

User manual

ADA-I911W

USB to 1-WIRE converter



Contents

1. GENERAL INFORMATION.....	3
1.1. WARRANTED INFORMATION.....	3
1.2. GENERAL CONDITIONS FOR SAFE USE.....	3
1.3. CE LABEL.....	3
1.4. ENVIRONMENTAL PRESERVATION.....	3
1.5. SERVICE AND MAINTENANCE.....	3
1.6. PACK CONTENTS.....	3
2. PRODUCT INFORMATION.....	3
2.1. PROPERTIES.....	3
2.2. DESCRIPTION.....	4
2.3. APPLICATION.....	4
2.4. EPROM MEMORY PROGRAMMING.....	4
2.5. 1-WIRE CIRCUITS COMMUNICATION.....	4
2.6. COMMUNICATION VIA VIRTUAL COM PORT.....	4
2.7. ISOLATION.....	5
3. CONFIGURATION.....	5
4. INSTALLATION.....	5
4.1. CONNECTION TO USB PORT OF PC.....	5
4.2. 1-WIRE SENSORS CONNECTION.....	5
4.3. POWER SUPPLY.....	6
5. DRIVERS INSTALLATION IN SYSTEM WINDOWS.....	6
5.1. EXAMPLE DRIVER INSTALLATION IN WINDOWS 7 SYSTEM.....	6
6. DRIVER UNINSTALLATION.....	12
6.1. DRIVER UNINSTALLATION IN WINDOWS 98/ME SYSTEMS.....	12
6.2. DRIVER UNINSTALLATION IN WINDOWS 2000/XP/2003/VISTA/7/2008 SYSTEMS.....	13
6.2.1. EXAMPLE DRIVER UNINSTALLATION IN WINDOWS 7 SYSTEMS.....	13
6.3. EMERGENCY DRIVER UNINSTALLATION.....	14
6.3.1. EMERGENCY DRIVER UNINSTALLATION IN WINDOWS 98/ME/2000.....	14
6.3.2. EMERGENCY DRIVER UNINSTALLATION IN WINDOWS XP/2003/Vista/7/2008.....	14
7. USING.....	14
7.1. SELECTION OF COM PORT LARGER THEN COM9.....	14
8. 1-WIRE INTERFACE – PIN DESCRIPTION.....	14
9. VERSIONS.....	14
10. SPECIFICATION.....	15

1. GENERAL INFORMATION

Thank you for your purchase of **CEL-MAR Company** product. This product has been completely tested and is covered by a two year warranty on parts and operation from date of sale.

If any questions or problems arise during installation or use of this product, please do not hesitate to contact Technical Support at +48 41 362-12-46 or e-mail support@cel-mar.pl.

1.1. WARRANTED INFORMATION

ADA-I911W converter is covered by a two year warranty from date of sale. In case of being damaged it will be repair or the damaged component will be replace. The warranty does not cover damage caused from improper use, materials consumption or any unauthorized changes. If the product does not function (is damaged), or not operate in accordance with the instructions, will be repaired.

All warranty and no warranty repairs must be returned with paid transport and insuring to the **CEL-MAR Company**.

CEL-MAR Company under no circumstances won't be responsible for ensuing damage from improper using the product or as a result of random causes: the lightning discharge, the flood, the fire and the like.

CEL-MAR Company is not be held responsible for damages and loss including: loss of profits, loss of data, pecuniary losses ensuing from using or the impossibility of using this product.

In specific cases **CEL-MAR Company** discontinue all warranties and in particular do not follow the user manual and do not accept terms of warranty by the user.

1.2. GENERAL CONDITIONS FOR SAFE USE

The device should be installed in a safe and stable places (eg, electroinstallation cabinet), the powering cable should be arranged so as not to be exposed to trampling, attaching, or pulling out of the circuit.

Do not put device on the wet surface.

Do not connect devices for nondescript powering sources,

Do not damage or crush powering wires.

Do not make connection with wet hands.

Do not adapt, open or make holes in casings of the device!

Do not immerse device in water or no other liquid.

Do not put the fire opened on device sources: candles, an oil lamps and the like.

Complete disable from the supply network is only after disconnecting the power supply circuit voltage.

Do not carry out the assembly or disassembly of the device if it is enabled. This may result to short circuit and damage the device.

The device can not be used for applications that determine human life and health (eg. Medical).

1.3. CE LABEL



The CE symbol on the device **CEL-MAR** means compatibility with electromagnetic compatibility Electromagnetic Compatibility Directive **EMC 2014/30/WE**.

Declaration of Conformity is delivered with purchased converter.

1.4. ENVIRONMENTAL PRESERVATION



This sign on the device inform about putting expended device with other waste materials. Device should send to the recycling. (In accordance with the act about the Electronic Appliance Expended from day 29 of July 2005)

1.5. SERVICE AND MAINTENANCE

The ADA-I911W converter does not require the servicing and maintenance.

Technical support is available at number +48 41 362-12-46 in 8.00-16.00, from Monday to Friday or e-mail support@cel-mar.pl.

1.6. PACK CONTENTS

ADA-I911W converter, User Manual, USB cable, CE declaration, CD-R software.

2. PRODUCT INFORMATION

2.1. PROPERTIES

- USB to 1-WIRE conversion,
- Signals: RX, TX,
- Operating possibility on MicroLAN bus,
- Programming possibility of EPROM memory on 1-WIRE bus (version 2-X),
- Baud rate on 1-WIRE bus: - standard up to 16,3 kbps, – overdrive up to 142 kbps,
- Baud rate virtual COM port (on USB): 9600bps (standard), 19200bps, 57600bps, 115200bps supported by the **DS9097U** adapter,
- Powering from USB port,
- 1 kV= or 3kV= (option) galvanic isolation between USB and 1-WIRE interfaces,
- ~3kV= optoisolation between USB and 1-WIRE interfaces on signal line,
- USB interface connection via USB socked B-type,
- 1-WIRE bus connection via screw terminal block,
- ABS material for casing,
- Casing dimensions (L x H x D) 65mm x 50mm x 27mm,

2.2. DESCRIPTION

ADA-I911W USB to 1-WIRE converter allows connection of several 1-WIRE's interface systems such as: temperature measurement systems, real time clocks, EPROM memory, A/C transducers etc., to common 1-WIRE bus. The transition from 1-WIRE interface to USB interface in ADA-I911W provides controller 1-Wire bus and the USB controller. In this way, the user does not need to delve into the quite complicated protocol 1-WIRE. The converter allows monitoring and/or controlling of 1-WIRE circuits via USB interface of computer PC-class, equipped with suitable software. CEL-MAR company provides an example of software for the visualization of temperature measurement called **Lämpömittari** taken by Timo Sara-aho. The software supports circuits for measuring the temperature eg. DS18S20. In the configuration settings of **Lämpömittari** software, in section **MicroLAN** should be used the **DS9097U** adapter. ADA-I911W is equipped with a female USB socket B-type for connection of USB interface and the screw terminal block for twisted-pair connections of 1-WIRE interface. The converter is powered from USB port. Together with the converter we supply drivers for Windows 98, ME, NT, 2000, XP, 2003, Vista, 7, 2008. Installing this software on Operating System it add the additional COM port about the next free number, witch can be used as standard COM port. It is virtual COM port therefore some software use DOS can work improperly.

2.3. APPLICATION

ADA-I911W converter can be use in the all types of local systems, based on **MicroLAN** networks such as: access control, control the operation of air conditioning and heating, a remote control and monitoring of alarm systems, fire extinguishers, etc. One of the fastest growing markets today is the market of alarm systems, in which MicroLAN is used for connection the sensors with alarm control panel, where instead of few or several wires can only use 3. MicroLAN in such use prevents the possibility of "defraud" alarm system by shorting or cutting the line and at the same time provides ease of automatic configuration and reconfiguration of the alarm system during operation. Much easier than the standard versions, is also keeping test procedures that help eliminate faulty system components.

