

7.1. Turning on/off the retransmission function

Action	Indication
1. Input the device in programming mode of repeater from the standby-mode	
Press and hold the programming button for more than 8 sec.	Visual indicator blinks green for certain times.
2. Change the operation mode of repeater	
Turning on/off and the selection of the retransmission mode is carried out circle-wise each time you press and hold the programming mode for more than 1 sec. (up to yellow flash).	Number of flashes: 1- retransmission of command is off (factory setting); 2- retransmission of command of dynamic protocol is on (fig.2); 3- retransmission of command of a new improved dynamic protocol is on (fig.3).
3. Output the device from the programming mode	
Press shortly the programming button.	The visual indication stops.
! The device is automatically removed from the programming mode, if no actions are performed with it during 32 sec.	

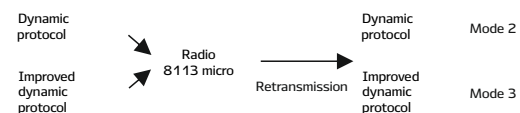


Fig. 3. Retransmission modes

8. Distance Programming Mode (DPM)

Input the device in the DPM is possible from previously programmed remote controls with support of dynamic code. The input function of the device in the DPM is active during the first 10 minutes after the supply voltage is applied. You should turn off and reapply power in order to reactivate the function of the DPM.

More information you can find in manual for remote control, and applying to manager or the manufacturer's technical support service.

9. Device operation

The device can execute the following commands:

1. "UP", "DOWN", "STOP" - when controlling from the Radio 8103, the Radio 8101-5, Radio 8101-15 remotes control. If during the movement of the roller shutter you press the button of the opposite direction and hold it for more than 1 sec, the roller shutter will stop for a while and start moving in the opposite direction.
2. "UP", "DOWN", "STOP" - when controlling by using the Radio 8101-2M mini-remote controls and two-key switch.
3. "Step-by-step control" - when controlling by using the Radio 8101-1M, Radio 8101-4M mini-remote controls, single-key switch.

10. Current maintenance

If during operation the device fault is detected it is necessary to disconnect the device from the supply mains immediately and call maintenance personnel. Within the warranty period servicing and repair are provided by the manufacturer dealer.

11. Storage and transportation, service life

The devices should be stored in packing at temperatures from +5°C to +40°C and relative humidity of not more than 80% in heated and vented warehouses, in air-conditioned depots without corrosive contaminants, conductible dust, acid and alkali vapors and gases causing corrosion and insulation breakdown. Temperature (more 3°C/min) and humidity (more 5%/min) violent fluctuations of air are prohibited during the storage.

The devices should be transported packaged, in containers, closed railway cars, heated and air-tight compartments of aircraft and holds and by trucks with rain and snow protection for any distances at temperatures from -50°C to +50°C and relative humidity of 100% at 25°C. Protection against dust and precipitation should be provided during transportation.

Average service life is 5 years min.

12. Disposal

At the end of the service life the device is subject to disposal. The device does not pose a hazard to human health and environment. The device does not contain any non-ferrous and precious metals.

13. Manufacturer's warranty

Guaranteed storage life is 6 months from the manufacturing date (the last 6 figures in the product serial number, for example: 191117 - November 19, 2017).

Guarantee service life is 24 months from the date of sale.

With the note of sale absent - from the manufacturing date.

Warranty obligations cease in case of non-observance of operating conditions established by the manufacturer and mechanical damage during operation. Warranty obligations do not cover the case of failure to present the device passport.

14. Completeness

Single-channel radio control Radio 8113 micro.....1pc.
Passport.....1pc.
Individual packing.....1pc.

15. Acceptance certificate

Single-channel radio control Radio 8113 micro (see serial number on the first page) is manufactured in conformance with RB TR 100376351.002-2003, is approved by QCD and is classified as fit for operation.

16. Potential problems

Problem	Probable reason	Fault elimination
The device does not operate.	a) There is no voltage; b) The wires in terminals 4 and 5 are not clamped well.	a) Apply the voltage supply at terminals 4 and 5. b) Clamp the wires in the terminals 4 and 5.
The curtain moves in an opposite direction when it is controlled by the remote control button of definite command.	The drive wires are connected incorrectly.	To change the drive wires connected to the terminals 7 and 8.

Single-channel radio control Radio 8113 micro Passport



1 Purpose

Single-channel radio control Radio 8113 micro (hereinafter referred to as Radio 8113 micro) is designed to control electric drives of roller shutters and sun blinds with a current consumption of up to 5 A using the remote controls of the Radio series.

