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PROGRAMMABLE CONTROLLERS
MELSEC-F

FX-USB-AW/FX3U-USB-BD

USER'S MANUAL
- USB Driver Installation Edition

Manual Number	JY997D32601
Revision	A
Date	May 2008

This manual describes the installation procedure of the USB driver software for FX-USB-AW and FX3U-USB-BD. Before use, read this manual and the manuals of all relevant products fully to acquire proficiency in handling and operating the product. Make sure to learn all the product information, safety information, and precautions.
Store this manual in a safe place so that it can be taken out and read whenever necessary. Always forward it to the end user.
Registration:
The company and product names described in this manual are registered trademarks or the trademarks of their respective companies.

Effective May 2008
Specifications are subject to change without notice.

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Safety Precaution (Read these precautions before use.)

This manual classifies the safety precautions into two categories:
◇DANGER and ⚠CAUTION .

◇DANGER	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
⚠CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

Depending on the circumstances, procedures indicated by ⚠CAUTION may also cause severe injury.
It is important to follow all precautions for personal safety.

Associated Manuals

Manual name	Manual No.	Description
FX-USB-AW User's Manual	JY997D13201	Explains the mounting and specifications of the FX-USB-AW.
FX3U-USB-BD User's Manual	JY997D13501	Explains the mounting and specifications of the FX3U-USB-BD.
FX Series User's Manual - Data Communication Edition	JY997D16901 MODEL CODE: 09R715	Explains N:N network, Parallel Link, Computer Link, Non-Protocol communication by RS and RS2 instructions/FX2N-232IF.

How to obtain manuals
For product manuals or documents, consult with the Mitsubishi Electric dealer from who you purchased your product.

1. Outline

This manual explains the installation method of the USB driver software for FX-USB-AW and FX3U-USB-BD.
For the mounting, hardware specification and applicable standard of the FX-USB-AW or FX3U-USB-BD, refer to the each product user's manual.

2. Specifications

For the hardware specifications of the FX-USB-AW or FX3U-USB-BD, refer to the each product user's manual.

2.1 Performance Specifications

1) FX-USB-AW

Item	Specification
Current consumption	• 15mA / DC 5V (5V DC power is supplied from the internal power supply of PLC) • 30mA / DC 5V (5V DC power is supplied from the USB connector of personal computer)
Level Conversion	Bidirectional between RS-422 and USB (Between signals are isolated by photocoupler.)
Baud Rate	115200 bps, maximum (The baud rate is different in PLC.)
Transmission standard	USB2.0 (For full speed)
Signal name (Port) To PLC	RS-422 (MINI DIN 8Pin male)
Signal name (Port) To a cable	USB (MINI B plug female)

2) FX3U-USB-BD

Item	Specification
Current consumption	• 15mA / DC 5V (5V DC power is supplied from the main unit) • 30mA / DC 5V (5V DC power is supplied from the USB connector of personal computer)
Isolation	Photocoupler isolation (Between communication line and CPU)
Baud Rate	9600/19200/38400/57600/115200 bps
Transmission standard	USB2.0 (For full speed)
Port	USB (MINI B plug female)

2.2 USB Cable Specifications

Signal name (Port)	To FX-USB-AW or FX3U-USB-BD	USB (MINI B plug male)
	To PC	USB (A plug male)
Length of cable		5m (196.9") at most (Included cable is 3m(118.1").)

2.3 System Requirements

OS	Microsoft® Windows® 98*1, Windows® 98SE*1 Microsoft® Windows® Millennium Edition (Windows® Me)*1 Microsoft® Windows® 2000*1 Microsoft® Windows® XP*1 Microsoft® Windows Vista®*2
Software	GX Developer (SW□D5C-GPPW-J, SW□D5C-GPPW-E) FX-PCS/WIN*3, FX-PCS/WIN-E*4 FX-PCS-VPS/WIN, FX-PCS-VPS/WIN-E
Programmable controller	FX0, FX0S, FX0N, FX1S, FX1N, FX2N, FX3U, FX1NC*5, FX2NC, FX3UC, FX2N-10GM, FX2N-20GM, FX2N-1RM(-E)-SET

*1 The USB driver for Windows® 98, Windows® 98SE, Windows® Millennium Edition, Windows® 2000 and Windows® XP included in the USB driver software Ver. 1.10 is used. This USB driver is the same driver as the USB driver for software previous to Ver.1.10.

*2 Use the USB driver for Windows Vista® from the USB driver software Ver.1.10.

*3 For versions earlier than 4.30, the communication port setting can be selected from COM1-COM4.
For versions 4.30 or later, the communication port setting can be selected from COM1-COM9.
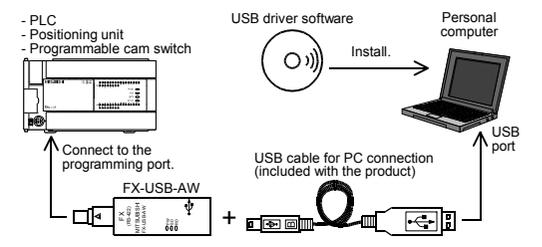
*4 For versions earlier than 3.30, the communication port setting can be selected from COM1-COM4.
For versions 3.30 or later, the communication port setting can be selected from COM1-COM9.

3. System Configuration

For details of the programming communication, refer to the following manual.
→ **Refer to the FX Series User's Manual - Data Communication Edition**
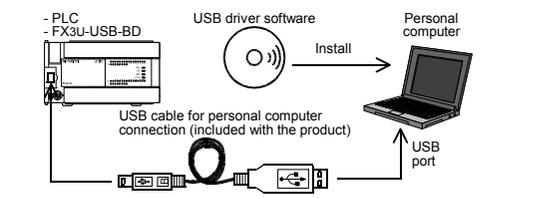
3.1 FX-USB-AW

- PLC
- Positioning unit
- Programmable cam switch

USB driver software
Install.