2.4. EPROM MEMORY PROGRAMMING

The version 2-x of ADA-I911W converter allows to programming the EPROM memory. This is done with the switch MODE side of the housing, in position "PROG", connecting programmable circuit to the bus and making the programming. If there are circuits to the bus on which do not require programming, the switch should be set in position "NORM".

2.5. 1-WIRE CIRCUITS COMMUNICATION

For communication with 1-WIRE circuits can be used the software as follow:

- a/ OneWire Viewer available here <http://www.maximintegrated.com/en/products/ibutton/software/1wire/OneWireViewer.cfm> ,
- b/ LogTemp available here <http://www.mrsoft.fi/ohj01en.htm> ,
- c/ Thermometer (Lampomittari) available here <http://www.elektroniikka.org/thermometer/?page=download> ,
- d/ DigiTemp available here <https://www.digitemp.com/index.shtml> ,
- e/ or other, cooperate with DS9097U adapter.

2.6. COMMUNICATION VIA VIRTUAL COM PORT

The communication between ADA-I911W converter and the application is via the virtual COM port, with baud rate 9600bps (the baud rate set in ADA-I911W after powering) or others, setted by the software of master device (eg. PC) ie.: 19200 bp/s, 57600 bp/s, 115200 bp/s.

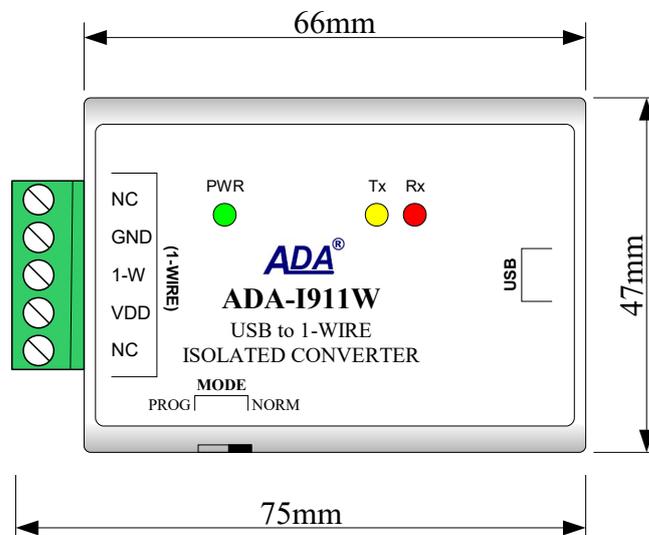


Fig. 1. ADA-I911W view

2.7. ISOLATION

ADA-I911W converter has 1kV= or 3kV galvanic isolation, depending on the version of device, described in pt. *VERSIONS*.

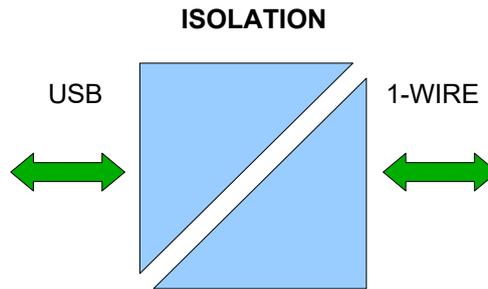


Fig. 2. Isolation diagram

3. CONFIGURATION

ADA-I911W converter can be set for operating in normal mode or programming mode by the use of MODE switch (fig.1). Description of the switch modes is shown in the table below.

<i>MODE switch</i>	<i>Function</i>
NORM	Operating in normal mode, allows to read data from the 1-WIRE interface circuits eg. DS18B20
PROG	Operating in programming mode of EPROM memory with 1-WIRE interface

4. INSTALLATION

This chapter will show how to connect ADA-I911W to 1-WIRE and USB interfaces.

To reduce disturbance from environment on 1-WIRE bus, it is recommended to:

- use multipair type shielded cables, which shield can be connected to the earthing on one end of the cable,
- lay signal cables at a distance of not less than 25 cm away from power cables,.

4.1. CONNECTION TO USB PORT OF PC

ADA-I911W converter is connected to USB of PC by the use USB Aw-Bw cable, supplied with the converter.

4.2. 1-WIRE SENSORS CONNECTION

For connection of 1-WIRE bus to ADA-I911W converter, should have flat screwdriver for connection of wires to terminal block. The connections of 1-WIRE sensors to ADA-I911W are shown below.

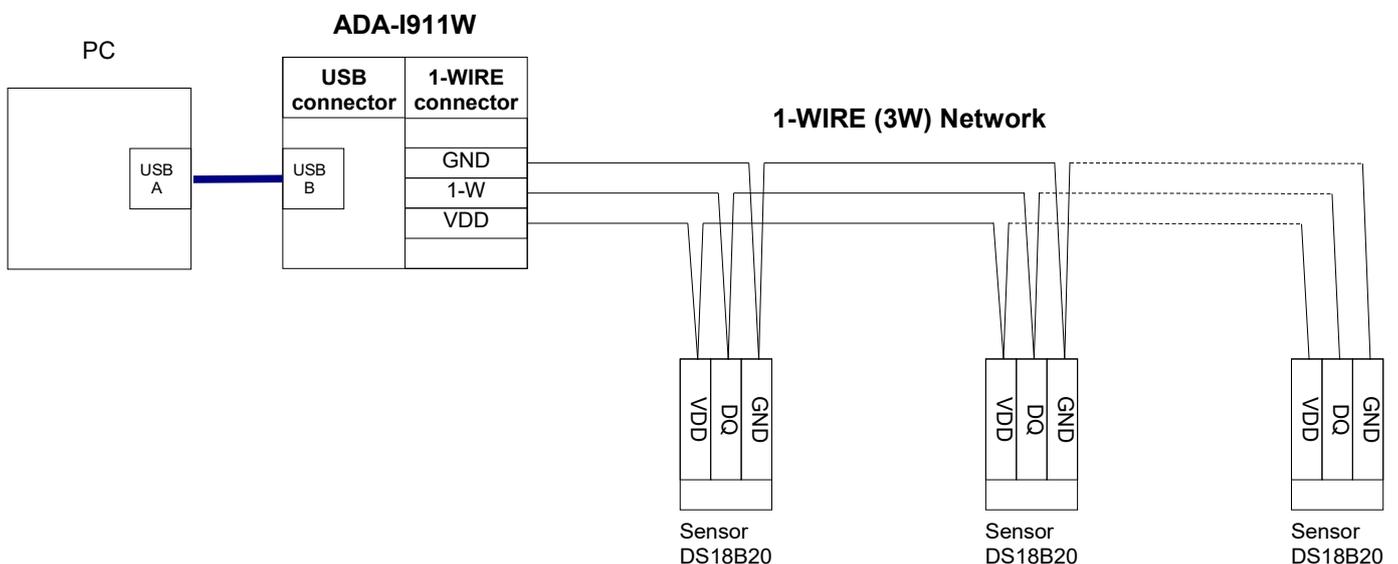


Fig 3. Sensors connection to ADA-I911W by 3-wire 1-WIRE bus.

