	Cycle control	ON/OFF control
Control mode	Normal, constant current feedback/ constant voltage feedback/ constant power feedback	Fixed cycle / variable cycle	-
Applied load	Resistance load, inductive load	Resistance load	Resistance load, inductive load
Output range	0 to 98 %	0 to 100 %	0 / 100 %
Output accuracy	Varies by control mode		
Normal	Within ± 10 % F.S. of rated load voltage	-	-
Constant current / voltage / power feedback	Within ± 3 % F.S. of rated load current / voltage / power	-	-

Power supply	100 - 240 VAC~ ± 10 % 50 / 60 Hz
Min. load current	1 A
Power consumption	Rated load current 25 / 35 / 50 A: ≤ 7 VA Rated load current 70 / 100 / 150 A: ≤ 12 VA
Insulation resistance	≥ 200 MΩ (500 VDC≐ megger)
Dielectric strength	Between input and power terminal: 2,000 VAC~ 50 / 60 Hz for 1 min
Output leakage currents	≤ 10 mArms
Noise immunity	± 2 kV square wave noise (pulse width: 1 μs) by the noise simulator
Memory retention	≈ 10 years (when using non-volatile semiconductor memory type)
Vibration	0.75 mm double amplitude at frequency of 5 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours
Vibration (malfunction)	0.5 mm double amplitude at frequency of 5 to 55 Hz (for 1 min) in each X, Y, Z direction for 10 min
Ambient temp.	-10 to 55 °C, storage: -20 to 80 °C (no freezing or condensation)
Ambient humi.	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)

Communication Interface

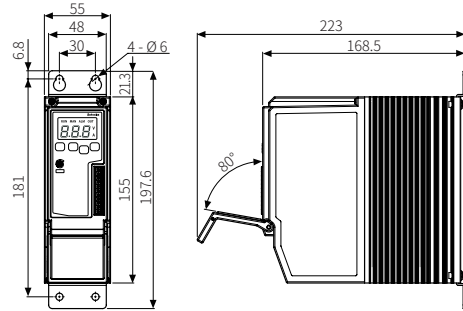
■ RS485

Comm. protocol	Modbus RTU
Application standard	Compliance with EIA RS485
Max. connection	31-unit (address: 01 to 99)
Comm. synchronous method	Asynchronous
Comm. method	2-wire half duplex
Comm. distance	≤ 800 m
Comm. speed	2,400 / 4,800 / 9,600 / 19,200 / 38,400 bps
Comm. response time	5 to 99 ms (default: 20 ms)
Start bit	1-bit (fixed)
Data bit	8-bit (fixed)
Parity bit	None, Even, Odd
Stop bit	1-bit, 2-bit

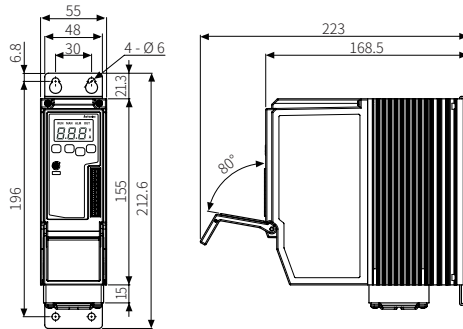
Dimensions

• Unit: mm, For the detailed drawings, follow the Autonics website.

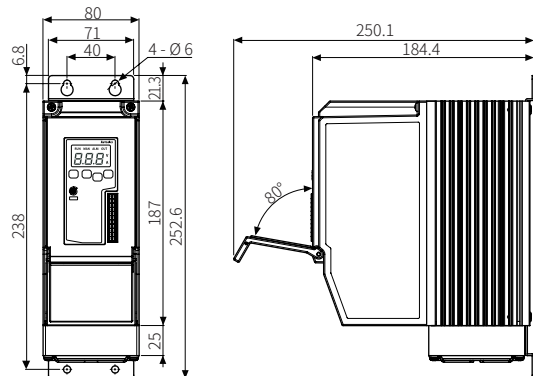
■ Rated load current 25 / 35 / 50 A



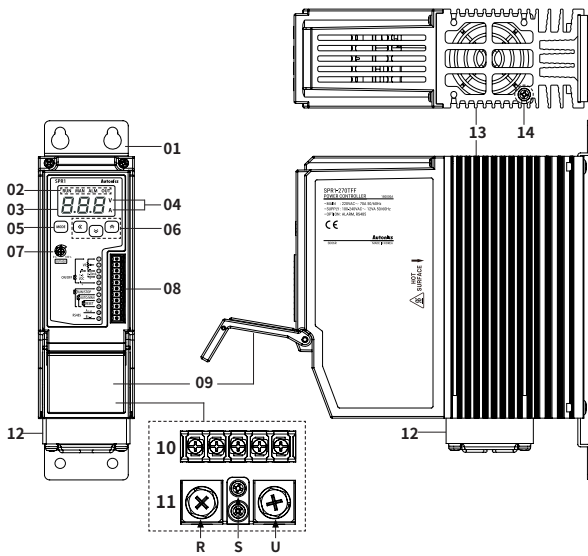
■ Rated load current 70 A



■ Rated load current 100 / 150 A



Unit Descriptions



- 01. Bracket
- 02. Indicator

Indicator		Function
RUN	Operation indicator (green)	Turns on in the RUN mode.
MAN	Manual control indicator (green)	Turns on when adjusting load output in the manual control mode.
ALM	Alarm indicator (red)	Flashes in alarming status.
OUT	Output indicator (red)	Turns on when load control outputs.

03. Display part

RUN mode: Displays depending the front display setting

Setting mode: Displays parameter and setting value in setting mode

04. Unit indicator (V, A)

Dependent on the display setting.

Display setting	V	A
Resistance and input	OFF	OFF
Voltage	ON	OFF
Current	OFF	ON
Power	ON	ON

05. [MODE] key

Enters parameter group, returns to RUN mode, moves parameters, and saves the setting value.

06. [◀], [▼], [▲] key

Enters SV setting mode and move digits.

07. Output control adjuster (OUT ADJ)

Adjusts output from 0 to 100 % in manual control.

08. Control input / comm. output terminal (11-pin connector terminal)

09. Terminal protection cover

10. Alarm output / power input terminal

11. R, S, U load output terminal

12. Cooling fan

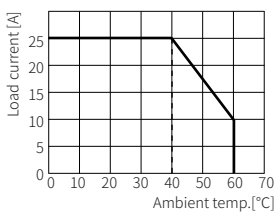
[Rated load current 70 / 100 / 150 A model]

13. Heatsink

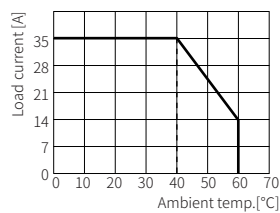
14. Bolt for grounding (M4)

Derating Curve

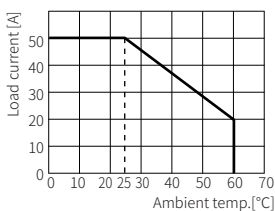
■ Rated load current 25 A



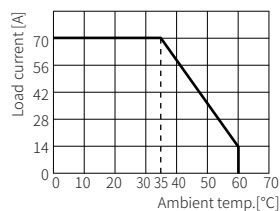
■ Rated load current 35 A



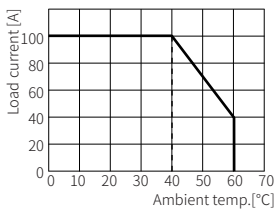
■ Rated load current 50 A



■ Rated load current 70 A



■ Rated load current 100 A



■ Rated load current 150 A

