**9. 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.

**10. Device operation**

The device can execute the following commands:

1. «UP», «DOWN», «STOP» — when controlling from the Radio 8101-2M, 8103, 8101-5, 8101-15 remote controls. 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. «Step-by-step control» — when controlling by using the Radio 8101-1M, Radio 8101-4M mini-remote controls.

In the «Roller shutter mode with auto closing» operation mode, the device can be blocked for 3 hours from the previously recorded remote control. To do this, press and hold the remote control button for more than 4 seconds. It can be unlocked by pressing any remote control button from which the device was blocked, or by pressing a button on the connected key switch.

**11. 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.

**12. Storage and transportation, service life**

The devices should be stored in packing at temperatures from +5B°C to +40B°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.
During storage, sharp fluctuations in temperature (more than 3°C / min) and humidity (more than 5%/min) of the air are not allowed.

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.

Average service life is 5 years min.

**13. 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.

**14. 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 в — 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.

**15. Completeness**

Executive device Radio 8113 IP65........................................................................1шт.
Passport...................................................................................................................1шт.
Individual packing..................................................................................................1шт.

**16. Acceptance certificate**

Executive device Radio 8113 IP65 (see serial number on the first page) is manufactured in conformance with RB TR 100376351.002-2003 and essential requirements of technological regulations, is approved by QCD and is classified as fit for operation.

**17. Potential problems**

| Problem | Probable reason | Fault elimination |
|---|---|---|
| The device does not operate. | a) there is no voltage;<br>b) the wires in terminals 1 and 2 are not clamped well. | a) apply the voltage supply at terminals 1 and 2;<br>b) clamp the wires in the terminals 1 and 2. |
| 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 4 and 5. |
| The device operates, indicator blinks red or green but the voltage is not supplied on drive. | a) the jumper between terminals 6 and 7 is not installed;<br>b) the jumper between terminals 6 and 7 is not clamped well. | a) install the jumper between terminals 6 and 7;<br>b) clamp the jumper between terminals 6 and 7. |
| The device is not entered in the programming mode | a) latching switch is connected, and the button of one of directions is pressed;<br>b) switch cable is out of service;<br>c) the switch is out of service. | a) change the latching switch on the switch without fixation;<br>b) check/change cable;<br>c) check/change switch. |
| The drive is turned on for a short time, roller shutter twitches and stops. | a) the short command mode is installed;<br>b) a short command time is installed, which is not insufficient for the full closing of roller shutter. | a) install the necessary mode;<br>b) install the necessary command time or reset to factory setting. |
| The device is not controlled using remote control and key switch, red visual indicator blinks permanently. | a) incorrect operation mode of safety inputs is installed;<br>b) there is an obstacle in area of connected safety sensor;<br>c) cable leading to the safety sensor is impaired. | a) install the mode of safety inputs in accordance with the sensor or reset to factory setting;<br>b) remove an obstacle in area of sensor;<br>c) check/change the cable. |

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# Executive device Radio 8113 IP65
## Passport

**1. Purpose**

The executive device Radio 8113 IP65 is designed to control roller shutters, roller blinds, gate and barrier control units, sun blinds, as well as lighting devices and any other electric load with a current consumption of up to 3 A using the remote controls of the Radio series.

**2. Specifications**

Supply voltage range, V~/Hz.................................................................187-253/50
Consumption current, mA, not more than.......................................................20
Maximum allowable switching current, A.....................................3 (at cos=1)
Number of controlled electric drives...................................................................1
Operating frequency range, MHz..................................................433,05-434,79
Number of recordable codes of remote controls.......................................500
Overall dimensions, mm...........................................................................80×80×50
Operation temperature range, °C...................................................from -30 to +50
Section of interconnecting wires, mm$^2$...............................................0,75 мм$^2$
Degree of enclosure protection.......................................................................IP65
Protection class against electric shock....................................................×.....II

The product is not intended for installation and operating in explosion hazard and fire hazardous zones and does not require the protective earth.

**3. Peculiarities**

- availability of potential;
- free contact for connection to automation of other manufacturers;
- control using the remote controls of the Radio series;
- support for feedback remotes;
- retransmission of commands from dynamic remote controls;
- auto closing timer for rolling gates;
- emergency control of roller shutters, rolling gates.

