

**RUD-1 v1.0**  
**Communication Interface**

*Document Rev. A*



**User Manual**

## General Description

RUD-1 can be used as a standard communication interface for Roger Access Control System (RACS) or for programming of PRxx1/PRxx2 series controller or PRT-EM/ PRT-MF series reader. RUD-1 is powered straight from USB port and has built-in supply module which provides 12V voltage which can be used to supply programmed device. RUD-1 can be used with following programs:

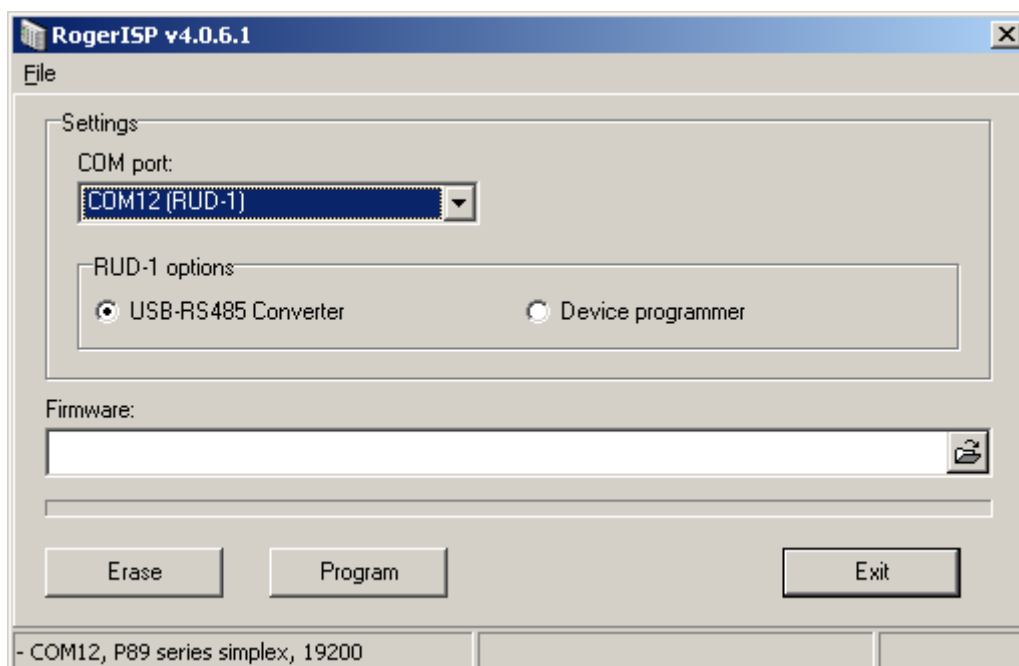
- PR Master v4.3, managing software for Roger Access Control System
- RARC v1.3, managing software for PRT-EM and PRT-MF series readers
- RogerISP v4, firmware upgrade tool for Roger access readers and controllers

Note: Before RUD-1 will be used in a system please install software driver.

## Functional Description

The RUD-1 can operate in two different modes: **USB-RS485 Communication Interface** or **Device Programmer**. Either PR Master or RARC program automatically configure RUD-1 for required operation without user intervention. When using RogerISP v4, installer must make adequate selection between these two modes depending which type of device will be uploaded with a firmware. The following rules should be use in this case:

- Select *USB-RS485 Converter* for operation with PRxx1/PRxx2 controllers or
- Select *Device programmer* for work with PR-EM or PRT-MF series readers



## **LED Indications**

RUD-1 has one dual color LED indicator which may light in green or red. When blinking green it indicates data transmitted from the PC, when blinking red indicating data received from the programmed system or device.

## **Supply Output**

RUD-1 provides 12V DC output intended to supply programmed device. The maximum output current for this output is 120mA.

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Note: User must assure the maximum current sourced by RUD-1 will be not exceeded otherwise USB port might be corrupted. Always, check documentation for current consumption required for the device supplied from the RUD-1.

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## **RS485 A/B Lines**

These lines support full RS485 electrical standard. The data flow control is provided by the internal logic of the RUD-1 using following formula: the RS485 circuit automatically switches to transmit mode when data comes from the PC and returns to receive mode when transmission from PC completes.

## **TXD and RXD Lines**

These lines are used for serial communication between programmed reader and PC and doesn't comply with RS232 nor RS485 standards.

## **RTS and CTS Lines**

These lines can be optionally used for operation in USB-RS485 mode and are intended to improve effectiveness of the data flow between managing software running on the PC and Roger Access Control System. Note, that electrical levels for these lines are adopted for operation with CPR-32SE access network controller (0V/+12V).

# Interface Installation

Before you will use RUD-1 in a given machine the software drivers must be installed. For latest version of software and drivers please visit [www.roger.pl](http://www.roger.pl). Once the RUD-1 is connected to USB the new serial port (COM) appears in the system. The RUD-1 supports Windows 98, Me, XP, VISTA, Windows Server 2003, Linux (kernel 2.4.20 or later), Apple Mac OS 8, 9, Mac OS X. All electrical connections should be carry out while interface is unplugged from the USB port. Optionally, the USB A-A cable (delivered with a package) can be used to extend distance between PC and RUD-1 interface. Please note that only one RUD-1 can be used simultaneously in given PC.

