

Roger Access Control System

MC16-SVC Installation Manual

Firmware version: 1.6.4 or newer

Document version: Rev. C



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

MC16-SVC controller is dedicated to demo or service operation in RACS 5 system. The controller is delivered with a set of licenses that enable switching to an operating mode compatible with 8 functional versions of the MC16 series controller. MC16-SVC controller can be operated as:

- access controller for 16 doors (MC16-PAC-16)
- access controller for 64 lockers (MC16-LRC-64)
- universal elevator access controller for 64 floors (MC16-EVC-64)
- car park controller for 16 doors/gates (MC16-AZC-16)
- hotel controller for 4 rooms (MC16-HRC-4)
- building automation controller (MC16-BAC-64)
- KONE elevator controller (MC16-EVK)
- alarm controller for 16 alarm zones (MC16-IAC-16)

Factory new device requires selection of a license prior to starting.

LICENSES PARAMETERS

Table 1. MC16-SVC licenses				
Type	MC16-PAC-16	MC16-LRC-64	MC16-EVC-64	MC16-AZC-16
Access Doors	16	64	64	16
Access Points	32	16	1	32
Inputs	96	128	8	96
Outputs	64	128	128	64
Function Keys	128	32	8	64
Local Commands	32	16	4	32
Access Zones	32	0	0	32
Alarm Zones	32	0	0	32
Automation Nodes	32	2	2	32
Power Supplies	32	16	16	32
Access Doors per Access Points	1	64	64	1
Type	MC16-HRC-4	MC16-BAC-64	MC16-EVK	MC16-IAC-16
Access Doors	4	0	64	0
Access Points	8	32	2	32
Inputs	24	128	8	128
Outputs	64	128	8	128
Function Keys	48	128	8	128
Local Commands	8	32	4	32
Access Zones	8	0	0	0
Alarm Zones	8	0	0	16
Automation Nodes	16	64	0	16
Power Supplies	8	32	16	32
Access Doors per Access Points	1	8	64	1

LICENSE REPLACEMENT

License replacement procedure:

1. Switch off the power supply of MC16 controller.
2. Press memory card and remove it from the socket under CR2032 battery on controller board.
3. Insert card into standard Flash memory card reader and connect it to computer's USB port.
4. Copy required license file from LICENSES folder into main folder of the card and change the name of the file into LICENSE.CFG if needed.
5. Open and configure DEBUG.CFG file on memory card (see below) to select demo or service mode.
6. Insert the card into controller socket.
7. Switch on the power supply of MC16 controller.

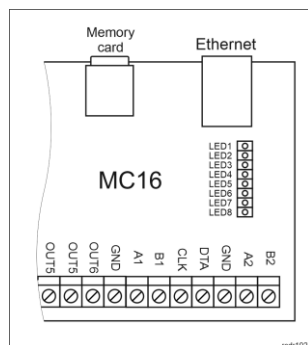


Fig. 1 MC16 memory card

DEMO AND SERVICE MODE

If the parameter EVL=1 is entered in DEBUG.CFG file on memory card then the controller operation on each day is limited to 6:00 am – 10:00 pm period. This is called demo mode and is offered for the purpose of MC16 evaluation and demonstration.

If the parameter EVL=0 or is not defined at all then the parameter STD in the format YY/MM/DD (e.g. STD=20/03/30) defines starting date for controller operation. This is called service mode and it is offered for the purpose of MC16 servicing e.g. temporary device replacement due to failure. In this mode the controller can be operated for 10 days. When the time expires, then the controller automatically suspends normal operation. In order to restart the work, it is necessary to set a new start date in the DEBUG.CFG file. The controller working time can be extended any number of times and the extension for another period may take place during the previous period.

CONFIGURATION WITH ROGERVDM PROGRAM

Low level configuration with RogerVDM software enables to define basic parameters of MC16 controller. Additionally it is necessary to define individual addresses for MCT and PRT series readers and MCX expanders according to their installation manuals.

MC16 programming procedure with RogerVDM software:

1. Connect the controller to Ethernet network and define the IP address of your computer in the same subnetwork as the controller with 192.168.0.213 default IP address.
2. Start RogerVDM program, select *MC16 v1.x* device, the latest firmware version and *Ethernet* communication channel.
3. Select from the list or enter manually the IP address of controller, enter 1234 communication key and start the connection with the controller.
4. In the top menu select *Tools* and then *Set communication key* to define your own password for the controller.
5. In the main window specify your own IP address of the controller.
6. Enable PRT or Wiegand readers if the controller is supposed to operate with them
7. Optionally enter comments for controller and its object to facilitate their identification during further configuration of the system.
8. Optionally backup settings clicking *Send to File...*
9. Click *Send to Device* to update the configuration of controller and disconnect by selection of *Device* in the top menu and then *Disconnect*.

CONFIGURATION WITH VISO PROGRAM

High level configuration with VISO software enables to define the logic of controller. More information on scenarios of operation and high level configuration is given in MC16 Operating manual as well as AN002, AN006 and other application notes.

MEMORY RESET

Memory reset procedure resets all settings to default ones and results in 192.168.0.213 IP address and empty communication key.

MC16 memory reset procedure:

1. Disconnect power supply.
2. Short CLK and IN4 lines.
3. Restore power supply, all LEDs will flash and wait min. 6s.
4. Remove connection between CLK and IN4 lines, LEDs will stop pulsating and LED2 will be on.
5. Wait approx. 1.5 min till LED5+LED6+LED7+LED8 are pulsating.
6. Restart the controller (switch power supply off and on).
7. Start RogerVDM and make low level configuration.