Personal computer

Connect to the programming port.
FX-USB-AW

USB cable for PC connection (included with the product)

USB port

Connected equipment		Baud rate	Cable for personal computer connection
Programmable controller	FX0, FX0S, FX0N, FX1S	9.6 kbps	USB cable of 5m (196.9") at most (Included cable is 3m (118.1"))
	FX1N, FX1NC*1	19.2 kbps or less	
	FX2N (Earlier than Ver.3.00), FX2NC(Earlier than Ver.3.00)	9.6 kbps	
	FX2N (Ver.3.00 or later), FX2NC(Ver.3.00 or later)	19.2 kbps or less	
	FX3U, FX3UC	115.2 kbps or less	
Positioning unit	FX2N-10GM, FX2N-20GM	9.6 kbps	
Programmable cam switch	FX2N-1RM-E-SET	9.6 kbps	

*1 FX1NC Series PLC specification details for I/O, wiring, installation, and maintenance can only be found in the Japanese Manual.
• Please refer to the specific PLC manual for a PLC not mentioned above.

3.2 FX3U-USB-BD

- PLC
- FX3U-USB-BD

USB driver software
Install

Personal computer

USB cable for personal computer connection (included with the product)

USB port

Connected equipment		Baud rate	Cable for personal computer connection
Programmable controller	FX3U	115.2 kbps or less	USB cable of 5m (196.9") at most (Included cable is 3m (118.1"))
	FX3UC-32MT-LT		

4. Connecting Procedure

4.1 Connecting Procedure of FX-USB-AW

1) Power off the PLC.
2) Connect the USB (MINI B plug male) connector of the USB cable to the FX-USB-AW.
3) Connect the RS-422 (MINI DIN 8Pin male) connector of the FX-USB-AW to the PLC.
4) Connect the USB (A plug male) connector of the USB cable to the Personal computer.
5) Power ON the PLC.
6) Power ON the Personal computer.
7) Make sure the POWER lamp of the FX-USB-AW is lit.
(The POWER lamp of FX-USB-AW lights when power is supplied normally by the personal computer.)

4.2 Connecting Procedure of FX3U-USB-BD

1) Power off the PLC.
2) Connect the USB (MINI B plug male) connector of the USB cable to the FX3U-USB-BD.
3) Connect the USB (A plug male) connector of the USB cable to the personal computer.
4) Turn ON the power supply of the PLC.
5) Turn ON the power supply of the personal computer.

5. Driver Installation

Caution
The driver is not installed properly when canceled during the installation. To complete the installation, uninstall the driver, and install again. For the uninstallation procedure of the driver, refer to the Chapter 7.

Note: This product requires USB Driver Installation for each USB port to be connected. To use multiple USB ports, connect this product to each port, and install the driver individually. (With Windows Vista®, Driver installation will occur automatically. In other OS, depending on the PC environment, Driver installation may occur automatically.)

USB driver software folder structure
The folder structure is as follows according to the USB driver software version.

Ver. 1.10 or higher

<CD-ROM Drive>
— <WinXP_2000_ME_98>
The USB driver for Windows® 98, Windows® 98SE, Windows® Millennium Edition (Me), Windows® 2000 and Windows® XP is stored.
— <WinVista>
The USB driver for Windows Vista® is stored.

Versions previous to Ver. 1.10
The USB driver for software previous to Ver. 1.10 does not have a folder structure. The USB driver is stored in the main directory of the CD-ROM drive.

5.1 Windows® 98, Windows® 98SE, Windows® Millennium Edition, Windows® 2000, and Windows® XP

Please install the driver by the following procedure.
The installation procedure is explained when connecting a personal computer with Windows® XP to the FX-USB-AW.

• Windows® 98, Windows® 98SE, Windows® Millennium Edition, and Windows® 2000, the installation method will vary.

1) When the USB cable is connected to the personal computer, the following screen is displayed.

Insert the included CD-ROM into the personal computer's CD-ROM drive.
Click [Next >].
The installation of the USB driver software will begin.
- If using Windows® 98 and Windows® 98SE
A window to select the location of the installation files will appear.
Specify the USB driver software version as follows:

Ver. 1.10 or higher
Please select the "Include this location in the search", and install by the specifying the "\WinXP_2000_ME_98" directory from the CD-ROM drive.

Versions previous to Ver. 1.10
Please select the CD-ROM drive.
- If using Windows® Millennium Edition, and Windows® 2000
A window to select the location of the installation files will appear.
Please select the CD-ROM drive.

2) The following screen is displayed. (Only in Windows® XP)

Click [Continue Anyway].

3) The following screen is displayed.

Click [Finish].
If using Windows® 2000 or Windows® XP, proceed to step 4).
- If Windows® 98, Windows® 98SE or Windows® Millennium Edition is used, installation of the USB Serial Port software begins, and ends automatically. The CD-ROM can be removed from the personal computer at this time. The installation of the USB driver software is finished.

4) The following screen is displayed.

Click [Next >].
The installation of the USB Serial Port software will begin.
- If using Windows® 2000, a screen to select the location of the installation files is displayed. Please select the CD-ROM drive.

5) The screen of 2) is displayed. (Only in Windows® XP)
Click [Continue Anyway].

6) The following screen is displayed.

Click [Finish].
The installation of the USB Serial Port software will finish.
The CD-ROM (USB driver software) can be removed from the personal computer at this time.

5.2   Windows Vista®

Please install the driver by the following procedure.
The installation procedure is explained when connecting a personal computer with Windows Vista® to the FX-USB-AW.
1) When the USB cable is connected to the personal computer, the following screen is displayed.

Click [Located and install driver software (recommended)].
2) Only when user account control is enabled, "user account control" screen is displayed.
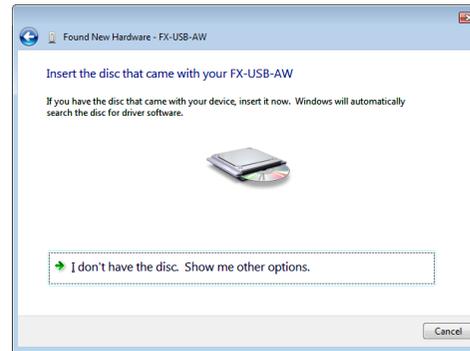Click [Continue], when displayed.
3) The following screen is displayed.
(The following screen may be displayed when connected to a Network.)

Click [Don't search online].

4) The following screen is displayed.

Insert the included CD-ROM into the personal computer's CD-ROM drive. The driver in CD-ROM is searched automatically and installation of the USB driver software will begin.
If the included CD-ROM was already inserted into the personal computer's CD-ROM drive before displaying the above screen, click [Next].
5) The following screen is displayed.

