Autonics

Wireless to Serial Communication Converters

SCM-WF48

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.

CE ℞ EHI

Major Features

- Converting USB or RS485 signal to Wi-Fi signal, and wireless communication up to max. 100 m
- Compact size (W 48×H 25.6×L 76.3 mm, except antenna)
- Built-in surge protection circuit, reverse polarity protection circuit
- Supports AP mode and station mode
- Various mounting methods (DIN rail, panel)

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.

01. **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, fire or economic loss.
02. **Do not use the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**
   Failure to follow this instruction may result in explosion or fire.
03. **Do not disassemble or modify the unit.**
   Failure to follow this instruction may result in fire.
04. **Do not connect, repair, or inspect the unit while connected to a power source.**
   Failure to follow this instruction may result in fire.
05. **Check 'Connections' before wiring.**
   Failure to follow this instruction may result in fire.

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

01. **Use the unit within the rated specifications.**
   Failure to follow this instruction may result in fire or product damage.
02. **Use dry cloth to clean the unit, and do not use water or organic solvent.**
   Failure to follow this instruction may result in fire.
03. **Keep metal chip, dust, and wire residue from flowing into the unit.**
   Failure to follow this instruction may result in fire or product damage.
04. **Do not disconnect connector or power, when the product is operating.**
   Failure to follow this instruction may result in fire or malfunction.

Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
- 24 VDC⎓ power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- Use only designated connector and do not apply excessive power when connecting or disconnecting the connectors.
- Keep away from high voltage lines or power lines to prevent inductive noise.
  In case installing power line and input signal line closely, use line filter or varistor at power line and shielded wire at input signal line.
  Do not use near the equipment which generates strong magnetic force or high frequency noise.
- Do not connect or disconnect the USB cable and RS485 cable quickly and repeatedly while communicating.
  It may cause damage or malfunction of the product and PC.
- After supplying power, connect with the communication output product. When disconnect, communication output product first and power last.
- When connecting multiple SCM-WF48 units to a PC, number of COM port goes up in sequential order and it takes some time to identify and assign number of COM port.
- When connecting the RS485 communication output product, connect the terminating resistance (120Ω, 1% (F) grade chip resistance, 1/4W) at each end of the communication cable.
- Use twist pair wire for RS485 communication. If not, use A(+) and B(-) cables in the same length.
- Use USB cable of designated standard, and do not use extension cable.

- 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 I

Cautions for Installation

- When wiring the RS485 connector, use AWG 24 cable.
- Tighten the connector screw with a tightening torque of 0.22 to 0.4 N m with the screwdriver for M2 screw.
- Do not apply excessive pressure to the WiFi antenna. It may cause product damage.

Part Descriptions
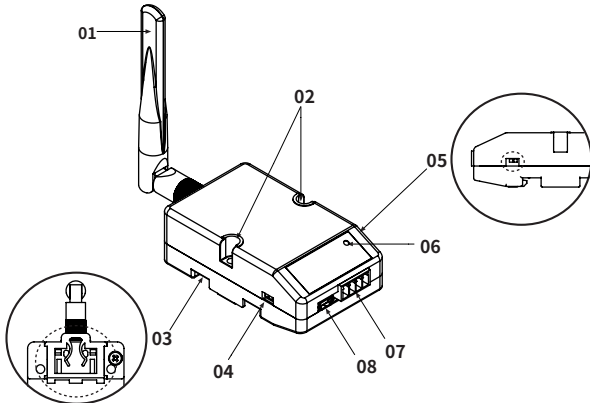
01. **WiFi antenna**
02. **Fixing screw hole**
03. **Rail Lock**
04. **Communication method switch (USB ↔ RS485)**
05. **Terminating resistance switch (RT ↔ OFF)**
06. **Indicator for modes**
07. **RS485 connector**
08. **USB connector**

RS485 Connector

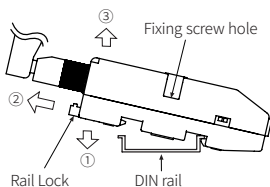| Pin	Function
A	RS485 (+)
B	RS485 (−)
V	+V
G	Ground

Installation

■ **DIN rail mounting and removal**

• **Mounting**

1. Hang up the backside holder on a DIN rail.
2. Press the unit toward ① direction until it snaps.

• **Removing**

1. Pull rail locks of the backside of the unit to ② direction.
2. Pull the unit to ③ direction.

■ **Mounting to panel**

- This unit is able to mount on a panel with two fixing screws at center of both sides.
- Use M3 screws with a tightening torque of 0.4 N m.

■ **USB driver installation**

- Visit our website to download the driver.
- If the computer is connected to the Internet, your PC automatically searches for the driver and install it.
- Check the status of the driver installed on your computer via Device Manager.

