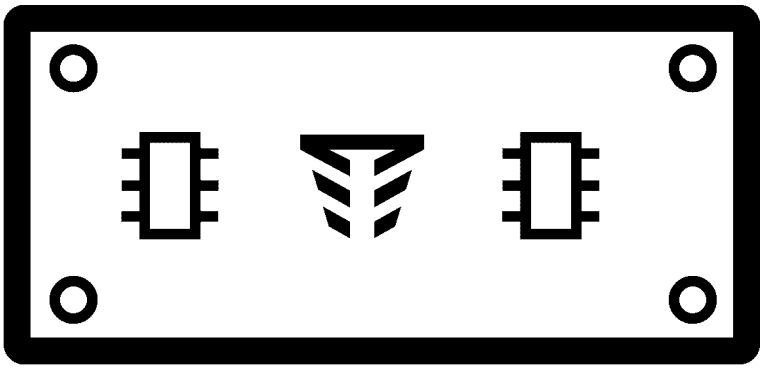
FIRE ALARM SYSTEMS

TIRAS



Input/output device M-LOOP

Passport AAZCh. 301411.179 PS

1O206

EN 54

DSTU ISO 9001:2015

Serial number:

Firmware version:

This passport contains information on the design and operation guides of the I/O device M-LOOP (further - the module), which is used in addressable fire alarm systems, based on the fire control panel "Tiras PRIME A".

The module meets the requirements of DSTU EN54-17, DSTU EN54-18.

1 LIST OF ABBREVIATIONS

SCI - short circuit isolator;

FCP – fire alarm control panel "Tiras PRIME A";

AFAS - addressable fire alarm system;

AI - addressable interface.

2 PURPOSE

The module is designed to increase the addressable interfaces of the AFAS and is installed on the AM-Multi+ board (I/O device operation in the AFAS based on the FCP "Tiras PRIME A"). The appearance of the module and its terminal location are shown in Fig.1.

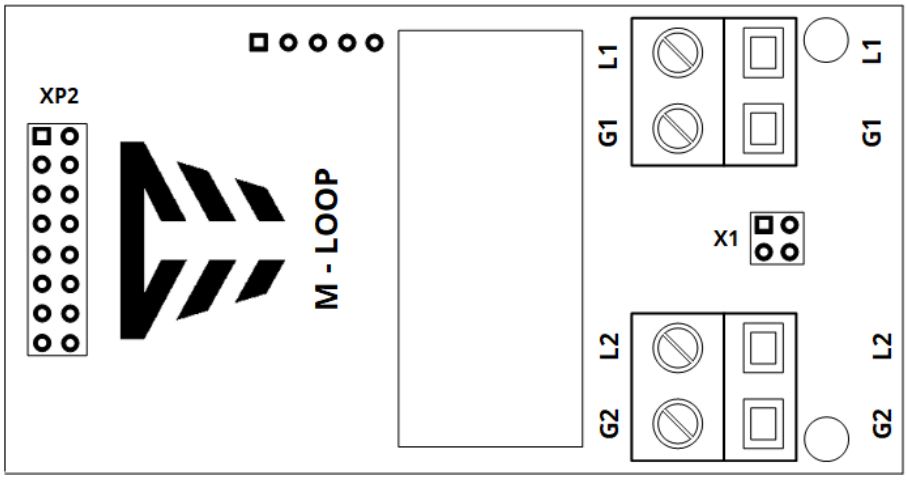


Figure 1 - Appearance of the module

3 TECHNICAL FEATURES

3.1 The list of inputs, outputs and their functions is given in table. 1.

Table 1

Name	Functional characteristics
L1, L2	The input for the connection of an AI positive wire.
G1, G2	Input connection of AI negative wire.
X1, XP2	Connection to AM-Multi+ ports.

3.2 Technical characteristics of the module are given in table 2.

Table 2

Characteristic name	Value
General	
Dimensions WxHxD, mm, not more than	32×65×21
Weight, kg, not more than	0,015
Average operating time per failure, h, not less than	40 000
Average service life, years, not less than	10
Fault detection time, s, not more than	10
Power supply	
Supply voltage through plug X1, V, not more than	25
Supply voltage through plug XP2, V, not more than	12
Current consumption of the module mA, not more than	18
Current consumption of AI, mA, not more than	130

3.3 The following limitations should be taken into account when applying the module in the AFAS project:

1) no more than 250 addressable components can be connected to AI;

2) the length of the AI between the module and any addressable component in any AI configuration should not exceed 2000 m;

3) the total resistance of the AI should not exceed 125 ohms;

4) the total current consumption from the AI of all connected addressable devices in all operation modes, should not exceed 65 mA or 130 mA, depending on the settings of the module according to chapter 5.

