SCM-WF48

Wi-Fi/RS485, USB wireless communication converter (converting Wi-Fi to RS485, USB)

NEW
(available soon)

▣ Features

- Converting USB or RS485 signal to Wi-Fi signal and wireless communication up to max. 100m
- Compact size(W48×H25.3×L76mm, excepting antenna)
- Built-in surge protection circuit, reverse polarity protection circuit
- Supports AP mode and infrastructure mode
- DIN rail and panel mounting

(pending)

SCM-US48I

USB to Serial converter(converting signal USB to Serial)

▣ Features

- Available to transmit signals to max. 1.2km by converting USB signal to RS485 signal
- Realizing electrical insulation(2500V RMS) between USB port and RS485 port through RS485 transceiver.
- Improved stability and durability with built-in protection circuit
- Easy connections between devices with bus power supplied from USB host controller without external power supply
- Offering USB 2.0 A/B type cable with built-in ferrite core for noise reduction
- Various operating systems supported (Windows 98, 98SE, ME, 2000, Server 2003, XP, Vista, 7)
- User friendly features through compatibility with USB 1.1 and USB 2.0

SCM-38I

RS232C to RS485 converter(converting signal RS232C to RS485)

▣ Features

- Built-in surge protection circuit
- The insulation type of signal line (Insulating RS232C and RS485)
- Create Tx-Enable signal automatically

SCM-US

USB to Serial converter(converting signal USB to Serial)

▣ Features

- Applicable OS : Windows 98, 98SE, ME, 2000, Server 2003, XP, Vista, 7
- Both USB 1.1 and USB 2.0 compatible
- Data transmission / power supply indicating LED
- Easy to connect with PC
- Built-in protection circuit
- Ferrite core cable for noise reduction
- Non-isolation type

※Specifically designed to connect to particular Autonics and Konics products which support the PC loader port.

⚠ **Please read "Caution for your safety" in operation manual before using.**

▣ Specifications

◎ SCM-WF48

Model		**SCM-WF48**
Power supply		24VDC
Allowable voltage range		12-28VDC
Communication type		RS485, USB, Wi-Fi
Isolation resistance		Min. 200 MΩ(at 500 VDC megger between external terminal and case)
Protection circuit		Reverse polarity protection circuit, surge protection circuit
Dielectric strength		1,000VAC 50/60Hz for 1 min.(between external terminal and case)
Noise resistance		±500 V the square wave noise(pulse width: 1μs) by the noise simulator
Vibration		1.5 mm amplitude at frequency or 300m/s^2 of 10 to 55 Hz(for 1min.) in each of X, Y, Z directions for 2 hours
Shock		500m/s^2(approx. 50G) in each of X, Y, Z directions for 3 times
Environ-ment	Ambient temperature	-10 to 55℃, storage: -20 to 60℃
	Ambient humidity	35 to 80%RH, storage: 35 to 80%RH
Protection		IP20(IEC standards)
Mounting		DIN rail or panel mounting
Accessories		USB 2.0 Mini 5P type cable (length: 1 m), Connector for RS-485 (4-pin, male type) 1EA
Weight※1		Approx. 160g(approx. 57g)

※1: The weight is with packaging and the weight in parentheses is only unit weight.
※Environment resistance is rated at no freezing or condensation.

● RS485 communication specifications

Connection	RS485
Standard	EIA RS485
Protocol	Modbus RTU
Com. method	2-wire half duplex
Synchronous method	Asynchronous
Effective com. distance	Max. 800m
Com. speed※**1**	4800, 9600, 19200, 38400, 57600, 115200bps (factory default: 115200bps)
Data bit※**1**	5bit,6bit,7bit,8bit(factory default:8bit)
Stop bit※**1**	1bit, 2bit(factory default: 1bit)
Parity bit※**1**	None, Even, Odd(factory default: None)
Multi-drop	Max. 31 Multi-drop
Connection type	4-wire screw terminal (2-wire communication method)

※1: You can set this by DAQMaster.

