PERCo®

Registration Controller
CR-01.2

OPERATION MANUAL

CE EAC

PERCo

Registration Controller
CR-01.2 "Licon"

Operation Manual

CONTENTS

Dear Customers!

Thank you for purchasing PERCo equipment.

Please follow instructions given in this Manual carefully and this quality product will provide many years of trouble-free use.

The Operation manual (hereinafter – the *Manual*)) contains information on technical characteristics and operation principle of **CR-01.2 "Licon" registration controller**. The Manual is aimed at providing proper operation and a more complete use of all the technical capabilities of the controller. The Manual also contains sections on the controller installation and diagnostics.

Abbreviations agreed in the Manual:
- LCD – Liquid-Crystal Display;
- ACS – Access Control System;

1 APPLICATION

CR-01.2 "Licon" registration controller (hereinafter – *controller*) is used as a part of **PERCo-Web** system and is aimed at time and attendance management. Off-line controller operation without system server connection is possible after corresponding setting.

Controller has two in-built access card readers and coloured LCD. By presenting employee's acces card a passage event is registered, full name and passage time are shown on LCD.

Controller supports passage control functions by time and functions of local and global zonality control (*Antipass)*. In case of violation of set time criterion or space control zone a message about registered violation is shown on LCD.

2 OPERATION CONDITIONS

With regards to resistance to environmental exposure controller conforms to category NF4 as per GOST 15150-69 (operation in premises with climate control).

Controller can be operated within the following conditions:

Ambient air temperature .... from +1°C to +40°C
Relative air humidity at +25°C .... max 80%

3   TECHNICAL SPECIFICATIONS

Rated operating voltage [1] 12VDC

Operating voltage limits .... 10.8 – 14VDC

Consumption current .... max 250 mA

Power consumption .... max 3 W

Number of reading devices 2

Proximity card types .... *HID, EM-Marine*

Card reading distance at the rated operating voltage for different card types:

>   *HID* cards .... min 4 cm

>   *EM-Marin* cards .... min 5 cm

Card reading distance with the controller installed on the metal surface:

>   *HID* cards .... min 3 cm

>   *EM-Marin* cards .... min 4 cm

Controller connection interface standard .... *Ethernet (IEEE802.3)*

Number of users (proximity cards) .... from 10,000 to 50,000 (see Note)

Number of log events .... from 125,000 to 760,000 (see Note)

> ### Note:
> Possible options for allocating memory (see Appendix 3, Clause 3.4):
> * 50,000 cards and 125,000 events – set by default,
> * 40,000 cards and 280,000 events,
> * 30,000 cards and 440,000 events,
> * 20,000 cards and 600,000 events,
> * 10,000 cards and 760,000 events.

Web-interface .... there's

LCD dimensions .... 71 cm

Mean lifetime .... 8 years

Electric shock protection class .... III (IEC 61140)

Controller dimensions .... 190×140×23 mm

Controller weight .... max 550 g

> ### Note:
> Initially controller features: IP-address and MAC-address, stated in the product certificate and at the inner side of the product housing; subnet mask: 255.0.0.0; gateway IP-address: 0.0.0.0.

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[1] As a power supply it is recommended to use DC source with linear voltage stabilization and output pulsation amplitude max. 50 mV.

4   STANDARD DELIVERY SET

Additional mounting tools supplied upon request:

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[1] ***PoE-splitter*** allows controller powering via *Ethernet* network. Splitter can be used with network commutators, supporting power transmission technology through PoE twisted-pair cable and is compatible with *IEEE 802.3af* standard.

5   PRODUCT DESCRIPTION

Controller is delivered in the plastic housing. The front panel features colour LCD display (2,8 inches diagonal and two proximity card presentation zones (Fig. 1). Housing design allows both inner power cables and *Ethernet* installation and their outer installation (on the top and at the bottom sides.

Controller features:
- two readers;
- non-volatile memory;
- non-volatile RTC-timer (real-time clock);
- sound piezoceramic radiator;
- 8P8C (*RJ45)* input to connect controller to *Ethernet* local network.

Controller operates with proximity cards of max 64-bit code. Types of compatible cards: *EM-Marine*; *HID*.

Controller provides:
- connection via *Ethernet (IEEE 802.3)* interface;
- *TCP/IP (ARP, IP, ICMP, TCP, UDP, DHCP*) protocol stack support*;*
- **PERCo-Web** system communication protocol application layer support;
- setting through Web-interface.

The following means of controller IP-address, gateway and subnet mask settings are provided: operation with initial settings; hand input; receiving them from DHCP server (see Section 8.5).
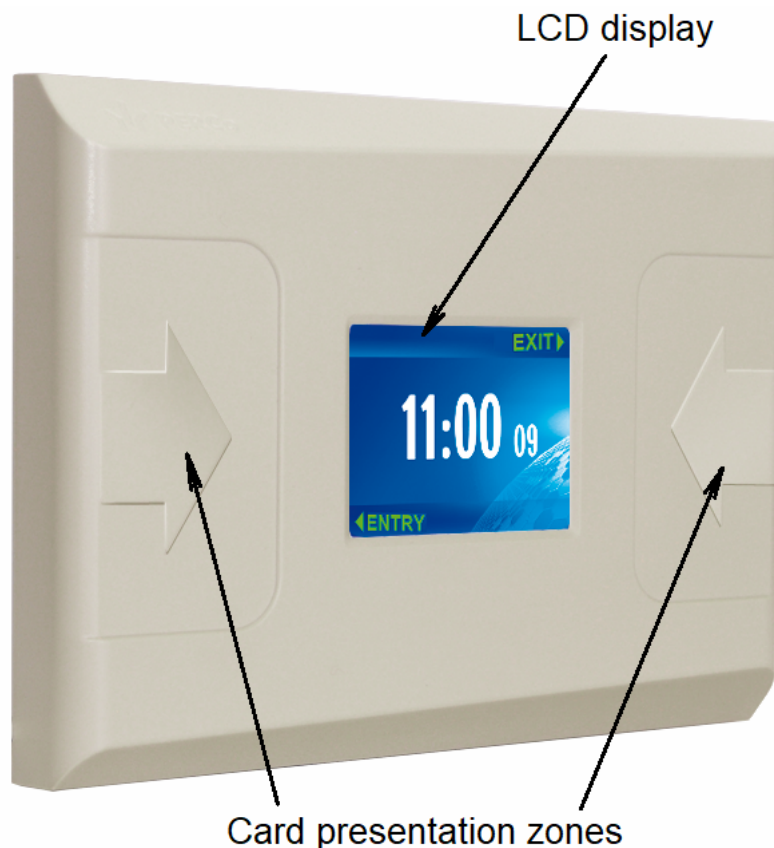

Figure 1. Registration controller overall view

6   MARKING AND PACKAGING

Controller has a marking label located on the metal base of the housing. The label features the following information about the controller:

- trademark and the manufacturer contact details;
- product name and model number;
- serial number;
- year and month of manufacture;
- power supply range;
- consumption current.

