Roger Access Control System

MCX102-BRD Installation Manual

Firmware version: 1.1.0.302 and newer

Hardware version: 1.0

Document version: Rev. D

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 expander is designed to operate in RACS 5 system as peripheral device connected to RS485 bus of MC16 access controller. MCX102-BRD enables to control single door by MC16 controller using two PRT series terminals or single terminal with Wiegand interface.
Factory new device is configured with default settings including ID=100 address. Before connecting to MC16 controller, the device should be assigned with unoccupied address in range of 100-115. Programming of other parameters depends on the individual requirements and is not obligatory. Configuration of the expander with RogerVDM requires RUD-1 interface.

CONFIGURATION WITH ROGERVDM PROGRAM

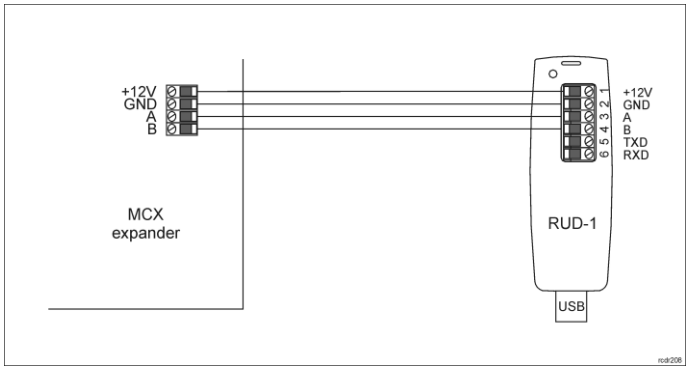

Fig. 1 Connection of the expander to RUD-1 interface

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.x* 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 IN1 according to fig. 5) and other settings according to requirements of specific installation.
5. Click *Send to Device* to update the configuration.
6. Optionally make a backup by clicking *Send to File…* and saving settings to file on disk.

Note: Time to connect to the device in RogerVDM is 30 seconds from power up. In case of timeout, a power reset should be performed just before the connection.

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.

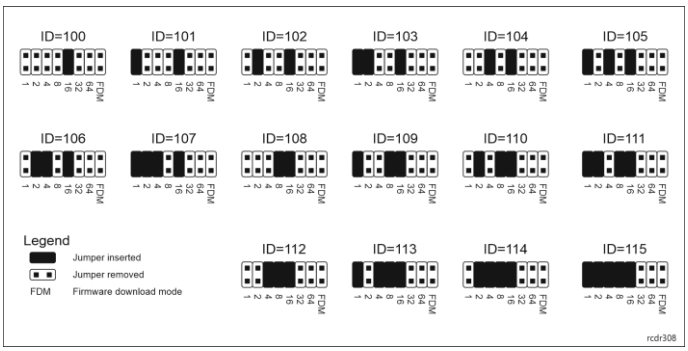

Fig. 2 Manual addressing of expander

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. Place jumper on 64 contacts 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

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

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.

APPENDIX

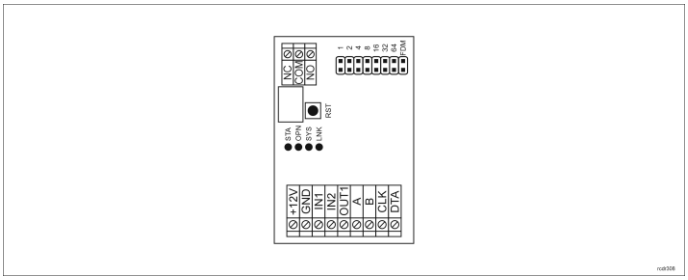

Fig. 3 MCX2-BRD expander

Table 1. Screw terminals	
Name	Description
+12V	12VDC power supply
GND	Ground

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IN1, IN2	Input lines
OUT1	15VDC/150mA transistor output line
A, B	R485 bus
CLK, DTA	RACS CLK/DTA bus
NO, COM, NC	Relay (REL1) 30V/1,5A DC/AC output

Table 2. LED indicators		
Indicator	Colour	Integral functions
STA	Red/ green	Current arming mode of Alarm Zone (armed/disarmed)
OPN	Green	Door unlocked
SYS	Orange	Various signalling functions including errors
LINK	Green	Data transmission on RS485 bus