2. Specifications

Supply voltage range, V~ /Hz.....187-253/50
Consumption current, mAnot more than 20
Maximum allowable switching current, A.....5 (at cos=1)
Number of controlled electric drives.....1
Maximum time of command «UP» and «DOWN», sec.....180
Factory setting of time command, sec.....120
Operating frequency range, MHz.....433,05-434,79
Number of recordable channels of remote controls.....500
Overall dimensions, mm.....51×22×20
Operation temperature range (in silicone frame), °C.....from -30 to +50
Section of interconnecting wires.....0,75 mm²
Degree of frame protection *.....IP55
Protection class against electric shock *.....II
*Provided only in silicone frame.

The device is not intended for installation and operating in explosion hazard and fire hazardous zones.

3. Peculiarities

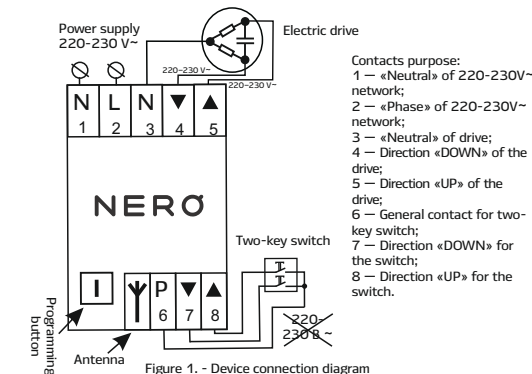
- support on a new improved dynamic radio protocol with high range and noise immunity;
- support of feedback remote controls (see manual for remote control);
- control using the remote controls of the Radio series;
- retransmission of dynamic commands from Radio remote controls.

4. Connection

Use wires with a cross-section of at least 0.75 mm² in double insulation to connect the device to the network and to the electric drive.

It is prohibited to use mounting wires and cables with polyethylene insulation or sheath.

It is prohibited to install the device at a distance less than 1 m from heating devices.



It is prohibited to supply 220-230V~ voltage to the terminals 1,2,3.

! To consider 220V~ as the nominal network voltage when delivered to Ukraine.

Use switch without the fixation of pressed position.

5. Programming of remote controls

5.1. Programming of remote controls using "Programming" button

Action	Indication	
1. Input the device in programming mode of remote controls (PM of remote controls)		
Press and hold the programming button for more than 4 sec	Visual indicator blinks red	
2. Record the remote control channel in the memory of the device (PM of remote controls)		
! Majority of remote controls are produced with dynamic code as the factory setting in 2019. See manual for remote control for more details.		
Radio 8101-1M	a) in dynamic mode: press and hold the remote control button for more than 2 sec.; b) in static mode: press short the remote control button (less than 1 sec.)	When recording the visual indicator blinks short-long-short green light.
Radio 8101-2M 8101-4M	a) in dynamic mode: press and hold the recordable remote control button, and press short any other; b) in static mode: press short the recordable button.	If the remote control is already recorded, the indicator will flash green shortly.
Radio 8103 8101-5 8101-15	a) in dynamic mode: 1) select the recorded channel; 2) record a channel: press the «STOP» button and, without releasing it, briefly press the «UP» button, then release both. b) in static mode: 1) select the recorded channel; 2) briefly press the «STOP» button. c) in dynamic mode with feedback: 1) select the recorded channel; 2) record a channel: - press the «STOP» and «UP» buttons simultaneously; - release the «UP» button without releasing the «STOP» button- get a signal from the remote about successful recording to the device (for more information, see the instructions for the remote).	If the memory is full, the indicator blinks yellow for 3 sec.
3. Delete the remote control channel from the memory of the device (PM of remote controls)		Indication of feedback remote control in dynamic mode: - channel is recorded: 1 audio signal and 1 blink of recordable channel diode; - channel is not recorded: 3 audio signals and 3 blinks of recordable channel diode (see manual for remote control).
Radio 8101-1M	a) in dynamic mode: 1) input the remote control in programming mode: press the button 3 times in a row, and hold it for more than 4 sec. when pressing for the fourth time. The pressing interval should not exceed 1 sec.; 2) delete the remote control: press and hold the remote control button for more than 1 sec. b) in static mode: press and hold the remote control button for more than 1 sec.	The visual indicator of the remote control blinks red in programming mode.
Radio 8101-2M 8101-4M	a) in dynamic mode: press and hold the button of erasable channel, and press any other for more than 1 sec.; b) in static mode: press and hold the button of erasable channel for more than 1 sec.	When deleting the visual indicator will flash long-term and then will continue to blink red.