The controller board and inner side of the housing feature labels with the initial:

- MAC – address;
- IP – address.

Controller is packed in a carton box keeping it safe from the damages during transportation and storage.

7 SAFETY REQUIREMENTS

Controller installation and maintenance should be carried out by qualified specialists who have studied this Manual.

Do not use!

- Controller when power supply voltage does not comply with the technical characteristics described in Section 3.

- Controller in operation conditions that do not conform to those given in operation conditions (Section 2).

- Controller in aggressive environment with atmospheric content of acids, alkalies, oils, etc.

8   INSTALLATION INSTRUCTIONS

⚠️ *Attention!*

Cable connection and jumper switching must be carried out on de-energized equipment with disconnected power supplies.

8.1   Installation details

It is recommended to consider the following factors when choosing controller mounting place:

- Controller should be installed at a place with easy access for proximity card presentation and information scrolling on LCD display. The recommended height is 120 - 150 cm from the floor level.
- It is recommended to install controller at least 1 meter apart from any other external readers and other EMI sources. EMI sources may reduce proximity card reading distance and be the cause of T&A display malfunctions
- Installing controller on a metal surface, proximity card reading distance gets reduced at 10–20 %;

8.2   Installation tools

- 1.2÷1.5 kW hammer drill;
- Ø5 mm and Ø 16 mm hard-alloyed drill bits;
- cutter;
- level;
- measuring tape (2 m).

8.3   Installation cables

Cables, applied at the installation are stated in Table 1. During cable laying follow these instructions

- Cabling and wiring assembly must be matched to the electrical installation regulations.

- Minimum cable laying distance from the EMI source is 30 cm.

- All cables can cross the power cable only at a right angle.

- Cable growth is to be performed with the reflow technique.

ℹ️ *Note:*

The sources of electromagnetic interferences are:

- readers,
- AC lines, AC relays,
- electric generators,
- electric motors,
- thyristor light regulators,
- PC displays,
- computer and telephone signal communication lines.

Table 1. Cables used during controller installation

№	Cable connection	Max. length	Type
1	Ethernet (IEEE 802.3) - controller	100 m	Four twisted pair cables Cat5 with minimum 0.2 mm^2 cross-section.
2	Controller – power supply	10 m	Twin wire with minimum 0.75 mm^2 cross-section.

8.4   Installation order

Follow this sequence during controller installation:

1. Unpack the box and check carefully controller delivery set.

2. Choose controller installation place.

3. Mark and prepare holes on installation surface for the metal base mounting and power and *Ethernet* cabling (Fig. 2).
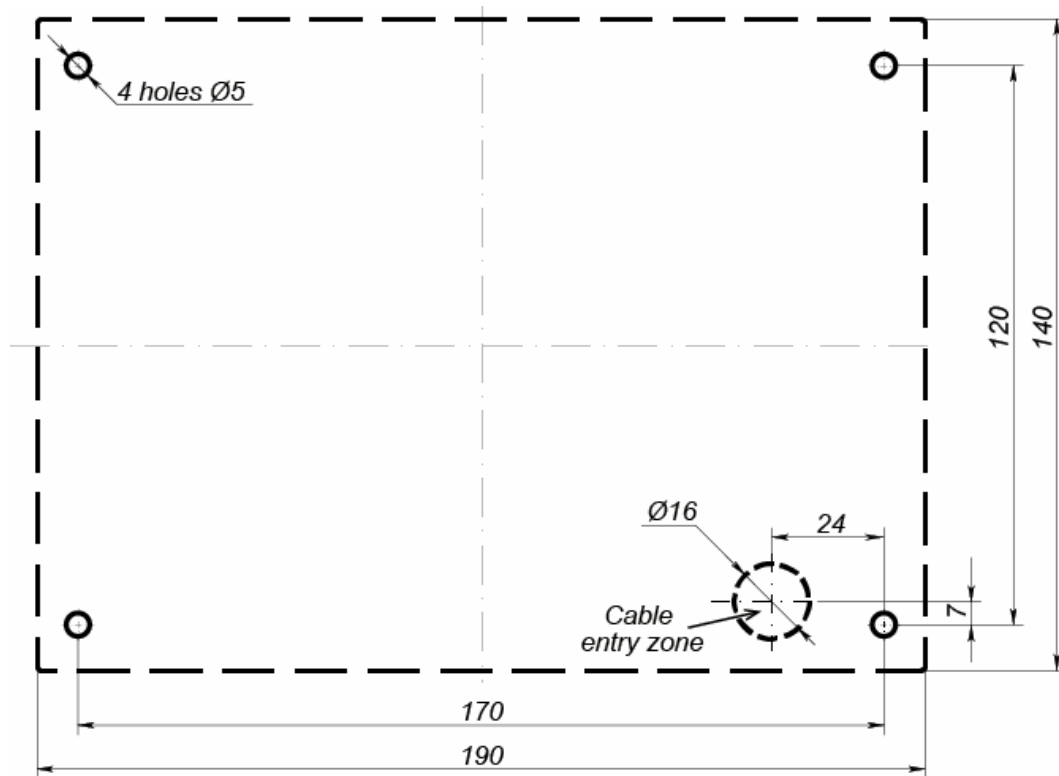

Figure 2. Hole spacing for controller installation
(housing dimensions and a hole for cable laying are dotted)

4. Lay power and *Ethernet* cables to controller installation place (Table 1). Housing design allows both inner power cables and *Ethernet* installation and their outer installation (on the top and at the bottom sides.

5. Loosen the screw located at the bottom side of controller housing and fixing it to the metal base. Remove the metal base.

6. Fix the metal base on the installation surface with four screws.

7. In case required install jumper on **XP1** output as per Section 8.5.

⚠️ ***Attention!***
It is recommended to leave some spare cable length in order to retract controller from the wall and have access to the jumpers.

8. Connect power cable to +*12V* terminal block on controller board.

9. Connect *Ethernet* cable to controller board input.

ℹ️ ***Note:***
Controller connection sequence through PoE-splitter is described in Appendix 2.

10. Install controller on the metal base and fix it with a screw in the bottom side of the housing.

9

8.5 IP-address representation

⚠️ ***Attention!***

Jumpers should be installed on de-energized equipment with disconnected power supplies.

