	«Security Hub» controller
	Technical passport

This document is intended to study the technical characteristics, equipment, operating conditions and warranty for the controller Security Hub (hereinafter controller) (Figure 1).

The manufacturer reserves the right to make changes related to product improvement without warning. All changes will be made to the new edition of the passport at the controller.

List of abbreviations:

Controller – controller «Security Hub»;

Astra-AMS – professional desktop application for configuration and monitoring;

Cloud server TEKO – hardware and software complex "Astra", which consists of a server, controllers, professional software for the automated workstation of the central monitoring station and user Internet applications (mobile, web applications);

BAT – rechargeable battery installed in the controller;
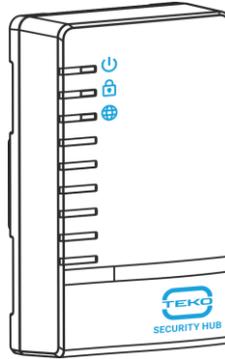
Zone – alarm loop (input), hardwired zone.

Figure 1

1 Function

1.1 Controller is intended for use as part of security, fire, emergency and other types of security system, as well as the controller of a smart home at the facility.

1.2 Controller is intended for:

– receiving information from wireless detectors on a radio channel 433 MHz,

– monitoring the status of hardwired detectors connected to the zone inputs of the controller,

– data exchange between the protected facility and the cloud server through the internet - GSM cellular radio (GPRS) and Ethernet wired communication in encrypted form*.

2 Key information and features

2.1 Controller supports up to 32 wireless devices, which have the function of selecting a radio channel (Rmod) and a frequency channel (Lit).

2.2 Controller ensures the data exchange with the Internet applications through the server**:**

– via a LAN channel, through an RJ45 connector (Ethernet 10 BASE-T) and the provider's network,

– via a GSM channel, through two SIM-cards (GPRS / EDGE) of GSM mobile operators.

The main channel of exchange is LAN, followed by priority are SIM1, SIM2.

2.3 Configuring and maintenance of the controller is performed using the Desktop App or Internet applications according to the user's instructions.

2.4 Power supply of the controller is carried out from three independent power supplies in any combination:

– from main power supply, 12 VDC, using +12V- ,

– from backup power supply, 12 VDC, using +12VR-,

– from power network 110-250 VAC, 50-60 Hz using power adapter and USB-port, which is placed on the controller's PCB.

Continuous monitoring and notification of the current state of the power supply is carried out.

2.5 For backup power supply, the controller has a battery holder and a connector for connecting a 2/3 A lithium-ion (Li-Ion) battery with a rated voltage of 3.7 V, a capacity of 600 or 700 mAh (depending on the current configuration).

Notes

1 *The backup battery is connected <u>immediately before</u> the external power supply to the controller. Turning on the controller from the battery is impossible.*

2 *When the controller switches to power from the backup battery:*

- communication is provided only via a GSM (GPRS);

- power supply of hardwired fire and intrusion detectors is not provided.

2.6 Controller has a **Touch Memory (TM)** input on the PCB for connecting a key reader of the "iButton" standard and / or an "Astra-KTM-S" keypad. iButtons are registered from the user applications.

2.7 Controller has two built-in signal relays **RELAY1, RELAY2** with programmable modes of operation. The relays are configured from the user applications.

2.8 Controller has 4 pairs of individually programmable +CONx- terminals allowing:

– in the "open collector" output mode CONx- connect the load, for manual or automatic control (connection diagram 4). Modes are configured from user applications;

– in the "intrusion" or "technological" zone mode, connect detectors that have a dry contact type output and operate for opening or closing (to the terminals + CONx, 12V- or 12VR-, connection diagram 1);

– in the "fire alarm" or "double event fire alarm" zone input mode, connect two-wire alarm loops with fire detectors powered by the loop (to the terminals + CONx, CONx-, wiring diagram 2).

Connection diagrams are shown in **Appendix 1.**

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* Encryption is used to protect the transmitted data from unauthorized access in the listed communication channels. The encryption functions cannot be changed by the user in a simple way.

2.9 Controller has **three built-in LEDs** (see. table 1).

Table 1 - Indication of controller

(power symbol)	POWER LED	Power Supply State
	On	External power supply, BAT charged
	Flashing 1 time every 2.5 sec.	No external power, switching to BAT power
	Double flash every 2.5 sec.	No external power, BAT critical discharge (less than 2 hours of operation left)
	Flashing 1 time every 0.7 sec.	External power supply, BAT missing or should be replaced.
	Turns off every 2.5 sec.	External power supply, BAT charge mode
(lock symbol)	SECURITY LED	Facility State
	Green flash every 2.5 sec.	Ready for arming
	Red flash every 2.5 sec.	Not ready for arming
	Double red flash every 2.5 sec.	Low battery of the detector
	Green flash 1 time every 0.7 sec.	Countdown of entry or exit delay
	Green light on	All partitions armed
	Red flash 1 time every 0.7 sec.	Alarm in partition
	Switching **green-red** (not more than 60 sec.)	Registration mode of a detector or iButton key
	Off	There are no detectors in controller's memory
(globe symbol)	INTERNET LED	Server connection status
	Green light on	Connected to the server (both channels are active)
	Flashes green	Data transferring
	Red flash every 2.5 sec	Wired internet (LAN) unavailable
	Double red flash every 2.5 sec.	LTE unavailable
	Red light on	No connection to the server

2.10 The controller is designed for installation by the end user without further substantial support by the supplier (manufacturer).

