

MICREX-F *series*

USER'S MANUAL

MICREX-F Personal Computer Loader Adapter

<Type:FLT-ASFKA >

Safety Precautions

Be sure to read the "Safety Precautions" thoroughly before using the product.
Here, the safety precautions items are classified into "Warning" and "Caution".



Warning

: Incorrect handling of the device may result in death or serious injury.



Caution

: Incorrect handling of the device may result in minor injury or physical damage.

Even some items indicated by "Caution" may result in a serious accident.

Both safety instruction categories provide important information. Be sure to strictly observe these instructions.



Warning

- ☐ Never touch any part of charged circuits as terminals and exposed metal portion while the power is turned ON.
It may result in an electric shock to the operator.
- ☐ Turn OFF the power before mounting, dismounting, wiring, maintaining or checking, otherwise, electric shock, erratic operation or troubles might occur.
- ☐ Place the emergency stop circuit, interlock circuit or the like for safety outside the PLC. A failure of PLC might break or cause problems to the machine.
- ☐ Do not connect in reverse polarity, charge (except rechargeable ones), disassemble, heat, deform, throw in a fire or short-circuit the batteries, otherwise, they might burst or take fire.
- ☐ If batteries have any deformation, spilled fluids, or other abnormality, do not use them. The use of such batteries might cause explosion or firing.

Safety Precautions



Caution

- ☐ Do not use one found damaged or deformed when unpacked, otherwise, fire, failure or erratic operation might be caused.
- ☐ Do not shock the product by dropping or tipping it over, otherwise, it might be damaged or troubled.
- ☐ Follow the directions of the operating instructions when mounting the product.
If mounting is improper, the product might drop or develop problems or erratic operations.
- ☐ Use the rated voltage and current mentioned in the operating instructions and manual. Use beyond the rated values might cause fire, erratic operation or failure.
- ☐ Operate (keep) in the environment specified in the operating instructions and manual. High temperature, high humidity, condensation, dust, corrosive gases, oil, organic solvents, excessive vibration or shock, might cause electric shock, fire, erratic operation or failure.
- ☐ Select a wire size to suit the applied voltage and carrying current. Tighten the wire terminals to the specified torque. Inappropriate wiring or tightening might cause fire, malfunction, failure or might cause the product to drop from its mounting.
- ☐ Contaminants, wiring chips, iron powder or other foreign matter must not enter the device when installing it, otherwise, fire, accident, erratic operation or failure might occur.
- ☐ Remove the dust-cover seals of modules after wiring, otherwise, fire, accident, erratic operation or failure might occur.
- ☐ Connect the ground terminal to the ground, otherwise, electric shock or erratic operation might occur.
- ☐ Periodically make sure the terminal screws and mounting screws are securely tightened.
Operation at a loosened status might cause fire or erratic operation.
- ☐ Put the furnished connector covers on unused connectors, otherwise, erratic operation or failure might occur.
- ☐ Put the furnished terminal covers on the terminal blocks, otherwise, electric shock or fire might occur.
- ☐ Sufficiently make sure of safety before program change, forced output, starting, stopping or anything else during a run.
Wrong operation might break or cause problems to the machine
- ☐ Engage the loader connector in a correct orientation, otherwise, an erratic operation might occur.
- ☐ Before touching the PLC, discharge any static electricity that may have been collected on your body. To discharge it, touch a grounded metallic object. Static electricity might cause erratic operation or failure.
- ☐ Be sure to install the electrical wiring correctly and securely, observing the directions of the operating instructions and manual. Wrong or loose wiring might cause fire, accident or failure.
- ☐ When disengaging the plug from the outlet, do not pull the cord, otherwise, break of cable might cause fire or failure.
- ☐ Do not attempt to change system configurations (such as installing or removing I/O modules) while the power is ON, otherwise, erratic operation or failure might occur.
- ☐ Do not attempt to repair the module by yourself, but contact your Fuji Electric agent. When replacing the batteries, correctly and securely connect the battery connectors, otherwise, fire, accident or failure might occur.
- ☐ Do not remodel or disassemble the product, otherwise, failure might occur.
- ☐ Follow the regulations of industrial wastes when the device is to be discarded.
- ☐ The modules covered in these operating instructions have not been designed or manufactured for use in equipment or systems which, in the event of failure, can lead to loss of human life.
- ☐ If you intend to use the modules covered in these operating instructions for special applications, such as for nuclear energy control, aerospace, medical or transportation, please consult your Fuji Electric agent.
- ☐ Be sure to provide protective measures when using the module covered in these operating instructions in equipment which, in the event of failure, can lead to loss of human life or other grade results.
- ☐ External power supply (such as 24 V DC power supply) which is connected to DC I/O should be strongly isolated from AC power supply, otherwise, accident or failure might occur. (Use of EN60950 conforming power supply is recommended.)

Preface

Thank you for purchasing FUJI programmable controller MICREX-F series.

This user's manual explains the hardware specifications of personal computer loader adapter (Type:FLT-ASFKA) to connect personal computer loader and MICREX –F series.

Read this manual carefully to ensure correct operation.

When using modules or peripheral devices, be sure to read the corresponding user's manuals listed below:

Title	Manual No.	Contents
MICREX-F series for personal computer software package windows version	FEH147	Explains operations of MICREX-F PLC Programmer
MICREX-F series <Instructions>	FEH160	Explains the specification of All MICREX-F series memory, instructions, system definitions.
MICREX-F series <Communications>	FEH161	Explains the specification of MICREX-F series T-link/ P-link/ PE-link
MICREX-F F55 series <Hardware>	FEH150	Explains the hard specification of F55 series.
MICREX-F F70/70S series <Hardware>	LEH946	Explains the hard specification of F70/70S series.
MICREX-F F120S/140S/150S series <Hardware>	LEH913	Explains the hard specification of F120S/140S/150S series.

*In addition to the above manuals, the following Fuji Electric Systems Co., Ltd. site offers various manuals and technical documents associated with MICREX-F.

URL <http://www.fesys.co.jp/eng/>

Notes

1. This manual may not be reproduced in whole or part in any form without prior written approval by the manufacturer.
2. The contents of this manual (including specifications) are subject to change without prior notice.
3. If you find any ambiguous or incorrect descriptions in this manual, please write them down (along with the manual No. shown on the cover) and contact FUJI.

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* Pentium is a registered trademark or trademark of Intel Corporation of the U.S.A.

Revisions

*Manual No. is shown on the cover.

