1. Outline of Product

The 485ADP is an insulated RS-485 communication adapter with an Terminal block for connecting RS-485 equipment. Connected to the main unit of the FX Series PLC, it enables signal exchange between the PLC and equipment via an RS-485 port.

2. Communication Functions and Applicable PLC

(Available in indicated version or later)

<table>
<thead>
<tr>
<th>Communication function</th>
<th>FXX</th>
<th>FPLX</th>
<th>FXX</th>
<th>FPLX</th>
</tr>
</thead>
<tbody>
<tr>
<td>No N network</td>
<td>V1.0</td>
<td>First product</td>
<td>V1.04</td>
<td>First product</td>
</tr>
<tr>
<td>Parallel link</td>
<td>V1.20</td>
<td>First product</td>
<td>V1.06</td>
<td>First product</td>
</tr>
<tr>
<td>Computer link</td>
<td>V1.20</td>
<td>First product</td>
<td>V1.06</td>
<td>First product</td>
</tr>
<tr>
<td>Non protocol communication</td>
<td>V1.20</td>
<td>First product</td>
<td>V1.06</td>
<td>First product</td>
</tr>
<tr>
<td>Inter communication</td>
<td>V3.00</td>
<td>First product</td>
<td>V3.00</td>
<td>First product</td>
</tr>
</tbody>
</table>

Function
- Data transfer connecting up to eight FX Series PLCs.
- Data transfer between two PLCs relationship specifying master/slave station.
- Data transfer between two PLCs relationship specifying master (or slave) station.
- Control communication between PLC and computer (specify the master station).
- Serial communication without protocol between PLC and equipment via RS-485 interface.
- Controlling Mitsubishi’s FREQON controller using TWINCAT instruction in function expansion memory.

3. Installation

Caution
- Use in the environments specified under the general specification in the manual.
- Do not use in environments with excessive or conductive dust, corrosive or flammable gas, oily smoke, moisture or rain, excessive heat, regular impact shocks or excessive vibration, as it may result in electrical shock, fire, malfunction, damage or deterioration on the product.
- Make sure to shut off the power outside the product before installing or wiring it. Otherwise, electric shock or serious damage to the product may occur.
- Never drop wire chips or shavings into the vent slits when drilling screw holes or performing wiring, as they may cause fire, breakdown, or malfunction.
- Securely install the 485ADP to the designated port. Poor connection may cause malfunction.

3.1 How to Install to FX Series PLC

Installation to FX0N-FXW/FCX

- Turn OFF the PLC before beginning any work.
- 1) Remove the panel cover from the top face of the main unit.
- 2) Take off the resin cover from the left side of the main unit.
- 3) Install the following board to the port on the main unit.

Installation to FX0N/FXW/FXNC

- 1) Remove the cover for a special adapter provided on the left side of the main unit.
- 2) Connect the special cable board using the 3A screws supplied. Tightening torque: 0.3 to 0.6 N·m
- 3) Connect the right-side connector to the port on the back side of the panel face.

Installation to FX0N/FXW/FXNC

- Turn OFF the PLC before beginning any work.
- 1) Remove the cover of the port for a special adapter provided on the left side of the main unit.
- 2) Connect the special cable board using the 3A screws supplied. Tightening torque: 0.3 to 0.6 N·m
- 3) Connect the right-side connector to the port on the back side of the panel face.

3.2 How to Install to Panel Face

Direct installation to the panel face

Directly fix to the panel face using 2 sets of a screw (M4), a spring washer, and a flat washer in the mounting holes.

Tightening torque: 0.7 to 1.0 N·m

For the pitch and positions of mounting screw holes, refer to the external dimensions.

Mounting on DIN rail

Fix the 485ADP to the DIN rail. DIN48277 (35 mm (1.37) width).

Dismounting from DIN rail

Slightly pull down the DIN rail mounting clip using a tool such as a slotted screwdriver.