4 CONNECTIONS

4.1 Connect of the AI to the module should be done according to Fig. 2.

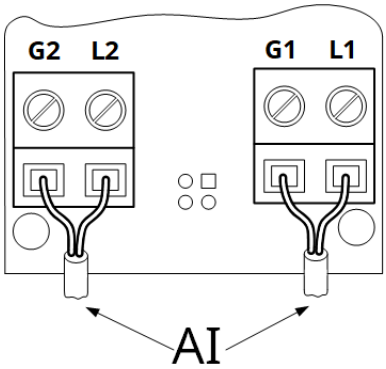


Figure 2 - Scheme of connections of external circuits to the module terminals.

Addressable components are connected to AI, which are both simultaneously communication lines and power lines. Figure 3 shows an example of external address components connection to the module terminals via AI.

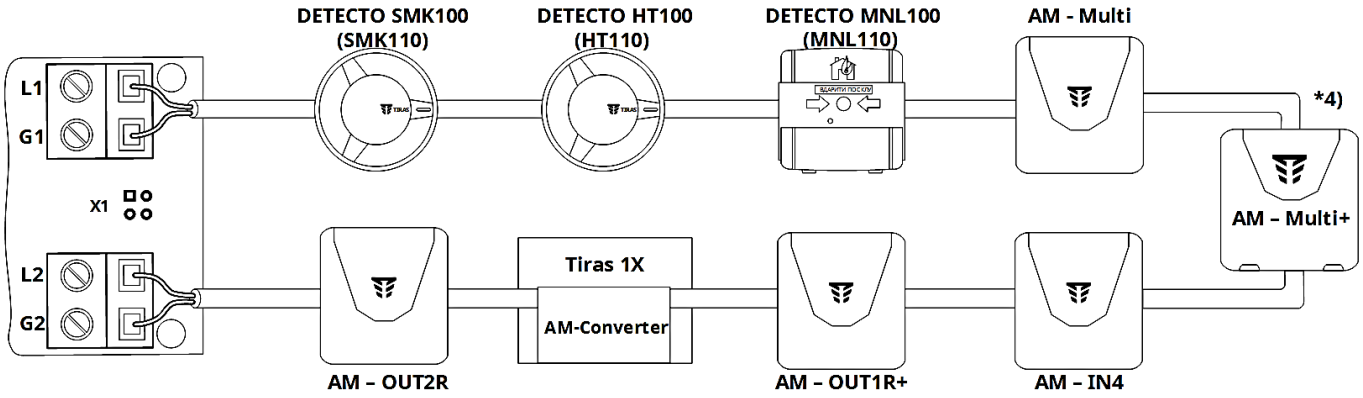


Figure 3 - Scheme of connection of addressable components to the module terminals

4.2 General rules for connecting AI to M-LOOP:

1) one end of the lop AI is connected to terminals L1-G1, the other – to terminals L2-G2.

2) radial AI is connected to the pairs of terminals: L1-G1, L2-G2. Addressable components in one radial AI should be registered in one zone so that a single fault in such AI does not affect other zones;

3) it is allowed in exceptional cases to perform radial branches from the loop AI: both from the cable and from the place of connection of the addressable component. In this case, the reliability of the AFAS is reduced, because in the event of an open or short circuit of the radial line (branch) will be lost connection with the addressable components located between the end of the radial line and the place of line fault. Also, in loop AI with branches it is more time-consuming to find the place of open or short circuit.

4) it is forbidden to connect the AM-Multi+ module with M-LOOP placed on it to the AI terminals of another M-LOOP module.

WARNING! The GND terminals of the AM-Multi+ device should not be connected to the G1 and G2 terminals of the M-LOOP module by any lines, otherwise the automatic AI testing process will be disrupted.

4.3 The AI can only be connected to the module terminals when there is no supply voltage on the AM-Multi+ device.

5 SETTINGS AND OPERATION

5.1 The configuration of the module is not required. Exchange with AM-Multi+ connected to serial ports (XP2, X1) is established automatically if AM-Multi+ has previously been configured to connect to the AFAS in accordance with the FCP operation manual.

