

# Roger Access Control System

## MCX16-UZ Installation Manual

Firmware version: 1.0.2.9 and newer

Document version: Rev. A



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](http://www.roger.pl).

### INTRODUCTION

The MCX16-UZ I/O expander enables use of Clex (UHLMANN&ZACHER) wireless locks as access terminals in RACS 5 system. MCX16-UZ operates as hardware interface for communication of Clex locks with MC16 access controller. The expander communicates with the MC16 controller using RS485-1 bus and with Clex public online system using RS485-2 bus. MCX16-UZ offers its input and output lines for use in RACS 5 system.

### CONFIGURATION WITH ROGERVDM PROGRAM

Low level configuration with RogerVDM software enables to define basic parameters of MCX16 expander.

#### Programming procedure:

1. Switch power supply off.
2. Short CLK and DTA lines.
3. Restore power supply (all LED flashing) and wait min. 5s.
4. Remove connection between CLK and DTA lines (LEDs stop flashing, LED8 is ON).
5. Start RogerVDM program, select *MCX16-UZ v1.x* device, the latest firmware version and *Ethernet* communication channel.
6. Enter device IP address and communication key (by default respectively 192.168.0.81, admin).
7. Click *Connect* button, the program will establish connection and automatically open configuration window.
8. Define RS485 address in range of 100-115 and if needed change IP address and communication key.
9. Enable Clex locks and enter their serial numbers *SW2-Version* (8 ASCII digits).
10. Optionally enter comments for *CDI*, *OUT* and *PWR* lock objects in order to facilitate identification of locks during further configuration of the system.
11. Click *Send to Device* to update the configuration of device and disconnect by selection of *Device* in the top menu and then *Disconnect*.

Note: The low level configuration of the expander cannot be modified with VISO v2 software.

### CONFIGURATION WITH VISO PROGRAM

High level configuration with VISO software enables to define the logic of controller, expander and locks. More information on this subject is given in AN056 application note.

### MEMORY RESET

Memory reset procedure resets all settings to default ones and results in 192.168.0.81 IP address and 'admin' communication key.

#### Memory reset procedure:

1. Disconnect power supply.
2. Press and remove memory card from expander.
3. Use memory card reader to connect the card to computer.
4. Delete CONFIG.INI file from the memory card.
5. Insert the memory card into expander socket.
6. Start RogerVDM and make low level configuration.

### FIRMWARE UPDATE

New firmware can be uploaded to the controller via its memory card. The latest firmware file is available at [www.roger.pl](http://www.roger.pl).

#### Firmware update procedure:

1. Disconnect power supply.
2. Press and remove memory card from expander.
3. Use memory card reader to connect the card to computer.
4. Copy the new firmware (\*.frg) to the memory card and rename it as FW.BUF.
5. Insert the memory card into expander socket.
6. Restore power supply and expander will automatically start the firmware update process. During this process, which usually takes 10s, LED2 is ON while LED3 is flashing.
7. Once the update is finished the FW.BUF file is automatically erased and expander returns to service mode (LED8 is steady ON).
8. If needed, start RogerVDM program and make low level configuration.

Note: During the firmware update process, it is necessary to ensure continuous and stable power supply for the device. If interrupted, the device may require repair by Roger.

### POWER SUPPLY

MCX16 expander can be supplied from 24VDC PSU, 12VDC PSU or 18VAC transformer with minimal power output 20VA. In case of 12VDC power supply, backup battery cannot be directly connected to the expander and in such case backup power supply must be provided by 12VDC power supply unit. It is recommended to install MCX16-UZ expander in ME-40-24V metal box which is factory equipped with adequate PSU.