IP-address representation is made by jumper installation (removal) on controller board **XP1** input. To access **XP1** input, take off metal protective screen by removing 4 screws. There are several possible variants of IP-address representation:

1. User mode. Jumper removed.
    - If IP-address (gateway, subnet mask) has not been changed by user, controller shall operate with the initial settings: IP-address and MAC-address are stated in product certificate, on controller board and on the inner side of product housing; subnet mask `255.0.0.0`; gateway IP-address `0.0.0.0`.
    - If IP-address (gateway, subnet mask) has been changed by user, controller starts working with new settings immediately without power supply changeover.

ℹ️ ***Note:***

Change controller initial settings from PC through Web-interface or from Software. At that controller and PC should be in one subnet.

1. *"IP MODE"*. Jumper in 1–2 position.
    - operation in networks with dynamic allocation of IP-addresses, controller gets IP-address (gateway, subnet mask) from DHCP-server.

2. *"IP DEFAULT"*. Jumper in 2–3 position.
    - Controller operates with initial settings. IP-address and MAC-address are stated in product certificate and on controller board; subnet mask `255.0.0.0`; gateway IP-address `0.0.0.0`.
    - Controller access password is cleared.

ℹ️ ***Note:***

IP-address user settings (gateway, subnet mask), are saved in controller memory when switching to "*IP DEFAULT"* mode. When switching back to user mode (jumper removal) controller starts working with these settings immediately.

Table 2. Jumper installation variants on XP1 input

№	Jumper position on XP1 input	Mode
1	**XP1** `1 2 3`	User mode
2	**XP1** `1 2 3`	"IP MODE"
3	**XP1** `1 2 3`	"IP DEFAULT"

9   CONFIGURATION

9.1   Configuration order

The order of configuration of the controller:

1 Connect the power source to the circuit with voltage and frequency indicated in its operational documentation. Turn on the power source, the LCD displays the standby mode (Section 11.2). It means that the controller is switched on.

2 Connect to the Web-interface of the controller via *Ethernet* network (Appendix 3, Clause 2).

> ### Note:
> The computer shall be in the same subnet with the controller. At first turn-on, it might be necessary to change network settings of the computer. The controller is equipped with IP-addresses from 10th subnet on default. Add IP-address: `10.x.x.x` (x- random numbers) and subnet mask `255.0.0.0. to TCP/IP additional settings of the computer.` No such servers or services like DNS and WINS are necessary. After turn-on network settings of the controller can be changed to settings recommended by system administrator in the software or via the Web-interface.

3 If necessary, change in the Web interface the settings of the memory of the controller (on default is *"50,000 access cards 125,000 events"*), Appendix 3, Clause 3.4.

4 Further configuration of the controller and devices connected to it can be changed either via Web-interface or with optional software installed on the computer:
   - *PERCo-SL01 "local software"* (does not require licensing);
   - *PERCo-SL02 "local software with visual verification"*;
   - Network software *PERCo-Web*.

> ### Note:
> You may buy optional software from official *PERCo* distributors. Also, specified software, the procedure of his licensing and electronic versions of the operating manual are available on the website of the company *PERCo* http://www.perco.com in the section **Support** > **Software**.

9.2   Configuration in the networking software

This section brings description of registration controller setting and operation within *PERCo-Web* Software.

> ### Attention!
> The specification of the time-passing control criterion is available in the extended version of the software. The *PERCo-WM-01 "Time & Attendance"* program module must be installed.

In the section *"Staff → Work schedules"*, define the room with the registration controller as the recording room and all related parameters and criteria (see *PERCo-WM-01* User's Manual).

9.2.1 Connection to the system

Controller connection and setting are performed in *"Administration→Configuration"* section.

1. Press 🔍 **Search devices** button in the *Rooms* or *Devices* tabs.

2. **Find devices** panel will show up:

3. Type IP-address of the connected controller in **IP-address** box.

> ### *Note:*
>
> Controller IP-address is stated in product certificate, on controller board and on the inner side of product housing.

4. Press **Find** button on **Find devices** panel. The equipment search will start.

5. After the search controller shall appear in the system configuration tree select it and press the **Add** button:

6. The controller appears in the tree on the **Configuration** tab:

7. Select it and click the 🔓 **Activate** button. The controller will be included in the security system.

9.2.2 Parameter description

Registration controller has the following settings:

Devices name. Input box allows typing a descriptive name of the controller. Initially: *"T&A2"*.

Exit from:, Entry to:. These boxes are for state registration controller location in "Rooms" section.

Web-interface access. The tag defines if controller configuration through Web-interface is supported.
- Tag removed. Controller access through Web-interface is not permitted.
- Tag set. Controller access through Web-interface is permitted.

Protection against identifiers handover (Antipass). Dropdown box allows setting controller reaction in case of identifier repeated presentation to the reader. One of the following security methods can be chosen:

- **No** – controller does not trace repeated identifier presentation.
- **Soft** – controller registers **passage** with zonal violations.
- **Hard** – controller registers **passage denial** caused by zonal violations.

Forward direction passage. This tag defines which of the readers is set for entrance and which for exit.

- Tag removed. Left reader is set for entrance and right reader is set for exit.
- Tag set. Right reader is set for entry and left reader is set for exit.

> *Note:*
>
> *"Entry"* and *"Exit"* signs on LCD display do not change at that. Sign text can be changed in **Localization of displayed lines** dropdown menu**.**

Information display time about employee. Input box sets the period of time within the limit of which the controller will be displaying personal information connected with presented identifier on LCD display.

Response period to system server request. Input box sets the period of time within the limit of which the controller waits for the personal information (full name), connected with presented identifier, from the system server. In case it is impossible to receive such information within the set period of time, controller will reflect identifier number on LCD display.

On the **Lines** tab, you can change the text of the inscriptions on the LCD screen**.**

10   FIRMWARE UPDATE

Use *"Firming"* program to update the firmware and to format the **PERCo-Web** system controller memory. You can download the current version on our web-site www.perco.com.

You can also update the firmware and format the memory through the Web-interface of the IP-Stile controller in **Diagnostics** section (Appendix 3, Clause 8).

> *Attention!*
>
> After formatting the controller's memory, you need to reinstall the fonts using the "Firmware" program. Font files are included in the software "Firmware of PERCo controllers". See operations consequence in specification for **PERCo** controllers update.

11   OPERATION

11.1 Power-up

Connect the power supply to the mains with electric parameters as per its documentation.

If necessary, connect to Web-interface of controller via Ethernet according to Section 9 and configure it.

