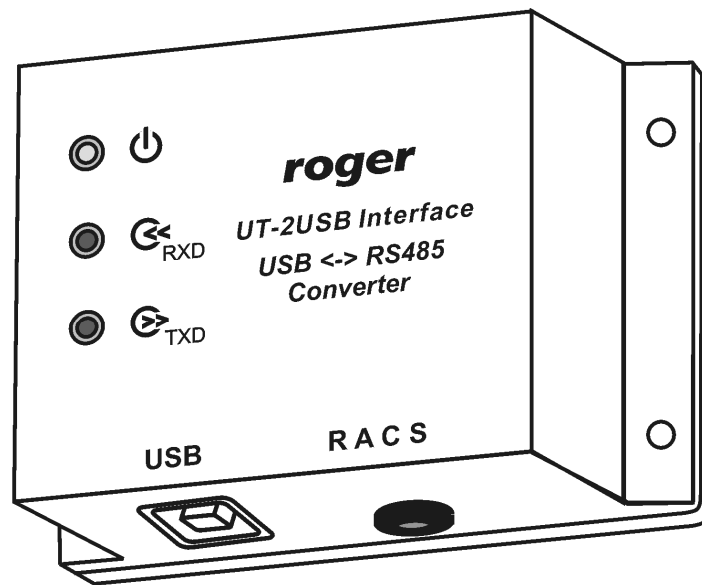


**Communication Interface  
UT-2USB v1.0**



KN030.cdr

**Installer Manual**

## General Description

The UT-2USB is a cost-effective module, that allows you to connect your serial RS485 devices (bus) to computer using a USB interface. It features various transmission rates (half duplex) from 0 kbit/s to 115.2 kbit/s and doesn't need any power supply. The UT-2USB is delivered with 1m USB A-B cable required for communication with PC. The connectivity with RS485 bus is carried out through screw terminals.

Although the UT-2USB converter was designed and tested for Roger Access Control System (RACS), anyway it can be used with other applications requiring the high speed (half duplex) serial communications port however in such cases installer must perform adequate tests to ensure that UT-2USB will operate satisfactory in given application. UT-2USB interface can be used for programming of a single PR access controller or for management of a networked access system. Each adapter comes in a black plastic case intended for wall mounting and has two LEDs which indicate data flow through RS485 and one LED for power supply.

The installation of UT-2USB requires two steps: first to make appropriate electrical connections, second to install driver on PC. The UT-2USB driver creates a Virtual COM Port (VSP-Virtual Serial Port or VCP-Virtual Com Port) within the operating system.

## Properties

### Power supply

The module derives the power from the USB port and doesn't need any external power source.

### RS485 Transmission Control

The data transfer on RS485 is automatically done by the converter. Normally, the UT-2USB operates in *receive* mode, which means that all data received by UT-2USB through RS485 lines are shifted to PC. With the first byte of data received from PC, the UT-2USB switches the RS485 interface (lines A and B) into *transmit* mode. The RS485 remains in that mode as long as data is transmitted from PC to RS485, once the PC stops transmission the RS485 lines returns automatically to *receive* mode.

### RTS and CTS Lines

Generally, the RTS and CTS lines are dedicated to improve communication between managing computer and RACS access systems which operate with CPR32-SE. The use of RTS and CTS lines in such systems is not obligatory and may be omitted. The RTS and CTS control lines are mostly used with access networks containing 16 or more controllers. When used, both lines must be connected to adequate input and output of the CPR32-SE network controller.




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Note: The RTS and CTS control lines are supported by PR Master v4.3 and CPR32-SE v3.0 or higher.

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Electrically, the RTS and CTS lines are adjusted to CPR32-SE v3.0 I/O standards (RTS active state is represented by ground voltage level, whereas line voltage above ~4,5 V or line floating keeps line inactive).

## LED Indications

LED	Symbol	Color	Function
POWER		Amber	Power supply
TXD		Green	Data send to RS485 comm. bus
RXD		Red	Data received from RS485 comm. bus

## Interface Installation

Firstly, a driver installation is required within the operating system to create Virtual COM Port. The UT-2USB interface should be connected to the PC USB port only after driver installation (drivers are included on a CD-ROM disc).

The UT-2USB supports Windows 98, Me, XP, VISTA, Windows Server 2003, Linux (kernel 2.4.20 or later), Apple Mac OS 8, 9, Mac OS X.

Install the interface in a dry area, all electrical connections should be carry out while interface is unplugged from the USB port. For connection with PC use the USB A-B cable (delivered with package).

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Note: Do not modify USB A-B cable, it is not allowed to cut this cable or extend it with help of others wires inappropriate for USB transmission. It is allowed to use a special USB extension cord, but the total USB cable length may not be longer than 5 meters.

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The UT-2USB can be connected to RS485 communication bus in any, arbitrary selected, location. The topology of RS485 communication bus in RACS system is free and may incorporate tree, star or any combination of them. Also, no terminating resistors are required on the ends of communication bus. Please note, that distance between UT-2USB and CPR control panel or any controller may not exceed 1200m.

