Standalone door control module

PK-01

Firmware version 1.00

EN

CE

pk-01_en 08/25

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IMPORTANT

The device should be installed by qualified personnel.

Prior to installation, please read carefully this manual.

Changes, modifications or repairs not authorized by the manufacturer shall void your rights under the warranty.

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Signs in this manual

 Caution – information on the safety of users, devices, etc.

 Note – suggestion or additional information.

CONTENTS

The PK-01 module is used to control access to a single door. The user gains access after using a code or a proximity card (125 kHz passive transponder in the form of card, key tag, etc.).

1. Features

- Support for up to 50 codes.
- Support for up to 50 proximity cards.
- Functions started using the code / proximity card:
  – unlocking the door,
  – blocking / unblocking the door,
  – changing the code by the user.
- Service mode used for programming the module and managing cards and codes.
- 12 keys for entering the code.
- Bell key.
- Backlit keys.
- Built-in proximity card reader.
- LED indicators.
- Built-in sounder.
- Relay output for controlling an electric strike, electromagnetic lock or other door actuator.
- 2 OC type outputs:
  – indication of alarm status;
  – bell signal.
- 2 dedicated inputs to connect:
  – door status sensor;
  – request-to-exit button/device.
- Suitable for outdoor installation (weather-proof enclosure).
- Tamper protection against enclosure opening and removal from the wall.
- Powered by 12 VDC (±15%).

2. Description

2.1 LED indicators

LED	Color	Description
	red	**ON** – alarm (signaling lasts 10 seconds) **flashing** – alarm memory (signaling lasts until a code is entered or a card is read in by any user) The alarm can be caused by: • forced entry, • 3 attempts to get access using unknown identifier (code or card), • module tamper.
	green	**ON** – door unblocked (permanently unlocked) **flashing** – door unlocked (user gained access)
	yellow	**ON** – door blocked (permanently locked)

When the code change and service functions are in use, the LEDs are used for communication with the user.

2.2 Keys

The number keys and the # and * keys are used for entering the code and starting the functions available in the module and for programming the module.

The key (bell) controls the OC output of the module. The output is active when the key is pressed.

2.3 Wires

Color	Description
red	+12 VDC power input (+12 V)
blue	common ground (COM)
green	alarm output
black	request-to-exit input
yellow	relay output normally open contact (NO)
pink	relay output normally closed contact (NC)
grey	relay output common contact (C)
brown	NC type door status input
violet	OC type BELL output

Table 1. Colors and functions of the keypad wires.

3. Installation

Disconnect power before making any electrical connections.

1. Remove the enclosure locking screw and open the enclosure.
2. Secure the enclosure base to the wall.
3. Close the enclosure and replace the enclosure locking screw.
4. Connect individual wires according to Table 1.

If the keypad is installed on a metal surface, the card reading range will be reduced.

The distance from an another device with built-in proximity card reader (e.g. a keypad with reader) should be at least 50 centimeters.

4. Users

Users are identified on the basis of their access code or proximity card assigned to them by the administrator. The access code can consist of 4 to 12 digits. The module supports up to 50 codes and 50 cards.

Wherever the word "card" is used in this manual, it means a passive transponder, which may take the form of a proximity card, proximity tag, etc.

By default, the administrator (user No. 50) is preprogrammed with the factory code **12345**. It is recommended that you change the code when you first time enter the service mode. The administrator can use the functions available in the service mode.

5. Using the module

5.1 Unlocking the door

5.1.1 Unlocking the door with identifiers

Present the card to the module (to a distance allowing the card to be read) or enter the code and press [*] to start the procedure of user verification. Having identified the user, the module will signal the door unlocking with a short beep. The relay will activate for a preset time during which the door opens freely. Depending on the module settings, the relay operate time after opening / closing the door can be shortened. The door should be closed before expiry of the maximum door open time.

The door will remain locked if the card or the code is unknown (2 long beeps) or the door is blocked (2 long beeps and the yellow LED is lit up).

5.1.2 Unlocking the door without user identification procedure

The door can be unlocked using the request-to-exit button/device. Using it will cause the same response of the module, as in case of the user identification based on the card or code.

5.2 Blocking the door

The door can be blocked (permanently locked) by the user authorized to block / unblock the door.

The user can only block the door when the door status is being monitored (see the "Programming the door status input" function).

1. Make sure that the door operates in normal mode and the door is closed.
2. Present the card to the module and hold it for about 4 seconds or enter the code and press [*]. The device will confirm with 2 short beeps that the door is blocked. The yellow LED will light up.