● Wi-Fi communication specifications

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

● USB communication specifications

Power	5 V, 500 mA
Standard	USB 2.0(compatible sub-transmission)
Com. method	2-wire half duplex
Connections	USB 2.0 Mini 5P type(Male)

◎ SCM-US48I / SCM-38I / SCM-US

Model		**SCM-US48I**	**SCM-38I**	**SCM-US**
Power supply		5VDC USB bus Power	12-24VDC ± 10%	5VDC USB bus Power※1
Power consumption		Max. 1W	Max. 1.7W	Max. 1W
Max. com speed※2		1,200 to 115,200bps(Recommended : 9,600bps)		
Communication type		Half duplex type		
Available com. distance		USB: Max. 1m ± 30% RS485: Max.1.2km	Max. 1.2km	1.5m(not extension)
Multi-drop		Max. 31 multi-drop		—
Protocol※2	Data bit	5 to 8 data bits		—
	Stop bit	1 or 2 stop bits		—
	Parity bit	None/Odd/Even		—
Connection type		USB: B type connector	RS232: D-sub 9Pin	USB: A type connector
		RS485: 4-wire screw terminal(2wire communication type)		Earphone jack(4 pole stereo phone plug)
Isolation type		Isolation		Non-isolation
Dielectric strength		●Between terminals and case: 200VAC 50/60Hz for 1 min. ●Between USB and RS485: 2500VAC 50/60Hz for 1 min.	●Between terminals and case: 200VAC 50/60Hz for 1 min. ●Between RS232C and RS485: 2500VAC 50/60Hz for 1 min.	—

※1: USB bus power is supplied from PC or USB host controller.
※2: Protocol and communication speed are set by Hyper terminal. DAQMaster, ParaSet, Modbus Poll.
When communicating with Autonics products, set communication speed to 9,600bps.

■ Specifications

◎ SCM-US48I / SCM-38I / SCM-US

Model		SCM-US48I	SCM-38I	SCM-US
Insulation resistance		Min. 100MΩ(at 500VDC megger)		—
Noise strength		±500V the square wave noise(pulse width: 1μs) by the noise simulator		—
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 1 hour		
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 10 minutes		
Shock	Mechanical	300m/s² (approx. 30G) in each of X, Y, Z directions for 3 times		
	Malfunction	100m/s² (approx. 10G) in each of X, Y, Z directions for 3 times		
Environ -ment	Ambient temperature	-10 to 55℃, storage: -20 to 60℃		
	Ambient humidity	35 to 85%RH, storage: 35 to 85%RH		
Approval		CE		
Accessory		USB 2.0 AB type connector (length: 1m)	—	
Unit weight		Approx. 34.5g	Approx. 46g	Approx. 41g

※There might be some differences in the specification above depending on PC environment.
※Environment resistance is rated at no freezing or condensation.

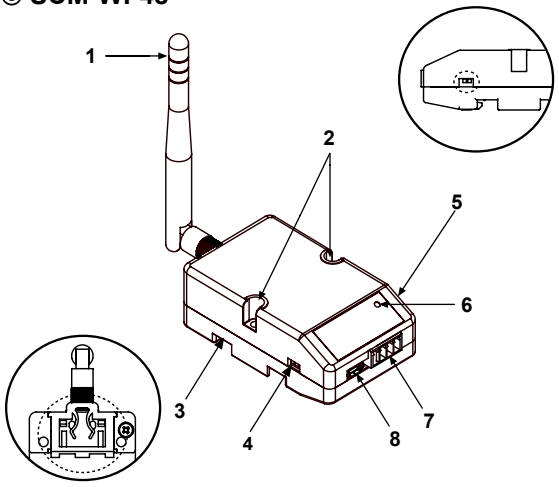
■ Integrated device management program (DAQMaster)

DAQMaster is the integrated device management program. **Set the communication method switch of SCM-WF48 as USB, and connect this unit and a PC with USB cable.**
You can set the communication setting for SCM-WF48 by DAQMaster.
Visit our website (www.autonics.com) and download DAQMaster.

Item	Minimum requirements
System	IBM PC compatible computer with Intel Pentium III or above
Operating system	Microsoft Windows 98/NT/XP/Vista/7
Memory	256MB or more
Hard disk	More than 1GB of free hard disk space
VGA	1024×768 or higher resolution display
Others	RS-232 serial port(9-pin), USB port

■ Part descriptions

◎ SCM-WF48



1.Wi-Fi antenna
: Antenna for transmitting and receiving Wi-Fi communication data. It may be broken when excessive pressure is applied.
2. Fixing screw hole
: Used for mounting the unit on a panel.
3. Rail Lock
: Used for fixing this unit at DIN rail mounting.
4. Communication method switch
: Switch for select communication method.

USB ◀▬▶ RS485
▬ (default)

For setting SCM-WF48I by DAQMater, select USB communication method.

