Roger Access Control System

MCT12E / MCT64E / MCT66E Reader

Installation Manual

Product version: v1.1

Firmware version: 1.0.2 and newer

Wersja dokumentu: Rev. F

INTRODUCTION

The reader is designed for operation with MC16 access controller (RACS 5 system). Factory new reader is configured with default settings including ID=100 address.

DEVICE CONFIGURATION

The reader can be configured in regard of various parameters (including address) in order to adapt it to the requirements of specific installation. Device can be configured from VISO v2 management software or RogerVDM utility software.

Note: Remote configuration of device from VISO v2 software is possible only if jumper is placed on MEM contacts (fig. 2). If the jumper is removed, then such configuration is blocked. In case of factory new device, jumper is placed on MEM contacts.

CONFIGURATION WITH VISO V2 PROGRAM

In RACS 5 v2 system the reader can be installed at site without previous configuration. According to AN006 application note, its address and other settings can be configured from VISO v2 management software and during such configuration the access to its service contacts (fig. 2) is not required.
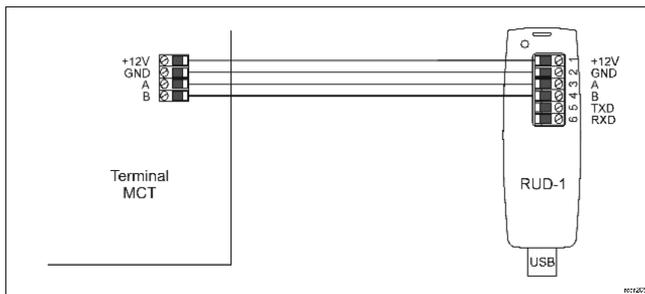
CONFIGURATION WITH ROGERVDM PROGRAM

Fig. 1 Connection of MCT reader to RUD-1 interface

Programming procedure with RogerVDM

1. Connect the reader to RUD-1 interface (fig. 1) and connect the RUD-1 to computer's USB port.
2. Start RogerVDM program, select *MCT* 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 and other settings according to requirements of specific installation.
5. Click *Send to Device* to update the configuration of reader.
6. Optionally make a backup by clicking *Send to File…* and saving settings to file on disk.
7. In the top menu select *Device->Disconnect.*

8. Disconnect reader from RUD-1 interface.

Note: Do not read any cards nor press reader keypad when reader is configured with RogerVDM.

MEMORY RESET PROCEDURE

Memory reset procedure enables configuration of RS485 address and resets all other settings to factory default ones.

Memory reset procedure

1. Remove all connections from A and B lines.
2. Connect CLK and DTA lines.
3. Restart the reader (switch power supply off and on or short RST contacts for a moment).
4. When red LED STATUS, green LED OPEN and orange LED SYSTEM are on then disconnect CLK and DTA lines.
5. When orange LED SYSTEM is on then enter 3 digits of RS485 address in range of 100-115 with reader keypad or with any EM125kHz proximity card.
6. When the third digit is defined then the reader will restart with the new address.

Readers without keypad can be addressed with multiple card readings where the N number of readings emulates digit of the address. Three series of readings with any EM125kHz proximity card are necessary to set the address. After each series wait for two beeps and proceed with the next digit. Zero digit is emulated with 10 readings.

Example:
Programming of ID=101 address with card readings:

1. Read card 1 time 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.
4. Wait till reader is restarted with the new address and other default settings.

