https://www.securitybulgaria.com/
e-mail:sales@securitybulgaria.com
Тел. 02/ 9208666
1309 Sofia, Bulgaria
Blvd. Dimitar Petkov 128A

Using the security function

Activating the SOT Zone Security.

The zone is armed by using an RFID card, PIN code, through the software, or the web interface of the IP module (see the section "Procedure for Using the SOT Function" for more details).

Activating the security system.

1. Activating the SOT zone security.

1.1 If the door is open, read an RFID card with the necessary access rights for controlling the SOT function twice, and then close the door. This procedure must be completed in no more than 12 seconds. While this time is passing, the LED on the reader will blink. After the specified time elapses, the zone will be armed. The LED on the reader will then stay continuously green.

1.2 Instead of a card, a four-digit PIN code can be used. The procedure is the same as in section 1.1, but instead of reading a card, enter the PIN code twice for the user authorized to control the system.

1.3 The controller has the capability for automatically arming a zone if no sensor has been triggered within a predefined time interval. This function is activated through software, and the time can be set from 1 to 99 minutes.

2. Disarming the security from the control panel of the security system zone.

Read the RFID card with access rights for controlling the security system only once. Disarm the security of the security system zone, unlock the door, and change the color of the reader's light indicator (illuminate in blue or red). If an RFID card with access rights but without control rights for the security system is read, access will be denied until the security is deactivated for the zone. Instead of a card, a one-time PIN code can be entered..

FAQ

Question: I don't know the controller's address. How can I discover it?
Response: The controller's address is printed on the label attached to the controller. In the event that the label has been removed or the address has been changed without updating the label, the address can be discovered using the PolimexAutoDetect software or the built-in controller search feature in the free Andromeda Tool software. If you're using LAN Scan, in the LAN module's web interface, navigate to the Device Manager section and press the Start button. A list of all controllers on the bus will appear.

Question: How can I restore the normal operational state of the controller after it has entered a "Fire" mode?
Answer: Make sure that the input signal from the PID (Proportional-Integral-Derivative) controller to the main controller is interrupted. The controller will automatically return to normal operation mode..

Question: Which one is the input reader and which one is the output reader?
Answer: For double doors, the odd-numbered one is the entrance, and the even-numbered one is the exit.

Question: Is an external relay needed at the output?
Answer: The output is designed to switch currents up to 3A in pulse mode (for a few seconds). If the actuator needs to remain activated for an extended period, it's advisable to use an additional relay. There's no definitive answer; it all depends on the specific case.

Question: On which locking mechanisms are diodes placed?
Answer: Protective diodes are placed on all locking mechanisms, regardless of their type. It's important to install them directly at the locking mechanism.

Question: How is the controller mounted in the box?
Answer: In the package, you receive 4 pieces of remote spacers.

Question: How is the LAN module installed?
Answer: Place the LAN module in a way that the RJ45 connector is oriented towards the SOT input ports.

Question: How is the USB module installed?
Answer: The USB module is plugged into the connector located right next to the RS 485 interface, oriented towards the internal part of the board.

Question: How is the reader's indication controlled?
Answer: The reader's indication is controlled by providing a "0" (ground) to the respective conductor for managing the LED or the buzzer.

Question: What is the permissible distance between the controller and the reader?
Answer: The standard theoretically defines a maximum of 100 meters. However, this depends on the type of conductors used. Please check the table with recommended cable types and permissible lengths (page 3) for more information.

Question: Permissible distance to the locking mechanism?
Answer: The cross-section of the conductor is calculated in a way that the voltage drop across it does not exceed 1V.

Question: What potential do outputs from 5 to 10 provide?
Answer: These are open-collector type outputs (O.C.). When activated, they provide ground (GND).

Question: How are the sound and light indications of the reader controlled?
Orr: To control the indications of the readers, you can use outputs from 5 to 8. If the security functionality of the controller is activated, these outputs show the status of the alarm zones and are connected to the inputs of the readers to control the light indication. The LED indicator of the first reader is connected to output 5, the second reader to output 6, and so on. This makes it easy to understand when the zone is armed and when it's not. If the alarm lines are deactivated, these outputs function as alarm outputs. In that case, the sound indication of the readers can be connected to them.
See diagram 5.