## Extending Communication Distance


The UT-2USB may be used for successful communication on distances up to 1200m. When longer distance is required a UT-3 interface can be used. The use of two UT-3 interfaces creates communication link and extends communication distance by next 1200m. For communication between access networks or controllers located in different buildings or cities the UT-4 interface can be used. The UT-4 interface enables communication with access controller(s) or access networks through 100/10BaseT Ethernet network with TCP/IP communication protocol.

Connection Terminals Assignments		
Name	Function	
<b>CTS</b>	For RACS	CTS line to CPR32-SE network controller (optional for PR Master 4.3)
<b>RTS</b>		RTS line to CPR32-SE network controller (optional for PR Master 4.3)
<b>A</b>		RS485 interface, line A
<b>B</b>		RS485 interface, line B
<b>GND</b>		RS485 interface, ground
<b>SHLD</b>		RS485 cable shield

<b>Technical Specification</b>	
Power supply	5 VDC direct from USB Port
Average current consumption	40 mA
Operating temp. range	0...+55° C.
Communication speed	0-115.2 kbit/s
Max. communication distance for USB	5 meters
Max. communication distance for RS485	1200 meters
Relative humidity	10 to 95% (without condensation)
Dimensions	68 x 45 x 23 mm
Weight	~ 35g

<b>Ordering</b>	
UT-2USB	Interface with black plastic case, 1m USB A-B cable and drivers

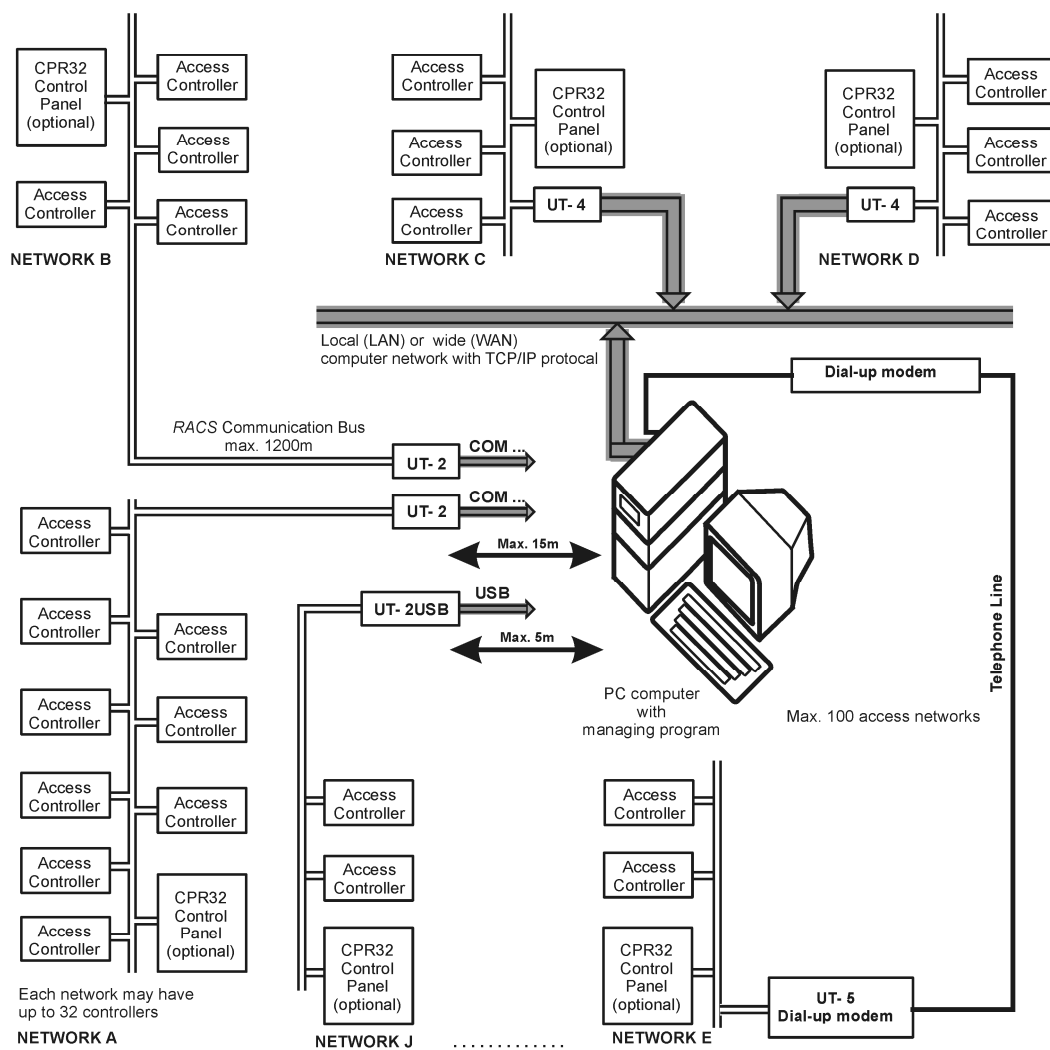
<b>History</b>	
UT-2USB v1.0	Initial product version