4. Product Specification

4.1 Specification

All other specifications than the followings are equivalent to those of the FX Series PLC main unit.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply voltage/current</td>
<td>DC 24V (supplied from PLC main unit) max. 30 mA</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>DC 24V (supplied from External power supply) max. 50 mA</td>
</tr>
<tr>
<td>Power supply specification</td>
<td>Conforming to RS-485/RS-422</td>
</tr>
<tr>
<td>Power consumption</td>
<td>3.0W (when all terminals in batch and FG terminal)</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>5 MΩ (between PLC and FG terminal)</td>
</tr>
<tr>
<td>Environmental conditions</td>
<td>Temperature: -10 to 50°C, Humidity: 35 to 85%RH</td>
</tr>
<tr>
<td>Communication speed</td>
<td>9,600 bps (standard)</td>
</tr>
<tr>
<td>Number of operational points</td>
<td>3,200 (relative to maximum number of controlled points of the PLC)</td>
</tr>
<tr>
<td>Communication method</td>
<td>Half-duplex</td>
</tr>
<tr>
<td>Communication format</td>
<td>Computer (dedicated protocol: format 1/format 4), No protocol</td>
</tr>
<tr>
<td>LED display</td>
<td>Power: green, RD: red, SD: red</td>
</tr>
</tbody>
</table>

4.2 Outside Dimensions and Part Names

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP COVER</td>
<td>Width: φ 4.5(0.18)</td>
</tr>
<tr>
<td>POWER LED</td>
<td>Height: 70(2.76)</td>
</tr>
<tr>
<td>SD LED</td>
<td>Width: φ 4.3(0.17)</td>
</tr>
<tr>
<td>8) DIN rail mounting clip</td>
<td>Height: 87(3.43)</td>
</tr>
<tr>
<td>7) DIN rail</td>
<td>Width: 80(3.15)</td>
</tr>
<tr>
<td>6) Extension cable</td>
<td>Length: 90(3.54)</td>
</tr>
<tr>
<td>5) SDI terminal</td>
<td>Color: Munsell 0.08GY 7.64/0.81D</td>
</tr>
<tr>
<td>4) SDA terminal</td>
<td>DIN rail width: 35 mm (1.37&quot;)</td>
</tr>
<tr>
<td>3) FX0N-485ADP</td>
<td>Accessories: Terminal resistors (330 Ω x 1), DIN rail mounting clip (FX2N in the diagram)</td>
</tr>
<tr>
<td>2) FX0N HARDWARE MANUAL</td>
<td>Color: Munsell 0.08GY 7.64/0.81D</td>
</tr>
<tr>
<td>1) 24+ terminal</td>
<td>DIN rail width: 35 mm (1.37&quot;)</td>
</tr>
</tbody>
</table>

4.3 Terminal configuration and terminal screws

The terminal configuration of the RS-485 port on the 485ADP is as shown below.

1) Top cover
2) POWER LED
3) SDA LED
4) RDB terminal
5) Extension cable
6) Direct mounting hole
7) DIN rail mounting slot
8) DIN rail mounting clip

Terminal screws of terminal block for RS-485 are M3 thread. Therefore, connect wiring by fitting a crimped terminal suited to the terminal screws (see below) to the cable.

Tightening torque of terminals is 0.5 to 0.8 N·m. Screw terminals must be secure enough to prevent a loose connection from causing a malfunction.
1. Outline of Product

The 485ADP is an insulated RS-485 communication adapter with an terminal block for connecting RS-485 equipment. Connected to the main unit of the FX Series PLC, it enables signal exchange between the PLC and equipment via an RS-485 port.

2. Communication Functions and Applicable PLC (Available in indicated version or later)

A) Communication functions

<table>
<thead>
<tr>
<th>Communication Configuration</th>
<th>FX2NC (First)</th>
<th>FX2NC (Second)</th>
<th>FX2NC (Third)</th>
<th>FX2NC (Fourth)</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>N network</td>
<td>V1.09</td>
<td>V1.09</td>
<td>V1.09</td>
<td>V1.09</td>
<td>Data transfer connecting up to eight FX Series PLCs.</td>
</tr>
<tr>
<td>Parallel link</td>
<td>V1.01</td>
<td>V1.01</td>
<td>V1.01</td>
<td>V1.01</td>
<td>Data transfer between two PLCs relationship specifying master/slave station.</td>
</tr>
<tr>
<td>Computer link</td>
<td>V1.01</td>
<td>V1.01</td>
<td>V1.01</td>
<td>V1.01</td>
<td>Serial communication without protocol between PLC, and equipment via RS-485 interface.</td>
</tr>
<tr>
<td>Non protocol communication</td>
<td>V1.01</td>
<td>V1.01</td>
<td>V1.01</td>
<td>V1.01</td>
<td>Connecting Mitsubishi's PRECODEL encoder using C240H instruction in position acquisition memory.</td>
</tr>
<tr>
<td>Serial communication</td>
<td>V1.04</td>
<td>V1.04</td>
<td>V1.04</td>
<td>V1.04</td>
<td>Connecting Mitsubishi's PRECODEL encoder using C240H instruction in position acquisition memory.</td>
</tr>
<tr>
<td>RS-485 port</td>
<td>V1.01</td>
<td>V1.01</td>
<td>V1.01</td>
<td>V1.01</td>
<td>Connecting Mitsubishi's PRECODEL encoder using C240H instruction in position acquisition memory.</td>
</tr>
</tbody>
</table>