Софтуери

ИНСТРУКЦИЯ ЗА ПОЛЗВАНЕ НА ANDROMEDA TOOL
http://goo.gl/r88288

ИНСТРУКЦИЯ ЗА ПОЛЗВАНЕ НА ANDROMEDA PRO
https://goo.gl/cSuFFa

Web SDK

ДОКУМЕНТАЦИЯ
https://goo.gl/hwKr2F

Свали приложението *iCONManager* от:

Google play

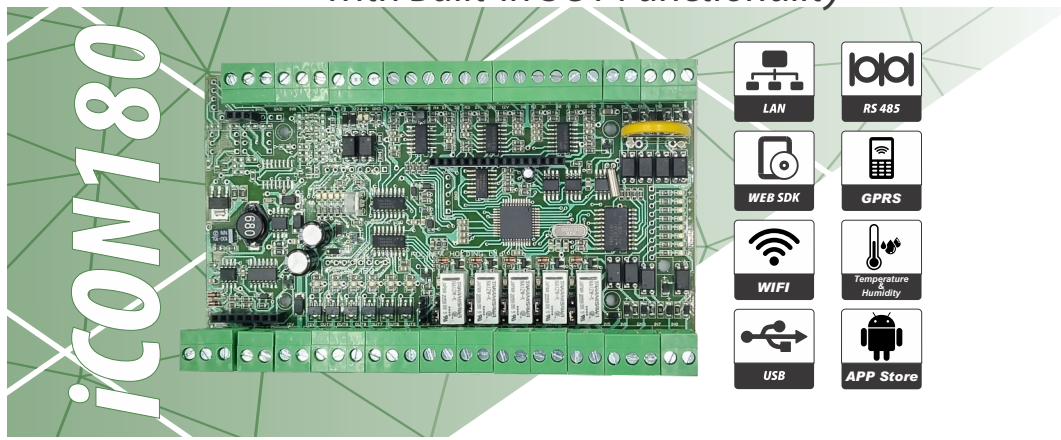
ЛИНК ЗА СВАЛЯНЕ НА ANDROMEDA TOOL
http://www.securitybulgaria.com/files/Andromeda/NewAndromedaToolLast.zip

МОДУЛ ЗА ДИСТАНЦИОННА ПОДДРЪЖКА
http://www.securitybulgaria.com/files/Andromeda/PolimexSupport.exe

Polimex
ISO 9001:2015 & ISO 27001:2017
IP-Based Video Surveillance
Access Control and Time Attendance
https://www.securitybulgaria.com/
e-mail:sales@securitybulgaria.com
Тел. 02/ 9208666
1309 Sofia, Bulgaria
Blvd. Dimitar Petkov 128A

Short User Guide

Controller for Access Control and Time Attendance with Built-in SOT Functionality



- Compliant with EN 50133-2-1/BDS 50133 Standard;
- USB / LAN / WiFi communication capability via additional module;
- RS485 bus communication (up to 253 devices);
- Automatic communication mode switching;
- Compatibility with free and paid software solutions;
- Management of four doors unidirectional, one bidirectional, two unidirectional, or two bidirectional doors;
- Emergency external system-triggered door opening;
- Automatic output activation based on pre-set schedules – up to 96 schedules;
- Support for access restriction time schedules – up to 96 schedules;
- User-configurable input and output state settings;
- Non-volatile memory and clock;
- Open WEB SDK protocol for integration and development;
- Automatic operation mode: standalone or networked (software-connected);
- Built-in Duress Mode functionality (silent door opening with quiet alarm);
- Four reader operation modes;
- Automatic reader mode switching based on time schedules;
- Input for digital temperature and humidity sensor;
- 4-line alarm system (ATZ).

User Capacity	7679
Event Memory	4094
Inputs	4 number of reader interfaces: 26 bit, 32 bit and 34 bit WIEGAND 4-8 bit for PIN
Reader Modes	Card, card + PIN, Card + work code, card or PIN
Inputs	10 number of opto-isolated inputs, active low to GND, (4x exit button, 4x magnetic contact, emergency situation input) 1 quantity temperature and relative humidity sensor, 4 quantity alarm zones(ATZ)
Outputs	10 quantity (4 quantity relay outputs - -30V/3A, 4 quantity outputs O.C. 30V/1A – for indication of alarm events/zone status, 1 PGM - O.C. 30V/1A, 1 quantity for siren– O.C. 30V/1A)
Communication	RS 485, (USB / LAN / WiFi / GPRS with an additional module)
Power Supply	12 V DC
Operating electric current (mA)	200
Light Indicators	Yes
Operating Temperature	-25°C-+75°C
Operating Humidity (RH)	10%- 90% RH (without condensation)
Dimensions	150*85*25

