

Roger Access Control System 5

Application note no. 001

Document version: Rev. C

Wiegand interface terminals

Note: This document refers to RACS 5 v1.6.6 or higher

Introduction

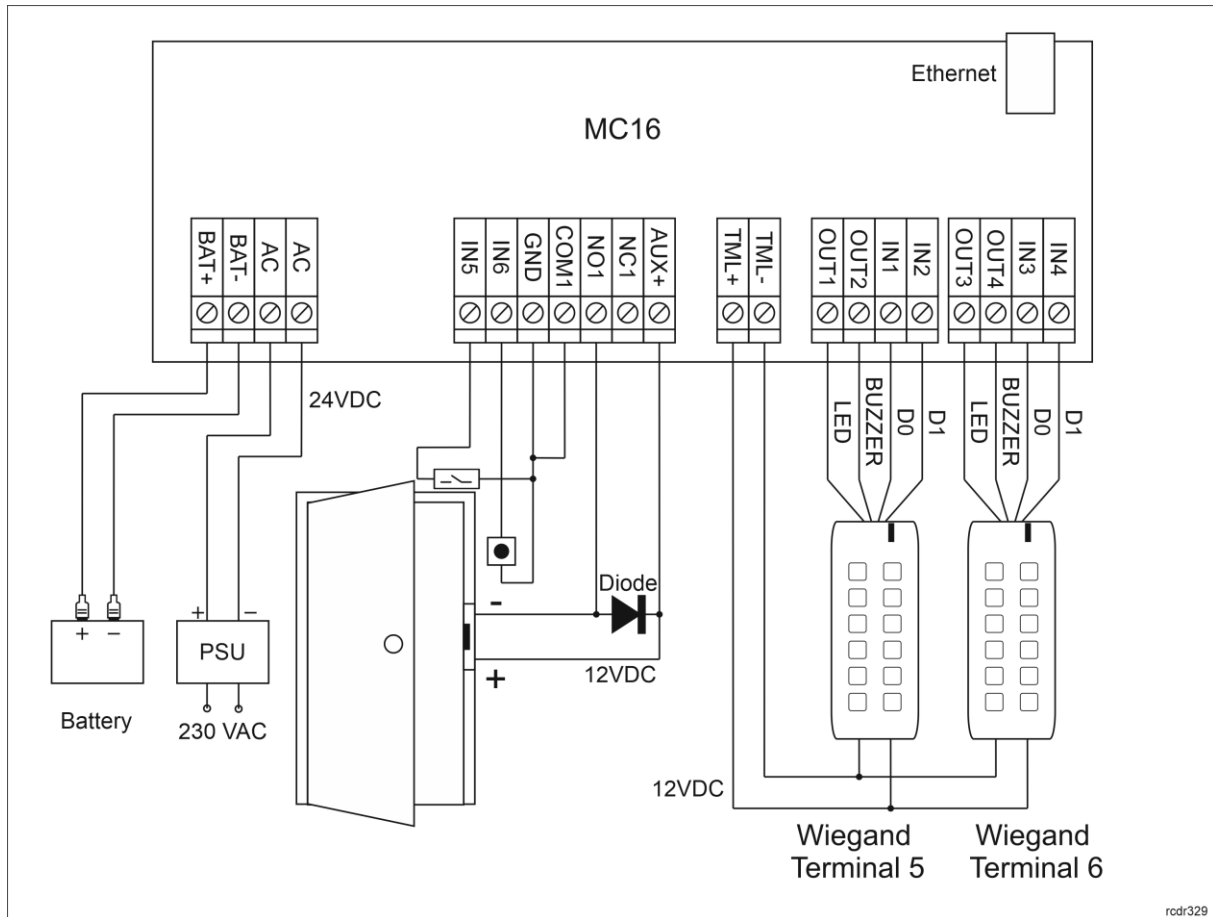
Terminals from various manufacturers can be installed in RACS 5 system if they offer communication via Wiegand 26..66bit interface. Due to this communication method the RACS 5 system can be complemented with non-typical identification devices which are not offered by Roger such as readers of less popular card standards, biometric readers other than fingerprint readers, license plate recognition cameras, long range readers, remote keyless entry devices, etc.

According to MC16 scenarios of operation which are presented in AN002 application note, Wiegand interface terminals can be directly connected to the controller (max. 4 terminals) or indirectly via MCX402-BRD expanders (max. 2 terminals per expander). Wiegand terminals are connected to inputs of mentioned devices.

