ALL-USB-RS422/485

USB to Serial Converter RS422/485

User Manual

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ALL-USB-RS422/485 USB to RS-422/485 Plugin Adapter

This mini ALL-USB-RS422/485 is a surge and static protected USB to RS-422/485 Plugin Adapter. The ALL-USB-RS422/485 USB-to-Industrial Single RS-422/485 Plugin Adapter is designed to make industrial communication port expansion quick and simple. Connecting to a USB port on your computer or USB hub, the ALL-USB-RS422/485 instantly adds an industrial RS-422/485 communication port to your system. No jumper setting is required for setting this mini Plugin adapter to RS-422 or RS-485 mode. The mini USB to RS-422/485 Plugin Adapter makes it easier than ever to add a RS-422 or RS-485 device to your system with easy plug-and-play and hot plug features.

Plugging the ALL-USB-RS422/485 to the USB port, this Plugin adapter is automatically detected and installed. There are no IRQ & COM port conflicts, since the port doesn't require any additional IRQ, DMA, memory as resources on the system. The RS-422/485 port functions as native Windows COM port, and it is compatible with Windows serial communication applications.

The USB Industrial I/O Adapter provides instant connectivity to RS-422/485 communication device for factory automation equipment, multi-drop data collection devices, barcode readers, time clocks, scales, data entry terminals, PC-to-PC long distance communications and serial communication in harsh environments. The USB Industrial I/O provides industrial solution for applications requiring single node or multi-drop communications over short and long distance.

Specifications & Features

- Adds a high speed RS-422 / 485 serial port via USB connection
- 256 bytes receive buffer for high speed data throughput
- 128 bytes transmit buffer for high speed data throughput
- Requires no IRQ, DMA, I/O port
- Data rates: 300 bps to 1M bps
- Connector: one 6-pin terminal block connector
- Auto transmit buffer control for 2-wire RS-485 half-duplex operation
- RS-422 (4 wire) data signals: TxD-, TxD+, RxD+, RxD-, GND
- RS-485 (4 wire) data signals: TxD-, TxD+, RxD+, RxD-, GND
- RS-485 (2 wire) data signals: data-, data+ GND
- Monitor LEDs of TxD, RxD indicating port status
- Easy operating mode configuration and setting
- Provides 15KV ESD protection and 600W surge protection for all serial signals
- Supplies DC 5V power output through PIN-5 to the serial devices requiring power
- FTDI virtual COM port drivers provided for Windows 8, 7, Vista, Server 2012, 2008, 2003, XP, 2000
- Linux kernel 2.4 and up built-in support. No driver installation required.
- Wide ambient temperature operation 0°C to 60°C (32°F to 140°F)
- CE, FCC approval

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Driver Installation

In most cases, the driver of ALL-USB-RS422/485 will be installed automatically.

Install in Windows 8, 7, Server 2012, 2008 R2

Connect your computer to Internet and plug ALL-USB-RS422/485 to the USB port. The driver will be installed automatically via Internet.

Install in Windows XP, Vista, Server 2003 and 2008

Connect your computer to Internet and plug ALL-USB-RS422/485 to the USB port, when asked to install the drivers, allow your computer to search the Internet to load and install the drivers automatically.

Install in Windows 2000

Download drivers from
http://www.allnet.de/nc/de/allnet-brand/downloads/treiber-firmware/

Pin-outs of Terminal Block Connector

Terminal block connector pin numbers

RS-422/485 Full Duplex Mode Pin-out

The table below shows the RS-422/485 full duplex mode pin-out of the terminal block connector

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Pin Number	Pin Type	Description	
1	Output	TxD-	Transmit Data, negative polarity
2	Output	TxD+	Transmit Data, positive polarity
3	Input	RxD+	Receive Data, positive polarity
4	Input	RxD-	Receive Data, negative polarity
5	Power	VCC	DC +5V
6	Ground	GND	Signal Ground

RS-422/485 full duplex pin-out for terminal block connector

RS-485 Half Duplex Mode Pin-out

The table below shows the RS-485 half duplex mode pin-out of the DB-9 Male connector

Pin Number	Pin Type	Description	
1	Out/In	Data-	Transmit /Receive Data, negative polarity
2	Out/In	Data+	Transmit /Receive Data, positive polarity
5	Power	VCC	DC +5V
6	Ground	GND	Signal Ground

RS-485 half duplex pin-out for terminal block connector

Signal Wiring

RS-422 and RS-485 4-Wire Scheme

The RS-422/485 requires dedicated wire pairs for transmit and receive. The transmit wires are used to send data to as many as 10 receivers, as stated in the specifications of RS-422. Since the USB-COMi-PL uses RS-485 line driver technology, up to 32

