EX5 / EX7

EX5 / EX7

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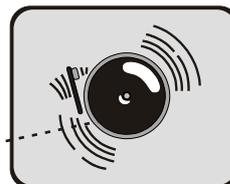
Gates
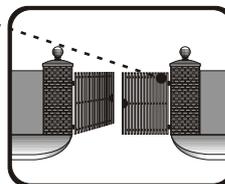
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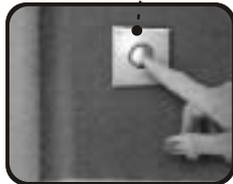
EX5 and **EX7** are standalone keypads suitable for both access control and command solutions. They can be either surface (52, 72 models) or flush (102 model) mounted.

Features:

  : Operates on 12/24V AC/DC

  : Backlit keys (metal/plastic keys

  : Indoor/outdoor use

  : 99 User codes (0 to 8 digits)

  : 30 sec lockout after 8 invalid codes

  : 2 Free tension LEDs (Red & Green)

  : 2 Pushbuttons to operate relays

  : **2** relays in **EX5** and **4** relays in **EX7**

  : Relay in latch (00) or pulsed mode (01 to 99 sec)

  : Power switching regulator for longer product life

  : EEPROM prevents data loss during power failure

  : Peripherals connected via bi-directional CODIX bus

  : Current consumption: Standby: 30mA,

              EX5 Maximum: 120mA: **EX7** Maximum: 150mA

120mm   90mm   40mm
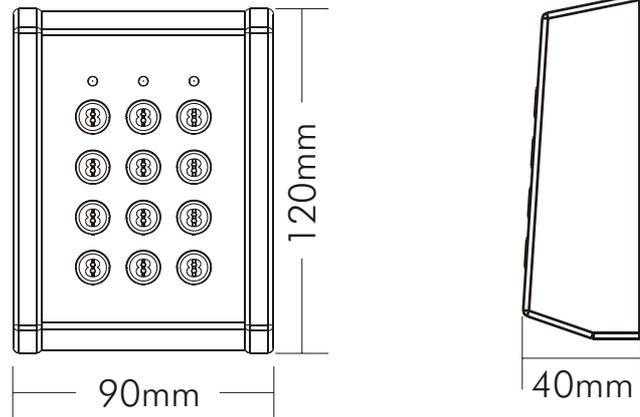
1.1. Testing EX5/EX7

The keypad is delivered pre-programmed by the factory. Before programming the EX5/EX7, it can be tested for its operation. These pre-assigned codes are only to be used for test purposes and must be modified afterwards to ensure complete security against unauthorized usage.

To perform the test, connect the power supply to the keypad and enter code 1 2 3 A. Now, relay 1 should be activated. You may now disconnect the power supply and continue with the installation.

1.2. PLEASE READ CAREFULLY BEFORE INSTALLATION

What you can do with the EX5/EX7 keypad:
1. Program up to 99 User codes
2. Connect up to 3 peripheral units via the CODIX bus: Slave proximity reader, type MINI
                                              Slave keypad, type INOX or ICX
3. **EX5** drives 2 relay outputs (10A and 2A respectively), **EX7** drives 4 relay outputs, 2A each
4. Connects up to 2 Exit button

What you cannot do:
1.   Use a power supply with output voltage lower than 11V or higher than 28V.
2.   Overload the relay outputs by connecting a load higher than 10A on relay 1 of **EX5** and
       2A on relay 2 of **EX5** and all the relays of **EX7**.
3.   Connect a voltage to the CODIX bus.

Good to know:
1.   Each User can have his/her own individual code (0 to 8 digits long) or proximity tag.
2.   Ensure that the Master code is kept confidential as it is vital for programming purposes.
3.   To gain access, enter the user code and press "A". E.g. 123+A

Default keypad settings:
The keypad is preset to the most common application using an electric strike.
Settings are as follows:
        Default Master code = 000
        All User codes are assigned to drive relay 1
        Default User code 1 = 123

