Table 3.2 - Purpose of the module indicators

Indicator	Purpose
Power	***Light*** **-** main and (or) backup power is supplied to the module. ***No light*** **-** module is off.
RS-485	***Light*** **-** the presence of a physical (wired) connection of the RS-485 interface. ***No light*** **-** no RS-485 interface connection fault.
LINK	***Light*** **-** the presence of the exchange via the RS-485 interface. The module is assigned correctly. ***No light*** **-** no exchange on the RS-485 interface. The module is not assigned or incorrectly assigned.
IND	***Not applicable*** (in this mode)

Indicators **K1-K8** on the module board display the state of the relay outputs, the indicator is lit – the relay is activated.

4 PACKAGE CONTENTS

After unpacking, visually inspect the module to make sure it has no mechanical damage, check the completeness according to Table 4.1.

Table 4.1 – Package contents of the module

Name	Quantity, (pcs.)
M-OUT8R module	1
User manual	1
Nylon ties	8

ATTENTION! The characteristics and package contents of the module may be changed by the manufacturer without additional notification.

5 REGULATORY COMPLIANCE

The model M-OUT8R complies with EMC Directive 2014/30/EU, LVD Directive 2014/35/EU, RoHS Directive 2011/65/EU.

The full text of the EU declaration of conformity is available at the following internet address: tiras.technology.

In accordance with the EU Directive 2012/19/EU on waste electrical and electronic equipment, the modules should be disposed of separately from household waste. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points.

6 WARRANTY OBLIGATIONS AND REPAIR INFORMATION

The manufacturer guarantees compliance of the module with the declared characteristics during the warranty period of operation and under the conditions of transportation, operation, and storage.

The warranty period is 36 months and is valid from the date of sale specified below or in other accompanying documents (contract, invoice, etc.).

If you do not provide a document confirming the date of sale of the module - the warranty period is calculated from the date of manufacture of the module.

_____ (date of sale) _____ (seller's signature) seller's stamp

The module is repaired by the manufacturer or its authorized representative. The module is repaired for free, in case the warranty period has not expired, and it was operated in accordance with the accompanying documentation. For repairs, the module is sent together with the document, which indicates the date of sale, and with a letter stating: the nature of the fault, the place of operation, contact person for repair.

If the module is not working properly, please contact technical support first, perhaps this problem can be resolved remotely.

The date of manufacture of the module and/or its serial number are indicated on the module label and packaging.

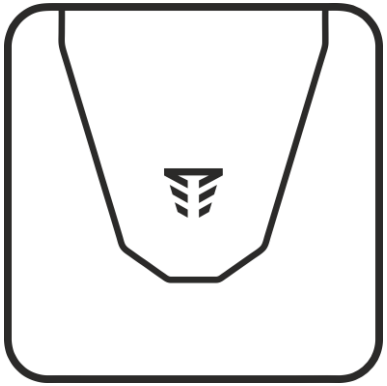
Information about limitation of liability is available in the "Warranty" section on the website: tiras.technology.

7 CONTACTS OF THE MANUFACTURER

“Tiras-12” LTD, Ukraine, Vinnytsia,
Khmelnytskoho Shose lane 2, b. 8
Sales department: market@tiras.ua
Technical support: support@tiras.ua
Warranty and post-warranty service: otk@tiras.ua

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TIRAS technologies



M-OUT8R

Outputs expansion module

User manual

“Tiras-12” LTD
Ukraine, Vinnytsia,
Khmelnytskoho Shose lane 2, b. 8

More information on the site
tiras.technology

1 GENERAL INFORMATION

M-OUT8R is an outputs expansion module (further – module) designed to increase the number of external relay outputs on 8 relays in security alarm systems based on Orion NOVA L (LTE) security control panel (further – SCP). The module is connected to the SCP via the RS-485 interface.

The module is designed for continuous round-the-clock operation in premises with regulated climatic conditions without the direct influence of climatic factors of the environment. Operating temperature range – from -5°C to +40 °C. Relative humidity – no more than 93%.

2 SPECIFICATIONS

Technical characteristics of the module are given in Table 2.1.

Table 2.1 – Technical characteristics of the module

Parameter	Value
Supply voltage, V	9.3 – 30.0
Maximum current consumption from supply voltage 24V, mA: ▪ in normal mode ▪ in activation mode, all relays	 15 180
Maximum current consumption from supply voltage 12V, mA: ▪ in normal mode ▪ in activation mode, all relays	 25 360
Maximum switching voltage / current of outputs (each), V/A ▪ AC ▪ DC	 250/5 30/7
Power input fuse (each), A	0.5
Connection interface	RS-485
Cross-section of connection wires, mm^2 ▪ for relay switching terminals ▪ others	 0.22 – 2.5 0.22 – 1.5
Input voltage "IN" - logic level "0", V	0-2.0
Input voltage "IN" - logic level "1", V	2-29
Overall dimensions (L×W×H), mm	200×200×60
Net weight, kg	0.8
Degree of the case protection (IEC 60529)	IP30
Operating temperature range at relative humidity up to 93% without condensation	from -5 °C to +40 °C
Average service life, years	10

3 INSTALLATION, CONNECTION AND SETTING

3.1 Mounting

The module is designed for wall mounting. At the base of the case, there are four holes for mounting on the wall (Figure 3.1).