11.2 Controller indication

Sound indication

Controller features a built-in sound piezoceramic radiator, which turns on for 0.2 seconds:

- once at the access card complying with all access criteria presentation;
- twice at other access cards presentation (cards with any kinds of violation or cards, which have not been included in the list).

LCD indication

In the sleep mode controller LCD displays:
- current system time;
- indication of *"entry"* reader and *"exit"* reader.

> ### *Note:*
> The text of the notes and messages displayed on LCD can be changed in the Software. The description in this manual features initial setting values.

Table 3 displays the list of all possible messages that can be shown on LCD at identifier presentation.

Table 3. LCD indication

Indication	Registered events
	Sleep mode.
	"Passage" No violations.

Indication	Registered events
exit ▶ Radek Y.G. Enter 09:08 ◀ entry	*"Passage, violation of TIME"* Violation of time control criterion set in controller parameters.
exit ▶ Radek Y.G. Zone violation: entry 18:30 ◀ entry	*"Passage, violation of ZONING"* *"Passage, violation of TIME and ZONING"* Having "**Antipass**: **soft"** parameter set. Messages are displayed successively, first is shown for 2 seconds, then the second is shown until the end of personalization indication time. Local or global zoning violation has been detected, i.e. repeated entrance or exit from the control zone or the identifier has not been registered at the previous entrance point. With local zoning violation: • If the passage direction displayed in the message **corresponds** with the required passage direction, then **you have forgotten to present a card during your latest passage** in the opposite direction. • If the passage direction displayed in the message **does not correspond** with the required passage direction, then you have **mistakenly presented a card to the reader, not corresponding with the passage direction**. Present a card to another reader. If global zoning is violated, you should go back to the previous passage point and make a correct passage.
exit ▶ Entry not registered. Zone violation ◀ entry	*"Passage not registered, violation of ZONING"* *"Passage not registered, violation of TIME and ZONING"* Same as previous, having **"Antipass"** parameter value set: **"hard"**.
exit ▶ No card in the list ◀ entry	*"Identifier presentation, identifier NOT REGISTERED"* *"Identifier presentation, identifier UNAUTHORIZED"* *"Identifier presentation, identifier from STOP-LIST"* *"Identifier presentation, identifier EXPIRED"* Card is not registered in controller list, card from the STOP-list, card expired etc.

12   TROUBLESHOOTING

The elimination of possible malfunctions listed below is made by the buyer. If the fault persists, we recommend you to contact one of the service centers of **PERCo** company. A list of service centers is given in the Certificate.

12.1 The controller does not work

Controller malfunctions may be caused by:
1. **Loosening of connecting terminal cables fixing in controller board terminal blocks** – tighten the terminal block screws with a screwdriver.
2. **Controller power supply malfunction** – check the power supply.
3. **Malfunction of electronic components**, installed on controller board – the controller should be sent back to the manufacturer for diagnostics.

12.2 Connection breakdown

Possible causes of the malfunction:
1. **Incorrect controller password has been used.** In the Software check correctness of the password used.
2. **Computer malfunctions** (with the Software, with databases, etc.).
   Diagnostics of this malfunction is made by initiating the following command:
   ```
   ping x.x.x.x
   ```
   where `x.x.x.x` – IP-address of the controller.
   If there is connection, you will see the following lines:
   ```
   Answer   from   x.x.x.x:   number   of   bytes=32   time<10mc
   TTL=128
   ```
   If there is no connection (answer), check the correctness of routing sets in your network.
3. **Malfunctions of Ethernet equipment**, HUB located between computer and controller, SWITCH and other network equipment including connection cables.
   Diagnostics of this malfunction is made by initiating the following command:
   ```
   ping x.x.x.x -l 576
   ```
   where `x.x.x.x` – IP-address of the controller.
   If there is connection and the standard minimal packet (576 bytes) is not fragmented, you will see the following lines:
   ```
   Answer   from   x.x.x.x:   number   of   bytes=576   time<10mc
   TTL=128
   ```
   In this case it can be said that IP-packets are not fragmented to the size smaller than 576 bytes and the chosen connection should function correctly.
   If it is impossible to get the positive answer, this means that on the IP-packet route there is a network commutating equipment, fragmenting IP-packets up to the size smaller than 576 bytes. Check the settings of this equipment and, if possible, increase *MTU* size. Usually this parameter is marked as *MaxMTU* or *IPMTU*.
4. **If several variants of commutation are possible**, use this command.
   ```
   ping x.x.x.x -l 576 -t
   ```
   Commutating in different ways, look at the response time, choosing the connection giving the quickest response time.
5. **Controller malfunctions.** Faulty operation of the elements, providing connection via *Ethernet (IEEE 802.3)* interface.

   In order to perform diagnostics of this malfunction, check two indicators, located in *RJ45* output of the *Ethernet* connection:

- *LINK* – connection is made:
  o green indicator ON– controller detects connection to *Ethernet*,
  o green light is OFF – controller does not detect connection to *Ethernet*;
- *ACT* – data exchange
  o yellow light is ON – controller detects data exchange via *Ethernet*,
  o yellow light is OFF– controller does not detect data exchange via *Ethernet*.

If controller does not detect connection to *Ethernet*, connect it to the cable, from which another controller operates. If controller does not detect connection to *Ethernet*, or connection with it cannot be restored, i.e. this controller is to be sent back to the manufacturer for diagnostics.

12.3 Incorrect presentation of LCD messages

The possible causes of incorrect presentation of LCD messages can be:
- Lack of fonts in controller (e.g. after memory formatting). It is required to download the fonts using *"Flasher"* program.
- Violation of configuration parameters. It is necessary to transfer the parameters saved in the Software database.

13   TRANSPORTATION AND STORAGE

Controller in the original package should be transported in **closed freight containers** or other closed type cargo transport units.

The storage of the controller is allowed indoors at ambient temperature from +1°C to +40°C and relative air humidity up to 80% at +25°C.

14   MAINTENANCE

Controller maintenance should be made at least once in 6 months and is to include following operations:
- cleaning controller housing from dust, dirt and foreign objects;
- checking all fixings;
- checking external links connection.

The detected defects should be immediately eliminated.

