

## Isolated RS-422A/485 Micro Converter for USB 2.0 COM-1PD2-USB



\* Specifications, color and design of the products are subject to change without notice.

### Features

#### Max. 921,600bps RS-422A/485 Serial Communication

The COM ports of this products support up to 921,600 bps.

This product has one channel RS-422A/485-standard serial ports.

#### Compatible to USB 2.0/USB 1.1 and not necessary to power these products externally as the bus power is used

Compatible to USB 2.0/USB 1.1 and capable to achieve high speed transfer at Full Speed (12Mbps).

Not necessary to power this product externally as the bus power of USB is used.

#### Possibly used as Windows, Linux-standard COM ports

Combining the product with our device driver COM-DRV makes it possible to use the product in the same manner as the COM ports of a PC.

This product supports communication using DCB structures in the Win32 API and Linux-standard system calls. In addition, supplies a diagnostic program to confirm hardware operation and to perform a communication test with equipment.

#### Electric isolation is provided between channels and between PCs

Electric isolation is provided between channels and between PCs. This prevents electric noise between PCs and external circuits.

#### Up to 127 converters can be installed on a single PC

Using a USB hub allows you to install up to 127 converters to a single PC.

#### Equipped with buffer memory for transmitting 128 bytes and receiving 384 bytes

This product is equipped with buffer memory for transmitting 128 bytes and receiving 384 bytes. These are FIFO format, useful for high speed communications and to reduce the load to the CPU when transmitting/receiving.

#### The control line for RS-422A/485 can be controlled and monitored by software.

The control lines for RTS+, RTS-, CTS+ and CTS- can be controlled and monitored using software.

The product is an isolated micro converter for converting the USB port of PC into RS-422A/485 serial communications.

Each converter has one channel RS-422A/485 communication port. Higher noise-resistant models with isolation between a PC and bus line as well as a surge protection circuit for communication ports.

The product support a baud rate of up to 921,600bps and has separate 128-byte / 384-byte buffer memory for transmit and receive.

Windows/Linux device driver is supported with this product.

- \* The contents in this document are subject to change without notice.
- \* Visit the CONTEC website to check the latest details in the document.
- \* The information in the data sheets is as of May, 2025.

### Specifications

#### Function specification

Item	Specifications
Number of channels	1 channel
Interface type	RS-422A/RS-485
Isolation	Bus isolation
Isolation voltage	300VDC
Transfer method	Asynchronous serial transfer (Full-duplex / half-duplex)
Baud rate	300 - 921,600bps *1 *2
Data length	7, 8 bit / 1, 2 stop bit
Parity check	Even, Odd, Non-parity
Controller chip	XR21V1410 Mounting the FIFO memory as the common buffer of RS-422A/RS-485 communication and USB. Sending: 128byte / receiving: 384byte (by the view of PC)
Connecting distance	Within 1200m *3
Operation guaranteed voltage	5V±5%
Power consumption	5VDC 350mA (Max)
USB bus specification	USB Specification 2.0/1.1 standard
Power consumption	Only bus power
USB transmission speed	12Mbps (full speed mode)
Cable length	1.8m
Physical dimension (mm)	68.3(W) x 20.5(D) x 36.5(H)
Weight	130g

\*1 These items can be set by software.

\*2 Data transmission at high speed may not be performed normally depending on the environment including the type of status of connected material of cable and environment.

\*3 The table below lists the maximum communication distances of the terminator resistor value and individual cable diameters. The terminators on the product (100Ω) and the terminators generally used with RS-422A/485(120Ω) are listed.

Maximum communication distances of the terminator resistor value (100Ω) and cable diameter

Terminator Resistor (Ω)	Cable Diameter	Maximum Communication Distance (m)
100	AWG28	400
	AWG26	700
	AWG24	1100
	AWG22	1200

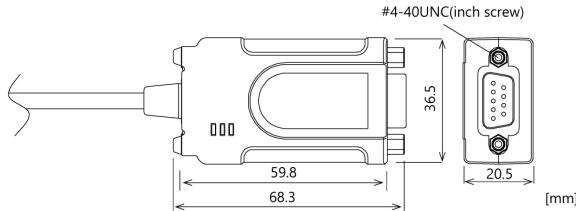
Maximum communication distances of the terminator resistor value (120Ω) and cable diameter

Terminator Resistor (Ω)	Cable Diameter	Maximum Communication Distance (m)
120	AWG28	500
	AWG26	800
	AWG24	1200
	AWG22	1200

## Installation Environment Requirements

Item	Specifications
Operating ambient temperature	0 - 50°C
Operating ambient humidity	10 - 90%RH (No condensation)
Floating dust particles	Not to be excessive
Corrosive gases	None
Standard	VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA

## Physical Dimensions



## Included Items

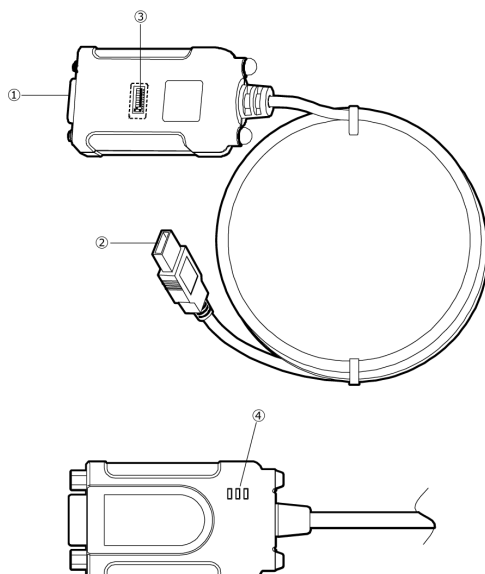
Product [COM-1PD2-USB] ...1  
Please read the following ... 1

## Support Software

Name	Contents	How to get
Windows Version Serial communication driver COM-DRV(WDM)	Software that makes it possible to use the product in the same manner as the COM ports of a PC running Windows. This software supports communication using DCB structures in the standard OS Win32 API, and the SerialPort class in the .NET Framework and the pySerial module in Python. Various sample programs such as C#, Visual Basic .NET, Visual C++, Python etc. and diagnostic program useful for checking operation is provided.	Download from the CONTEC website *1
Linux Version Serial communication driver COM-DRV(LNX)	Software that makes it possible to use the product in the same manner as the COM ports of a PC running Linux. This software conforms to Linux-standard tty drivers, and the pySerial module in Python. The software includes various sample programs such as gcc (C, C++) and Python programs.	Download from the CONTEC website *1

\*1 Download the files from the following URL.  
<https://www.contec.com/download/>

## Component Name



No.	Name	No.	Name
1	Interface connector (9pin D-SUB(Male))	3	Data transmission mode, terminator setting SW
2	Interface connector (USB Type-A)	4	LED Indicator

## Connecting to an External Device

### Interface Connectors

Pin assignment of interface connectors

						1	SG	Signal Ground	
Clear to Send-	CTS-	6				2	RTS+	Request to Send+	
Clear to Send+	CTS+	7				3	RTS-	Request to Send-	
Receive Data+	RxD+	8				4	TXD+	Transmit Data+	
Receive Data-	RxD-	9				5	TXD-	Transmit Data-	

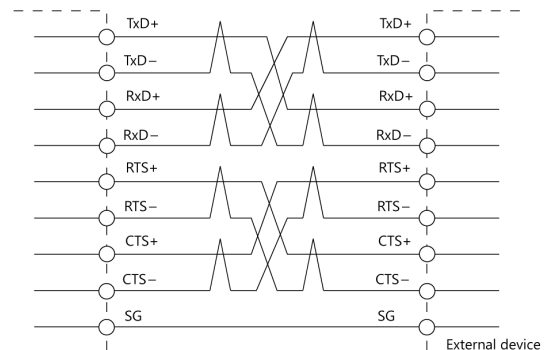
### CAUTION

For TxD, RxD, and RTS, pin assignment has even-numbered pins for positive and odd-numbered ones for negative. For CTS, however, even-numbered and odd-numbered pins are assigned for negative and positive, respectively, in contrast with other signals. This is not a description error.

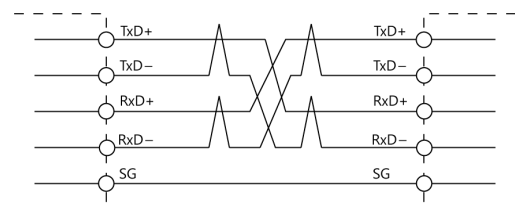
### Example Connections

The RS-422A/485 interface provides a differential method of transmission, in which relative potential differences between two conductors (positive and negative) are meaningful as signals. For the converter, a twisted-pair cable (balanced line) should be used as possible to improve noise immunity.

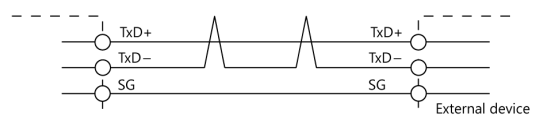
### Example of connection with RTS and CTS connected to external device in full-duplex mode



### Example of connection with RTS and CTS self-looping in full-duplex mode



### Example of connection in half-duplex mode



### CAUTION

Connecting the converter by incorrect wiring can cause a fault in the converter and/or the device connected.

## Differences from Conventional Products

Item	COM-1PD(USB)H	COM-1PD2-USB
Controller chip	FT232BL	XR21V1410

### Other differences

- Compatible with Windows 10 or later (For details, refer to Help or Online Help).
- COM-1PD2-USB Serial Communication Driver for Windows COM-DRV (WDM) Ver. 10.00 or later.  
To use COM-1PD (USB) H and COM-1PD2-USB together, update the serial communication driver.

For other information, contact your retailer.