3 Specifications

Radio channel parameters

Operating frequency, MHz.................................. 433,42 (lit «1»)
Wireless coverage range (line of sight), m**..........................100

*** The wireless coverage largely depends on the design features of the room, the interference environment. The maximum range parameters are provided when the best conditions for the installation of the controller and the detector are met.*

General technical parameters

Power supply from an external source of 12 V:
- main (terminals **+12V-**) and backup (terminals **+12VR-**) power supply voltage, V....................................from 10.5 to 13.6
- maximum current consumption, mA 300
- rated current consumption, mA, not more 150
Mains voltage, V ....from 110 to 240
Power consumption, W, not more 5

Power from USB:
- supply voltage, V 5
- maximum current consumption, mA, not more 500
- rated current consumption, mA, not more 200

BAT power:
- supply voltage, V ....from 3.3 to 4.2
- BAT life time, h ....from 4 to 8
- battery discharge voltage, V 3.5
- charge time of fully discharged battery, h, not more 10

Boot time, sec., not more..60

Relay 1, Relay 2 (RELAY 1, RELAY 2 terminals):
- maximum load voltage, V 100
- maximum load current, A...0.1

Terminals +CONx- (x = 1, 2, 3, 4):
Parameters in open collector output mode:
- maximum load voltage, V 24
- maximum load current, A...0.25
Parameters in hardwire zone mode:
- terminal voltage on duty mode, V:
  - with 12V power supply....................................from 9.3 to 12.4
  - with 5V power supply..................................... from 3.8 to 4.0
- zones current for supplying detectors, mA, not more 3
- short circuit current, mA, not more than:
  - with 12V power supply...24
  - with 5V power supply...10
- time of hardwire zone integration, msec........................40±10
- zones wires resistance, Ohm, not more 220
- leakage resistance between wires or
each wire and the ground, kOhm, not less 50
Resistance*** for intrusion/emergency zone, kOhm:
- "Normal" ....from 3 to 5
- "Alarm"..from 0 to 3 or more than 5
Resistance*** for fire type zone, kOhm:
- "Normal" .... from 3 to 5
- "Fire" ....from 1.5 to 3 and from 5 to 12
- "Failure"......................................from 0 to 1.5 or more than 12

Resistance*** for **fire** type zone **double event mode**, kOhm:
- "Normal" ....from 3 to 5
- "Fire "..from 0 to 1.5 and from 5 to 12
- "Fire Danger" (with resistor R_{add})..........................from 1.5 to 3
- "Failure"...more than 12

Touch Memory input (terminals +TM-):
Maximum length of the interface line, m 15

Overall dimensions, mm, not more than ....136 × 86 × 38
Weight, kg, not more 0.2

Operating conditions:
Temperature range, °C.......................................from - 10 to + 50
Relative humidity of air, % ....up to 98 at +40°C
without moisture condensation

*** The permissible range of resistance values is no more than 10%, for a value of 12 kOhm - no more than ± 2 kOhm.*

4 Delivery set

Controller "Security Hub".. 1 pc..
Rechargeable battery 2/3 A (Li-Ion),
3.7V, 600 mA*h (or 700 mA*h) .... 1 pc. (installed))
Resistor C1-4-0.25-3.9 kΩ ± 5% .... 4 pcs..
Screw 3×30 .... 4 pcs..
Dowel 6×30 .... 4 pcs..
Technical Passport...1 pc..

5 Marking

On the labels affixed to the controller housing, the following is indicated:
- trademark of the manufacturer;
- abbreviated name of the product;
- firmware version;
- date of manufacture;
- conformance mark;
- production serial number;
- bar code duplicating text information.

6 Compliance

6.1 Controller IP protection: IP31.

7 Disposal

7.1 The kit poses no hazard to life, human health, and the environment; after the expiry of its service life, its disposal is carried out without taking special measures of environment protection.

8 Transport and storage conditions

8.1 Controller in the manufacturer's packaging should be transported at any distance by any type of transport in covered vehicles in accordance with the rules for the carriage of goods in force for the respective mode of transport.

8.2 The storage room should be free of conductive dust, acid and alkali vapors, as well as gases that cause corrosion and destroy insulation.

8.3 The storage period of the controller in a transport or consumer container, according to storage conditions, should not exceed 12 months.

8.4 Controller is not intended for transportation in unheated, unpressurized aircraft cabins.

9 Warranty

9.1 The quality management system is certified for compliance with ISO 9001.

9.2 The manufacturer guarantees the compliance of the controller with the technical conditions, provided that the consumer observes the conditions of transportation, storage, installation and operation.

