

RS-422 Communication Board FX1N-422-BD

We appreciate it very much that you have purchased our RS-422 communication board FX1N-422-BD for Mitsubishi PLC.

Please read this manual and other manuals of the PLC main unit and peripheral equipment before using the FX1N-422-BD to understand the specifications sufficiently, then use the FX1N-422-BD correctly.

Make sure that this manual is delivered to the end user.

1. Outline

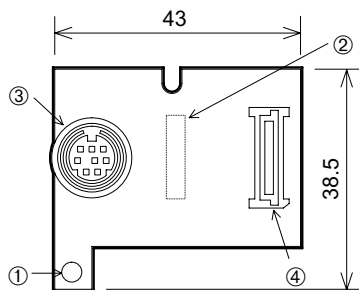
The RS-422 communication board FX1N-422-BD (hereafter referred to as "422BD") is connected to the FX1S/FX1N Series PLC basic unit, and used as a connection port for a programming tool (such as the GOT Series, the ET Series, programming tool FX-10P/20P or personal computer).

For example, by using the 422BD, two GOT Series units can be connected to the FX1S/FX1N Series PLC, or the GOT Series unit can be connected to a programming tool (such as FX-10P, FX-20P or personal computer). However, a programming tool can be connected to only either one between the connector built in the PLC and the connector of the 422BD.

Only one function expansion board can be connected to one PLC basic unit. Accordingly, the 422BD cannot be used together with the FX1N-485-BD or the FX1N-232-BD.

2. Outside Dimensions and Name of Each Part

Unit: mm



① Mounting hole (2-φ3.5)

② Connector for PLC

③ Connector for RS-422 equipment (mini-DIN, 8-pin type)

The top face of this connector is higher than the top face of the PLC panel cover by approximately 3 mm when a cable is not connected, and by approximately 50 mm when a cable is connected.

④ Connector for display module FX1N-5DM or memory cassette FX1N-EEPROM-8L

Accessories:	Top cover for board	1
	M3 screw to mount board	2
	M3 screw to fix top cover	1

3. Connectable Models and Cables

Peripheral equipment	Cable	Current consumption of 5V DC
FX-20P	FX-20P-CAB0 or (FX-20P-CAB + FX-20P-CADP)	180mA
FX-10P		120mA
Personal computer (for programming)	{F2-232CAB (for D-sub, 25-pin type), F2-232CAB-1 (for D-sub, 9-pin type) or F2-232CAB-2 (for half-pitch, 14-pin type)} + FX-232AW(C) + FX-422CAB0	220mA
FX-10DM	FX-20P-CAB0 or FX-20P-CAB + FX-20P-CADP	180mA
F930GOT, F940GOT, ET-940, F940/943GOT (handy type)	FX-50DU-CAB0	Not required
	FX-40DU-CAB(-10M) (or equivalent cable) + FX-422AW0	180mA

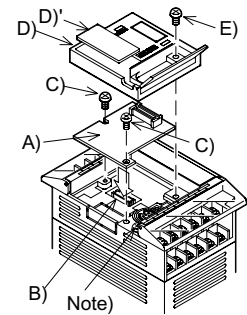
4. Installation

Make sure to turn off the power before installing the 422BD.

- A) Communication board 422BD (function expansion board)
- B) Connector for optional equipment
- C) M3 screw to fix board (2 pieces) (offered as accessories of board)
- D) Top cover for board (offered as an accessory of board)
- E) M3 screw to fix top cover (offered as an accessory of board)

Note: This screw cannot be removed.

- Plug the communication board A) in to the connector B).
- Fix the board to the basic unit with two M3 screws C). (Tightening torque: 0.3 to 0.6 N·m)
- Remove the top cover of the basic unit, and attach the top cover for board D) instead. During attachment, remove D) with a nipper, etc. so that the connector of the board is exposed.
- Fix the top cover with the M3 screw E). (Tightening torque: 0.3 to 0.6 N·m)
- When the FX1N-5DM is used also, refer to the handy manual offered with the FX1S/FX1N Series PLC main unit.
- Only one function expansion board is available for one FX1S/FX1N Series PLC basic unit. Never stack up two or more function expansion boards. (Even if they are stacked up, they do not function at all.)



5. Specifications

5.1 Environmental specifications

The environmental specifications are equivalent to those of the PLC main unit. (Refer to the manual of the PLC main unit.)

5.2 Power supply specifications

5V DC, 60 mA is supplied as the power from the PLC.

When the FX1N Series PLC is used, the 5V DC power supplied to the peripheral equipment connected to the 422BD and supplied to a special block should not exceed the 5V DC power capacity of the FX1N Series PLC.

For the details, refer to the handy manual of the PLC main unit.

5.3 Performance specifications

Transmission standard	In conformance to RS-422
Maximum transmission distance	50 m maximum
External equipment connection method	Mini-DIN, 8-pin socket
Communication method	Half duplex, bi-directional
Communication procedure	Protocol for programming tool
Insulation	Not insulated

6. Cautions on Use

- 1) Do not perform communication setting of D8120 using a peripheral equipment or program. If such setting is performed, communication with a programming tool or the GOT Series is disabled.
- 2) Connect a programming tool (such as FX-10P, FX-20P and personal computer) to either one between a connector built in the PLC and the connector of the 422BD. If a programming tool is connected to the both connectors, the following may occur:
A program stored in the PLC may not match a program stored in the programming tool. If the program is changed or the set value of timers or counters are changed in this status, the program may be partially overwritten and the PLC may malfunction.

7. Troubleshooting

- 1) Make sure that the connected cables are properly connected.
- 2) Check connection with the PLC and the POWER LED status on the PLC main unit.
- 3) Make sure that the communication format is in the initial status (D8120 = K0).
Using peripheral equipment, make sure of the communication setting in parameters. If non-procedure (RS instruction) or a dedicated protocol is selected, clear the setting to "0" using peripheral equipment.
- 4) Make sure that RS, VRRD and VRSC instructions are not used in the program. If they are used, delete them, turn off the power of the PLC, then turn it on again.
- 5) If the special auxiliary relay M8070 or M8071 is ON, set it to OFF using peripheral equipment, turn off the power of the PLC, then turn it on again.

For the phone number and the fax number of Technical Consulting in the FA Division within Mitsubishi Electric Corporation and the MELSEC-F Fax Information Service, refer to the manual of the PLC main unit.

