TRIKDIS©
UŽDAROJI AKCINĖ BENDROVĖ

RADIO RECEPTION MODULES
RF7 AND RF7U

Reception modules RF7 and RF7U

The reception modules are used as components of the multichannel receiver RI-4010M and are designed for reception encoded messages, at the frequency range VHF (RF7) or UNF (RF7U), being sent via wireless channels. The modules receive and recognize signals encoded in RAS-2M, LARS and LARS1 encoding systems.

1 – Power LED (Green);
2 – Reception mode LED (Red);
3 – RESET button;
4 – Antenna connector;
5 – Programing connector;
6 – Router connector;
7 – Power supply connector;

Description of operation principles and key features

The reception modules RF7 and RF7U are dual conversion super-hetero-dyne receivers with digital recognition of received signal. Received and recognized signal is processed and transmitted to the router of the multichannel receiver.

Microcontroller performs signal processing. It recognises the signal being sent and generates a message of appropriate form and structure. The filtering of the message is performed according to the indicated features and via serial interface it is transmitted to the router of the multichannel receiver. The reception modules RF7 and RF7U have programing filters, enabling filtering of the message according to:

- Message repetition interval;
- Content of the information;
- Communication route;
- Sequence of account numbers;
- Sequence of event codes;

Specifications

1. The reception module RF7 operates at the VHF frequence range from 146 to 174 MHz.

2. The reception module RF7U operates at the UHF frequence range from 410 to 470 MHz.

3. Radio engineering parameters of the RF7 and RF7U reception modules are fully compliant with the requirements of EN 300 113 standard.

4. Sensitivity of the reception modules RF7 and RF7U is not worse than 0,3μV near message error number BER =0, 8.

5. The reception modules RF7 and RF7U are supplied with 12, 6 V direct voltage. Permissible voltage alteration range from 11 to 15 V. Current does not exceed 120 mA.

6. The reception modules operate at the temperature from -10 C to +55ºC and relative humidity up to 90% near +20ºC.

7. Overall dimensions of the module do not exceed 190 x 130 x 30 mm.

Light emitting indication

Radio reception module has two light emitting diodes. Green LED indicates power supply, red flashes during the process of message receiving or lights constantly during programing mode.

Preparation for operating

Radio reception modules are delivered being regularized according to the requirements of the user. Exploitation parameters are indicated in the table No 1.

Preparation for operating:

1. Unpack the module;
2. Check exploitation parameters of the device;
3. Unscrew decorative lid from the rear board of the multichannel receiver and built in the reception module;
4. Press RESET button;
5. Connect antenna;

The reception module generates service messages, indicated in annex A

Received messages are displayed on the monitor of the multichannel receiver and transmitted to the centralized monitoring program.

Indication of received message

The content of the message, which has been received via wireless channel and displayed on the LCD monitor of RI-4010M receiver, is presented below:

01-1 12:38:15 7678 E21D 21 000

Herein:

01 – Type of the reception module;
1 – Channel (line) number;
12:38:15 - Reception time;
7678 – Account number;
E21D – Event code;
21 – Service information of wireless communication channel;
000 – Event place

Table No 1

Exploitation parameters of the radio reception modules		
Title	Permissible range	Default
Module type	RF7, RF7U	
Operating frequences range	VHF, UHF	
Defined operating frequency, MHz	146 – 174	
	410 – 470	
Radio engineering parameters	in compliance with EN 300 113	in compliance with EN 300 113
Sensibility when BER =0,8	0,30 μV	
Message encoding systems	RAS-2M subsystems 0 - 3	On Subsystems…….
	LARS subsystems 0 - 3	Off
	LARS1 subsystems 0 - 7	Off
Informational filters:		
• According to reception level;	On /Off	Off
• Coincidence;	On /Off	On, 2 messages
• Differences;	On /Off	Off
• Content of the information;	On /Off	Off
• Time;	1-999 sec.	90 sec.
• Info;	On /Off	Off
• Special;	On /Off	Off
• According to repeater's number;	On /Off	Off
• According to account numbers;	On /Off	Off
• According to event code;	On /Off	Off

A Annex		
Service messages of radio reception module		
Message	**Code**	**Description**
RECEIVER RESET	E0	The module is overloaded.
HIGH NOISE	C2	Broadcasting background noise exceeds permissible.
NORMAL NOISE	C3	Broadcasting background noise reduced up to the limit of sensibility.