Appendix A

Table A.1 – Description of the elements of the module board

Element	Purpose
Z1...Z8	Terminals for connection of zones (end-of-line resistors of 3 kOhm)
GND	Terminals for connection of circuit ground
TAMP1	Terminals for connection the tamper intrusion in the module case
+12V	DC power output terminals
A, B	Terminals for connection the RS-485 interface (twisted pair cable)
TM	Terminals for connection Touch Memory key readers
Q1, Q2	Transistor output terminals
OUT1, OUT2	Programmable power output terminals
L, N	Terminals for connection of a network 230V
XS2	M-Z expansion module socket
MODULE1	M-OUT2R relay output expansion socket
XP1	Battery plug
BAT START	Button to start the module from the battery
TAMP2	Tamper detects separation from the wall
RS-485, LINK	Technological indicators

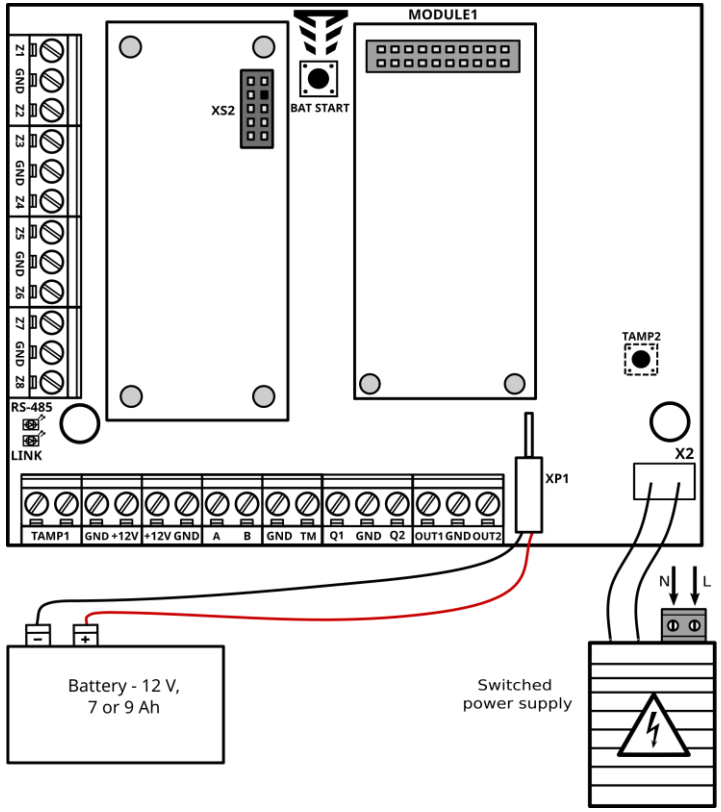


Figure A.1 – Appearance of the module board

TIRAS technologies



M-ZP mBox

Zone expansion module

User manual

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More information on the site
tiras.technology

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1 GENERAL INFORMATION

M-ZP mBox is a zone expansion module (further – module) designed to expand the security alarm system based on the Orion NOVA L (LTE) security control panel (further – SCP) by 8 zones (16 zones additionally using the M-Z module) and 4 outputs (6 outputs additionally using the M-OUT2R module). Transistor outputs Q1, Q2 can operate in two modes "Remote LED" (for direct connection of remote LED) or "Open collector" (for control of external devices). The OUT1, OUT2 universal outputs can be used to connect an additional siren or to control external devices. The module has an input for connecting TM key readers. The module is powered by 230V AC and has a place for installing a 7 or 9 A·h battery. It also can be used as an additional backup power supply for external system devices.

The module is designed for continuous 24h work in premises with regulated climatic conditions without the direct influence of climatic factors of the environment.

2 SPECIFICATIONS

Specifications of the module are shown in Table 2.1.