5.3 Restoring the door to normal operation mode

The blocked / unblocked door can be restored to its normal operating mode by a user authorized to block / unblock the door. It can be done using a proximity card or code.

In order to restore the normal operating mode of the door, present the card to the module and hold it for about 4 seconds or enter the code and press [*] to confirm. The device will signal restoration of the door to the normal operating mode by 2 short beeps.

5.4 Unblocking the door

The door can be unblocked (permanently unlocked) by the user authorized to block / unblock the door.

The user can only unblock the door when the door status is being monitored (see the "Programming the door status input" function).

1. Make sure that the door operates in normal mode and open the door.
2. Present the card to the module and hold it for about 4 seconds or enter the code and press [*]. The device will confirm with 2 short beeps that the door is unblocked.

5.5 Code change

1. Press [1], then [*]. The module will generate 2 short beeps and the green and red LEDs will start blinking simultaneously.
2. Enter the code and press [#]. The module will generate 2 short beeps.
3. Enter the new code.

If the code entered has already been assigned to another user, the module will generate 2 long beeps.

4. Press [#] to confirm the new code. The module will generate 4 short beeps and 1 long beep, and the two LEDs will go out.

6. Programming the module

Programming is done using the functions available in the service mode.

6.1 Starting the service mode

1. Press [2], then [*]. The module will generate 2 short beeps, the red and green LEDs will start blinking simultaneously.
2. Enter the administrator code (by default: 12345) and press [#]. The module will generate 2 short beeps and the red and green LEDs will start blinking alternately.
3. Press the key corresponding to the function number and press [#]. The module will generate 2 short beeps and the red and green LEDs will be lit continuously.

After 45 seconds of inactivity (in case you do not press any key), the service mode will be automatically terminated.

6.2 Service mode menu

Shown in square brackets are the key sequences for calling the required submenu or starting the required function.

- [0#] Exit service mode
- [1#] Add, remove or edit the user code
- [2#] Add or remove user card
- [3#] Program user authority level
  - [0#] basic
  - [1#] with option to block / unblock door
- [4#] Program door status input:
  - [0#] unused
  - [1#] NC type
  - [2#] NO type
- [5#] Program request-to-exit input:
  - [0#] unused
  - [1#] NC type
  - [2#] NO type

6# Program maximum door open time

7# Program relay operation time

8# Configure relay operation time reducing function:

- 0# disabled
- 1# when door open
- 2# when door closed

9# Configure backlighting:

- 0# off
- 1# automatic
- 2# permanent

When navigating through the service mode, keep the following principles in mind:

1. After selecting a function from the main menu (from 1 to 9), the green and red LEDs will be steadily lit.
2. After saving each change, the module will generate 4 short beeps and 1 long beep. Entering incorrect data is indicated with 2 long beeps. In both cases, after generating the signal, the device returns to the main menu.
3. To exit the function, without making or confirming any change, press *.

Exiting the service mode

Press 0 and #. The module will generate 4 short beeps and 1 long beep.

Adding / editing the user code

Adding a new code is equivalent to adding a user.

You can enter up to 49 user codes.

You cannot delete the administrator.

During the process of adding codes, it is recommended that you additionally make a list of users and numbers assigned to them.

1. Press 1 and #. The module will generate 2 short beeps.
2. Enter the number of user to whom a code is to be added / whose code is to be changed.

If the yellow LED lights up after entering the user number, it means that the code of a user with this number is already saved in the module.

3. Press #. The module will generate 2 short beeps.
4. Enter the code.

If the entered code has already been assigned to another user, the module will generate 2 long beeps. In such a case the whole procedure of code adding should be repeated from the beginning.

5. Press # to confirm. The module will generate 4 short beeps and 1 long beep.

Deleting the user code

1. Press 1 and #. The module will generate 2 short beeps.
2. Enter the number of the user whose code is to be removed.
3. Press #. The module will generate 2 short beeps. The yellow LED will light up.
4. Press 0 three times.
5. Press # to confirm. The module will generate 4 short beeps and 1 long beep.

Adding the user card

Adding a new card is equivalent to adding a user.

You can enter up to 50 user cards.

During the process of assigning cards, it is recommended that you additionally make a list of users and numbers assigned to them.

1. Press 2 and #. The module will generate 2 short beeps.
2. Enter the number of user to whom a card is to be added.

If the yellow LED lights up after entering the user number, it means that the card of a user with this number is already saved in the module.

