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## Overview

DC USB/232 ISO is a communication converter that enables interconnecting industrial serial buses and devices with RS-232 connection to USB port of PC.

Connecting the converter to PC additionally exceeds the capacity of RS-232 ports. Data rate and format adjustment is performed automatically according to requirements of RS-232 device. Converter power is supplied from USB port at the same time galvanic isolated from RS-232 devices (network). It is compatible with most operating systems enabling two access modes: as virtual serial COM port (VCP drivers up to 115 kbps), as well as direct USB port (D2XX drivers up to 1 Mb/s).



DC USB/232 ISO data converter

## Applications

DC USB/232 ISO is completely adjusted for applications of industrial communications and process automation, alarm systems and telemetry. It is used for:

- Interconnecting distributed I/O modules and PLCs to PC;
- Galvanic isolation of PC from RS-232 networks;
- Connecting PC without COM ports to RS-232 communication bus;
- Increasing number of COM ports on PC;
- Field data readout using laptops.

## Technical specifications

Communication connectors	USB (type B); RS-232 (standard DB-9 male connector)
Compliance	USB 1.1 and USB 2.0 standard
Data rate and format	Automatically determined by RS-232 device
Maximum distance	20m @ 9600 b/s
Supported operating systems	Windows 98/ME/2000/XP and Linux
Cable in set	USB cable (type A to type B) 1.5 m
LED indicators	ON, Tx, Rx
Galvanic isolation	1.5kV DC
Power supply	From USB port – no additional mains adapter is required
Operating temperature	-25 to 70°C
Dimensions	76 x 42 x 20 mm

## Converter wiring

Next photo shows connectors layout. Converter features three (3) LEDs signalling power status (ON) and existing data transfer (TX and RX).

Converter is to be connected to PC host by means of USB cable (type B, included in package), while RS-232 side has regular DB-9 male connector (user obtains serial cable).



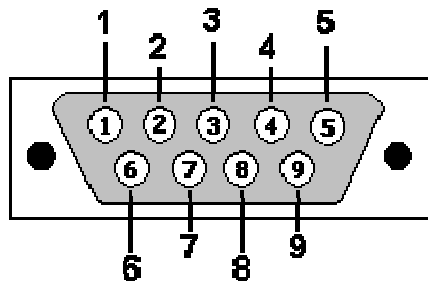
Converter upper view

### RS-232 device connection

DC USB/232 ISO converter behaves as DTE device on it's RS-232 side (same as PC). Pin layout of DB-9 connector is:

Pin No.	Name	Direction	Description
1	DCD	Input	Data Carrier Detect
2	RD	Input	Receive Data
3	TD	Output	Transmit Data
4	DTR	Output	Data Terminal Ready
5	GND	-	Ground
6	DSR	Input	Data Set Ready
7	RTS	Output	Request To Send
8	CTS	Input	Clear To Send
9	RI	Input	Ring indicator

**RS232 DB9 (EIA/TIA 574)**



Connector pins view

### Software installation

Plug DC USB/232 ISO converter to USB port of PC first, by using included USB cable. It can be hot-plugged without powering the PC off. After a few moments, following system message will show (images are taken from Win XP operating system – other OS can have a bit different appearance):



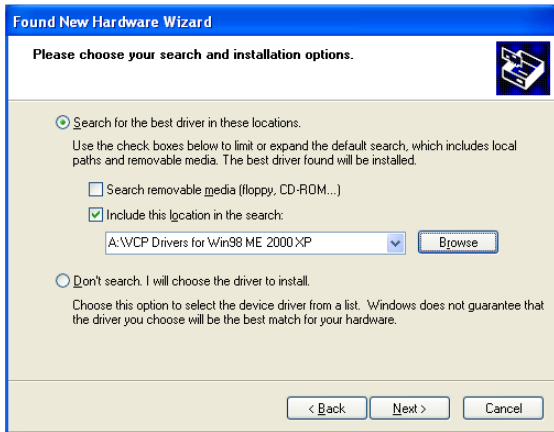
System has recognized new device

Next step is locating the folder with driver software.



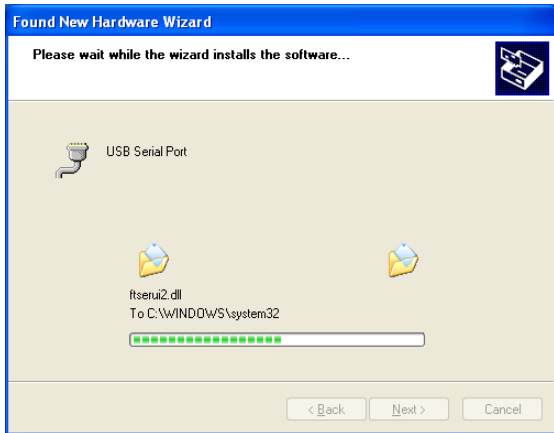
Determining which device driver to use (software location)

Converter package includes CD media with device drivers supporting most of currently available Windows operating systems. To install converter's Virtual COM port, folder with VCP drivers should be selected, as shown by next screenshot. On the other hand, by using D2XX drivers instead of VCP drivers, only direct access to USB port is enabled, with no access through serial port. Other operating system's drivers can be downloaded for free: <http://www.ftdichip.com/FTDrivers.htm>

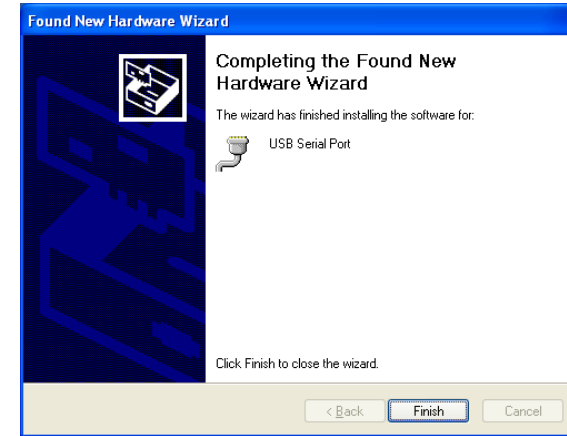


Locating VCP drivers on CD

By choosing VCP folder, Windows will install VCP device driver suitable for USB/232 ISO converter.

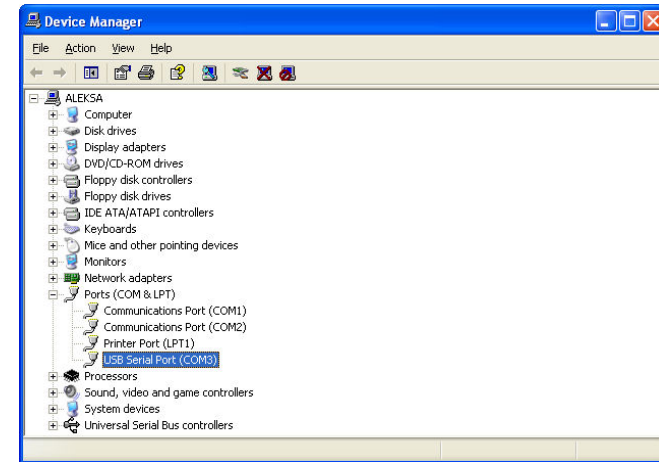


Installation in progress



Installation is finished

There is no need to restart OS after installation finishes – new serial port can be configured right away. Next screenshot shows COM3 port as an example, while port number can vary depending on PC hardware.



Configuring new port (COM3) from Windows Device Manager

This concludes the last step of USB/232 ISO drivers installation.