Manufacturer and representative office in Belarus

Nero Electronics LLC
Minsk FEZ, 223016, Minsk district,
Novy Dvor Rural Council, 74
Tel.: +375 17 388-53-00
+375 29 609-25-59
by-order@neroelectronics.by
www.neroelectronics.by
technical support:
+375 29 610-12-53

Representative offices in Russian Federation:


SketchNero Group LLC
15, Bolshaya Ochakovskaya St.,
119361, Moscow.
Tel.: +7 495 430-79-60
+7 495 735-64-47
info@neros.ru

technical support:
8 800 5000-930

Representative office in Ukraine:

Umnye resheniya LLC
21, B. Khvoyki St., Office,
03022, Kiev.
Tel.: +38 067 679-51-22
+38 044 500-18-55
ua-order@neroelectronics.by

technical support:
+380 67 679-51-22


Action	Indication
Radio 8103 8101-5 8101-15	<p>a) in dynamic mode: 1) select the channel to delete; 2) delete the channel, press the «STOP» button and without releasing it, briefly press the «DOWN» button, release both.</p> <p>b) in static mode: 1) select the channel to delete; 2) press and hold the «STOP» button for more than 1 second, then release.</p> <p>c) in dynamic mode with feedback: 1) select the channel to delete; 2) delete the channel, -press simultaneously button «STOP» and «DOWN» button; -release the «DOWN» button while holding down the «STOP» button (to the remote control signal about the successful removal of the device in more detail, refer to the instructions on remote).</p>
4. Delete channels of all remote controls from the memory of the device (PM of remote controls)	
Press and hold the programming button for more than 8 sec.	The visual indicator will flash red for a long time twice.
5. Output the device from the PM of remote controls	
Press short the programming button.	The visual indication stops.
<div>  The device is automatically removed from the programming mode, if no actions are performed with it during 32 sec. </div>	

5.2. Programming of remote controls using 2-key switch or button

Programming using two-key switch is available during the first 10 minutes after voltage, after which it is necessary to remove and apply voltage to the device.

Action	Indication
1. Input the device in PM of remote controls	
Press and hold the button of connected single-key switch for more than 4 sec., then release and press short twice during 5 sec.	- Roller shutter curtain will make short-term movement «DOWN-UP» once and after 5 sec. will confirm the input in PM of remote controls with repeated short-term movement «DOWN-UP»; Visual indicator blinks red
2. Record the remote control channel in the memory of the device (PM of remote controls)	
Radio 8101-1M	<p>a) in dynamic mode: press and hold the remote control button for more than 2 sec.;</p> <p>b) in static mode: press short the remote control button (less than 1 sec.)</p>
Radio 8101-2M 8101-4M	When recording the remote control channel: - Roller shutter will make long-term «DOWN-UP», short-term «DOWN-UP» and long-term «UP» movements; - the visual indicator of the device blinks short-long-short green light.

Action	Indication
Radio 8103 8101-5 8101-15	<p>a) in dynamic mode: 1) select the recorded channel; 2) record a channel: press the «STOP» button and, without releasing it, briefly press the «UP» button, then release both.</p> <p>b) in static mode: 1) select the recorded channel; 2) briefly press the «STOP» button.</p> <p>c) in dynamic mode with feedback: 1) select the recorded channel; 2) record a channel: - press the «STOP» and «UP» buttons simultaneously; - release the «UP» button without releasing the «STOP» button- get a signal from the remote about successful recording to the device (for more information, see the instructions for the remote).</p>
3. Delete the remote control channel from the memory of the device (PM of remote controls)	
Radio 8101-1M	<p>a) in dynamic mode: 1) input the remote control in programming mode: press the button 3 times in a row, and hold it for more than 4 sec. when pressing for the fourth time. The pressing interval should not exceed 1 sec.;</p> <p>2) delete the remote control: press and hold the remote control button for more than 1 sec.</p> <p>b) in static mode: press and hold the remote control button for more than 1 sec.</p>
Radio 8101-2M 8101-4M	<p>a) in dynamic mode: press and hold the button of erasable channel, and press any other for more than 1 sec.;</p> <p>b) in static mode: press and hold the button of erasable channel for more than 1 sec.</p>
Radio 8103 8101-5 8101-15	<p>a) in dynamic mode: 1) select the channel to delete; 2) delete the channel, press the «STOP» button and without releasing it, briefly press the «DOWN» button, release both.</p> <p>b) in static mode: 1) select the channel to delete; 2) press and hold the «STOP» button for more than 1 second, then release.</p> <p>c) in dynamic mode with feedback: 1) select the channel to delete; 2) delete the channel, -press simultaneously button «STOP» and «DOWN» button; -release the «DOWN» button while holding down the «STOP» button (to the remote control signal about the successful removal of the device in more detail, refer to the instructions on remote).</p>