3. Press #. The module will generate 2 short beeps.
4. Present the card to the module. After read-in, the module will generate 4 short beeps and 1 long beep.

If the presented card has already been assigned to another user, the module will generate 2 long beeps. In such a case the whole procedure should be repeated from the beginning.

Deleting the user card

1. Press 2 and #. The module will generate 2 short beeps.
2. Enter the number of the user whose card is to be removed.
3. Press #. The module will generate 2 short beeps. The yellow LED will light up.
4. Press the # key. The module will generate 4 short beeps and 1 long beep.

Programming the user authority level

1. Press 3 and #. The module will generate 2 short beeps.
2. Enter the number of the user whose authority level is to be defined.
3. Press #. The module will generate 2 short beeps.
4. If the user is only to have access to the door, press 0.
5. If the user is to have, in addition to the access to the door, the authority to block or unblock it, press 1.
6. Press # to confirm. The module will generate 4 short beeps and 1 long beep.

Programming the door status input

1. Press 4 and #. The module will generate 2 short beeps.
2. Depending on how the module is to handle the door status input, press:
   - 0 – input unused,
   - 1 – input supports NC type sensor,
   - 2 – input supports NO type sensor.
3. Press # to confirm. The module will generate 4 short beeps and 1 long beep.

Programming the request-to-exit input

The request-to-exit input allows to unlock the door for the preprogrammed relay operating time.

1. Press 5 and #. The module will generate 2 short beeps.
2. Depending on how the module is to handle the request-to-exit input, press:
   - 0 – input unused,
   - 1 – input supports NC type button/device,
   - 2 – input supports NO type button/device.
3. Press # to confirm. The module will generate 4 short beeps and 1 long beep.

Programming the maximum door open time

This function allows you to define the time during which the door may remain open after the relay is turned off. If the door status is supervised and the door remains open longer than the prescribed time, the module will signal a long open door by means of short beeps generated with high frequency. The maximum door open time can be programmed for 255 seconds. The value 0 disables the function.

1. Press 6 and #. The module will generate 2 short beeps.
2. Program the time, using the number keys.
3. Press # to confirm. The module will generate 4 short beeps and 1 long beep.

Programming the relay operation time

The relay operating time is counted from the moment of gaining access by the user or from using the request-to-exit button by the user. The time can be programmed within the range from 1 to 255 seconds.

1. Press 7 and #. The module will generate 2 short beeps.
2. Program the time, using the number keys.
3. Press # to confirm. The module will generate 4 short beeps and 1 long beep.

Configuring the relay operation time reducing function

1. Press 8 and #. The module will generate 2 short beeps.
2. Depending on whether the module is to reduce the relay operating time, press:
   - 0 – function disabled,
   - 1 – the relay operation time is to be reduced when the door is open,
   - 2 – the relay operation time is to be reduced when the door is closed.

3. Press [#] to confirm. The module will generate 4 short beeps and 1 long beep.

Configuring the backlight

1. Press [9] and [#]. The module will generate 2 short beeps.
2. Depending on how the module keys are to be illuminated, press:
   - [0] – backlight off,
   - [1] – automatic backlight turned on by using any key or presenting the card,
   - [2] – permanent backlight.
3. Press [#] to confirm. The module will generate 4 short beeps and 1 long beep.

7. Restoring factory settings

1. Turn off the module power supply.
2. Short the ends of the green and black wires.
3. Turn on the power supply. The module will generate 4 short beeps and 1 long beep. The factory settings are restored.
4. Turn off the power supply again.
5. Open the ends of the green and black wires.
6. Connect the wires correctly to the corresponding terminals.
7. Turn on the module power supply.

7.1 Factory settings

Administrator code: 12345
Door status input – unused
Request-to-exit input – unused
Maximum door open time – 0 s
Relay operation time – 5 s
Relay operation time reduction – function disabled
Backlight – automatic

8. Specifications

Supply voltage ..... 12 VDC ±15%
Standby current consumption ..... 105 mA
Maximum current consumption ..... 125 mA
Reader transmit frequency ..... 125 kHz
OC type outputs ..... 30 mA / 12 VDC
Relay output (resistive load) ..... 2 A / 24 VDC
Environmental class according to EN50130-5 III
Maximum humidity ..... 93±3%
Operating temperature range ..... -25...+55 °C
Dimensions ..... 47 x 158 x 24 mm
Weight ..... 297 g