**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.

The holes in feedthrough plate should be punctured using a tool of smaller diameter than the input cable.
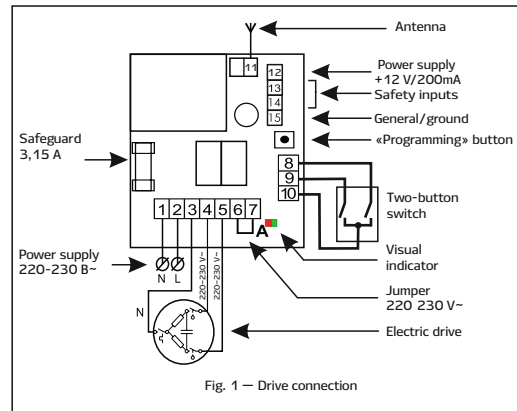


Fig. 1 — Drive connection

It is prohibited to supply 220-230 V~ voltage to the terminals 8-15.

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

**!** It is allowed to change the safeguard on the 5A rating when connecting the drives with a current consumption more than 3 A.

The button is connected when the voltage is removed by installing a jumper between pins 8 and 9 (see Fig. 3)

**5. Programming of remote controls**

| 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)**

| | | |
|---|---|---|
| Radio 8101-1M | a) in dynamic mode: press and hold the remote control button for more than 2 sec.;<br>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.<br><br>If the remote control is already recorded, the indicator will flash green shortly.<br><br>If the memory is full, the indicator blinks yellow for 3 sec. |
| Radio 8101-2M 8101-4M | a) in dynamic mode: press and hold the recordable remote control button, and press short any other;<br>b) in static mode: press short the recordable button. | |
| Radio 8103 8101-5 8101-15 | a) in dynamic mode:<br>1) select the recorded channel;<br>2) record a channel: press the «STOP» button and, without releasing it, briefly press the «UP» button, then release both.<br>b) in static mode:<br>1) select the recorded channel;<br>2) briefly press the «STOP» button.<br>c) in dynamic mode with feedback:<br>1) select the recorded channel;<br>2) record a channel:<br>- press the «STOP» and «UP» buttons simultaneously;<br>- 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). | Remote display in dynamic mode with feedback:<br>- channel recorded: 1 beep and 1 flashing diode of the recorded channel;<br>- channel not recorded: 3 beeps and 3 flashing diodes of the recorded channel (see the instructions on the remote control). |

**3. Delete the remote control channel from the memory of the device (PM of remote controls)**

| | | |
|---|---|---|
| Radio 8101-1M | a) in dynamic mode:<br>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.;<br>2) delete the remote control: press and hold the remote control button for more than 1 sec.<br>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.<br><br>When deleting the visual indicator will flash long-term and then will continue to blink red. |
| 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.;<br>b) in static mode: press and hold the button of erasable channel for more than 1 sec. | The visual indicator will flash long-term and then will continue to blink red. |
| Radio 8103 8101-5 8101-15 | a) in dynamic mode:<br>1) select the channel to delete;<br>2) delete the channel, press the «STOP» button and without releasing it, briefly press the «DOWN» button, release both.<br>b) in static mode:<br>1) select the channel to delete;<br>2) press and hold the «STOP» button for more than 1 second, then release. | |

NERO

## Column 1

| Action | | Indication |
|---|---|---|
| Radio 8103 8101-5 8101-15 | 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). | Remote display in dynamic mode with feedback: - channel deleted: 2 beeps and 2 flashing diodes of the channel being deleted; - channel not deleted: 3 beeps and 3 flashing diodes of the deleted channel(see the instructions on the remote control) in red. |

**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. |

| ! | The device is automatically removed from the programming mode, if no actions are performed with it during 32 sec. |
|---|---|

**6. Operation modes**

The device has 4 operation modes:

**Short command mode** is used to connect the external automatics (fig. 2 and fig. 3). Command time is 1,5 sec.

**Roller shutter mode** is used to control electric drives of roller shutters, roller blinds, sun blinds. Command time can be installed up to 180 sec. Factory setting is 60 sec. (fig. 1).

**Roller shutter mode with auto closing** is used to control roller gates. Auto closing time can be installed up to 240 sec. Factory setting is 20 sec.

**Continuous command mode** is used to control incandescent lightning and another load up to 3 A/690 W. It is recommended to connect incandescent lamps not more than 220 W.

The command and auto closing time settings allow you to optimize the control of the roller shutters. The command time is set in accordance with the size of the roller shutter curtain. The auto closing timer is set according to the required waiting time for closing in the open position.