5. Terminating resistance switch
: Switch for whether using terminating resistance.

RT ◀▬▶ OFF
▬ (default)

[RT]: It uses terminating resistances.
[OFF]: It does not use terminating resistance.

※It is applied only when selecting RS485 communicaiton method.
※Specifications of terminating resistance: 120 Ω, 1%(F) grade chip resistance, 1/4 W

6. Indicator
: Indicator for statue of AP mode and Infrastructure mode.

Mode / Status	AP mode	Infrastructure mode
Red ON	Initial error※1	Try to AP connection
Green ON	AP ready	AP connection is complete
Orange ON	Protocol socket error※2	
OFF	Power is not supplied.	

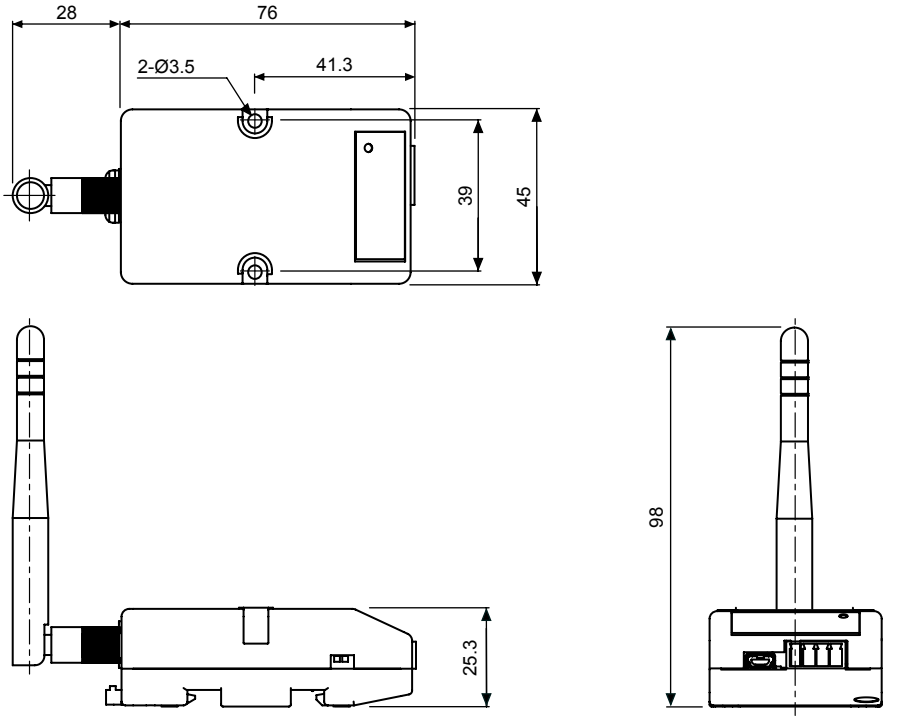
※1: Re-set AP mode with DAQMaster.
※2: Re-supply the power to server and client.
※When power is supplied, this green/red indicator flashes 3 to 4 times in turn.

7. RS485 connector: Used for connecting RS485 communication cable.
8. USB connector: Used for connecting a PC, etc. with an USB cable.

▣ Dimensions

◎ SCM-WF48

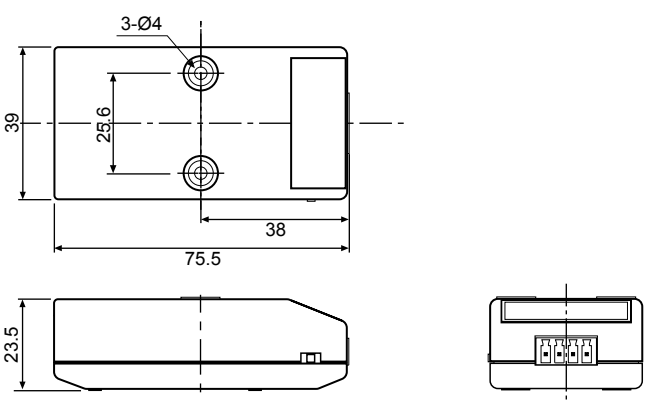
(unit: mm)



◎ SCM-US48Ⅰ

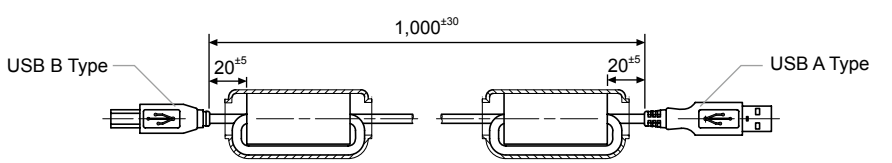
※USB 2.0 AB type cable is including the product and is also sold separately.
(model: USB AB CABLE)