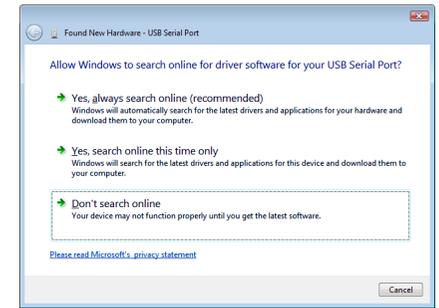Click [Install this driver software anyway].
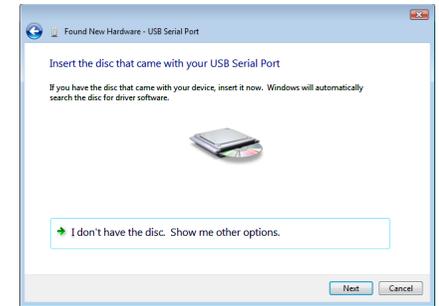6) The following screen is displayed.

Click [Close].

7) The following screen is displayed.
(The following screen may be displayed when connected to a Network.)

Click [Don't search online].
8) The following screen is displayed.

Click [Next].
The installation of the USB Serial Port software will begin.
9) The screen of 5) is displayed.
Click [Install this driver software anyway].
10) The following screen is displayed.

Click [Close].
The installation of the USB Serial Port software will finish.
The CD-ROM (USB driver software) can be removed from the personal computer at this time.
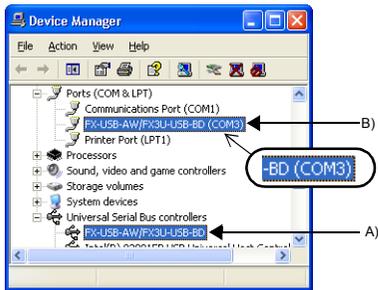
6. Installation Confirmation of Driver

Procedure for confirming the installation of the driver is described below.
Windows® XP example follows.

- In Windows® XP, click [Start] → [Control Panel] → [Performance and Maintenance] → [System] → [Hardware] → [Device Manager] and the window below will be displayed.
  Please confirm the COM number to which the driver is allocated (COM and LPT).
- If using Windows® 98, Windows® 98SE, Windows® Millennium Edition or Windows® 2000
  A screen that is equivalent to the one below is displayed by clicking [My Computer] → [Control Panel] → [System] → [Device Manager] in the menu of the personal computer.
- If using Windows Vista®
  A screen that is equivalent to the one below is displayed by clicking [Start] → [Control Panel] → [Hardware and Sound] → [Device Manager] in the menu of the personal computer.

When user account control is enabled
Only when user account control is enabled will the "user account control" screen be displayed.
Click [Continue], when displayed.

Check following:
- FX-USB-AW/FX3U-USB-BD is indicated at A).
- FX-USB-AW/FX3U-USB-BD (COM *) is indicated at B).
  * indicates the COM number used in the FX-USB-AW or FX3U-USB-BD.
- Install the driver again when ⚠ is displayed.

Select the programming software COM number as the COM number currently assigned on the screen above.

Setting GX Developer:
Double-click [Online] → [Transfer setup] → [Serial] of personal computer side I/F.
Select the same COM number as the COM number of the personal computer when the personal computer side I/F serial setting Dialog Box appears.
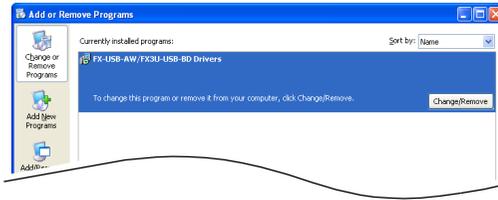Click [OK] of [Connection Setup] screen to end.

7. Uninstalling Driver

7.1 Windows® 98, Windows® 98SE, Windows® Millennium Edition, Windows® 2000, and Windows® XP

Please uninstall the driver by the following procedure.
A Windows XP example follows.
1) Detach the USB cable from the personal computer.
   Click [Start] → [Control Panel] → [Add or Remove Programs] in the menu of the personal computer, the window below will be displayed.
   - In case of Windows Me of Windows 98 and Windows 98SE, Windows 2000
     A screen that is equivalent to the one below is displayed by clicking [My Computer] → [Control Panel] → [Add/Remove Programs] in the menu of the personal computer.
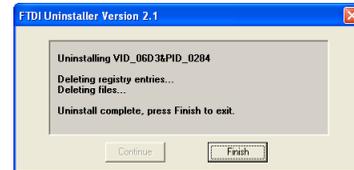

Click [Change/Remove].

2) The following screen is displayed.

Click [Continue].

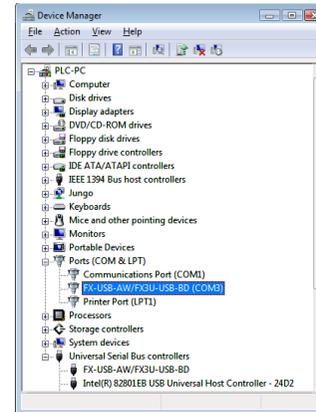3) The following screen is displayed.

Click [Finish].

7.2 Windows Vista®

Please uninstall the driver by the following procedure.

Caution
Driver software must be uninstalled in the order of "Ports (COM & LPT)" after which the "Universal Serial Bus Controllers" should be uninstalled.
If uninstalling directly from the "Universal Serial Bus Controllers", the driver software for the FX-USB-AW and FX3U-USB-BD will not uninstall correctly.
When uninstalling from "Universal Serial Bus Controllers", uninstall USB driver software after re-installation in the order of "Ports (COM & LPT)" after which the "Universal Serial Bus Controllers" should be uninstalled.

1) Connect the FX-USB-AW or FX3U-USB-BD to the personal computer via a USB cable.
   Click [Start] → [Control Panel] → [Hardware and Sound] → [Device Manager] and the window below will be displayed.
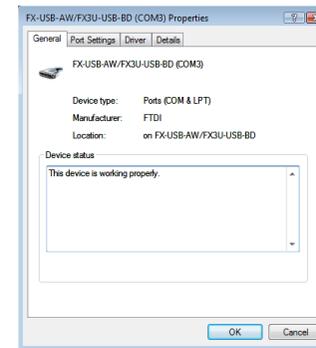

Double-click [FX-USB-AW/FX3U-USB-BD (COM*)] in the [Ports (COM & LPT)].
* indicates the COM number used in the FX-USB-AW or FX3U-USB-BD.