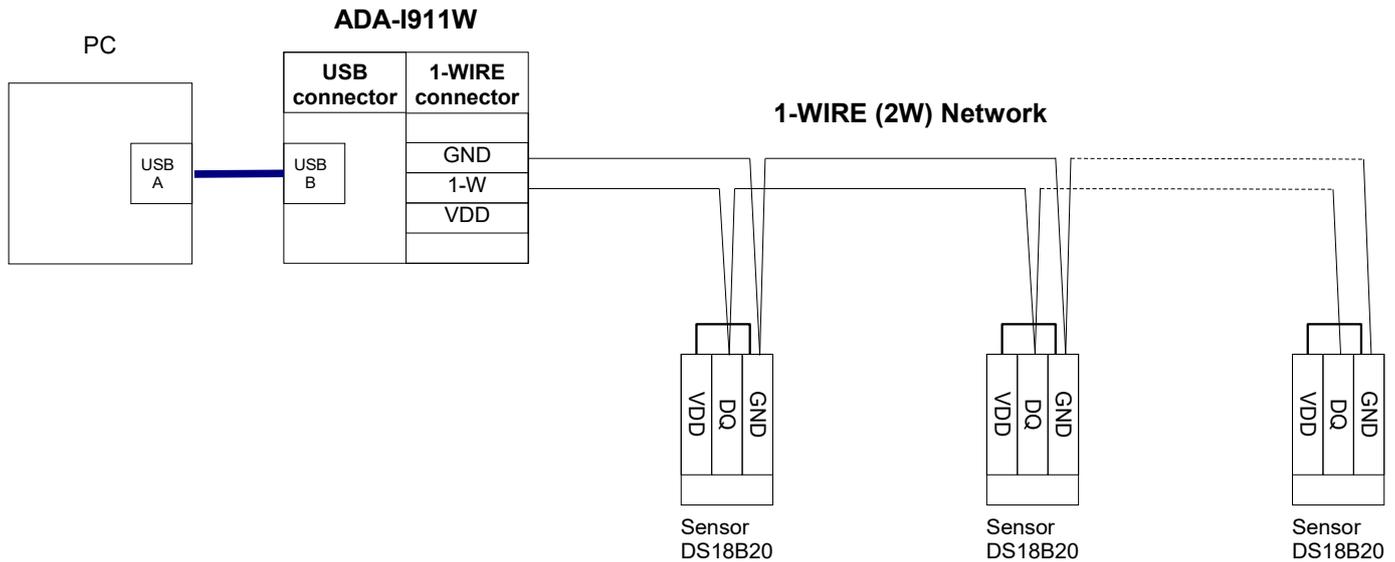


Fig 4. Sensors connection to ADA-I911W by 2-wire 1-WIRE bus.

4.3. POWER SUPPLY

The converter is powered from USB port of PC. After connection to USB port, will start driver installation and after that, the green LED PWR should be lit. If doesn't check:

- the computer is running,
- the connection of converter cable to the computer,
- hibernation mode of computer,
- the correctness of driver installation.

5. DRIVERS INSTALLATION IN SYSTEM WINDOWS

ADA-I911W is delivered with the driver package Installer for Windows systems on CD-ROM.

For installation follow the steps below:

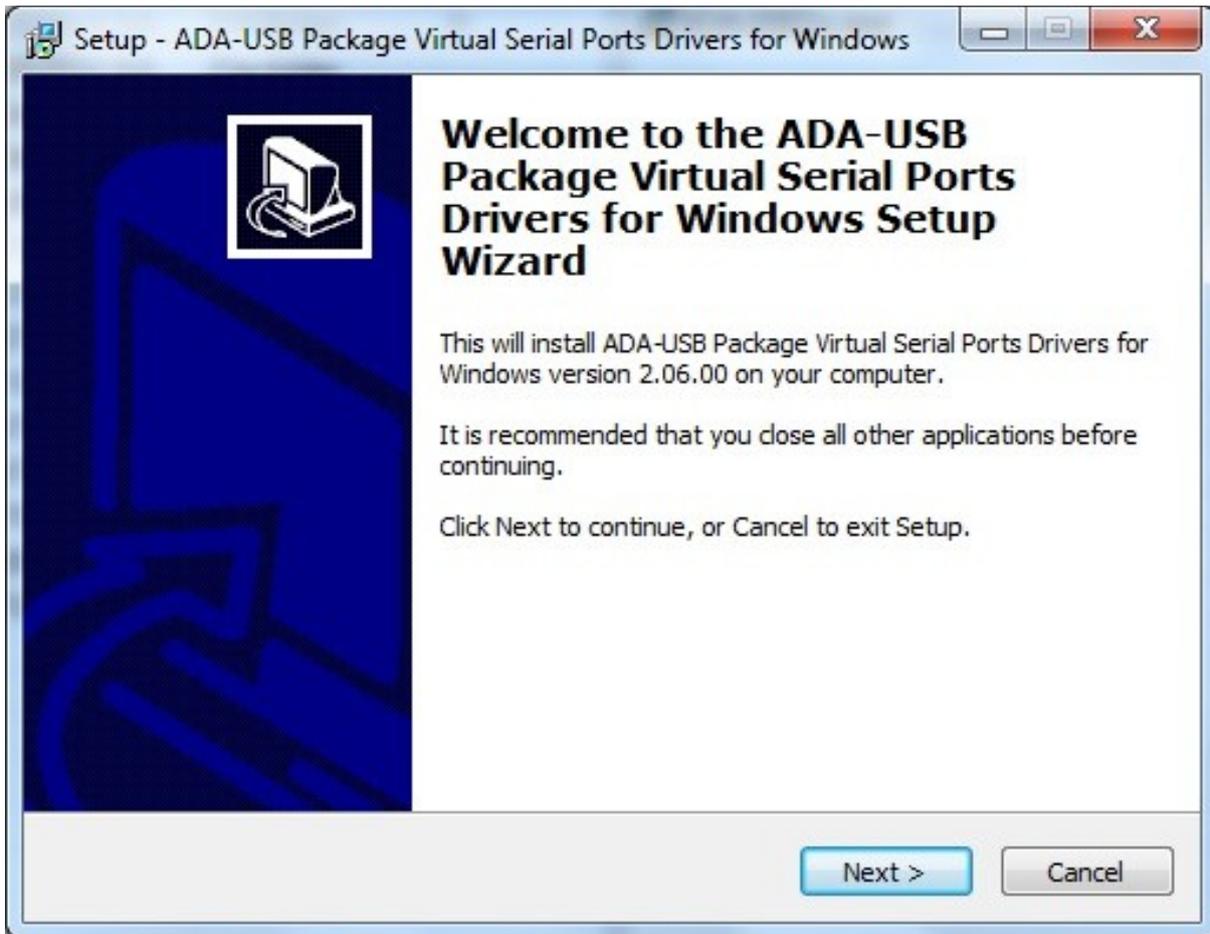
- a/ insert the CD-ROM to optical driver of the computer,
- b/ the installation wizard will run automatically, if not double click **ADAUSBDRV.exe**.
- c/ follow the steps of installation wizard, will be installed the Drivers and Uninstaller for the Windows systems 98, ME, 2000, XP, 2003, Vista, Win7, 2008, Win8,
- d/ connect the convert to USB port of computer and follow the steps of installation wizard.