DAQMaster

- DAQMaster is the comprehensive device management program for Autonics' products, providing parameter setting, monitoring and data management.
- Visit our website to download the DAQMaster installer and user manual.

| Item	Minimum requirements
System	IBM PC compatible computer with Intel Pentium III or above
Operating system	Microsoft Windows 98/NT/XP/Vista/7/8/10
Memory	256MB or more
Hard disk	More than 1GB of free hard disk space
VGA	1024×768 higher resolution display
Others	RS232 serial port (9-pin), USB port

How to use DAQMaster

01. **Select USB via Communication method switch.**
02. **Connect your PC and SCM-WF48 with the enclosed USB.**
03. **Proceed device connection and communication mode via DAQMaster.**
    For detailed setting method, see the "DAQMaster User Manual."
04. **Select RS485 via Communication method switch to connect with other units.**
    Select RT via Terminating resistance switch to use terminating resistance.

Indicator for Modes

Mode	Indicator	State
AP mode	Green ON	Power ON / AP ready
	Red ON	Station or device connection is complete
	OFF	No power
Station mode	Green ON	Power ON
	Red ON	AP connection is complete
	OFF	No power

Dimensions

- Unit: mm, For the detailed dimensions for the product, follow the Autonics web site.
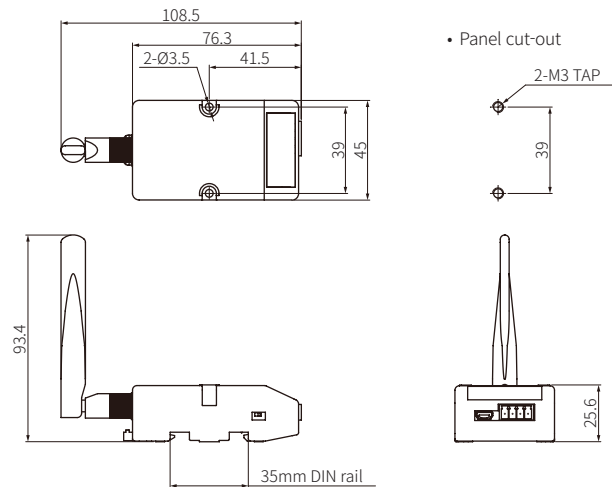
Specifications

Model name	SCM-WF48
Power supply	24 VDC⎓
Allowable voltage range	12 - 28 VDC⎓
Power consumption	$\approx$ 3 W
Communication type	RS485, USB, WiFi
Isolation resistance	$\geq$ 200 MΩ (at 500 VDC⎓ megger between external terminal and case)
Protection circuit	Reverse polarity protection circuit, surge protection circuit
Dielectric strength	1,000 VAC$\sim$ 50/60 Hz for 1 min (between external terminal and case)
Noise immunity	$\pm$ 500 VDC⎓ the square wave noise (pulse width: 1μs) by the noise simulator
Vibration	1.5 mm amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours
Shock	500 m/s^2 ($\approx$ 50 G) in each X, Y, Z direction for 3 times
Ambient temperature	-10 to 55 °C, storage: -20 to 60 °C (a non freezing or condensation environment)
Ambient humidity	35 to 80 %RH, storage: 35 to 80 %RH (a non freezing or condensation environment)
Protection structure	IP20 (IEC standards)
Mounting	DIN rail or panel mounting
Accessories	USB 2.0 Mini B type cable (length: 1 m): 1, Connector for RS485 (4-pin, male type): 1
Indicator	Indicates state of mode
Approval	CE ℞ EHI
Weight (packaging)	$\approx$ 57 g ($\approx$ 160 g)

Communication	WiFi
Standard	802.11b/g/n (IEEE 802.11b) compatible
Communication speed	$\leq$ 11 Mbps
Communication distance	$\leq$ 100 m
Protocol	TCP/IP (IPv4)
Frequency range	2.4 to 2.497 GHz
Security	WEP, WPA, WPA2-PSK, Enterprise
Antenna	2dBi external antenna

Communication	RS485
Standard	EIA RS485
communication speed [01]	4800, 9600, 19200, 38400, 57600, 115200bps (default: 9600bps)
communication method	2-wire half duplex
Synchronous method	Asynchronous
Communication distance	$\leq$ 800 m
Multi-drop	$\leq$ 31 Multi-drop
Protocol [01]	Data bit: 5bit, 6bit, 7bit, 8bit (default: 8bit) Stop bit: 1bit, 2bit (default: 1bit) Parity bit: None, Even, Odd (default: None)
Connection type	4-wire screw terminal (2-wire communication method)

01) You can set via DAQMaster.

Communication	USB
Power	5 VDC⎓, 500mA
Standard	USB 2.0 (compatible sub-transmission)
Communication method	2-wire half duplex
Communication distance	$\leq$ 1 m $\pm$ 30%
Connection type	USB 2.0 Mini B type (male)