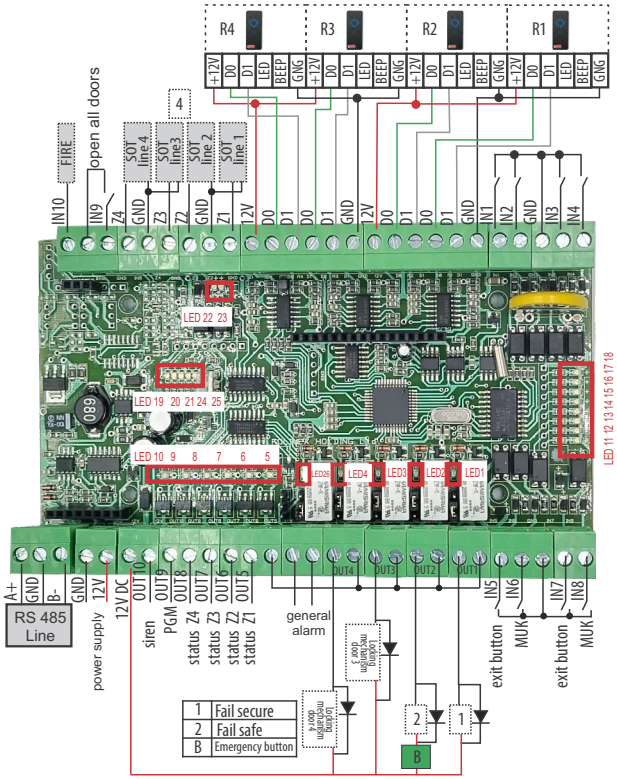
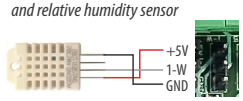


Table of functionalities for iCON180

Входове	2 door mode	3 door mode	4 door mode
IN1	Exit button - door 1	Exit button - door 1	Exit button - door 1
IN2	Door status sensor 1	Door status sensor 1	Door status sensor 1
IN3	Not in use	Not in use	Exit button - door 2
IN4	Not in use	Not in use	Door status sensor 2
IN5	Exit button - door 2	Exit button - door2	Exit button - door 3
IN6	Door status sensor 2	Door status sensor 2	Door status sensor 3
IN7	Not in use	Exit button - door 3	Exit button - door 4
IN8	Not in use	Door status sensor 3	Door status sensor 4
Fire	Signal from PIR	Signal from PIR	Signal from PIR
R1	Entrance reader for the door 1	Entrance reader for the door 1	Entrance reader for the door 1
R2	Exit reader for the door 1	Exit reader for the door 1	Entrance reader for the door 2
R3	Entrance reader for the door 2	Entrance reader for the door 2	Entrance reader for the door 3
R4	Exit reader for the door 2	Entrance reader for the door 3	Entrance reader for the door 4
Outputs			
OUT1	Door relay 1	Door relay 1	Door relay 1
OUT2	Common output	Common output	Door relay 2
OUT3	Door relay 2	Door relay 2	Door relay 3
OUT4	Common output	Door relay 3	Door relay 4
OUT5	LED/ BEEP on the reader 1	LED/ BEEP on the reader 1	LED/ BEEP on the reader 1
OUT6	LED/ BEEP on the reader 2	LED/ BEEP on the reader 2	LED/ BEEP on the reader 2
OUT7	LED/ BEEP on the reader 3	LED/ BEEP н on the reader 3	LED/ BEEP on the reader 3
OUT8	LED/ BEEP on the reader 4	LED/ BEEP on the reader 4	LED/ BEEP on the reader 4

Wiring diagram for a digital temperature and relative humidity sensor



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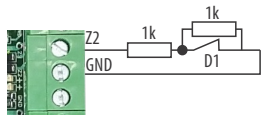
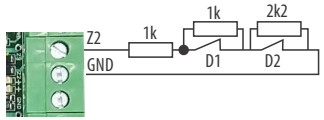
Wiring diagram for connecting 1 sensor to an alarm system



Wiring diagram for connecting 2 sensors to an alarm system



* If the sensors are not connected, the CO detection function is deactivated by the software.