Table 2.1 – Specifications of the module

Name	Value
Power supply voltage (AC), V, frequency (50±1) Hz	187–253
Maximum power consumption from the mains, VA	25
Maximum current consumption from the battery (excluding consumption of external devices and installed M-OUT2R module), mA	200
Voltage at the battery terminals required for module normal operation, V	10.8–13.8
The value of the voltage at the terminals of the battery, the module is disconnected from the battery, V	10.5±0.2
Supply voltage at outputs + 12V, OUT1, V	10.3–15.2
Maximum load current at outputs + 12V, OUT1, mA: ▪ total ▪ each of the outputs	 1000 500
Maximum switching voltage/current of relay outputs (each) M-OUT2R: ▪ AC ▪ DC	 42 V / 10 A 30 V / 5 A
Overall dimensions (L×W×H), mm	280×280×85
Net weight (without battery), kg	1.1
Operating temperature range at relative humidity up to 75% without condensation	from -10 °C to +40 °C
Average service life, years	10

3 INSTALLATION, CONNECTION AND SETTING

The module is designed for wall mounting. Before mounting the module, open its case to access the mounting holes. To open the case, remove the plastic plugs on the front of the case, unscrew the two screws, and remove the cover. At the base of the case, there are holes for mounting screws to the wall. The case-based element G3 is used to detect the separation of the case from the wall. It should be fixed with a screw to the wall. When the base of the case is detached from the wall, element G3 remains on the wall, leading to the tamper break.

The surface for the module mounting should be smooth and ensure a tight fit of the base of the case after installation.

Figure 3.1 shows the installation dimensions of the module.

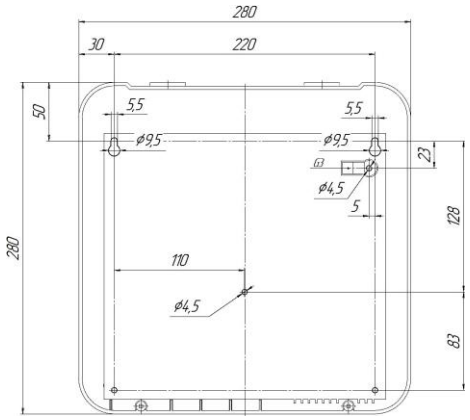


Figure 3.1 – Installation dimensions of the module

The appearance of the module board is shown in Figure A.1 of Appendix A. A description of the elements of the module board is given in Table A.1 (Appendix A).

Caution:

1. Installation, removal, and all connections must be carried out by qualified personnel in accordance with the electrotechnical regulations and fire safety regulations.
2. **Installation, removal, and all connections must be carried out with all of the power supplies disconnected: main (230V) and alternative (battery).**
3. The main power supply (230V AC) is connected to the built-un power supply unit by solid or stranded cable with cross-section 0.75-2.5 mm^2. The main power connection terminals are marked as L and N. The connection wires insulation must be stripped by 6 mm maximum. The stranded wires must be crimped by tips.
4. It is not allowed to use a cable with damaged insulation.
5. After connecting the wires to “L”, “N” terminals, fix the cable with tie.
6. The mains line must be connected to an automatic disconnection device designed for a current of 6A.
7. Installation, replacement, and connection of the battery must be carried out by qualified personnel. The battery terminals must be connected properly according to their polarity.
8. To ensure the safety of the device and the declared characteristics, it is not allowed to replace the battery with another type. It is not allowed to use battery with visible damages.
9. 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.
10. After installation and connection are complete, close the module case.

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.

Connect the RS-485 interface (terminals "A" and "B") to the interface bus of the SCP (according to its user manual). The schematic ground of the SCP and the module should also be connected.

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

The description of the technological indicators LINK and RS-485 located on the module board is given in Table 3.1.

Table 3.1 - Purpose of the module indicators

Indicator	Status	Description of the communication status via the RS-485 interface
LINK	**Light**	Availability of exchange on the RS-485 interface. The module is assigned correctly
	No light	No exchange via RS-485 interface. Module not assigned or incorrectly assigned
RS-485	**Light**	Availability of incoming packets via RS-485 interface
	No light	No incoming packets via the RS-485 interface

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-ZP mBox module	1
User manual	1
Resistor 3 kOhm (± 1%), 0.125 W[1]	10
LED L-53HD[1]	1
Plastic plug[1]	1

Note. 1.Located inside the module case.

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

5 REGULATORY COMPLIANCE

Hereby, “Tiras-12” LTD declares that the model M-ZP mBox 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.

In accordance with EU Directive 2006/66/EC, batteries (included in the product) should be disposed of separately from household waste. For proper recycling, return the battery to your local supplier 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.

_____ _____ seller's stamp

(date of sale) (seller's signature)

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 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

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