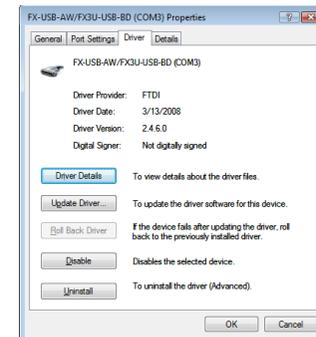**When user account control is enabled**
Only when user account control is enabled will the "user account control" screen be displayed.
Click [Continue], when displayed.

2) The following screen is displayed.

Select [Driver] tab.

3) The following screen is displayed.

Click [Uninstall].

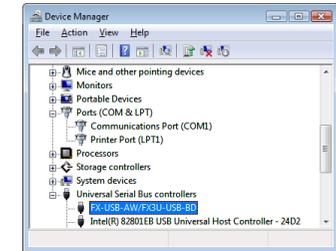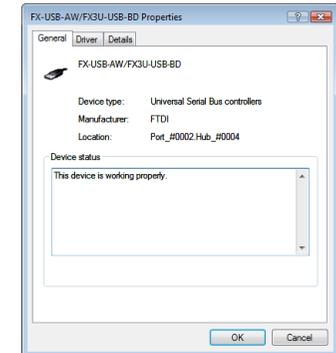4) The following screen is displayed.

Add check mark

Add a check mark to [Delete the driver software for this device], and click [OK].
The USB Serial Port software is uninstalled.
And then, uninstall a USB driver by operation of 5) to 8).

5) Double-click [FX-USB-AW/FX3U-USB-BD] in the [Universal Serial Bus Controllers] from the device manager.
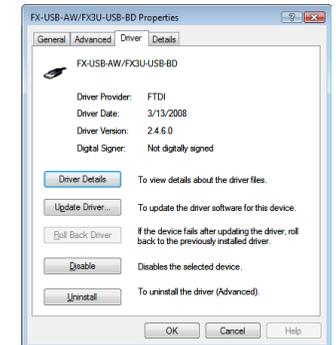

6) The following screen is displayed.

Select [Driver] tab.

7) The following screen is displayed.

Click [Uninstall].

8) The following screen is displayed.

Confirm Device Uninstall

FX-USB-AW/FX3U-USB-BD

Warning: You are about to uninstall this device from your system.

☑ Delete the driver software for this device.

OK   Cancel

→ Add check mark

Add a check mark to [Delete the driver software for this device], and click [OK].
The USB driver is uninstalled.

8. Caution on Use

STARTUP AND MAINTENANCE PRECAUTIONS	◇DANGER

- Before modifying or disrupting the program in operation or running the PLC, carefully read through this manual and the associated manuals and ensure the safety of the operation.
  An operation error may damage the machinery or cause accidents.

STARTUP AND MAINTENANCE PRECAUTIONS	⚠CAUTION

- Do not disassemble or modify the PLC.
  Doing so may cause fire, equipment failures, or malfunctions.
  * For repair, contact your local Mitsubishi Electric distributor.
- Since the FX-USB-AW case is made of resin, do not drop it or exert strong impact to it.
  Doing so may cause damage.

DISPOSAL PRECAUTIONS	⚠CAUTION

- Please contact a certified electronic waste disposal company for the environmentally safe recycling and disposal of your device.

TRANSPORT AND STORAGE PRECAUTIONS	⚠CAUTION

- The product is a precision instrument. During transportation, avoid any impacts.
  Failure to do so may cause failures in the product.
  After transportation, verify the operations of the product.

- The FX-USB-AW or FX3U-USB-BD is connected to a personal computer, and the PLC is turned on, and then an operations such as write, read, and monitor are tried for the first time using a programming tool, a communication error message may be displayed.
  In such a case, clear the message and try the operations again.
- The expansion board cannot be connected to FX3UC Series PLC other than FX3UC-32MT-LT.
- Only one expansion board can be used per main unit.
  Additional expansion boards such as the FX3U-232-BD, FX3U-422-BD or FX3U-485-BD cannot be installed/used together with the FX3U-USB-BD.
- If a communication error message is indicated while operating the programming tool (when executing 'Write to PLC', 'Read from PLC', or 'Monitor'), disconnect the USB cable once (from either the PC or the FX-USB-AW) and connect it again. Then clear the error message and choose Write, Read, or Monitor again.
- The programming tool may not be operated properly due to a contact failure at connectors or wire breakage.
  Make sure to save the program before transferring or changing it.

9. Troubleshooting

9.1 FX-USB-AW

- If communication cannot be established between the PLC (as well as a positioning unit or a programmable cam switch) and a PC using FX-USB-AW, confirm the following status by checking POWER LED, SD LED, and RD LED in FX-USB-AW.

State of POWER LED	Contents
POWER LED is lit.	The DC5V power supply from the personal computer is normally supplied. In case of no communication, check the status of SD LED and RD LED.
POWER LED is not lit.	The DC 5V power supply from the personal computer is not supplied. Check the items below. • Confirm that the specified cable is used to connect the FX-USB-AW and the personal computer. • Confirm whether the power supply is supplied to personal computer.

The status of SD LED and RD LED.		Contents
SD	Blinking	Communicating correctly
	Extinguished	• Confirm that the power is supplied to the personal computer. • Confirm the personal computer and the PLC are connected properly with the specified cable. • Confirm that the communication settings and connected PLC are correctly set in the software. Refer to the software manual.
RD	Blinking	Data receiving
	Extinguished	• Confirm that the power is supplied to PLC. • The PLC will not operate when a configuration that exceeds the DC 5V or DC 24V capacity is used. It will also be impossible to communicate normally. • Confirm that the specified cable is used to connect the personal computer and PLC. • Confirm that the communication settings and connected PLC are correctly set in the software. Refer to the software manual.

- When driver installation is required after already establishing USB communication.
  → This product requires USB Driver Installation for each USB port to be connected. Connect the product to a driver-installed USB port, or install the driver to the current port.

9.2 FX3U-USB-BD

- If communication cannot be established between the PLC and a personal computer using FX3U-USB-BD, confirm the following status by checking SD LED and RD LED in FX3U-USB-BD.

