UA.TR.028

NERO

Radio card
Radio 8117 micro
Passport

1. Designation

The radio card Radio 8117 micro is designated to control the automation units of sliding, swinging, sectional doors and barriers.

2. Specifications

Supply voltage range AC/DC, V	~9-24/=12-30
Consumed current, mA	NMT 100
Maximum permissible switching current, A	5 (at cos=1)
Number ochannels	2
Command duration (for each channel), s	1,5
Operating frequency range, MHZ	433,05-434,79
Number of recorded remote control codes	500
Overall dimensions,mm	98×32×22
Operating temperature range, °C	from -30 to +50
Connector wires section	0,5 mm²
Degree of case protection	IP55

The product is not intended to be installed and operated in explosive and fire hazardous areas and does not require protective grounding.

3. Special features

- supporting a new improved dynamic radio protocol with high range and noise immunity;
- 2 channels to control other manufacturers automation;
- control using the Radio series remote controls;
- supporting remote controls with feedback (see remote control instructions);
- retransmission the dynamic code of the Radio series remotes.

4. Connection

Connecting wires and cables with polyethylene insulation or sheath are not allowed.

It is not allowed to install the device at a distance of less than 1 m from heating appliances.

The holes in the cable glands must be made with a tool of a smaller diameter than the inserted cable.
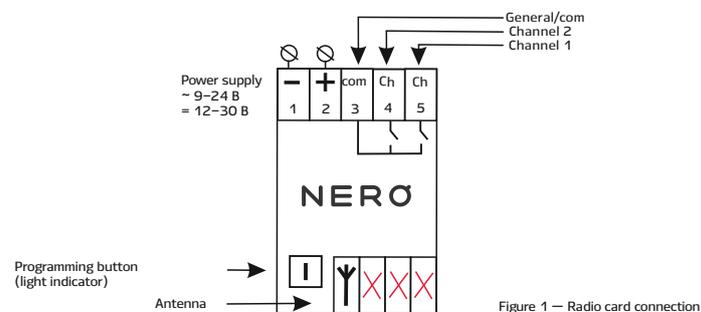

Figure 1 — Radio card connection

5. Remote control programming

Action	Indication
1. Enter the device into remote control programming mode (remote control PM)	
Press and hold the Programming button for more than 4 s.	Indicator lamp is red.
2. Select a channel for remote control record	
Press and hold the Programming button for more than 1 s (channels change circle-wise).	The number of red blinking 1 – 1st channel; 2 – 2nd channel.
3. Record remote control channel to the device memory	
! One channel of the remote control can be recorded in only one of the two channels of the device, i.e., two channels cannot be recorded in one channel of the remote control.	
! Since 2019, most remote controls are available with a dynamic code as the factory setting. See the instructions for the remote control for details.	
Radio 8101-1M	a) in dynamic mode: press the remote control button and hold it for more than 2 s; b) in static mode: press briefly the remote control button (less than 1 s).	During recording, the device indicator light flashes green short-long-short. If the remote control is already recorded, the indicator flashes green briefly. If the memory is full, the indicator flashes yellow for 3 s. Remote control indication in dynamic mode with feedback: - the channel is recorded: 1 beep l and 1 diode blink for the recorded channel; - the channel is not recorded: 3 beeps and 3 diode blinks for the recorded channel (see the instructions for the remote control).
Radio 8101-2M 8101-4M	a) in dynamic mode: press the recordable remote control button and, while holding it, briefly press any other one; b) in static mode: press briefly the recordable button.	
Radio 8101-5 8101-15	a) in dynamic mode: 1) select a recordable channel; 2) record the channel: press the «STOP» button and, without releasing it, briefly press the «UP» button, then release both buttons. b) in static mode: 1) select a recordable channel; 2) press briefly the «STOP» button. c) in dynamic mode with feedback: 1) select a recordable channel; 2) record the channel: -press simultaneously the «STOP» and «UP» buttons; -release the UP button, without releasing «STOP» - receive the remote control signal about successful recording to the device (for more details, see the instructions for the remote).	