B) Communication specifications

- General specification
  - Withstand voltage: 30 V AC (Between all terminals in batch and FG terminal)
  - Insulation resistance: 1 MΩ or more (Between all terminals in batch and FG terminal)

- Power supply specification
  - Voltage: 5 V DC (supplied from PLC main unit) max. 30 mA, 24 V DC (supplied from External power supply) max. 50 mA

- Transmission
  - Conforming to RS-485/RS-422

3. Installation

Caution

- Use in environments specified under the general specification in the manual.
- Do not use the product in environments with excessive or conductive dust, corrosive or flammable gas, oily smoke, moisture or rain, excessive heat, regular impact shocks or excessive vibration, as it may result in electrical shock, fire, malfunction, damage or deterioration on the product.
- Make sure to shut off the power outside the product before installing or wiring it. Otherwise, electric shock or serious damage to the product may occur.
- Never drop wires or shavings into the vent slots when drilling screw holes or performing wiring, as they may cause fire, break down, or malfunction.
- Securely install the 485ADP to the designated port. Poor connection may cause malfunction.

3.1 How to Install to FX Series PLC

Installation to FX0N/FX2NC

Turn OFF the PLC before beginning any work.

1) Remove the panel cover from the top face of the main unit.
2) Take off the resin cover from the left side of the main unit.
3) Install the following board to the port on the main unit.
4) Make sure to shut off the power outside the product before installing or wiring it.
5) Connect the cables of the FX2N-ADP to the port on the board from the left side.

Installation to FX0N/FX2NC

1) Turn OFF the PLC before beginning any work.
2) Remove the cover of the port for a special adapter provided on the left side of the main unit.
3) Connect the built-in terminal of the FX2N-ADP to the port for a special adapter.

3.2 How to Install to Panel Face

Direct installation to the panel face

1) Directly fix to the panel face using 2 sets of a screw (M4), a spring washer, and a flat washer in the mounting holes.
2) Tightening torque: 0.7 to 1.0 N·m

For the pitch and positions of mounting screw holes, refer to the external dimensions.

Mounting on DIN rail

Fix the 485ADP to the DIN rail. DIN48277 (56 mm (1.71) width).

Dismounting from DIN rail

Slightly pull down the DIN rail mounting clip using a tool such as a slotted screwdriver.

4. Product Specification

4.1 Specification

All other specifications are the same as those that are equivalent to the FX Series PLC main unit.

- General specification
  - Withstand voltage: 30 V AC (Between all terminals in batch and FG terminal)
  - Insulation resistance: 1 MΩ or more (Between all terminals in batch and FG terminal)

- Power supply specification
  - Voltage: 5 V DC (supplied from PLC main unit) max. 30 mA, 24 V DC (supplied from External power supply) max. 50 mA

- Transmission
  - Conforming to RS-485/RS-422

- Types of installation
  - Panel-board installation

- Distance
  - Total distance distance: 50 m or less

- Number of control points
  - No points (unrelated to maximum number of controlled points of the PLC)

- Communication method
  - Half-duplex

- Communication format
  - PC network: 800 bps, PC interface: 9600 bps

- Computer link
  - No protocol: 300/600/1200/2400/4800/9600/19200 bps

- Communication format
  - Computer link, No protocol: format 1/format 4, No protocol

- LED display
  - Power: green, RD: red, SD: red

4.2 Outside Dimensions and Part Names

1) Top cover
2) POWER LED
   - Lighting while power is correctly supplied.
3) RD LED
   - Lighting while receiving data.
4) SD LED
   - Lighting while sending data.
5) Extension cable
6) Direct mounting hole
7) DIN rail mounting slot
   - DIN rail width: 35 (1.37")
8) DIN rail mounting clip

4.3 Terminal configuration and terminal screws

The terminal configuration of the RS-485 port on the 485ADP is as shown below. Terminal screws of terminals block for RS-485 are M3 thread. Therefore, connect wiring by fitting a cramped terminal suited to the terminal screws (see below) to the cable. Tightening torque of terminal screws is 0.5 to 0.8 N·m. Screw terminals must be secure enough to prevent a loose connection from causing a malfunction.