The status of SD LED and RD RED

The status of SD LED and RD LED.		Contents
SD	Blinking	Communicating correctly
	Extinguished	• Confirm that the power is supplied to the personal computer. • Confirm the personal computer and the PLC are connected properly with the specified cable. • Confirm that the communication settings and connected PLC are correctly set in the software. Refer to the software manual.
RD	Blinking	Data receiving
	Extinguished	• Confirm that the power is supplied to PLC. • The PLC will not operate when a configuration that exceeds the DC 5V or DC 24V capacity is used. It will also be impossible to communicate normally. • Confirm that the specified cable is used to connect the personal computer and PLC. • Confirm that the communication settings and connected PLC are correctly set in the software. Refer to the software manual.

- When driver installation is required after already establishing USB communication.
  → This product requires USB Driver Installation for each USB port to be connected. Connect the product to a driver-installed USB port, or install the driver to the current port.

⚠ For safe use

- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi Electric.
- This product has been manufactured under strict quality control. However when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

MITSUBISHI ELECTRIC CORPORATION

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MITSUBISHI
Changes for the Better

PROGRAMMABLE CONTROLLERS
MELSEC-F

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2. Specifications
For the hardware specifications of the FX-USB-AW or FX3U-USB-BD, refer to the each product user's manual.

2.1 Performance Specifications
1) FX-USB-AW

Item	Specification
Current consumption	• 15mA / DC 5V (5V DC power is supplied from the internal power supply of PLC) • 30mA / DC 5V (5V DC power is supplied from the USB connector of personal computer)
Level Conversion	Bidirectional between RS-422 and USB (Between signals are isolated by photocoupler.)
Baud Rate	115200 bps, maximum (The baud rate is different in PLC.)
Transmission standard	USB2.0 (For full speed)
Signal name (Port) To PLC	RS-422 (MINI DIN 8Pin male)
To a cable	USB (MINI B plug female)

2) FX3U-USB-BD

Item	Specification
Current consumption	• 15mA / DC 5V (5V DC power is supplied from the main unit) • 30mA / DC 5V (5V DC power is supplied from the USB connector of personal computer)
Isolation	Photocoupler isolation (Between communication line and CPU)
Baud Rate	9600/19200/38400/57600/115200 bps
Transmission standard	USB2.0 (For full speed)
Port	USB (MINI B plug female)

2.2 USB Cable Specifications

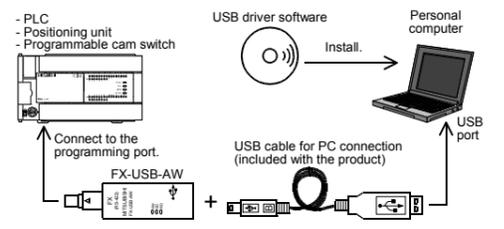| Signal name (Port)	To FX-USB-AW or FX3U-USB-BD	USB (MINI B plug male)
	To PC	USB (A plug male)
Length of cable		5m (196.9") at most (Included cable is 3m(118.1").)

2.3 System Requirements

OS	Microsoft® Windows® 98*1, Windows® 98SE*1 Microsoft® Windows® Millennium Edition (Windows® Me)*1 Microsoft® Windows® 2000*1 Microsoft® Windows® XP*1 Microsoft® Windows Vista®*2
Software	GX Developer (SW□D5C-GPPW-J, SW□D5C-GPPW-E) FX-PCS/WIN*3, FX-PCS/WIN-E*4 FX-PCS-VPS/WIN, FX-PCS-VPS/WIN-E
Programmable controller	FX0, FX0S, FX0N, FX1S, FX1N, FX2N, FX3U, FX1NC*5, FX2NC, FX3UC. FX2N-10GM, FX2N-20GM, FX2N-1RM(-E)-SET

*1 The USB driver for Windows® 98, Windows® 98SE, Windows® Millennium Edition, Windows® 2000 and Windows® XP included in the USB driver software Ver. 1.10 is used. This USB driver is the same driver as the USB driver for software previous to Ver.1.10.
*2 Use the USB driver for Windows Vista® from the USB driver software Ver.1.10.
*3 For versions earlier than 4.30, the communication port setting can be selected from COM1-COM4.
For versions 4.30 or later, the communication port setting can be selected from COM1-COM9.
*4 For versions earlier than 3.30, the communication port setting can be selected from COM1-COM4.
For versions 3.30 or later, the communication port setting can be selected from COM1-COM9.

3. System Configuration
For details of the programming communication, refer to the following manual.
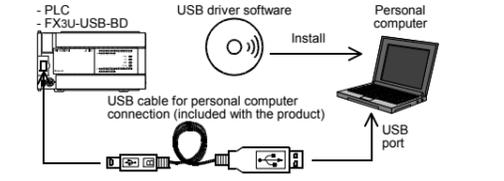→ **Refer to the FX Series User's Manual - Data Communication Edition**

3.1 FX-USB-AW
- PLC
- Positioning unit
- Programmable cam switch

USB driver software
Install.
Personal computer

Connect to the programming port.
FX-USB-AW
USB cable for PC connection (included with the product)
USB port

Connected equipment		Baud rate	Cable for personal computer connection
Programmable controller	FX0, FX0S, FX0N, FX1S	9.6 kbps	
	FX1N, FX1NC*1	19.2 kbps or less	
	FX2N (Earlier than Ver.3.00), FX2NC(Earlier than Ver.3.00)	9.6 kbps	USB cable of 5m (196.9") at most (Included cable is 3m (118.1"))
	FX2N (Ver.3.00 or later), FX2NC(Ver.3.00 or later)	19.2 kbps or less	
	FX3U, FX3UC	115.2 kbps or less	
Positioning unit	FX2N-10GM, FX2N-20GM	9.6 kbps	
Programmable cam switch	FX2N-1RM-E-SET	9.6 kbps	

*1 FX1NC Series PLC specification details for I/O, wiring, installation, and maintenance can only be found in the Japanese Manual.
• Please refer to the specific PLC manual for a PLC not mentioned above.

