IDEC

INSTRUCTION SHEET

MICROSmart

FC6A Series
HMI module

This sheet provides brief operating instructions of the MicroSmart programmable controller. For details, see the FC6A Series MicroSmart User's Manual.

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 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 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.
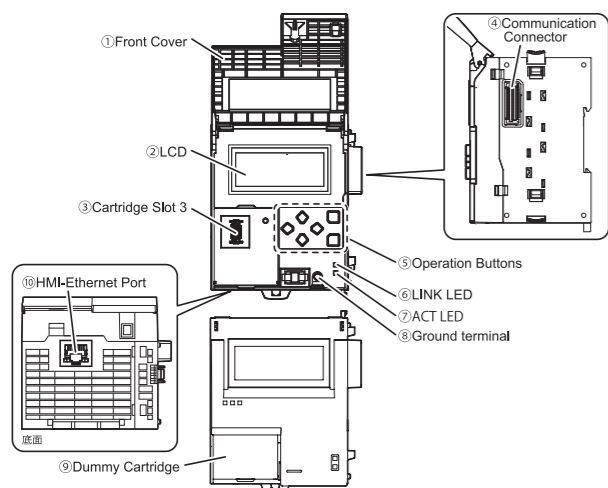•Do not disassemble, repair, or modify MicroSmart modules.

1 Type

HMI module
　FC6A-PH1
Applicable model
　FC6A Series MicroSmart CPU module

2 Specification

Operating Temperature: 0 to +55℃, Storage Temperature:-25 to +70℃ (no freezing),
Relative/Storage Humidity: 10 to 95%RH（no condensation）,
Altitude: 1013 to 795hPa (0 to 2,000 m) during operation 1013 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/s^2 (1 G), X, Y, Z directions, 2 hours,
Shock Resistance: 147 m/s^2 (15 G), 11 ms, X, Y, Z directions, 3 times
*See the user's manual for more details on the product specifications.

3 Parts Description

①Front Cover
②LCD
③Cartridge Slot 3
⑩HMI-Ethernet Port
⑨Dummy Cartridge
④Communication Connector
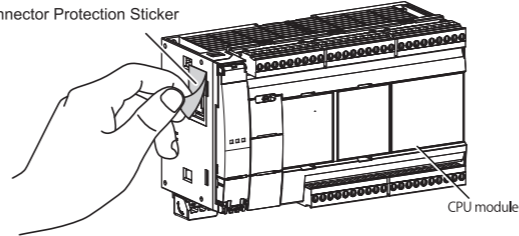⑤Operation Buttons
⑥LINK LED
⑦ACT LED
⑧Ground terminal

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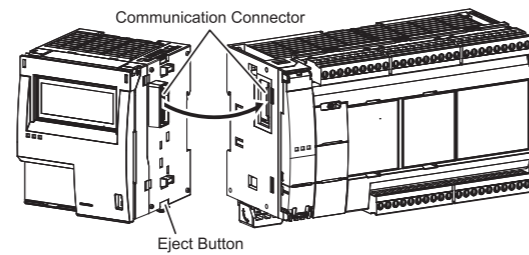　This port is used for Ethernet connection.

4 Conneccting HMI Module

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

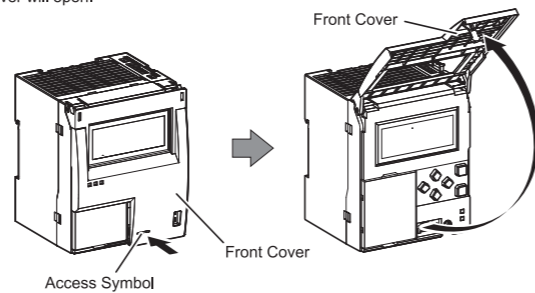Communication Connector Protection Sticker
CPU module

