

## Roger Access Control System

# MCX402-1-KIT Installation Manual

Expander firmware version: 1.0.4.259 or newer

Product version: 2.0

Document version: Rev. D



*This document contains minimum information that is necessary for initial setup and installation of the kit. The detailed description of configuration parameters and functionalities of all components is specified in respective Operating manuals available at [www.roger.pl](http://www.roger.pl).*

## INTRODUCTION

MCX402-1-KIT is the access expander kit for single read-in/read-out door in RACS 5 system with Wiegand interface readers or PRT (RACS CLK/DTA) readers depending on firmware of the expander. The kit includes MCX402-BRD expander and ME14-24V metal box with 24VDC/50W power supply unit. The box is adapted to installation of 7Ah battery for emergency supply. All elements of controlled door including readers and door lock can be supplied from the kit. Before connecting to controller, the expander should be assigned with unoccupied address in range of 100-115. Addressing of the expander can be done from computer by means of RogerVDM program or manually. Configuration of the expander with RogerVDM requires RUD-1 interface.

## CONFIGURATION WITH ROGERVDM PROGRAM

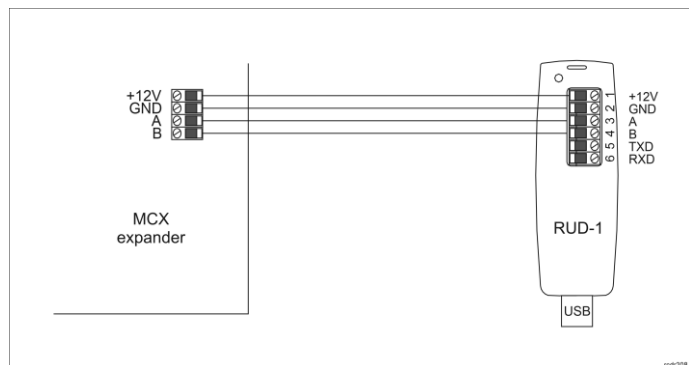


Fig. 1 Connection of MCX expander to RUD-1 interface for configuration

### Expander programming procedure with RogerVDM software:

1. Connect the device to RUD-1 interface (fig. 1) and connect the RUD-1 to computer's USB port.
2. Start RogerVDM program, select *MCX v1.xT* device, firmware version, *RS485* communication channel and serial port with RUD-1 interface.
3. Click *Connect*, the program will establish connection and will automatically display *Configuration* tab.
4. Enter unoccupied RS485 address in range of 100-115, enable Wiegand or PRT terminals, configure input types (e.g. NC for IN6 according to fig. 4) and other settings according to requirements of specific installation.
5. Click *Send to Device* to update the configuration of device.
6. Optionally make a backup by clicking *Send to File...* and saving settings to file on disk.
7. Disconnect the expander from RUD-1 interface.

## MANUAL ADDRESSING

The RS485 address of expander configured with RogerVDM is a software address. Alternatively hardware RS485 address can be configured with jumpers and such address has higher priority than software address.

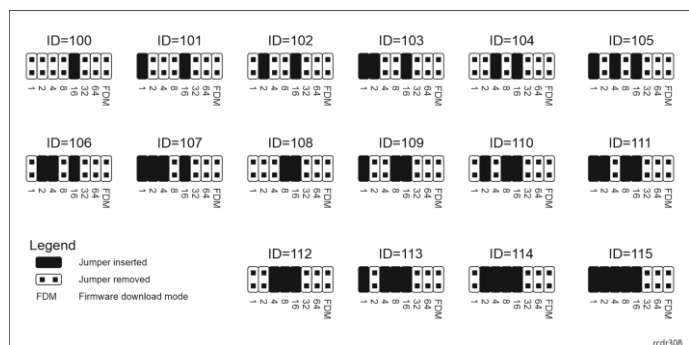


Fig. 2 Manual addressing of expander

Note: Each time the hardware RS485 address is modified the device must be restarted

## MEMORY RESET

Memory reset procedure restores factory default settings including ID=100 software address.