5.1. EXAMPLE DRIVER INSTALLATION IN WINDOWS 7 SYSTEM

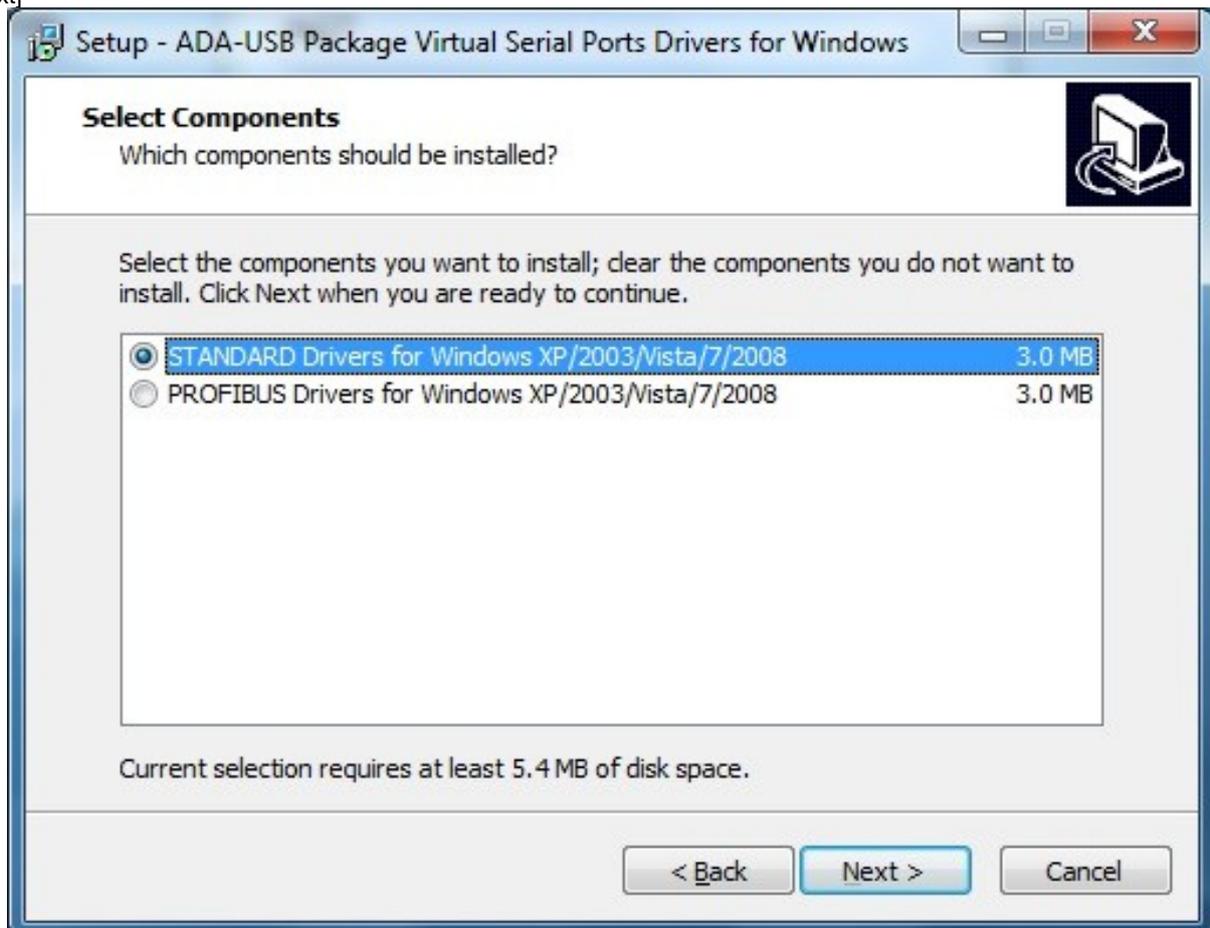
ADA-I911W is delivered with the drivers for Windows system 98/ME/2000/XP/Vista/7/2008 Win8

Driver installation have to be done from the account with Administrator permissions. For the drivers installation in Win7 follow the steps bellow:

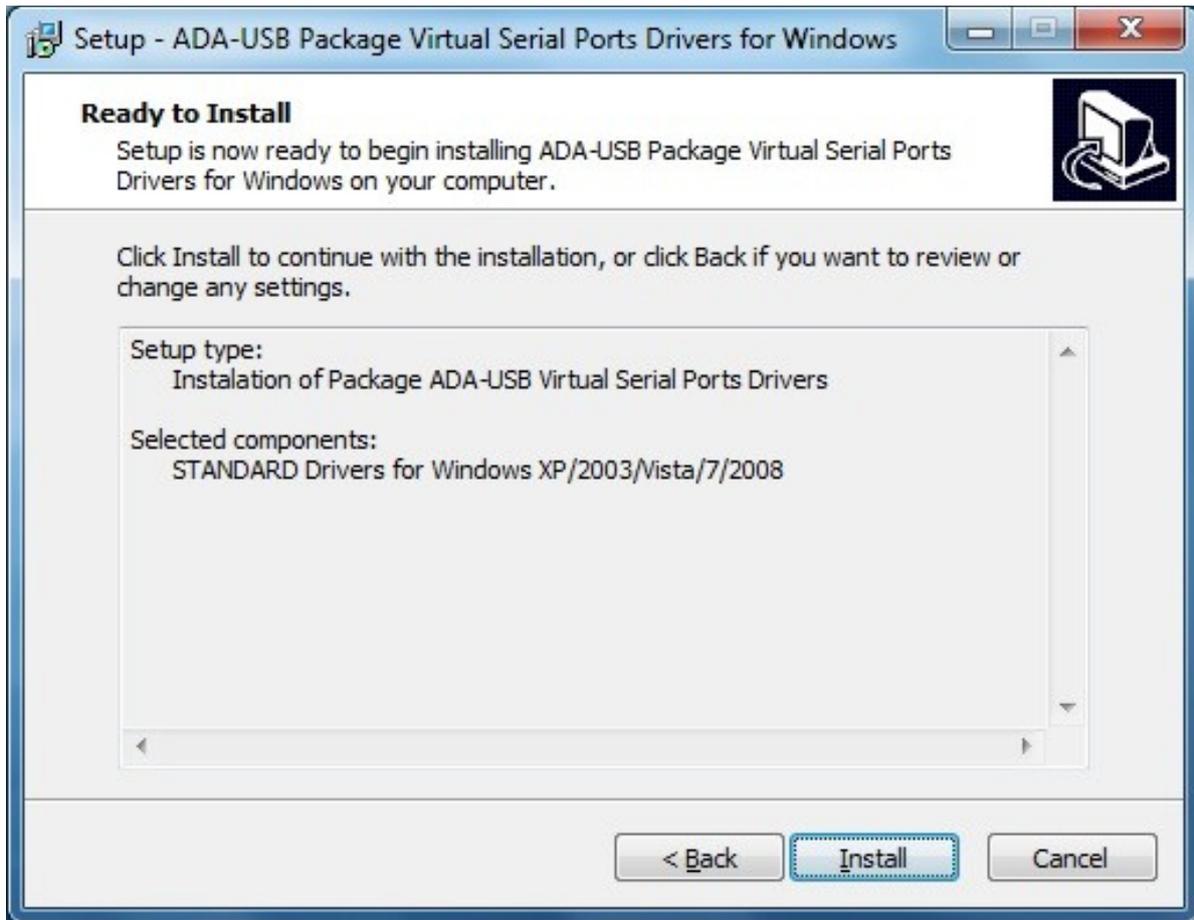
- a/ insert the CD-ROM to optical driver of computer,
 - b/ the installation wizard will run automatically, if not double click **ADAUSBDRV.exe** form the CD-ROM.
- After running the installer, the wizard installation window will appear.