(unit: mm)



● **USB 2.0 AB type cable**

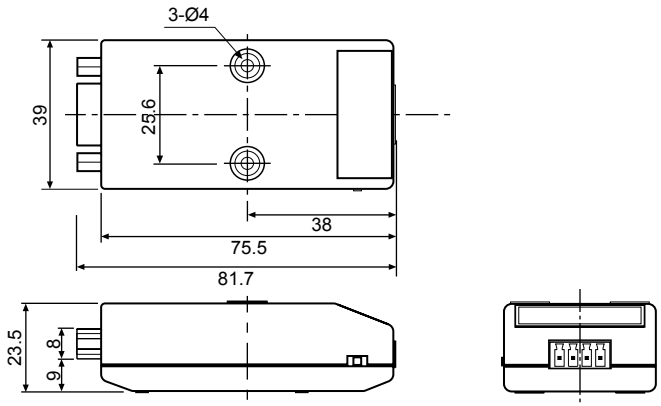
(unit: mm)



▣ Dimensions

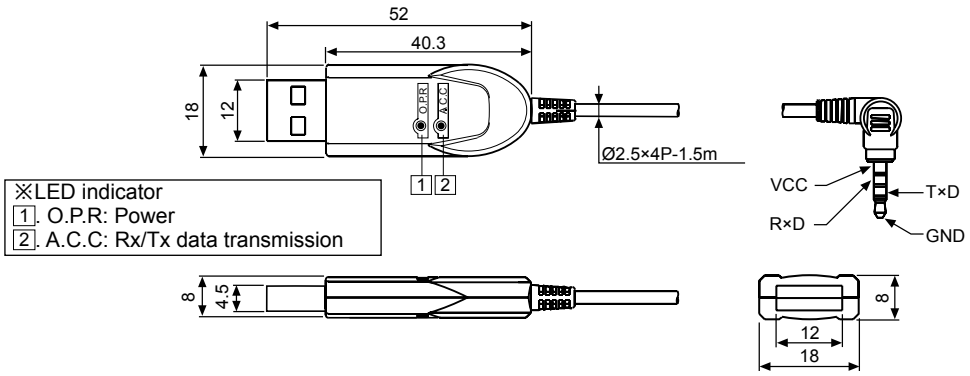
◎ SCM-38I

(unit: mm)



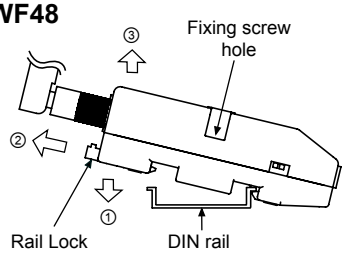
◎ SCM-US

(unit: mm)



▣ Installations

◎ SCM-WF48



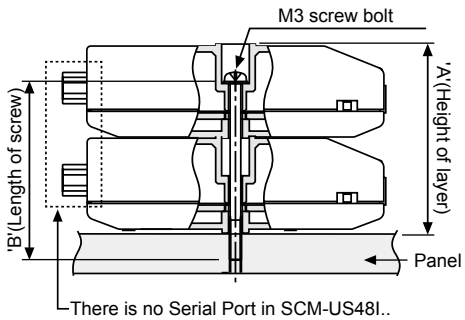
● **Mounting to and removing from DIN rail**

- **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 this unit to ② direction.
  2) Pull the unit to ③ direction

● **Mounting to panel**

1) This unit is able to mount on a panel with two fixing screws at center of both sides.
2) For mounting the unit, use M3 screws. Tighten screws with 0.4 N.m torque.

◎ SCM-US48I & SCM-38I

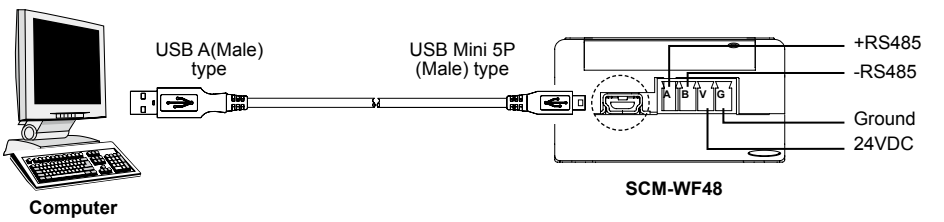


'B'(Length of screw)	"A" size (23N+0.5)	"B" size (23N-3)
1	23.5mm	20mm
2	46.5mm	43mm
3	69.5mm	66mm
4	92.5mm	89mm

