

# 1 USB to RS-485 interface converter

## 1.1 Introduction

The module is a cost-effective way to convert RS485 industrial buses to an USB interface. When connected to a PC USB port the module is automatically detected and is installed as a native COM port which is compatible with any existing serial communication application. Multiple modules can be installed when using USB hubs thus allowing a hassle-free configuration of a multi serial system without any IRQ or DMA configuration. They have 600W protect between the USB port and RS485 protects the PC from spikes or possible misconnections in the communication bus.

## 1.2 Features

The converter can be configured for RS485 two-wire (Half Duplex) networks. When operating in two-wire RS485 the data transfer control is automatically done by the converter. Two independent RS485 networks can be supported by one module, thus duplicating the possible number of remote devices.

- Computer interface: USB V1.1 2.0 Plug and Play.
- Operational system virtual serial port driver.
- Supports Windows 98/ME/XP/2000/CE, MAC & Linux 2.4.20 or superior.
- Field Interfaces: RS-485 Half Duplex (dual buses).
- Automatic flow control for RS485 Half Duplex.
- Transmission rate: from 300 bps to 1Mbps.
- Maximum RS-485 cable length : 1200 m.
- Maximum number of devices in the RS485 network: Half Duplex to 32 devices.
- Power: from the USB port.
- Consumption: < 100 mA.
- RS-485 bus protection: up to 600W surges.
- USB connection: Mini-B connector. 100 cm cable with the module.
- RS-485 connector: DB 9 male.
- RS-485 connector: DB 9 female with 5 meter cable and 5 pin M12 male connector
- ABS enclosure: 60 x 57 x 24 mm(not include cable).
- Operating environment: 0 to 70°C, 10 to 90% relative humidity, non-condensing.

## 1.3 Wiring configuration

The RS-485 termination of the Interface is implemented as a DB9 plug. The pin assignments for the connector can be found in the following table as well as on a sticker applied to the unit.

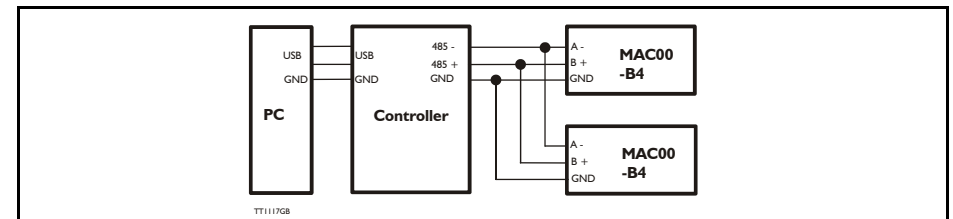
RS-485 Pinout at DB9 Male:

| PIN# | RS-485 |
|------|--------|
| 1    | 485 -  |
| 2    | 485 +  |
| 5    | GND    |

LED indication:

- Red LED -----Data sending from USB port to RS-485 Serial Port side
- Green LED --Data receiving from RS-485 Serial port side to USB port

Wiring examples:



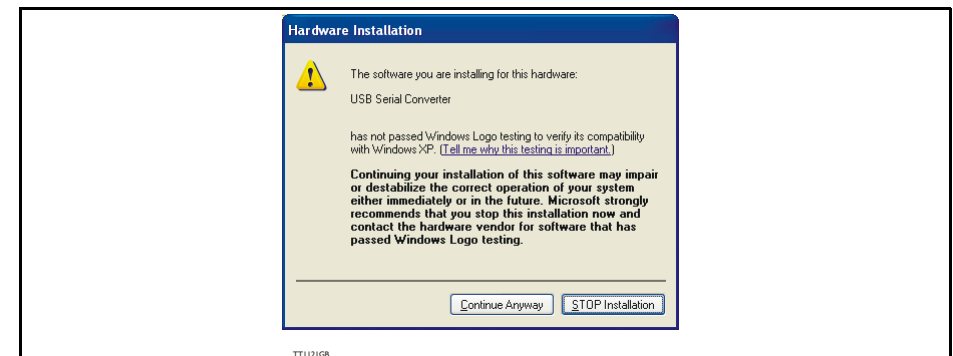
## 1.4 Driver Installation

Follow the steps below to install driver of USB-High Speed Serial Converter:

1. Power on your computer and make sure that the USB port is enabled and working properly.
2. Plug in the USB-High Speed Serial Converter into the USB port, the PC should then detect the new hardware, or if not, then run the Add New Hardware Wizard to assist you in setting up the new device.
3. If the PC detect the new hardware it ask you to insert the USB-HS Serial Converter software driver (FTDI USB driver) into the CD-ROM drive and click next to continue. It is also a possibli to download the driver from our Web site [www.jvl.dk/download](http://www.jvl.dk/download).
4. Windows will now detect the driver (FTSER2K.SYS). The Path on the CD\_ROM is  
D:\Driver\ATC820\For Windows 98&Me  
                                          \For Windows Vista x 64  
                                          \For Windows XP

Click Next to continue installation.

If Windows XP is configured to warn when unsigned (non-WHQL certified) drivers are about to be installed, the following screen will be dispalyed unless installing a Microsoft WHQL certified driver. Click on "Continue Anyway" to continue with the installation. Windows XP will repeat the installation procedure, but without the Windows Logo testing. If Windows XP is configured to ignore file signature warnings, no message will appear.



5. Click next to continue and let Windows copy the needed files to your hard disk.
6. When Windows finish the installation of the software required for the new USB to serial converter, click finish

### 1.5 Uninstalling the Driver Program

If you want to remove the USB-HS Serial converter driver program, it can be done by the windows Manament Consoles, this uses the FTDI driver uninstaller program to remove files and registry entries to leave a clean system. You can unisntall it by following the steps below:

1. The USB serial converter shall be connected to your PC.
2. Run the Management Console program, this are located in the "Control Panel". Find the hardware folder and click on the USB controller. Point on the USB Serial converter, Right click and choose Remove. The Driver will now be removed from you PC.

### 1.6 User Information

Please contact your nearest JVL representative in case of technical assistance. Your nearest contact can be found on our web site [www.jvl.dk](http://www.jvl.dk)

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## JVL Industri Elektronik A/S