Printed on	*Manual No.	Revision contents
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Revisions

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Section 1 General

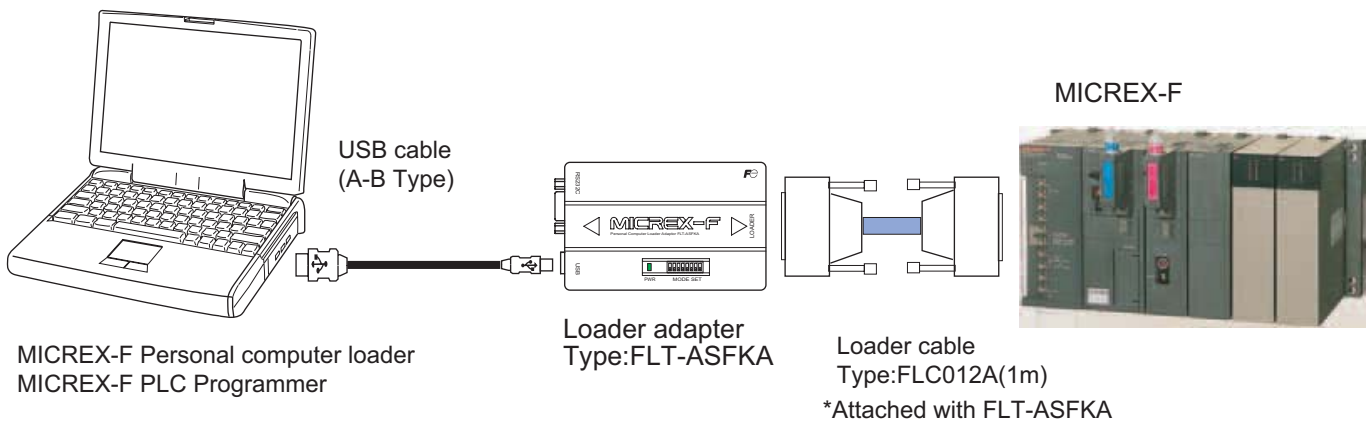
Loader adapter (type:FLT-ASFKA) equips RS-232C and USB port. You don't need to connect an external converter for USB <-> RS-232C even though your personal computer doesn't have RS-232C port.

1-1 Connection Configuration of Personal Computer Loader

(1) How to use USB port of personal computer

<Preparation>

- ♦Personal computer loader (personal computer + MICREX-F PLC Programmer)
- ♦Loader adapter (loader cable is attached with the product)
- ♦USB cable (A-B Type) available at market
- ♦USB driver (download from our homepage)



It is needed to install USB driver in every USB port of using personal computer.

Download USB driver for loader adapter from our technical information page.

Access to the following website. USB driver is set in [Software libraries] of [Programmable controllers].

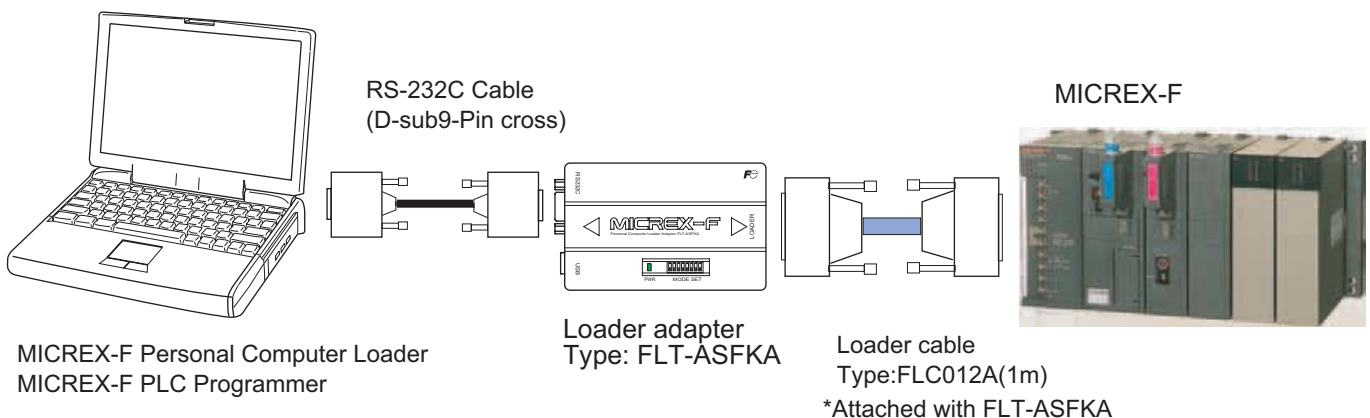
<http://www.fesys.co.jp/eng/>

Note) it is required to register as a member of our technical information to download.

(2) How to use RS-232C of personal computer

<Preparation>

- ♦Personal computer loader (personal computer + MICREX-F PLC Programmer)
- ♦Loader adapter (loader cable is attached with the product)
- ♦RS-232C cross cable D-sub9Pin Type: female - female (available at market)



Section 2 Specifications

2-1 General Specifications

Title		Specifications
Physical environment conditions	Operation ambient temperature	0 to 50 °C
	Storage temperature	-25 to 70 °C
	Relative humidity	20 to 95%RH, no condensation. Transport condition: 5 to 95%RH, no condensation
	Pollution degree	2
	Corrosion immunity	Free from corrosive gases. No stained with organic solvent.
	Corrosive gas	Free from corrosive gases.
	Operating altitude	2000m or less above sea level Transport condition: 70kPa (equivalent to 3000m above sea level) or more
Isolation resistance		Photocoupler
Dielectric strength		445V AC/ minute (between T-link and RS-232C or USB connector)
Insulation resistance		10M or more with 500V DC megger (between T-link and RS-232C or USB connector)
Internal Current consumption		5VDC, 270mA or less (supplied from PLC via loader cable)
Installation conditions	Structure	Tabletop type
	Cooling methods	Natural air cooled
Mass		Approx. 140g
Outside dimensions		W120xH72xD33mm (described in Chapter 2-4)

Section 2 Specifications

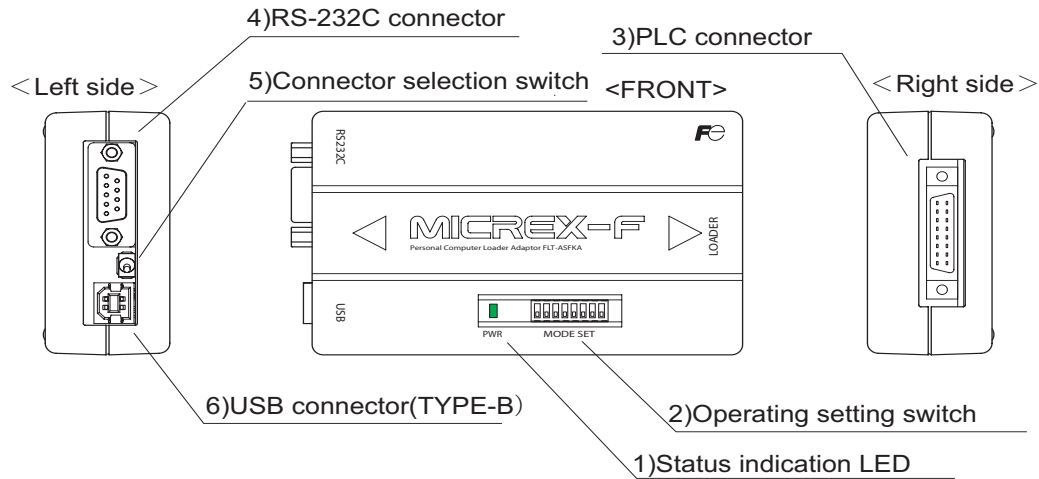
2-2 Communication specifications

Title	Between Personal computer loader and the adapter		Between the adapter and PLC
	RS-232C connection	USB connection	
Connection distance	15m	2m	1m (Attached loader cable type: FLC 012A using) *It is possible to extend maximum 5m by using optional loader cable. Type: FLC 011A using ⇄5m Type: FLC 010A using ⇄3m
Transmission method	RS-232C	USB2.0 Full Speed	T-link
Data bit	7/8 bits	-	-
Parity	Even/ odd/ none	-	-
Baud rate (bps)	300/600/1200/2400/4800- /9600/19200/38400	-	-