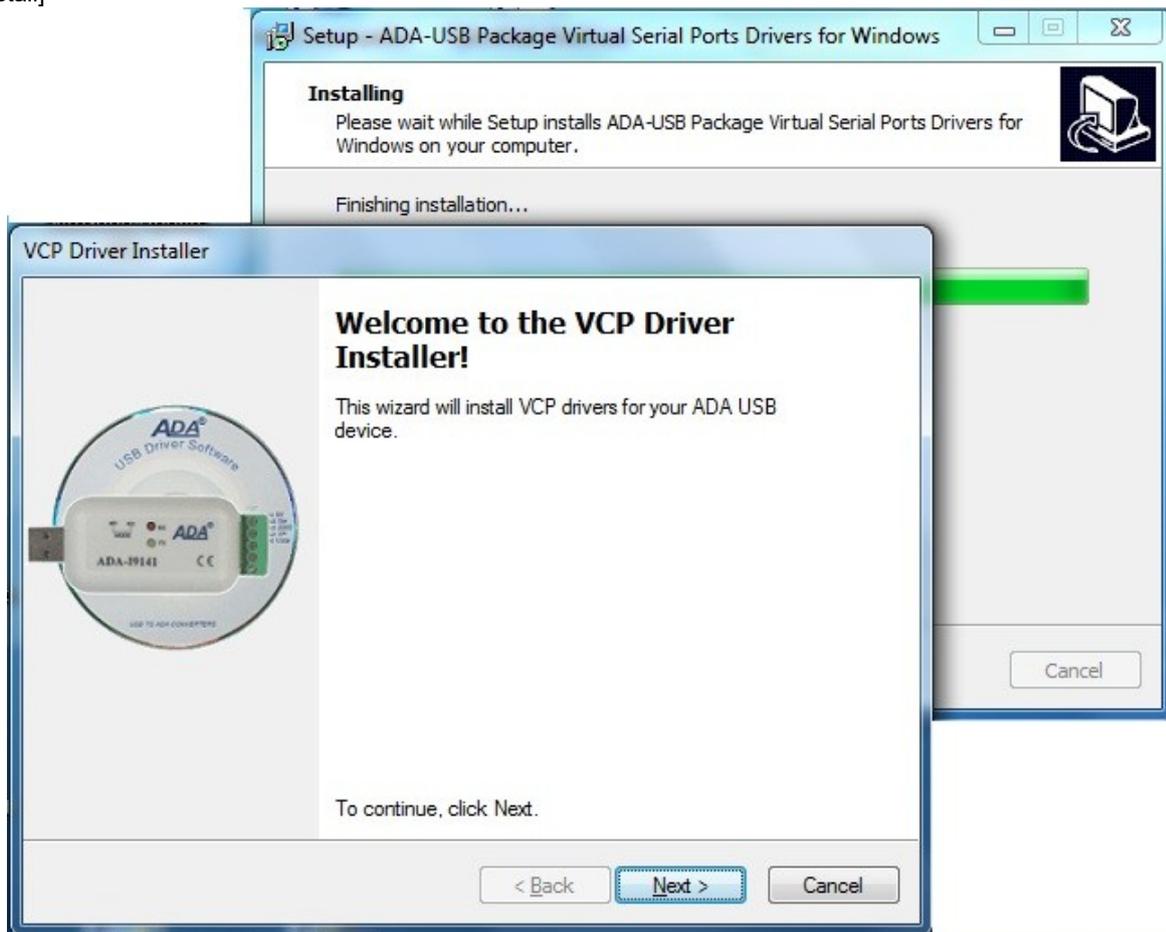
Press [Next]



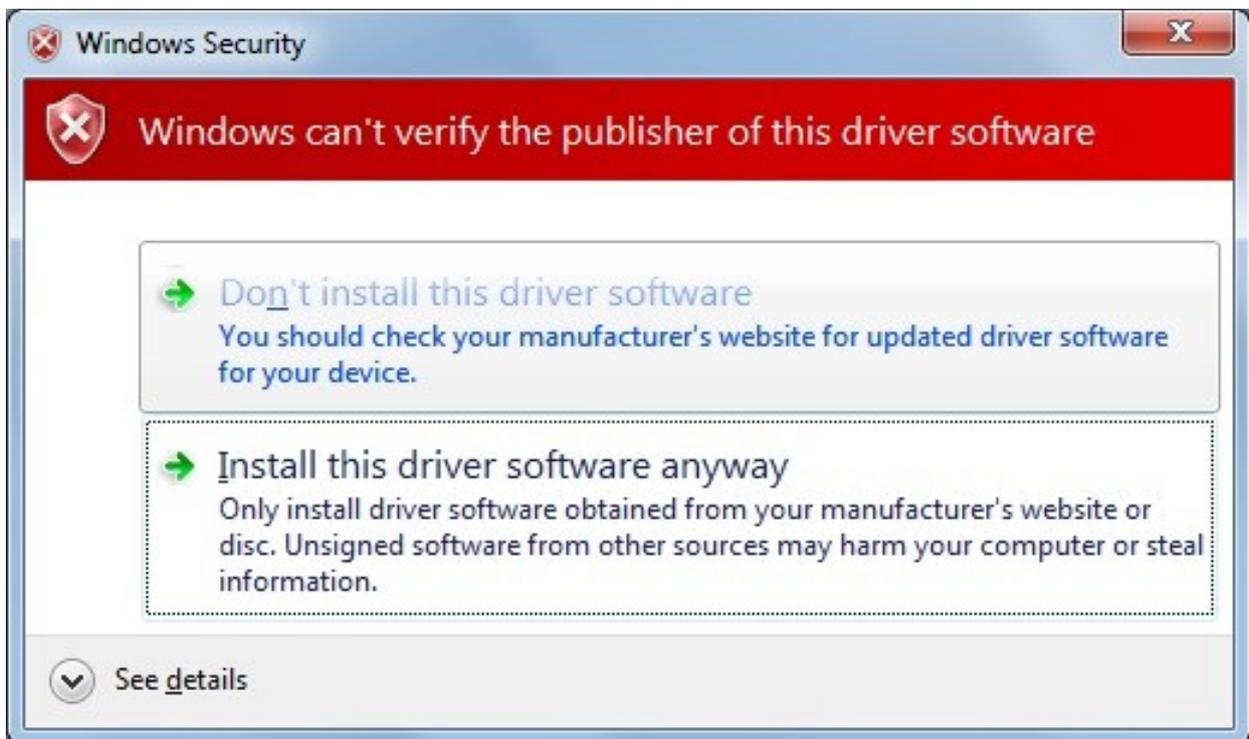
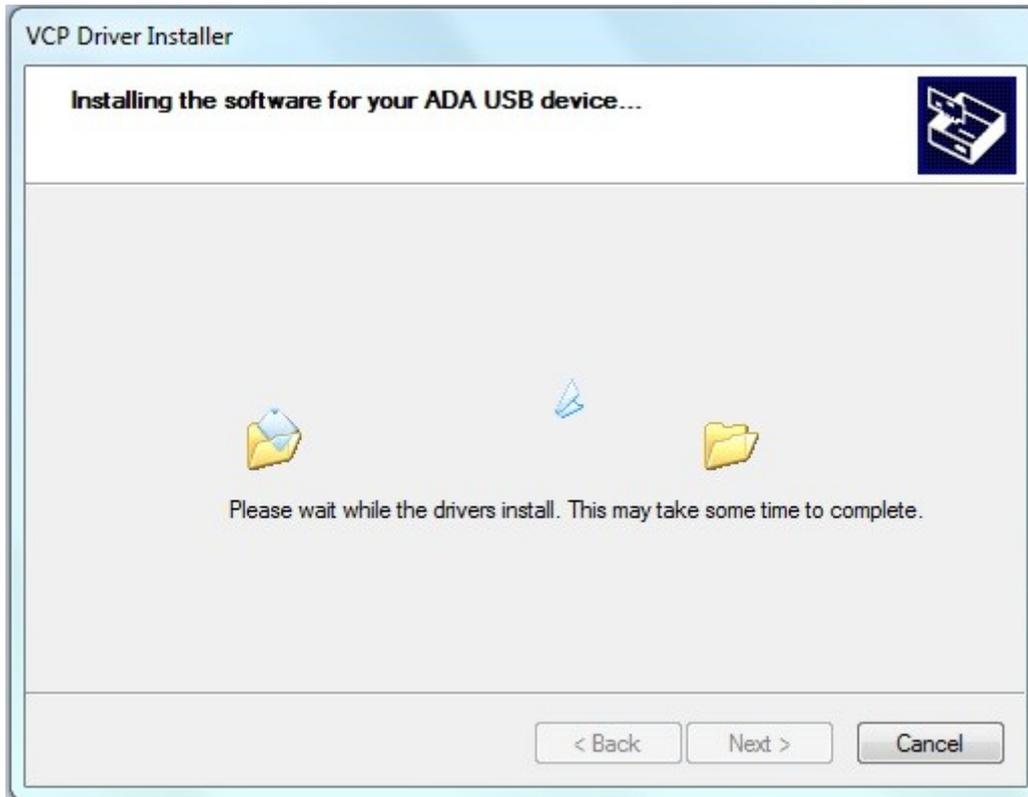
Select STANDARD Drivers and press [Next]