In case of electric incompatibility of devices on Wiegand bus it may be necessary to install PR-GP-BRD modules on communication lines. The connection method is described in PR-GP-BRD manual.

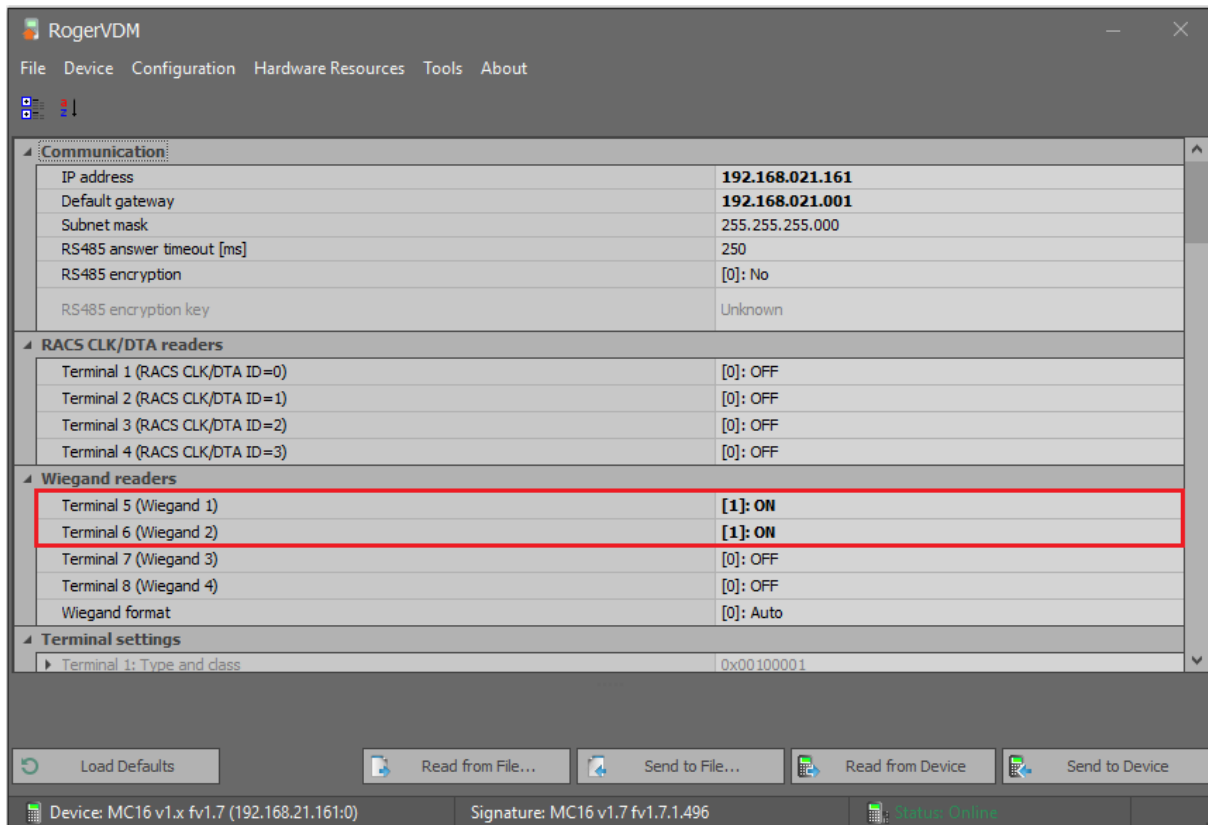
Access Door with Wiegand terminals (MC16-PAC-1-KIT)

The diagram below shows typical connection of Wiegand terminals to single door MC16-PAC-1-KIT for read-in/out door. In case of read-in door a single Wiegand terminal is connected.