Action	Indication
3. Delete remote control channel from device memory (remote control PM)	
Radio 8101-1M	a) in dynamic mode: 1) enter the remote control into programming mode: press the button 3 times in a row, and for the fourth one - hold the button for 4 s. The pressing interval should not exceed 1 s; 2) remove the remote control: press the remote control button and hold it for more than 1 s. b) in static mode: press the remote control button and hold it for more than 1 s.	In PM, the remote control light indicator flashes red. Upon removal, the device light indicator will flash for a long time and continue to flash in red.
Radio 8101-2M 8101-4M	a) in dynamic mode: press the button of the deleted channel and, holding it, press any other and hold it for more than 1 s, then release both buttons; b) in static mode: press and hold the button of the deleted channel for more than 1 s.	The device light indicator will flash for a long time and continue to flash.
Radio 8101-5 8101-15	a) in dynamic mode: 1) select the deleted channel; 2) record the channel, press the «STOP» button and without releasing press briefly the «DOWN» button, release both buttons. b) in dynamic mode: 1) select the deleted channel; 2) press briefly the «STOP» button. c) in dynamic mode with feedback: 1) select the deleted channel; 2) record the channel, -press simultaneously the «STOP» and «DOWN» buttons; -release the «DOWN» button without releasing the «STOP» button (to receive the remote control signal about successful removal from the device, see the instructions for the remote control for more details).	Remote control indication in dynamic mode with feedback: -channel deleted: 2 beeps and 2 diode blinks for the deleted channel; -channel has not been deleted: 3 beeps and 3 diode blinks of the deleted channel (see instructions for the remote control) in red.
4. Delete channels of all remote controls from the device memory (remote controls PM)	
Press and hold the Programming button for more than 8 s.	The light indicator flashes red twice for a long time.
5. Remove the device from the programming mode of the remote controls	
Press briefly the Programming button.	Light indication stops.
! In case of inactivity, the device will automatically exit programming mode after 32 s	

6. Mode of operation

The device can operate in one of three modes.

Single-channel mode (command duration is 1.5 s) is used to control a single object. For example, a barrier: 1st channel is responsible for the UP direction, and the second – DOWN direction. In this case, control is performed by all remote controls recorded in both channels of the device (see Figure 2).
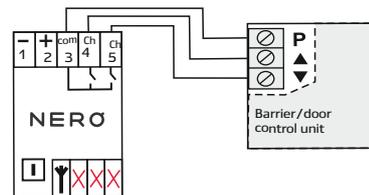

Figure 2 — Single-channel mode

Two-channel mode (factory setting). Command duration is 1.5 s. It is used to control two automation objects. However, it should be taken into account that the radio card has one common input (3 "com" terminal), and it is not possible to connect it to different potentials at the same time (see Figure 3)
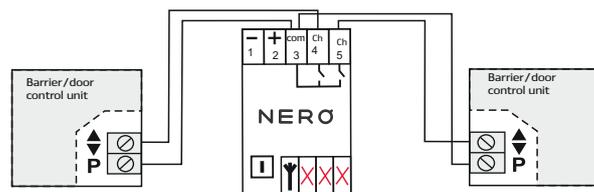

Figure 3 — Two-channel mode

Continuous command mode (command duration is infinite). It is used to control automation objects in which a continuous command is required, for example, a command to block the doors or gates automation. However, it should be taken into account that the radio card has one common input (3 "com" terminal), and it is not possible to connect it to different potentials at the same time (see Figure 4).
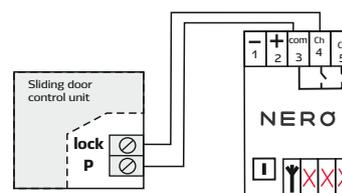

Figure 4 — Continuous command mode

6.1. Operation mode change

Action	Indication
1. Enter the device into the programming mode of operation modes (modes PM)	
1) enter in the remote controls PM: press the Programming button and hold it for more than 4 s; 2) enter in the operating modes PM: press briefly the Programming button.	1) the light indicator flashes red; 2) the light indicator flashes green a certain number of times.
2. Change device operation mode	
Modes are switched in a circle each time the Programming button is pressed while holding it for 1 second (until the flash is yellow).	Number of flashes: 1 — single-channel operation mode; 2 — two-channel operation mode (factory setting); 3 — continuous command mode.
3. Reset to factory settings	
1) enter the device in the remote control PM: press and hold the Programming button for more than 4 s; 2) enter the device in the modes PM: press and hold the Programming button for more than 1 s; 3) being in modes PM: press and hold the Programming button for more than 4 s.	1) the light indicator flashes red; 2) the light indicator flashes green according to the selected mode; 3) the light indicator flashes long yellow and continues to blink green.
4. Remove the device from the programming mode	
Press briefly the Programming button once.	The light indication stops.

> **!** In case of inactivity, the device will automatically exit programming mode after 32 s.

