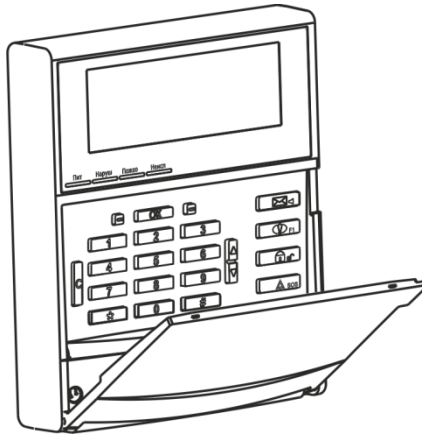




Control Panel

ASTRA-812 Pro

Technical Manual



1 Function

Fire alarm Control Panel Astra-812 Pro is designed for providing both wired and wireless fire, security and other types of alarms as a part of a wireless fire and security alarm system. Control Panel supports up to 999 addressable devices:

- up to 192 wireless devices of the 433 system system through the built-in wireless module and / or through fire wireless extenders Astra-WE 433
- up to 999 Astra-A addressable devices through Astra-A RPA wired addressable extenders.
- This Technical Manual corresponds to the properties of the Astra-812 Pro Control Panel for software version 812P-av5_5 and higher

The manufacturer reserves the right to make changes to the design, software, circuit solutions and product packaging that do not worsen its technical characteristics, do not violate mandatory regulatory requirements, without prior notice to the consumer.

The technical features of the product not specified in the instruction manual in terms of design, software and circuit solutions are standard for the product, if they do not worsen the declared technical characteristics. The consumer, due to dissatisfaction with the technical features not specified in the instruction manual or the changes made, has the right to return the product to the seller while maintaining the presentation of the product and within the time limits established by Purchase Contract.

Abbreviation:

42A – Addressable hardwired smoke detector

43A – Addressable hardwired heat detector

45A – Addressable hardwired fire manual call point

CrossArm – monitoring software

BI – display unit "Astra-863";

BR – relay unit "Astra-823", Astra-824"

BRA – relay block wired address "Astra-BRA";

ILS – short circuit insulator "Astra-A ILS";

MA – address mark "Astra-AM"

VES – voice evacuation speaker of 2.4 system;

PAK Astra – software and hardware complex (designed to organize a station for centralized monitoring of remote objects by collecting telemetric information via GSM and Internet channels in real time with the possibility of remote Control of equipment and actuators installed at the facility);

Control Panel – Astra-812 Pro Control Panel and fire Control device "Astra-812" version Pro

PKM – Astra Pro monitoring software package

KPD 814 – Control Panel "Astra-814 Pro"

KPD 8131 – wireless channel keypad "Astra-8131"

RPP-433 – fire wireless extender "Astra-WE 433"

RTR – fire wireless extender "Astra-WE 433", operating in repeater mode

RPA – wired addressable extender "Astra-A RPA";

RP – Astra-713 alarm loop extender with version 713-v3_x;

"433 system" system– wireless fire and security alarm system "433 system"

Astra-A system – Wired addressable security and fire alarm system "Astra-A"

Reader 8531 – wireless channel reader "Astra-8531"

TM –Touch Memory

UPD – addressable remote start devices "Astra-A UDP" version PP, "Astra-A UDP" version PD

AL –Alarm Loop

WD –Wiegand (26-128).

2 Basic information and features of Control Panel

2.1 The Control Panel is configured and maintained using the Astra Pro PKM, instructions and other materials posted on the website www.teko.biz.

2.2 The Control Panel is powered from external redundant power supplies with a rated voltage of 12V or 24V.

2.3 Control Panel has two independent power inputs (main and backup) and automatically switches from the main input to the backup and back when the voltage drops.

2.4 Control Panel has a built-in wireless module for working with wireless devices of the 433 system in the amount of up to 192 wireless devices

2.5 Control Panel has two programmable built-in loops:

- **Alarm loop 1** (terminals **Z1-GND**) – in the factory settings - the Control input of the generalized signal "Power supply failure", can be configured as security or technological,

- **Alarm loop 2** (terminals **Z2-GND**) – no factory settings, can be configured as security or technological (cannot be used for power control)

2.6 Control Panel has a built-in RS-485 interface with a capacity of 64 addresses for connecting extenders - BI, BR, RP, RPA, RR-Z, RPP-433, KPD. The software versions of the extenders must be brought into line with the version of the Control Panel by the installer through the "Software change module" from the PKM

2.7 Control Panel can organize an RS-485 ring interface between the built-in port of the device itself and the port through the Astra-RS-485 module in order to meet the requirements of clause 5.4 of SP484.1311500.2020 when forming a fire alarm system. Extenders are connected to the ring interface using Astra-A ILS isolators (see connection diagrams in Appendix A), while in the settings of the Control Panel, you must set the speed to 38400 bps.