2.1. Mounting instructions

1. Determine an appropriate place to mount the keypad.
2. Stick the template and drill 3 holes as indicated on it.
3. Remove the top cover and then insert a screwdriver into the recess at the bottom of the housing and separate keypad assembly from the housing.
4. Earthing is recommended for EX5 / EX7.
   Cable through the wall
a. Route the interface cable from EX5/EX7 and power supply through holes provided for the same on the housing.
   Cable along the wall
b. In case wiring is carried out externally, then, using a nose-plier knock OFF the tab from base of the top-cover and allow the cable to pass through. Ensure that the cable entry points are sealed with silicone sealant.
5. Ensure that the wiring of the EX5/EX7 is carried out as per wiring instructions given in the manual.
6. Fix the housing to the wall using 3 wall-mounting screws (8 x 30 CSK Philips) along with 3 rubber washers supplied.
7. Replace the keypad assembly and ensure that it is completely flush with the housing.
8. Finally replace the top cover and fix it with two M3 x 12 mm screws using the security screw driver provided.
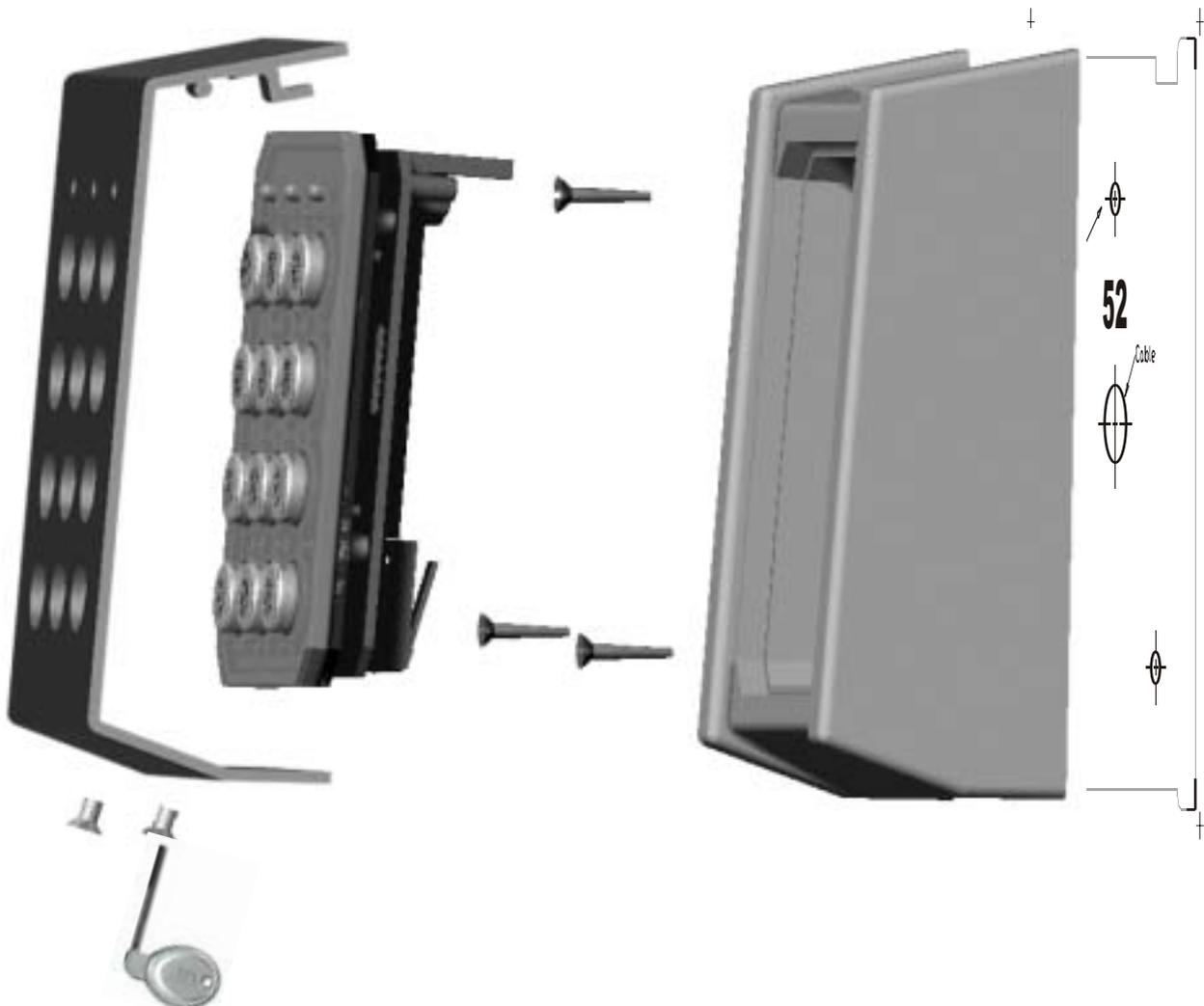
2.2. Wiring instructions

Wiring terminals are located in the middle of the PCB and can be connected as described below.