Section 2 Specifications

2-3 Names and Functions

2-3-1 Names



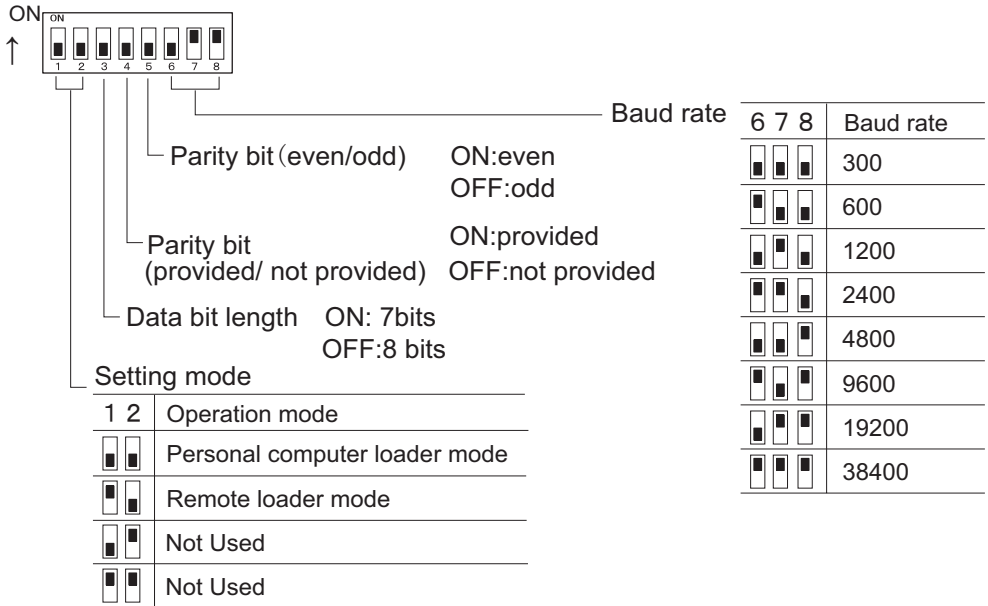
2-3-2 Functions

(1) Status indication LED

It turns on the light when the adapter is supplied power from PLC. (Green)

(2) Operation setting switch

It is the switch for setting connection with personal computer loader.

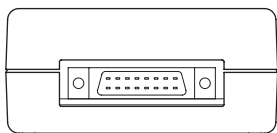


*It is set to personal computer loader mode, baud rate: 19200, data length: 8bits, and no parity at factory shipment.

*It doesn't reflect setting the contents even if it is changed during online.

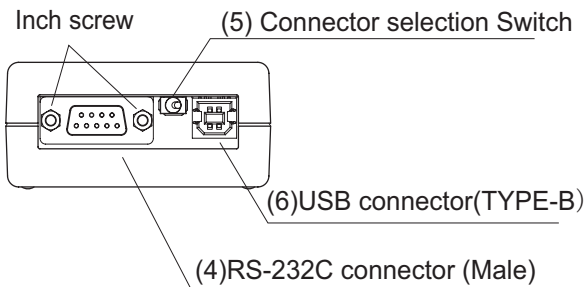
It reflects them upon energization to the adapter. We recommend setting the switch during power off. If the setting is changed during power on, you need to reset this adapter by un-plug and plug in loader cable.

Section 2 Specifications



(3) PLC connector

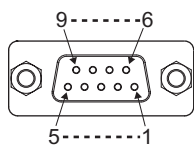
Join the loader cable to connect between the adapter and PLC (MICREX-F series). The loader cable is attached to the product. Type: FLC 012A (1m)



(4) RS-232C connector

Join the RS-232C cable to connect the adapter and personal computer loader. The adapter is D-sub9 pins male type.

*Use cross cable of commercial D-sub 9-pin for RS-232C cable.



PIN No.	Function	Direction of Signal Adapter Personal computer	Description
1	CD	←	Carrier detection
2	RD	←	Receive data
3	SD(TD)	→	Send data
4	ER(DTR)	→	Data terminal ready
5	SG	-	Signal ground
6	DR(DSR)	←	Data set ready
7	RS(RTS)	→	Request to send
8	CS(CTS)	←	Clear to send
9	RI(CI)	←	Call indication

(5) Connector selection switch

Select a connector which connects the adapter and personal computer loader.
It connects to RS-232C when you switch it to RS-232C side, and connects by USB cable when you switch it to USB side.

*It is set to RS-232C at factory shipment.

(Note) If the switch is changed during online, communication is cut off and causes error.

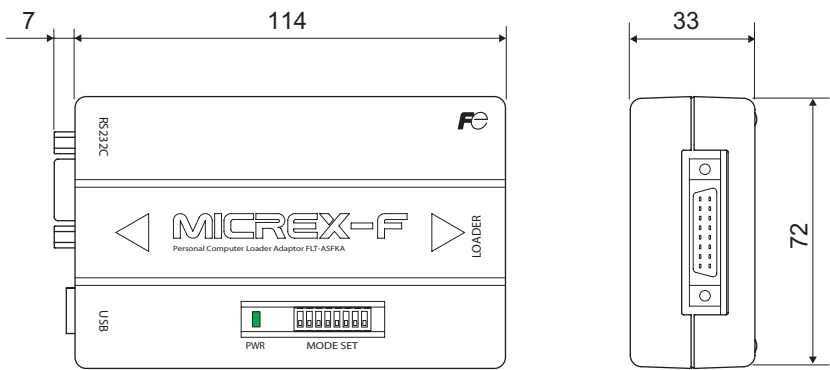
(6) USB connector (TYPE-B)

Join USB cable to connect the adapter and personal computer loader. Use commercial A-B type USB cable.