3.2 FX3U-USB-BD
- PLC
- FX3U-USB-BD

USB driver software
Install
Personal computer

USB cable for personal computer connection (included with the product)
USB port

Connected equipment		Baud rate	Cable for personal computer connection
Programmable controller	FX3U	115.2 kbps or less	USB cable of 5m (196.9") at most (Included cable is 3m (118.1"))
	FX3UC-32MT-LT		

4. Connecting Procedure

4.1 Connecting Procedure of FX-USB-AW
1) Power off the PLC.
2) Connect the USB (MINI B plug male) connector of the USB cable to the FX-USB-AW.
3) Connect the RS-422 (MINI DIN 8Pin male) connector of the FX-USB-AW to the PLC.
4) Connect the USB (A plug male) connector of the USB cable to the Personal computer.
5) Power ON the PLC.
6) Power ON the Personal computer.
7) Make sure the POWER lamp of the FX-USB-AW is lit.
(The POWER lamp of FX-USB-AW lights when power is supplied normally by the personal computer.)

4.2 Connecting Procedure of FX3U-USB-BD
1) Power off the PLC.
2) Connect the USB (MINI B plug male) connector of the USB cable to the FX3U-USB-BD.
3) Connect the USB (A plug male) connector of the USB cable to the personal computer.
4) Turn ON the power supply of the PLC.
5) Turn ON the power supply of the personal computer.

5. Driver Installation
Caution
The driver is not installed properly when canceled during the installation. To complete the installation, uninstall the driver, and install again. For the uninstallation procedure of the driver, refer to the Chapter 7.

Note: This product requires USB Driver Installation for each USB port to be connected. To use multiple USB ports, connect this product to each port, and install the driver individually. (With Windows Vista®, Driver installation will occur automatically. In other OS, depending on the PC environment, Driver installation may occur automatically.)

USB driver software folder structure
The folder structure is as follows according to the USB driver software version.

Ver. 1.10 or higher
<CD-ROM Drive>
— <WinXP_2000_ME_98>
The USB driver for Windows® 98, Windows® 98SE, Windows® Millennium Edition (Me), Windows® 2000 and Windows® XP is stored.
— <WinVista>
The USB driver for Windows Vista® is stored.
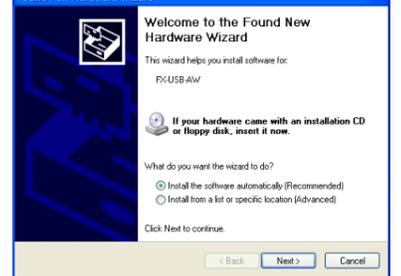
Versions previous to Ver. 1.10
The USB driver for software previous to Ver. 1.10 does not have a folder structure. The USB driver is stored in the main directory of the CD-ROM drive.

5.1 Windows® 98, Windows® 98SE, Windows® Millennium Edition, Windows® 2000, and Windows® XP
Please install the driver by the following procedure.
The installation procedure is explained when connecting a personal computer with Windows® XP to the FX-USB-AW.
• Windows® 98, Windows® 98SE, Windows® Millennium Edition, and Windows® 2000, the installation method will vary.
1) When the USB cable is connected to the personal computer, the following screen is displayed.

Insert the included CD-ROM into the personal computer's CD-ROM drive.
Click [Next >].
The installation of the USB driver software will begin.
- If using Windows® 98 and Windows® 98SE
A window to select the location of the installation files will appear.
Specify the USB driver software version as follows:
Ver. 1.10 or higher
Please select the "Include this location in the search", and install by the specifying the "\WinXP_2000_ME_98" directory from the CD-ROM drive.
Versions previous to Ver. 1.10
Please select the CD-ROM drive.
- If using Windows® Millennium Edition, and Windows® 2000
A window to select the location of the installation files will appear.
Please select the CD-ROM drive.

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2) The following screen is displayed. (Only in Windows® XP)

Click [Continue Anyway].

3) The following screen is displayed.

Click [Finish].
If using Windows® 2000 or Windows® XP, proceed to step 4).
- If Windows® 98, Windows® 98SE or Windows® Millennium Edition is used, installation of the USB Serial Port software begins, and ends automatically. The CD-ROM can be removed from the personal computer at this time. The installation of the USB driver software is finished.

4) The following screen is displayed.

Click [Next >].
The installation of the USB Serial Port software will begin.
- If using Windows® 2000, a screen to select the location of the installation files is displayed.
Please select the CD-ROM drive.

5) The screen of 2) is displayed. (Only in Windows® XP)
Click [Continue Anyway].

6) The following screen is displayed.

Click [Finish].
The installation of the USB Serial Port software will finish.
The CD-ROM (USB driver software) can be removed from the personal computer at this time.
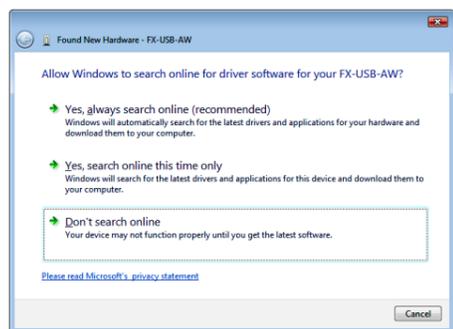
5.2 Windows Vista®
Please install the driver by the following procedure.
The installation procedure is explained when connecting a personal computer with Windows Vista® to the FX-USB-AW.
1) When the USB cable is connected to the personal computer, the following screen is displayed.
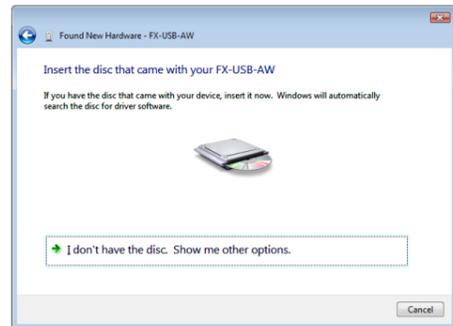
Click [Located and install driver software (recommended)].

2) Only when user account control is enabled, "user account control" screen is displayed.
Click [Continue], when displayed.

3) The following screen is displayed.
(The following screen may be displayed when connected to a Network.)

Click [Don't search online].

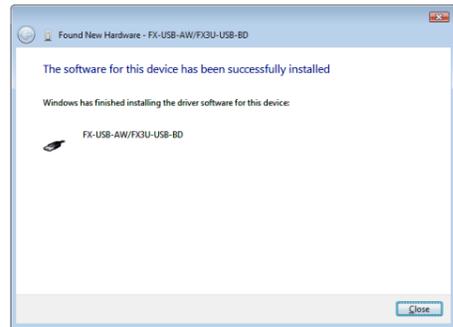4) The following screen is displayed.