### Expander memory reset procedure:

1. Remove all connections from A, B, CLK and DTA terminals.
2. Put jumper on "64" contact and restart device with RST button on device board or by switching supply off and on.
3. Remove jumper from "64" contacts when LED STAT (red), LED OPN and LED SYS are ON.
4. LED OPN and LED SYS will switch off and device shall restart automatically with factory default settings.

## FIRMWARE UPDATE

Factory new expander is equipped with a firmware dedicated to Wiegand readers. If the expander is to be operated with PRT readers then another firmware must be uploaded. Such firmware is available at [www.roger.pl](http://www.roger.pl). Firmware update requires RogerISP program.

### Expander firmware update procedure:

1. Connect the device to RUD-1 interface (fig. 1) and connect the RUD-1 to computer's USB port.
2. Put jumper on FDM contacts
3. Restart device with RST button on device board or by switching supply off and on.
4. Start RogerISP software.
5. Select serial port emulated by RUD-1 interface and the option *USB-RS485 Converter*.
6. Select firmware file (\*.hex), click *Program* and follow instructions on screen.
7. Once the firmware is uploaded remove the FDM jumper and restart the device.
8. Start Memory reset procedure.

## POWER SUPPLY

The kit is supplied from 24VDC/50W power supply unit. The metal box offers space for installation of typical 7Ah backup battery which is connected to BAT+ and BAT- terminals of MCX402-BRD expander.

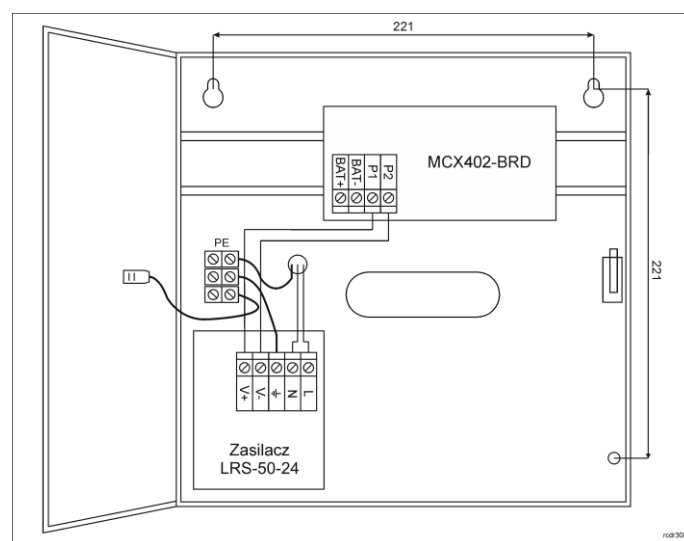


Fig. 3 MCX402-1-KIT

	The installation can be done only by qualified person with all necessary certificates concerning connection and maintenance of 230VAC and low voltage networks.
	Prior to starting the installation it is necessary to ensure that 230 VAC circuit is disconnected. All works inside the box must be carried out with 230VAC supply voltage disconnected.



It is forbidden to use the kit without properly executed and operational earthing system.

## TAMPER DETECTOR

The metal box is equipped with door contact which can be connected to one of the inputs (e.g. IN8) and GND terminal of the expander. The anti-sabotage function can be assigned to the input within high level configuration of the system.

## APPENDIX

Table 1. MCX402-BRD screw terminals	
Name	Description
BAT+, BAT-	Backup battery
P1	24VDC input power supply
P2	Ground
AUX	12VDC/1.0 output power supply (for door lock)
TML	12VDC/0.2A output power supply (for readers)
IN1-IN8	Input lines
GND	Ground
IO1, IO2	15VDC/1A transistor output lines
A, B	RS485 bus
CLK, DTA	RACS CLK/DTA bus
NO1, COM1, NC1	30V/1.5A DC/AC (REL1) relay
NO2, COM2, NC2	230V/1.5A AC (REL2) relay