Low level configuration (RogerVDM)

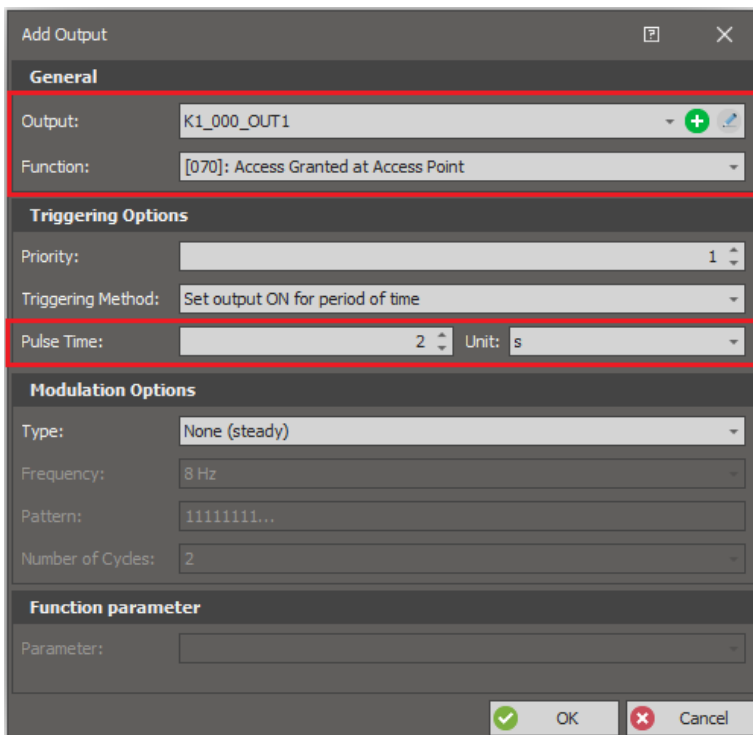
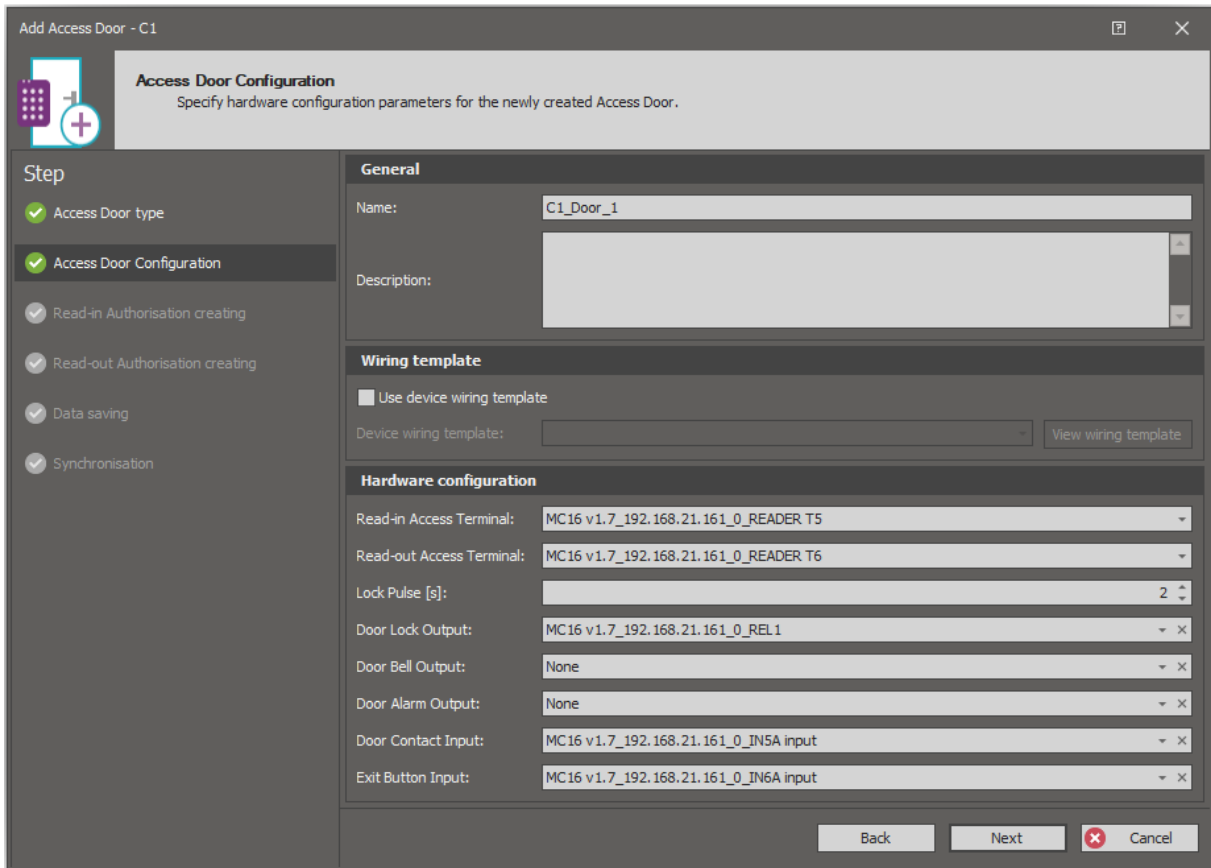
Low level configuration with RogerVDM software enables to define basic parameters of devices in the system. In case of MC16 controller except for typical parameters such as IP address, communication key and NC type input for connection of door contact it is also necessary to enable operation with Wiegand readers and possibly define data format. When operation with Wiegand terminals is enabled then respective inputs of the controller are reserved for such communication and they cannot be used for any other purpose.