Insert the included CD-ROM into the personal computer's CD-ROM drive. The driver in CD-ROM is searched automatically and installation of the USB driver software will begin.
If the included CD-ROM was already inserted into the personal computer's CD-ROM drive before displaying the above screen, click [Next].
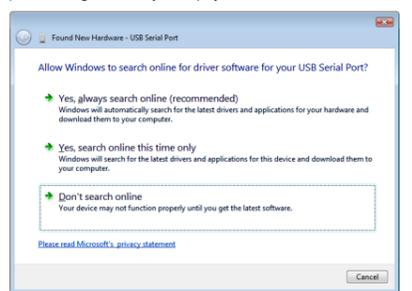
5) The following screen is displayed.

Click [Install this driver software anyway].

6) The following screen is displayed.

Click [Close].

7) The following screen is displayed.
(The following screen may be displayed when connected to a Network.)

Click [Don't search online].

8) The following screen is displayed.

Click [Next].
The installation of the USB Serial Port software will begin.

9) The screen of 5) is displayed.
Click [Install this driver software anyway].

10) The following screen is displayed.

Click [Close].
The installation of the USB Serial Port software will finish.
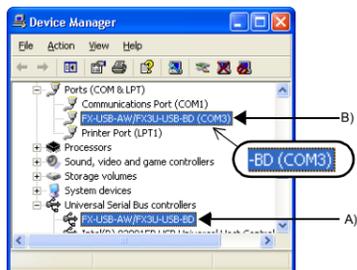The CD-ROM (USB driver software) can be removed from the personal computer at this time.

6. Installation Confirmation of Driver

Procedure for confirming the installation of the driver is described below.
Windows® XP example follows.

- In Windows® XP, click [Start] → [Control Panel] → [Performance and Maintenance] → [System] → [Hardware] → [Device Manager] and the window below will be displayed.
  Please confirm the COM number to which the driver is allocated (COM and LPT).
- If using Windows® 98, Windows® 98SE, Windows® Millennium Edition or Windows® 2000
  A screen that is equivalent to the one below is displayed by clicking [My Computer] → [Control Panel] → [System] → [Device Manager] in the menu of the personal computer.
- If using Windows Vista®
  A screen that is equivalent to the one below is displayed by clicking [Start] → [Control Panel] → [Hardware and Sound] → [Device Manager] in the menu of the personal computer.

When user account control is enabled

Only when user account control is enabled will the "user account control" screen be displayed.
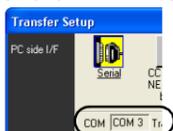Click [Continue], when displayed.

Check following:
- FX-USB-AW/FX3U-USB-BD is indicated at A).
- FX-USB-AW/FX3U-USB-BD (COM *) is indicated at B).
  * indicates the COM number used in the FX-USB-AW or FX3U-USB-BD.
- Install the driver again when ⚠ is displayed.

Select the programming software COM number as the COM number currently assigned on the screen above.

Setting GX Developer:
Double-click [Online] → [Transfer setup] → [Serial] of personal computer side I/F.
Select the same COM number as the COM number of the personal computer when the personal computer side I/F serial setting Dialog Box appears.
Click [OK] of [Connection Setup] screen to end.

7. Uninstalling Driver

7.1 Windows® 98, Windows® 98SE, Windows® Millennium Edition, Windows® 2000, and Windows® XP

Please uninstall the driver by the following procedure.
A Windows XP example follows.

1) Detach the USB cable from the personal computer.
   Click [Start] → [Control Panel] → [Add or Remove Programs] in the menu of the personal computer, the window below will be displayed.
   - In case of Windows Me of Windows 98 and Windows 98SE, Windows 2000
   A screen that is equivalent to the one below is displayed by clicking [My Computer] → [Control Panel] → [Add/Remove Programs] in the menu of the personal computer.

   Click [Change/Remove].

2) The following screen is displayed.

   Click [Continue].

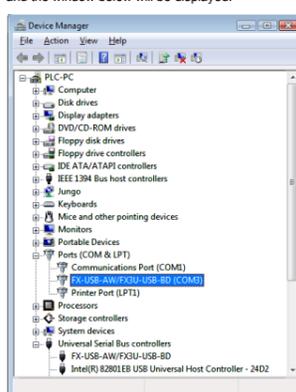3) The following screen is displayed.

   Click [Finish].

7.2 Windows Vista®

Please uninstall the driver by the following procedure.

Caution
Driver software must be uninstalled in the order of "Ports (COM & LPT)" after which the "Universal Serial Bus Controllers" should be uninstalled.
If uninstalling directly from the "Universal Serial Bus Controllers", the driver software for the FX-USB-AW and FX3U-USB-BD will not uninstall correctly.
When uninstalling from "Universal Serial Bus Controllers", uninstall USB driver software after re-installation in the order of "Ports (COM & LPT)" after which the "Universal Serial Bus Controllers" should be uninstalled.

1) Connect the FX-USB-AW or FX3U-USB-BD to the personal computer via a USB cable.
   Click [Start] → [Control Panel] → [Hardware and Sound] → [Device Manager] and the window below will be displayed.
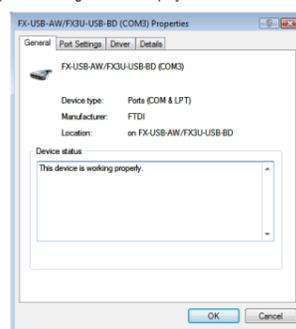

   Double-click [FX-USB-AW/FX3U-USB-BD (COM*)] in the [Ports (COM & LPT)].
   * indicates the COM number used in the FX-USB-AW or FX3U-USB-BD.
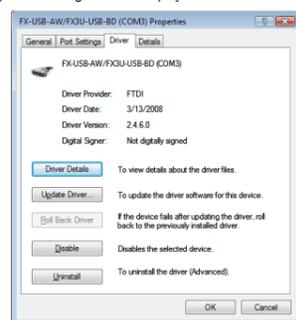
When user account control is enabled
Only when user account control is enabled will the "user account control" screen be displayed.
Click [Continue], when displayed.

2) The following screen is displayed.