Section 2 Specifications

2-4 Dimensions

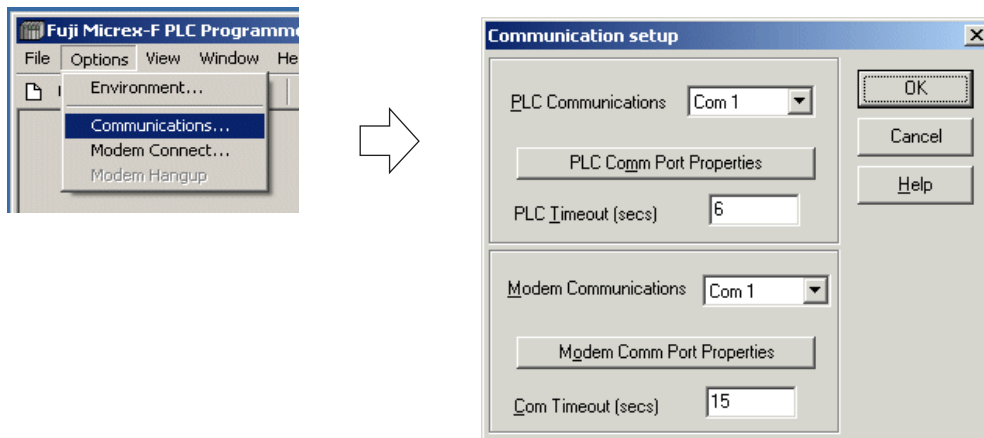
(Unit:mm)



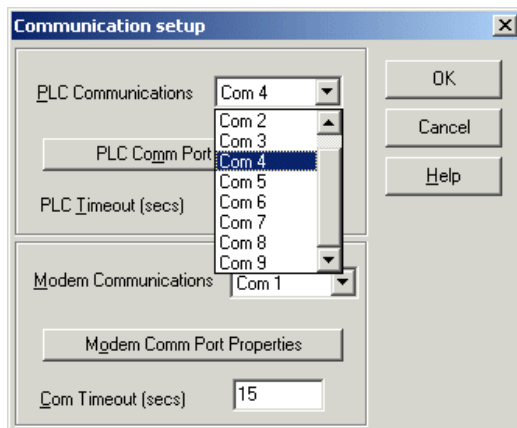
Section 3 Online Operations

3-1 Setting Communication Port of Personal Computer Loader

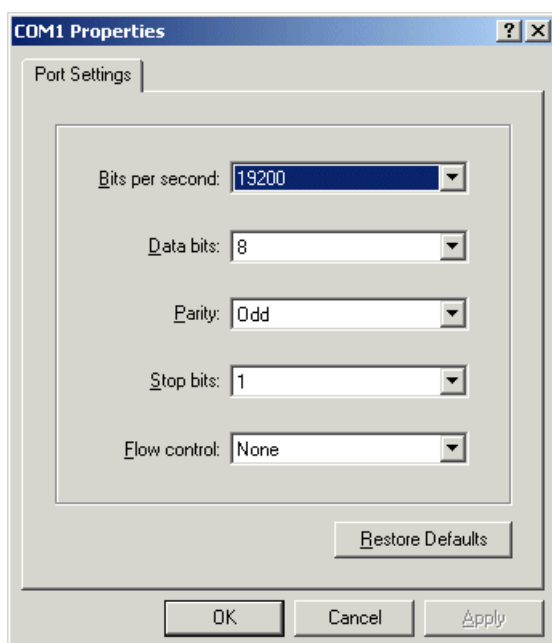
(1) Start up MIREX-F PLC Programmer. Select [Option] - [Communications] from menu bar, and the [Communication setup] dialogue is displayed.



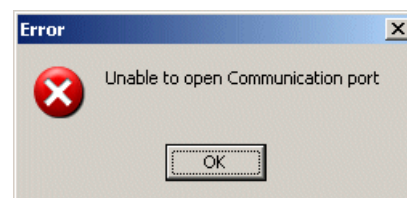
(2) Select a COM port number of communication port which you connect loader adapter.



(3) Click the [PLC comm Port Properties] button, then the following dialogue is displayed.



(Note) When you click the the [PLC Comm Port Properties] button, if communication port setting is not available, the following picture is displayed.



It is possible to check what COM port is assigned to using port by [Device Manager].

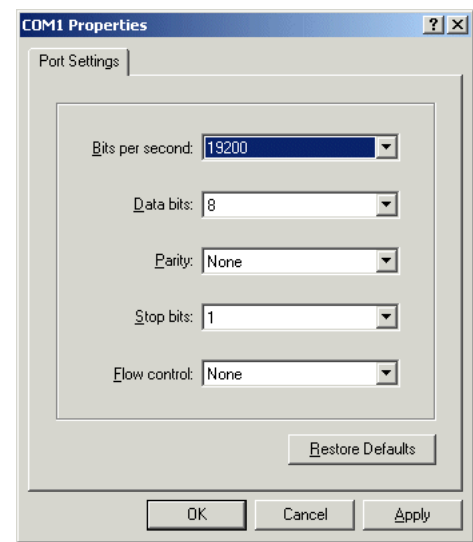
Set Baud rate, Data bits, Parity to fit in operation setting switch.
Stop bits: 1 and Flow control: None should not be changed.

Section 3 Online Operations

3-2 Setting Loader Adapter

Set the switch to fit in communication port of personal computer loader.
 This setting is also needed when USB port is used.

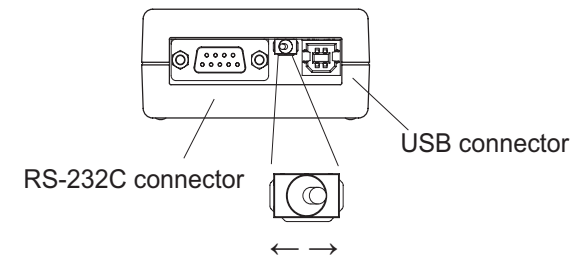
<Setting example In case of Baud rate:19200 bit/ second, Data bits: 8, Parity: None>



* Read chapter3-1 to know how to set the communication port of personal computer loader.

<Connector selection switch>

Set connector selection switch to using communication port.



In case of using USB, switch it to USB connector side.
 In case of using RS-232C, switch it to RS-232C connector side.