Auto closing timer is turned on after:
a) the time expiration of the "UP" command;
b) the stopping in an intermediate position upon a command from a remote control or a key switch;
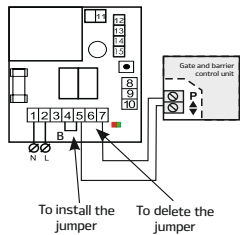c) the unlocking the device using a safety sensor.



To install the jumper   To delete the jumper
Fig. 2 Connection to step-by-step input

Gate and barrier control unit
Connecting a button
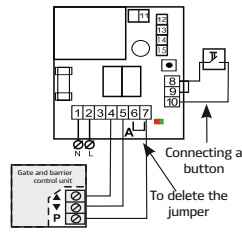To delete the jumper
Fig. 3 Connection to separate "OPEN" and "CLOSE" inputs

**6.1. Change of operation mode, command time and auto closing time**

| Action | Indication |
|---|---|
| **1. Input the device in programming mode of operation modes** | |
| 1) input in the PM of remote controls: press and hold the programming button for more than 4 sec.; 2) input in PM of operation modes: press and hold the programming button for more than 1 sec. (up to yellow flash). | 1) visual indicator blinks red; 2) visual indicator blinks green for certain times. |

## Column 2

| Action | Indication |
|---|---|
| **2. Change the device operation mode** | |
| The modes are switched circle-wise each time you press and hold the programming button for more than 1 sec. (up to yellow flash). | Number of flashes: 1- short command mode; 2- roller shutter mode(factory setting); 3- roller shutter mode with auto closing; 4- continuous command mode. |
| **3. Change the command time (in the PM of operation mode)** | |
| ! The time setting is carried out only using connected key switch without the fixation of pressed position. | |
| 1) to input repeatedly the device in the PM of operation mode, if it is necessary; 2) to set the 2nd operation mode; 3) to install the roller shutter in the lowermost position by pressing the «DOWN» button; 4) to start the time countdown by pressing shortly the «UP» button; 5) to wait for 3-5 sec. and press the «DOWN» button when the roller shutter is stopped in uppermost position. New time will be recorded in the device memory. | The visual indication of the second operation mode — double green flashes. |
| **4. Change the time of auto closing timer (in the PM of operation mode)** | |
| 1) to input repeatedly the device in the PM of operation mode, if it is necessary; 2) to set the 3rd operation mode; 3) to start the time countdown by pressing shortly the «UP» button; 4) to press the «DOWN» button when the necessary time is expired. New time will be recorded in the device memory. | The visual indication of the third operation mode — triple green flashes. |
| **5. Reset to the factory setting (in the PM of operation mode)** | |
| 1) to input repeatedly the device in the PM of operation mode, if it is necessary; 2) press and hold the programming button for more than 4 sec. | The visual indicator will flash yellow after 1 and 4 sec., and then it will continue to blink double green light. |
| **6. Output the device from the programming mode** | |
| Press twice 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. | |

**7. Safety inputs**

**7.1. Connection of safety devices**

The device can operate with the following safety devices:
- reed switch (fig. 4);
- optical sensors SIGNAL 12 (fig. 5);
- infrared barrier with NO and NC contacts (fig. 6);
- device for group opening of roller shutters with NO and NC contacts (clause 6.2).

When the device is blocked by the sensor, the red visual indicator will flash continuously. The device will be unavailable to control. In this situation, it is necessary to eliminate the obstacle in the operation area of the sensor or to change the operation mode in accordance with the connected sensor.

The device has 5 operation modes of safety inputs (PM of safety inputs) for the organization of work with the safety elements.

Modes 1-4 determine the contact type of the infrared barrier (reed switch) and the response of the device when sensors are blocked during the movement:
1. NO-sensor: when the device is closed, it will execute the «STOP» command.
2. NO-sensor (factory setting): when the device is closed, it will execute the «STOP» and «UP» commands.
3. NC-sensor: when the device is opened, it will execute the «STOP» command.
4. NC-sensor: when the device is opened, it will execute the «STOP» commands.

When the IS15 insertion is deformed, the optical beam of the optical sensors SIGNAL 12 is interrupted, and the device always executes the «STOP» and «UP» commands. The response does not depend on the selected mode (1-4). The «UP» command is executed only when the sensor is blocked during the «DOWN» movement.

