The KM13-1S and KM13-1N cables require different software drivers. These software drivers can be installed from the CD supplied with each product. If you need to use both products, install both drivers.

Markings:
- KM13-1S is marked with “KM13-1S”
- KM13-1N is marked with “KM13”
Applicable Product:

- Range-free Multi-controller FA-M3
  
  Model code : KM13-1S, KM13-1N
  Model name : USB-Serial Converter

The document number and document model code for this manual are given below. Refer to the document number in all communications; also refer to the document number or the document model code when purchasing additional copies of this manual.

- Document No. : IM 34M06C91-01E
- Document Model Code : DOCIM
Important

■ About This Manual

- This Manual should be passed on to the end user.
- Before using the controller, read this manual thoroughly to have a clear understanding of the controller.
- This manual explains the functions of this product, but there is no guarantee that they will suit the particular purpose of the user.
- Under absolutely no circumstances may the contents of this manual be transcribed or copied, in part or in whole, without permission.
- The contents of this manual are subject to change without prior notice.
- Every effort has been made to ensure accuracy in the preparation of this manual. However, should any errors or omissions come to the attention of the user, please contact the nearest Yokogawa Electric representative or sales office.

■ Safety Precautions when Using/Maintaining the Product

- The following safety symbols are used on the product as well as in this manual.

⚠️ Danger. This symbol on the product indicates that the operator must follow the instructions laid out in this instruction manual to avoid the risk of personnel injuries, fatalities, or damage to the instrument. Where indicated by this symbol, the manual describes what special care the operator must exercise to prevent electrical shock or other dangers that may result in injury or the loss of life.

🛡️ Protective Ground Terminal. Before using the instrument, be sure to ground this terminal.

嗞嗞 Function Ground Terminal. Before using the instrument, be sure to ground this terminal.

Alternating current. Indicates alternating current.

Direct current. Indicates direct current.
The following symbols are used only in the instruction manual.

**WARNING**

Indicates a “Warning”.
Draws attention to information essential to prevent hardware damage, software damage or system failure.

**CAUTION**

Indicates a “Caution”
Draws attention to information essential to the understanding of operation and functions.

**TIP**

Indicates a “TIP”
Gives information that complements the present topic.

**SEE ALSO**

Indicates a “SEE ALSO” reference.
Identifies a source to which to refer.

- For the protection and safe use of the product and the system controlled by it, be sure to follow the instructions and precautions on safety stated in this manual whenever handling the product. Take special note that if you handle the product in a manner other than prescribed in these instructions, the protection feature of the product may be damaged or impaired. In such cases, Yokogawa cannot guarantee the quality, performance, function and safety of the product.

- When installing protection and/or safety circuits such as lightning protection devices and equipment for the product and control system as well as designing or installing separate protection and/or safety circuits for fool-proof design and fail-safe design of processes and lines using the product and the system controlled by it, the user should implement it using devices and equipment, additional to this product.

- If component parts or consumable are to be replaced, be sure to use parts specified by the company.

- This product is not designed or manufactured to be used in critical applications which directly affect or threaten human lives and safety — such as nuclear power equipment, devices using radioactivity, railway facilities, aviation equipment, air navigation facilities, aviation facilities or medical equipment. If so used, it is the user’s responsibility to include in the system additional equipment and devices that ensure personnel safety.

- Do not attempt to modify the product.

### Exemption from Responsibility

- Yokogawa Electric Corporation (hereinafter simply referred to as Yokogawa Electric) makes no warranties regarding the product except those stated in the WARRANTY that is provided separately.

- Yokogawa Electric assumes no liability to any party for any loss or damage, direct or indirect, caused by the use or any unpredictable defect of the product.
Software Supplied by the Company

- Yokogawa Electric makes no other warranties expressed or implied except as provided in its warranty clause for software supplied by the company.
- Store the original media, such as floppy disks, that contain the software in a safe place.
- Reverse engineering, such as decompiling of the software, is strictly prohibited.
- Under absolutely no circumstances may the software supplied by Yokogawa Electric be transferred, exchanged, or sublet or leased, in part or as a whole, for use by any third party without prior permission by Yokogawa Electric.
General Requirements for Using the FA-M3 Controller

- Avoid installing the FA-M3 controller in the following locations:
  - Where the instrument will be exposed to direct sunlight, or where the operating temperature exceeds the range 0°C to 55°C (32°F to 131°F).
  - Where the relative humidity is outside the range 10 to 90%, or where sudden temperature changes may occur and cause condensation.
  - Where corrosive or flammable gases are present.
  - Where the instrument will be exposed to direct mechanical vibration or shock.
  - Where the instrument may be exposed to extreme levels of radioactivity.

- Use the correct types of wire for external wiring:
  - Use copper wire with temperature ratings greater than 75°C.

- Securely tighten screws:
  - Securely tighten module mounting screws and terminal screws to avoid problems such as faulty operation.
  - Tighten terminal block screws with the correct tightening torque as given in this manual.