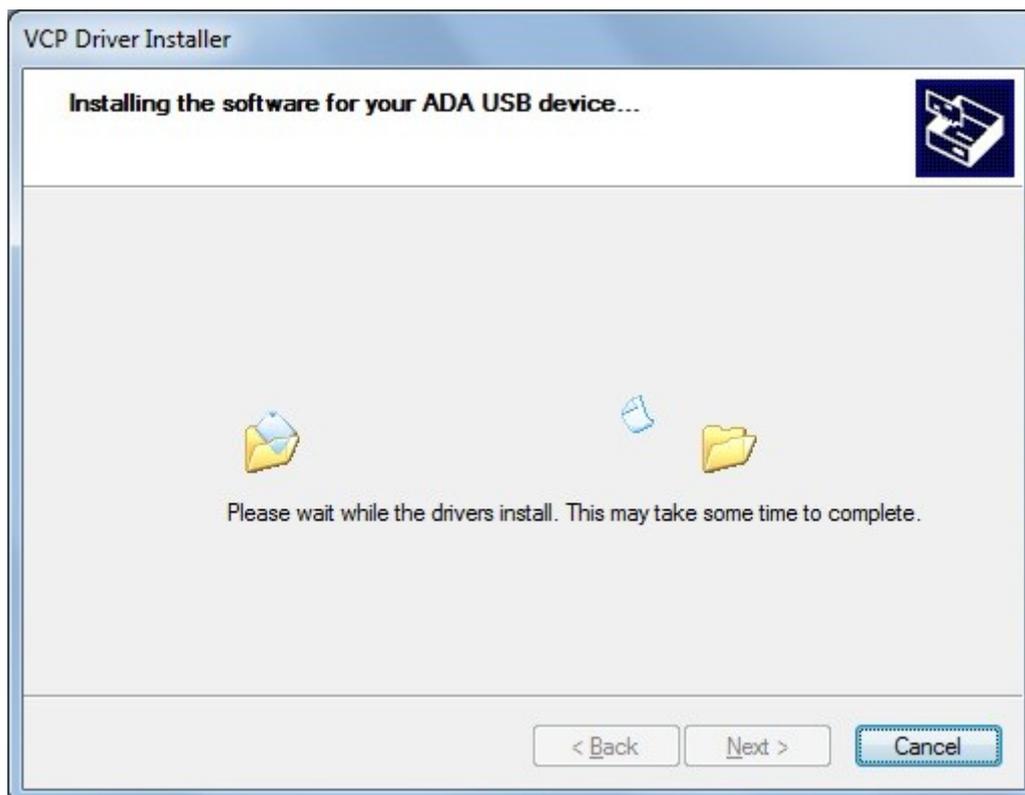
Press [Install]



Press [Next], will be installed Drivers for USB Bus.



Press [Install this driver software anyway]. Installation of drivers for USB Bus will start.



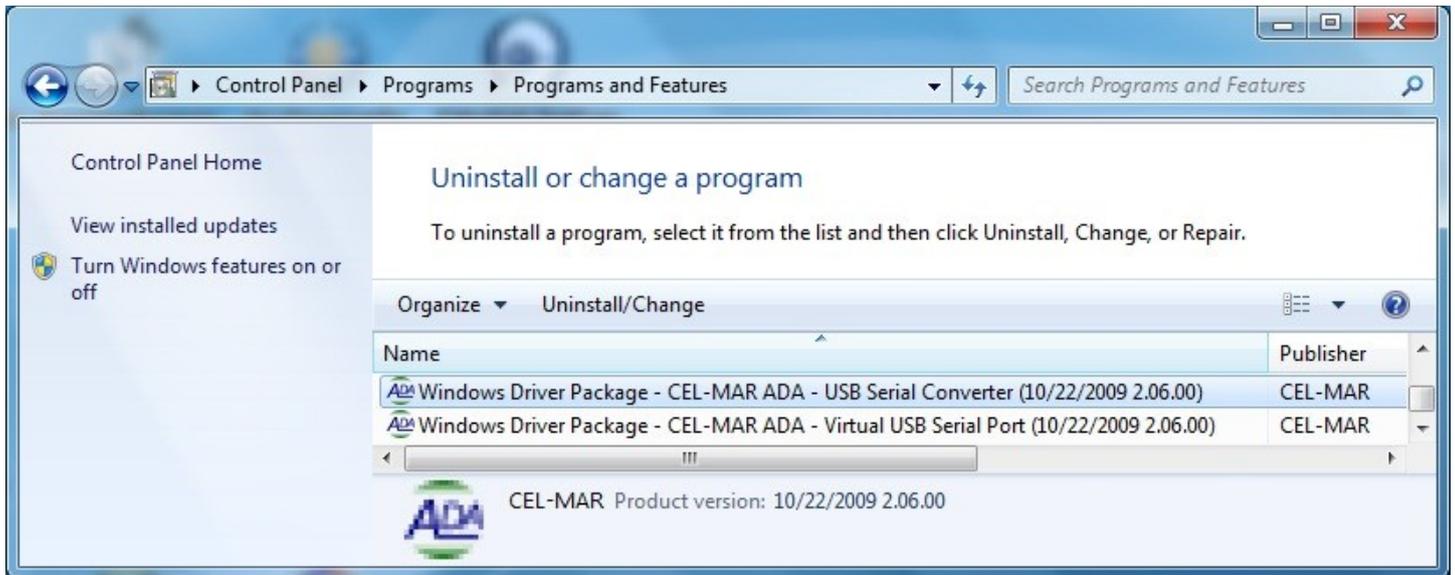
Press [Install this driver software anyway]. Installation of drivers for Virtual Port will start.



