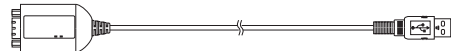


# CS1W-CIF31 USB-Serial Conversion Cable

OMRON

## Instruction Sheet

Thank you for purchasing this OMRON product. Please read this instruction sheet and thoroughly familiarize yourself with the functions and characteristics of the product before use. Please retain this sheet for future reference. The manual for this product is stored in PDF format in the "On-line Manuals" folder on the CD-ROM. For a detailed guide to the usage of this product, refer to the manual.



### OMRON Corporation

©OMRON Corporation 2003 All Right Reserved. 0675217-3A

The CS1W-CIF31 USB-Serial Conversion Cable connects an OMRON PLC (Programmable Controller) or PT (Programmable Terminal) to a personal computer's USB port. The cable can be used once the required drivers (on the provided CD-ROM) have been installed in the personal computer.

The Conversion Cable can be used with OMRON PLC/PT software, such as the CX-Programmer, which use the CX-Server or FinsGateway as a communications driver, as well as other OMRON Software, such as the DeviceNet Configurator.

### Safety Precaution

**Definition of Precautionary Information**  
**DANGER** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

**WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

**Caution** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, or property damage.

### PRECAUTIONS

This section provides general precautions for using the USB-Serial Conversion Cable and related devices. The information contained in this section is important for the safe and reliable application of the USB-Serial Conversion Cable. You must read this section and understand the information contained before attempting to set up or operate a USB-Serial Conversion Cable and PLC system.

### General Precautions

- The user must operate the product according to the performance specifications described in the operation manuals.
- Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems, machines, and equipment that may have a serious influence on lives and property if used improperly.
- This manual provides important information for using the CS1W-CIF31 USB-Serial Conversion Cable. Be sure to read this manual before attempting to use the Conversion Cable and keep this manual close at hand for reference during operation.

**WARNING** It is extremely important that a PLC and all PLC Units be used for the specified purpose and under the specified conditions, especially in applications that can directly or indirectly affect human life. You must consult with your OMRON representative before applying a PLC system to the above mentioned applications.

### Operating Environment Precautions

- Do not use the USB-serial Conversion Cable in the following places:
- Locations subject to strong electromagnetic fields.
  - Locations subject to direct sunlight.
  - Locations subject to temperatures or humidity outside the range specified in the specifications.
  - Locations subject to condensation as the result of severe changes in temperature.
  - Locations subject to corrosive or flammable gases.
  - Locations subject to excessive dust, or salts, or metal filings.
  - Locations subject to exposure to water, oil, or chemicals.
  - Locations subject to shock or vibration.
- Provide proper shielding when installing in the following locations:
- Locations subject to static electricity or other sources of noise.
  - Locations subject to strong electromagnetic fields.
  - Locations subject to possible exposure to radiation.
  - Locations near power supply lines.

### Application Precautions

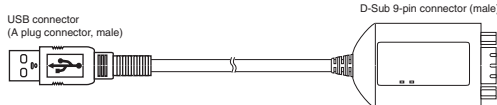
- Observe the following precautions when using the USB-Serial Conversion Cable.
- These cables are designed specifically to connect a personal computer to an OMRON PLC or PT. Do not use them to connect any other

devices and do not use a commercially available USB-serial conversion cable in place of these cables. Improper usage of these cables may result in damage to external devices, the PLC, or the PT.

- Do not attempt to disassemble, repair, or modify any Units.
- Touch a grounded metal object to discharge any static electricity before connecting the Conversion Cable to the PLC's connector, a PLC Connecting Cable, or the personal computer's USB port.
- To avoid malfunctions due to noise, do not route the Conversion Cable parallel or close to a high-tension power line.
- Tighten the D-sub connector screws to a torque of 0.4 N·m.
- Either turn OFF the power supply to the computer or disconnect the cable from the USB connector before setting the DIP switch.
- Always lock any connectors that are equipped with locking mechanisms.
- Do not place anything on the cable.
- Do not bend the cable past its normal bending radius or pull on the cable.
- Touch the Unit only after touching a grounded metal object to release static electricity from your body.
- Disconnect or connect the cable only after confirming that communications are not in progress.
- Do not quickly and repeatedly connect and disconnect the USB connector. Doing so may cause the computer to malfunction.
- It may take some time for the computer to detect the cable after the cable is connected. This is not a malfunction.
- Do not connect the RS-232C connector on the CS1W-CIF31 Cable (D-sub type) directly to the RS-232C or RS-422/485 connector on the PLC. The cable may malfunction.
- Do not connect this cable to a USB hub; connect it directly to a USB connector on the computer.
- The cable may malfunction.
- Do not extend the USB portion of this cable with an extension cable. The cable may malfunction.
- Set the communications port (COM port) number used by the software to the communications port (COM port) number allocated to the Conversion Cable.

**Caution** Perform wiring so that the power supply wires are not exposed and do not come into contact with any metal parts. Contact with metal parts may cause a fire.