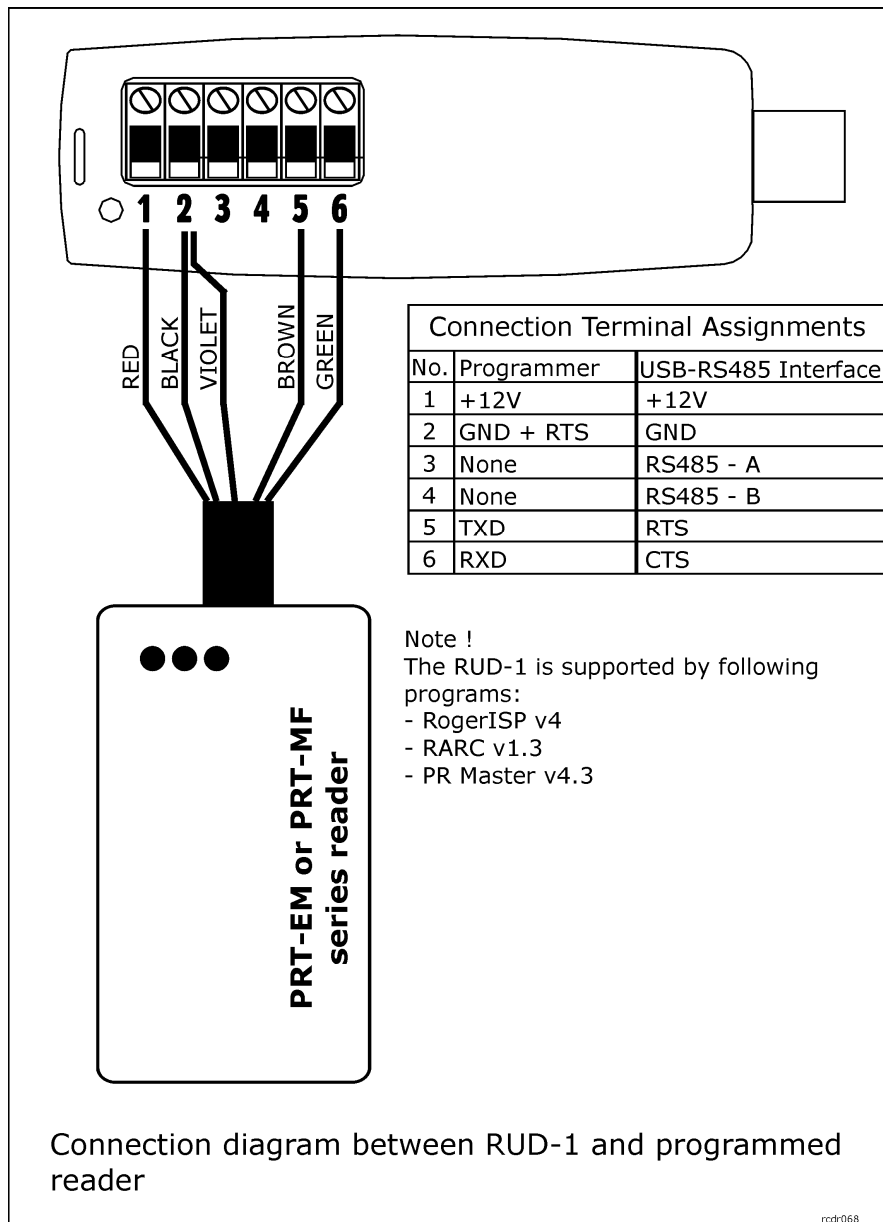
Note: Don't modify USB cable, it is not allowed to cut or extend it with help of others wires. It is allowed to use a special USB extension cord, but the total USB cable length may not be longer than 5 meters.

<b>Terminal Assignments</b>		
Terminal Number	Function in Device Programmer mode	Function in USB-RS485 Converter mode
1	+12V (supply plus)	+12V (supply plus)
2	GND (supply minus)	GND (supply minus)
3	None	RS485-A
4	None	RS485-B
5	TXD (serial data output, 0/12V logic levels)	RTS (0/12V logic levels)
6	RXD (serial data input, 0/12V logic levels)	CTS (0/12V logic levels)

<b>Technical Specification</b>	
Power supply	5 VDC from USB Port
Average current consumption	30 mA (no external load on 12V DC output)
Max. output current on 12V output	120mA
Operating temp. range	0...+55° C.
Communication speed	0-115.2 kbit/s
Flow control on RS485	Automatic
Max. communication distance for USB	5 meters
Max. communication distance for RS485	1200 meters
Relative humidity	10 to 95% (without condensation)
Dimensions	88 x 30.5 x 14.5 mm
Weight	~ 30g

<b>Ordering</b>	
RUD-1	Interface with 1m USB A-A cable, software driver not provided and can be download from the <a href="http://www.roger.pl">www.roger.pl</a>

<b>Ordering</b>		
Version	Release date	Comment
RUD-1 v1.0	05/02/2009	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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