IDEC

INSTRUCTION SHEET

MICROSmart

FC6A Series
HMI module

Safety Precautions

Special expertise is required to use the MICROSmart.
• Read this instruction sheet and the user's manual to make sure of correct operation before starting installation, wiring, operation, maintenance, and inspection of the MICROSmart.
  Keep this instruction sheet where it can be accessed by the end user.
• All MICROSmart modules are manufactured under IDEC's rigorous quality control system, but users must add backup or failsafe provisions to control systems use the MICROSmart in applications where heavy damage or personal injury may be caused if the MICROSmart should fail.
• Install the MICROSmart according to the instructions described in this instruction sheet and the user's manual. Improper installation will result in falling, failure, or malfunction of the MICROSmart.
• Make sure that the operating conditions are as described in the user's manual. If you are uncertain about the specifications, contact IDEC before using the MICROSmart.
• In this instruction sheet, safety precautions are categorized in order of importance from 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

• Turn off the power to the MICROSmart before starting installation, removal, wiring, maintenance, or inspection on the MICROSmart.Failure to turn off the power may cause damage, 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.
• SUITABLE FOR USE IN CLASS 1, DIVISION 2, GROUPS A,B,C AND D HAZARDOUS LOCATIONS, OR NONHAZARDOUS LOCATIONS ONLY.
• Cet appareil convient uniquement à l'emploi dans des zones dangereuses de classe 1, groupes A,B,C et D; ou dans des zones non dangereuses.
• WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS.
• Avertissement: risque d'explosion. Ne pas débrancher l'appareil tant que le circuit est sous tension, ou à moins d'être certain que lieu d'utilisation soit exempt de concentrations inflammables.
• THIS EQUIOMENT IS AN OPEN -TYPE DEVICE MEANT TO BE INSTALLED IN AN ENCLOSURE SUITABLE FOR THE ENVIRONMENT THAT IS ONLY ACCESSIBLE WIHT THE USE OF A TOOL OR KEY.
• Cet appareil doit être installé dans un boîtier qui est adapté à l'environnement d'utilisation et uniquement accessible avec un outil d'ouverture ou une clé.

⚠ CAUTION

• The MICROSmart is designed for installation in equipment. Do not install the MICROSmart outside of equipment.
• Install the MICROSmart in environments as described in the user's manual. If the MICROSmart is used in places where it is subjected to high-temperature, high-humidity, condensation, corrosive gases, excessive vibrations, or excessive shocks itwill result in electrical shocks, fire hazard, or malfunction.
• The environment rating for using the MICROSmart is "Pollution degree 2."
• Prevent metal fragments and pieces of wire from dropping inside the MICROSmart 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 the proper tightening torque of 0.5 to 0.6 N-m.
• Do not disassemble, repair, or modify MICROSmart modules.

1 TYPE

HMI module
  FC6A-PH1

Applicable model
  FC6A Series MICROSmart CPU module

2 Specification

Operating Temperature: -10 to +55°C (no freezing),
Storage Temperature: -25 to +70°C (no freezing)
Relative/Storage Humidity: 10 to 95%RH (no condensation),
Altitude or Air Pressure: 1,013 to 795hPa (0 to 2,000 m) during operation
  1,013 to 701hPa (0 to 3,000 m) during transport,
Vibration Resistance: 5 to 8.4 Hz half amplitude 3.5 mm, 8.4 to 150 Hz, acceleration 9.8 m/s² (1 G), X, Y, Z directions, 2 hours,
Shock Resistance: 147 m/s² (15 G), 11 ms, X, Y, Z, 3 axes, 6 directions, 3 times each
Installation Location: Inside cabinet (indoor use)
Maximum Surrounding Air Temperature: 55°C
Temperature Code: T4A

*See the user's manual for more details on the product specifications.