2.2.1. Connecting peripherals to the communication bus

The EX5/EX7 has a 3-wire CODIX data communication bus (GND, DATA, + 9V) that allows easy connection of peripheral units (keypads or readers). The wiring is done between the BUS terminals of the EX5/EX7 and the corresponding terminals of the peripheral units as specified in its technical manual. The EX5/EX7 will automatically detect these peripheral units, so there is no need to program the Master keypad to detect them.

Note: A maximum of 3 peripheral keypads/readers can be connected to EX5/EX7. The maximum distance between the EX5/EX7 and the peripheral is 200m (100m if 2 or 3 peripherals are connected to the EX5/EX7); the maximum distance between EX5/EX7 and the power supply is 50 meters. If the distance between the power supply and the EX5/EX7 exceeds 10 meters, then it is advisable to connect only one peripheral (keypad or proximity reader) over a maximum distance of 100m.

NOTE: The CODIX connections on the keypad are only an output. No voltage should be applied to these terminals to avoid damaging the keypad.

2.2.2. Connecting output relays

The EX5 has 2 relay outputs with the following characteristics:
    Relay 1: 10A / 24V DC 120V AC
    Relay 2: 2A / 24V AC/DC

The EX7 has 4 relay outputs with the following characteristics:
    All 4 Relays: 2A / 24V AC/DC

Relay contacts are voltage-free switch contacts and can be connected as follows:
    NO (Normally opened), C (Common), NC (Normally closed)
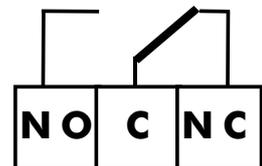
The relay terminals are located on the PCB as shown in connection diagram (refer "Overall connection diagram").

2.2.3. Connecting an electric strike to output relays

When an electric strike is connected, the power supply used must be sufficient to power both the EX5 and the strike. As in some applications this might not be possible, the use of a separate power supply for the door strike is recommended.

DC connection :

NO | C | NC

**Diode
BY 251**

−

Strike

+

AC connection :

NO | C | NC

**Capacitor + Resistor
470 nF   10KΩ - ½W**

~

Strike

~
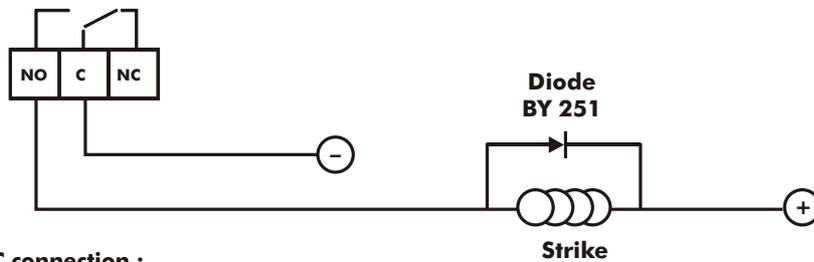
2.2.4. Connecting voltage free LEDs

EX5/EX7 is equipped with a red and a green LED, which can be driven externally. The connections for these LEDs are as follows (refer "Overall connection diagram"): LR + and LR - = Red LED

LG + and LG - = Green LED

Connections are to be done as follows:

2.2.4.1. On 12V DC power

Connect straight as shown below:

LED

+ ———————— (+ 12V DC)

- ———————— (Negative terminal power supply)
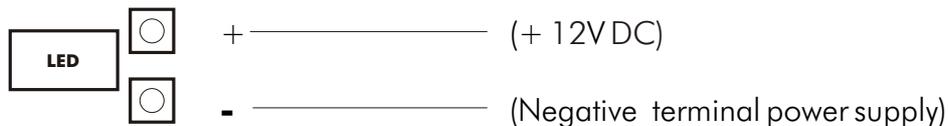
2.2.4.2. On 12V AC power

Connect a diode, type 1N4001 in series with the positive terminal of the LED:

LED

+ ———◄———— (12V ~)