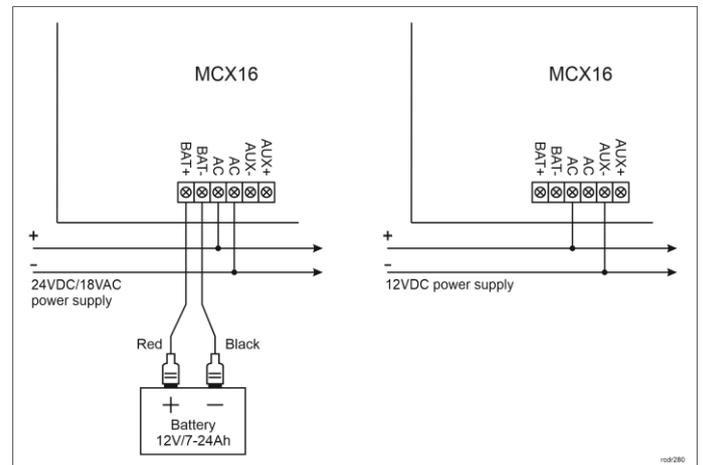


Fig. 1 MCX16 power supply

### APPENDIX

Table 1. Screw terminals	
Name	Description
BAT+, BAT-	Backup battery
AC, AC	18VAC or 24VDC input power supply
AUX-, AUX+	12VDC/1.0 output power supply
TML-, TML+	12VDC/0.2A output power supply
IN1-IN8	Input lines
GND	Ground
OUT1-OUT6	15VDC/150mA transistor output lines
A1,B1	RS485 bus (MC16 controller)
CLK, DTA	Not used
A2,B2	RS485 bus (Clex FMS hub)
NO1, COM1, NC1	30V/1.5A DC/AC (REL1) relay
NO2, COM2, NC2	30V/1.5A DC/AC (REL2) relay

Table 2. LED indicators	
Name	Description
LED1	Established connection with hub
LED2	-
LED3	ON: Low level configuration error Pulsing: Communication lost with controller
LED4	RTC error
LED5	-
LED6	License error
LED7	ON: Backup battery error Pulsing: Backup battery low level
LED8	ON: Service mode Pulsing: Normal mode

Table 3. Specification	
Supply voltage	17-22VAC, nominal 18VAC 11.5V-15VDC, nominal 12VDC 22-26VDC, nominal 24VDC
Backup battery	13.8V/7Ah, charging current approx. 300mA
Current consumption	100 mA for 18VAC (no loads on AUX/TML outputs)

Inputs	Eight parametric inputs (IN1..IN3) internally connected to the power supply plus through a 5.6kΩ resistor. Approx. 3.5V triggering level for NO and NC inputs.
Relay outputs	Two relay outputs with single NO/NC contact 30V/1.5A rated
Transistor outputs	Six open collector transistor outputs, 15VDC/150mA rated. Max. total current sink by all outputs up to 3ADC.
Power supply outputs	Two power outputs: 12VDC/0.2A (TML) and 12VDC/1A (AUX)
Distances	1200m for RS485
IP Code	n/a
Environmental class (acc. to EN 50131-1)	Class 1, indoor general conditions, temperature: +5°C to +40°C, relative humidity: 10 to 95% (no condensation)
Dimensions H x W x D	72 x 175 x 30 mm
Weight	approx. 200g

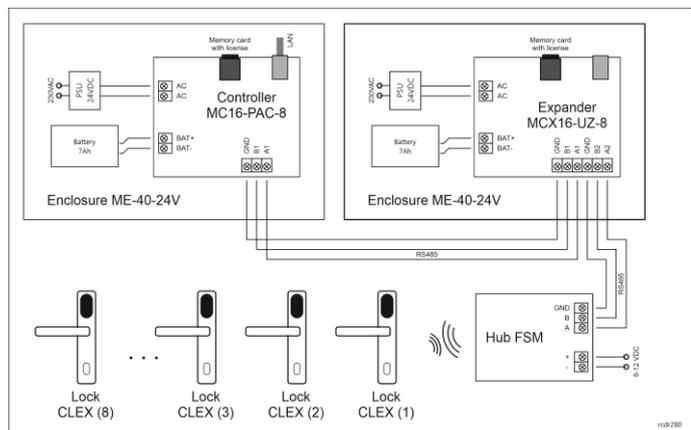


Fig. 2 Typical connection diagram

## Notes:

- Up to 16 MCX16-UZ expanders can be connected to RS485 bus of MC16 controller but the total number of doors with CLEX locks (e.g. CX8172) cannot exceed 16 and it depends on the version of MC16 controller.
- FSM hub can be supplied from standalone 12VDC PSU or from AUX/TML outputs of MCX16-UZ expander or MC16 controller.
- The maximal RS485 bus length between controller and expander as well as between expander and FSM hub equals to 1200m and it can be executed with standard U/UTP cat. 5 cable.
- It is possible to install both MC16 controller and MCX16-UZ expander in the same ME-40-24V metal box.



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