- Securely lock connecting cables:
  - Securely lock the connectors of cables, and check them thoroughly before turning on the power.

- Interlock with emergency-stop circuitry using external relays:
  - Equipment incorporating the FA-M3 controller must be furnished with emergency-stop circuitry that uses external relays. This circuitry should be set up to interlock correctly with controller status (stop/run).

- Ground for low impedance:
  - For safety reasons, connect the [FG] grounding terminal to a Japanese Industrial Standards (JIS) Class D (earlier called Class 3) Ground*1. For compliance to CE Marking, use braided or other wires that can ensure low impedance even at high frequencies for grounding.

*1 Japanese Industrial Standard (JIS) Class D Ground means grounding resistance of 100 Ω max.

- Configure and route cables with noise control considerations:
  - Perform installation and wiring that segregates system parts that may likely become noise sources and system parts that are susceptible to noise. Segregation can be achieved by measures such as segregating by distance, installing a filter or segregating the grounding system.

- Configure for CE Marking Conformance:
  - For compliance to CE Marking, perform installation and cable routing according to the description on compliance to CE Marking in the “Hardware Manual” (IM34M06C11-01E).
● Keep spare parts on hand:
  - Stock up on maintenance parts including spare modules, in advance.
  - Preventive maintenance (replacement of the module or its battery) is required for using the module beyond 10 years. For enquiries on battery replacement service (for purchase), contact your nearest Yokogawa Electric representative or sales office. (The module has a built-in lithium battery. Lithium batteries may exhibit decreased voltage, and in rare cases, leakage problems after 10 years.)

● Discharge static electricity before operating the system:
  - Because static charge can accumulate in dry conditions, first touch grounded metal to discharge any static electricity before touching the system.

● Never use solvents such as paint thinner for cleaning:
  - Gently clean the surfaces of the FA-M3 controller with a cloth that has been soaked in water or a neutral detergent and wringed.
  - Do not use volatile solvents such as benzine or paint thinner or chemicals for cleaning, as they may cause deformity, discoloration, or malfunctioning.

● Avoid storing the FA-M3 controller in places with high temperature or humidity:
  - Since the CPU module has a built-in battery, avoid storage in places with high temperature or humidity.
  - Since the service life of the battery is drastically reduced by exposure to high temperatures, take special care (storage temperature should be from -20°C to 75°C).
  - There is a built-in lithium battery in a CPU module and temperature control module which serves as backup power supply for programs, device information and configuration information. The service life of this battery is more than 10 years in standby mode at room temperature. Take note that the service life of the battery may be shortened when installed or stored at locations of extreme low or high temperatures. Therefore, we recommend that modules with built-in batteries be stored at room temperature.

● Always turn off the power before installing or removing modules:
  - Failing to turn off the power supply when installing or removing modules, may result in damage.

● Do not touch components in the module:
  - In some modules you can remove the right-side cover and install ROM packs or change switch settings. While doing this, do not touch any components on the printed-circuit board, otherwise components may be damaged and modules may fail to work.

● Do not connect unused terminals:
  - Do not connect wires to unused terminals on a terminal block or in a connector. Doing so may adversely affect the functions of the module.
Waste Electrical and Electronic Equipment

Waste Electrical and Electronic Equipment (WEEE), Directive 2002/96/EC
(This directive is only valid in the EU.)

This product complies with the WEEE Directive (2002/96/EC) marking requirement. The following marking indicates that you must not discard this electrical/electronic product in domestic household waste.

Product Category
With reference to the equipment types in the WEEE directive Annex 1, this product is classified as a “Monitoring and Control instrumentation” product.
Do not dispose in domestic household waste.
When disposing products in the EU, contact your local Yokogawa Europe B. V. office.

How to Discard Batteries

The following description on DIRECTIVE 2006/66/EC (hereinafter referred to as the EU new directive on batteries) is valid only in the European Union.

Some models of this product contain batteries, which cannot be removed by the user. Make sure to dispose of the batteries along with the product.

Do not dispose in domestic household waste.
When disposing products in the EU, contact your local Yokogawa Europe B. V. office.

Battery type: Lithium battery

Note: The symbol above means that the battery must be collected separately as specified in Annex II of the EU new directive on batteries.
Introduction

- Overview of the Manual

This manual describes how to install and use the USB-Serial Converter (KM13-1□), which is to be connected between the programming port of a sequence CPU module (F3SP□□) and the USB port of a PC. Read it carefully to ensure correct and safe use of the product.
Copyrights and Trademarks

■ Copyrights

Copyrights of the programs and online manual included in this CD-ROM belong to Yokogawa Electric Corporation.

This online manual may be printed but PDF security settings have been made to prevent alteration of its contents.

This online manual may only be printed and used for the sole purpose of operating this product. When using a printed copy of the online manual, pay attention to possible inconsistencies with the latest version of the online manual. Ensure that the edition agrees with the latest CD-ROM version.

Copying, passing, selling or distribution (including transferring over computer networks) of the contents of the online manual, in part or in whole, to any third party, is strictly prohibited. Registering or recording onto videotapes and other media is also prohibited without expressed permission of Yokogawa Electric Corporation.