- ———————— (12V ~)
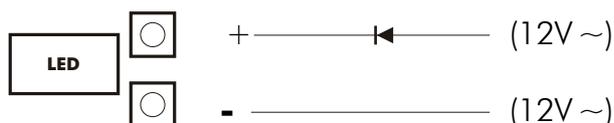
2.2.4.3. On 24V DC power

Connect a resistor of 1kΩ / 1W as shown below:

LED

1kΩ/ 1W

+ ——[ ]—— (+ 24V DC)

- ———————— (Negative terminal power supply)
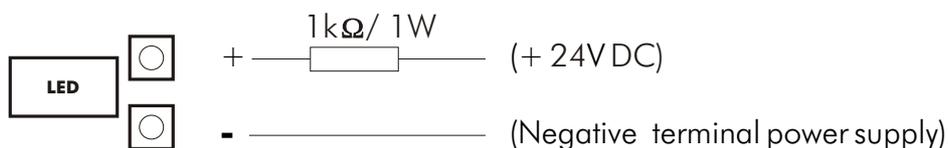
2.2.4.4. On 24V AC power

Connect a resistor of 1kΩ / 1W and a diode, type 1N4001 in series with the positive terminal of the LED:

LED

1kΩ/ 1W

+ ——◄—[ ]— (24V ~)

- ———————— (24V ~)
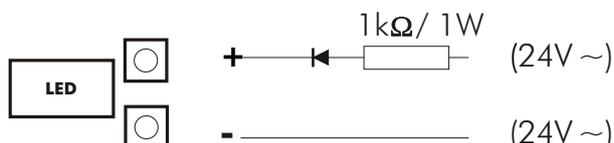
2.2.4.5. Connecting voltage free LEDs to indicate the relay state

If required the voltage free LEDs can be used to light up each time and for as long as a relay output is activated. For instance, the green LED can show the state of relay 1, the red LED can show the state of relay 2. For example when the door strike is activated, the green LED lights up. To do so, the following connections should be made (please refer "Connecting an electric strike to the output relays") for correct connection of the door strike to the relay:

DC connection:
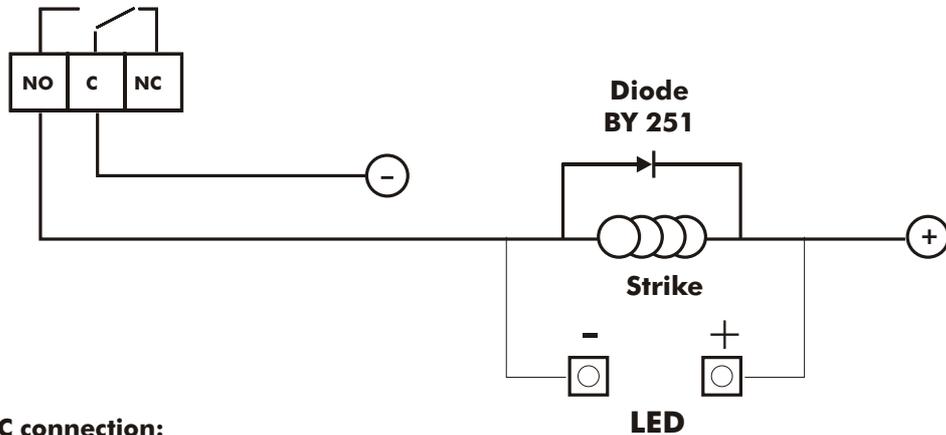
AC connection:
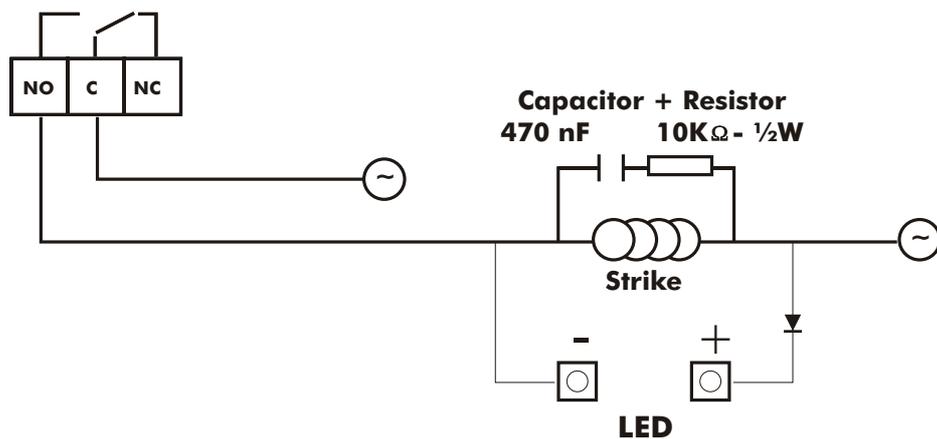
2.2.5. Connecting Exit buttons