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

Communication Connector
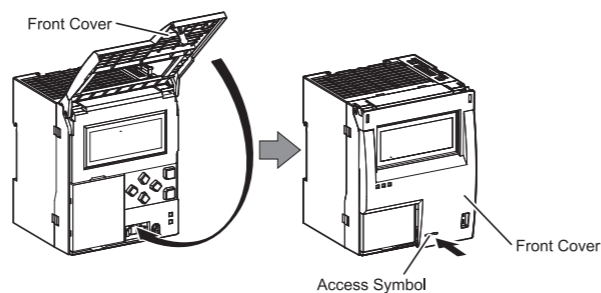Eject Button

5 Opening and Closing Front Cover

Opening the Front Cover

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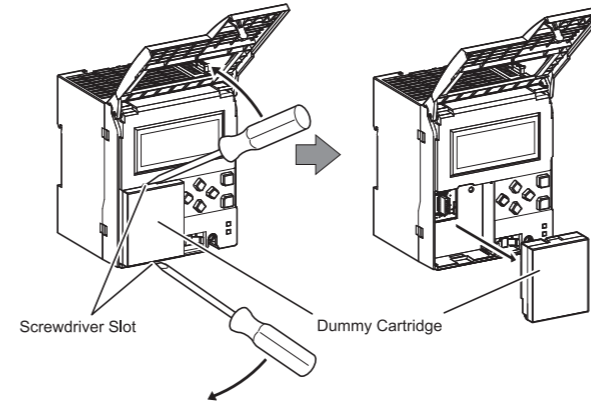2. The front cover will open.

Front Cover
Front Cover
Access Symbol

Closing the Front Cover

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

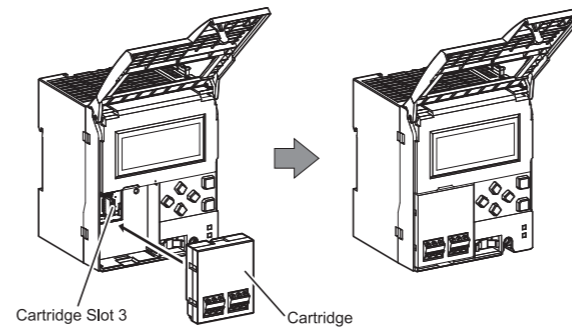Front Cover
Front Cover
Access Symbol

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.

Screwdriver Slot
Dummy Cartridge

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.
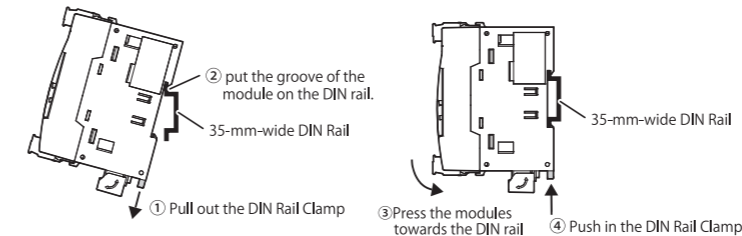

Cartridge Slot 3
Cartridge

7 Mounting HMI Mdule

For details about mounting and removing modules, see the user's manual.

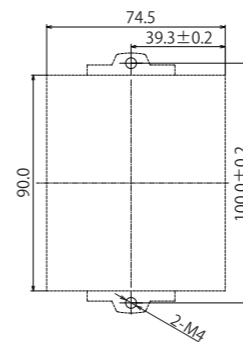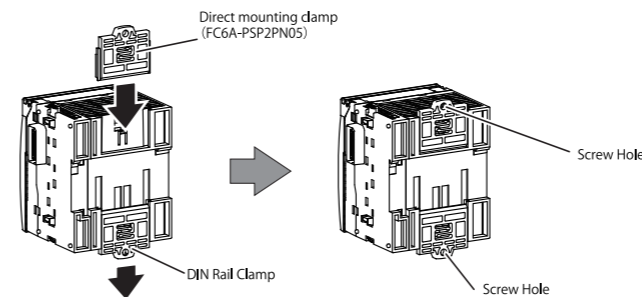〔Mounting on DIN Rail〕
　Use a 35-mm-wide DIN rail and BNL6 mounting clips to secure the modules.