### Appearance and Component Names



### LED Indicators

Indicator	Color	Status	Description
TD	Yellow	Flashing	Data is being sent from the USB-Serial Conversion Cable.
		OFF	Data is not being sent from the USB-Serial Conversion Cable.
RD	Yellow	Flashing	The USB-Serial Conversion Cable is receiving data.
		OFF	The USB-Serial Conversion Cable is not receiving data.

### Specifications

- Compatible Operating Systems**  
Windows 98/ME/2000/XP
- Compatible Software Applications**  
CX-Programmer, CX-Simulator, CX-Protocol, CX-Position, CX-Motion, CX-Process, NS-Designer, PLC Reporter, DeviceNet Configurator, NT Support Tool for Windows, ZEN Support Software Ver.3.0 or later
- Compatible PLCs, PTs and Programmable Relay**  
The following OMRON PLCs and PTs are supported by the compatible software applications.

### PLCs

CS/CJ-series, C-series (see note), and CVM1/CV-series

### PT

NS-series and NT-series

### Programmable Relay

ZEN (see note 2)

Note 1. The following C-series PLCs are supported: C200HS, C200HX/HG/HE, C200H, C1000H, C2000H, CQM1, CPM1, CPM1A, CPM2A, SRM1, CQM1H, and CPM2C.  
 Note 2. The ZEN Programmable Relay is supported only if ZEN Support Software Ver. 3.0 or later is used.

### General Specifications

USB Interface rating	Conforms to USB Specification 1.1	
DTE speed	115.2 kbps	
Connector specifications	Computer end	USB (type A plug, male)
	PLC end	RS-232C (D-sub 9-pin, male)
Power supply	Bus power (5 VDC power from upstream)	
Current consumption	35 mA	
Operating environment		
	Ambient temperature	0 to 55°C
	Ambient humidity	10% to 90% humidity (with no condensation)
	Atmosphere	No corrosive gases
Weight	50 g	

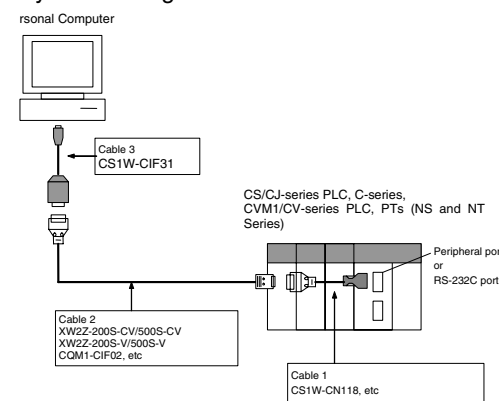
### Application Procedure

This section explains how to connect a PLC CPU Unit to a personal computer with a USB-Serial Conversion Cable. Use the procedure below when connecting a PLC CPU Unit and personal computer. The Conversion Cable uses one of the computer's COM ports for communications. When communicating with a PLC through a Conversion Cable, set the communications port (COM port) number used by the software to the communications port (COM port) number allocated to the Conversion Cable.

- 1. Connect the Cable(s).**  
Connect the Conversion Cable to the computer's USB port and the CPU Unit's peripheral port or RS-232C port.  
For details, refer to *Connection Configurations*.
- 2. Install the communications driver.**  
The Conversion Cable's communications driver must be installed in the computer in order for the computer to use the Conversion Cable.  
For details, refer to *Installing the Drivers*.
- 3. Turn ON the PLC's power.**  
Turn ON the PLC's power supply.
- 4. Make an online connection to the CPU Unit through the computer software (when using the CX-Programmer.)**  
Select the COM port in the CPU Unit from the CX-Programmer and connect online.

### 1. Connect the Cable(s).

#### System Configuration



#### Connection Configurations

The following table shows the connection configurations that can be used to connect an OMRON PLC (or PT) to a personal computer's USB port.

USB-Serial Conversion Cable	Conversion Cable's serial connector	Required adapters or cables		Compatible PLC or PT connector	Compatible PLCs and PTs
		Cable 2	Cable 1		
CS1W-CIF31 (D-sub version)	D-sub 9-pin male	*CS1W-CN226/626 (Programming Device Connecting Cable for a CS/CJ-series peripheral port and personal computer) *XW22-200/500S-CV or XW22-200/500S-V (Programming Device Connecting Cable for an RS-232C port and personal computer) *CQM1-CIF02 (Programming Device Connecting Cable for a C-series peripheral port and personal computer)	None required *CS1W-CN118 (RS-232C to CS/CJ-series peripheral port Conversion Cable) *CS1W-CN114 (C-series peripheral port to CS/CJ-series peripheral port Conversion Cable)	CS/CJ-series peripheral port	CS/CJ-series, CQM1H, and CPM2C
		*CQM1-CIF02 (Programming Device Connecting Cable for a C-series peripheral port and personal computer)	None required	C-series peripheral port	C200HS, C200HX/HG/HE, CQM1, CPM1, CPM1A, CPM2A, and SRM1
		RS-232C 9-pin to 25-pin adapter	*CV500-CIF01 (Programming Device Connecting Cable for a CV-series peripheral port and PC98-type personal computer)	CV-series peripheral port	CVM1/CV-series
		*XW22-200/500S-CV or XW22-200/500S-V (Programming Device Connecting Cable for an RS-232C port and personal computer)	-	RS-232C port (D-sub 9-pin)	PLCs (CPU Unit or Serial Communication Unit/Board connection) or PTs
		ZEN-CIF01 (Personal Computer Connecting Cable)	Not necessary	Personal Computer Connecting port	ZEN

