Roger Access Control System

PRT12MF / PRT62MF / PRT64MF / PRT66MF Installation Manual

Firmware version: x.35.192 and newer

Document version: Rev. C

CE

This document contains minimum information that is necessary for initial setup and installation of the device. The detailed description of configuration parameters and functionalities is specified in respective Operating manual available at www.roger.pl.

INTRODUCTION

The reader can be used for standalone operations as access control terminal and it can also be used in RACS 4 and RACS 5 systems where it can function as slave reader connected to master access controller via RACS CLK/DTA bus. Alternatively, the reader can be installed in third party systems and connected via Wiegand, Magstripe or RS232 interfaces. Factory new reader is configured with RACS mode and ID=0 address. Detailed configuration of device can be done with computer (RARC software) or manually with reader's keypad or proximity card. If reader is configured from computer then connection of RUD-1 interface is necessary.

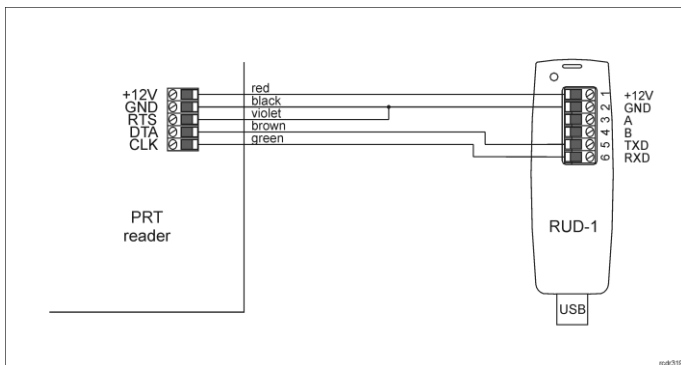## CONFIGURATION WITH RARC PROGRAM

Fig. 1 Connection of reader to RUD-1 interface

Programming procedure:

1. Connect the reader to RUD-1 interface (fig. 1) and connect the RUD-1 to computer's USB port.
2. Start RARC program, in the top menu select *Options->Port* and indicate serial port with RUD-1 interface.
3. In the top menu select *Connection->Connect* and in the opened window select *RS232* and *Start* button to establish connection with the reader.
4. Depending on requirements of specific installation configure operating mode, input/output functions, options and users with access rights at the reader.
5. Click *Upload to reader* to update the configuration of reader.
6. Optionally make a backup by clicking in the top menu *File->Save configuration settings to file…*
7. When configuration is finished then in top menu of RARC program select *File->Exit*.
8. Disconnect reader from RUD-1 interface..

MANUAL CONFIGURATION OF READER

In case of standalone operation, the reader can be configured in regard of its options and functions using programming commands and INSTALLER proximity card or PIN which can be configured within Memory reset procedure. The list of commands and their descriptions are given in the Operating Manual of PRTxxMF readers which is available at www.roger.pl. However the recommended method is configuration with RARC software.

MANUAL CONFIGURATION OF USERS

In case of standalone operation, the reader can be configured with up to 120 users, each with proximity card and PIN using MASTER card or PIN. New MASTER card and PIN can be configured within Memory reset procedure.

The list of frequently used programming commands:

[11][PIN][#] – Add new user with PIN.

[12][Card 1][Card 2]...[Card N][#] – Add one or more new users with cards.

[20] – Delete all users except for MASTER and INSTALLER.

[21][PIN][#] – Delete entered PIN.

[22][Card][#] – Delete indicated card.

[24][YYMMDDhhmm] – Configure date and time where YY – year (00-99), MM – month (01-12), DD – day (01-31), hh – hour (00-23), mm – minute (00-59).

[#] – Exit from User Programming Mode.

Example of user(s) enrolment with card (reader with keypad)

1. Read MASTER card or enter MASTER PIN and the reader will switch LED OPEN ⚡ (green) and LED STATUS 🔴 (red) on to confirm that it entered programming mode.
2. Press 1 and 2 on reader's keypad and LED SYSTEM ⚡ (orange) will pulsate.
3. Read one or more cards to program them into reader.
4. Press # key to finish the command and press # key again to exit programming mode. By default LED STATUS 🔴 (red) will be switched on.

In case of readers without keypad the programming command is entered with multiple card readings. In this method, N number of MASTER card readings emulates digit. After each series of readings wait for two beeps and proceed with the next digit. Zero digit is emulated with 10 readings.