APPENDIXES

Appendix 1. Events registered by the controller

Event type	Notes
Events, connected with identifier presentation	
Identifier presentation, identifier NOT REGISTERED	The identifier presented has never been transferred to controller, i.e. it has not been given control parameters to this controller.
Identifier presentation, identifier UNAUTHORIZED	The identifier presented has been banned in the controller.
Identifier presentation, identifier from STOP-LIST	The identifier presented has been added to a STOP-list.
Identifier presentation, identifier EXPIRED	The identifier presented has an expired date set in control parameters.
Passage	Event, indicated at the passage registration without any detected violations.
Passage, violation of TIME	The identifier presented does not correspond to the time control criterion set in the parameters.
Passage, violation of ZONING	This controller features "soft" Antipass, while the presented identifier has violated zoning, or "hard" Antipass has been set and local zoning has been violated, i.e. an attempt of a repeated entrance or exit has been made.
Passage, violation of TIME AND ZONING	This is the combination of two reasons: the presented identifier does not correspond to the time control criterion stated in parameters and the zoning has been also violated.
Passage not registered, violation of ZONING	The controller features "hard" Antipass. The identifier presented has violated global zoning.
Passage not registered, violation of TIME and ZONING	This controller features "hard" Antipass. The identifier presented does not correspond to the time control criterion stated in parameters and has violated global zoning.
Events, connected with controller state change	
Energizing	Regular controller power supply energizing or network power recovery.
De-energizing	Regular controller power supply de-energizing or emergency shutdown, caused by network breakdown or accumulator discharge.
Connection breakdown	Disconnection between security system Software and the controller. Software disconnection from the local network.
Connection recovery	Recovery of connection between security system Software and the controller. Connection to the local network.
Event log overflow	Event log overflow appears when there is one clear log event page left in the controller memory. One page can feature 32 events.
Clear event log	Event log is cleared after reading the full event log.

Event type	Notes
Controller restart. *External reset;* *reset as per Watchdog.*	The event appears in case controller decides to process the hardware reset. Controller program reset occurs after built-in Software update, memory formatting or after the first detection of a fatal malfunction.
Malfunction of controller. *DataFlash memory;* *RTC clock;* *I2C bus.*	Fatal malfunction – controller components faulty operation.
Formatting of event memory *event log area;* *card list area;* *configuration setting area;* *program area;* *current settings area.*	Clearing of the corresponding controller memory areas.
Controller testing initiated	Device switch into «Test» mode by command from the Web-interface.
Controller testing finished, no faults detected	Device switch into a sleep mode after self-diagnostics. No fatal faults detected.
Controller testing finished, faults detected	Self-diagnostics finished. Fatal faults detected.

Appendix 2.   Controller connection through PoE-splitter

⚠️ ***Attention!***

Instruction provided refers to the splitters included in supplementary equipment delivery set.

Splitter description

PoE-splitter (hereinafter – *splitter*) is designed for energizing equipment, connected via *Ethernet* network. Splitter operates with any network commutators (hereinafter – *Switch)*, supporting technology of electric power transmission via *PoE* twisted pair wire and compatible with *IEEE 802.3af* standard.

Splitter is designed as a block of electronics in a plastic housing featuring the following outputs:

   Con 1 – output for *Ethernet* cable from *Switch* connection*;*
   Con 2 – output for *Ethernet* controller cable connection;
   Con 3 – power output for controller power cable connection.

Splitter is designed as a block of electronics in a plastic housing featuring the following outputs:
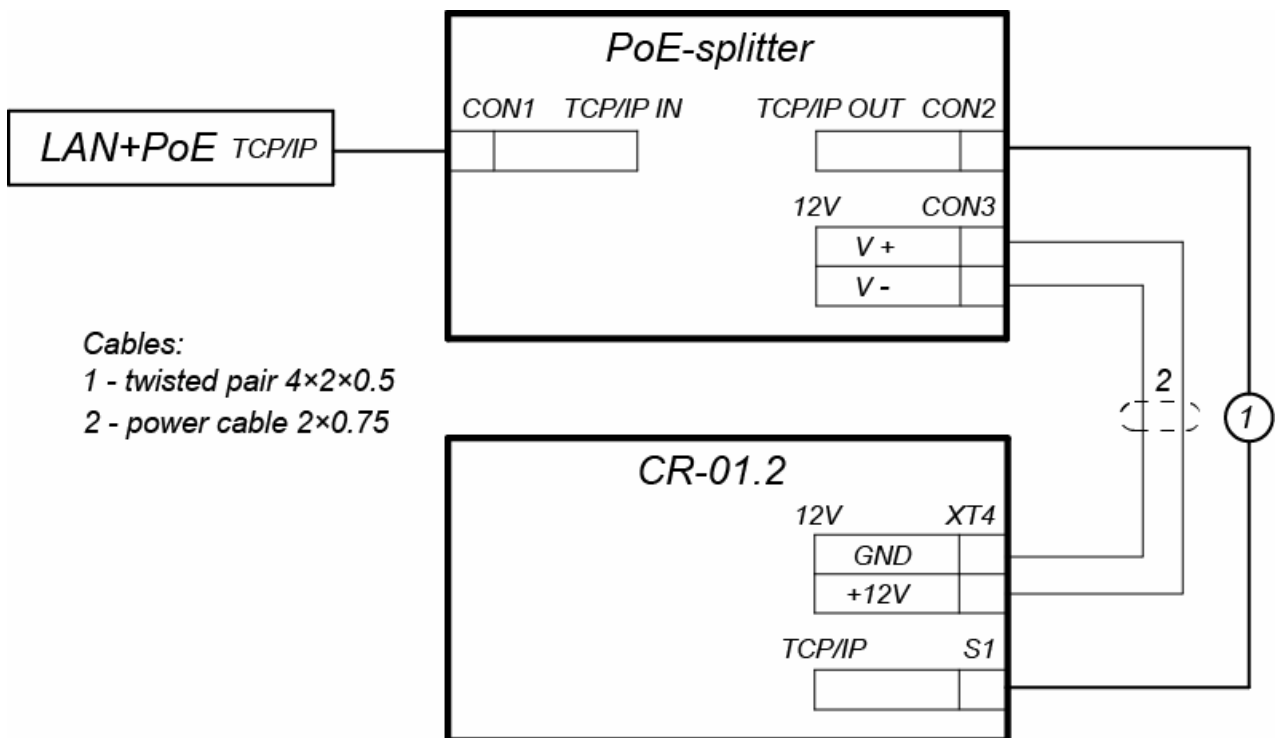

Figure 3. Controller connection scheme through PoE-splitter

Connection sequence

Follow this sequence during controller connection through splitter:

1. Choose splitter installation place. Do not install splitter at more than 2 m distance from the controller.

2. Connect *Ethernet* cable from controller to ***Con2*** output of the splitter.

3. Connect controller power-supply circuits to ***Con3*** output of the splitter. Connection scheme is given in Figure 3 ((attachment plug for connection to the output is included into splitter delivery set).

