

FX_{1N}

RS-485 COMMUNICATION BOARD FX_{1N}-485-BD

USER'S MANUAL

JY992D84201B

This manual only describes the specifications for RS-485 Communication Board FX_{1N}-485-BD. For complete operation, wiring, mounting and programming instructions please refer to the FX_{1S}, FX_{1N} HARDWARE MANUAL and PROGRAMMING MANUAL. These manuals should be read and understood before attempting to install or use the unit.

Related Manuals

Manual name	Manual No.	Description
FX _{1S} Series Handy Manual	JY992D83801	Describes contents related to hardware of FX _{1S} Series PLC such as specifications, wiring and installation.
FX _{1N} Series Handy Manual	To be issued in April, 2000	Describes contents related to hardware of FX _{1N} Series PLC such as specifications, wiring and installation.
FX _{1S} /FX _{1N} /FX _{2N} /FX _{2NC} Series Programming Manual II	JY992D62001	Describes instructions in FX _{1S} /FX _{1N} /FX _{2N} /FX _{2NC} Series.
FX Series Communication User's Manual	JY992D69801	Describes contents related to communication available in FX Series PLC such as wiring, communication setting and program examples. (Make sure to read this manual.)

1. Outline of Product

The RS-485 communication board FX_{1N}-485-BD (hereafter referred to as "485BD") is connected to the FX_{1S}/FX_{1N} Series PLC basic unit, and available for the applications described below. Only one function expansion board can be connected to one PLC basic unit. Accordingly, the 485BD cannot be used together with the FX_{1N}-422-BD or the FX_{1N}-232-BD.

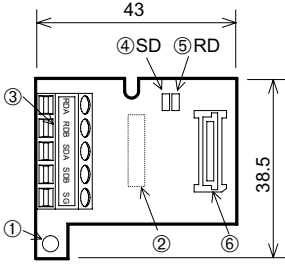
1.1 Features

- Data transfer function using the non-procedure method.
The 485BD transfers the data using the RS instruction between a bar code reader, personal computer or printer.
As the 485BD is not equipped with buffer memory, it sends and receives the data using data registers specified by the RS instruction.
For the RS instruction and the communication setting, refer to the FX Series Communication User's Manual.
- Data transfer function using a dedicated protocol.
The 485BD transfers the data when a personal computer directly specifies devices of the PLC.
For the dedicated protocol and the communication setting, refer to the FX Series Communication User's Manual.
- Parallel link function.
The 485BD transfers automatically 50 auxiliary relays and 10 data registers when two FX_{1S} Series PLC's (two FX_{1N} Series PLC's) are connected on a one-to-one basis.
For the setting procedure and program examples, refer to the FX Series Communication User's Manual.
- Easy PC link function.
The 485BD transfers automatically up to 64 auxiliary relays and 8 data registers when up to eight FX_{1S}/FX_{1N}/FX_{0N}/FX_{2N}/FX_{2NC} Series PLC units are connected. For the setting procedure and program examples, refer to the FX Series Communication User's Manual. For the FX_{2N} Series PLC, the version should be 2.00 or greater (manufacturer's serial No. 780000 or later).

1.2 Outside dimensions and name of each part

Unit: mm

Accessories: Top cover for board 1
Terminal resistor 330 2
Terminal resistor 110 1
M3 screw to mount board 2
M3 screw to fix top cover 1
Station No. label for link



- ① Mounting hole (2- ϕ 3.5)
- ② Connector for PLC
- ③ Terminal block for RS-485 equipment
The top face of this terminal box is higher than the top face of the PLC panel cover by approximately 7 mm.
- ④ SD LED: Flickers at high speed during send.
- ⑤ RD LED: Flickers at high speed during receive.
- ⑥ Connector for display module FX1N-5DM or memory cassette FX1N-EEPROM-8L

1.3 System configuration

For the system configuration, refer to the FX Series Communication User's Manual offered separately.

2. Installation

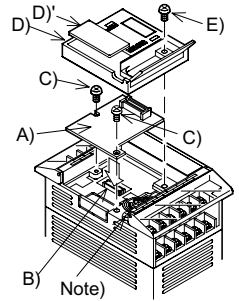
2.1 Installation procedure

Make sure to turn off the power before installing the 485BD.

- A) Communication board 485BD (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.)



3. Specifications

3.1 Environmental specifications

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

3.2 Power supply specifications

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

3.3 Performance specifications

Transmission standard	Description
Maximum transmission distance	In conformance to RS-485 and RS-422
Communication type	Non-procedure, dedicated protocol, parallel link, easy PC link: Half duplex, bi-directional
Communication method	Non-procedure, dedicated protocol 1 procedure, dedicated protocol 4 procedure, parallel link, easy PC link
Transmission speed (baud rate)	Non-procedure, dedicated protocol: 300 to 19,200 b ps Parallel link: 19,200(b ps) Easy PC link: 38,400(b ps)
Insulation	Not insulated

Guidelines for the safety of the user and protection of the RS-485 Communication Board FX1N-485-BD

- This manual has been written to be used by trained and competent personnel. This is defined by the European directives for machinery, low voltage and EMC.
- If in doubt at any stage during the installation of the RS-485 Communication Board FX1N-485-BD always consult a professional electrical engineer who is qualified and trained to the local and national standards. If in doubt about the operation or use of the RS-485 Communication Board FX1N-485-BD please consult the nearest Mitsubishi Electric distributor.
- Under no circumstances will Mitsubishi Electric be liable or responsible for any consequential damage that may arise as a result of the installation or use of this equipment.
- All examples and diagrams shown in this manual are intended only as an aid to understanding the text, not to guarantee operation. Mitsubishi Electric will accept no responsibility for actual use of the product based on these illustrative examples.
- Owing to the very great variety in possible application of this equipment, you must satisfy yourself as to its suitability for your specific application.

Manual number : JY992D84201

Manual revision : B

Date : MAR 2000



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