Action	Indication
4. Delete channels of all remote controls from the memory of the device (PM of remote controls)	
Press and hold the button of connected single-key switch for more than 4 sec.	When confirming the deletion of all remote controls: - Roller shutter will make two long-term movements «DOWN-UP»; - Visual indicator will flash long-term with the red light twice.
5. Output the device from the PM of remote controls	
Press short the button of connected single-key switch.	The visual indication stops.
<div>  The device is automatically removed from the programming mode, if no actions are performed with it during 32 sec. </div>	

6. External control modes

External control modes. It is possible to connect two-key switch without fixation or button to the external inputs 6,7,8. There are two ways how to do it:

- a) hardware-based: remove voltage from the device, install a jumper between contacts 7 and 8, apply voltage to the device (see Figure 2).
- b) software-based: as indicated in the table 6.1.

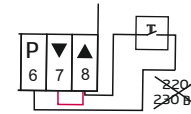


Figure 2. Button connection


Automatic disconnection. The device can automatically turn off the voltage supply to the roller shutter drive when running on mechanical limit switches or apply voltage to the drive with a set time (**factory setting is 120 sec.**), time will not exceed 180 sec. in both cases.

Selection of automatic disconnection / set time is carried out in external control mode selection menu.

Setting of command time allows to optimize the control of roller gates and roller shutters. Command time is set in accordance with the dimensions of roller shutter curtain.

6.1. Selection of external control mode and time setting

Action	Indication
1. Input the device in programming mode of external control (PM of external control)	
1) Input the device in programming mode of remote controls: press and hold the programming button for more than 4 sec	1) Visual indicator blinks red;
2) Input the device in programming mode of external control: press the programming button for more than 1 sec.	2) Visual indicator flashes yellow and blinks green;
3) The modes are switch by pressing the programming button for more than 1 sec (up to yellow flash)	3) Number of flashes: 1- two-key mode with tunable time (factory mode); 2- button mode with tunable time; 3- two-key mode with automatic disconnection; 4- button mode with automatic disconnection.

Action	Indication
2. Setting of time command	
Time is set using connected 2-key switch.	
1) install a roller shutter in lowermost position; 2) input the device in programming mode of remote controls: press and hold the programming button for more than 4 sec;	2) Visual indicator blinks red.
3) input the device in menu of programming mode of external control: press the programming button for more than 1 sec;	3) Visual indicator blinks green according to the selected mode.
4) Set the time: 1. To start the countdown by pressing short the "UP" button; 2. When the roller shutter curtain is stopped in the uppermost position, wait for 3-5 sec. and press short the "DOWN" button. New time will be recorded in the device memory.	Number of flashes: 1 – two-key mode with configurable duration (factory mode); 2 – button mode with configurable duration; 3 – two-key mode with automatic shutdown; 4 – button mode with automatic shutdown.
3. Reset of external control mode and time to the factory settings	
1) Input the device in programming mode of remote controls: press and hold the programming button for more than 4 sec.	1) Visual indicator blinks red
2) Input the device in programming mode of external control: press the programming button for more than 1 sec.	2) Visual indicator blinks green according to the selected mode.
3) Press and hold the programming button for more than 4 sec in programming mode of external control	3) Visual indicator flashes long-term with the yellow light and continues to blink green.
4. Output the device from the PM of external control	
Press short the programming button.	There is no indication
<div>  The device is automatically removed from the programming mode, if no actions are performed with it during 32 sec. </div>	


7. Retransmission

The retransmission function is necessary to increase the transmission distance of a remote control signal in difficult reception conditions. Difficult conditions can be strong interference, long distance, the presence of a large number of obstacles. For example, to control a group of devices located on an object with difficult reception conditions, you need to record the remote control in all devices and turn on the retransmission function on one or more of them. Devices intended for retransmission are selected based on the size and characteristics of an object. As a rule, the repeater should be located in the middle of the distance, between the most remote control points of the receiver.

Only the dynamic code is retransmitted!!

Do not turn on the retransmission without extreme necessity.

Do not turn on the retransmission on devices located nearby.


Do not turn on the retransmission on many devices. This can disturb to transmit the second command of the remote control coming after a short period of time (1-2 sec.).

Retransmission of remote control marking is carried out only together with the control of power relay.