### 2. Installing the Drivers

- Installing the Drivers**  
When the USB-Serial Conversion Cable is connected to the computer, the operating system (OS) will recognize the Cable as a new device. At this point, the driver can be installed with the wizard. The actual driver installation method depends on the OS being used. Windows 2000 is used in the examples in this section.

Note: The USB-Serial Conversion Cables are compatible with Windows XP. When you install the Conversion Cable's driver, a warning message will appear indicating that the driver software has not passed Windows Logo testing, but click *Continue Anyway* to proceed with the installation. We have thoroughly tested the driver on Windows XP and verified that it operates properly. The driver will not be installed properly if the installation process is cancelled before completion. Normal communications may not be possible if the driver is not installed properly. If the driver is not installed properly, uninstall it (refer to page 37) and then reinstall it correctly.

- When "Found New Hardware Wizard" window will be displayed, Click the **Next** button.
- Select *Search for a suitable driver for my device (recommended)* and click the **Next** button.
- Select *Specify a location* and click the **Next** button.
- Insert the CD-ROM containing the driver (the CD-ROM is in the same package as the Conversion Cable) into the computer's CD-ROM drive.
- Click the **Browse** button, select the *ftdibus.inf* file, from the root directory of the CD-ROM and click the OK button.
- If *OMRON USB HS Serial Converter* will be recognized, Click the **Next** button to start the installing the driver.
- "Completing the Found New Hardware Wizard" window will be displayed if the driver was installed properly. Click the **Finish** button.
- When the **Finish** button is clicked in step 6, the following window will be displayed for installation of the USB Serial Port driver. Follow the same procedure in steps 1 through 7 to install the USB Serial Port driver. (Driver installation is completed after installation of the USB Serial Port driver.)

#### Uninstalling the Drivers

- Disconnect the Conversion Cable from the computer.
  - Select *Add/Remove Programs* from the *Control Panel*. Select *OMRON USB-to-Serial Converter Drivers*.
  - Click the **Delete** button.
  - FTDI Uninstaller Ver 2.1* dialogbox will be displayed.
  - Click the **Continue** button.
- When the drivers have been successfully deleted, the message *Uninstall complete, press Finish to exit* will be displayed.
- Click the **Finish** button.

### 3. Turn ON the PLC's power.

### 4. Connecting Online from the CX-Programmer

Select the COM port in the CPU Unit from the CX-Programmer and connect online.

- Verifying the Allocated Communications Port**  
The communications port (COM port) being used by the Conversion Cable can be verified with the following procedure.
  - Open the *Control Panel*, open the *System* folder, and click the **Hardware** tab.
  - Click the **Device Manager** button.
  - Click the + symbol to the left of the *Ports(COM & LPT)* device icon to display the contents of that folder. Verify that there is an entry for the *OMRON CS1W-CIF31\* USB Serial Port (COM...)* device. A communications port name will appear in parentheses. This is the communications port being used by the Conversion Cable.

- Changing the Allocated Communications Port**  
The communications port (COM port) being used by the Conversion Cable can be changed with the following procedure.
 Note: If the new COM port is being used by another driver, that driver must be uninstalled.
  - Double-click *OMRON CS1W-CIF31\* USB Serial Port (COM...)* in the Device Manager window.
  - Click the **Port Settings** tab.
  - Click the **Advanced** button. The following window will be displayed.
  - Select the new COM port number from the COM Port Number list.
  - Click the OK button to change the COM port used by the Conversion Cable.

## OMRON

OMRON Corporation  
 FA Systems Division H.Q.  
 66 Matsumoto  
 Mishima-city, Shizuoka 411-8511  
 Japan  
 Tel: (81)55-977-9181  
 Fax: (81)55-977-9045

### Regional Headquarters

OMRON EUROPE B.V.  
 Wegalaan 67-69,  
 NL-2132 JD Hoofddorp  
 The Netherlands  
 Tel: (31)2356-81-300  
 Fax: (31)2356-81-388

OMRON ELECTRONICS LLC  
 1 East Commerce Drive,  
 Schaumburg, IL 60173  
 U.S.A.  
 Tel: (1)847-843-7900  
 Fax: (1)847-843-8568

OMRON ASIA PACIFIC PTE. LTD.  
 83 Clemenceau Avenue,  
 #11-01, UE Square,  
 Singapore 239920  
 Singapore  
 Tel: (65)6835-3011  
 Fax: (65)6835-2711

Note: Specifications subject to change without notice. Printed in Japan