Table 2. Specification	
Supply voltage	230VAC, 50/60Hz (-15%+10%)
Power supply	LRS-50-24 24VDC/50W
Short circuit and overload protection	Yes
Metal box	DC01 0.8mm metal sheet, grey anthracite colour (RAL7016)
Tamper protection	NO/NC detector, 50VDC/50mA
Distances	Up to 150 m between kit and readers
IP Code	IP20
Environmental class (acc. to EN 50133-1)	Class I, indoor general conditions, temperature: +5°C to +40°C, relative humidity: 10 to 95% (no condensation)
Dimensions H x W x D	255 x 255 x 90 mm
Weight	1,7 kg
Certificates	CE

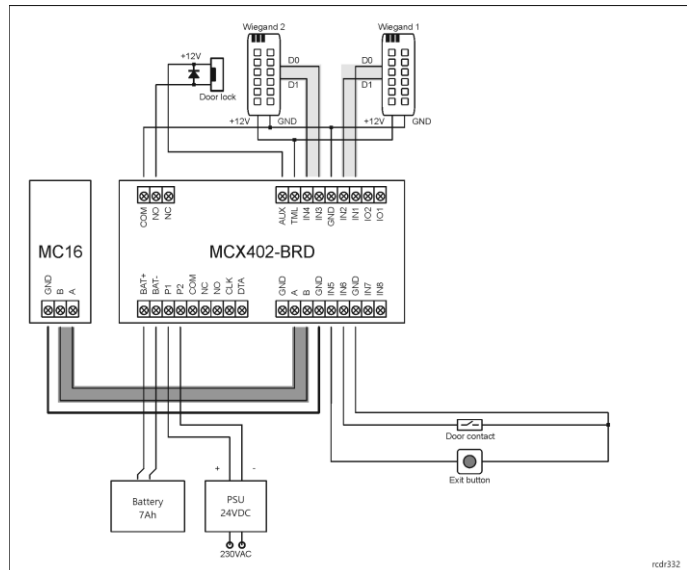


Fig. 4 Typical door control with Wiegand readers

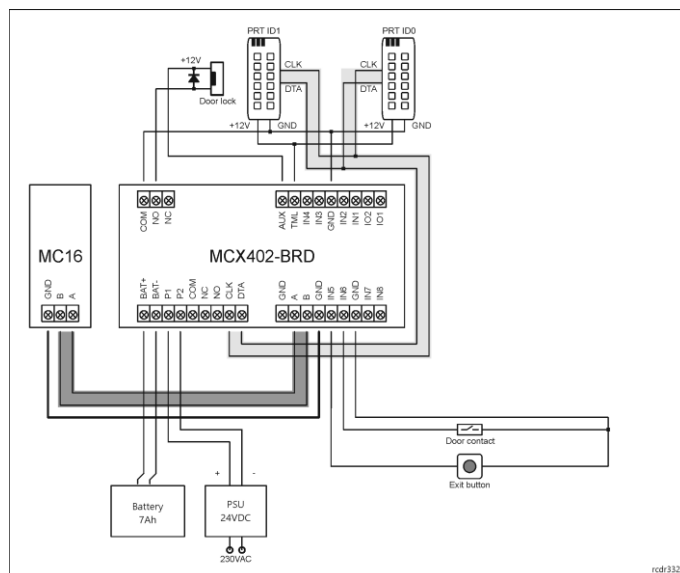


Fig. 5 Typical door control with PRT readers

### Notes:

- In case of read-in door, single reader is connected to the expander.
- Any unoccupied IN1-IN8 inputs of the expander can be used for connection of door contact and exit button.
- In case of electrically incompatible Wiegand readers it might be necessary to install PR-GP-BRD modules.
- LED indicators of Wiegand readers can be controlled with IO1 and IO2 transistor outputs.
- Diagrams include doors with electric strikes. In case of electromagnetic lock, the NC terminal of relay is used instead of NO terminal.
- Diagrams include exit buttons. In case of read-in/out doors they can be used for emergency door opening.



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