«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 software for configuring and monitoring;
Cloud server – cloud server TEKO;
BAT - rechargeable battery installed into controller;
Zone – hardwired zone.

Figure 1

1 Function

1.1 Controller is intended for the organization of security, fire, alarm, emergency and other types of signaling at the facility.

1.2 Controller is intended for:
– receiving information from wireless detectors on a radio channel 433 MHz,
– monitoring the condition of wired detectors connected to the 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 provides registration and processing of the states of 32 wireless devices, which have the function of selecting a radio channel (Rmod) and a letter (Lit).

2.2 Controller provides exchange of information with **CMS** and mobile applications through a 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 The setup and maintenance of the controller is carried out with the help of the automated workstation of the central monitoring station or Internet applications according to the user's instructions.

2.4 External power supply for controller is carried out from three independent sources in any combination:
– from the main power supply with a rated voltage of 12 V via terminals + 12V-,
– from a backup power supply with a rated voltage of 12 V via terminals + 12VR-,
– from a household network 230 V 50 Hz through a network adapter (not supplied) and a USB port.

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

2.5 To ensure redundancy of power supply inside the controller, there is a battery holder and a connector for connecting a lithium-ion (Li-Ion) battery of a standard size 2/3 A with a nominal voltage of 3.7V, a capacity of 600 or 700 mA/h (depending on the current picking).

Notes

1 Battery connection is carried out immediately before external power is supplied to the controller. *From the battery the start of the controller is impossible.*

2 When switching to power from the built-in battery controller*:*
- provides communication only over a wireless GSM channel;
- does not provide power to hardwired zones.

2.6 **The controller** has a built-in Touch Memory (TM) input for connecting an iButton key reader and / or an Astra-KTM-S keyboard. iButton codes are registered from the CMS or mobile applications.

2.7 **The controller** has two built-in signal relays RELAY1, RELAY2 with programmable operating modes. Relays are configured from the CMS or mobile applications.

2.8 **The controller** has 4 pairs of individually programmable terminals + CONx-, allowing:

– in the "open collector" output mode, when controller is powered from the +12 V power supply, to connect a load, for example, the Astra-10 ver.M2 siren, to control it in manual or automatic mode;

– in the hardwired zone mode "intrusion" or "emergency", to connect detectors having an output of the dry contact type;

– in the fire alarm or double event fire alarm input mode, to connect two-wire hardwired zones powered by a zone.

Connection diagrams are shown in Appendix 1.

2.9 The controller has three built-in indicators (see table 1).

Table 1 - Indication of controller

⏻	POWER SUPPLY	Power 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
◉	WIRELESS /HARWIRED ZONES	Object status
	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.**	Malfunction or detector has a low battery
	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 s)	Interactive mode (adding a detector or iButton key to the controller's memory)
	Off	There are no detectors in controller's memory
☁	**CONNECTION**	**Server connection status**
	Green light on	Connected
	Flashes **green**	Data transfer
	Red flash every **2.5 s**	LAN channel unavailable
	Double **red** flash every **2.5 sec.**	GSM channel unavailable
	Red light on	Connection unavailable

2.10 The controller is designed for installation by the 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

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, hr..from 4 to 8
- the threshold for the information transfer of
battery discharge, V..3.5
- charge time of fully discharged battery, hr, not more 10

Loading 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
- current at the terminals of the zones for power supply
of 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 type of hardwired zone, kOhm, in the state:
- "Normal" ....from 3 to 5
- "Violation" ....from 0 to 3 or more than 5
Resistance*** for fire type of hardwired zone, kOhm, in the state:
- "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 hardwired zone in **double event mode**, kOhm, in the state:
- "Normal" ....from 3 to 5
- "Fire "...from 0 to 1.5 and from 5 to 12
- "Fire Danger" (with resistor Radd)...........................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 without BAT, kg, not more 0.14
Operating conditions:
Temperature range, °C...................................... from - 10 to + 55
Relative humidity of air, % ....up to 98 at +40°C
                                                            without condensing

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.
Expansion bolt shield 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;
- 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 Warranty
8.1 Warranty period - 5 years 6 months from the date of manufacturing.
8.2 The warranty does not come into effect in the following cases:
- non-observance of the requirements of the Technical Passport;
- mechanical damage to the controller;
- repair of the controller by another person other than the manufacturer.
8.3 The warranty applies only to the controller. All equipment from other manufacturers used in conjunction with controller is subject to their own warranties. The warranty does not apply to rechargeable 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.

