



Ethernet modules *E10* and *E10C*

(firmware versions E10 v121018 and E10C v121116 or higher)

User manual

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Safety requirements

Please read this manual carefully before using the security modules *E10* and *E10C*.

Security modules *E10* and *E10C* should be installed and maintained by qualified personnel, having specific knowledge regarding the functioning of GSM devices and safety requirements. The device must be disconnected from external power supply source before starting device installation.

Modules *E10* and *E10C* should be mounted in places with restricted access and in safe distance from any sensitive electronic equipment. The device is not resistant to mechanical effects, dampness and hazardous chemical environment.

Liability restrictions

- When buying the Device, the Buyer agrees that the Device is a part of a security system of premises, which sends messages about security system status. The Device, when installed, does not diminish the probability of burglary, fire, intrusion or other breach of premises.
- When buying the Device, the Buyer agrees that the Device supplied by UAB "TRIKDIS" fully meets his requirements for intended use.
- UAB "TRIKDIS" provides no guarantees that the Device shall function as declared if the Device is installed and used not according to its original purpose, user manual and relevant electronic and technical conditions.
- UAB "TRIKDIS" is in no way associated with GSM/GPRS/Internet service providers (operators), thus UAB "TRIKDIS" is in no way responsible for any defects in Device operation if they have occurred because of the loss of GSM/GPRS/Internet connection, or because of other defects in the service provider network.
- UAB "TRIKDIS" has no control and is not responsible for the prices and marketing of network services provided by the GSM/GPRS/Internet service providers.
- User manual of the Device can contain technical inaccuracies, grammatical or typographical errors. UAB "TRIKDIS" reserves the right to correct, update and/or change information in the installation manual.

Ethernet modules *E10* and *E10C*

Ethernet modules *E10* and *E10C* are designed to transmit messages from security control panel at a secured object to a monitoring station through Internet connection.

The module *E10* is applied for sending of *DSC*, *Pyronix*, *Caddx* control panels data bus signals and *Paradox*, *Secolink* control panels *Serial* output signals.

The module *E10C* is applied for sending messages of connected security panel when its PGM output state changes.

- Messages are transmitted to one IP address of monitoring station by TCP/IP or UDP/IP protocol;
- In case of communication failure with the main IP address, it switches transmitting of messages to backup IP address;
- Data transmission contains information in Contact ID codes;
- Two access levels for setting of operating parameters;
- Setting of operating parameters is implemented with the software *Econfig* while connected via USB or Internet connection.

Description of device operation

Module *E10* is compatible with control panels of five manufacturers and interfaces C11, C14, C15 and CZ6. When connected to a *DSC*, *Caddx*, *Pyronix* control panel data bus or *Paradox*, *SecoLink* control panel *Serial* output, or to any of the supported interfaces, the module receives its messages and transmits them to a specified IP address or domain of the monitoring station IP receiver. If a message fails to be transmitted to the IP receiver, the module *E10* will send it to backup IP address or domain of backup IP receiver.

When module *E10C* is connected to PGM outputs of control panel, it will send messages about state changing of external circuits connected to *IN1-IN4* inputs. Messages are transmitted to a specified IP address or domain of the monitoring station IP receiver. If a message fails to be transmitted to the IP receiver, the module *E10C* will send it to backup IP address or domain of backup IP receiver.

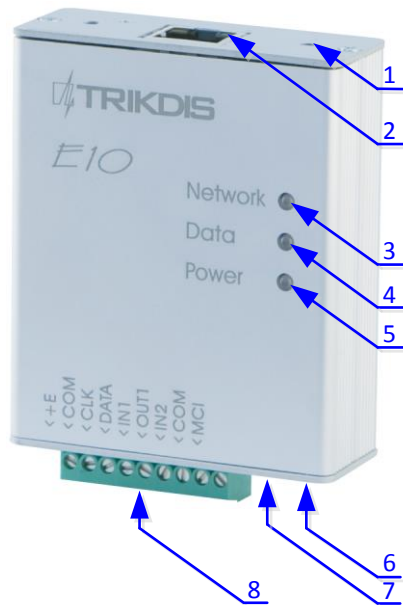
IP receiver of the monitoring station monitors connection with modules *E10* and *E10C* by periodically receiving *PING* signals of the modules.

The state of PGM output *OUT1* of the modules *E10* and *E10C* can change after particular event occurs, for example: Internet connection is lost.

The use of interface

Interface	Description
C11	Receives DTMF tone messages coded in Contact ID protocol of security panel telephone communicator and sends them to transmitter <i>E10</i> .
C14	Receives DTMF tone messages coded in Contact ID protocol of security panel telephone communicator and sends them to transmitter <i>E10</i> . In addition, landline can be wired to interface. In this case the interface enables the security control panel reporting to monitoring station through two different communication channels. This interface enables the use of one channel as main and the second one as backup.
C15	Receives data from data bus of BOLID C2000 alarm control panel and sends it coded in Contact ID protocol to transmitter <i>E10</i> .
CZ6	Expands transmitter <i>E10</i> inputs IN number up to 6 EOL=2,2 kΩ type.