The EX5/EX7 unit offers the possibility to connect 2 normally open (NO) contacts in such a way that once this contact is closed (e.g. by pressing an Exit button) an output relay of the EX5/EX7 is activated. For instance, this contact can be used to connect an emergency Exit button to open the door without entering either a code or presenting a tag.

EX5: Exit button 1 and Exit button 2 will automatically activate relay 1 and relay 2 respectively.
EX7: Refer "Assigning of relay to Exit buttons (EX7)".

These connections can be found on:
Exit button 1 (PB1), Ground (GND) and Exit button 2 (PB2)
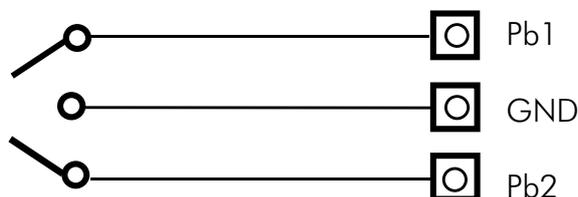
2.2.6. Connecting tamper switch

The tamper switch is a security contact (NO) to detect the opening or the tampering of the housing of the EX5/EX7.
Once the keypad is installed on the wall, the contact will remain closed.
The connections for this tamper switch are as follows:

| NO | C |
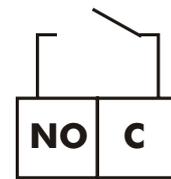
Tamp

2.2.7. Overall connection diagrams

EX5
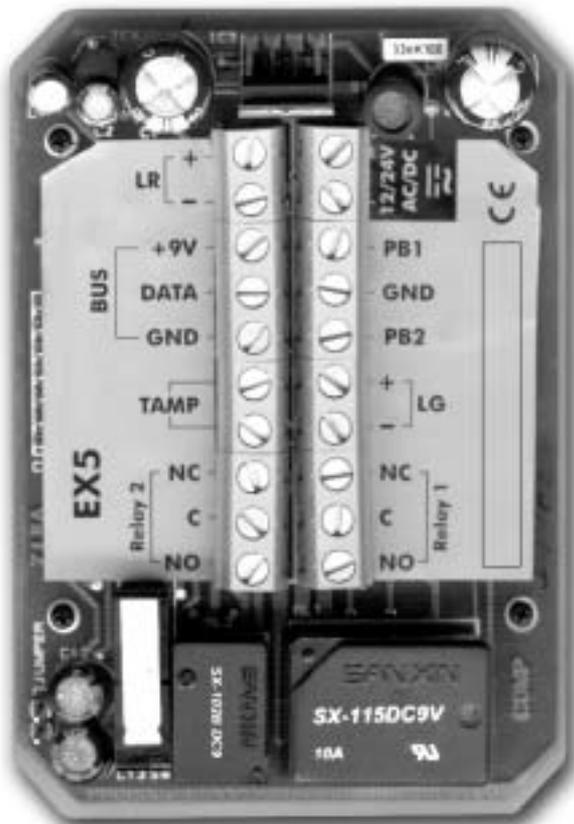
EX7

3.0 Programming instructions

Before you begin the programming, you need to enter into the programming mode by entering the Master Code.

3.1. The Master code

The Master code enables you to start the programming on the EX5/EX7 keypad. The default Master code as defined by the factory, is "000". It is highly recommended to change the Master code from the default factory setting for security purposes.

3.1.1. Changing the Master code

It is possible to modify the Master code by performing the following steps:
Switch ON the power to the keypad.
1.   Enter the Master code {either the default Master code (000)+B if this hasn't been changed yet OR your personal Master code (e.g. 1997+B, where 1997 denotes the Master code you have programmed)}. The yellow LED lights ON followed by a long beep.
2.   Press 000.
3.   Enter the NEW Master code of 1 to 8 digits (e.g.: 2578).
4.   Confirm by pressing key A. Two short beeps are heard.
5.   Quit the programming mode by pressing B. Yellow LED turns OFF.