   Select [Driver] tab.
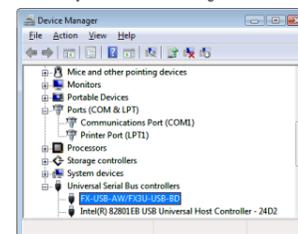
3) The following screen is displayed.

   Click [Uninstall].

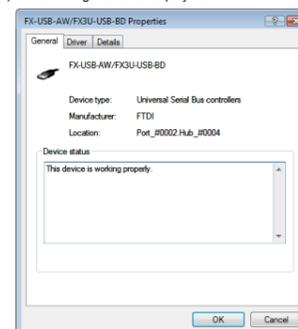4) The following screen is displayed.

   Add a check mark to [Delete the driver software for this device], and click [OK].
   The USB Serial Port software is uninstalled.
   And then, uninstall a USB driver by operation of 5) to 8).

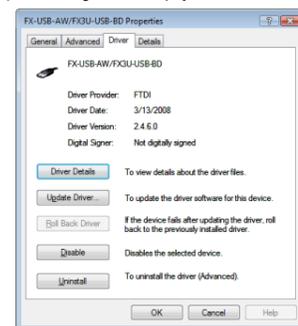5) Double-click [FX-USB-AW/FX3U-USB-BD] in the [Universal Serial Bus Controllers] from the device manager.

6) The following screen is displayed.

   Select [Driver] tab.

7) The following screen is displayed.

   Click [Uninstall].

---

8) The following screen is displayed.

Add a check mark to [Delete the driver software for this device], and click [OK].
The USB driver is uninstalled.

8. Caution on Use

STARTUP AND MAINTENANCE PRECAUTIONS	◇ DANGER

- Before modifying or disrupting the program in operation or running the PLC, carefully read through this manual and the associated manuals and ensure the safety of the operation.
  An operation error may damage the machinery or cause accidents.

STARTUP AND MAINTENANCE PRECAUTIONS	⚠ CAUTION

- Do not disassemble or modify the PLC.
  Doing so may cause fire, equipment failures, or malfunctions.
  * For repair, contact your local Mitsubishi Electric distributor.
- Since the FX-USB-AW case is made of resin, do not drop it or exert strong impact to it.
  Doing so may cause damage.

DISPOSAL PRECAUTIONS	⚠ CAUTION

- Please contact a certified electronic waste disposal company for the environmentally safe recycling and disposal of your device.

TRANSPORT AND STORAGE PRECAUTIONS	⚠ CAUTION

- The product is a precision instrument. During transportation, avoid any impacts.
  Failure to do so may cause failures in the product.
  After transportation, verify the operations of the product.

- The FX-USB-AW or FX3U-USB-BD is connected to a personal computer, and the PLC is turned on, and then an operations such as write, read, and monitor are tried for the first time using a programming tool, a communication error message may be displayed.
  In such a case, clear the message and try the operations again.
- The expansion board cannot be connected to FX3UC Series PLC other than FX3UC-32MT-LT.
- Only one expansion board can be used per main unit.
  Additional expansion boards such as the FX3U-232-BD, FX3U-422-BD or FX3U-485-BD cannot be installed/used together with the FX3U-USB-BD.
- If a communication error message is indicated while operating the programming tool (when executing 'Write to PLC', 'Read from PLC', or 'Monitor'), disconnect the USB cable once (from either the PC or the FX-USB-AW) and connect it again. Then clear the error message and choose Write, Read, or Monitor again.
- The programming tool may not be operated properly due to a contact failure at connectors or wire breakage.
  Make sure to save the program before transferring or changing it.

9. Troubleshooting

9.1 FX-USB-AW

- If communication cannot be established between the PLC (as well as a positioning unit or a programmable cam switch) and a PC using FX-USB-AW, confirm the following status by checking POWER LED, SD LED, and RD LED in FX-USB-AW.

State of POWER LED	Contents
POWER LED is lit.	The DC5V power supply from the personal computer is normally supplied. In case of no communication, check the status of SD LED and RD LED.
POWER LED is not lit.	The DC 5V power supply from the personal computer is not supplied. Check the items below. • Confirm that the specified cable is used to connect the FX-USB-AW and the personal computer. • Confirm whether the power supply is supplied to personal computer.

The status of SD LED and RD LED.		Contents
SD	Blinking	Communicating correctly
SD	Extinguished	• Confirm that the power is supplied to the personal computer. • Confirm the personal computer and the PLC are connected properly with the specified cable. • Confirm that the communication settings and connected PLC are correctly set in the software. Refer to the software manual.
RD	Blinking	Data receiving
RD	Extinguished	• Confirm that the power is supplied to PLC. • The PLC will not operate when a configuration that exceeds the DC 5V or DC 24V capacity is used. It will also be impossible to communicate normally. • Confirm that the specified cable is used to connect the personal computer and PLC. • Confirm that the communication settings and connected PLC are correctly set in the software. Refer to the software manual.

- When driver installation is required after already establishing USB communication.
  → This product requires USB Driver Installation for each USB port to be connected. Connect the product to a driver-installed USB port, or install the driver to the current port.

9.2 FX3U-USB-BD

- If communication cannot be established between the PLC and a personal computer using FX3U-USB-BD, confirm the following status by checking SD LED and RD LED in FX3U-USB-BD.

The status of SD LED and RD RED

The status of SD LED and RD LED.		Contents
SD	Blinking	Communicating correctly
SD	Extinguished	• Confirm that the power is supplied to the personal computer. • Confirm the personal computer and the PLC are connected properly with the specified cable. • Confirm that the communication settings and connected PLC are correctly set in the software. Refer to the software manual.
RD	Blinking	Data receiving
RD	Extinguished	• Confirm that the power is supplied to PLC. • The PLC will not operate when a configuration that exceeds the DC 5V or DC 24V capacity is used. It will also be impossible to communicate normally. • Confirm that the specified cable is used to connect the personal computer and PLC. • Confirm that the communication settings and connected PLC are correctly set in the software. Refer to the software manual.

- When driver installation is required after already establishing USB communication.
  → This product requires USB Driver Installation for each USB port to be connected. Connect the product to a driver-installed USB port, or install the driver to the current port.

⚠ For safe use

- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi Electric.
- This product has been manufactured under strict quality control. However when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

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