*** Wireless coverage range depends on the design features of the room, the interference environment. Maximum range parameters are provided when the best installation conditions for the controller and the detector are met.*
****The permissible range of resistance values is no more than 10%, for a value of 12 kOhm - no more than ± 2 kOhm.*

Connection diagrams

1) Connection of intrusion, panic and emergency hardwired zone
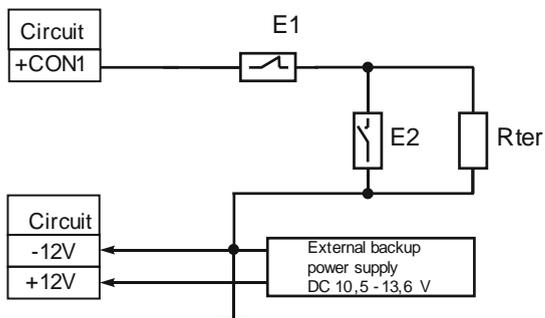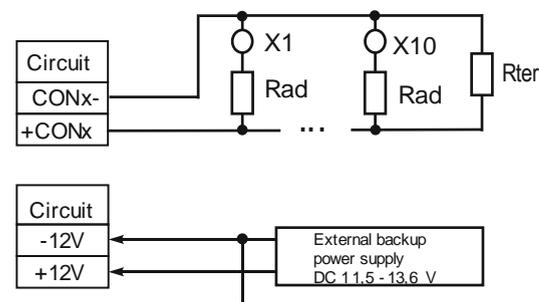
E1 - detector with normally closed contacts
(intrusion, panic or emergency)
E2 - detector with normally open contacts
(intrusion, panic or emergency)
Rter - terminal resistor 3.9 kOhm

2) Connection of the fire hardwire zone
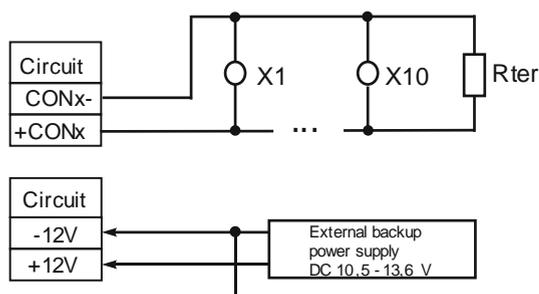
X1 ... X10 - active detector (smoke detector)
Rter - terminal resistor 3.9 kOhm

## 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
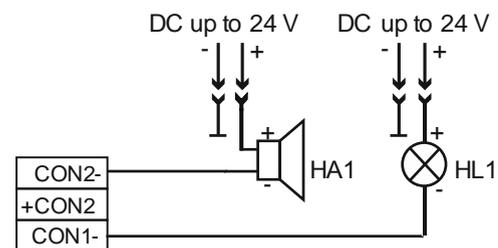
HA1 – siren
HL1 – light indicator

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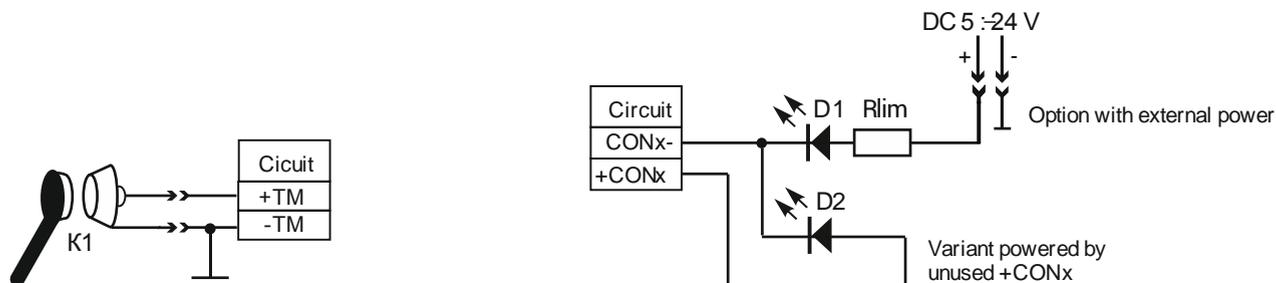
K1 - a reader of Touch Memory or other technology with the provision of information on

Dallas Identifier 1990A

D1, D2 – led indicator of the iButton reader kOhm