■ Trademarks

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Part B  KM13-1N

B1. Features

B2. Specifications
   - Model and Suffix Codes
   - Functional Specifications
   - Compatible PCs and Operating Systems
   - External Dimensions
   - Precautions When Using KM13-1N
   - Serial No. of KM13-1N

B3. Installation
   - Connecting the KM13-1N
   - Attaching to the PC
   - Installing in Windows 2000 Environment
   - Installing in Windows XP Environment
   - Verifying Installation in Windows 2000/XP Environment

B4. COM Port Setup
   - COM Port Setup Using Device Manager

B5. Uninstalling the Driver
   - For Windows 2000/XP

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Revision Information
FA-M3
USB-Serial Converter
Part A KM13-1S
A1. Features

- This product is a USB-to-RS232C converter compliant to USB specification rev. 1.1.
- It supports data transmission rate of up to 230 kbps.
- USB connector allows easy attachment and detachment.
- By using a virtual COM port, it does not consume IRQ resource of a PC.
- LED indicator allows easy monitoring of the communications status.
A2. Specifications

Model and Suffix Codes

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Style Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KM13</td>
<td>-1S</td>
<td>...</td>
<td>...</td>
<td>USB1.1 compliant USB-serial converter cable, Approx. 3 m long</td>
</tr>
</tbody>
</table>

Functional Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input/output signal level</td>
<td>RS232C compliant</td>
</tr>
<tr>
<td>Connection interface</td>
<td>USB (Universal Serial Bus) 1.1 compliant</td>
</tr>
<tr>
<td>Number of I/O ports</td>
<td>1 port</td>
</tr>
<tr>
<td>Size</td>
<td>85 mm (L) x 28 mm (W) x 11 mm (H) (see external dimensions drawing for cable length)</td>
</tr>
<tr>
<td>Weight</td>
<td>128 g</td>
</tr>
<tr>
<td>Communications protocol</td>
<td>Asynchronous communications</td>
</tr>
<tr>
<td>Transmission speed</td>
<td>300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400bps *1</td>
</tr>
<tr>
<td>Transmission distance</td>
<td>15 m max.</td>
</tr>
<tr>
<td>Power supply</td>
<td>DC+5V (supplied by USB bus)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>30 mA average, 50 mA max. at 5V</td>
</tr>
<tr>
<td>Communications parameters</td>
<td>7 or 8 bits; 1 start bit; 1, 1.5 or 2 stop bits; Odd, even, or no parity</td>
</tr>
<tr>
<td>LED display</td>
<td>PWR: Power LED (lit when power supplied by USB bus is normal at 5V) TXD: LED for transmission (from PC to device) RXD: LED for receiving (from device to PC)</td>
</tr>
<tr>
<td>Operating temperature and humidity ranges</td>
<td>0 to 50°C; 10 to 90% (non-condensing)</td>
</tr>
<tr>
<td>Storage temperature and humidity ranges</td>
<td>-20 to 65°C; 10 to 90% (non-condensing)</td>
</tr>
<tr>
<td>Number of insertions or removals</td>
<td>1000 max. at USB end, 1000 max. at CPU end</td>
</tr>
</tbody>
</table>

*1: The actual maximum achievable transmission rate depends on the specifications of the PC.

CAUTION

Beware of the following limitations when using the product:
- Do not remove the product when an application is accessing its COM port, or it may affect the stability of the OS.
- Do not suspend the product when an application is accessing its COM port, or the system may fail to resume subsequently.
- This product does not support serial mouse devices designed for RS232C ports.

Compatible PCs and Operating Systems

KM13-1S can be used with any PC equipped with a USB interface, and running Windows 2000, Windows XP, Windows Vista(32bit/64bit), Windows 7(32bit/64bit) or Windows 8(32bit/64bit).

External Dimensions

![External Dimensions Diagram]
Precautions When Using KM13-1S

WARNING

- Always discharge any static electricity before touching the product when working in an environment prone to static charge to prevent malfunction due to electrical discharge to the internal circuitry through gaps in the casing.

CAUTION

- This product is a class B information technology equipment based on the Voluntary Control Council for Interference by Information Technology Equipment (VCCI) standard. Using the product near radio or television receivers may interfere with receiving. Follow the instructions in the manual to ensure proper use.
- Never disassemble or modify the product.
- Do not bend with force, drop or damage the product. Do not place it under heavy load.
- Do not use the product after it is exposed to water, chemical, oil or other fluids to prevent electric shock or fire due to short-circuit.
- Using the product near motors or other noise sources may result in malfunction. Always segregate the product from noise sources.
- Avoid storing the product in places subject to high temperature, high humidity, drastic temperature changes, dust, vibration or shock. Keep away from sources of magnetic fields such as speakers.
- Communication performance of KM13-1S may be 1.2 times lower in access to the program area and two times lower in access to the device area, compared to the former model KM13-1N. This may result in longer time required for program update and download.
- When using KM13-1S, use the ladder program development tool WideField2 R4.01 or later and WideField3.