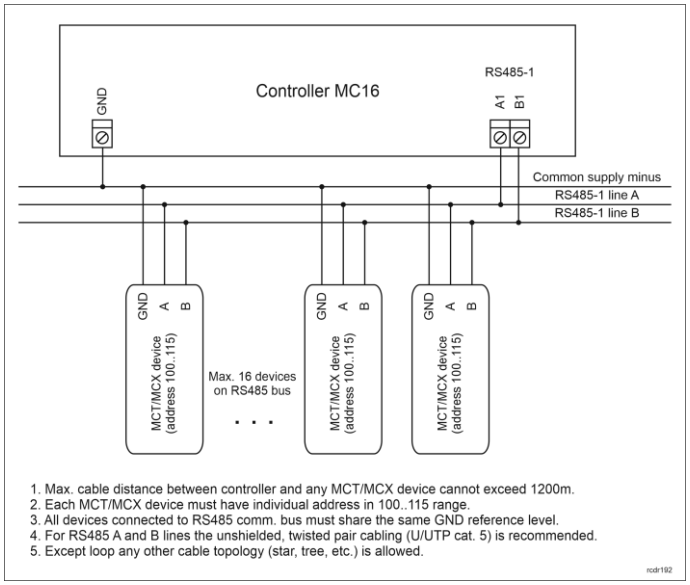


Fig. 4 Connection of readers and expanders to MC16 access controller

Table 3. Specification	
Supply voltage	Nominal 12VDC, min./max. range 10-15VDC
Current consumption (average)	40mA (when relay off)
Inputs	Two (IN1, IN2) NO/NC inputs, triggering level app. 3.5V
Relay output	Single (REL1) relay output with isolated NO/NC contact, 30V/1.5A max load
Transistor output	Single (OUT1) transistor output, max load 15VDC/150mA
Distances	Up to 1200 m between controller and expander (RS485) Up to 150m between expander and PRT or Wiegand terminals
IP Code	IP20
Environmental class (according to EN 50133-1)	Class I, indoor general conditions, temperature: +5°C to +40°C, relative humidity: 10 to 95% (no condensation)
Dimensions W x S x G	80 x 54 x 20 mm
Weight	50g
Certificates	CE

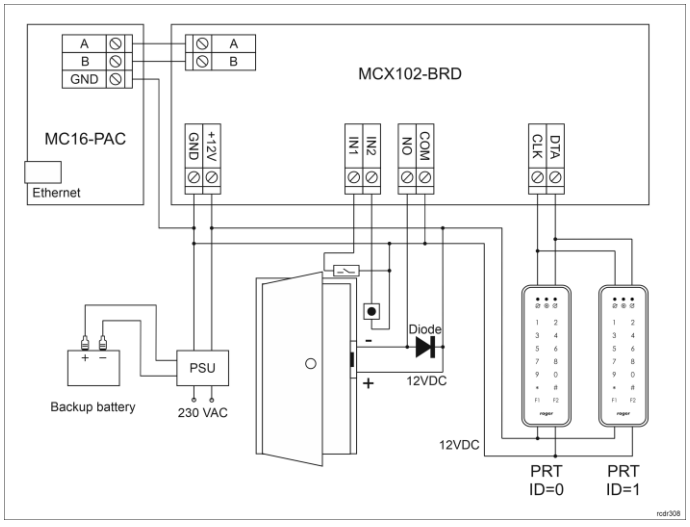


Fig. 5 Typical door control with PRT readers

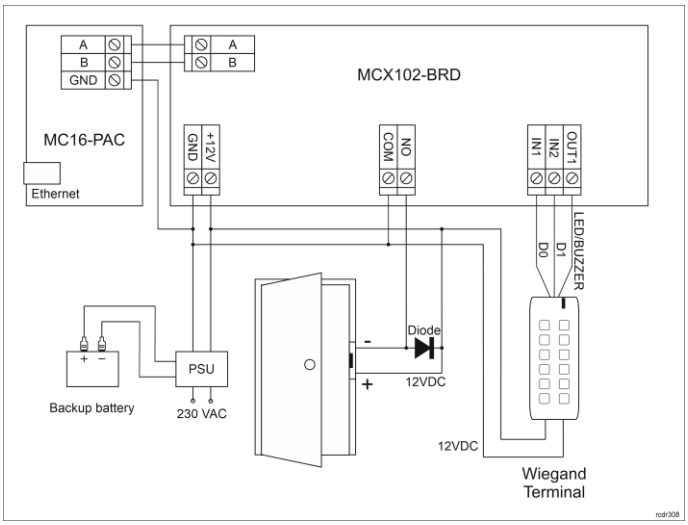
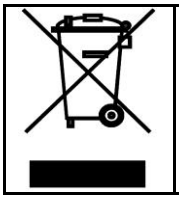


Fig. 6 Typical door control with Wiegand reader

Notes:

- Any 12VDC/1.5A buffer power supply unit can be used for expander and door devices.
- MCX102-BRD cannot charge battery therefore backup power supply must be ensured on the level of PSU.
- Diagrams include doors with electric strikes. In case of electromagnetic lock, the NC terminal of relay is used instead of NO terminal.
- Diagram in fig. 6 includes exit button. In case of read-in/out doors it can be used for emergency door opening.



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