3 Name & Function
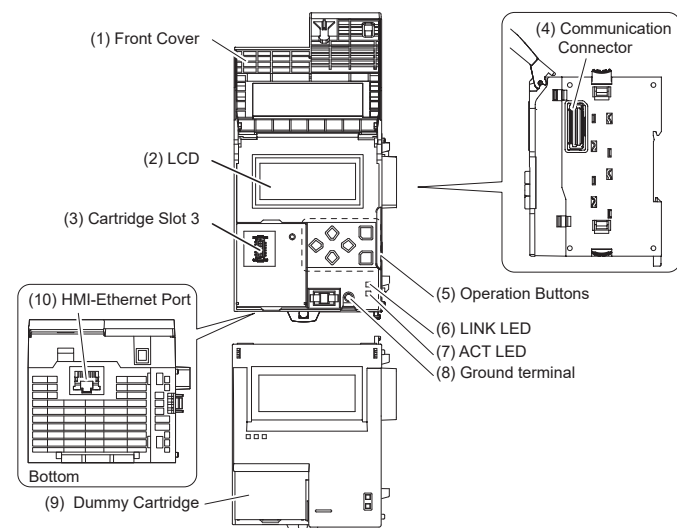
(1) Front Cover
  Remove the front cover when using the operation buttons.
(2) LCD
  Displays operation menus, status, and settings of the MicroSmart.
(3) Cartridge Slot 3
  For connecting an optional cartridge. You cannot connect a communication cartridge to cartridge slot 3.
(4) Communication Connector
  Connects to the CPU modules.
(5) Operation Buttons
  For operating the menus displayed on the LCD to access functions. There are six operation buttons.
(6) LINK LED
  Turns on when the CPU module is connected to another network device using a LAN cable.
(7) ACT LED
  Flashes when the CPU module sends or receives data from the Ethernet port.
(8) Ground terminal
  functional ground terminal
(9) Dummy Cartridge
  Remove the HMI connector cover when using an optional HMI module.
(10) HMI-Ethernet Port
  This port is used for Ethernet connection.

4 Connecting HMI Module

1. Peel off the protection sticker applied to the communication connector on the FC6A Series MICROSmart CPU module.
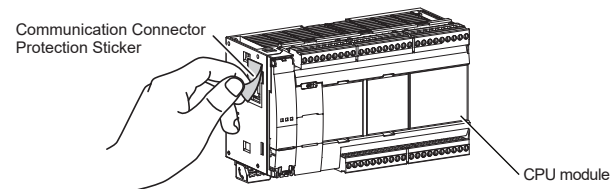

2. Line up the HMI module alongside the FC6A Series MICROSmart CPU module.
3. Confirm that the HMI module eject button is depressed and push the HMI module until it clicks while taking care with the position of the communication connector. If the eject button is not depressed, push in the eject button until it clicks after the HMI module has been pushed onto the FC6A Series MICROSmart CPU module. The HMI module is now locked on the FC6A Series MICROSmart CPU module.
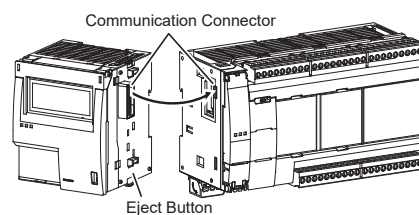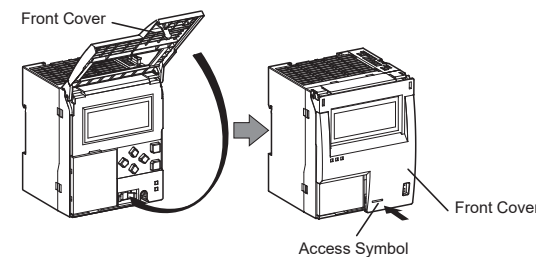