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 *USB-RS485 Converter* option.
6. Specify path to firmware file (*.hex).
7. Click *Program* and proceed according to displayed messages.
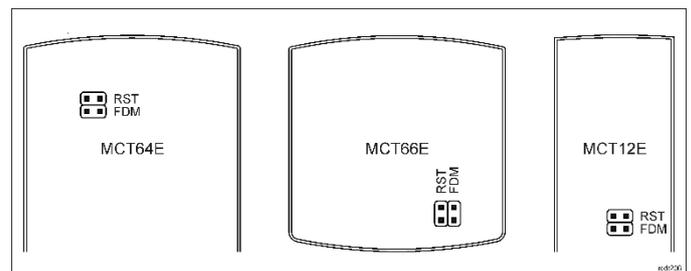8. Remove jumper from FDM contacts and restart the reader.
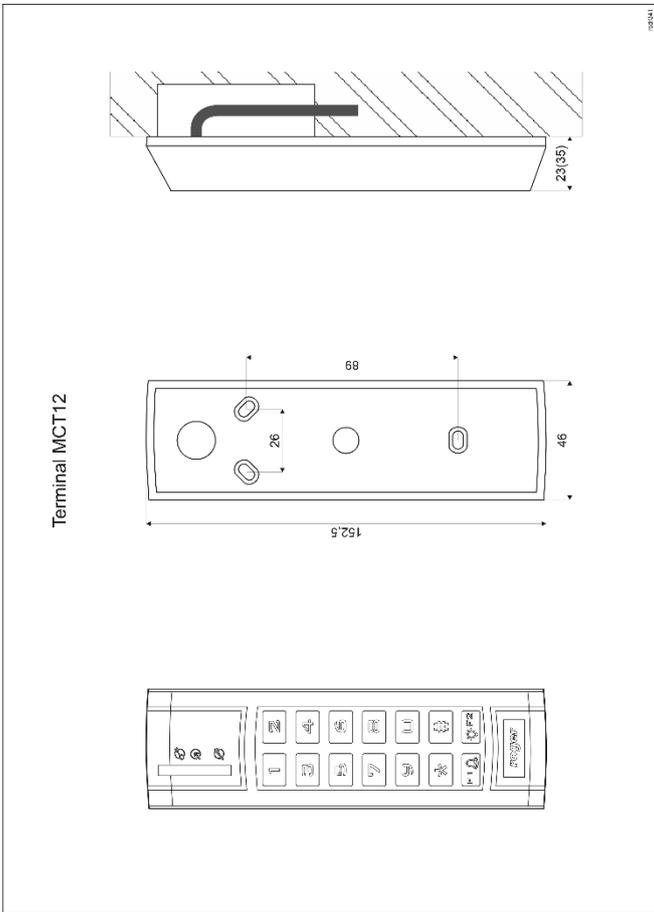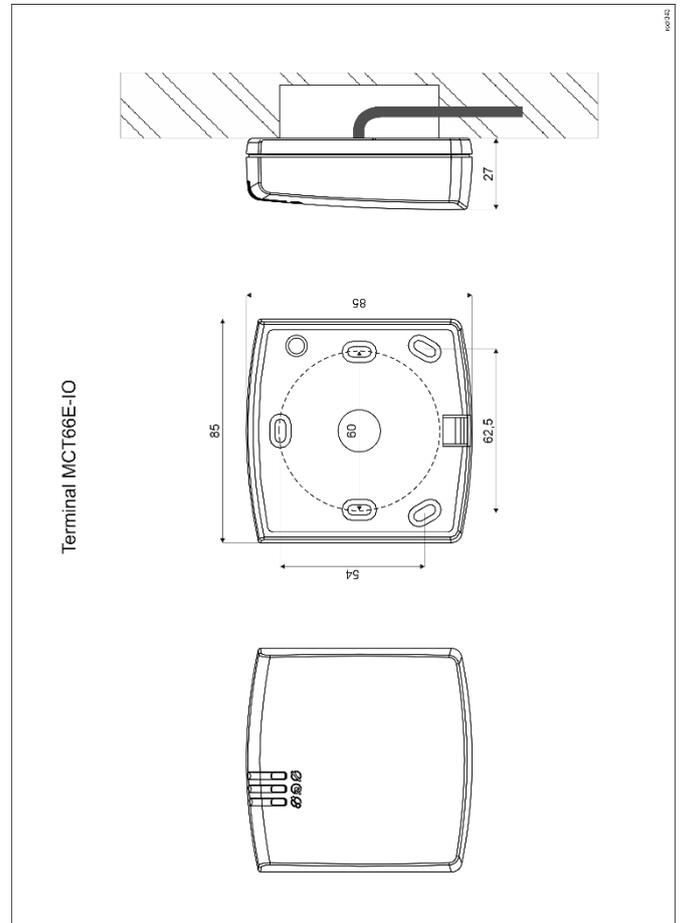
INSTALLATION

Fig. 2 Service contacts.