E.g.: Based on factory code (for 1st time):
   000 + B + 000 + 2578 + A + B
Based on personal Master code (assume personal Master code = 1997)
   1997 + B + 000 + 2578 + A + B

3.1.2. Restore default factory settings and redefine a Master code

Should the personal Master code be lost or forgotten, it is always possible to restore the default factory setting and define a NEW Master code by performing the following steps:

Switch OFF the power to the keypad.
1.   Open the housing of the unit and place the jumper in the closed position.
2.   Switch on the power to the keypad. The yellow LED blinks followed by several beeps.
3.   Put the jumper back in its original (opened) position.
   The yellow LED remains ON followed by a long beep.
4.   Close the housing of the unit.
5.   Press 000.
6.   Enter the new Master code (1 to 8 digits, e.g.:2578).
7.   Confirm by pressing key A. Two short beeps are heard.
8.   Quit the programming mode by pressing B. The yellow LED turns OFF.

E.g.: 000 + 2578 + A + B

Jumper Position

Closed

Opened

3.2. Programming EX5/EX7

3.2.1. Entering the programming mode

To enter the programming mode follow the instructions given below:

1.   Enter your Master code.
2.   Confirm by pressing key B. The yellow LED lights ON followed by a long beep.
Note: If the entered Master code is invalid, beeps and flashes for a period of 3 seconds (beep…beep…) are indicated.

3.2.2. Programming the User codes

Note: For all examples below, it is assumed that the Master code is set to 2578.

3.2.2.1. Installation with or without peripheral keypad

1. Enter the programming mode (refer to "Entering the programming mode").
2. Press 0.
3. Enter the memory position (01 ... 99) of the User to be programmed (e.g. 01).
4. Enter the User code (e.g.: 12345).
5. Confirm by pressing key A. Two short beeps are heard.
    Repeat steps 2 to 5 in order to program the other Users 02 to 99.
6. Quit the program by pressing key B.

E.g.: 2578 B + 0 + 01 + 12345 A + B

3.2.2.2. Installation with a peripheral proximity reader

Programming the proximity tags via the EX5/EX7 keypad.
1. Enter the programming mode (refer to "Entering the programming mode").
2. Press 0.
3. Enter the memory position (01 ... 99) of the User to be programmed (e.g.: 02).
4. Present the tag in front of the proximity reader. Two short beeps are heard on the Master keypad and one beep on the reader to indicate correct memorization.
    Repeat steps 2 to 4 in order to program the other Users.
5. Quit the program by pressing key B.

E.g.: 2578 B + 0 + 02 + present the tag in front of slave reader + B

3.2.3. Assigning relays to codes

1. Enter the programming mode (refer to "Entering the programming mode").
2. In case of **EX5**, press 3.
    In case of **EX7**, press 7
3. Enter the memory position (01... 99) of the User code to be programmed (e.g.: 02 for code 2).
4. Enter the number of the relay to be assigned (i.e. For **EX5**, 1 for relay 1, 2 for relay 2, or 1+2 for relay 1and 2 whereas for **EX7**, 1and/or 2 and/or 3 and/or 4 for relays 1,2,3 and 4 respectively).
5. Confirm by pressing key A. Two short beeps are heard.
6. Quit the program by pressing key B.

E.g. for EX5: 2578 B + 3 + 02 + 1+ A = code 2 activates relay 1
E.g. for EX7: 2578 B + 7 + 02 + 3+ A = code 2 activates relay 3
E.g. for EX7: 2578 B + 7 + 03 + 14+ A = code 3 activates relay 1 and 4
Note: The default factory setting automatically assigns all User codes to relay 1. Only when codes are assigned to another relay, this needs to be redefined.

3.2.4 . Programming relays for ON/OFF mode or pulsed mode

1. Enter the programming mode (refer to "Entering the programming mode").
2. Enter the number of the relay to be programmed (i.e. For **EX5**, 1 for relay 1or 2 for relay 2 whereas for **EX7**, 1 for relay1 or 2 for relay 2 or 3 for relay 3 or 4 for relay 4).
3. Enter: a.   00 for ON/OFF mode functioning.
            b.   01 to 99 seconds for pulsed mode functioning.
4. Confirm by pressing key A. Two short beeps are heard.
    Repeat steps 2 to 4 in order to program the 2nd relay.
5. Quit the program by pressing key B.
E.g.: 2578 B + 1 + 00 + A = ON/OFF (Relay 1)
Or 2578 B + 2 + 15 + A = Pulse 15 sec (Relay 2)

3.2.5 . Assigning of relay to Exit buttons (EX7)

Note: This option is available only for the EX7 unit.