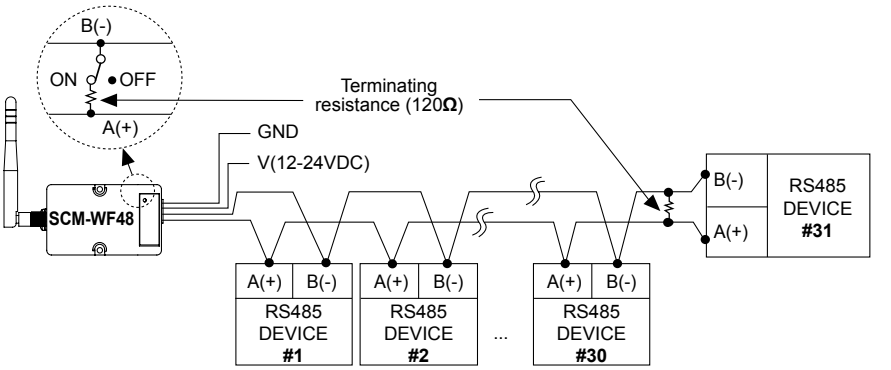
▣ Example of connections

◎ SCM-WF48

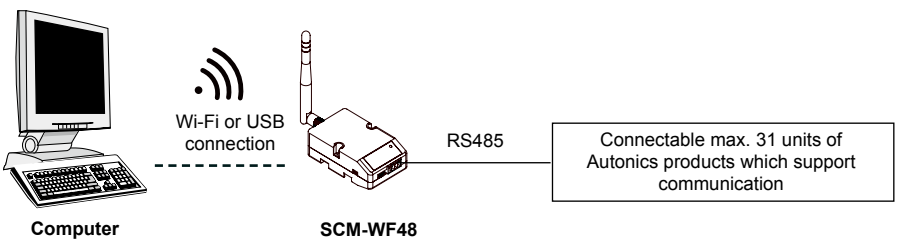
● **Cable connection**



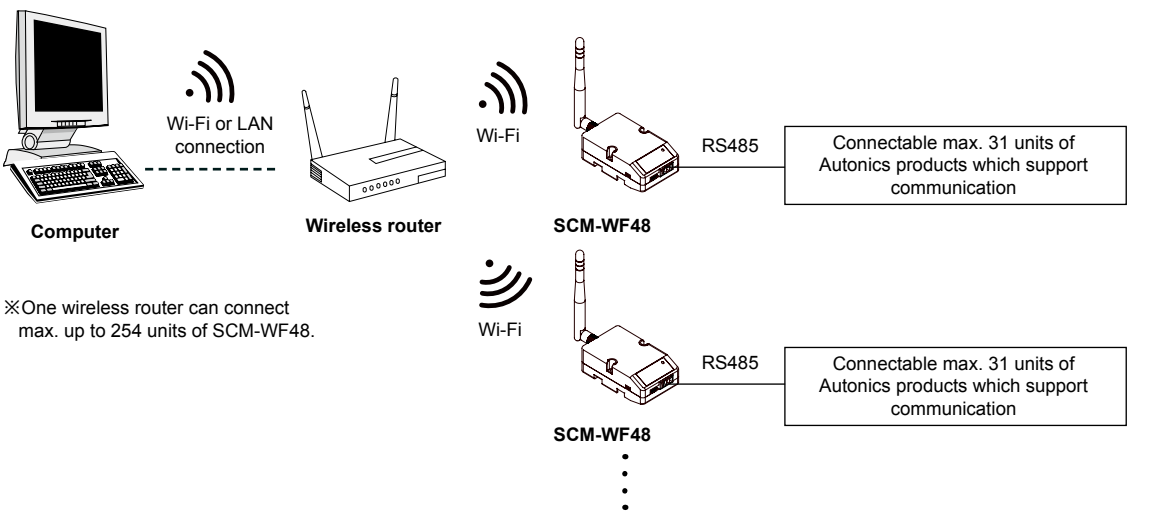
● **Connection of SCM-WF48 and Multi-drop**



