IDEC

INSTRUCTION SHEET

MICROSmart pentra

FC5A Series

Expansion RS485 Communication Module

This sheet provides brief operating instructions of the expansion RS485 communication module. For details, see the MicroSmart user's manual

Safety Precautions

In this operation instruction sheet, safety precautions are categorized in order of importance to Warning and Caution:

⚠ **WARNING**

Warning notices are used to emphasize that improper operation may cause severe personal injury or death.

⚠ **CAUTION**

Caution notices are used where inattention might cause personal injury or damage to equipment.

⚠ **WARNING**

This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D or non-hazaedous locations only.
Explosion hazard - Substitution of components may impair suitability for Class I, Division 2.
Explosion hazard - Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
Turn off the power to the MicroSmart before starting installation, removal, wiring, maintenance, and inspection on the MicroSmart. Failure to turn power off may cause electrical shocks or fire hazard.
Emergency stop and interlocking circuits must be configured outside the MicroSmart. If such a circuit is configured inside the MicroSmart, failure of the MicroSmart may cause disorder of the control system, damage, or accidents.

⚠ **CAUTION**

The expansion RS485 communication module is designed for installation in equipment. Do not install the expansion RS485 communication module outside equipment.
Install the expansion RS485 communication module in environments described in the user's manual. If the expansion RS485 communication module is used in places where the expansion RS485 communication module is subjected to high-temperature, high-humidity, condensation, corrosive gases, excessive vibrations, and excessive shocks, then electrical shocks, fire hazard, or malfunction will result.
The environment for using the expansion RS485 communication module is "Pollution degree 2."
Prevent metal fragments and pieces of wire from dropping inside the expansion RS485 communication module housing. Ingress of such fragments and chips may cause fire hazard, damage, or malfunction.
Use wires of a proper size to meet voltage and current requirements. Tighten terminal screws to a proper tightening torque of 0.22 to 0.25 N·m.
Do not disassemble, repair, or modify the expansion RS485 communication module.
Users must add a backup or failsafe provision to the control

system using the expansion RS485 communication module in applications where heavy damage or personal injury may be caused in case the expansion RS485 communication module should fail.

1 Type

FC5A-SIF4

2 Specifications

| Module		FC5A-SIF4
Quantity of Channels		1 ch
Electrical Characteristics		EIA RS485 compliant
Recommended Cable	Shielded multi-core cable	Shielded twisted pair cable: 0.3 mm² (22AWG) 2P
	Dielectric Strength	700V AC/ min
	Conductor resistance	65.7 Ω-km maximum at 20degC
	Insulation Resistance	100 MΩ-km
Maximum Cable Length		1200m
Quantity of Applicable Expansion RS485 Communication Modules	All-in-one type CPU module	3 maximum(Note 1)
	Slim type CPU module	5 maximum
Communication Parameters	Baud Rate (bps)	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps
	Data Bits	7 or 8
	Parity	Odd, Even, None
	Stop Bits	1 or 2
Protocol (Note 3)	Maintenance Communication (ASCII mode)	Possible (Note 2)
	User Communication	Possible
	Data Link	Possible
	Modbus Communication	Possible
	Modem Communication	-

Note 1:
The all-in-one 24-I/O type CPU module cannot use the expansion RS485 communication module in combination with analog modules and AS-Interface master module. When using the expansion RS485 communication module in combination with analog modules and AS-Interface master module, use the slim type CPU module. For details, see the MicroSmart user's manual.

Note 2:
Run-time program download is impossible.

Note 3
The MicroSmart CPU module system program version 220 or higher is required to use these protocols.

To confirm the system program version of the MicroSmart CPU module, use WindLDR on a computer connected with the CPU module. The system program version is indicated on the PLC Status dialog box.