1. Enter the programming mode (refer to "Entering the programming mode").
2. Press 5 for Exit button 1 (PB1)
    OR
    Press 6 for Exit button 2 (PB2).
3. Enter the number of the relay to be assigned (i.e.: 1 and/or 2 and/or 3 and/or 4, for relays 1,2,3 and 4 respectively).
4. Confirm by pressing key A. Two short beeps are heard.
5. Quit the program by pressing key B.

E.g.: 2578 B + 5 + 1+ A = Assigning relay 1 to the Exit button 1 (PB1)
E.g.: 2578 B + 6 + 34+ A = Assigning relays 3 and 4 to the Exit button 2 (PB2)

3.2.6 . Quit programming mode

To quit the programming mode, press key B. The yellow LED turns OFF.

3.2.7. Deleting User codes / tags

3.2.7.1. To delete a single User code / tag

1. Enter the Master code.
2. Confirm by pressing key B. The yellow LED lights ON and a long beep is heard.
3. Press key 9.
4. Enter the memory position (01… 99) of the User code to be deleted (e.g.: 03 to delete User code 3).
5. Confirm by pressing key A. Two short beeps are heard.
    Repeat steps 3 to 5 if more codes need to be deleted.
6. Quit the program by pressing key B.

E.g.: 2578 B + 9 + 03 + A = Deleting User code 3

3.2.7.2. To delete all User codes / tags

1. Enter the Master code.
2. Confirm by pressing key B. The yellow LED lights ON and a long beep is heard.
3. Press keys 8, then enter 99. A long warning beep will be heard.
4. Confirm by pressing key A. Two short beeps are heard.
5. Quit the program by pressing key B.

E.g. : 2578 B + 8+99 + A + B

3.2.8. Overview of the programming menu of EX5

Entering programming mode:
> Enter Master code + B (Yellow LED lights ON + long beep)

Program new Users: (once entered in programming mode)
> For keypad codes: 0 + (01…99) + (User code) + A
> For proximity tags: 0 + (01…99) + (User tag)

Assign relays to User codes: (once entered in programming mode)

     3 + (01…99) + (1 or 2 or 12) + A   with   1 = relay 1
                                                                2 = relay 2
                                                             12 = relays 1 and 2

Defining functioning mode for relays: (once entered in programming mode)

     (1 or 2) + (00 for ON/OFF mode or 01...99 sec for pulsed mode) + A
                                      with   1 = relay 1
                                                      2 = relay 2

Delete a single User code / tag: (once entered in programming mode)

     9 + (01…99) + A

Delete all User codes / tags: (once entered in programming mode)

     8 + 99 + A

Quit programming mode : (once entered in programming mode)

     Press key B (Yellow LED turns OFF)

3.2.9. Overview of the programming menu of EX7

Entering programming mode:

     Enter Master code + B (Yellow LED lights ON + long beep)

Program new Users: (once entered in programming mode)

     For keypad codes: 0 + (01…99) + (User code) + A
     For proximity tags: 0 + (01…99) + (User tag)

Defining functioning mode for relays: (once entered in programming mode)

     (1 or 2 or 3 or 4) + (00 for ON/OFF mode or 01...99 s for pulsed mode) + A
                                  with 1/2/3/4 = relays 1 / 2 / 3 / 4 respectively

 Assigning relay to exit button: (once entered in programming mode

     (5 or 6) + (1 and/or 2 and/or 3 and/or 4) + A
                               with 1,2,3,4 = relays 1,2,3 and 4 respectively

Assign relays to User codes: (once entered in programming mode)

     7 + (01…99) + (1 and/or 2 and/or 3 and/or 4) + A
                               With 1,2,3,4 = relays 1,2,3 and 4 respectively

Delete all User codes / tags: (once entered in programming mode)

     8 + 99 + A

Delete a single User code / tag: (once entered in programming mode)

     9 + (01…99) + A

Quit programming mode: (once entered in programming mode)

     Press key B (Yellow LED turns OFF)

	{{01...99}}			1	2
Roger	01	123		✓	
Allan	02	456			✓
Susan	03	789		✓	✓
	01				
	02				
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