< Operation setting switch >

Mode setting

1 2	Operation mode
<input type="checkbox"/>	Personal computer loader mode
<input type="checkbox"/>	Remote loader mode
<input type="checkbox"/>	Not Used
<input type="checkbox"/>	Not Used

Parity bit (even/odd)

ON:even
OFF:odd

Parity bit (provided/ not provided)

ON:provided
OFF:not provided

Data bit length

ON:7bits
OFF:8bits

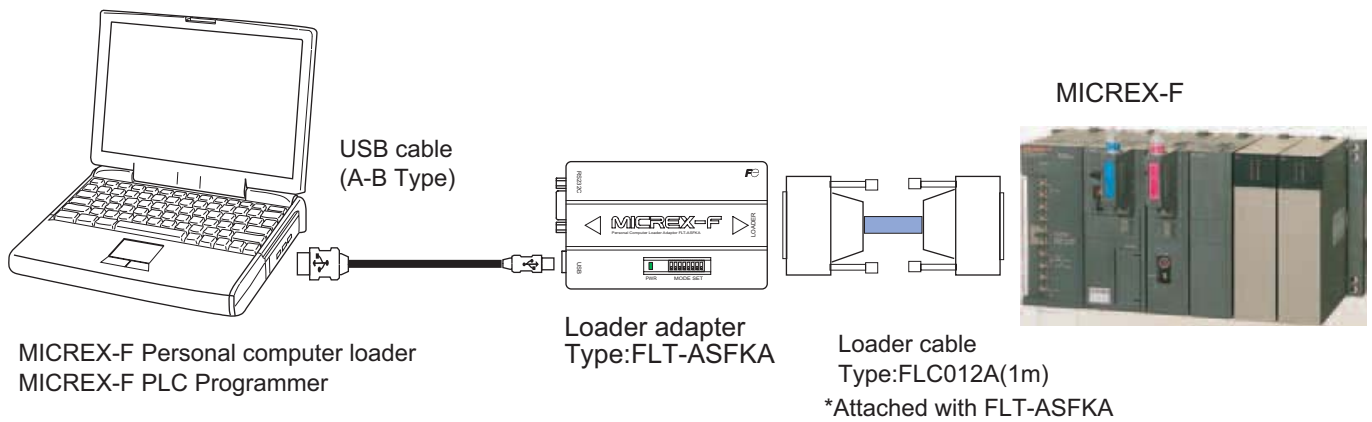
Baud rate

6 7 8	Baud rate
<input type="checkbox"/>	300
<input type="checkbox"/>	600
<input type="checkbox"/>	1200
<input type="checkbox"/>	2400
<input type="checkbox"/>	4800
<input type="checkbox"/>	9600
<input type="checkbox"/>	19200
<input type="checkbox"/>	38400

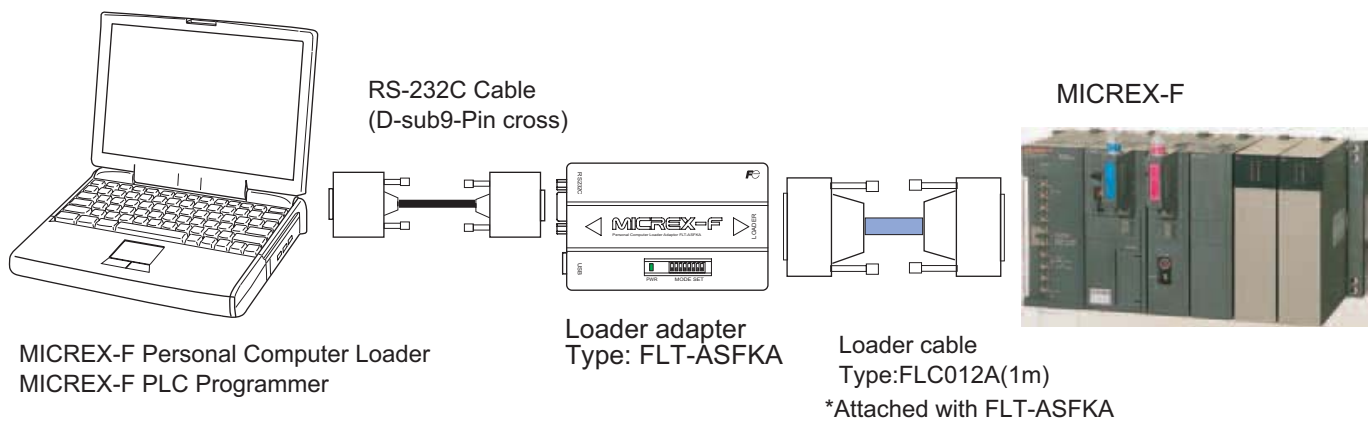
Section 3 Online Operations

3-3 Connect Personal Computer Loader and PLC

3-3-1 In case of using USB port of personal computer



3-3-2 In case of using RS-232C port of personal computer



Section 3 Online Operations

3-4 Installation of USB Driver

In case of using USB port of personal computer, it is needed to install USB driver for loader adapter. There are two kinds of drivers for loader adapter: "USB Serial Converter" and "USB serial Port." It is needed to install both of them.

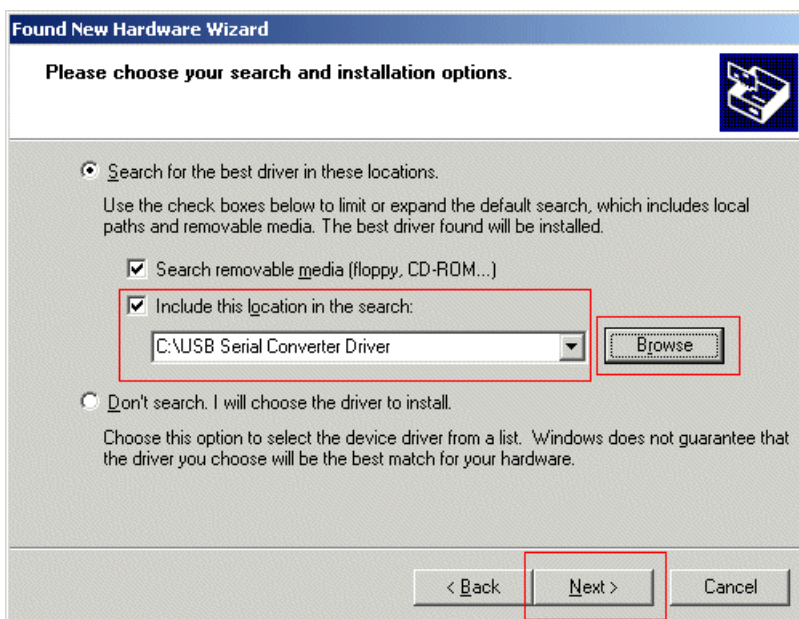
3-4-1 Installing USB driver

(1) Connect loader adapter to energized PLC loader connector. Status indication LED lamp on the loader adapter will turn on. Connect a cable to USB connector of personal computer. The following dialogue is displayed when personal computer recognizes a loader adapter as USB device.



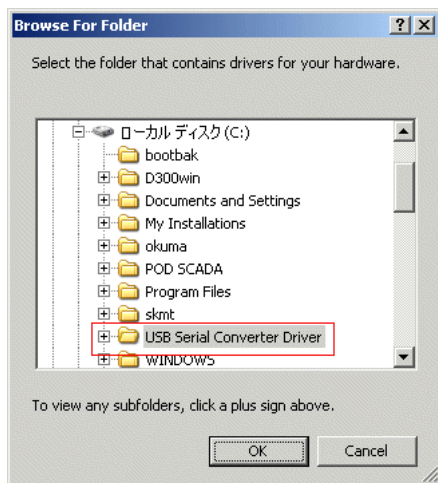
(2) Select "Install from a list or specific location," and click the [Next] button. Then the following dialogue is displayed.

