

# Roger Access Control System 5

Application note no. 030

Document version: Rev. D

## Universal access control in elevators

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

### *Introduction*

RACS 5 system enables control in elevators of various manufacturers. Single MC16-EVC series elevator access controller depending on its version can control from 8 to 64 floors. The controller uses output lines (relays) located on peripheral expanders to enable particular buttons at elevator control panel. The selection of buttons results from Authorizations (access rights) of user who is identified at terminal (reader) installed inside elevator cabin. Additional terminals on particular floors can be installed to control elevator calling. Standard MC16-PAC series access controllers and MCT-IO type readers with built-in input/outputs can be used for this purpose.

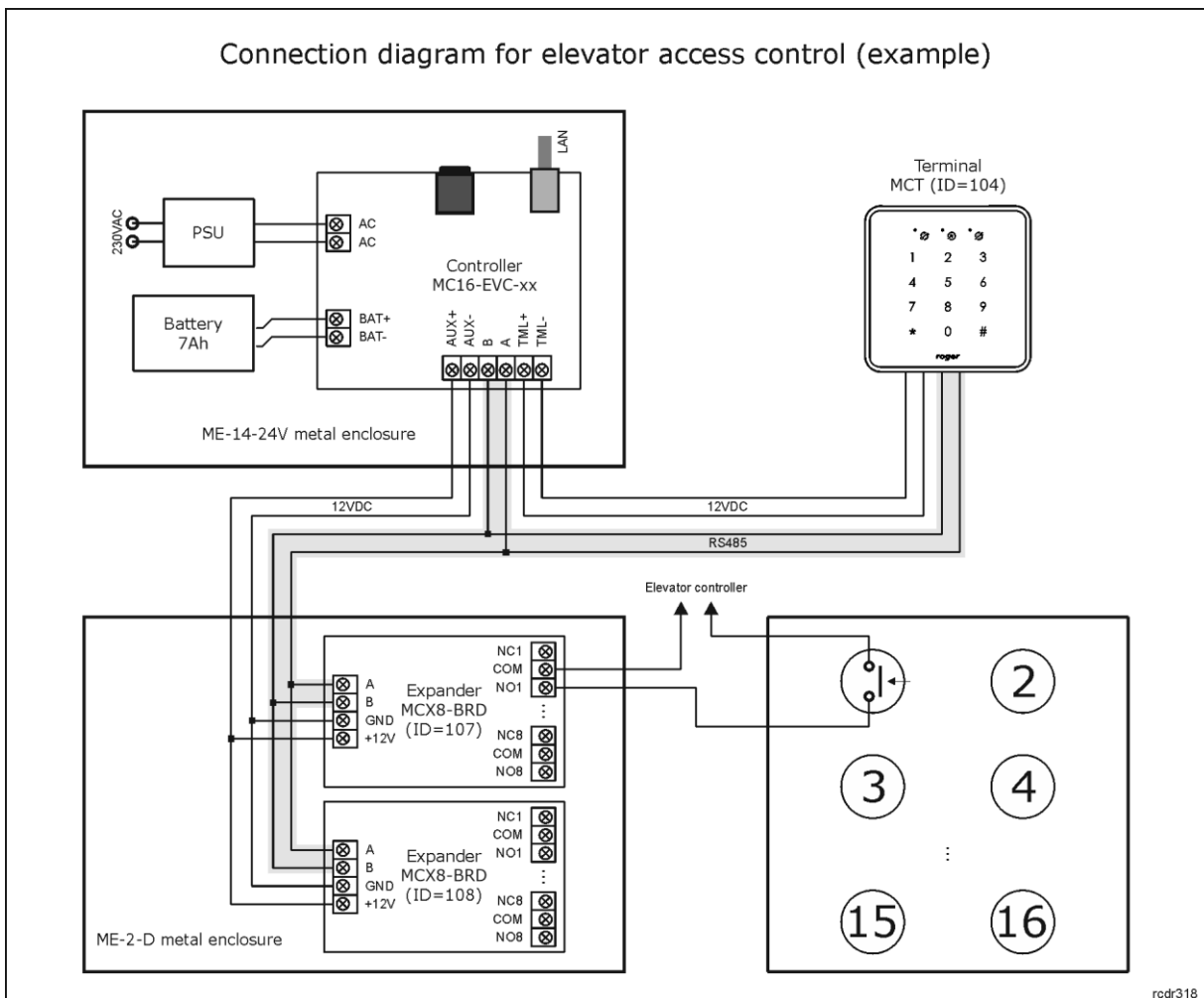
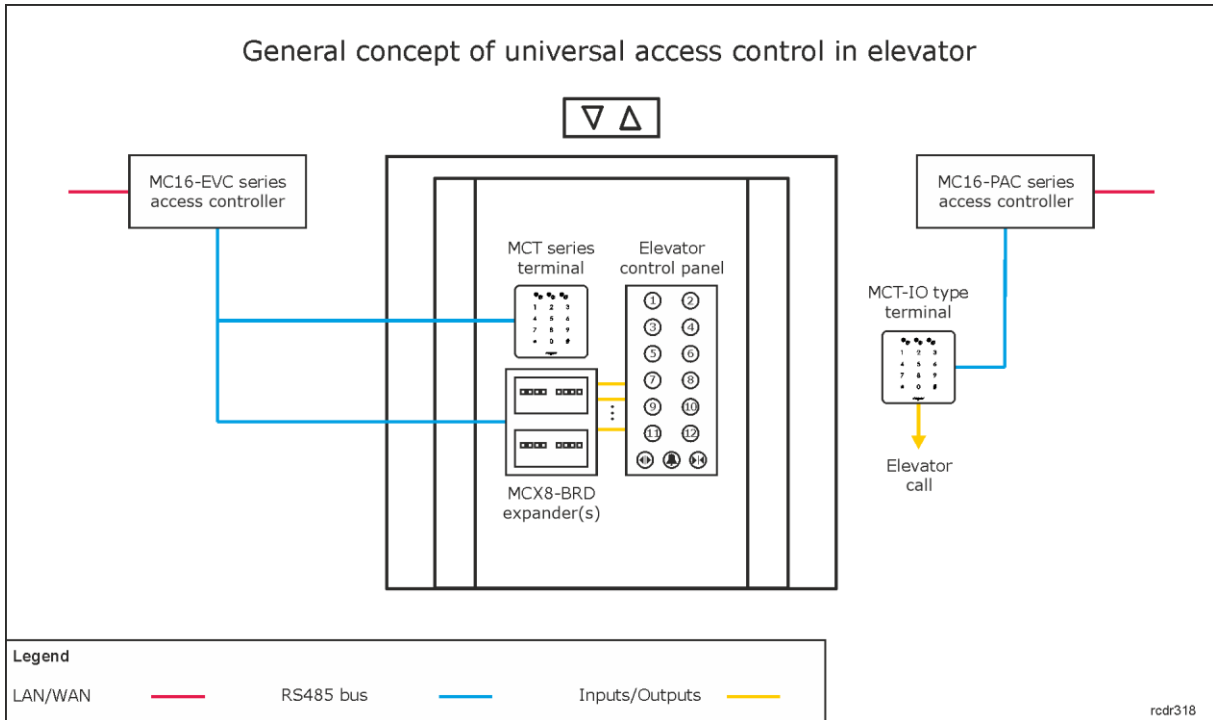
---