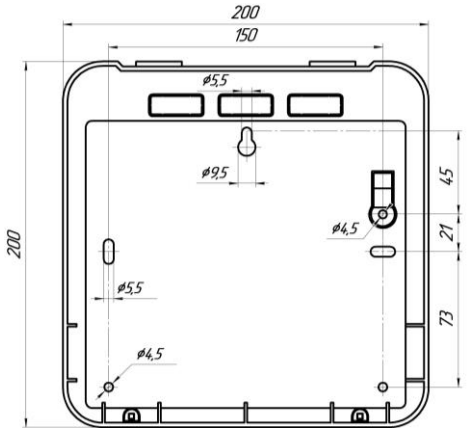


Figure 3.1 – Installation dimensions of the module case

3.2 Connections

The appearance of the module board is shown in Fig. 3.2.

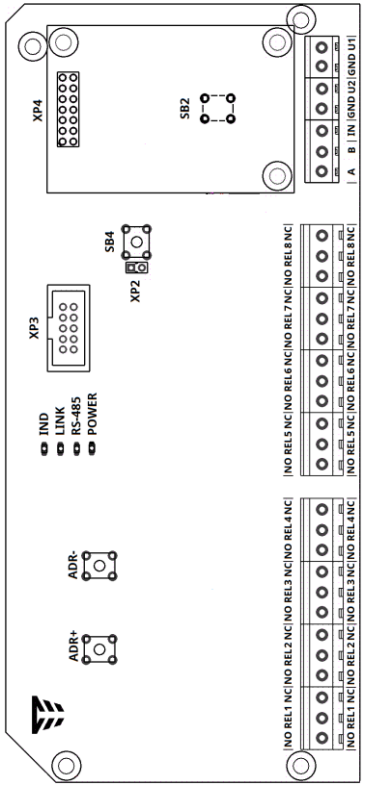


Figure 3.2 - Appearance of the module board

Caution:

1. All connections must be carried out by qualified personnel in accordance with the electrotechnical regulations and fire safety regulations.
2. Installation and connections must be carried out with the power supply disconnected.
3. Do not apply power to relay terminals (**NO, NC, REL1-REL8**) until connection and mounting will be complete.
4. The wires connected to relay terminals should have cross-section corresponding to the current of the connected load.
5. The load current of the devices connected to the module relay must not exceed its maximum switching current (see p.3, Table 2.1).
6. It is not allowed to use a cable with damaged insulation for connection to relay terminals.
7. After connecting the wires to relay terminals, fix the cables with ties from package contents (Table 4.1).
8. Printed circuit board of the module contains static-sensitive components. To avoid damage to sensitive components before handling any boards you should discharge static electricity in your body by touching the ground.

Enter the wires via appropriate holes of the module case and make all connections. Make sure that the wires are securely fixed in the module terminals. After installation and connection are complete, close the module case.

The purpose of the terminals and connectors of the module are shown in Table 3.1.

Table 3.1 – Purpose of terminals and connectors of the module

Terminal	Purpose	Note
U1, U2	Main and backup power supply of the module	
GND	Schematic ground	
A, B	RS-485 interface connection	Twisted pair cable
IN	Power supply status input (if used)	Logical "0" - norm logical "1" - fault
REL1-REL8	Relay common contact	K1 - K8 - relay status indicators
NO	Normally open relay contact	Regarding joint contact
NC	Normally closed relay contact	
XP2	Jumper lock tamper	
SB4	Tamper button	
SB2	Button for the module detach detection from the wall	
ADR+	Increase / set address	
ADR-	Decrease / set address	
XP3	Not applicable	
XP4		

Connect the RS-485 interface terminals "**A**" and "**B**" to the interface bus of the SCP (according to its user manual) with which this module works.

The supply voltage (+) should be applied to the **U1** and **U2** inputs from an external device (power supply and/or SCP). The **GND** (-) terminal should be connected to the circuit ground of the external device. If using a single power supply, connect inputs **U1** and **U2** with a jumper.

The universal **IN** input is connected according to the diagram shown in Figure 3.3.

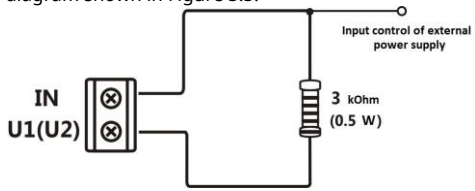


Figure 3.3 – Wiring diagram of the IN input

The **XP2** connector is used to lock the tamper while preparing the module for use. The jumper must be removed from this connector before closing the housing.

The detachable element on the basis of the case (Figure 3.1) is used for the detection of separation from a wall. It should be fixed with a screw to the wall. When the base of the housing is separated from the wall, this element remains on the wall, leading to violation of the tamper separation.

3.3 Setting

Each module has a unique nine-digit serial number. This number is used to assign the module to the SCP. The serial number of the module is specified on its printed circuit board and case.

WARNING! If the module is connected and configured correctly, but there is no communication with the SCP, then it is necessary to program the module to work by serial number:

1. To enter the module programming mode, press the **ADR+** and **ADR-** buttons simultaneously – the **Power**, **RS-485**, **LINK**, and **IND** indicators will flash three times in a row and then will light off. The module address is displayed on the **Power**, **RS-485**, **LINK**, and **IND** indicators.
2. Press **ADR+** or **ADR-** button until all indicators will be off.
3. Repeat step 1 to exit the programming mode.

The module address is set in bit form and displayed on the **Power**, **RS-485**, **LINK**, and **IND** indicators. By pressing the **ADR+** or **ADR-** button, the operation with one or another control panel is selected, according to Table 3.2.

The purpose of the module indicators is shown in Table 3.2.