5 Opening and Closing Front Cover

Opening the Front Cover

1. Push the access symbol until it clicks to unlock the front cover.
2. The front cover will open.
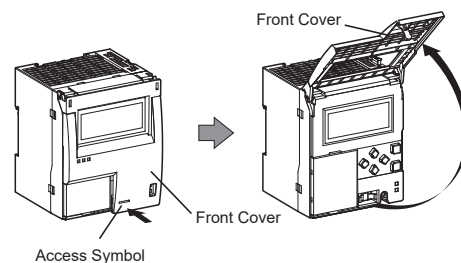
Closing the Front Cover

1. Close the front cover.
2. Push the access symbol until it clicks to lock the front cover.

6 Connecting Cartridge

1. Unlock and open the front cover of the HMI module.
2. Insert a flathead screwdriver into each of the screwdriver slots (two locations) on the HMI module and remove the dummy cartridge straight off the HMI module by pushing in the dummy cartridge tabs.
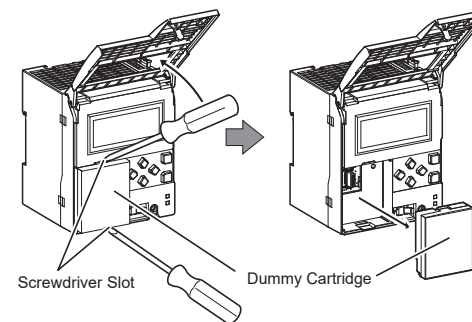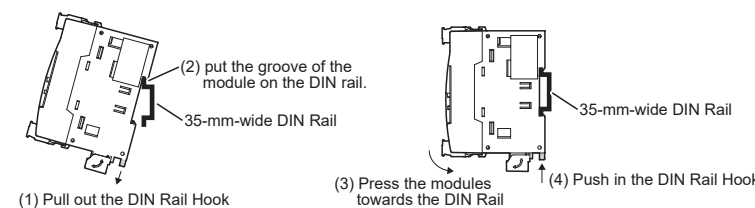

3. Take care with the vertical orientation of the analog cartridge and firmly push the cartridge connector onto cartridge slot 3 on the HMI module.
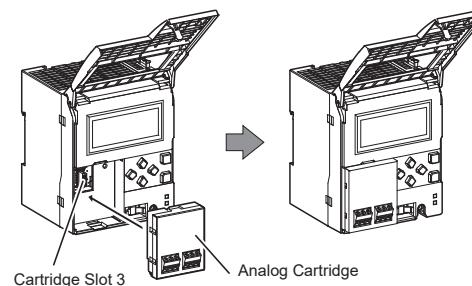

7 Mounting HMI Module

For details about mounting and removing modules, see the user's manual.
[Mounting on DIN Rail]
Use a 35-mm-wide DIN Rail and BNL6 mounting clips to secure the modules.