Serial No. of KM13-1S

The serial number of each KM13-1S cable contains the manufacturing date and has the following format:

First 4 characters : year of manufacture
Next 2 characters : month of manufacture
Remaining characters : manufacturing information

For instance, a serial number of “2004011101FA” indicates that the product is manufactured in January 2004.
A3. Installation

A3.1 Connecting the KM13-1S

To use this product, you need to perform the following steps:
Attach the product to the PC → Install the driver software → End

Follow the detailed description given below to perform setup.

- Attaching to the PC

1. Power on the PC and start Windows.
2. Connect the USB connector of the product to a USB port on a PC as shown in the diagram below:
   - Push in the connector completely to ensure that it is securely attached.
   - For information on the location of the USB port, refer to the PC manual.
   - The product may be incompatible with keyboard or display USB ports of some PCs.
A3.2 Installing in Windows 7/8 Environment

This section describes how to install the driver software required for using the product in a Windows 7/8 environment.

To install the driver software in Windows 7/8, use the installer supplied with the product. Follow the steps below to perform installation.

◆ Procedure ◆

(1) Insert the CD-ROM supplied with the product into the CD-ROM drive of the PC.

**TIP**
It is not necessary to connect the product to the PC during installation of driver software.

(2) Open the CD-ROM in Explorer or any other way, and start "Setup.exe".
⇒ This starts up InstallShield Wizard of the driver software, and the Welcome to the InstallShield Wizard for YOKOGAWA A1045UR Installer dialog box appears.

(3) Click the [Next] button.
⇒ The Ready to Install the Program dialog box appears.

(4) Click the [Install] button.
⇒ Installation of the driver software begins.

**TIP**
The Windows Security function may display a warning window during installation. Even in this case, you can continue installation.
(5) The InstallShield Wizard Complete dialog box appears.

(6) Connect the product to the PC.

⇒ Proceed to Section A3.4 "Verifying Installation in Windows Vista/7/8 Environment".

⚠️ CAUTION

Configuring the FA-M3 and software to use higher transmission rates will allow smoother use.
For instance, you may select "115200 bps even parity" in the WideField3/WideField2 environment setup and ladder program configuration.
A3.3 Installing in Windows Vista Environment

This section describes how to install the driver software required for using the product in a Windows Vista environment.

To install the driver software in Windows Vista, use the installer supplied with the product.

Follow the steps below to perform installation.

◆ Procedure ◆

(1) Insert the CD-ROM supplied with the product into the CD-ROM drive of the PC.

TIP
It is not necessary to connect the product to the PC during installation of driver software.

(2) Open the CD-ROM in Explorer or any other way, and start "Setup.exe".
⇒ This starts up InstallShield Wizard of the driver software, and the Welcome to the InstallShield Wizard for YOKOGAWA A1045UR Installer dialog box appears.

(3) Click the [Next] button.
⇒ The Ready to Install the Program dialog box appears.

(4) Click the [Install] button.
⇒ Installation of the driver software begins.

TIP
The Windows Security function may display a warning window during installation. Even in this case, you can continue installation.
(5) The InstallShield Wizard Complete dialog box appears.

(6) Connect the product to the PC.

⇒ Proceed to Section A3.4 "Verifying Installation in Windows Vista/7/8 Environment".

⚠️ **CAUTION**

Configuring the FA-M3 and software to use higher transmission rates will allow smoother use.
For instance, you may select "115200 bps even parity" in the WideField3/WideField2 environment setup and ladder program configuration.
A3.4 Verifying Installation in Windows Vista/7/8 Environment

This section describes how to verify whether the driver software is properly installed for the product. This verification also checks whether the KM13-1S is working correctly on the PC.

◆ Operation ◆

(1) Click [System and Maintenance] in Windows Control Panel. Click [Device Manager] to open the device manager.

(2) Under “Ports (COM & LPT)”, select “YOKOGAWA USB Serial Port (COMx)” (‘x’ is a numerical digit denoting the COM port number).

(3) The Properties dialog is displayed. Verify that the message “This device is working properly” is displayed in the [Device status] area. If an error is detected, an error message will be displayed in the [Device status] area.

⇒ At this point, you have completed verifying the driver installation.
A3.5 Installing in Windows XP Environment

This section describes how to install the driver software required for use in a Windows XP environment.

To install the driver software in Windows XP, use the Windows Plug and Play function. Follow the steps below to perform installation.

◆ Procedure ◆

(1) Connect the product to the PC. This automatically starts up the “Found New Hardware Wizard”. Insert the product CD-ROM into the CD-ROM drive. Select [Install from a list or specific location (Advanced)] and click [Next].

(2) The search and installation options selection screen is displayed. Select [Search for the best driver in these locations].

(3) Checkmark [Include this location in the search:], click [Browse] and select the “x:\WinXP” folder. Click [Next]. (‘x’ denotes the drive letter (e.g. ‘d’) for the CD drive containing the product CD-ROM.) Click [Next].