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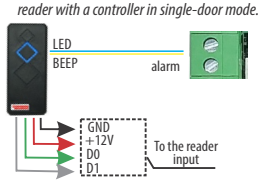
Wiring diagram for connecting LED and BEEP indicators on a reader with a controller in single-door mode.



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LEDs for operation indication

Led №	Displays the status of:	Status of the indicators:	
Led 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Out 1,2,3,4,5,6,7,8,9,10	ON ■	OFF □
Led 11, 12, 13, 14, 15,16 ,17,18	In1,2,3,4,5,6,7,8	ON ■	OFF □
Led 19	Power supply voltage	ON ■	X
Led 20	Communication exchange Tx	Fast blinking	X
Led 21	Communication exchange Rx	Fast blinking	X
Led 22	fire	ON ■	OFF □
Led 23	open all doors	ON ■	OFF □
Led 24	Communication exchange Tx2	Fast blinking	X
Led 25	Communication exchange Rx2	Fast blinking	X
Led26	General alarm	ON ■	OFF □

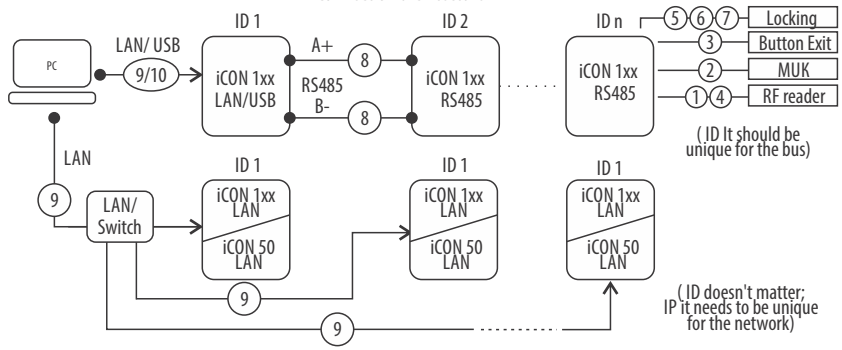
Recommended cable types and permissible lengths

The recommended cable for connecting the controller to the peripheral devices of the system is a multi-conductor cable 2x0.5+8x0.22. (2x0.5 is used for controlling the locking mechanism, while the remaining 8x0.22 conductors are used for supplying power to the readers, receiving data from the readers, controlling the buzzer, managing the LED indication of the readers, the exit button, the microphone, the speaker, and other functions. If there are insufficient conductors, a common ground can be used. (For example, the black 0.5 mm).)

Table of lengths for power supply 13.7VDC

№	Equipment:	Cable specification- mm²	Maximum length - meters
1	Readers - data and power	0.22 mm	up to 100 m
2	Magnetic Proximity Sensor	0.22 mm	up to 100 m
3	Exit button	0.22 mm	up to 100 m
4	LED and reader buzzer	0.22 mm	up to 100 m
5	Electromagnet (550mA) Polymex	0.5 mm	up to 30 m
6	Electromagnetic strike plate Polymex	0.5 mm	up to 70 m
7	Electric drop bolt Polymex	0.5 mm	up to 40 m
8	RS-485	FTP min 5 category	up to 1200 m
9	LAN	FTP min 5 category	up to 100 m
10	USB	Ready-made cable	2-3 m
11	Emergency button	0.5 мм	Always located to the door

Connection architecture



Connecting to a bus via RS485 communication interface

Connection to the RS485 bus allows the construction of larger systems. Twisted pair cables with a length of up to 1200 meters are used as the transmission medium. It is recommended to use shielded cable, with the shield grounded at one end of the cable. If a suitable grounding point is not available, the shield is connected to the ground of the converter or the controller acting as the converter. To reduce noise levels, it is advisable to terminate the line, especially for longer lengths. The value of the terminating resistors depends on the length of the line as follows:

For lines up to 50 meters, use a 1 kΩ resistor.
For lines up to 150 meters, use a 620 Ω resistor.
For lines over 150 meters, use a 300 Ω resistor.

Personal computers do not support the RS485 interface, necessitating the use of a signal converter. For this purpose, it is recommended to use a LAN or USB module. These modules connect to any controller from the iCON1xx series without any hardware or firmware modifications. To maintain the network topology of controllers, the role of the converter can be performed by one of the controllers in the bus or by an external converter.

Each controller on the bus has its own address with a value from 0 to 254. DUPLICATION OF ADDRESSES ON THE BUS IS NOT ALLOWED. The address of each controller is recorded on the label on the controller.

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