Example of user(s) enrolment with card (reader without keypad):

1. Read MASTER card and the reader will switch LED OPEN ⚡ (green) and LED STATUS 🔴 (red) on to confirm that it entered programming mode.
2. Read MASTER card 1 time and wait for two beeps.
3. Read MASTER card 2 times and wait for two beeps. LED SYSTEM ⚡ (orange) will pulsate.
4. Read one or more cards to program them into reader.
5. Wait 10 s to finish the command and wait another 60 s or read MASTER card 12-times to exit programming mode. By default LED STATUS 🔴 (red) will be switched on.

Note: Reader rejects programming of already programmed card or PIN and then sounds error signal (long beep).

MEMORY RESET PROCEDURE

Memory reset procedure enables configuration of operating mode, enrolment of MASTER and INSTALLER users and it resets all other settings of reader to factory default ones. MASTER user is used for manual programming of users while INSTALLER user is used for manual programming of reader.

Memory reset procedure:

1. Remove all connections from CLK, IN1 and RTS lines.
2. Connect CLK and IN1 lines.
3. Restart the reader (switch power supply off and on or short RST contacts for a moment).
4. When LED OPEN ⚡ (green) pulsates and reader makes continuous sound then disconnect CLK and IN1 lines.
5. When LED SYSTEM ⚡ (orange) pulsates enter 3 digits of operating mode with reader keypad or with any Mifare proximity card e.g. [030] for Simple standalone, [000] for RACS with ID=0 address, etc.
6. Enter new MASTER PIN (3-6 digits) and press # key or skip this step and proceed to the next one.
7. Read any MIFARE proximity card – it will be new MASTER card or press # and proceed to the next step.
8. Enter new INSTALLER PIN (3-6 digits) and press # key or skip this step and proceed to the next one.
9. Read another MIFARE proximity card – it will be new INSTALLER card or press # to skip this step.

In case of readers without keypad the operating mode is entered with multiple card readings. In this method, N number of any MIFARE card readings emulates digit. After each series of readings wait for two beeps and proceed with the next digit. Zero digit is emulated with 10 readings.

Example of [001] operating mode programming with multiple card readings:

1. Read card 10 times and wait for two beeps.
2. Read card 10 times and wait for two beeps.
3. Read card 1 time and wait for two beeps

THE APPLICATION OF READER IN RACS SYSTEMS

In RACS 4 and RACS 5 access control systems, PRTxxMF series reader is operated as slave terminal connected to master access controller. In majority of cases the reader with factory settings can be installed without any additional configuration. If more than one reader is connected to RACS CLK/DTA bus then each must have unique address which is configured by selection of respective operating mode [000]..[003] by means of RARC software or within Memory reset procedure. In case of reader operated as terminal any users, input/output functions and other standalone mode options are not configured.

FIRMWARE UPDATE

The update requires connection of reader to computer with RUD-1 interface (fig. 1) and starting RogerISP software. The latest firmware file is available at www.roger.pl.

Firmware update procedure:

1. Connect the reader to RUD-1 interface (fig. 1) and connect the RUD-1 to computer's USB port.
2. Place jumper on FDM contacts (fig. 2).
3. Restart the reader (switch power supply off and on or short RST contacts for a moment).
4. Start RogerISP program.
5. Select serial port with RUD-1 interface and *Device Programmer* option.
6. Specify path to firmware file (*.hex).
7. Click *Update* to start firmware upload with progress bar in the bottom.
8. When the update is finished, remove jumper from FDM contacts and restart the reader.

Note: After firmware update it may be necessary to start Memory reset procedure.
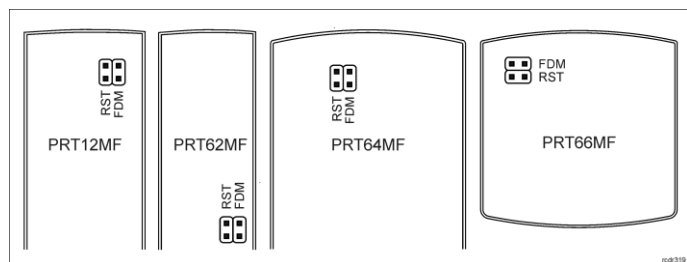
APPENDIX