For the detailed wiring (including usage of terminal resistor and preparation of cable) with communication equipment, system configuration and communication setting, and program example, refer to the "FX COMMUNICATION USERS MANUAL".

Specifications are subject to change without notice.
1. Outline of Product

The 485ADP is an insulated RS-485 communication adapter with an Terminal block for connecting RS-485 equipment. Connected to the main unit of the FX Series PLC, it enables signal exchange between the PLC and equipment via an RS-485 port.

2. Communication Functions and Applicable PLC

(Available in indicated version or later)

<table>
<thead>
<tr>
<th>Communication Type</th>
<th>Feature</th>
<th>FX2NC</th>
<th>FX1N</th>
<th>FX1N</th>
<th>FX3U</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>N:N network</td>
<td>Data transfer connecting to eight FX Series PLCS.</td>
<td>V1.00</td>
<td>V1.04</td>
<td>V1.06</td>
<td>V1.06</td>
<td>Data transfer between two PLCs and computer (specified as the master station).</td>
</tr>
<tr>
<td>Serial link</td>
<td>Data transfer between the PLC and computer (specified as the master station).</td>
<td>V1.20</td>
<td>V1.20</td>
<td>V1.20</td>
<td>V1.20</td>
<td>Serial communication without protocol between PLC and equipment via RS-485 interface.</td>
</tr>
<tr>
<td>No protocol</td>
<td>inherits the communication function of the PLC and computer (specified as the master station).</td>
<td>Communicating Mitsubishi's FREQROL inverter using STAIR in function expansion memory.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MODBUS communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Installation

Caution
- Use in environments specified under the general specification in the manual.
- Do not use in environments with excessive or conductive dust, corrosive or flammable gas, oily smoke, moisture or rain, excessive heat, regular impact shocks or excessive vibration, as it may result in electrical shock, fire, malfunction, damage or deterioration on the product.
- Make sure to shut off the power outside the product before installing or wiring. Otherwise, electric shock or serious damage to the product may occur.
- Never drop wires or shavings into the vent slots when drilling screw holes or performing wiring, as they may cause fire, breakdown, or malfunction.
- Securely install the 485ADP to the designated port. Poor connection may cause malfunction.

3.1 How to Install to FX Series PLC

Installation to FX1S/FX1N/FX2N

Turn OFF the PLC before beginning any work.
1) Remove the panel cover from the top face of the main unit.
2) Take off the resin cover from the left side of the main unit.
3) Install the following board to the port on the main unit.
4) Fix the above board using the M3 screws supplied.
5) Connect the in-built cable of the 485ADP to the port on the board from the left side.

Installation to FX2NC

Turn OFF the PLC before beginning any work.
1) Remove the cover of the port for a special adapter provided on the left side of the main unit.
2) Connect the in-built cable of the 485ADP to the port for a special adapter.

3.2 How to Install to Panel Face

Direct installation to the panel face

Directly fix to the panel face using 2 sets of a screw (M4), a spring washer, and a flat washer in the mounting holes. Tightening torque: 0.7 to 1.0 N·m

For the pitch and positions of mounting screw holes, refer to the external dimensions.

Mounting on DIN rail

Fix the 485ADP to the DIN rail. DIN48277 (35 mm (1.37"") wide).

Dismounting from DIN rail

Slightly pull down the DIN rail mounting clip using a tool such as a slotted screwdriver.

4. Product Specification

4.1 Specification

All other specifications than the followings are equivalent to those of the FX Series PLC main unit.

- Power supply specification
  - V:DC (supplied from PLC main unit) max. 30 mA
  - V:DC (supplied from External power supplies) max. 50 mA

- Transmission specification
  - 300/600/1200/2400/4800/9600 bps

- Types of connection
  - N:N network, Parallel link

- Number of occupied points
  - 2 point (unrelated to maximum number of connected points of the PLC)

- Transmission method
  - Half-duplex

- Communication format
  - Computer (dedicated protocol: format 1/format 4), No protocol

- Power supply
  - 5 V DC (supplied from PLC main unit) max. 30 mA

- Safety guidelines for the user and protection of the FX0N-485ADP.

- This manual is written to be used by trained and competent personnel. The definition of such a person or persons is as follows:
  - a) Any engineer using the product associated with this manual, should be of a competent nature, trained and qualified to the local and national standards. These engineers should be fully aware of all aspects of safety with regards to automated equipment.
  - b) Any commissioning or service engineer must be of a competent nature, trained and qualified to the local and national standards.
  - c) All operators of the completed equipment should be trained in this product in a safe and coordinated manner in compliance to established safety practices.