9.3 Warranty period – 12 months from the date of manufacture.

9.4 Average service life - 8 years.

9.5 The manufacturer is obliged to repair or replace the controller during the warranty period.

9.6 The warranty does not come into force in the following cases:

    -non-compliance with requirements of technical passport;
    -mechanical damage of the controller;
    -repair of the controller by another.

9.7 The warranty applies only to the controller. All third party equipment used in conjunction with the controller is subject to their own warranties. The warranty does not apply to batteries, connecting cables used in conjunction with the controller.

The manufacturer is not liable for any damage to health, property or other accidental or intentional loss, direct or indirect damage based on the user's statement that the kit has not fulfilled its functions, or as a result of misuse, failure, or temporary inoperability of the kit devices.
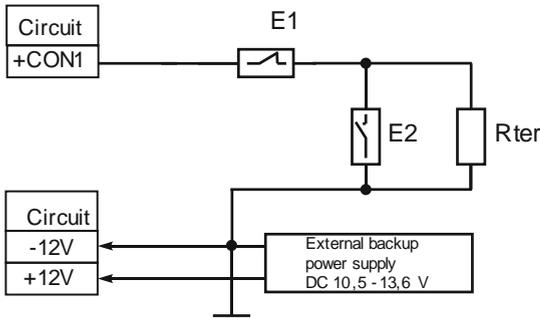
Manufacturer:

ZAO NTC TEKO
Gafuri 71,
420108 Kazan, Russia
Tel.: +7 843 528-03-69
Mob.: +7 967 368 08 98
E-Mail: export@teko.biz
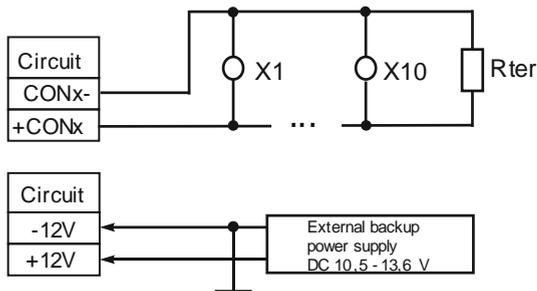Web: www.teko.biz

Made in Russia

Connection diagrams

**1) Connection of intrusion, panic and emergency hardwired zone**

E1 - detector with normally closed contacts
(intrusion, panic or emergency)
E2 - detector with normally open contacts
(intrusion, panic or emergency)
Rter - terminal resistor 3.9 kOhm

**2) Connection of the fire hardwire zone**

X1 ... X10 - active detector (smoke detector)
Rter - terminal resistor 3.9 kOhm

**3) Connecting a fire alarm with double event hardwire zone**
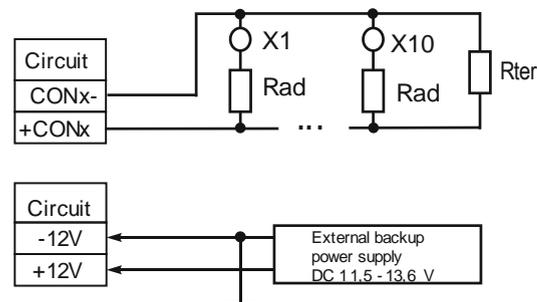
X1 ... X10 - active detector (smoke detector)
Rad - is an additional resistor whose nominal value
should be recommended by manual of
selected hardwired detector
Rter - terminal resistor 3.9 kOhm

4) Connection of light indicator and siren
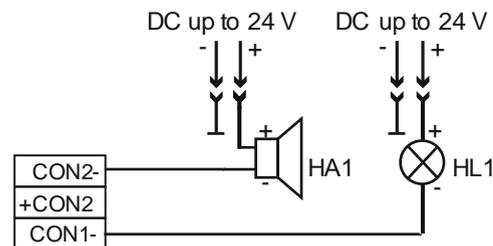
HA1 – siren
HL1 – light indicator

5) Connecting the iButton key reader and the reader indicator
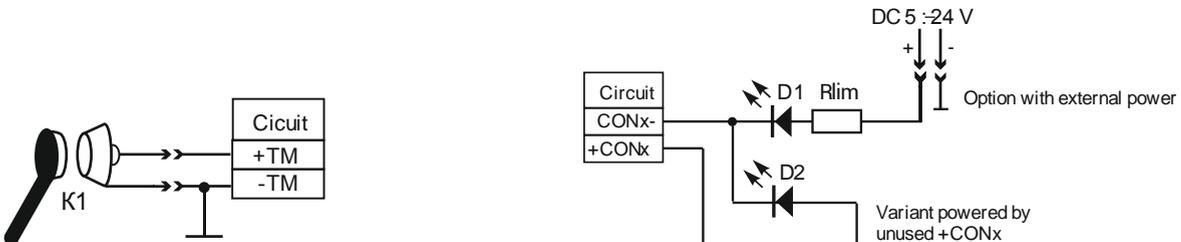
K1 - a reader of Touch Memory or other technology with the provision of information on

Dallas Identifier 1990A

D1, D2 – led indicator of the iButton reader kOhm

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