5.2 The conditions for the fault mode of the module are the activation of the SCI or the loss of the exchange through the serial port, if such an exchange has been established.

6 PACKAGING

6.1 After unpacking the module it is necessary:

- visually inspect the module and make sure there is no mechanical damage on it;
- check the delivery set according to table 3.

Table 3

Name	***Designation***	***Quantity,pcs.***
M-LOOP module	AAZCh. 301411.179	1
Passport	AAZCh. 301411.179 PS	1
Plastic rack		2

7 OPERATION, STORAGE, AND TRANSPORTATION CONDITIONS

The device is intended for continuous 24h operation in the premises under regulated climatic conditions. Operating temperature range: from - 10˚C to +55˚C, at relative humidity not more than 93%.

Packaged devices are stored in warehouses under the following conditions: air temperature from - 50˚C to +55˚C, relative humidity should not exceed 98% at a temperature of 35˚C. There should be no aggressive impurities in the air causing corrosion in the premises where the devices are stored.

Packaged devices are transported by low-tonnage shipments at any distance by road and rail in closed vehicles in accordance with the rules of transportation applicable to each type of transport. When placing and securing boxes with packed devices during transportation, ensure a stable position of the boxes to prevent shifting and bumps between them. During loading and transportation, the requirements of handling signs on the packaging should be met.

8 INFORMATION ON DECLARATIONS OF CONFORMITY TO TECHNICAL REGULATIONS AND CERTIFICATES

This module meets the requirements of following mandatory technical regulations:

- Technical regulations on electromagnetic compatibility of equipment;
- Technical regulations of restriction the use of certain hazardous substances in electrical and electronic equipment.

Certificate of compliance with the requirements of DSTU EN 54 series standards issued by the State Certification Center of the SES of Ukraine.

The Quality Management System of Tiras-12 LTD is certified in accordance with DSTU ISO 9001: 2015.

The full text of declarations of compliance with technical regulations and certificates are available on the website https://tiras.technlogy.

9 ACCEPTANCE CERTIFICATES

The module meets the requirements of regulatory and technical documents and is recognized as suitable for operation. Evidence of acceptance is a sticker on the passport. The date of acceptance coincides with the date of manufacture.

10 WARRANTIES AND REPAIRS

"Tiras-12" LTD (further - the manufacturer) guarantees compliance of the module with the requirements of current regulatory and technical documents during the warranty period under the conditions of transportation, operation and storage.

The warranty period is 36 months and starts at the date of sales specified in the operation documents for the module or in other accompanying documents (sales contract, invoice, bill, etc.). If you cannot provide a document confirming the date of sale of the module, the warranty period starts from the date when the module was produced.

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

The module is repaired by the manufacturer. This module is repaired for free, in case the warranty period is not expired, it was operation in accordance with this passport.

The module is sent for repair, together with a letter, which should include: the description of the malfunction, the place of operation and the contact phone of the person in charge of repair.

11 LIMITATIONS OF LIABILITY

The manufacturer reserves the right to refuse warranty service of the device in controversial circumstances. The manufacturer also has the right to make a final decision on whether the device is to be serviced under the guarantee.

Actions and damages that result in loss of warranty service:

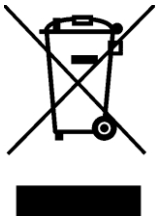
1) damage caused by natural phenomena (fire, flood, wind, earthquake, lightning, etc.);
2) damage caused by a violation of the installation rules or the provision of improper conditions for the operation of the device, including:
   - faulty grounding;

- over-voltage;
- high humidity and vibration;

3) damage caused by foreign objects entering the device, liquids, insects and others;
4) mechanical damage to components of the device (chips, dents, cracks, broken contact terminals, etc.);
5) damage resulting from unauthorized repair;
6) damage caused by violation of the rules of transportation, storage and operation;
7) changing, removing, rubbing or damaging the serial number of the device (or labels with serial numbers on the device).

12 DISPOSAL

After the expiry of the service life of the device its utilization is carried out in accordance with the current legislation, separate from household waste.



In accordance with the EU Directive 2012/19/EU on waste electrical and electronic equipment, the disposal of device should be done separately from household waste. To dispose of the device, it should be delivered to a point of sale or a local processing point.

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TIRAS

tiras.technology

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