High level configuration (VISO)

High level configuration with VISO software enables to define the logic of system. In case of Wiegand terminals:

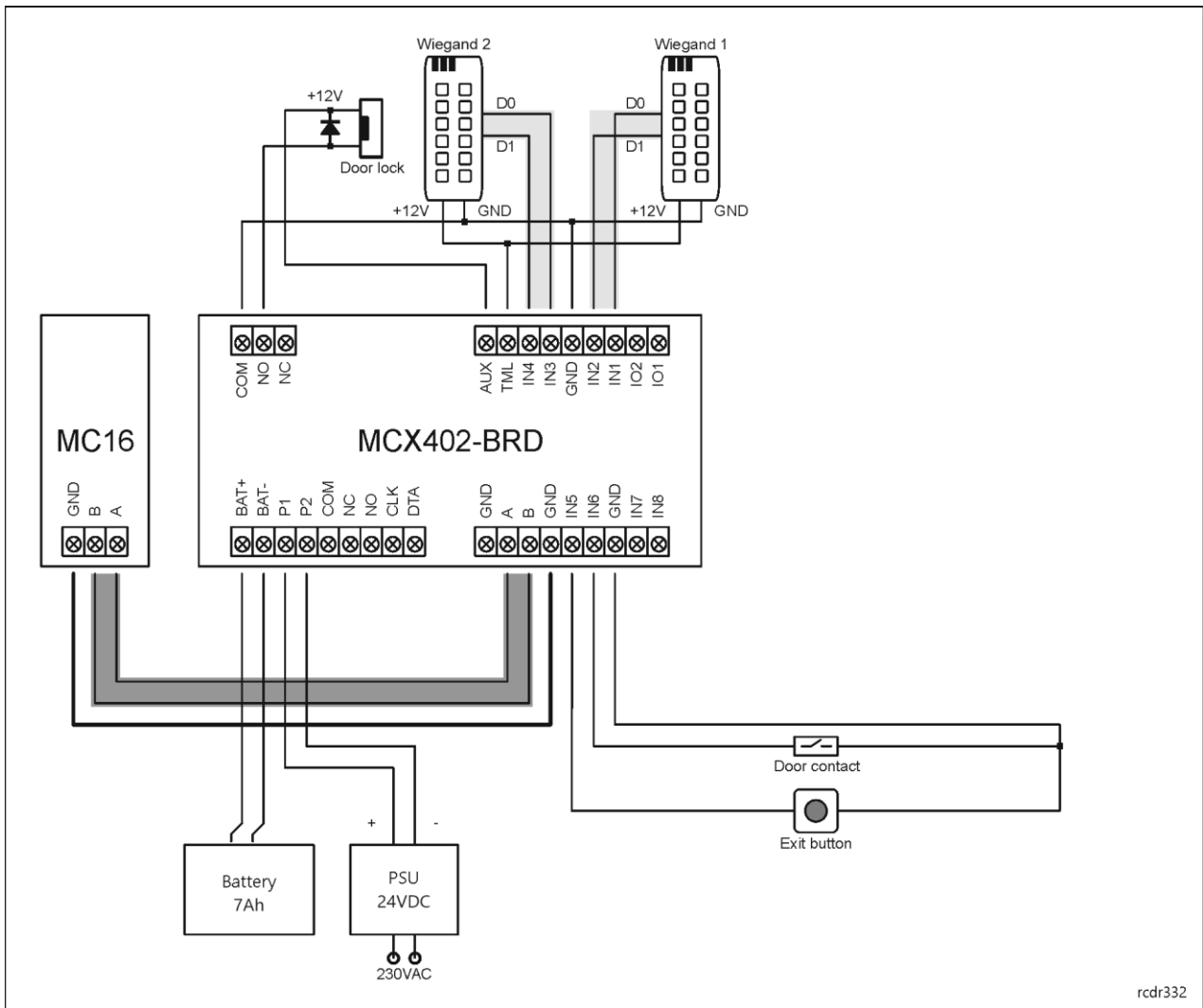
- Configure the system in regard of database and services according to AN006 application note. The installation of recommended centralized database is explained in AN017 application note.
- Detect controller and its resources by means of Add Access Controller wizard after selection of *Wizards* in the top menu of VISO software.
- Configure Access Door by means of Add Access Door wizard, selecting Wiegand terminals within MC16 controller as read-in and read-out terminals.
- In the navigation tree of VISO software double click *Access Points*.
- Select the first point with Wiegand terminal which was created by wizard.
- In the bottom select *Outputs* and then *Add*.
- In the opened window select the button  to indicate location of output (according to the diagram it will be OUT1 at MC16 board) and close the window with *OK* button. Specify *Pulse Time* equal to *Lock Pulse* so the output will be activated for the same time as door lock (2s by default).
- Select the function *[070]: Access Granted at Access Point* so the output after proper connection to Wiegand terminal could activate its LED when access is granted at the door.
- Define another output (according to diagram it will be OUT2 at MC16 board) and assign the same function *[070]*. Connect the output properly to Wiegand terminal so it could activate its buzzer when access is granted at the door.
- Similarly configure OUT3 and OUT4 outputs for the second Wiegand terminal.
- Upload settings to controller.