2.8 The built-in RS-485 interface, in the absence of extenders, can be used to communicate with a PC through the Astra-984 interface device to perform configuration and monitoring functions (except for changing software).

2.9 The Control Panel has a USB 2.0 interface for communication with a PC via a USB 2.0 AM/BM cable and provides with the help of PKM:

- configuring the parameters of the Control Panel, extenders connected via the RS-485 interface, and registered addressable wired and wireless devices;

- viewing information about events and the status of all registered devices of the "433 system" and "Astra-A", as well as loops, separate or located in the devices of the systems;

- change of Control Panel software and built-in modules;

- change of software for addressable detectors of the Astra-A system;

- change of speech fragments of the OPR (through the Astra-985 interface device).

2.10 The Control Panel has inputs for connecting TM or WD readers:

- terminals **-TM, WD1** for connecting TM key readers of the DS1990A(R) standard (or TM key emulator, for example, Astra-KTM-S keyboard),

- terminals **WD0, WD1, -TM** for connecting WD readers (26-128) that work with standard identification cards and key fobs of the EM-Marlin, MIFARE standard.

2.11 The Control Panel has 1 slot for installing a module Astra-GSM (PAK Astra), Astra-GSM (Proxima), Astra-LAN (PAK Astra) or Astra-RS-485 (modules are not included in the delivery set of the Control Panel, they are supplied separately):

- the Astra-LAN module (PAK Astra) provides information exchange with the PAK Astra server over the Internet via the Ethernet 10/100 Base-T network interface for the purpose of remote monitoring and control of the Control Panel (Security Hub mobile application, web application, CrossArm);

- the Astra-GSM module (PAK Astra) provides for the transmission of messages over the cellular network in SMS text, voice formats, as well as the exchange of information with the PAK Astra server for the purpose of remote monitoring and control of the Control Panel (Security Hub mobile application, web application, CROSSARM);

- Astra-GSM module (Proxima) provides messaging over the cellular network in Pro-Net, SIA-IP formats;





- The Astra-RS-485 module provides the Control Panel with an additional, independent of the built-in, RS-485 interface for communication with a PC, when the built-in Control Panel interface is used to connect extenders.

2.12 Inputs/outputs to the Control Panel for Astra-LAN (PAK Astra) and Astra-RS-485 modules are provided using an additional terminal board supplied with the modules.

2.13 Control Panel provides:

- 1) 1) performing actions (registration, status processing, Control) with 64 expansion units in total on the RS-485 interface line, of which:
 - up to 8 KPD 814,
 - up to 16* addressable extenders of different types: RR-Z, WE 433, RPA extenders (one RPA provides connection to a total of up to 250 address devices of the Astra-A system: detectors 42A, 43A, 45A, tags MA, BRA, BPA , as well as connecting up to 32 non-address ILS),
 - up to 30 wired RP extenders,
 - up to 64 BI indication blocks, BR relay blocks (taking into account the total capacity of the interface);
- 2) performing actions (registration, status processing, Control) with 999 addressable wire and wireless channel devices in total in various combinations of the 433 system, Astra-A subsystems operating through the corresponding types of extenders, of which:
 - up to 192 wireless devices of the 433 system system;
 - up to 999 address devices of the Astra-A system when using RPA,
 - up to 512 fire detectors,
 - up to 96 BRA relay blocks,
 - up to 96 blocks of signal-launching BPA,
 - up to 8 wireless KPD 8131 (no more than 4 for one RPP-433),
 - up to 8 wireless readers 8531 (no more than 4 per RPP-433);
- 3) registration of up to 250 identifiers (PIN codes, key fobs, TM keys, Wiegand keys);
- 4) support for up to 50 readers;
- 5) support for the operation of the Astra-KTM-S wired keyboard;
- 6) creation of up to 250 logical partitions of the following types: security, fire with a single actuation, fire with a double actuation, technological, temperature;
- 7) up to 250 users;
- 8) operation of up to 250 system outputs located in the Control Panel and extenders registered in the Control Panel (BR, RP, RTR, etc.);
- 9) creation of up to 5 logical zones of fire voice alarm;
- 10) event log of up to 10,000 events (with the date and time of the event);
- 11) remote notification via communicators::
 - Astra-LAN (PAK Astra) in the format of Astra PAK - 1 recipient,
 - Astra-GSM (PAK Astra) in the format PAK Astra - 1 recipient
 - Astra-GSM (PAK Astra) in SMS and / or voice format - up to 8 recipients, each of which can be assigned the main and backup channels for messaging with individual settings for formats, types of notifications and groups of sections, priority,
 - Astra-GSM (Proxima) - up to 8 recipients (in Pro-Net or SIA-IP format);
- 12) display of notifications on 4 built-in two-colour LED indicators:

* when the built-in wireless module of the Astra-812 Pro Control Panel is disabled

-  indicator (POWER) отображает состояние электропитания ППКУП,
-  indicator (alarm) displays the general status of the security,
-  indicator displays the general status of fire sections,
-  indicator (failure) displays equipment malfunctions.