	The symbol of a crossed-through waste bin on wheels means that the product must be disposed of at a separate collection point. This also applies to the product and all accessories marked with this symbol. Products labeled as such must not be disposed of with normal household waste, but should be taken to a collection point for recycling electrical and electronic equipment. Recycling helps to reduce the consumption of raw materials, thus protecting the environment.
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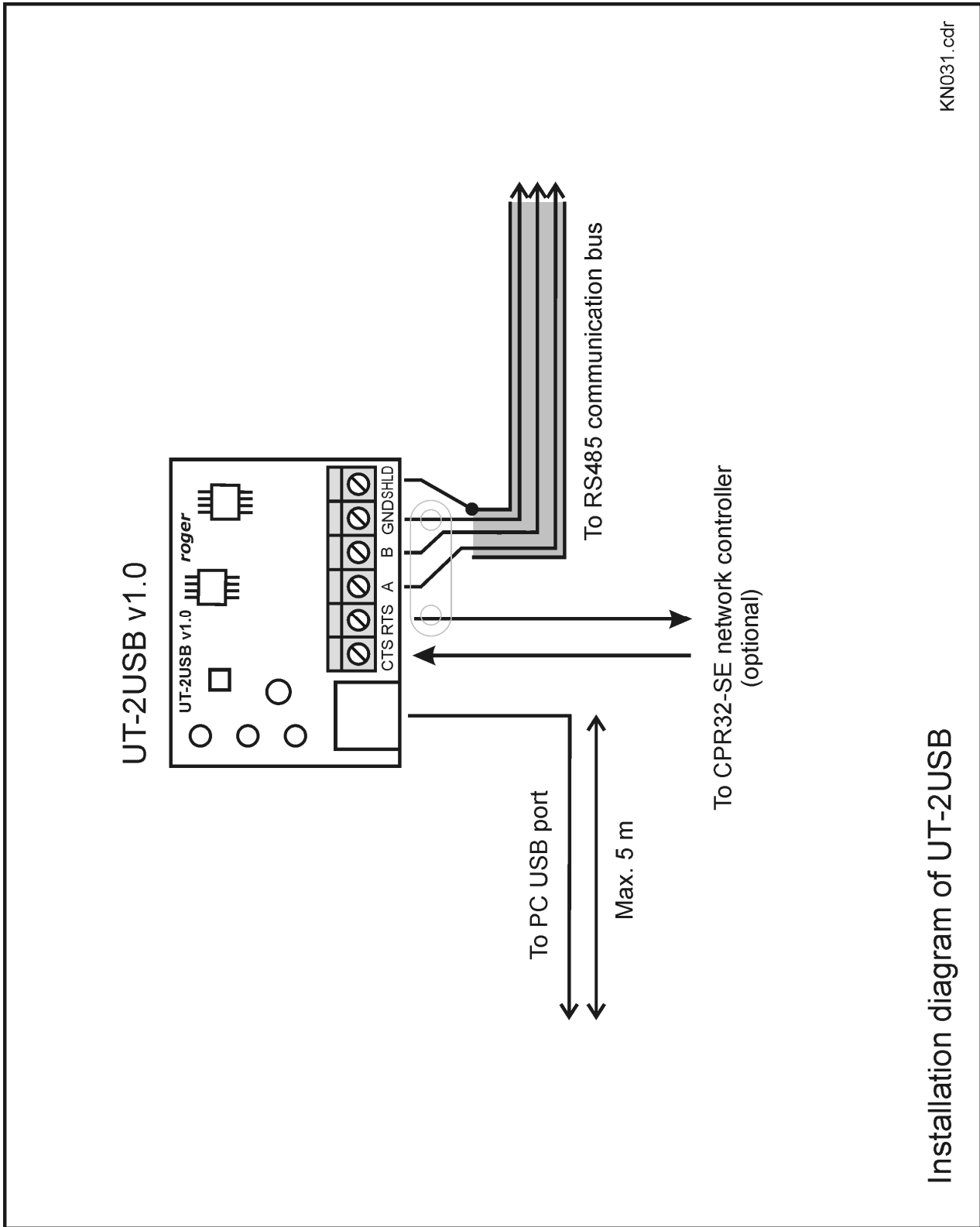
**Contact**  
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**Tel.: 055 272 0132**  
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## Roger Access Control System

### The structure of RACS



1. Each network requires separate communication channel (COM port, USB port, TCP network or dial-up modem)
2. The maximum cable length between UT-2 communication interface and PC COM can't exceed 15 m.
3. The maximum cable length between UT-2USB communication interface and PC USB can't exceed 5 m.
4. The communication interface (UT-2, UT-2USB, UT-4 or UT-5) can be connected to RACS communication bus in any arbitrary selected location.
5. The maximum cable distance between communication interface and any access controller or CPR32-SE, may not exceed 1200 m.
6. The installation of CPR32-SE network controller is optional in access network.
7. System requires RACS managing software.
8. PC computer may operate in *Online* or *Offline* mode.



Installation diagram of UT-2USB

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