The fifth mode allows you to control groups of devices Radio 8113 IP65 through one dry contact by applying / dumping power supply +12 V (cl. 6.2).
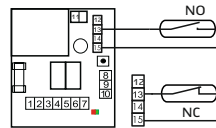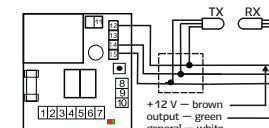
## Column 3



Fig. 4 Connection of reed switch



+12 V — brown output — green general — white
Fig. 5 Connection of optical sensor SIGNAL 12
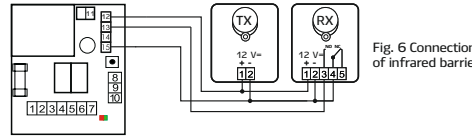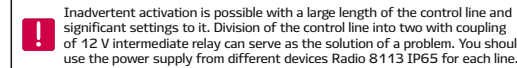


TX   12 V=   RX   12 V=
Fig. 6 Connection of infrared barrier

**7.2. Group control of devices**

You can use NO or NC contact type to control the devices.

A jumper between the contacts 13-15 allows you to invert the effect of the device on the roller shutter.

Device Radio 8113 IP65 or another power supply can serve as a 12 V power supply.

For example, if you use the NC-contact, then this connection scheme will support the monitoring of control line integrity. When a wire breaks, all roller shutters will raise/lower as if the control contact is opened. It is necessary to set the 5th operation mode of the safety inputs to implement this functionality (cl. 6.3).

| ! | Inadvertent activation is possible with a large length of the control line and significant settings to it. Division of the control line into two with coupling of 12 V intermediate relay can serve as the solution of a problem. You should use the power supply from different devices Radio 8113 IP65 for each line. |
|---|---|

**7.2.1. Control of group of devices, a jumper is not installed (fig. 7)**
- when the contact is closed, the device will execute the «DOWN» command, the control from the remote controls and key switch will be blocked;
- when the contact is opened, the device will execute the «UP» command, the control from the remote controls and key switch will be available;
- after power re-supplying when the contact is opened, the device will execute the «UP» command;
- after power re-supplying when the contact is closed, the device will execute the «DOWN» command.



Fig. 7 Variant of control without a jumper

**7.2.2. Control of group of devices, a jumper 13-15 is installed**
- when the contact is closed, the device will execute the «UP» command, the control from the remote controls and key switch will be available;
- when the contact is opened, the device will execute the «DOWN» command, the control from the remote controls and key switch will be blocked;
- after power re-supplying when the contact is opened, the device will execute the «DOWN» command;
- after power re-supplying when the contact is closed, the device will execute the «UP» command.



Fig. 8 Variant of control with a jumper

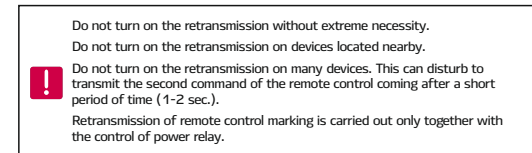**7.3. Installation of operation mode of safety inputs**

| Action | Indication |
|---|---|
| **1. Input the device in programming mode of safety sensor** | |
| 1) input in the PM of remote controls: press and hold the programming button for more than 4 sec.; | 1) visual indicator blinks red; |

## Column 4

| Action | Indication |
|---|---|
| 2) input in PM of operation modes: press and hold the programming button for more than 1 sec.; 3) input in PM of safety sensor: press short the programming button. | 2) visual indicator blinks green; 3) visual indicator blinks red for certain times (cl. 2). |
| **2. Change the operation mode of safety inputs** | |
| The modes are switched circle-wise each time you press and hold the programming mode for more than 1 sec. (up to yellow flash). | Number of flashes: 1 — NO: «STOP» command(factory setting); 2 — NO: «STOP-UP» command; 3 — NC: «STOP» command; 4 — NC: «STOP-UP» command; 5- control of group of devices. |
| **3. Reset the operation mode of safety inputs to the factory setting** | |
| Press and hold the programming button for more than 4 sec. | Single red flash. |
| **4. 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. | |

**8. 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. |
|---|---|

**8.1. 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 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 is disabled (factory setting); 2 — retransmission of dynamic protocol commands is enabled; 3 — retransmission of new improved dynamic protocol commands is enabled. |
| **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. | |