● **AP mode**



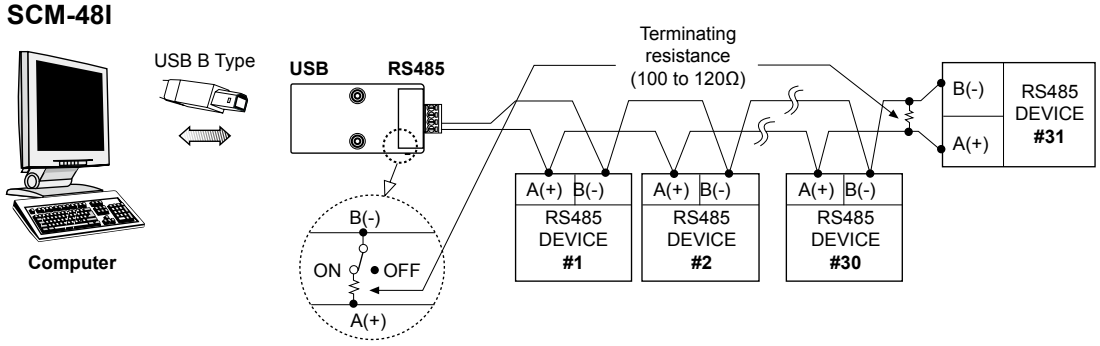
● **Infrastructure mode**



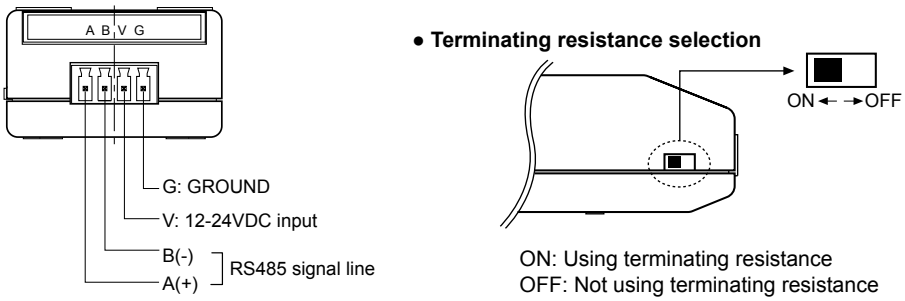
※One wireless router can connect
max. up to 254 units of SCM-WF48.

※Before using this unit, set the communication method switch of SCM-WF48 as USB, and connect this unit and a PC with USB cable.
You can set the communication setting for SCM-WF48 by DAQMaster.