- Notes on the Symbols Used in this Manual

  - 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 the actual use of the product based on these illustrative examples.
  - Please contact a Mitsubishi distributor for more information concerning applications in life critical situations or high reliability.

- Associated Manuals

  - PROGRAMMING MANUAL, PROGRAMMING MANUAL II, or FX COMMUNICATION USER'S MANUAL mentioned below are not provided in sets on this product.
  - Contact our agent where the product was purchased to request the manuals accordingly.

- Manual number:
  - FX0N-485ADP INS ULLATION MANUAL JY992D53101
  - FX COMMUNICATION USERS MANUAL JY992D69901
  - FX-HEX HARDWARE MANUAL JY992D54501
  - FX-HEX HARDWARE MANUAL JY992D75701
  - FX-HEX HARDWARE MANUAL JY992D57601
  - FX-HEX HARDWARE MANUAL JY992D76701
  - FX-HEX HARDWARE MANUAL-JY992D87201
  - PROGRAMMING MANUAL JY992D74901
  - PROGRAMMING MANUAL II JY992D80101
  - JY992D84910
  - Special Connector Board JY992D84701
  - Special Connector Board JY992D36901

- Manual revision: D
- Date : September 2003
- Weight: Approx. 0.3 kg (0.6 lb)
- Dimensions: 74 x 58 x 16 mm (2.9 x 2.3 x 0.63 in.)

-有可能

-不可能

- Will

- May

- MIGHT
4. Product Specification

1. Outline of Product

The 485ADP is an insulated RS-485 communication adapter with a Terminal block for connecting RS-485 equipment. Connected to the main unit of the FX Series PLC, it enables signal exchange between the PLC equipment and via an RS-485 port.

2. Communication Functions and Applicable PLC

(Available in indicated version or later)

<table>
<thead>
<tr>
<th>Communication type</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>N network</td>
<td>Data transfer connecting up to eight FX Series PLCs.</td>
</tr>
<tr>
<td>Parallel link</td>
<td>Data transfer between two PLCs relationship specifying master/slave station.</td>
</tr>
<tr>
<td>Computer link</td>
<td>Data transfer between the 485ADP and computer (specified as the master station).</td>
</tr>
<tr>
<td>Intercommunication</td>
<td>Serial communication without protocol between PLC and equipment via RS-485 interface.</td>
</tr>
</tbody>
</table>

3. Installation

Caution

- Use in environments specified under the general specification in the manual. Do not use the product in environments with excessive or conductive dust, corrosive or flammable gas, oily smoke, moisture or rain, excessive heat, regular impact shocks or excessive vibration, as it may result in electrical shock, fire, malfunction, damage or deterioration on the product.
- Make sure to shut off the power outside the product before installing or wiring it. Otherwise, electric shock or serious damage to the product may occur.
- Never drop wire clips or shavings into the vent slots when drilling screw holes or performing wiring, as they may cause fire, breakage, or malfunction.
- Securely install the 485ADP to the designated port. Poor connection may cause malfunction.

3.1 How to Install to FX Series PLC

Installation to FX Series PLC

Turn OFF the PLC before beginning any work.

1. Remove the panel cover from the top face of the main unit.
2. Take off the resin cover from the left side of the main unit.
3. Install the following board to the port on the main unit.

Installation to FX/FXon/FXn/FXplc

1) 24+ terminal . . . .Power supply terminal (M3 screw)
2) 24- terminal . . .Ground terminal (M3 screw)
3) 20+ terminal . . .Ground terminal (M3 screw)
4) SDA terminal . . .Data transmission terminal (M3 screw)
5) SCL terminal . . .Data transmission terminal (M3 screw)
6) RDA terminal . . .Data transmission terminal (M3 screw)
7) RDB terminal . . .Data transmission terminal (M3 screw)
8) N/A terminal . . .Power supply terminal (M3 screw)

3.2 How to Install to Panel Face

Direct installation to the panel face

Directly fix to the panel face using 2 sets of a screw (M4), a spring washer, and a flat washer in the mounting holes. Tightening torque: 0.7 to 1.0 Nm

For the pitch and positions of mounting screw holes, refer to the external dimensions.

Mounting on DIN rail

Fix the 485ADP to the DIN rail. DIN48277 (35 mm (1.37") wide).

Dismounting from DIN rail

Slightly pull down the DIN rail mounting clip using a tool such as a sloted screwdriver.