(4) A message is displayed to warn that the software you are installing has not passed Windows Logo testing. Click [Continue Anyway].
(5) Copying of the driver software begins. When installation is completed, a confirmation screen is displayed. Click [Finish].

⇒ At this point, you have completed installing the driver software. Proceed to Section A3.7, “Verifying Installation in Windows 2000/XP Environment”.

⚠️ CAUTION

Configuring the FA-M3 and software to use higher transmission rates will allow smoother use. For instance, you may select “115200 bps even parity” in the WideField3/WideField2 environment setup and ladder program configuration.

⚠️ CAUTION

- When you connect the product to the PC, the “Found New Hardware Wizard” will be started automatically twice. Selecting file “ftdibus.inf” first installs it automatically. Files “ftdibus.inf” and “ftdiport.inf” are to be installed in this order.
- Until the above-mentioned two driver software files have been installed, the KM13-1S USB-Serial Converter device cannot be recognized by the PC.
A3.6 Installing in Windows 2000 Environment

This section describes how to install the driver software required for using the product in a Windows 2000 environment.

To install the driver software in Windows 2000, use the Windows Plug and Play function. Follow the steps below to perform installation.

◆ Procedure ◆

(1) Connect the product to the PC. This automatically starts up the "Found New Hardware Wizard". Insert the product CD-ROM into the CD-ROM drive and click [Next].

(2) The Install Hardware Device Drivers screen is displayed. Select [Search for a suitable driver for my device (recommended)] and click [Next].

(3) The Locate Driver Files screen is displayed. Checkmark [Specify a location], and click [Next].

Continue on next page.
(4) A screen prompting for the manufacturer’s installation disk is displayed. Click [Browse] and select the “x:\Win2000” folder on the CD-ROM. “x:\Win2000” is displayed in the [Copy manufacturer’s files from:] field. Click [OK].

(‘x’ denotes the drive letter (e.g. ‘d’) of the CD drive containing the product CD-ROM.)

(5) The Driver Files Search Results screen is displayed. Verify that “x:\win2000\ftdiport.inf” is displayed on the screen and click [Next].

(‘x’ denotes the drive letter (e.g. ‘d’) for the CD drive containing the product CD-ROM.)

(6) Copying of the driver software begins. When installation is completed, a confirmation screen is displayed. Click [Finish].

⇒ At this point, you have completed installing the driver software. Proceed to Section A3.7, “Verifying Installation in Windows 2000/XP Environment”.

⚠️ CAUTION

- Configuring the FA-M3 and software to use higher transmission rates will allow smoother use. For instance, you may select “115200 bps even parity” in the WideField3/WideField2 environment setup and ladder program configuration.

- When you connect the product to the PC, the “Found New Hardware Wizard” will be started automatically twice. Selecting file “ftdibus.inf” first installs it automatically. Files “ftdibus.inf” and “ftdiport.inf” are to be installed in this order.

- Until the above-mentioned two driver software files have been installed, the KM13-1S USB-Serial Converter device cannot be recognized by the PC.
A3.7 Verifying Installation in Windows 2000/XP Environment

This section describes how to verify whether the driver software is properly installed for the product. This verification also checks whether the KM13-1S is working correctly on the PC.

◆ Operation ◆

(1) Double-click [System] in Windows Control Panel to open the System Properties dialog. Select the [Hardware] tab, and click [Device Manager] to open the device manager.

(2) Under “Ports (COM & LPT)”, select “KM13-1S USB-Serial Converter (COMx)” (‘x’ is a numerical digit denoting the COM port number).

(3) The Properties dialog is displayed. Verify that the message “This device is working properly” is displayed in the [Device status] area.
If an error is detected, an error message will be displayed in the [Device status] area.

⇒ At this point, you have completed verifying the driver installation.
A4. COM Port Setup

- For Windows2000/XP/Vista/7/8

  On Windows 2000, Windows XP, Windows Vista, Windows 7 or Windows 8, you can change the COM port allocated to KM13-1S using the device manager. For details on the procedure, see Section A4.1.
A4.1 COM Port Setup Using Device Manager
This section describes how to change the COM port allocated to KM13-1S using Device Manager on Windows XP, 2000, Vista, 7 or 8.

A4.1.1 Operation in Windows Vista/7/8
◆ Procedure ◆

(1) Click [System and Maintenance] in Windows Control Panel. Click [Device Manager] to open the device manager window.

(2) Under “Ports (COM & LPT)”, select “YOKOGAWA USB Serial Port (COMx)” (‘x’ is a number).

(3) The Properties dialog is displayed. Select the [Port Settings] tab.

(4) On the [Port Settings] tab, click the [Advanced...] button.
⇒ The Advanced Settings for COMx dialog box appears.
(5) From [COM Port Number], select the desired port number.
⇒ This completes COM port setup.
A4.1.2 Operation in Windows 2000/XP

◆ Procedure ◆

(1) Double-click [System] in Windows Control Panel to open the System Properties dialog. Select the [Hardware] tab, and click [Device Manager] to open the device manager window.