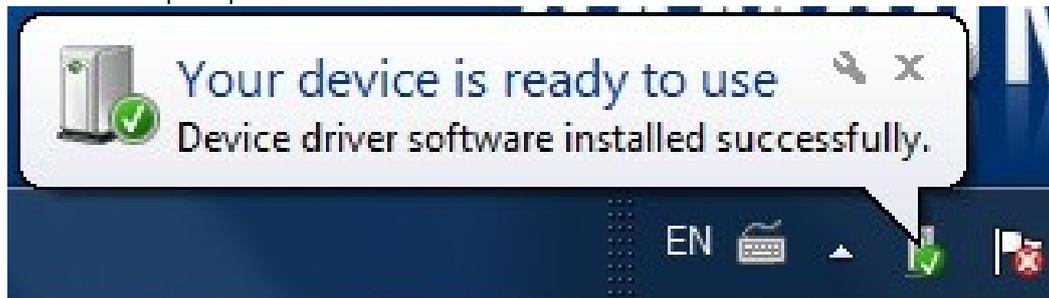
Press [Finish]



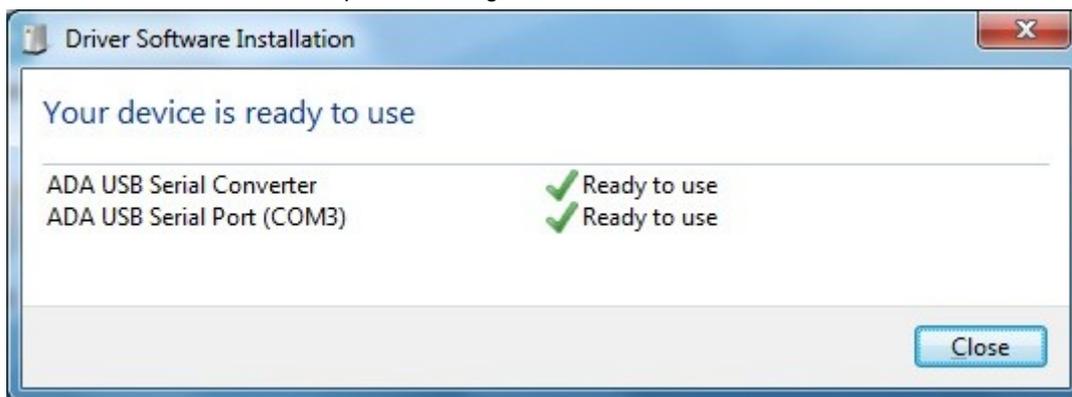
Press [Finish].
The driver for ADA-I911W have been installed. This can be checked in "Uninstall or change a program".



Now connect ADA-I911W to computer port.



After connection will appear the Tool tip with [Your device is ready to use]. To see the details press the Tooltip, and will appear information window where is shown which COM port was assigned to converter.



After this installation, RS232 port of ADA-I911W converter is available in the system as normal COM port. Should remember about specified baud rate for communication

If during installation was selected driver for Standard baud rates, it is possible to use:

9600 bps (standard), 19200 bps, 57600 bps, 115200 bps supported by the **DS9097U** adapter. Selecting other baud rates will result in no reading of 1-WIRE circuits.

6. DRIVER UNINSTALLATION

6.1. DRIVER UNINSTALLATION IN WINDOWS 98/ME SYSTEMS

In this operating system driver uninstallation have to be done according follow steps:

- a/ disconnect converter from computer,
- b/ select menu **Start > Setting > Control Panel > Add > Remove Programs**,
- c/ select from the list **"ADA USB Serial Converter Driver"** and press **[Change / Remove]**,
- e/ reboot the computer.

6.2. DRIVER UNINSTALLATION IN WINDOWS 2000/XP/2003/VISTA/7/2008 SYSTEMS

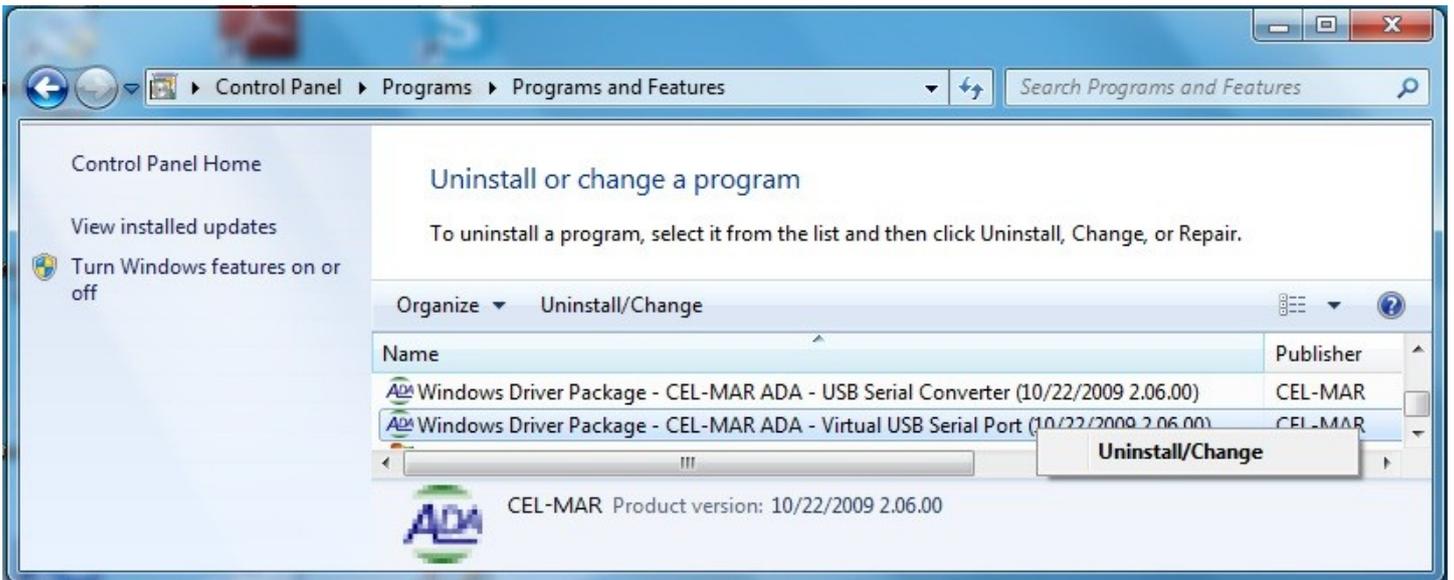
Drivers uninstallation in Windows2000/XP/2003/Vista/7/2008, have to be done according follow steps:

- a/ disconnect converter from computer,
- b/ login as the **Administrator**,
- c/ select menu **Start > Setting > Control Panel > Add > Remove Programs**,
- d/ select from the list **Windows Driver Package – CEL-MAR ADA – Virtual USB Serial Port**,
- e/ press [Change / Remove], Virtual USB Serial Port driver will be uninstalled,
- f/ select from the list **Windows Driver Package – CEL-MAR ADA – USB Serial Converter**,
- g/ press [Change / Remove], driver converter of USB Bus will be uninstalled,
- h/ after uninstallation reboot the computer.