3 Parts Description
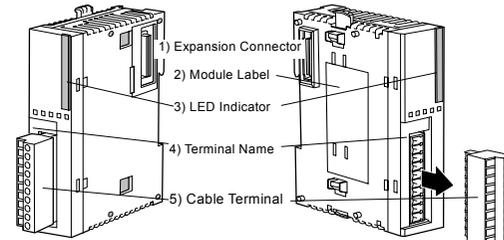
1)	Expansion Connector	Connects to the CPU and other I/O modules. (All-in-one 10- and 16-I/O type CPU modules cannot be connected.)
2)	Module Label	Indicates the expansion RS485 communication module Type No. and specifications.
3)	LED Indicators	PWR: Turns on when this module is powered up. SD: Turns on when this module is sending data. RD: Turns on when this module is receiving data.
4)	Terminal Name	Indicates terminal names.
5)	Cable Terminal	Screw terminals for wiring.

4 Assembling

When assembling an expansion RS485 communication module, remove the expansion connector seal from the CPU module. The following example demonstrates the procedure for assembling the all-in-one 24-I/O type CPU module. When assembling slim type CPU modules, take the same procedure.

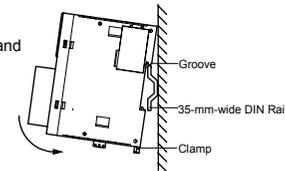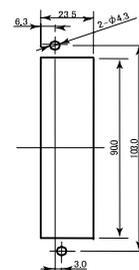For details about assembling of the expansion RS485 communication module, see the MicroSmart user's manual.
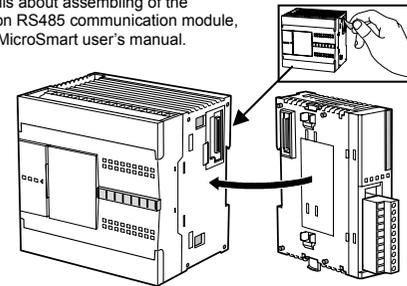
5 Mounting Modules

For details about mounting and removing of the expansion RS485 communication module, see the MicroSmart user's manual.

[DIN Rail Mounting]
Use a 35-mm-wide DIN rail and BNL6 mounting clips to secure the modules.


[Direct Mounting]
Use M4 mounting screws (6 mm or 8 mm long). When mounting the expansion RS485 communication module, use optional direct mounting strip FC4A-PSP1P.

6 Wiring

For details about wiring of the expansion RS485 communication module, see the MicroSmart user's manual.
Use a recommended cable for wiring the expansion RS485 communication terminals.
Crimp the ferrules to the wire cable.
When the expansion RS485 communication module may malfunction due to external noise, connect the shield of the cable to a proper ground.
Before wiring, read the user's manual for the remote device connected to the expansion RS485 communication module.
Insert appropriate termination resistors matched to the characteristic impedance of the cable. When the recommended cable is used, insert 100Ω 1/2W resistors.
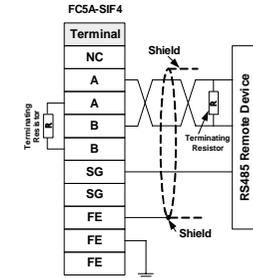
7 Dimensions
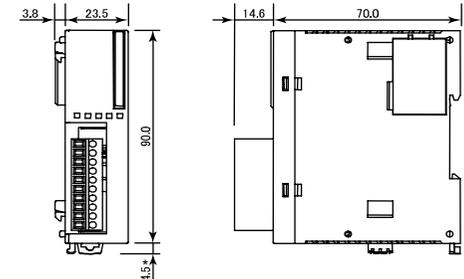
*8.5 mm when the clamp is pulled out.   All dimensions in mm.

8 Ferrule

Type numbers of the ferrule, crimping tool, and screwdriver listed below are the type numbers of Phoenix Contact. When ordering these products from Phoenix Contact, specify the Order No. and quantity listed below.

Ferrule Order No.

Module	Phoenix Type	Order No.	Pcs./Pkt.
FC5A-SIF4	AI 0,34-8 YE	3203066	100

Crimping Tool and Screwdriver Order No.

Name	Phoenix Type	Order No.	Pcs./Pkt.
Crimping Tool	CRIMPFOX ZA3	1201882	1
Screwdriver	SZS 0.4×2.5	1205037	10

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