(2) Under “Ports (COM & LPT)”, select “KM13-1S USB-Serial Converter (COMx)” (‘x’ is a number).

(3) The Properties dialog is displayed. Select the [Port Settings] tab.

(4) From the [Port Settings] tab, click the [Advanced...] button.

⇒ The Advanced Settings for COMx dialog box appears.

(5) From [COM Port Number], select the desired port number.

⇒ This completes COM port setup.
A5. Uninstalling the Driver

This chapter describes how to remove the software driver for the product.

A5.1 For Windows Visa/7/8

Use the uninstaller supplied with the product to automatically uninstall the driver.

(1) Executing the Uninstaller

1. From the Control Panel, select [Programs]-[Uninstall a program].
2. From the displayed list, select [YOKOGAWA A1045UR Installer] and start the uninstallation.
3. The uninstaller automatically uninstalls the driver from the system.
A5.2 For Windows 2000/XP

To uninstall the driver, you need to (1) delete the associated device information; and (2) delete the associated .inf file.

(1) Deleting Device Information

1. With the KM13-1S inserted in the USB port, double-click [System] on Windows control panel. On the displayed System Properties window, click the [Hardware] tab, followed by the [Device Manager] button.

2. From the displayed device list, double-click [Ports (COM & LPT)] to expand it. From the expanded list, select “KM13-1S USB-Serial Converter (COMx)” (where ‘x’ is a number). (“KM13-1S USB-Serial Converter (COMx)” will be highlighted.) Select [Action]-[Uninstall] from the menu. A message confirming whether to remove the device is displayed. Click [OK].

3. Next, from the displayed device list, double-click [Universal Serial Bus controllers] to expand it. If [KM13-1S USB-Serial Converter] is displayed in the expanded list, delete it by referring to step (2).

(2) Deleting .inf File

1. Double-click [My Computer] to open it. Select [Tools]-[Folder Options] from the menu bar. From the displayed window, click the [View] tab, and turn off the checkbox for [Hide extensions for known file types].

2. Click [Apply], followed by [OK].

3. Using File Explorer, open the “C:\WINNT\INF” folder under Windows 2000 environment or the “C:\WINDOWS\INF” folder under Windows XP environment.

4. Look for files having names of the form “oemX.inf” (where ‘X’ denotes a number). If there is only one matching file (“oem0.inf”), delete the “oem0.inf” file, as well as the “oem0.PNF”. If there are multiple matching files (e.g. “oem0.inf”, “oem1.inf”, …), open each of the matching .inf file using Notepad or any other text editor, and search for the .inf file with “; FTDIBUS.INF - INF file for KM13-1S” coded on the first line in the file. When you find the required .inf file, delete it and the corresponding “.pnf” file having the same filename. Again, open each .inf file using Notepad or any other text editor, and delete all .inf files containing the “KM13-1S” text string.

(If you cannot find an “inf” folder under the “Windows” folder, change the folder options to “Show hidden files and folders”.)

This completes the procedure for uninstalling the product driver. Finally, detach the KM13-1S converter from the USB port, and restart the PC.
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FA-M3

USB-Serial Converter

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IM 34M06C91-01E  5th Edition
B1. Features

- This product is a USB-to-RS232C converter compliant to USB specification rev. 1.1.
- It supports data transmission rate of up to 230 kbps.
- USB connector allows easy attachment and detachment.
- By using a virtual COM port, it does not consume IRQ resource of a PC.
- LED indicator allows easy monitoring of the communications status.
B2. Specifications

- Model and Suffix Codes

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Style Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KM13</td>
<td>-1N</td>
<td>…</td>
<td>…</td>
<td>USB1.1 compliant USB-serial converter cable, Approx. 3 m long</td>
</tr>
</tbody>
</table>

- Functional Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input/output signal level</td>
<td>RS232C compliant</td>
</tr>
<tr>
<td>Connection interface</td>
<td>USB (Universal Serial Bus) 1.1 compliant</td>
</tr>
<tr>
<td>Number of I/O ports</td>
<td>1 port</td>
</tr>
<tr>
<td>Size</td>
<td>85 mm (L) x 28 mm (W) x 11 mm (H) (see external dimensions drawing for cable length)</td>
</tr>
<tr>
<td>Weight</td>
<td>128 g</td>
</tr>
<tr>
<td>Communications protocol</td>
<td>Asynchronous communications</td>
</tr>
<tr>
<td>Transmission speed</td>
<td>300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400 bps</td>
</tr>
<tr>
<td>Transmission distance</td>
<td>15 m max.</td>
</tr>
<tr>
<td>Power supply</td>
<td>DC+5V (supplied by USB bus)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>30 mA average, 50 mA max. at 5V</td>
</tr>
<tr>
<td>Communications parameters</td>
<td>7 or 8 bits; 1 start bit; 1, 1.5 or 2 stop bits; Odd, even, or no parity</td>
</tr>
<tr>
<td>LED display</td>
<td>PWR: Power LED (lit when power supplied by USB bus is normal at 5V) TXD: LED for transmission (from PC to device) RXD: LED for receiving (from device to PC)</td>
</tr>
<tr>
<td>Operating temperature and humidity ranges</td>
<td>0 to 50°C; 10 to 90% (non-condensing)</td>
</tr>
<tr>
<td>Storage temperature and humidity ranges</td>
<td>-20 to 65°C; 10 to 90% (non-condensing)</td>
</tr>
<tr>
<td>Number of insertions or removals</td>
<td>1000 max. at USB end, 1000 max. at CPU end</td>
</tr>
</tbody>
</table>