Access Door with Wiegand terminals (MCX402-1-KIT)

The diagram below shows typical connection of Wiegand terminals to single door MCX402-1-KIT for read-in/out door. There is also available MCX402-2-KIT which enables control of two read-in doors,

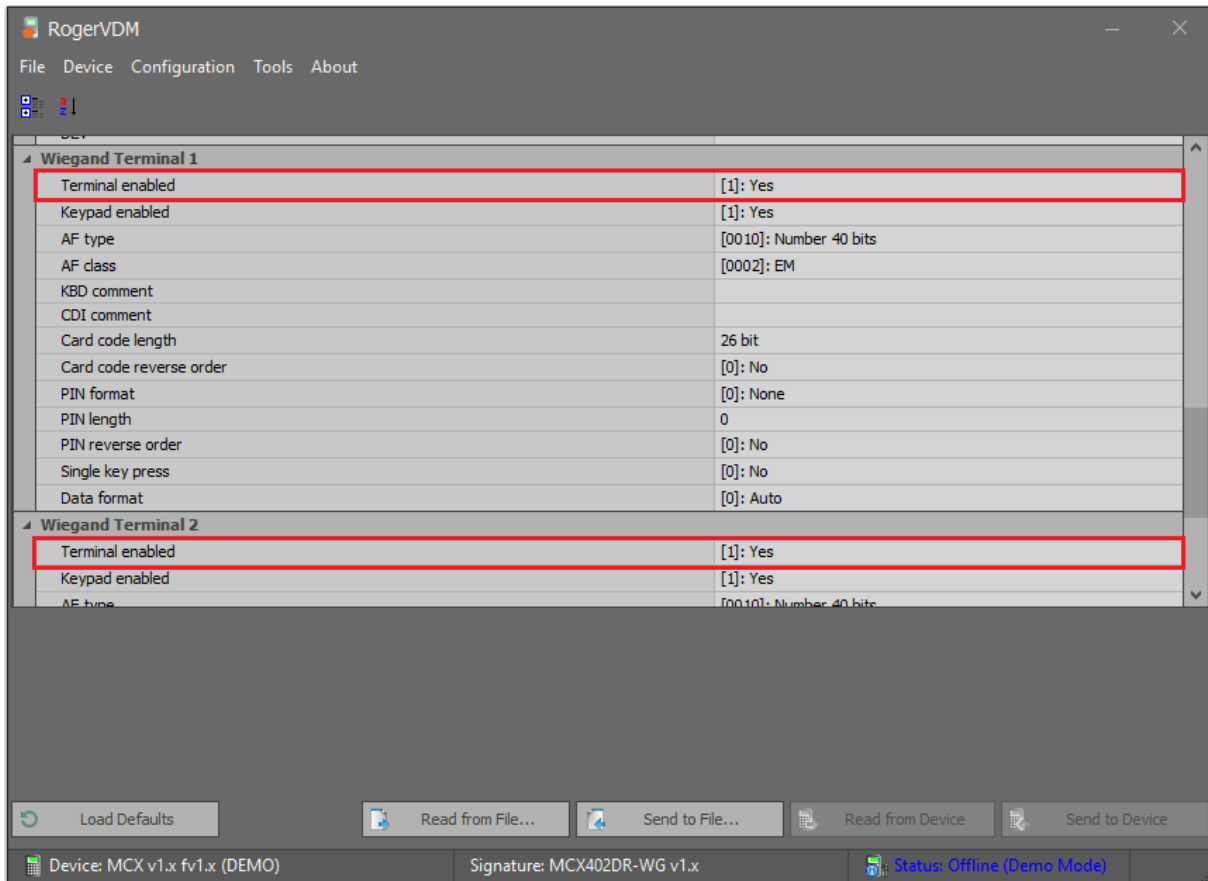
each equipped with single terminal. Expander kits do not offer access control functionality by themselves and they must be connected to MC16 access controller.