Note: Some elevator manufacturers offer input modules. In such scenario outputs of MCX8-BRD expanders are not connected to buttons of control panel in elevator cabin but to elevator controller equipped with such input module. Then MCX8-BRD expanders can be installed inside elevator control room.

Note: RACS 5 system offers also dedicated integration with KONE, SCHINDLER and OTIS elevators which are explained in individual application notes.

---

This note explains how to configure access control at elevator control panel. Access control at floors is the same as typical door access control and it is explained in other notes e.g. AN006 which is available at [www.roger.pl](http://www.roger.pl).



## Notes:

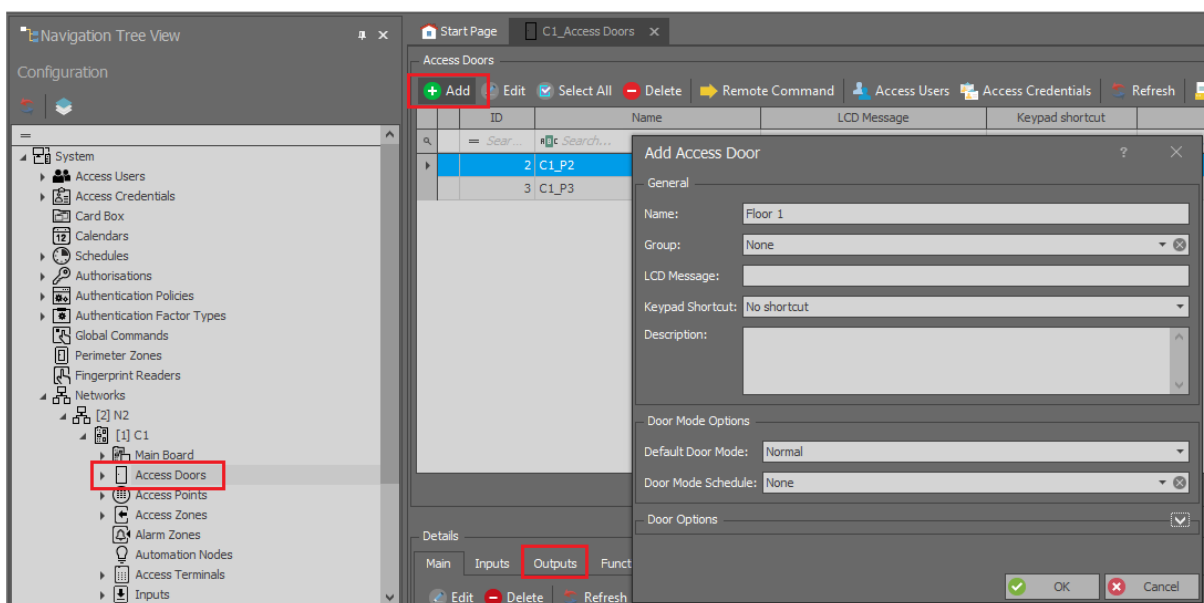
- Power supply arrangement in fig. 2 is exemplary. Primary and backup supply can also be provided directly by elevator power supply circuit. All devices in the diagram can be supplied with 12VDC.
- Each button circuit is closed by one of relays at MCX8-BRD expander. In the example above, two MCX8-BRD expanders enable control of 16 buttons (floors) from single MCT terminal.
- The system can be further extended in regard of number of floor buttons by connection of more expanders to MC16-EVC controller and in regard of number of elevators by installation of more MC16-EVC controllers with their expanders and terminals.
- The maximal number of floor buttons controlled by single access controller is possible for MC16-EVC-64 device which can control up to 64 floor buttons. It would require 8 x MCX8-BRD expanders or equivalent to provide 64 outputs.
- The total number of MCT/MCX devices on RS485 bus of particular access controller cannot exceed 16 available addresses in ID=100-115 range.
- Maximal distance for RS485 bus equals to 1200m and all devices on the bus should have common GND.


## Configuration of elevator access control

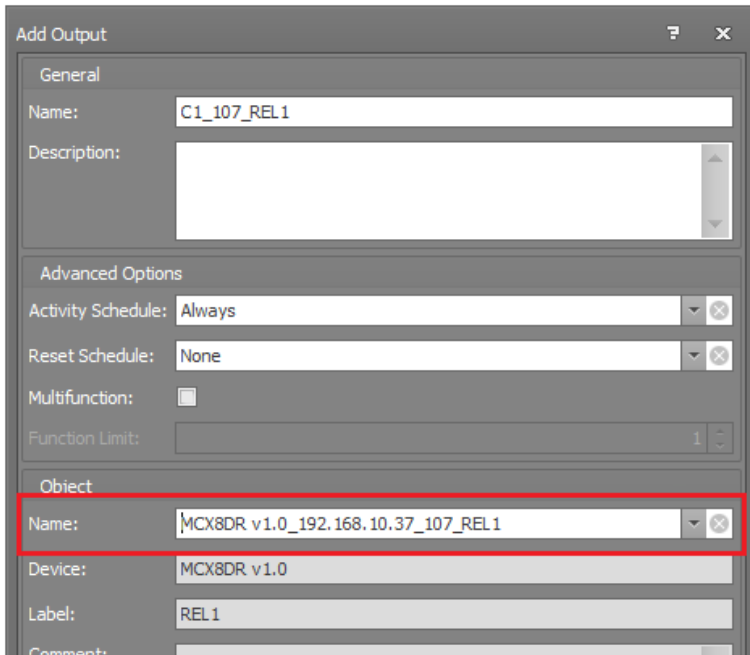
### Low level configuration and logical structure

Configuration of elevator access control is similar to door access control. The difference is in the association of multiple doors (floor buttons) to single terminal instead of the association of single door to one or two terminals. In order to configure the system from the example above:

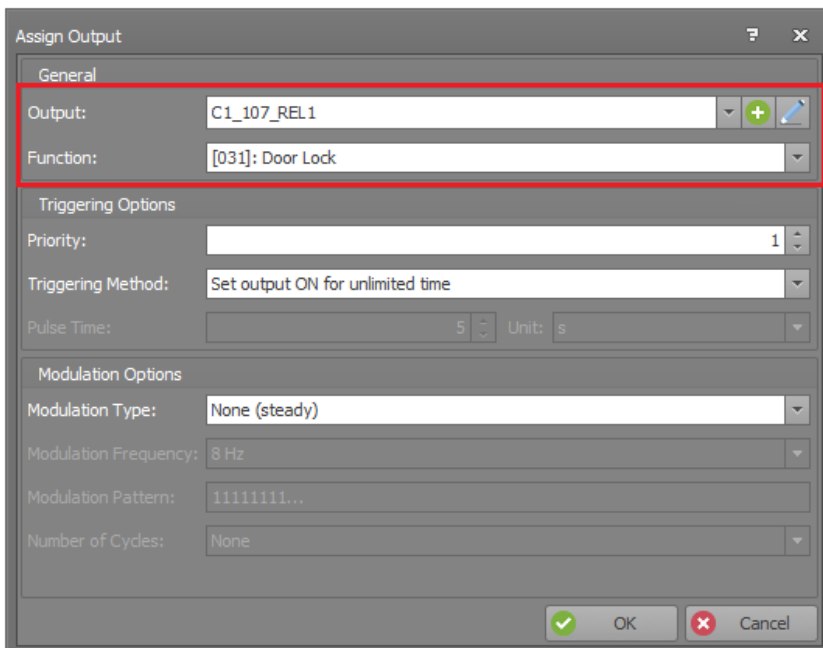
- Make low level configuration of access controller with RogerVDM program according to AN006 Application note defining communication key, IP address and other parameters if needed.
- Make low level configuration of MCX8-BRD expanders and MCT terminals defining their individual addresses on RS485 bus according to their installation manuals. Connect devices with each other.
- Install VISO software, configure database and RACS 5 services, detect access controller with its peripheral devices using Add Access Controller wizard according to AN006 Application note.
- In the navigation tree of VISO software within particular MC16 access controller double click *Access Doors* command.



- In the opened window select *Add* button and name the door which represents one of the floor buttons. When *Door Options* is expanded in the same window then some additional parameters are available such as *Lock Pulse* which corresponds to activation time of output connected to floor button i.e. time for user to press floor button after identification at terminal. Close the window with *OK* button.
- In the bottom select *Outputs* tab and then *Add* button.
- In the opened window select the button  to indicate the location of output.
- In the next window, in the *Name* field of *Object* area select particular output for activation of floor button e.g. REL1 relay at MCX8-BRD (ID=107) as in the diagram and then close the window with *OK* button.



- In the opened window select the function *[31]: Door lock*.



- Configure 11 remaining Access Doors, each with its output to control remaining floor buttons.

- In the navigation tree of VISO software within particular MC16 access controller double click *Access Terminals* command.
- In the opened window select the button *Add*, select reader connected to access controller and close the window with *OK* button.
- In the navigation tree of VISO software within particular MC16 access controller double click *Access Points* command.
- In the opened window select the button *Add*, name the point e.g. C1\_AP1 and close the window with *OK* button.
- In the bottom select *Access Terminals* tab, then *Assign* button and select previously created terminal.
- In the bottom select *Access Doors* tab and according to mentioned above scenario assign 12 Access Doors (floor buttons) with previously assigned outputs.
- It is also recommended to change the function of Normal Authentication (i.e. single card reading at terminal). In case of elevator access control, the default [151] function will unnecessarily generate series of events when access is granted. Therefore in the bottom select *Authentication Options* tab and *Edit* button, then *Normal Authentication* tab and assign the function [175] instead of [151] indicating just created Access Point as the *Function Object*.