*1: The actual maximum achievable transmission rate depends on the specifications of the PC.

---

**CAUTION**

Beware of the following limitations when using the product:
- Do not remove the product when an application is accessing its COM port, or it may affect the stability of the OS.
- Do not suspend the product when an application is accessing its COM port, or the system may fail to resume subsequently.
- This product does not support serial mouse devices designed for RS232C ports.

- Compatible PCs and Operating Systems

KM13-1N can be used with any PC equipped with a USB interface, and running Windows 2000 or Windows XP.

- External Dimensions

![External Dimensions Diagram](image-url)

- Ferrite core
- To computer: 350±10 mm, 107 mm
- 228±50 mm to CPU module
Precautions When Using KM13-1N

WARNING

- Always discharge any static electricity before touching the product when working in an environment prone to static charge to prevent malfunction due to electrical discharge to the internal circuitry through gaps in the casing.

CAUTION

- This product is a class B information technology equipment based on the Voluntary Control Council for Interference by Information Technology Equipment (VCCI) standard. Using the product near radio or television receivers may interfere with receiving. Follow the instructions in the manual to ensure proper use.
- Never disassemble or modify the product.
- Do not bend with force, drop or damage the product. Do not place it under heavy load.
- Do not use the product after it is exposed to water, chemical, oil or other fluids to prevent electric shock or fire due to short-circuit.
- Using the product near motors or other noise sources may result in malfunction. Always segregate the product from noise sources.
- Avoid storing the product in places subject to high temperature, high humidity, drastic temperature changes, dust, vibration or shock. Keep away from sources of magnetic fields such as speakers.

Serial No. of KM13-1N

The serial number of each KM13-1N cable contains the manufacturing date and has the following format:

First 4 characters : year of manufacture
Next 2 characters : month of manufacture
Remaining characters : manufacturing information

For instance, a serial number of “2004011101FA” indicates that the product is manufactured in January 2004.
B3. Installation

B3.1 Connecting the KM13-1N

To use this product, you need to perform the following steps:
Attach the product to the PC → Install the driver software → End

Follow the detailed description given below to perform setup.

- Attaching to the PC
  1. Power on the PC and start Windows.
  2. Connect the USB connector of the product to a USB port on a PC as shown in the diagram below.
     - Push in the connector completely to ensure that it is securely attached.
     - For information on the location of the USB port, refer to the PC manual.
     - The product may be incompatible with keyboard or display USB ports of some PCs.
B3.2 Installing in Windows 2000 Environment

This section describes how to install the driver software required for using the product in a Windows 2000 environment. Follow the steps below to perform installation.

◆ Procedure ◆

1. Connect the product to the PC. This automatically starts up the “Found New Hardware Wizard”. Insert the product CD-ROM into the CD-ROM drive and click [Next].

2. The Install Hardware Device Drivers screen is displayed. Select [Search for a suitable driver for my device (recommended)] and click [Next].

3. The Locate Driver Files screen is displayed. Checkmark [Specify a location], and click [Next].

4. A screen prompting for the manufacturer’s installation disk is displayed. Click [Browse] and select the “x:\KM13-1N\Win2000” folder on the CD-ROM. “x:\KM13-1N\Win2000” is displayed in the [Copy manufacturer’s files from:] field. Click [OK].

('x' denotes the drive letter (e.g. 'D') of the CD drive containing the product CD-ROM.)

Continue on next page.
(5) The Driver Files Search Results screen is displayed. Verify that “x:\KM13-1N\win2000\serwpl.inf” is displayed on the screen and click [Next].

(‘x’ denotes the drive letter (e.g. ‘D’) for the CD drive containing the product CD-ROM)

(6) Copying of the driver software begins. When installation is completed, a confirmation screen is displayed. Click [Finish].

⇒ At this point, you have completed installing the driver software. Proceed to Section B3.4, “Verifying Installation in Windows 2000/XP Environment”.

⚠️ CAUTION

Configuring the FA-M3 and software to use higher transmission rates will allow smoother use.

For instance, you may select “115200 bps even parity” in the WideField3/WideField2 environment setup and ladder program configuration.
B3.3 Installing in Windows XP Environment

This section describes how to install the driver software required for use in a Windows XP environment. Follow the steps below to perform installation.