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Low level configuration (RogerVDM)

Low level configuration with RogerVDM software enables to define basic parameters of devices in the system. In case of MC16 controller it is enough to configure typical parameters such as IP address and communication key. Additionally it is necessary to configure MCX402-BRD address on RS485 bus, enable operation with Wiegand terminals, possibly specify data format and select NC type input for connection of door contact. When operation with Wiegand terminals is enabled then respective inputs of the expander are reserved for such communication and they cannot be used for any other purpose.

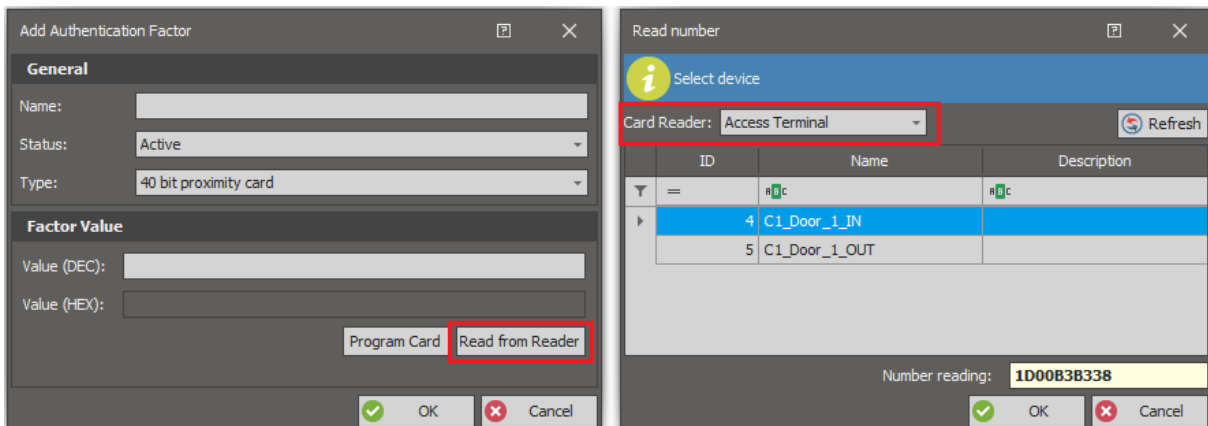


High level configuration (VISO)

High level configuration with VISO software enables to define the logic of system. In case of Wiegand terminals connected to MCX402-BRD expander the configuration is made similarly as in case of previously described Wiegand terminals connected directly to MC16 controller. The difference is in selection of input and outputs at the expander instead of controller.

User enrolment

It is recommended to enrol, edit and delete users by means of wizards which are available after selection of *Wizards* in the top menu of VISO software. When Authentication Factor is defined then particular user's identification element can be read at connected Wiegand terminal to acquire the number of such element (card, remote control fob, face, etc.)



Note: In case of cards from HID company (e.g. iClass) their numbers can be read at connected Wiegand HID terminal operated as RACS 5 Access Terminal or at OMNIKEY 5x27 administrator reader which is integrated with RACS 5 system.