① Pull out the DIN Rail Clamp
② put the groove of the module on the DIN rail.
35-mm-wide DIN Rail
③Press the modules towards the DIN rail
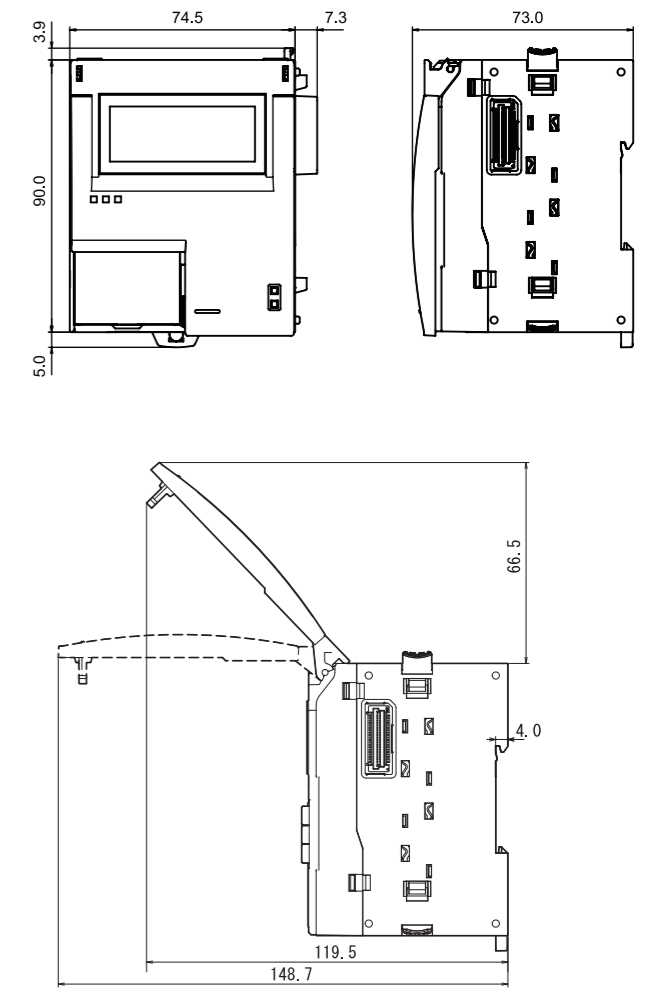④ Push in the DIN Rail Clamp
35-mm-wide DIN Rail

〔Direct Mounting on Panel Surface〕
　Pull out the DIN rail clamp on the back of the module and insert the direct mounting clamp (FC6A-PSP2PN05) 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.

Direct mounting clamp (FC6A-PSP2PN05)
DIN Rail Clamp
Screw Hole
Screw Hole

74.5
39.3±0.2
90.0
100.0±0.2
2-M4

All dimensions in mm.

8 Dimensions

74.5　7.3　73.0
3.9
90.0
5.0
66.5
4.0
119.5
148.7

All dimensions in mm.

9 Applicable Ferrule

The recommended ferrule is made by Phoenix Contact. To crimp the ferrules shown below, use a special crimping tool （CRIMPFOX 6（1212034））

AI 0,25-6（3203040）, AI 0,25-8（3203037）, AI 0,34-6（3203053）,
AI 0,34-8（3203066）, AI 0,5-6（3200687）, AI 0,5-8（3200014）,
AI 0,5-8 GB（1208966）, AI-TWIN 2 x 0,5-8（3200933）,
AI 0,75-6（3200690）, AI 0,75-8（3200519）, AI 1-8（3200030）,
AI-TWIN 2 x 0,75-8（3200807）, AI 1,5-6（3200755）, AI 1,5-8（3200043）

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

10 Recommended Screwdriver / Tighting torque

To wire the terminal block, use the recommended screwdriver made by Phoenix Contact and tighten terminal screws to the proper tightening torque.

Screwdriver：SZS 0,6×3,5（1205053）/ Tighten torque：0.5-0.6 N-m

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

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