Authentication Options

Normal Authentication | Special Authentication | Double Authentication | Card Inserted into Holder

Action Type: Function

Action: [175]: Grant Door Access with Normal Lock Pulse

Parameter: All

Object: [4]: C1\_AP1

Register event:

Authorisation Options

User authentication required:

Authorisation for Access Point required:

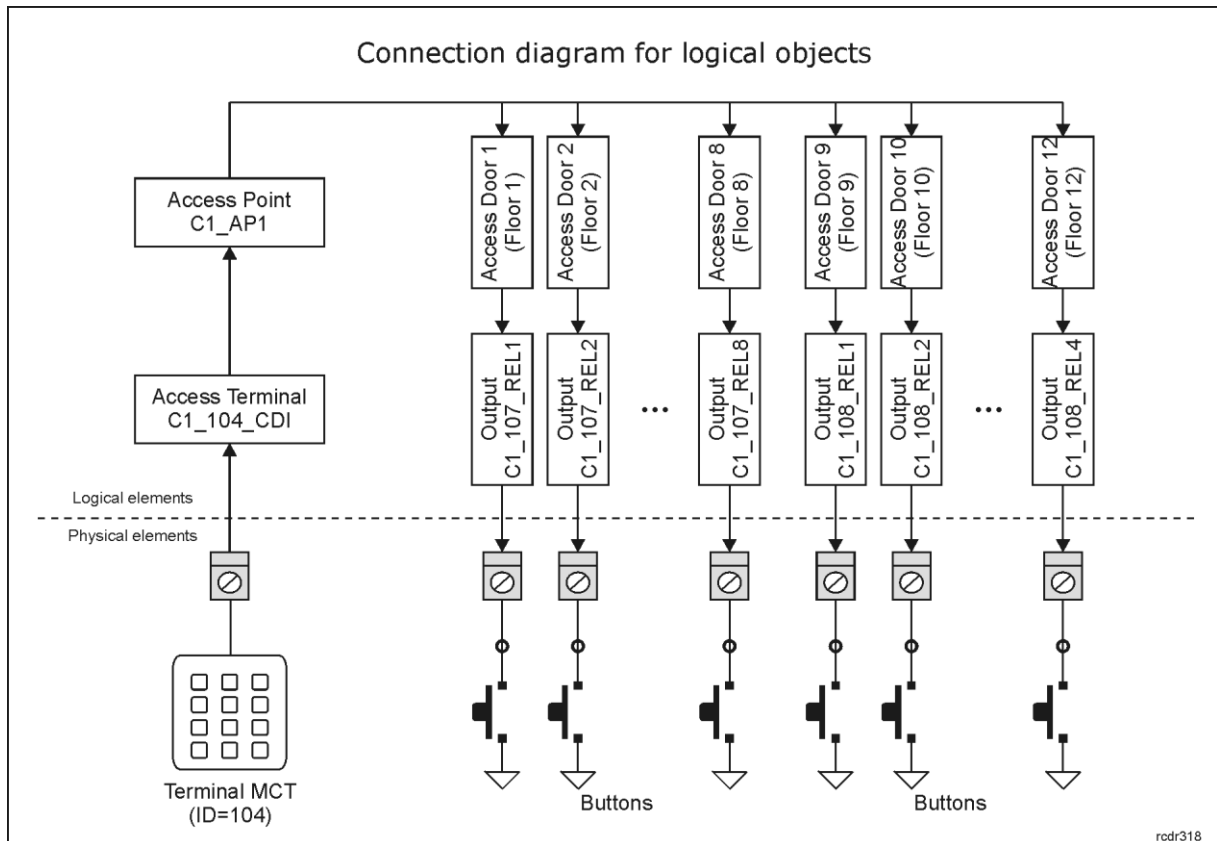
Authorisation for Object required:

Authorisation for Function Parameter required:

Interactive Options

OK Cancel

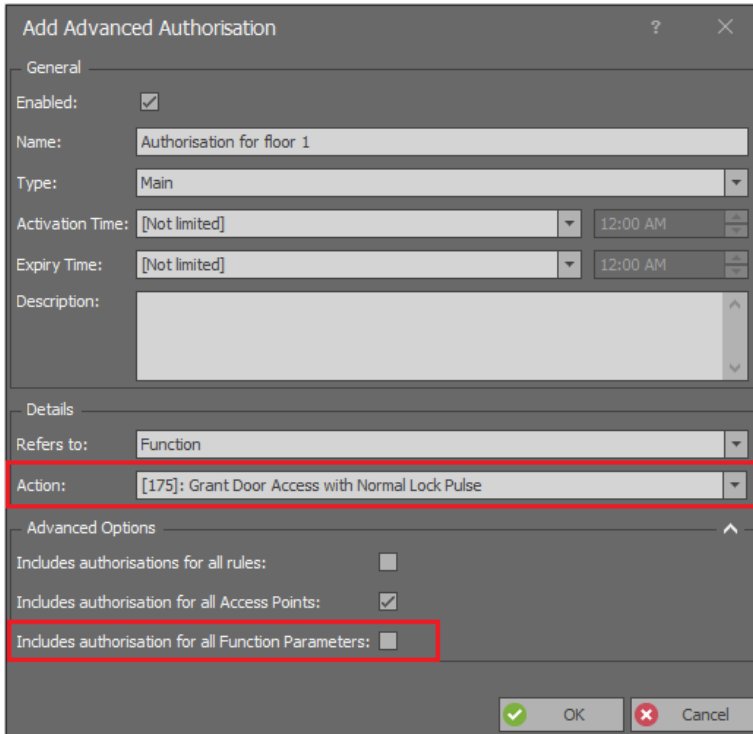
- Upload settings to controller.