7. Retransmission

The retransmittion function is necessary to increase the transmission distance of the remote control signal due to the repeater built into the radio card. This function is used in case of strong interference, large distances, and the presence of a large number of obstacles. For example, to control a group of devices located at an object with difficult reception conditions, it is necessary to record the remote control in all devices and enable the relay function on one or more of them. Devices intended for retransmission are selected based on the size and characteristics of the object. As a rule, the repeater should be in the middle of the distance, between the most remote control points of the remote control receiver.

Only dynamic code is retransmitted!

> **!** Do not enable retransmission unless absolutely necessary.
>
> Do not retransmission relay on devices nearby.
>
> Do not enable retransmission on a large number of devices. This may interfere with sending the second remote command, following after a short period of time (1-2 s).
>
> The retransmission of the remote control sending is carried out only in combination with the control of power relays.

7.1. Enable or disable the retransmission function

Action	Indication
1. Enter the device into the repeater PM from standby mode	
Press and hold the Programming button for more than 8 s.	The light indicator flashes green a certain number of times.
2. Change repeater mode	
The retransmission function changes each time you press and hold the Programming button for more than 1 s (until the yellow flash).	Number of flashes: 1 - command retransmission is off (factory setting); 2 - retransmission of dynamic protocol commands is enabled (see Figure 5); 3 - retransmission of commands of the new improved dynamic protocol is enabled (see Figure 5).
3. Remove the device from programming mode	
Press briefly the Programming button (less than 1 s).	The light indication stops.

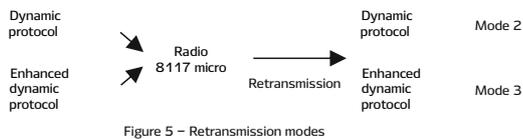> **!** In case of inactivity, the device will automatically exit programming mode after 32 s.

Figure 5 – Retransmission modes

8. Device operation

The device feeds short pulses (1.5 s) when the relay closes.

In single-channel mode, Channel 1 is responsible for the UP direction, Channel 2 is responsible for the DOWN direction (when controlling from remote controls with unambiguous commands: Radio 8101-2M, Radio 8101-5, Radio 8152-50).

In dual-channel mode, each channel operates in a step-by-step mode.

9. Routine maintenance

If a malfunction is detected during operation, immediately disconnect the device from the mains and call service personnel. Repair of the product during the warranty period and service is performed by the manufacturer's dealer.

10. Storage, transportation, service life

Products should be stored in packaging at temperatures from + 5°C to + 40°C and relative air humidity of no more than 80% in heated and naturally ventilated warehouses, in air-conditioned warehouses in the absence of aggressive impurities, conductive dust, acid fumes and alkalis, as well as gases that cause corrosion and destroy insulation. During storage, sharp fluctuations in temperature (more than 3°C/min) and air humidity (more than 5%/min) are not allowed.

Products must be transported in package in containers, closed railway cars, heated sealed compartments of aircraft and holds, as well as automobile transport with protection against precipitation at any distance at temperatures from -50°C to + 50°C, and with relative humidity up to 100% - at 25°C.When transporting products, protection from dust and atmospheric condensation should be provided.

The average product life is at least 5 years.

11.Disposal

At the end of its service life, the product must be disposed of in accordance with the laws of the host country. The product is not dangerous for human life and health, as well as for the environment. The product does not contain non-ferrous and precious metals.

12. Manufacturer's warranties

The warranty shelf life is 6 months from the date of manufacture (the last 6 digits in the serial number of the device, for example: 191117 - November 19, 2017).

The warranty period is 24 months from the date of sale.

In the absence of a mark on the sale - from the date of manufacture.

Warranty obligations do not apply to the product in case of mechanical damage, as well as in case of non-compliance with storage, transportation and operation conditions. Warranty obligations do not apply if the passport is not submitted.

13. Scope of supply

Radio card Radio 8117 micro..1pc.
Data sheet..1pc.
Individual package...1pc.

14. Acceptance certificate

The radio card Radio 8117 micro (see the serial number on the first page) is made in accordance with the requirements of TR BY 808001034.009-2018, accepted by the Quality Control Department and recognized as serviceable.

15. Potential problems

Problem	Possible cause	Troubleshooting
Device does not function.	a) the supply voltage is not applied; b) the wires in terminals 4 and 5 are poorly clamped;	a) supply voltage; b) clamp the wires in terminals 4 and 5.