[Direct Mounting on Panel Surface]
Pull out the DIN Rail Hook on the back of the module and insert the direct mounting Hook (FC6A-PSP1PN05) into the slot. Attach the module to the mounting plate using the screw holes.
Attach the module to the mounting plate using M4 tapping screws, as shown below, or make 5 to 6mm mounting holes and secure the module using M4 pan head screws.
Always give sufficient consideration to operability, ease-of-maintenance, and environmental resistance when deciding on the mounting position.
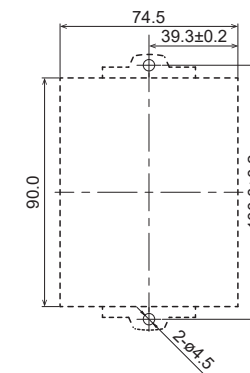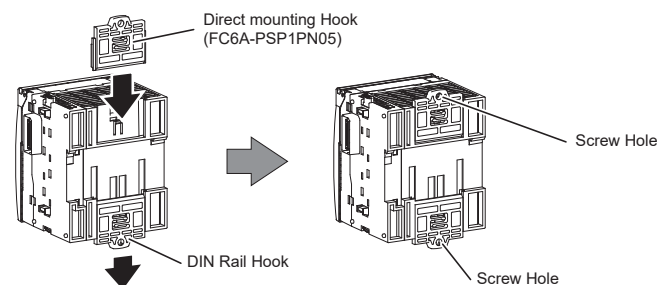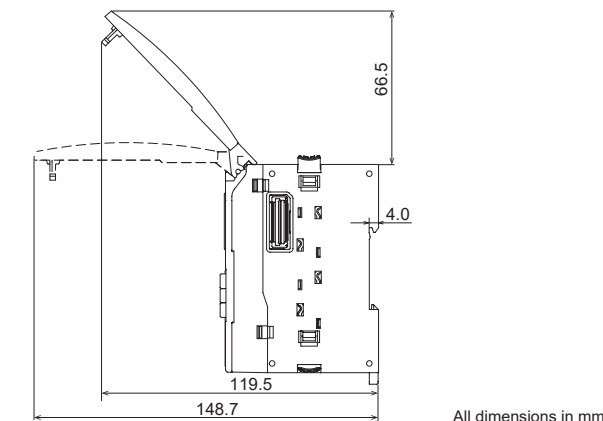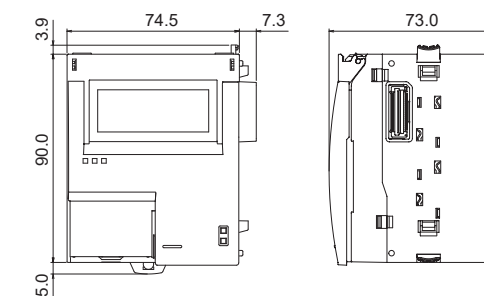

8 Dimensions

⚠ CAUTION
• For UL/cUL, Horizontal mounting only.
• Use copper conductor only.

All dimensions in mm.

All dimensions in mm.

9 Applicable Cable / Recommended Ferrule / Recommended Screwdriver / Tightening Torque

The recommended ferrule is made by Phoenix Contact or Weidmüller. To crimp the ferrules shown below, use a special crimping tool. (CRIMPFOX6 (1212034) or PZ 6 Rote (9014350000))
To the terminal block, use the recommended screwdriver made by Phoenix Contact or Weidmüller and tighten terminal screws tightening torque.

Applied cable		Recommended ferrule
UL1007 / UL2464	AWG24	AI 0,25-6 (3203040), AI 0,25-8 (3203037), H0,25/10 HBL(9025740000), H0,25/12T GE (9021020000)
	AWG22	AI 0,34-6 (3203053), AI 0,34-8 (3203066), H0,34/10 TK(9025750000), H0,34/12 TK (9025770000)
	AWG20	AI 0,5-6 (3200687), AI 0,5-8 (3200014), AI-TWIN 2×0,5-8 (3200933), H0,5/12D W(9019000000), H0,5/16D W (9019020000), H0,5/14D ZH W (9037380000)
	AWG18	AI 0,75-6 (3200690), AI 0,75-8 (3200519), AI-TWIN 2×0,75-8 (3200807), H0,75/12D GR (9019030000), H0,75/14D GR (9019040000), H0,75/14D ZH GR (9037410000)
	AWG16	AI 1,5-6 (3200755), AI 1,5-8 (3200043), H1,5/14D SW (9019120000)
UL1015	AWG20	AI 0,5-8 GB (1208966)
	AWG18	AI 1-8 (3200030), H1,0/14D R (9019080000)
	AWG16	AI 1,5-6 (3200755), AI 1,5-8 (3200043), H1,5/14D SW (9019120000)

Screwdriver	Tighten torque
SZS 0,6×3,5 (1205053) , SDS 0,6X3,5X100 (9008330000)	0.5 to 0.6 N-m

( ) indicates the Type No. of PHOENIX CONTACT GmbH & Co. KG and Weidmüller Interface GmbH & Co. KG.

10 Precaution for Disposal

• Dispose of the FC6A Series MICROSmart as an industrial waste.

MicroSmart User's manual can be downloaded from http://www.idec.com/FC6Amanuals

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