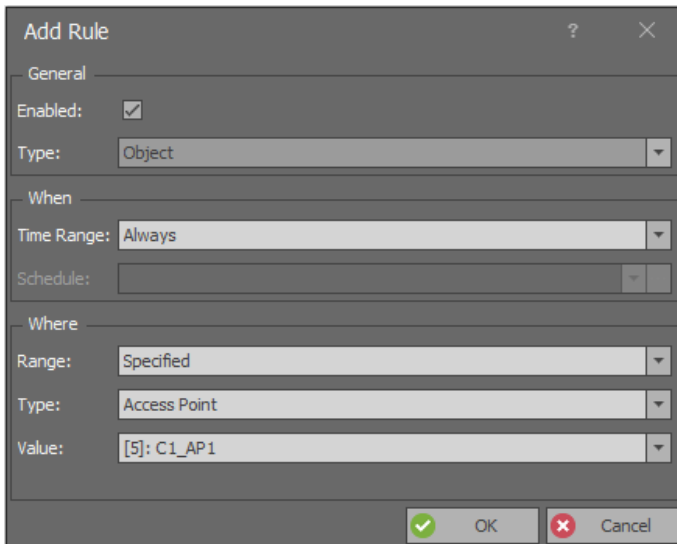
### Configuration of Authorisations

After configuration of logical connections between readers and expanders it is necessary to configure Authorisations (access rights) to be used further when users are enrolled into the system. In order to define Advanced Authorisations for access in elevator:

- In the navigation tree of VISO software expand *Authorisations* command and then double click *Advanced Authorisations* command.
- In the opened window select *Add* button, name the Authorisation and assign the function [175] if it was changed previously for Normal Authentication at Access Point (if not, then select the default function [151]). In the bottom deselect the option *Includes authorisation for all Function Parameters* and close the window with *OK* button.



- In the bottom select *Positive Rules* tab and then *Add* button.
- In the opened window select *Object* as *Type*, *Specified* as *Range*, *Access Point* as *Type* and *C1\_AP1* as *Value*. This rule will allow to use reader inside the elevator. Optionally the rule can be additionally limited in time by assigning a General Purpose Maintained schedule. Custom schedules are created in the navigation tree of VISO software by selecting *Schedules* command. Close the window with *OK* button.



- Add another rule, this time selecting *Function Parameter* as *Type*, *Specified* as *Range*, *Access Door* as *Type* and *Floor 1* as *Value*. This rule will allow to activate REL1 relay and consequently select Floor 1 button. Optionally the rule can be additionally limited in time by assigning a General Purpose Maintained schedule. Custom schedules are created in the navigation tree of VISO software by selecting *Schedules* command. Close the window with *OK* button.

The screenshot shows the 'Add Rule' dialog box with the following configuration:

- General:** Enabled: ; Type: Function Parameter
- When:** Time Range: Always; Schedule: (empty)
- Where:** Range: Specified; Type: Access Door; Value: [2]: Floor 1

- Configure more Authorisations for remaining floors. There can be defined single Authorisation per floor and there can also be defined consolidated Authorisations for several floors as single Authorisation can include multiple rules.

### Management of users

The management of users in the system can be done with wizards, which are accessed by selection of *Wizards* command in the top menu of VISO software. New user can be enrolled with *Add Person Online* wizard. The use of wizard is explained in AN006 Application note. The wizard enables assignment of Authorisations(s) and Authentication Factors (cards, PINs, etc).

**Contact:**  
**Roger sp. z o.o. sp.k.**  
**82-400 Sztum**  
**Gościszewo 59**  
**Tel.: +48 55 272 0132**  
**Fax: +48 55 272 0133**  
**Tech. support: +48 55 267 0126**  
**E-mail: [support@roger.pl](mailto:support@roger.pl)**  
**Web: [www.roger.pl](http://www.roger.pl)**