Module overview



- 1 - Holes to fasten the module (2 x M3)
- 2 - Network socket RJ45
- 3 - Indicator "Network"
- 4 - Indicator "Data"
- 5 - Indicator "Power"
- 6 - USB socket
- 7 - Switch "Reset"
- 8 - Terminal block

Terminal block description

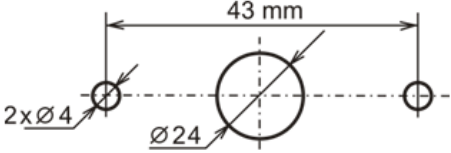
Module E10 terminals	Purpose
+E	+12V power supply terminal
COM	Common ground terminal
CLK	Synchronizing signal terminal
DATA	Data signal terminal
IN1	1st input terminal for connection of external circuits (type NC/NO/EOL=2.2 kΩ can be set)
OUT1	Output terminal (OC type)
IN2	2nd input terminal for connection of external circuits (type NC/NO/EOL=2.2 kΩ can be set)
COM	Common ground terminal
MCI	Provided for future use

Module E10C terminals	Purpose
+E	+12V power supply terminal
COM	Common ground terminal
IN1	1st input terminal for connection of external circuits (type NC/NO/EOL=2.2 kΩ can be set)
IN2	2nd input terminal for connection of external circuits (type NC/NO/EOL=2.2 kΩ can be set)
IN3	3rd input terminal for connection of external circuits (type NC/NO/EOL=2.2 kΩ can be set)
IN4	4th input terminal for connection of external circuits (type NC/NO/EOL=2.2 kΩ can be set)
OUT1	Output terminal (OC type)
COM	Common ground terminal
MCI	Provided for future use

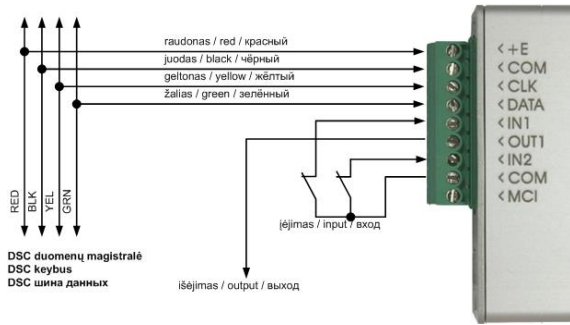
Light indication

LED	Operation	Description
"Network" displays the status of connection to the Internet	Green ON	Module is connected to the Internet
	Yellow ON	TCP/IP session is open
"Data" displays data transfer	Green ON	Unsent messages present
	Red ON	Messages cannot be sent
	Green flashing	Messages are being received from the control panel
"Power" displays power supply status and the functioning of the microprocessor	Green flashing	Power supply is sufficient,
	Yellow flashing	Power supply is not sufficient ($\leq 11,5$ V),

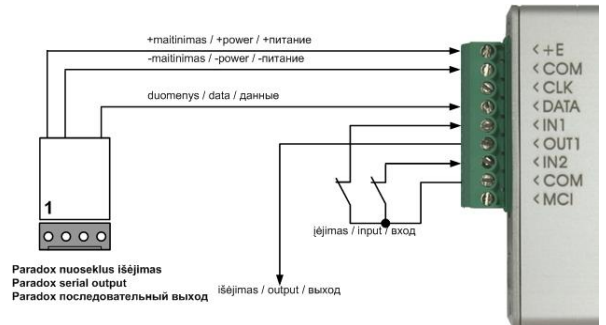
Module installation

Actions	Notes
1. Set the operating parameters of module.	Follow information in chapter Setting of operating parameters .
2. Fasten the module in the control panel metal casing by using M3x6 screws or an adhesive fastening tape.	<p>The position and dimensions of holes to be drilled in the casing for fastening the module:</p> 
3. According to wiring diagrams, connect the transmitter to external equipment.	See chapter Wiring diagrams for wiring to control panels. Wiring to the interfaces is described in manual of particular interface.
4. Connect LAN cable.	Connected network must not restrict module operation.
5. Turn on the system power supply.	
6. According to light indication evaluate if the module is properly connected to the network.	Indicator Network must illuminate green.
7. Check if the module sends messages according to its configuration.	The message must be received at the specified IP address.