List of Wiegand terminals

Roger devices are designed to operate with Wiegand 26..66bit terminals from various manufacturers. They can be adapted to different data formats and in case of electric incompatibility PR-GP-BRD modules can be connected.

The list below includes Wiegand terminals for which the operation in RACS 5 system was verified but it is not in any way guaranteed. Notes given in the table are guidelines only. If device is not on the list it does not mean that it cannot be operated in RACS 5 system.

Note: Before installation of Wiegand terminals in a building it is necessary to verify and confirm their operation in RACS 5 system by oneself. This condition applies also to devices listed below.

Note: If 24bit and 40bit card readers are connected to the same MC16 controller then it may be necessary to enter C24=1 parameter in DEBUG.CFG file on MC16 memory card.

Model	Manufacturer	Notes
Card readers		
ATS1190	UTC	PR-GP-BRD module or 1kOhm terminating resistors are required. Settings in RogerVDM (MC16): <i>Wiegand format: [1]: Without control bits</i> <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i>
MiniProx 5365EGP00	HID	PR-GP-BRD module is required. Settings in RogerVDM (MC16): <i>Wiegand format: [1]: Without control bits</i> <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [1000]: PROX_TAG</i>
R10	HID	PR-GP-BRD module or 1kOhm terminating resistors are required. Settings in RogerVDM (MC16): <i>Wiegand format: [1]: Without control bits</i> <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i> Settings in RogerVDM (MCX402-BRD) <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i> <i>Card code length: 0</i>
RP40	HID	PR-GP-BRD module is required.

		<p>Settings in RogerVDM (MC16): <i>Wiegand format: [1]: Without control bits</i> <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i></p> <p>Settings in RogerVDM (MCX402-BRD) <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0002]: EM</i> <i>Card code length: 0</i></p>
RK40	HID	<p>PR-GP-BRD module is required.</p> <p>Settings in RogerVDM (MCX402-BRD) <i>AF type: [0004]: Number 24 bits</i> <i>AF class: [0001]: None</i> <i>Card code length: 0</i></p>
ioProx P225-XSF	Kantech	<p>PR-GP-BRD module or 1kOhm terminating resistors are required.</p> <p>Settings in RogerVDM (MC16): <i>Wiegand format: [3]: With control bits</i> <i>AF type: [0002]: Number 16 bits</i> <i>AF class: [0001]: None</i></p>
ACCESS 9 CL	Idesco	<p>Settings in RogerVDM (MC16): <i>Wiegand format: [1]: Without control bits</i> <i>AF type: [0008]: Number 32 bits</i> <i>AF class: [0001]: None</i></p> <p>Settings in RogerVDM (MCX402-BRD) <i>AF type: [0008]: Number 32 bits</i> <i>AF class: [0001]: None</i> <i>Card code length: 32</i></p>
KDH-C330U	KaDe	<p>PR-GP-BRD module or 1kOhm terminating resistors are required.</p> <p>Settings in RogerVDM (MC16) <i>Wiegand format: [2]: Without extreme bits</i> <i>AF type: [0008]: Number 32 bits</i> <i>AF class: [0001]: None</i></p>
KDH-C100H	KaDe	<p>PR-GP-BRD module is required.</p> <p>Settings in RogerVDM (MC16): <i>Wiegand format: [1]: Without control bits</i> <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i></p>
Lante	Lante	<p>PR-GP-BRD module is required.</p> <p>Settings in RogerVDM (MC16): <i>Wiegand format: [3]: With control bits</i> <i>AF type: [0008]: Number 32 bits</i></p>

