Connected external devices:

- One reader with TM or Wiegand 26-42 output protocol
- exit button
- Door position sensor
- Electromechanical or electromagnetic lock
- Reader LED and buzzer control

Contents of delivery:

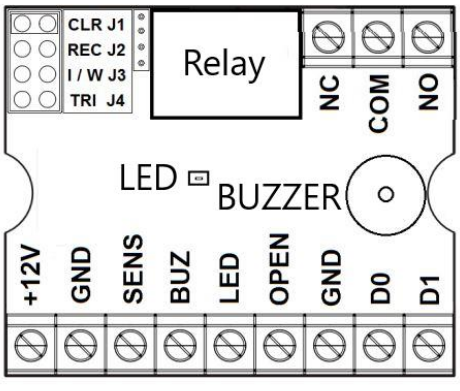
- Controller - 1 pc.
- Diode - 1 pc.
- Jumper - 3 pcs.
- Instruction - 1 pc.

Specification

Parameter	Meaning
Connected reader protocol	TM (iButton) or Wiegand 26-42
Compatible IDs (cards, key fobs)	Any compatible with the plug-in reader
Number of Master cards (keys)	2 pcs.
Number of user cards (keys)	1000 pcs.
Reader connection input	1
Cable length to reader	No more than 100 meters for Wiegand 26-42 protocol No more than 50 meters for iButton protocol
Lock control output	Relay NO/NC contacts (type 1C), not more than 30 volts / 3A
Indicator control output	Open collector, no more than 50 mA
Lock opening time	1 to 127 seconds (default 3 sec)
Supply voltage	9 - 24 volts DC
Consumption current	no more than 70 mA
working temperature	from - 35 to +50 degrees
Permissible humidity	no more than 90% without condensation
Dimensions	46x38x16 mm

Photo of the board and description of pins

+12 V	Power (+)
GND	Power (-), common wire
Sens	Input for connecting a door sensor (reed switch)
Buz	Reader buzzer control output
Led	Reader led diode control output
GND	Common wire
D0	Data 0, Reader input Wiegand 26/42 or TM (iButton)
D1	Data 1, Reader input Wiegand 26/42
NC	Normally closed relay contact
COM	Common relay contact
NO	Normally open relay contact



Jumpers description

J1	Installed to remove Master cards (keys)
J2	Set to automatically add user cards (keys)
J3	Set when connecting readers with Wiegand 26-42 protocol
J4	Set to put the controller in trigger mode

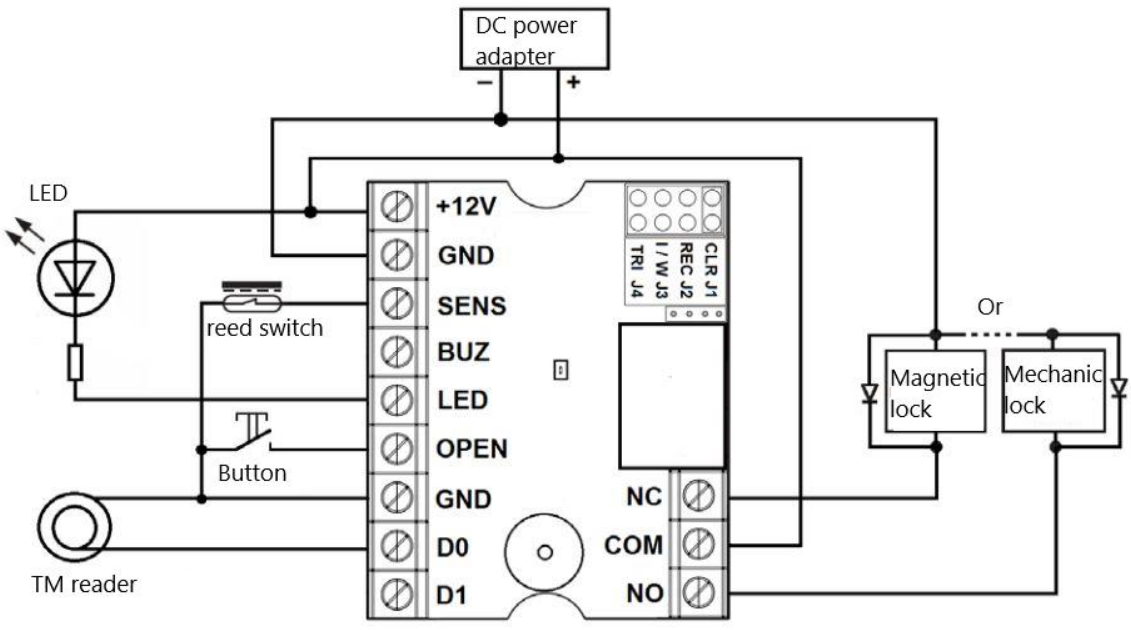
Important notes on connecting the controller:

1. The controller is not designed to control devices with a voltage of more than 36V.
2. If a twisted-pair cable is used to connect the reader via the Wiegand-26-42 protocol, then the D0 and D1 signals must be connected to different pairs, while the second wire of the pair must be connected to the common wire. Connecting D0 and D1 as one pair is not allowed.
3. When connecting the reader using the TM protocol, the central contact is connected to D0, the common contact is connected to the common wire. When connecting with a twisted-pair cable, one pair of wires must be used.
4. If unused wires remain in the "twisted pair" cable when connecting the reader, then they must be connected to the common wire of the controller and reader (GND).
5. The door position sensor input is designed to connect any sensor (reed switch, lock door position output, Hall sensor, etc.) that is triggered when the door is closed. Activation of the sensor leads to interruption of the opening time of the lock for passage, for example, for people with limited mobility, without fear that the door will remain open after the passage. The door position sensor input is normally closed, i.e. when the door is closed, the SENS input must be connected to the common GND wire of the controller. It is not necessary to connect a door position sensor, its absence does not interfere with the operation of the controller.
6. The "Exit" button must have normally open contacts. When you press the "Exit" button, the lock opens for the programmed time.
7. The LED and buzzer (BUZ) control outputs are designed to indicate operation and are connected to a common wire when activated in accordance with the logic of the controller. Connection for LED and buzzer control (BUZ) is optional. Not all readers have the ability to control the indication. Some models of card readers have a built-in indicator that does not provide for external control. Carefully read the instructions for the reader that you connect to the controller.
8. LED and buzzer control outputs of open collector type, with a current of not more than 50 mA.
9. It is recommended to use an uninterruptible power supply (UPS) with a permissible load current that exceeds the current consumption of the electric lock by at least 50%.

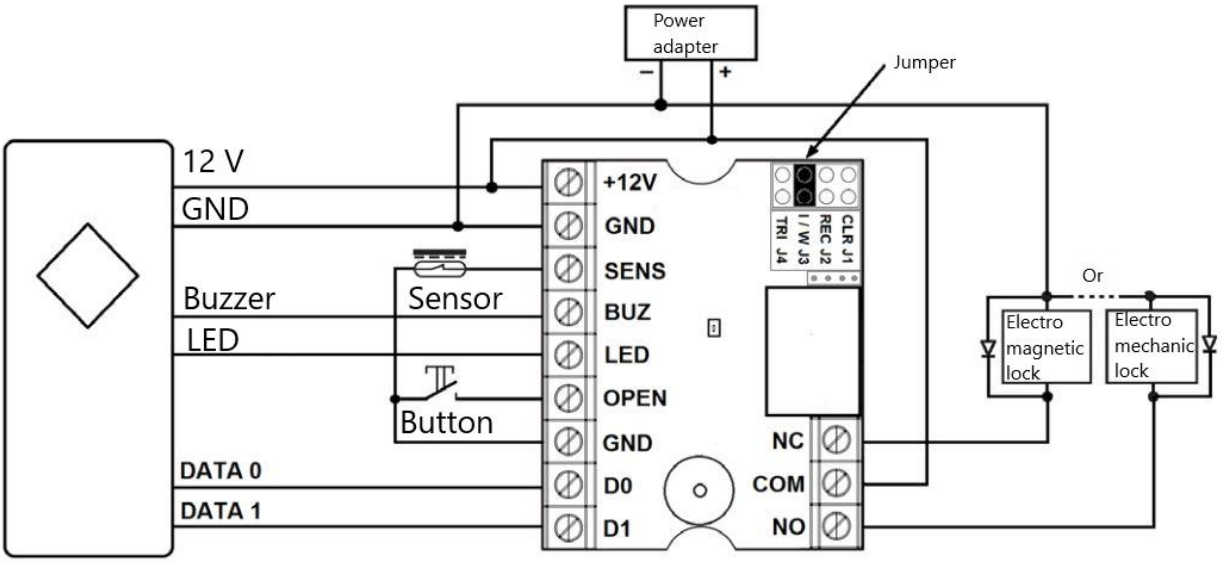
Attention:

If the lock does not have protective elements or demagnetization circuits installed during production, then be sure to install a diode or varistor for 18-20 volts (when the lock is powered from 12-15V), parallel to the lock winding, to dampen the self-induction pulses of the lock. In the absence of a protective element, the panel relay may be damaged.

Connecting a controller with a reader with TM output protocol



Connecting a controller with a reader with Wiegand 26-42 output protocol



Controller Programming

Attention: Master cards are not included in the package. When purchasing cards, be sure to include one or two cards to use as Master Cards, as without master card programming, the controller cannot be used.

Programming Master cards (keys)

The controller is shipped unprogrammed. After turning on the power, the controller waits for two cards to be sequentially presented to the reader, which will be recorded as a Master card. During this time, the indicator on the controller board and the LED output will turn on at a frequency of 1 time per second.