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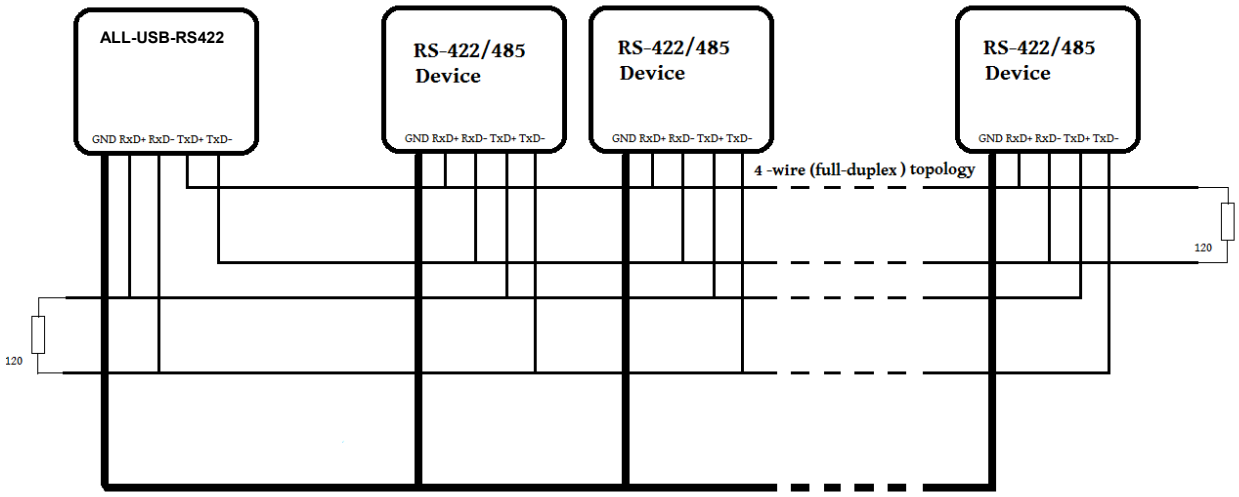
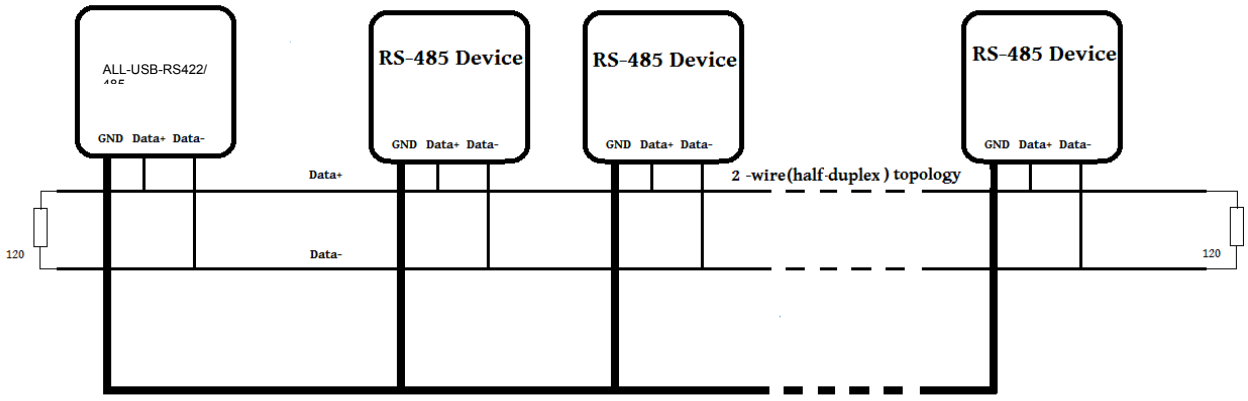
receivers are possible. The following diagram shows RS-422 and RS-485 4-wire scheme:



4-wire cabling scheme

RS-485 2-Wire Scheme

The following diagram shows RS-485 2-Wire scheme:



2 -wire cabling scheme

The RS-485 operation of ALL-USB-RS422/485 allows for 2-wire cabling. Several RS-485 2-wire devices are connected in parallel to the wires, which is call bus topology. Each device can either send or receive data at a given time, so it is operating in half-duplex mode.

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CE-Declaration of Conformity

For the following equipment:

Germering, 23th of July, 2015

USB to Serial Converter RS422/485

ALL-USB-RS422/485

CE The safety advice in the documentation accompanying the products shall be obeyed. The conformity to the above directive is indicated by the CE sign on the device.

The Allnet ALL-USB-RS422/485 conforms to the Council Directives of 2004/108/EC.

This equipment meets the following conformance standards:

EN55022:2010/AC:2011 Class B
EN61000-3-2:2014
EN61000-3-3:2013 and EN55024:2010
(IEC61000-4-2 Edition 2.0 2008-12, IEC61000-4-3 Edition 3.2 2010-04, IEC61000-4-4 Edition 2.1 2011-03, IEC61000-4-5 Edition 2.0 2005-11, IEC61000-4-6 Edition 3.0 2008-10, IEC61000-4-8 Edition 2.0 2009-09 IEC61000-4-11 Edition 2.0 2004-03)

This equipment is intended to be operated in all countries.

This declaration is made by

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Germering, 23.07.2015

Wolfgang Marcus Bauer
CEO

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