		<i>AF class: [0001]: None</i>
MACE MM	Nedap	Settings in RogerVDM (MC16): <i>Wiegand format: [1]: Without control bits</i> <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i>
AR6181-MX	Vanderbilt/ Siemens	Settings in RogerVDM (MC16): <i>Wiegand format: [3]: With control bits</i> <i>AF type: [0008]: Number 32 bits</i> <i>AF class: [0001]: None</i> Settings in RogerVDM (MCX402-BRD) <i>AF type: [0008]: Number 32 bits</i> <i>AF class: [0001]: None</i> <i>Card code length: 34</i>
PR500 Cotag	Vanderbilt/ Siemens	PR-GP-BRD module is required. Settings in RogerVDM (MC16): <i>Wiegand format: [1]: Without control bits</i> <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i>
ASR1101M-D	Dahua	PR-GP-BRD module is required. Settings in RogerVDM (MC16): <i>Wiegand format: [3]: With control bits</i> <i>AF type: [0004]: Number 24 bits</i> <i>AF class: [0001]: None</i>
PRM 5/2	Deister Electronic	Settings in RogerVDM (MC16): <i>Wiegand format: [1]: Without control bits</i> <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i>
PRX-TSEC-MINI-125-B	ITC	Settings in RogerVDM (MC16): <i>Wiegand format: [1]: Without control bits</i> <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i>
PRX-NPROX	ITC	Settings in RogerVDM (MC16): <i>Wiegand format: [1]: Without control bits</i> <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i>
MM-R41W	Micromade	Settings in RogerVDM (MC16): <i>Wiegand format: [0]: Auto</i> <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i>
Long range readers / radio receivers with remote control		
AY-L23 G/H	Rosslare	PR-GP-BRD module is required. Settings in RogerVDM (MC16): <i>Wiegand format: [1]: Without control bits</i>

		<p><i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i></p> <p>Settings in RogerVDM (MCX402-BRD) <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0002]: EM</i> <i>Card code length: 0</i></p>
AR-661	Soyal	<p>PR-GP-BRD module or 1kOhm terminating resistors are required.</p> <p>Settings in RogerVDM (MC16) <i>Wiegand format: [3]: With control bits</i> <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i></p>
XT-1	TagMaster	<p>PR-GP-BRD module is required.</p> <p>Settings in RogerVDM (MC16): <i>Wiegand format: [2]: Without extreme bits</i> <i>AF type: [0010]: Number 40 bits</i> <i>AF class: [0001]: None</i></p>
ZK-RFID102	ZKHY	<p>Settings in RogerVDM (MC16): <i>Wiegand format: [0]: Auto</i> <i>AF type: [0008]: Number 32 bits</i> <i>AF class: [0001]: None</i></p> <p>Settings in RogerVDM (MCX402-BRD) <i>AF type: [0008]: Number 32 bits</i> <i>AF class: [0001]: None</i> <i>Card code length: 34</i></p>
Face recognition terminals		
ASI7213Y	Dahua	<p>PR-GP-BRD module is required.</p> <p>Settings in RogerVDM (MC16): <i>Wiegand format: [3]: With control bits</i> <i>AF type: [0004]: Number 24 bits</i> <i>AF class: [0001]: None</i></p>
DS-K1T671M-3XF	HIK Vision	<p>PR-GP-BRD module is required.</p> <p>Settings in RogerVDM (MC16): <i>Wiegand format: [3]: With control bits</i> <i>AF type: [0008]: Number 32 bits</i> <i>AF class: [0001]: None</i></p> <p>Settings in the terminal <i>Communication Direction: Send</i> <i>Wiegand Mode: Wiegand 34</i></p>
DS-K1T605MF	HIK Vision	<p>PR-GP-BRD module is required.</p>

		<p>Settings in RogerVDM (MC16): <i>Wiegand format: [3]: With control bits</i> <i>AF type: [0008]: Number 32 bits</i> <i>AF class: [0001]: None</i></p> <p>Settings in RogerVDM (MCX402-BRD) <i>AF type: [0008]: Number 32 bits</i> <i>AF class: [0001]: None</i> <i>Card code length: 34</i></p>
License Plate Recognition (LPR) cameras*		
ITC237-PU1B-IR-WIEGAND	Dahua	<p>PR-GP-BRD module is required.</p> <p>Settings in RogerVDM (MC16): <i>Wiegand format: [0]: Auto</i> <i>AF type: [4000]: SAN</i> <i>AF class: [8150]: LPR</i></p>
DS-2CD4A26FWD-IZSWG/P	HIK Vision	<p>Settings in RogerVDM (MC16): <i>Wiegand format: [0]: Auto</i> <i>AF type: [4000]: SAN</i> <i>AF class: [8150]: LPR</i></p>
DS-2CD7A26G0/P-IZSWG	HIK Vision	<p>Settings in RogerVDM (MC16): <i>Wiegand format: [0]: Auto</i> <i>AF type: [4000]: SAN</i> <i>AF class: [8150]: LPR</i></p>

* More information on LPR cameras is given in AN028 application note

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