Check off on the "Include this location in the search" box.



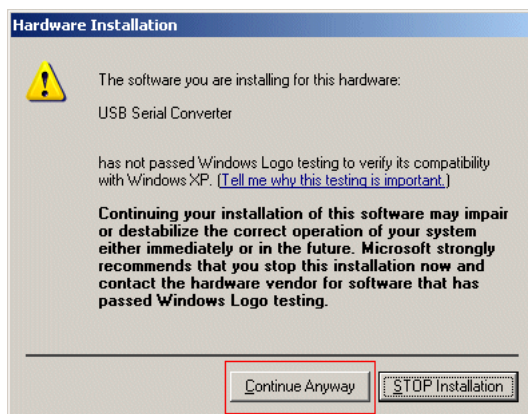
Section 3 Online Operations

(3) Click the [Browse] button, select the folder in which stores a driver file, and click the [OK] button.



The picture on left side is an example that driver soft is stored in USB serial converter driver folder.

(4) When you click the [Next] button, it starts to install "USB serial Converter." Then, the following warning dialogue is displayed. Click the [Continue anyway] button to continue to install.

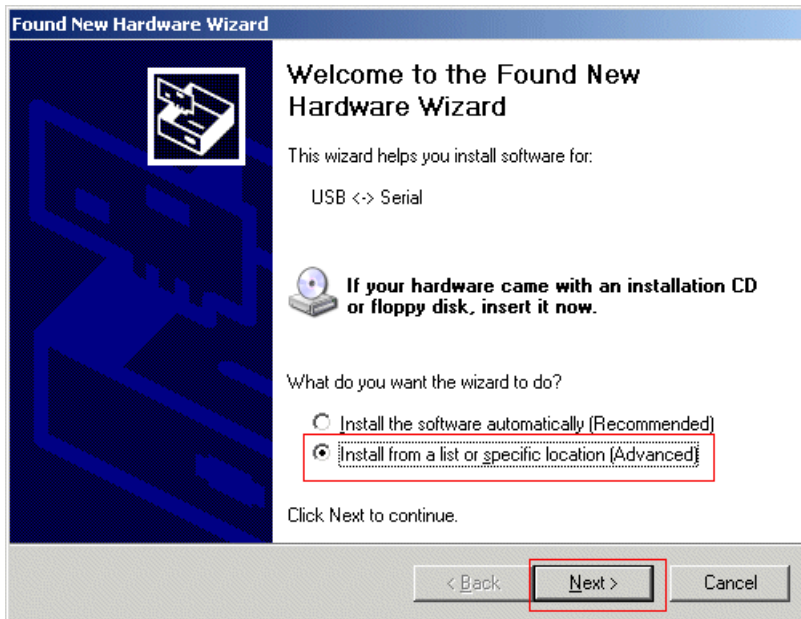


(5) Continue to install. Then when install finishes, the following is displayed.



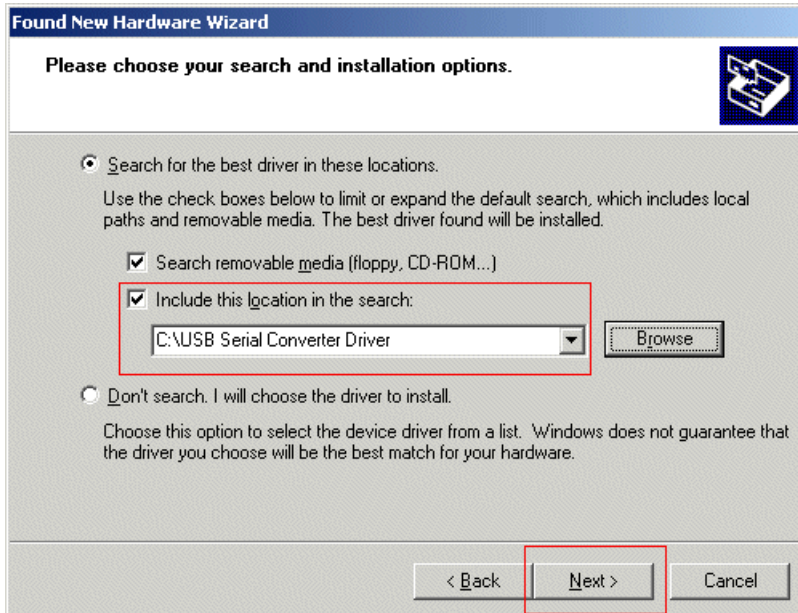
Section 3 Online Operations

(6) When you click the [Finish] button, it starts to install "USB serial port" driver, and the following dialogue is displayed. Then click the [Next] button.



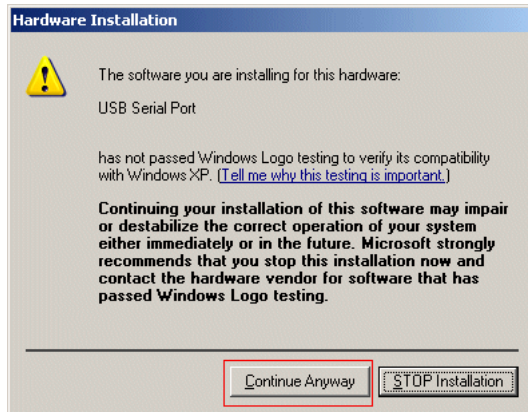
(7) Select "Install from a list or specific location," and click the [Next] button. Then the following dialogue is displayed.

Check off on the "Include this location in the search" box.

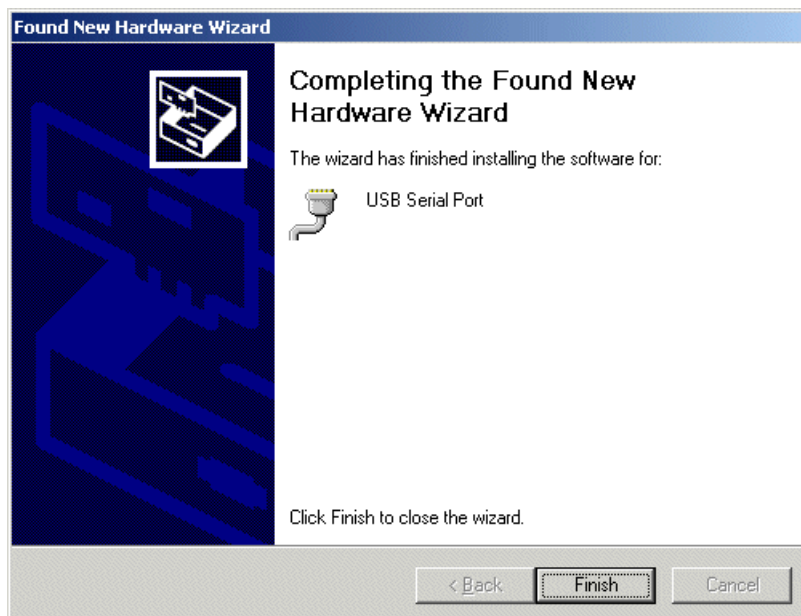


Section 3 Online Operations

(8) When you click the [Next] button, it starts to install "USB serial Converter." Then, the following warning dialogue is displayed. Click the [Continue anyway] button to continue to install.



