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roger MC16-PAC-5 Physical Access Controller Installation Guide

Roger Access Control System
MC16 Installation Manual
Firmware version: 1.6.4 and newer
Document version: Rev. I

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**.

Contents

INTRODUCTION

MC16 controller is mainly dedicated to door access control in RACS 5 system.
The controller is master device for such peripheral devices as MCT and PRT series terminals, Wiegand interface readers and MCX series expanders. Inputs and outputs of the controller or connected peripheral device can be

used to control such devices as door locks, exit buttons, alarm sirens, etc. Various versions and types of controllers are based on the same hardware module and differ with license on their memory cards. Most popular MC16-PAC controllers are offered in MC16-PAC-x-KIT sets.

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 and AN006 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 and 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.
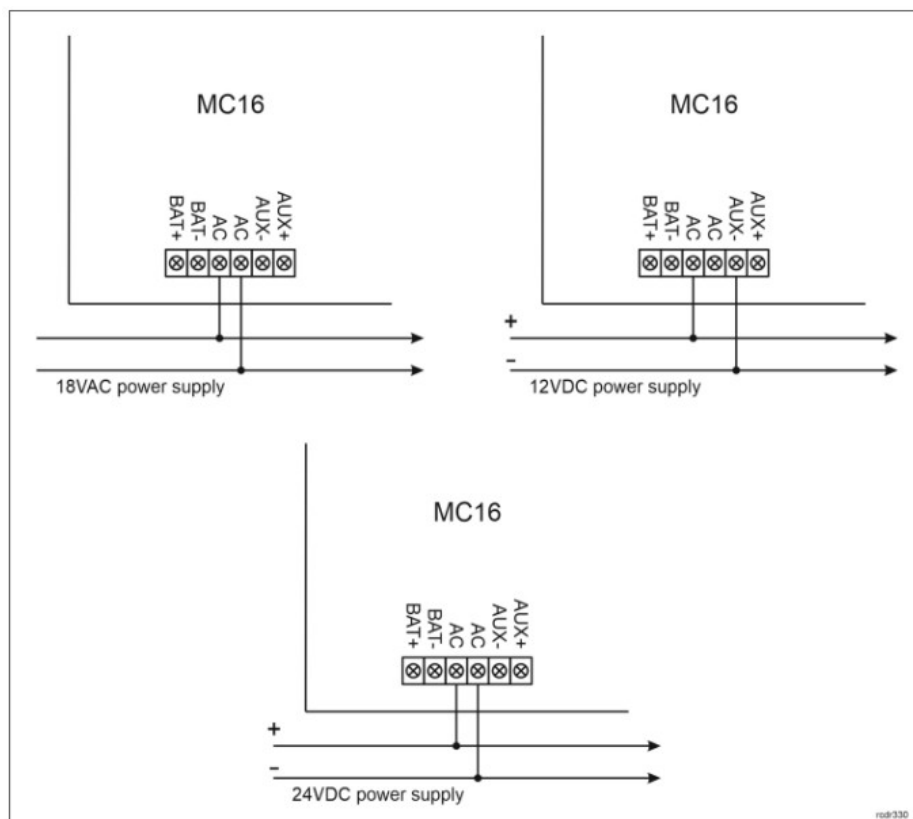
Fig. 1 MC16 power supply