4. Connect *Ethernet* cable from *Switch* to ***Con1*** output of the splitter.

5. After verification between *Switch* and splitter, controller will be energized.

6. Disconnect *Ethernet* (coming from *Switch*) cable from **Con1** output of the splitter to de-energize controller.

Appendix 3.   CR-01.2 "Licon" Controller Web-interface. User Manual

CONTENTS

1. WEB-INTERFACE OPPORTUNITIES

Using Web-interface without installation of additional software allows performing following steps for the controller and connected devices:

- Change configurations, access password and time of built-in clocks of the controller.
- Configure Settings of readers and format of the card identifiers.
- Record the access card numbers in the controller memory, assign them the rights for arming or disarming.
- Monitor event log of the controller and save them as a file.
- Control the status of the controller and connected devices, monitor the event log.
    - Troubleshoot the controller, format the memory and update the embedded software (except for the parameters and content of the text on the LCD).

> ⚠️ **Attention!**
>
> It is possible only with the Web-interface Select controller configuration and Settings of built-in memory (access cards/events).

> ℹ️ **Note:**
>
> Change of configurations via Web-interface of the controller is not available if the controller is under control of network or local software of **PERCo** systems (you can only monitor the configuration; operations are forbidden). The access to Web-interface is allowed if the software is configured to **"Allow Web-interface"**. It is possible after stopping the operation of the software and stopping the server of **PERCo** system.

2. CONNECTION TO WEB-INTERFACE OF THE CONTROLLER

Connection between the controller and the computer is performed via *Ethernet* interface (IEEE 802.3). Make sure that the computer and the controller are on the same subnet *Ethernet*. It may become necessary to change network settings of the computer, browser settings and to check operation of the network. IP-address of the controller is specified in the certificate and the controller board.

To connect the controller to Web-interface:

1. Open Web-browser (e.g. *Internet Explorer*).

> ℹ️ **Note:**
>
> Web-interface was tested with the Web-browsers: *Microsoft IE* version 10 or higher, *Google Chrome* version 32 or higher, *Mozilla Firefox* version 32 or higher, *Opera* version 30 or higher, *Microsoft Edge* and for *MacOS Apple Safari 9* or higher. If you use other browsers and outdated versions, malfunctions of the Web-interface can appear.

2. Enter in the address bar IP-address of the controller and press the button **Enter** on the keyboard. If necessary, enter the access password to the controller. By default, there is no password. When entering the password, the content of the field **User name** doesn't matter.

    1. After that the main Web-page of the controller interface is opened. At the home page are displayed the model, configuration, network settings of the controller and the version of embedded software. Every time when you open the main page, current data read from the controller are displayed there.
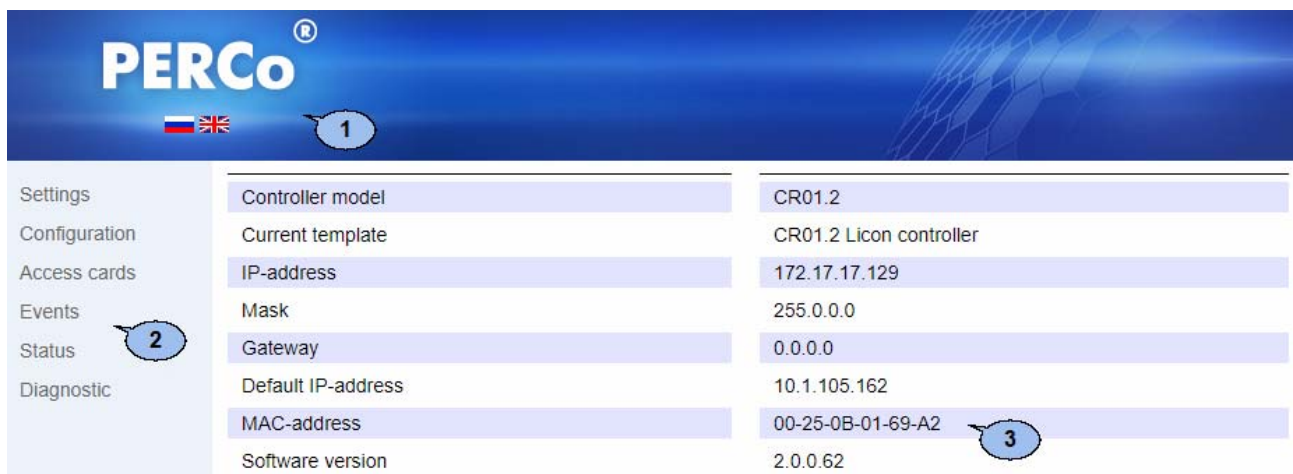
On the page, you can select following:

1. The title bar if he page contains **PERCo** trademark and buttons to select the language of Web-interface. By clicking on the **PERCo** company logo you navigate to the main page from other sections of Web-interface.

2. Sidebar of the Web-interface navigation. The panel has the following structure:

"Settings"	*"Network"*	
	"Password"	
	"Time"	
	"Memory usage"	
"Configuration"	*"Template"*	
	"Edit"	*"Readers"*
		"Card format"
"Access cards"	*"Input"*	
	"List"	
	"Load from file"	
"Events"		
"Status"		
"Diagnostic"		

3. Working area of the page.

3. SETTING

3.1 Change of network setting of the controller

The controller has following configurations by default (they are specified in the certificate of the device and on the labels on the controller):

- MAC-address `00-25-0B-xx-xx-xx`, where `xx` – is a number from `00` to `FE`;
- IP-address `10.x.x.x`, where `x` – is a number from 0 to 254;
- Subnet mask `255.0.0.0`.

To change network settings of the controller (only in user mode, Sect. 8.5 of Operation manual):

1. Click consistently in the Web-interface menu: **Settings → Network**. The page with working area will be opened:

IP-address:	172	. 17	. 17	. 127
Mask:	255	. 0	. 0	. 0
Gateway:	0	. 0	. 0	. 0

Save

2. In the input fields **IP-address:**, **Mask:**, **Gateway:** the new values of network Settings of the controller.

3. Click **Save** button. New network settings will be saved in the controller.

3.2 Setting of the access password of the controller

By default, access password of the controller is not specified. To change or set the new password:

1. Click in the Web-interface menu: **Settings → Password**. The page with working area will be opened:

New password:	••••••••
Confirm password:	••••••••

Save

2. In the **New password:** field enter the new password of the controller, in the **Confirm password:** field enter the password again to confirm the correct input.

3. Click the **Save** button. The new password will be saved in the controller.

3.3 Change the system time of the controller

To change the time:

1. Click in the Web-interface menu: **Settings → Time.** The page with working area will be opened:

Change date:	2	/ 11	/ 17
Change time:	16	: 17	: 42
Synchronize with PC:	☐		

Save

2. In the input fields **Change Date:**, **Change Time:** change the set values.

3. If necessary, put tick **Synchronize with PC:** to synchronize the time and date of the controller with the computer connected to the Web-interface.