(9) Continue to install. Then when install finishes, the following picture is displayed.



Section 3 Online Operations

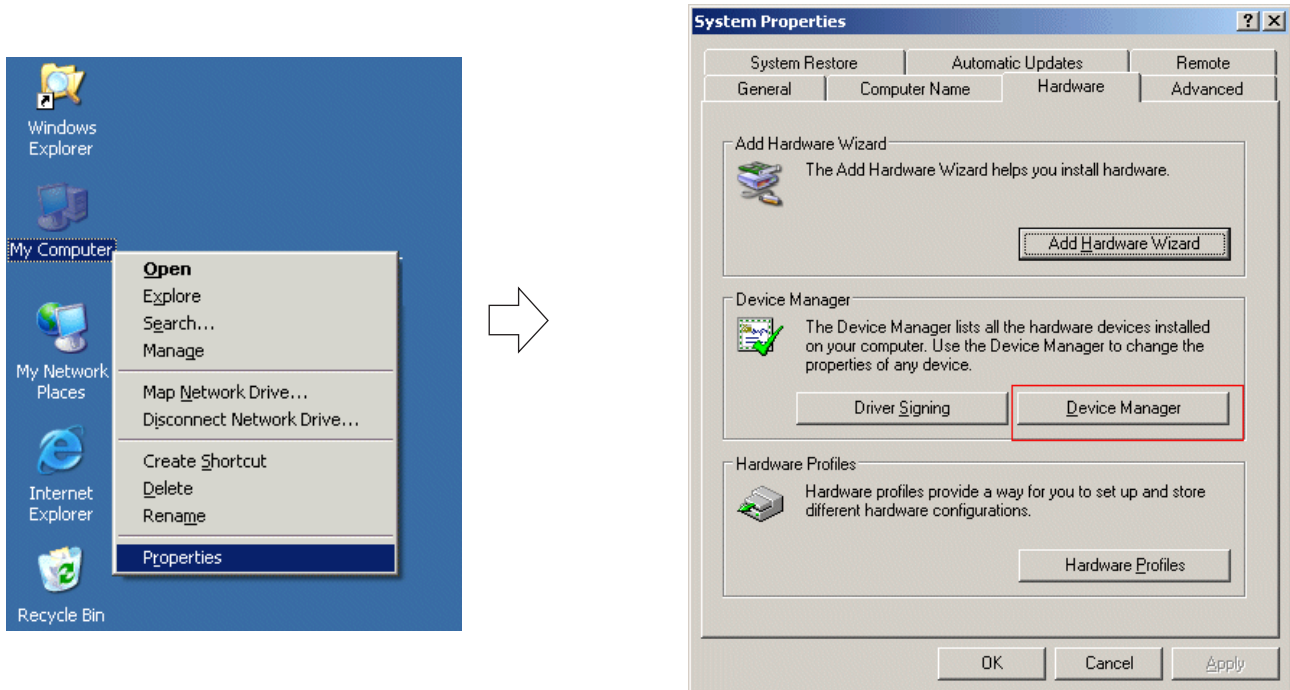
3-4-2 how to confirm the COM port number

This is the way to confirm what COM port is assigned to the installed communication port.

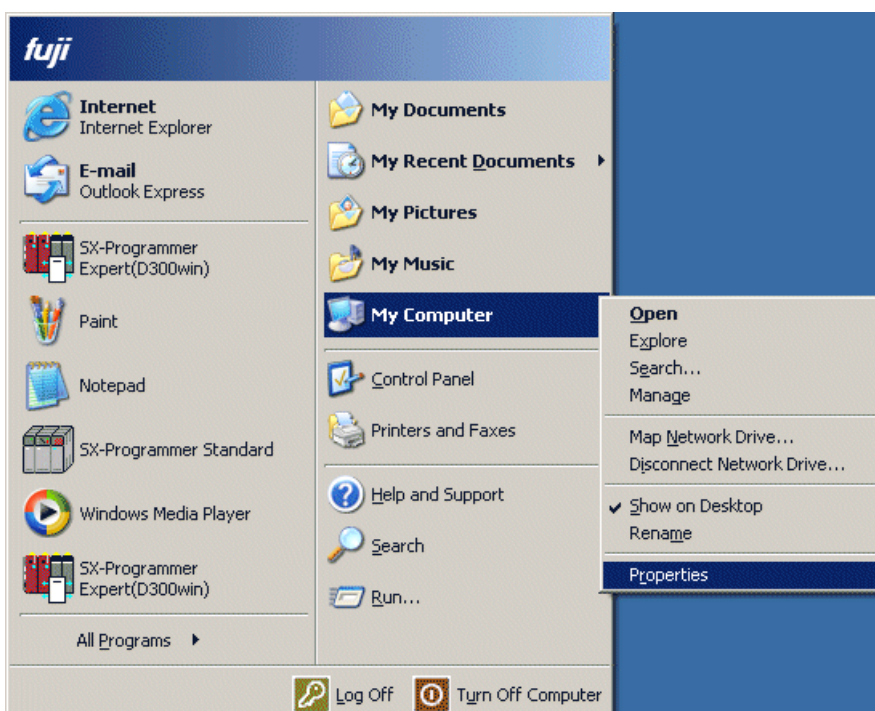
Here, it explains how to do by WINDOWS-XP

(1) Right-click on [My computer] on the desk top screen, and select [Properties] from the menu. Then, the [System properties] dialogue is displayed.

Click the [Hardware] tab, so the following screen is displayed.