If you need only one master card, present it to the reader twice. Recording the Master card into the memory is indicated by the controller's buzzer sound signal and activation of the BUZ output. After recording two Master cards (or one, presented twice), the indicator turns off and the controller goes into standby mode.

Controller Standby

In standby mode, the controller indicator is off, the buzzer does not emit any signals.

Programming cards (keys) of users

In standby mode, present the Master card to the reader once. The indicator and LED output of the controller will turn on, the buzzer will emit two short beeps, which means the controller has entered the user card recording mode. To record user cards, bring them to the reader with an interval of at least 1 second. Successful recording of the card (key) is indicated by short-term switching off of the controller's LED output and a single sound signal from the controller with the activation of the BUZ output.

If the inserted card has already been programmed into the controller, when it is presented, the buzzer emits three short beeps, while the key (card) is not rewritten into the controller's memory. You can continue programming user keys (cards).

If no keys are brought to the reader within 60 seconds, the controller will automatically switch to standby mode.

You can exit the user card programming mode, in standby mode, at any time:

- If you have programmed the cards, then present the Master card once, the controller buzzer will beep once, the indicator will turn off and the controller will go into standby mode.
- If you have not programmed the cards, then bring the Master card to the reader twice. After the first presentation of the Master Card, the controller's buzzer will emit two beeps and the indicator will start flashing. After the second presentation of the Master Card, the controller buzzer will give one beep, the indicator will turn off and the controller will go into standby mode.

Programming the opening time of the lock

To program the lock opening time, the "Exit" button must be connected to the controller. If the button is not connected, simulate it by closing the OPEN and GND terminals.

In standby mode, present the Master card to the reader once. The controller indicator will turn on, the buzzer will emit two short beeps, which means the controller has entered the lock opening time programming mode.

Press and hold the "Exit" button for the required time to open the lock, the controller will give out one beep, after which it will start beeping every second.

Release the button after receiving the desired delay time equal to the number of beeps minus the first beep. The time that you held the "Exit" button will be remembered by the controller as the time for which the relay will be activated when a user card is presented to the reader or when the "Exit" button is pressed.

If there is no action with the controller within 60 seconds, the controller will automatically go into standby mode.

Removing user cards (keys)

To delete the cards of all users, the "Exit" button must be connected to the controller. If the button is not connected, simulate it by closing the OPEN and GND terminals.

In standby mode, bring the master card to the reader twice. After the first presentation of the Master Card, the controller buzzer emits two beeps, and the indicator turns on. After the second presentation of the Master Key, the controller's buzzer emits two beeps, and the indicator starts flashing.

Press the "Exit" button for more than 5 seconds, until a series of beeps appears and the indicator flashes. Wait for the end of the series of beeps. All user cards have been removed from the controller memory. The master cards will remain in the controller's memory.

If you do not press the "Exit" button within 1 minute after entering the user card deletion mode, the controller will automatically return to standby mode without deleting user cards. You can exit the user card deletion mode by swiping the Master card to the reader once. The buzzer will beep twice, the indicator will stop flashing, and the controller will enter standby mode.

Deleting Master Cards

To remove the Master Card, turn off the power of the controller, install jumper J1 and turn on the power of the controller.

The buzzer of the controller will emit a series of short beeps, the indicator will flash synchronously. After about 3 seconds, the buzzer and indicator will turn off, which means that the Master Card has been successfully removed from the controller's memory.

Power off the controller, remove jumper J1 and power on the controller again. The controller will enter the Master card (key) programming mode.

User card automatic programming mode

Attention: the mode of automatic adding of user cards (keys) cannot be turned on if Master cards are not added or previously deleted in the controller. Before installing jumper J2, program the master card

This mode allows you to program user cards (keys) automatically when they are presented to the reader, for example, when replacing the controller in the entrance, when it is impossible to collect residents' cards (keys).

Power down the controller and install jumper J2. Power on the controller.

When applying any card to the reader, the controller opens the door for the programmed time and checks if this key is in the memory, if not, it writes it down. To exit the mode of automatic recording of user cards, turn off the power of the controller, remove jumper J2 and turn on the power of the controller again.

Trigger mode

Trigger mode is designed to control various devices, such as an alarm system. Each time the card is presented to the reader, the relay switches to the opposite state. If the relay was on, it will turn off, and vice versa. Switching on the relay is accompanied by a series of short beeps with parallel activation of the BUZ output and the indicator on the board and the activation of the LED output.

To enable the trigger mode of the controller - turn off the power of the controller, install jumper J4 and turn on the power of the controller again.

Note: When the trigger mode is enabled, the activation of the door position sensor connected to the SENS input turns off the relay without an audible signal.

Door opening

When presenting the card to the reader or pressing the "Exit" button, the controller activates the relay and turns on the indicator with periodic sound signals for the programmed door opening time. If the card is not in the controller's memory, the indicator and the buzzer emit a series of short signals, the relay is not activated.