◆ Procedure ◆

1. Connect the product to the PC. This automatically starts up the “Found New Hardware Wizard”. Insert the product CD-ROM into the CD-ROM drive. Select [Install from a list or specific location (Advanced)] and click [Next].

2. The search and installation options selection screen is displayed. Select [Search for the best driver in these locations].

3. Checkmark [Include this location in the search:] , click [Browse] and select the “x:\KM13-1N\WinXP” folder. Click [Next]. (’x’ denotes the drive letter (e.g. ‘D’) for the CD drive containing the product CD-ROM.) Click [Next].

4. A message is displayed to warn that the software you are installing has not passed Windows Logo testing. Click [Continue Anyway].

5. Copying of the driver software begins. When installation is completed, a confirmation screen is displayed. Click [Finish].

⇒ At this point, you have completed installing the driver software. Proceed to Section B3.4, “Verifying Installation in Windows 2000/XP Environment”.

CAUTION

Configuring the FA-M3 and software to use higher transmission rates will allow smoother use.

For instance, you may select “115200 bps even parity” in the WideField3/WideField2 environment setup and ladder program configuration.
B3.4 Verifying Installation in Windows 2000/XP Environment

This section describes how to verify whether the driver software is properly installed for the product. This verification also checks whether the KM13-1N is working correctly on the PC.

◆ Operation ◆

1. Double-click [System] in Windows Control Panel to open the System Properties dialog. Select the [Hardware] tab, and click [Device Manager] to open the device manager.

2. Under “Ports (COM & LPT)”, select “KM13-1N USB-Serial Converter (COMx)” (‘x’ is a numerical digit denoting the COM port number).

3. The Properties dialog is displayed. Verify that the message “This device is working properly” is displayed in the [Device status] area. If an error is detected, an error message will be displayed in the [Device status] area.

⇒ At this point, you have completed verifying the driver installation.
B4. COM Port Setup

- For Windows 2000/XP

On Windows 2000 or Windows XP, you can change the COM port allocated to KM13-1N using the device manager. For details on the procedure, see Section B4.1.
B4.1 COM Port Setup Using Device Manager

This section describes how to change the COM port allocated to KM13-1N using Device Manager on Windows XP or 2000.

◆ Procedure ◆

(1) Double-click [System] in Windows Control Panel to open the System Properties dialog. Select the [Hardware] tab, and click [Device Manager] to open the device manager window.

(2) Under “Ports (COM & LPT)”, select “KM13-1N USB-Serial Converter (COMx)” (‘x’ is a number).

(3) The Properties dialog is displayed. Select the [Port Settings] tab and click the [Advanced...] button.

On the displayed screen, select the desired COM port number from the [COM Port Number:] dropdown menu.

⇒ This completes COM port setup.
B5. **Uninstalling the Driver**

This chapter describes how to remove the software driver for the product.

B5.1 **For Windows 2000/XP**

To uninstall the driver, you need to (1) delete the associated device information; and (2) delete the associated .inf file.

(1) **Deleting Device Information**

1. With the KM13-1N inserted in the USB port, double-click [System] on Windows control panel. On the displayed System Properties window, click the [Hardware] tab, followed by the [Device Manager] button.
2. From the displayed device list, double-click [Ports (COM & LPT)] to expand it. From the expanded list, select “KM13-1N USB-Serial Converter (COMx)” (where ‘x’ is a number). (“KM13-1N USB-Serial Converter (COMx)” will be highlighted.) Select [Action]-[Uninstall] from the menu. A message confirming whether to remove the device is displayed. Click [OK].
3. Next, from the displayed device list, double-click [Universal Serial Bus controllers] to expand it. If [KM13-1N USB-Serial Converter] is displayed in the expanded list, delete it by referring to step (2).

(2) **Deleting .inf File**

1. Double-click [My Computer] to open it. Select [Tools]-[Folder Options] from the menu bar. From the displayed window, click the [View] tab, and turn off the checkbox for [Hide extensions for known file types].
2. Click [Apply], followed by [OK].
3. Using File Explorer, open the “C:\WINNT\INF” folder under Windows 2000 environment or the “C:\WINDOWS\INF” folder under Windows XP environment.
4. Look for files having names of the form “oemX.inf” (where ‘X’ denotes a number). If there is only one matching file (“oem0.inf”), delete the “oem0.inf” file, as well as the “oem0.PNF”. If there are multiple matching files (e.g. “oem0.inf”, “oem1.inf”, …), open each of the matching .inf file using Notepad or any other text editor, and search for the .inf file with “; SERWPL.INF - INF file for KM13-1N” coded on the first line in the file. When you find the required .inf file, delete it and the corresponding “.pnf” file having the same filename. Again, open each .inf file using Notepad or any other text editor, and delete all .inf files containing the “KM13-1N” text string.

(If you cannot find an “inf” folder under the “Windows” folder, change the folder options to “Show hidden files and folders”.)

This completes the procedure for uninstalling the product driver. Finally, detach the KM13-1N converter from the USB port, and restart the PC.
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USB-Serial Converter
Part B  KM13-1N

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