4. Click the **Save** button.

3.4 Choice of Settings of memory allocation

By default, the controller memory is allocated to store data up to 50,000 access cards and up to 125,000 events. The user is able to change the memory allocation of the controller in accordance with the controller configuration. Other options of memory allocation:

- 10,000 cards and 760,000 events,
- 20,000 cards and 600,000 events,
- 30,000 cards and 440,000 events,
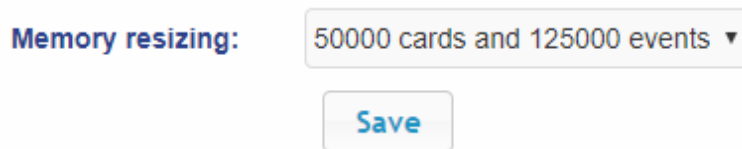- 40,000 cards and 280,000 events.

Note:

In software **PERCo-Web** are supported all these options, but their choice is only available in the Web interface.

To change Settings on the memory allocation of the controller:

1. Click in the Web-interface menu: **Settings → Memory usage**. The page with working area will be opened:

Memory resizing: [50000 cards and 125000 events ▾]

[Save]

2. In dropdown list **Memory resizing:** select one of the variants of the memory allocation.

3. Click the **Save** button.

4. CONFIGURATION

4.1 The choice of the controller configuration

There is only one configuration template **"CR01.2 Licon controller"** available for *CR-01.2* controller. By default, controller is configured according to this template.

Attention!

If you change the configuration, the previous configuration and at the internal responses of all resources of the controller will be deleted. In the new template for the resources of the controller is installed default configuration. The list of downloaded access cards, related user information, rights and parameters of access remain the same.

To change the configuration of the controller:

1. Click in the Web-interface menu: **"Configuration" → "Template"**. The page with working area will be opened.

2. Press **"CR01.2 Licon Controller"** template.

3. In the opened window click **"Continue"**. The controller configuration will be changed. Change the configuration template can take 30 seconds.

4.2 Configuration of the Settings of the controller resources

4.2.1 Readers

There are only two inbuilt readers in controller configuration template. Adding extra reader is impossible. In the reader settings you can only change the direction of the passage.

Note:

By default, for readers in-built into controller there are set passage directions of "straight" configuration – left reader (#1) for entrance registration, right one (#2) –for exit registration. If it's necessary to interchange them, their directions and relative signs on LCD should also be changed. Signs change is possible only within **PERCo** networking software.

To configure the Settings of the reader:

1. Click consistently in the Web-interface menu: **Configuration → Edit → Readers**. The page with working area will be opened:

Number	Operating device	Direction
Reader 1	1	1
Reader 2	1	2

2. Click in the working area of the page on the line with the name of necessary reader. The window **Reader** (**number**) will be opened:

Reader 1

Operating device: 1

Direction: 1

Delete   Save   Cancel

3. In the opened window make the necessary changes of the Settings:
    - selector **Direction:** sets the direction of the OD to which the reader is attached (direction #1 is set as "Input" by default, and direction # 2 as "Output").

4. Click the **Save** button. The window **Reader (number)** will be closed, changed Settings will be passed to the controller.

5. To exit from the window **Reader (number)** without saving changes, click the button **Cancel**. Also, it is possible to close the window using the **Close** button [×].

Attention!

In order to avoid incorrect device operation do not set the same passage direction for both in-built readers and do not remove them from the list!

If necessary, it is possible to restore to factory default settings by resetting configuration template (see Clause 4.1).

4.2.2 The reading format of the card identifiers

Attention!

- Change of this parameter when you have already entered the access control cards, results in the passage on these cards will be impossible.
- When connecting to the controller working under software of **PERCo** systems, the current formant may not be shown (nothing is selected from the formats). In this case to change the reading format of card identifiers is **PROHIBITED**.

To select the reading format of card identifiers:
1. Click consistently in the Web-interface menu: **Configuration → Edit → Card format**. The page with working area will be opened:

Card reader operating mode: Wiegand 26 ▾

Save

2. Using the drop-down list **Card reader operating mode:** select one of offered formats and click the **Save** button.

5. ACCESS CARDS

5.1.   Entering of the cards identifiers

The main list of the cards is the list of identifiers of access cards brought into controller memory. This list is accessed through the OD.

To enter the card identifiers:
1. Click consistently in the Web-interface menu: **Access cards → Enter**. The page with working area will be opened:

Switch on card reader input   Manual input

Number type   Wiegand 26 ▾

Add cards manually or using card reader

2. If necessary, use the dropdown list in the heading of the **Number type** column, select the format to display the cards identifiers.

> ### Note:
>
> The display format is not the format of reading of the card identifiers (set in the **Configuration** section, Clause 4.2.2), when you change the display format, the format of reading does not change.

3. Entering of the card identifiers from the reader:
   • In the working area of the page click the **Switch on card reader input** button.
   • Present your card to one of the readers included in the controller configuration. The card identifier will appear in the working area of the page. Also, you will see the buttons **Save** and **Load to emergency list.**
   • If necessary, similarly add other cards.

Switch off card reader input   Manual input

Number type   Wiegand 26 ▾

139,46934

48,22984

37,46820

2,42291

Save   Load to emergency list

- In the working area of the page click the **Switch off card reader input** button.

4. <u>Entering of the card identifiers manually</u>:

- In the working area of the page click the M**anual input** button. The window C**ard input** will be opened:

- In the **Card number:** field enter the card identifier. Click the **Save** button. The window C**ard input** is closed; the card identifier appears in the working area of the page.

- If necessary, similarly, add the other cards.

5. <u>To transfer the entered card identifiers to the controller,</u> click the **Save** button in the working area of the page. The identifiers will be transferred to the main list of the cards in section **List**.

5.2.   The list of stored cards

To work with the list of the cards stored previously in the controller's memory:

1. Click consistently in the Web-interface menu: **Access cards → List**. The page with working area will be opened:

Number Wiegand 26	Valid till	Type	Full name
1,19	18-07-2017 18:00:59	Temporary	Kravtschuk Sergey
56,15714	24-07-2019	Permanent	Savitskiy A.P.
63,45357	25-07-2019	Permanent	Radek Y. G.
68,17161	24-07-2019	Permanent	Mullermann Ernst
190,50942	25-07-2019	Permanent	Gritovt Peter
243,50788	18-07-2017 18:00:59	Temporary	Visitor #1
2,42291	18-07-2017 18:00:59	Temporary	Visitor #2
37,46820	31-12-2099	Permanent	Gagarin A.
48,22984	31-12-2099	Permanent	Traspodnic Hans
139,46934	31-12-2099	Permanent	Qualthu Muhamet Oridy

Save file   Clear log

2. If necessary, use the dropdown list in the heading of the **Number** column, select the format to display the cards identifiers.