APPENDIX

Table 1. MC16 screw terminals

Name	Description
BAT+, BAT-	Backup battery
AC, AC	18VAC or 24VDC 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 2. 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 3. 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
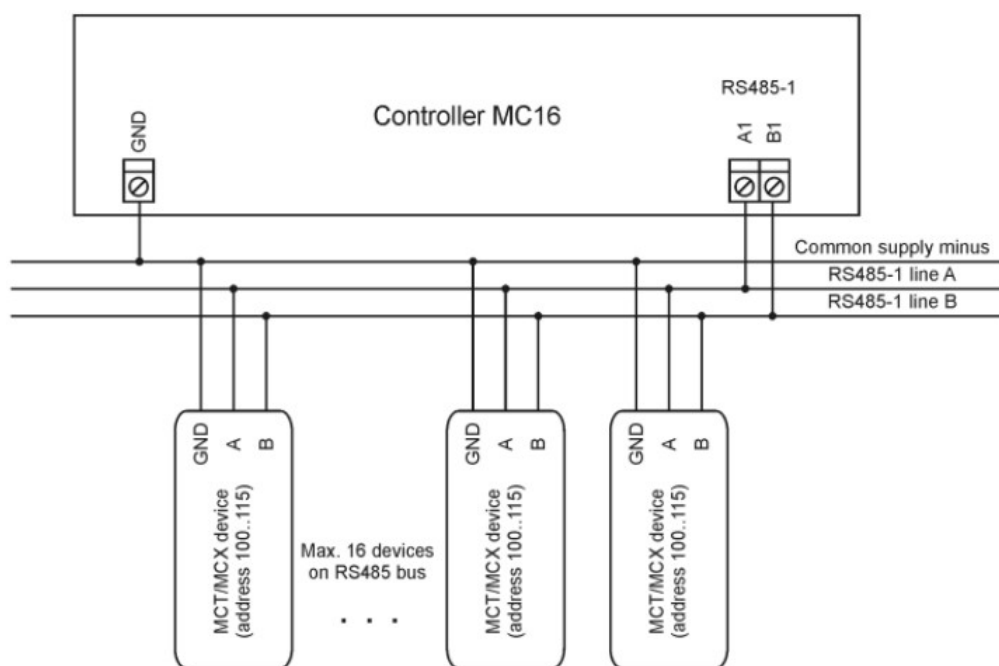
1. Max. cable distance between controller and any MCT/MCX device cannot exceed 1200m.

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.

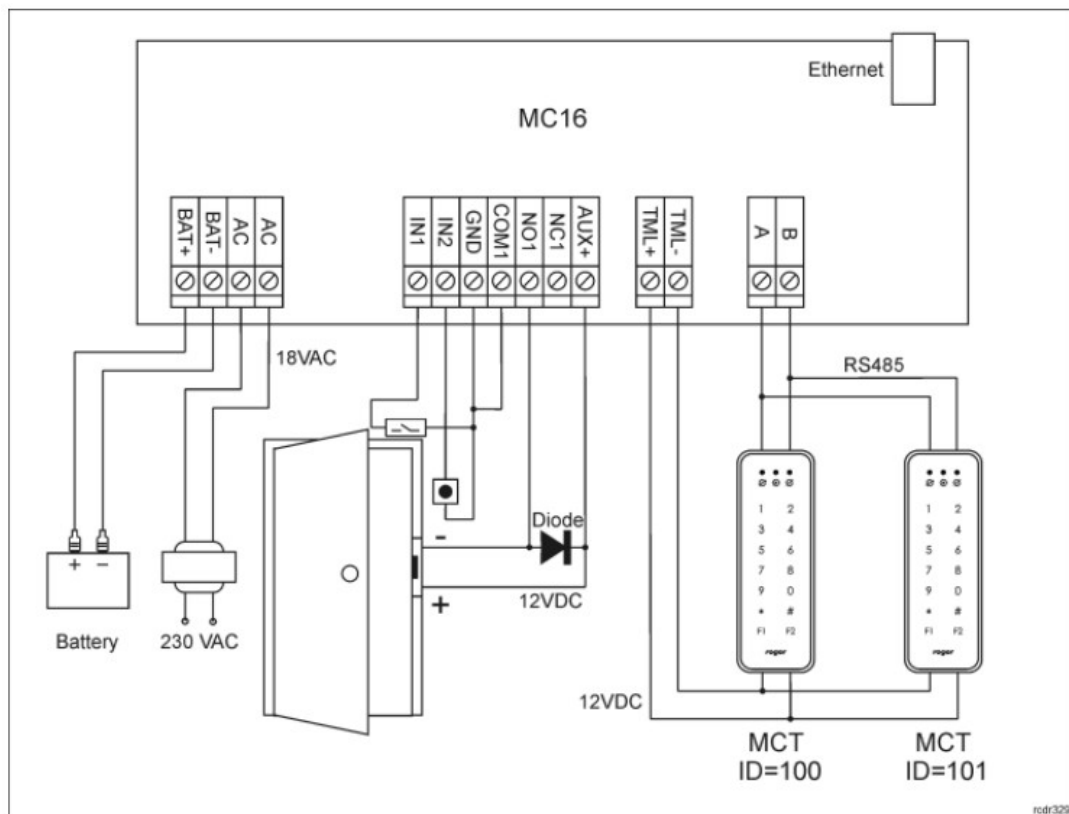**Fig. 2 Connection of readers and expanders to MC16 access controller**