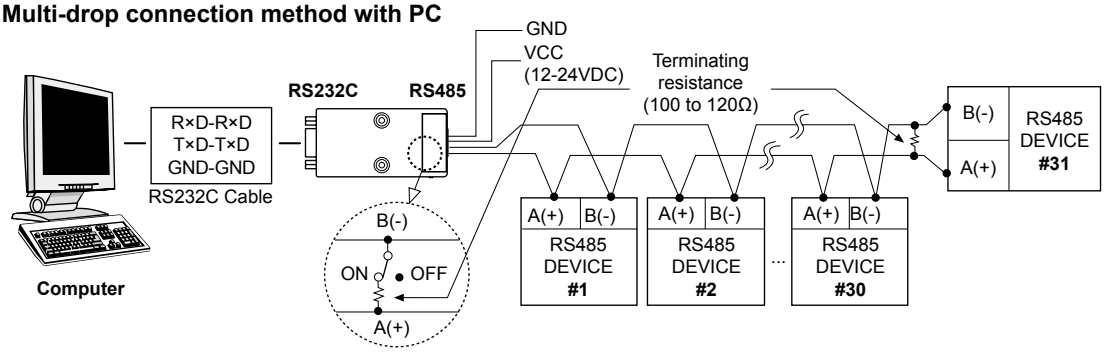
◎ SCM-48I



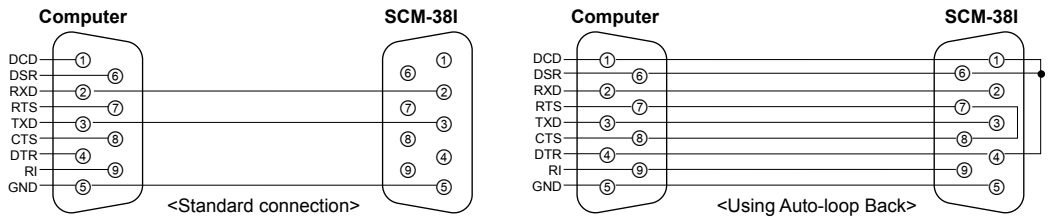
◎ SCM-38I



• Multi-drop connection method with PC

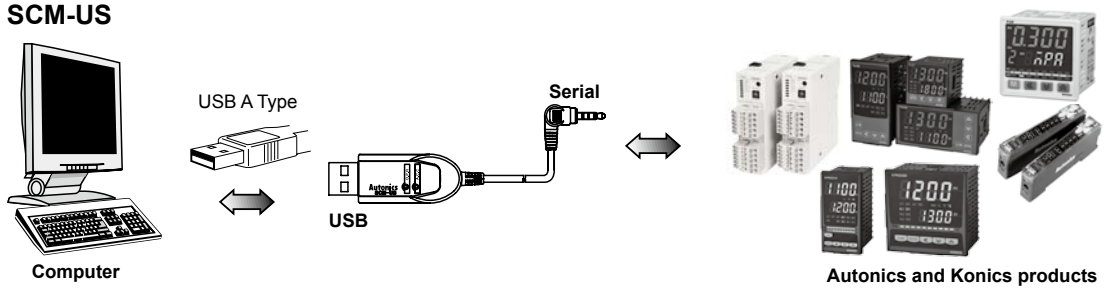


• RS232C cable connection



※When the software of the communication driver uses Auto-loop Back, please connect as the above.

◎ SCM-US



▣ Driver installation (SCM-WF48, SCM-US48I, SCM-US)

◎ USB Driver Installation

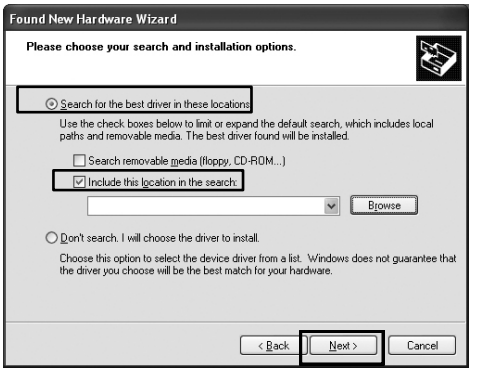
1) Visit our website(www.autonics.com) to download USB Driver.

2) Unzip the downloaded 'SCM-WF48.zip', 'SCM-US48I.zip', or 'SCM-US.zip' at any directory.

3) When connecting product with USB port, 'Found New Hardware Wizard" will appear automatically. 'Do you want to search software by connecting 'Window Update'?. Click 'No' button and the following window will be displayed to proceed Driver installation.
Select 'Install from a list or specific location' (Advanced)' (S) and click 'Next'.

4)Select 'Search for best driver in these locations' and 'include this location in the search' continuously. Click the 'Browse' button.

5)When 'Browse Folder' window is displayed, select 'SCM-WF48\Driver' for SCM-WF48, or 'SCM-US\Driver' for SCM-US48I, SCM-US, and click 'Finish'. Click 'Next' to proceed with the USB Driver installation.



6) Hardware installation message will appear while Found New Hardware Wizard is running. Click 'Continue Anyway' to proceed with installation.

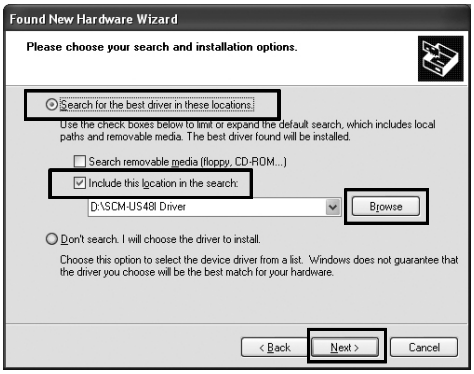
7) The following window will be displayed if the USB Driver is installed properly. Click the 'Finish' button.

◎ Serial Port Driver Installation

1) After installing USB Driver, Serial Port (COM port), 'Found New Hardware Wizard' will appear (Serial Port Driver installation follows the same procedures described in installing USB Driver).

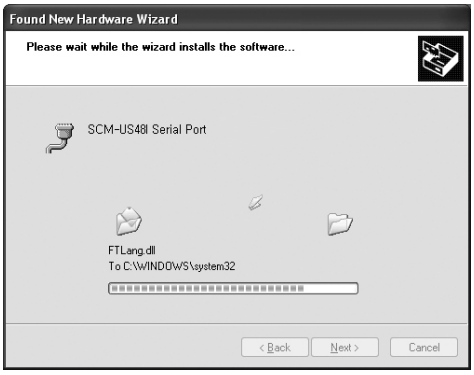
2) After selecting 'Install from a list or specific location (advance)', click 'Next' button. The following window will be displayed for 'Search and installation options'

3) Because a driver location was selected when installing USB driver, click 'Next' button.