Installation of Control Panel is carried out using a mounting template (attached to the Technical certificate), installation - according to the connection diagram (see Annex B).

3 Specification

Technical parameters of the wireless channel:

| | |
|--------------------------------------------------------------------------------------|--------|
| Operating frequency, MHz: | |
| - frequency 1..... | 433,42 |
| - frequency 3..... | 434,42 |
| Range of Astra-RC and Astra-3221, m*, not less | 1000 |
| RTR range, m*, not less..... | 1500 |
| Operating range of other detectors and wireless devices 433 system, m*,not less..... | 300 |

Characteristics:

| | |
|---------------------------------------------------------------------------|---------------|
| Supply voltage, V..... | from 10 to 27 |
| Average current consumption at supply voltage 12 (24) V, mA: | |
| - excluding power supply of plug-in modules..... | 80 (60) |
| - with installed module Astra-GSM (Proxima) or Astra-GSM (PAK Astra)..... | 120 (80)** |
| - with Astra-LAN module installed (PAK Astra)..... | 170 (120)** |
| Maximum length of TM interface line, m..... | 25 |
| Maximum line length of WD interface, m..... | 25 |
| Maximum line length of the RS-485 interface, m..... | 1000 |

Other characteristics (terminals Z1-GND, Z2-GND):

| | |
|--------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Standby voltage, V..... | from 10 to 27 |
| Short circuit current, mA, not more..... | 20 |
| Resistance of wires connected to the AL input (without taking into account the external element), Ohm, not more | 220 |
| Leakage resistance between loop wires or each wire and "Earth", kOhm, not less | 20 |
| Loop resistance ***, kOhm, mode: | |
| - Standby..... | from 3 to 5 |
| - Violation..... | from 0 to 3 or more than 5 |
| Minimum AL violation time, ms..... | 70 |

Relay 1 (terminals RELAY1):

| | |
|---------------------------------------------------|-----|
| - maximum load voltage, AC, V, not more..... | 250 |
| - maximum load voltage, DC, V, not more..... | 27 |
| - maximum load current, AC, DC, A, not more | 5 |

Relay 2, 3 (terminals RELAY2, RELAY3):

| | |
|----------------------------------------------|-----|
| - maximum load voltage, DC, V, not more..... | 100 |
| - maximum load current, A, not more | 0,1 |

Open Collector Outputs (terminals OC1, OC2, OC3):

| | |
|----------------------------------------------|-----|
| - maximum load voltage, DC, V, not more..... | 27 |
| - maximum load current, A, not more | 0,5 |

* In line of sight. The range depends on the design features of the room, interference environment.

** To operate the Control Panel with any module, the rated current of the power supply must be at least 0.7 A (recommended 1 A).

*** Factory settings; parameters are programmed via PKM Astra Pro.

| | |
|---------------------------|----------------|
| Dimensions, mm | 174 × 150 × 43 |
| Weight, kg, not more..... | 0,45 |

Operating conditions

| | |
|----------------------------|-------------------|
| Temperature range, °C..... | from -10 to +55 |
| Relative humidity,% | from 98 to +40 °C |

4 Delivery set

| | |
|-----------------------------------------------|---------|
| Control Panel "Astra-812 Pro" | 1 pc. |
| Screw | 4 pcs. |
| Dowel | 4 pcs. |
| Resistor C1-4-0,25 W 3,9 kOhm \pm 5 % | 2 pcs. |
| Stiker | 2 pcs. |
| Technical Manual..... | 1 copy. |

5 Marking

The label affixed to the body of the Control Panel contains:

- manufacturer's trademark;
- Control Panel abbreviated name;
- sheath protection degree;
- software version;
- manufacture date;
- conformity mark;
- serial factory number;
- barcode label

6 Compliance

6.1 Control Panel design provides IP30 protection rating

7 Disposal

Control Panel does not in itself constitute a hazard; after the end of its service life, its disposal is carried out without taking special measures to protect the environment.

8 Warranty

8.1 The quality management system is certified for compliance ISO 9001-2015

8.2 The operation warranty period is 5 years from the date of operation start-up, but no longer than 5 years 6 months from the date of manufacturing subject to the requirements of the Technical certificate.

8.3 The average service life of the Control Panel is 10 years.

8.4 The manufacturer is obliged to repair or replace the Control Panel during the warranty period.

8.5 The guarantee does not take effect in the following cases:

- mechanical damage to the Control Panel;
- repair of the Control Panel by a person other than the manufacturer.

8.6 Warranty applies only to the Control Panel. All other manufacturer's equipment used together with the Control Panel is subject to their own warranties.

The manufacturer is not responsible for any damage to health, property or other incidental or special loss, direct or consequential damages based on the statement of the user that the Control Panel did not fulfill its functions, or as a result of misuse, failure or temporary inoperability of the Control Panel.

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