Fig. 2 Service contacts

Table 1. Terminals and wires

Screw terminal	Wire colour	Description
12V	Red	Supply plus
GND	Black	Ground
IN1	Yellow	IN1 input line
IN2	Blue	IN2 input line
RTS	Violet	RS232 interface RTS line
CLK	Green	CLK line
DTA	Brown	DTA line
TMP	White	Tamper switch
TMP	Grey	Tamper switch
NC	Grey-pink	REL1 relay output (NC)
COM	Red-blue	REL1 relay common terminal
NO	Pink	REL1 relay output (NO)

Table 2. Specification

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Supply voltage	Nominal 12VDC, min./max. range 10-15VDC
Current consumption (average)	PRT12MF/PRT64MF: ~85 mA PRT12MF-BK/PRT62MF/PRT66MF: ~65 mA
Inputs	Two (IN1..IN2) NO inputs, approx. 3.5 triggering level
Relay output	Relay output (REL1) with single NO/NC contact, 30V/1.5A DC/AC max. load, available only in PRT64MF and PRT66MF
Tamper protection	Isolated 50mA/24V contacts, shorted when enclosure is closed
Proximity cards	13.56MHz according to ISO14443A and MIFARE
Reading range	Up to 6 cm. Note: Reading distance is defined for good quality proximity cards placed in optimal position against the reader. For all readers the optimal position for card reading is in the front of the device (card surface parallel to the front).
Distances	150m maximal cable length for RACS CLK/DTA bus between controller and reader
IP Code	IP65 Note: The IP65 is guaranteed assuming that the enclosure adheres tightly to the surface on which the device is installed. In the case of an uneven surface, the installer must use additional sealing, e.g., in the form of a plastic mass between the bottom part of the enclosure and the surface on which lit is mounted.
Environmental class (according to EN 50133-1)	Class IV, outdoor general conditions, temperature: -25°C to +60°C, relative humidity: 10 to 95% (no condensation)
Dimensions H x W x D and weight	PRT12MF: 152,5 x 46 x 23(35) mm; 150g PRT62MF: 100 x 45 x 25 mm; 100g PRT64MF: 115 x 80 x 35 mm; 120g PRT66MF: 85 x 85 x 27 mm; 120g
Certificates	CE
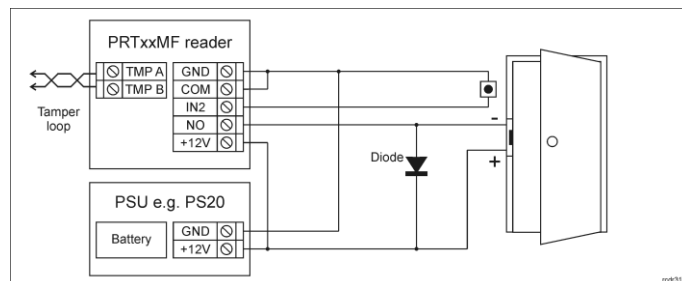
Fig. 3 Connection of door lock and exit button to PRT64MF or PRT66MF reader – Simple standalone mode

Note: PRT12MF and PRT62MF readers are not equipped with relay. In their case a door lock can be controlled by external relay connected to configured CLK or DTA transistor output.
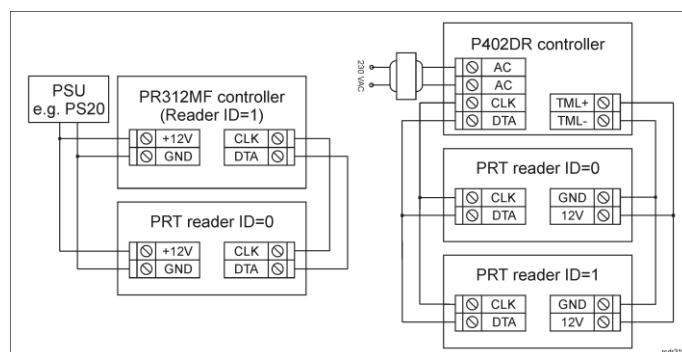

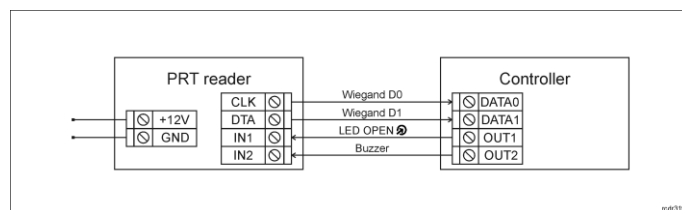Fig. 4 Connection of PRT readers in RACS 4 system – terminal (online) mode

Fig. 5 Connection of reader to controller via Wiegand interface

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