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Fig. 3 Installation MCT12E

Fig. 4 Installation MCT64E-IO

Fig. 5 Installation MCT66E-IO

Table 1. Terminals and wires			
Screw terminal	Wire colour (MCTxxE-IO)	Wire colour (MCTxxE)	Description
12V	Red	Red	Supply plus
GND	Black	Blue	Ground
IN1	Pink		IN1 input line
IN2	Blue		IN2 input line
IN3	White-yellow		IN3 input line
RS485 A	Brown	Brown	RS485 bus, line A
RS485 B	Green-white	White	RS485 bus, line B
CLK	White	Green	CLK line
DTA	Green	Yellow	DTA line
TMP	Yellow	Pink	Tamper switch
TMP	Grey	Grey	Tamper switch
IO1	Yellow-brown		IO1 output line
IO2	Green-brown		IO2 output line
REL1-NC	Grey-pink		REL1 relay output (NC)
REL1-COM	Red-blue		REL1 relay common terminal
REL1-NO	Violet		REL1 relay output (NO)

Note: MCT12E enclosure consists of front panel and back panel. New device is assembled with a standard back panel, but additional free of charge, extended back panel is included. This panel can be used when connection cable has to be hidden and no flush mounting box is available.

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Installation guidelines

• The terminal should be mounted on a vertical structure (wall) away from sources of heat and moisture.
• Front panel should be attached in such way as the tamper detector would firmly press the back panel.
• All electrical connections should be done with disconnected power supply.
• If the device is installed in a place exposed to conductive dust (e.g. metal dust), after installation the RST/FDM pins should be protected with an insulating compound, e.g. silicone..
• If the terminal and controller are not supplied from the same PSU then GND terminals of both devices must be connected with any wire
• Device can be cleaned by means of wet cloth and mild detergent without abrasive components. In particular do not clean with alcohols, solvents, petrol, disinfectants, acids, rust removers, etc. Damages resulting from improper maintenance and usage are not covered by manufacturer warranty.
• The IP65 rating is guaranteed if the bottom of the housing is tightly adhered to the surface on which the device is installed. It is the installer's responsibility to seal the space between the bottom of the housing and the surface on which the device is mounted.