Note:

The display format is not the format of reading of the card identifiers (set in the **Configuration** section, Clause 4.2.2), when you change the display format, the format of reading does not change.

3. To save the cards to a file, click the **Save file** button. The cards will be saved in the file `cards.bin`, which can be used as a backup card list.

4. To remove all the cards from the controller memory, click the **Clear log** button.

5. To change the Settings, select one of the cards in the working area of the page. The window of the identifier of the selected card opens:

6. If necessary, in the opened window on the **Essential** tab change the card Settings.

7. Go to the **Access rights** tab. It is possible to set access rights for this card. To do this, select the number of the set using the drop-down list **Card rights number** and configure the Settings:

⚠️ *Attention!*

Each card has 2 sets of access rights which in the section **"Configuration"** are assigned to the readers #1 and #2 (Clause 4.2.1). When you enter the cards in the controller list, by default they are granted all access rights (both sets for each card have the status **"Unblocked"**).

8. To delete the card, click the **Delete** button at the bottom part of the window.

9. To save changed Settings of the card, click the **Save** button. The window will be closed, changed Settings will be passed to the controller.

The Settings of the set of access rights correspond to similar Settings in network software of *PERCo* systems.

⚠️ *Attention!*

Setting of Settings of time access criteria via the controller is possible only in network software of *PERCo* systems. In the Web-interface is only possible to change the time criterion (time zone, weekly schedule, flexible daily schedule, flexible weekly schedule) and transition from one set of time Settings to another set by changing his number. The number of time criterion corresponds to order number of the set of Settings of time criterion in the network software.

5.3. Loading the identifiers from a file

⚠️ *Attention!*

When loading the list of cards from the file to the controller, previously loaded cards are deleted automatically from the controller memory.

The list of the cards can be loaded only from the file `cards.bin`, created via Web-interface of the controller earlier. To download the numbers of the card from a text file:

1. Click consistently in the Web-interface menu: **Access cards → Load from file.** The page with working area will be opened:

   | Browse... | File not selected. | Load |

2. Click the **Browse…** button. In the opened window of the Explorer specify location and name of the file with the card list and click the **Open** button. The explorer window will be closed; the file name will be indicated in the field near the **Browse…** button.

3. Click the **Load** button. The window **Progress** will be opened containing information about the boot process.

 | Progress | | ✖ |
   | --- | --- | --- |
   | **Date** | **Message** | |
   | 10-11-2017 13:41:17 | Card load | |
   | 10-11-2017 13:41:17 | Completed | |

6. EVENTS

To view the event log of the registration of the controller:

1. Click in the Web-interface menu: **Events**. The page with working area will be opened:

	Filter

Date	**Event**
27/04/18 15:09:59	Connection reactivation
27/04/18 15:09:56	Switch on the controller
27/04/18 15:09:55	Switch off the controller

   | Save | Clear | | << First | < Earlier | Later > | Last >> |

2. By default, all events stored in the controller memory are displayed, by 20 events on the page. To move through the pages of the event, use the buttons located in the lower part of the working area. The events in the working area of the page are displayed in reverse chronological order.

3. There is possibility of selection in the report of events by categories and time. To do this, click the **Filter** button, the window **Filter** will be opened:
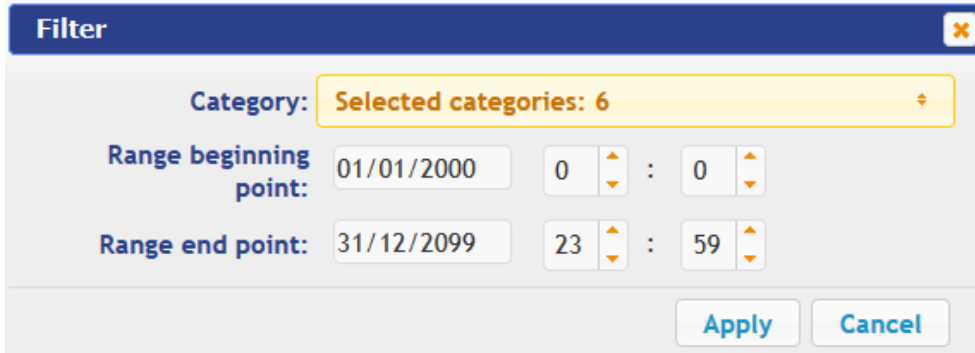
4. In the dropdown list **Selected categories: [number]** put ticks the event categories which should be reported. Following categories of events are available:
   - **ID Card access**
   - **Guard zone status change**
   - **Guard zone resource state change**
   - **Change input/output state change**
   - **Access without ID Card**
   - **Functioning**

5. Use the fields **Range beginning point** and **Range end point** to set the period of the report.

6. Click the **Apply** button to apply the filter, click the **Cancel** button to cancel any made changes. The window **Filter** closes, the report will display the events in accordance with the filter settings.

7. To save the events to a file, click the **Save** button at the bottom part of working area of the page. The events will be saved in the file `events.txt`.

8. To delete all events from the controller memory, click the **Clear** button at the bottom part of working area of the page.

7. STATUS

To view the controller status and status of all his resources click in the Web-interface menu **Status.** The page with working area will be opened:

8. DIAGNOSTICS

For diagnostics and maintenance of the controller:

1. Click in the Web-interface menu: **Diagnostic.** The page with working area will be opened:

Diagnostics (50 min):	Start
Diagnostics with formatting (15 min):	Start
Formatting (2 min):	Start
Software update:	Browse... File not selected. Update

2. To start testing the status of the controller hardware click the **Start** button in the line **Diagnostics (50 min):**. In the confirmation window click **OK**.

> ⚠️ ***Attention!***
> When testing the controller, the event log is automatically cleared.

3. For diagnostic purposes of the controller with the previous formatting, click the **Start** button in the line **Diagnostics formatting (15 min):**.

4. To start formatting the internal memory of the controller, click the **Start** button in the line **Format (2 min):**. In the confirmation window click **OK**.

> ⚠️ ***Attention!***
> During controller memory formatting all information about configuration, access cards, time and space zones, controller password and log events disappears automatically. Information about font for signs on LCD also disappears and it's only possible to upload them again by using "Updater" programme (see Operating Manual, Section 9.2).

5. To update the controller software (firmware), indicate the location of the software file using the **Browse** button and click the **Update** button.

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