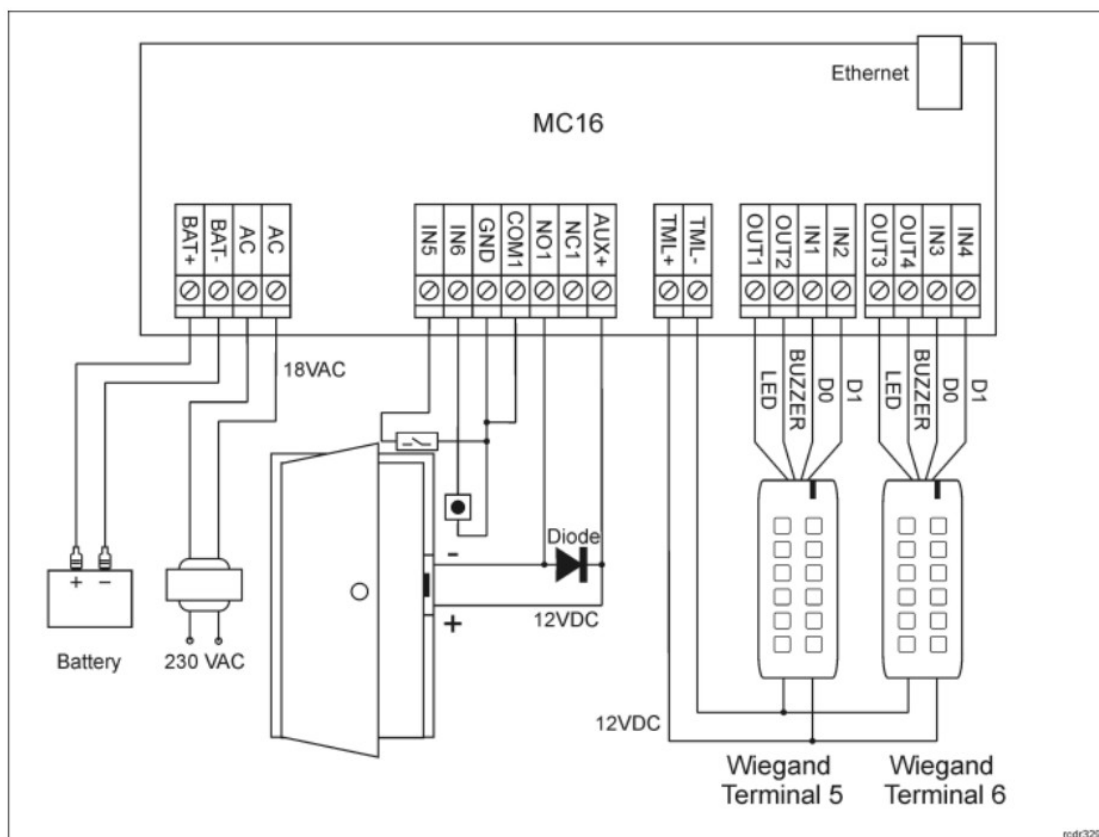**Fig. 3 Typical door control with MCT readers**

Fig. 4 Typical door control with Wiegand readers

Notes:

- In case of read-in door, single reader is connected to the controller. MCT terminal can be then installed with default ID=100 address.

- In case of PRT readers, the diagram is the same as in case of MCT readers except for connection to CLK and DTA lines instead of RS485 A and B lines.
- In case of electrically incompatible Wiegand readers it might be necessary to install PR-GP-BRD modules.
- 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.

 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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Documents / Resources

roger MC16-PAC-5 Physical Access Controller [pdf] Installation Guide
MC16-PAC-5 Physical Access Controller, MC16-PAC-5, Physical Access Controller, Access Controller, Controller

References

- ⌐ **Kontrola Dostępu i Automatyka Budynkowa - Roger**
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