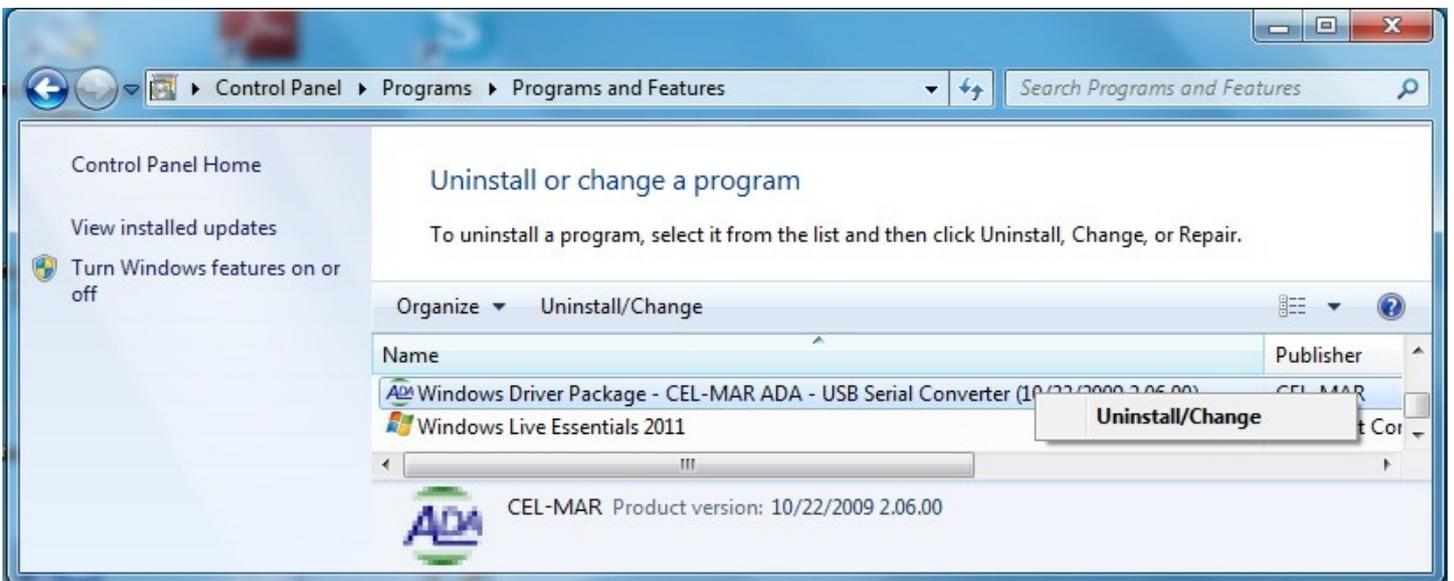
6.2.1. EXAMPLE DRIVER UNINSTALLATION IN WINDOWS 7 SYSTEMS

Driver uninstallation in Windows 7 system, have to be done according follow steps:

- a/ disconnect converter from computer,
- b/ login the **Administrator account**,
- c/ select menu **Start > Control Panel > Programs > Uninstall**,
- d/ select from **Windows Driver Package – CEL-MAR ADA – Virtual USB Serial Port**,



- e/ press [**Uninstall/Change**], Virtual USB Serial Port driver will be uninstalled
- f/ select from the list **Windows Driver Package – CEL-MAR ADA – USB Serial Converter**



- g/ press [**Uninstall/Change**], driver converter of USB Bus will be uninstalled,
- h/ after uninstallation reboot the computer.

6.3. EMERGENCY DRIVER UNINSTALLATION

If there are problems with correct operation of drivers or converter and or on the computer was installed driver other devices this type, it is possible to use the special software form delivered CD-ROM to clean the system form files and entries in the system registry. This can be done after uninstallation described in point 6.1 and 6.2.

6.3.1. EMERGENCY DRIVER UNINSTALLATION IN WINDOWS 98/ME/2000

Emergency driver uninstallation in Windows 98/ME/2000 system have to be done according follow steps:

- a/ disconnect converter from computer,
- b/ from CD-ROM delivered with converter, copy to hard disk the folder **Windows\Win-98ME_1.09.06\FTClean** for Windows 98/ME or **Windows\Win-2000\FTClean** for Windows 2000,
- c/ from **FTClean** folder run the application **FTClean.exe** and follow the Tooltip,
- d/ after finishing, reboot the computer.

6.3.2. EMERGENCY DRIVER UNINSTALLATION IN WINDOWS XP/2003/Vista/7/2008

Emergency driver uninstallation in Windows XP/2003/Vista/7/2008 system have to be done according follow steps:

- a/ disconnect converter from computer,
- b/ login the **Administrator account**,
- c/ from CD-ROM delivered with converter, copy to hard disk the folder **Windows\Win-XP-2003-Vista-7-2008_2.06\CDMUninstaller**,
- d/ from CDMUninstaller folder run the application **uninstall.bat**,
- e/ after finishing, reboot the computer.

7. USING

After proper connection according to section above the converter can be used. If connection of USB cable was made property green LED PWR on front panel of converter should lit. If doesn't, check the connection of converter to the computer or computer is ON and or it isn't in hibernation mode.

During data transmission LEDs should blink and they indicate appropriately:

LED	Description
PWR	Signalling of Powering
RX	Signalling of data receiving through ADA-I911W from 1-WIRE port.
TX	Signalling of data transmitting from ADA-I911W through 1-WIRE port .

7.1. SELECTION OF COM PORT LARGER THEN COM9

If virtual port COM of converter will install in Windows OS as COM10 or larger then in application using this port, should be typed COM port address as: \\.\COM10.

8. 1-WIRE INTERFACE – PIN DESCRIPTION

Pin	Description
VDD	Voltage + 5V, power the 3-wire 1-WIRE bus
1-W	The data transmission 1-Wire bus corresponds to DQ pin DS18B20 circuit
GND	1-WIRE bus ground

9. VERSIONS

ADA-I911W - <input type="checkbox"/> - <input type="checkbox"/>	
Electronics version:	
Without possibility of programming the memory of 1-WIRE interface	1
With possibility of programming the memory of 1-WIRE interface	2
Galvanic isolation:	
1kV=	2
3kV=	3

Order example:
Product symbol: **ADA-I911W-1-2**
1 - without possibility of programming the memory of 1-WIRE interface
2 - 1kV= galvanic isolation,

10. SPECIFICATION

TECHNICAL DATA
Transmission Parameters

Interface	USB	1-WIRE
Connector	B-type female	Screw terminal block, max. wire Ø2,5mm ²
Line length	up to 5 m	up to 300 m – for DS1820 sensors
Maximum number of connected devices	1	up to 100 of DS18B20 circuits
Transmission line	USB cable	Twisted cable 1-pair, 2- pair UTP Cat.5e, shield inside large interferences STP Cat. 5e.
Standards	9.6, 19.2, 57.6, 115.2 [kbit/sec]	standard: 0 do 16,3 kbps, overdrive: 0 do 142 kbps,
Maximum baud rate	USB1.1, USB2.0	1-WIRE
Transmission type	1-WIRE - half duplex (transmitting and receiving on the same wire)	
Optical Signalization	<ul style="list-style-type: none"> • PWD – green LED power supply, • RX – red LED received data via 1-WIRE interface, • TX – yellow LED transmitted data via 1-WIRE interface. 	

Electrical Parameters

Power requirements	from USB of Computer
Power Cable	USB cable
Power	<1W
Galvanic Isolation	1kV DC or 3kV DC – between USB and 1-WIRE interfaces
Optoisolation	~3kV - between signal line USB and 1-WIRE interfaces
Electromagnetic compatibility	Resistance to disruptions according to the standard PN-EN 55024. Emission of disruptions according to the standard PN-EN 55022.
Safety requiring	According to the PN-EN60950 norm.
Environment	Commercial and light industrial.

Environmental Parameters

Operating temperature	0 ÷ 50°C
Humidity	5 ÷ 95% - non-condensing
Storage temperature	-20 ÷ 60 °C

Casing

Dimensions (W x D x H)	65mm x 50mm x 27mm
Material	ABS
Degree of casing protection	IP20
Weight	< 0,10 kg
Implementation of Standard	Not applicable
Location during work	Free
Mounting method	Not applicable

Dear Customer,

Thank you for purchasing **CEL-MAR Company** products.

We hope that this user manual helped connect and start up the **ADA-I911W converter**. We also wish to inform you that we are a manufacturer of the widest selections of data communications products in the world such as: data transmission converters with interface RS232, RS485, RS422, USB, Current Loop, Fibre-Optic Converters and Ethernet or Wi-Fi.

Please contact us to tell how you like our products and how we can satisfy you present and future expectation.

CEL-MAR sp.j.

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