APPENDIX

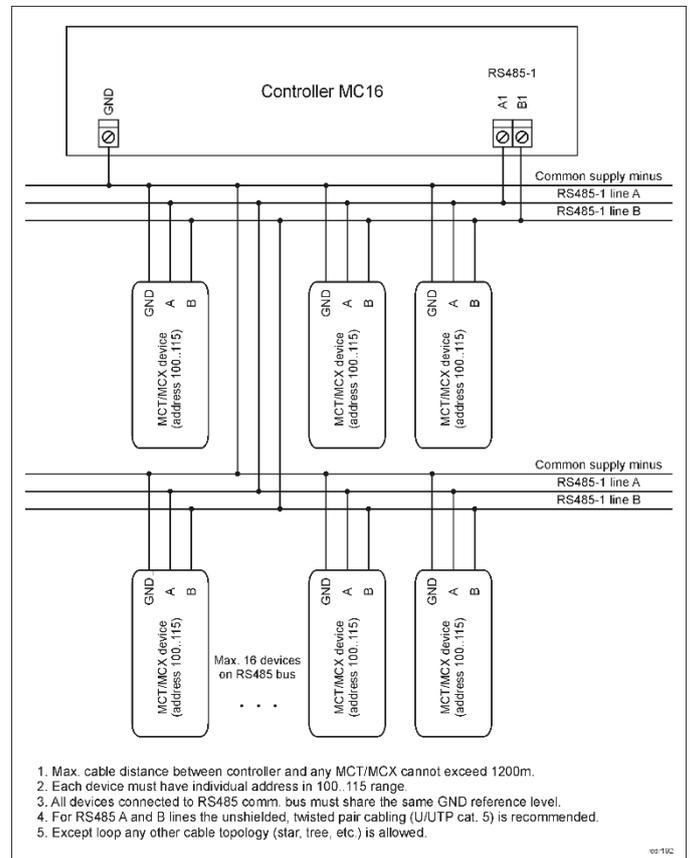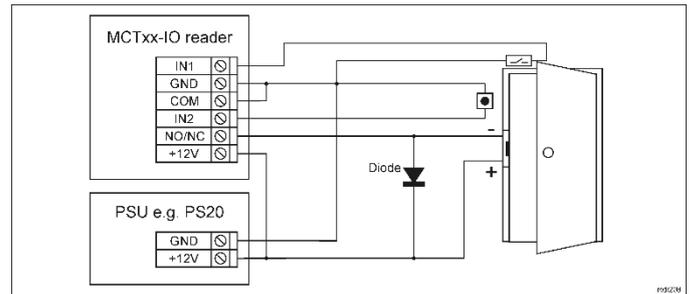| Table 2. Specification	
Nominal supply voltage	12VDC
Nominal supply current	MCT12E/MCT12E-IO: ~50 mA MCT12E-BK/MCT12E-BK-IO: ~40 mA MCT64E-IO: ~50 mA MCT66E-IO: ~40 mA
Inputs	Three inputs (IN1..IN3) electrically connected internally to +12V through a 5.6 kΩ resistor. NO and NC lines approx. 3.5V triggering level
Relay output	Relay output (REL1) with single NO/NC contact, 30V/1.5A DC/AC max. load
Transistor outputs	Two (IO1, IO2) open collector outputs, 15VDC/1A max. load
Tamper protection	Isolated 50mA/24V contacts, shorted when enclosure is closed
Identification methods	EM 125 kHz UNIQUE according to EM4100/4102
Reading range	Up to 7 cm
Distance	1200m maximal cable length for RS485 bus between controller and reader
IP	MCT12E: IP65 MCT64E-IO: IP65 MCT66E-IO: IP65
IK	MCT12E: IK07 MCT64E-IO: IK08 MCT66E-IO: IK07
Environment	Outdoor general conditions, temperature: -25°C to +60°C, relative humidity: 10 to 75% (no condensation)
Dimensions HWD	MCT12E: 152,5 x 46 x 23(35) mm MCT64E-IO: 115 x 80 x 35 mm MCT66E-IO: 85 x 85 x 27 mm
Weight	~150g
Compliance	CE; RoHS
Manufacturer's warranty	36 months

Fig. 6 Connection of readers and expanders to MC16 access controller

1. Max. cable distance between controller and any MCT/MCX cannot exceed 1200m.
2. Each 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.

Rys. 7 Connection of door lock, door contact and exit button to MCTxx-IO reader

Table 3. Ordering information	
MCT12E-BK	EM 125 kHz access terminal
MCT12E	EM 125 kHz access terminal with keypad
MCT12E-BK-IO	EM 125 kHz access terminal; on-board I/Os
MCT12E-IO	EM 125 kHz access terminal with keypad; on-board I/Os
MCT64E-IO	EM 125 kHz access terminal with keypad; on-board I/Os
MCT66E-IO	EM 125 kHz access terminal; on-board I/Os
RUD-1	Portable USB-RS485 communication interface dedicated to ROGER access control devices

Table 4. Product history		
Version	Date	Description
MCT12E v1.0	01/2015	The first commercial version of product

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MCT12E v1.1	12/2015	Minor modifications of power supply and RS485 circuits
MCT64E-IO v1.0	01/2015	The first commercial version of product
MCT66E-IO v1.0	01/2015	The first commercial version of product
MCT64E-IO v1.1	12/2015	Minor modifications of power supply and RS485 circuits
MCT66E-IO v1.1	12/2015	Minor modifications of power supply and RS485 circuits

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