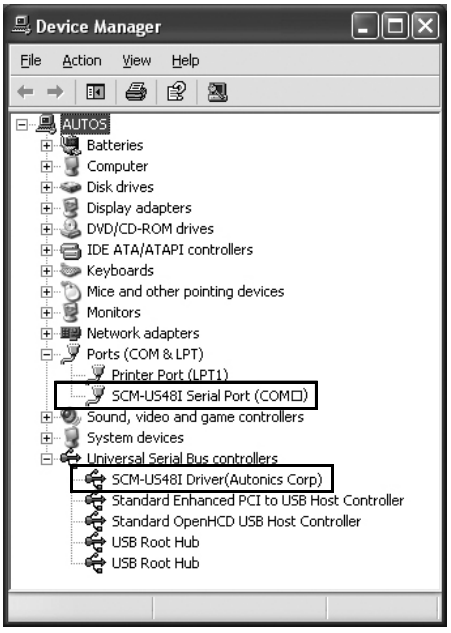


4)Hardware installation message will appear while Found New Hardware Wizard is running. Click 'Continue Anyway' to proceed with installation.

5)'Completing the Found New Hardware wizard' will be displayed if the Serial Port Driver is installed properly. Click the 'Finish' button.



※Verify that drivers were installed properly with the windows Device Manager after finishing USB Driver and Serial Port Driver installation.
Open the folder [My computer], open the system folder (click right), click the hardware tab, and click the Device Manager Button. Then, make sure that 'SCM-WF48 Driver(Autonics Corp)', 'SCM-US48I Driver(Autonics Corp)' or 'SCM-US Driver(Autonics Corp)' is found in 'Common Serial Bus Controller' category and 'Port (COM and LPT) is found in 'SCM-WF48 Serial Port (COM □)', 'SCM-US48I Serial Port(COM □) or 'SCM-US Serial Port(COM □)'.



※This Driver Installation is described based on the procedure for Windows XP.
There might be some differences in the specification above depending on OS.

▣ Proper usage

- In case of connecting PC with SCM-WF48, SCM-US48I or SCM-US, when changing PC USB port and connecting this unit to another (changed) USB port, USB driver will be reinstalled. This is not a malfunction.
- When connecting SCM-US or SCM-US48I communication module, please connect PC first. Then, connect RS485 communication product afterward. When disconnecting the units, remove the unit in reverse order.
- Using the Twisted pair cable (AWG24), which is suitable to RS485 communication is recommended. If the Twisted pair cable is not used, be sure preserving identically the length of A(+) and B(-) cables.
- After connecting SCM-WF48 with RS485 communication DEVICE, be sure to attach the terminating resistor (120Ω). After connecting SCM-38I, SCM-US48I with RS485 communication DEVICE, be sure to attach the terminating resistor (100 to 120Ω).
- In case of connect PC with SCM-WF48, SCM-US48I, or SCM-US , No. of COM Port will be numbered in order. This is not a malfunction. (e.g. COM 14, COM 15, ..., COM 256)
- When connecting SCM-WF48, SCM-US48I or SCM-US with USB cable, check COM port number before communication. It may take some time for computer to detect the cable after the cable is connected. (This is not a malfunction.)
- When connecting PC with SCM-WF48, SCM-48I or SCM-US, do not use the extension cable to extend USB cable length. It may cause a malfunctions.
- Be cautious when using SCM-WF48 or SCM-US as non-isolated type.
- Check the connection, disconnection and short of communication cable before supplying the power to SCM-WF48.
- Only use Autonics products that are available for SCM-US.
- Observe the rated voltage.
- To avoid malfunctions due to noise, do not place the unit close to a high-voltage power line.
- Proper application environment
  (Avoid following environments for unit to be used.)
  - Where severe vibration or shock exists
  - Where close to a strong alkali or strong acid
  - Where direct rays of light exist
  - Where near facilities generating strong magnetic forces or electric noise.
- Storage
  Keep the unit -20 to 60℃, 35 to 85%RH with avoiding direct rays of light. It is recommended to keep the unit package as it is.
- Installation environment
  - It shall be used indoor
  - Altitude max. 2000m
  - Pollution degree 2
  - Installation category II