FIRMWARE UPDATE

New firmware can be uploaded to the controller with RogerVDM software. The latest firmware file is available at www.roger.pl.

MC16 firmware update procedure:

1. Connect with the controller using RogerVDM software.
2. Backup settings by clicking *Send to File...*
3. In the top menu select *Tools* and then *Update firmware*.
4. Select firmware file and then click *Update*.
5. After firmware update wait till LED8 is pulsating.
6. Make or restore low level configuration in RogerVDM software.

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

MC16 controller is designed for power supply from 230VAC/18VAC transformer with minimal power output 20VA, but it can also be supplied with 12VDC or 24VDC. In case of 12VDC power supply, backup battery cannot be directly connected to MC16 and in such case backup power supply must be provided by 12VDC power supply unit.

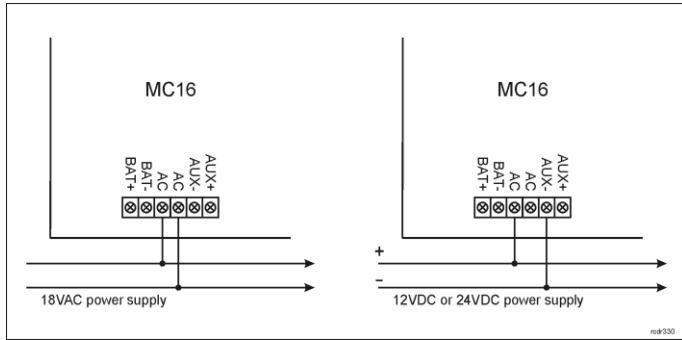


Fig. 2 MC16 power supply

APPENDIX

Table 2. MC16 screw terminals	
Name	Description
BAT+, BAT-	Backup battery
AC, AC	18VAC input power supply
AUX-, AUX+	12VDC/1.0 output power supply (for door lock)
TML-, TML+	12VDC/0.2A output power supply (for readers)
IN1-IN8	Input lines
GND	Ground
OUT1-OUT6	15VDC/150mA transistor output lines
A1,B1	RS485 bus
CLK, DTA	RACS CLK/DTA bus
A2,B2	Not used
NO1, COM1, NC1	30V/1.5A DC/AC (REL1) relay
NO2, COM2, NC2	30V/1.5A DC/AC (REL2) relay

Table 3. MC16 LED indicators	
Name	Description
LED1	Normal mode
LED2	ON: Service mode (low level configuration) Pulsing: RAM or Flash SPI memory error
LED3	ON: High level configuration error Pulsing: Low level configuration error
LED4	No memory card or memory card error
LED5	Event log error
LED6	License error
LED7	Not used
LED8	Pulsating: Proper functioning of the controller

Table 4. Specification	
Supply voltage	17-22VAC, nominal 18VAC 11.5V-15VDC, nominal 12VDC, 22-26VDC, nominal 24VDC
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 150m for and RACS CLK/DTA and Wiegand
IP Code	IP20
Environmental class (acc. to EN 50131-1)	Class I, indoor general conditions, temperature: +5°C to +40°C, relative humidity: 10 to 95% (no condensation)
Dimensions H x W x D	72 x 175 x 30 mm
Weight	approx. 200g

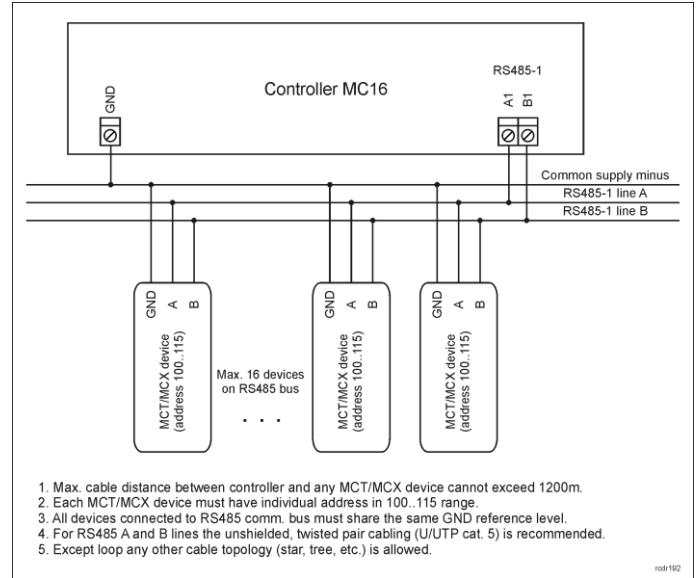



Fig. 3 Connection of readers and expanders to MC16 access controller

1. Max. cable distance between controller and any MCT/MCX device cannot exceed 1200m.
2. Each MCT/MCX device must have individual address in 100..115 range.
3. All devices connected to RS485 comm. bus must share the same GND reference level.
4. For RS485 A and B lines the unshielded, twisted pair cabling (U/UTP cat. 5) is recommended.
5. Except loop any other cable topology (star, tree, etc.) is allowed.



This symbol placed on a product or packaging indicates that the product should not be disposed of with other wastes as this may have a negative impact on the environment and health. The user is obliged to deliver equipment to the designated collection points of electric and electronic waste. For detailed information on recycling, contact your local authorities, waste disposal company or point of purchase. Separate collection and recycling of this type of waste contributes to the protection of the natural resources and is safe to health and the environment. Weight of the equipment is specified in the document.

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