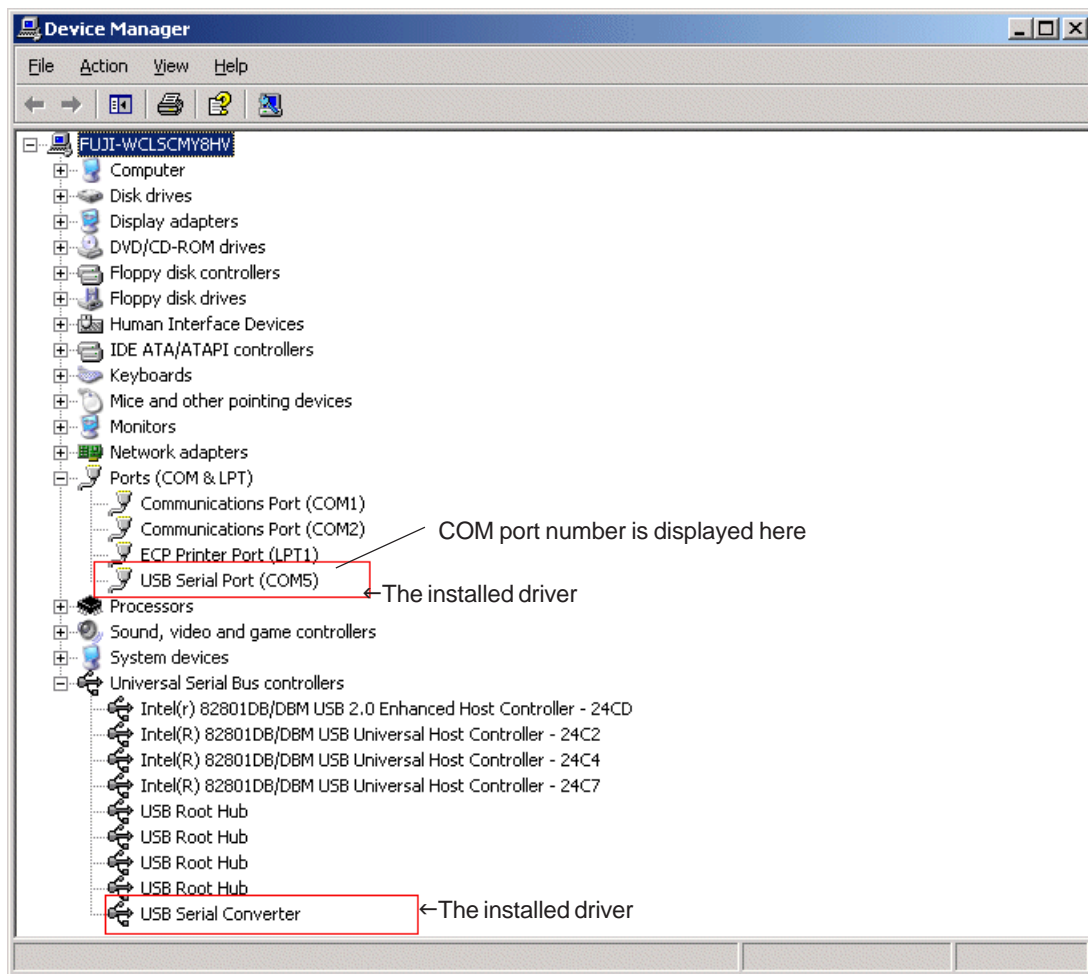


*If the [My computer] icon is not on desktop, go to WINDOWS [Start] menu. Then, right click on [My computer], and select [Properties] from the menu, then [System properties] is displayed.



Section 3 Online Operations

(2)Click the [Device Manager] button, then it is able to confirm the assign status such as the following picture.

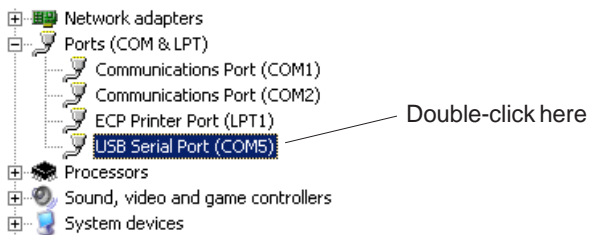


Section 3 Online Operations

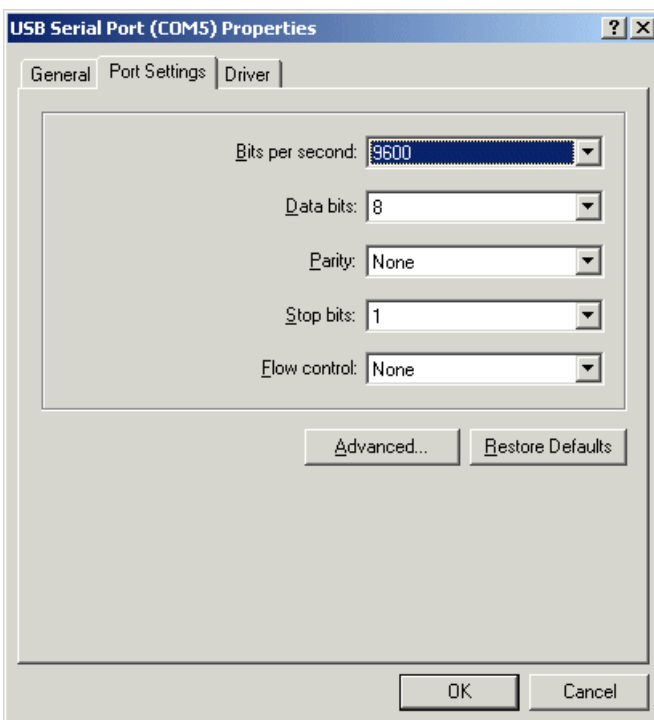
3-4-3 How to change the COM port number

COM port number of personal computer loader is from COM 1 to COM 9. If it is assign to COM 10 or more even though you followed the above operations, change the COM port number by following step.

(1) Double-click [USB serial port], then [Properties] dialogue is displayed.

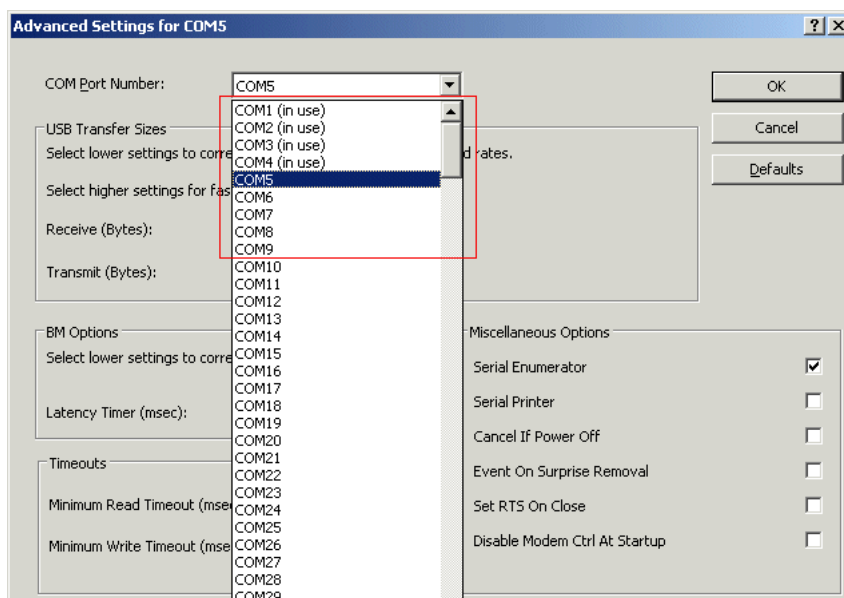


(2) [USB serial Port properties] is displayed. Select the [Port Setting] tab, and click the [Advanced] button.



(3) The [Advanced] dialogue is displayed.

Select the available COM port number among COM 01 to COM 09, and click the [OK] button.



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