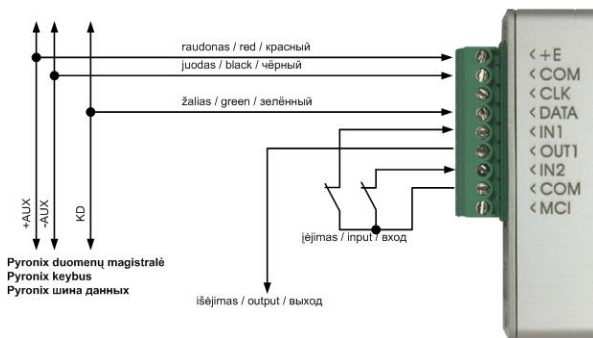
Wiring diagrams



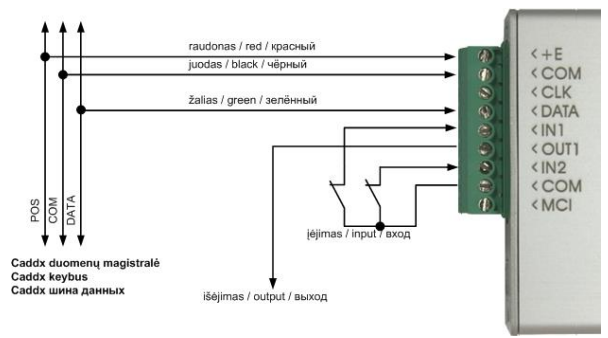
Module E10 wiring diagram to DSC Power Series control panels: PC1616, PC1832, PC1864 PC585, PC1565, PC5020.



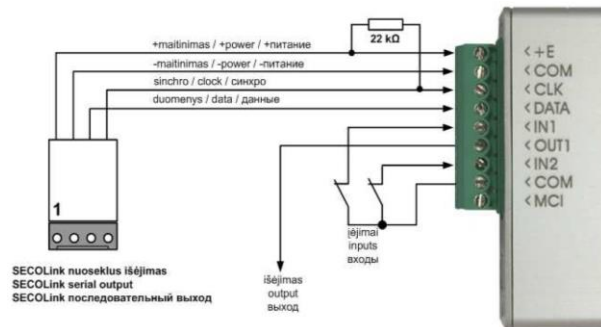
Module E10 wiring diagram to Paradox control panels: SPECTRA SP5500, SP6000, SP7000, 1727, 1728, 1738, MAGELLAN MG5000, MG5050, DIGI PLEX EVO48, EVO192, EVO96, NE96, ESPRIT E55, 728ULT, 738ULT. CRP2 cable is needed.



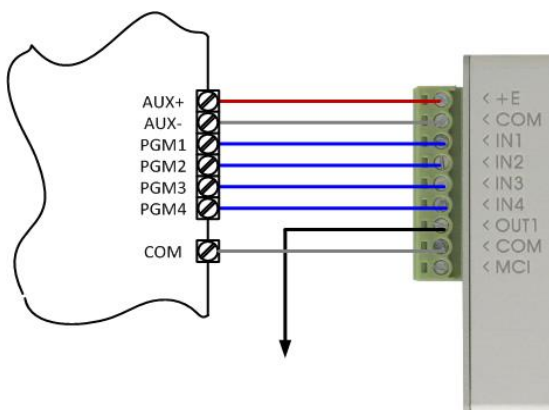
Module E10 wiring diagram to Pyronix Matrix Series control panels: MATRIX 424, MATRIX 832, MATRIX 832+, MATRIX 6, MATRIX 816.



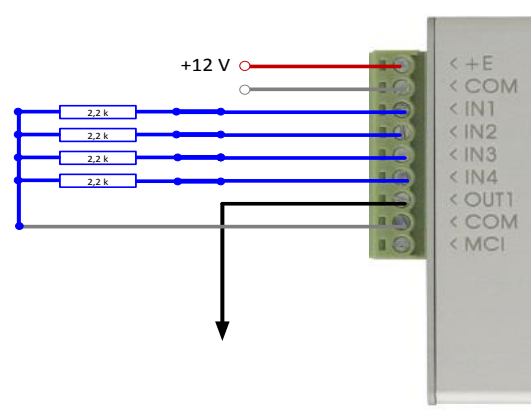
Module E10 wiring diagram to Caddx control panels: NX-4, NX-6, NX-8.



Module E10 wiring diagram to SECOLink PAS832 control panel. CRP3 cable is needed.



Module E10C wiring diagram to control panel. Input type set as NO or NC.



Module E10C wiring diagram. Input type set as EOL=2,2 kΩ.

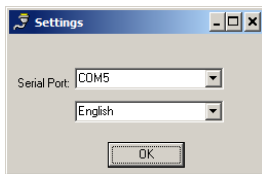
Setting of operating parameters

Operating parameters of the modules *E10* and *E10C* can be set with software *Econfig* (v121116 or higher version). The software is available for download on website www.trikdis.lt. Firmware versions of the modules has to be E10 v121018 and E10C v121116 or higher versions.

1. Connect the module *E10* to a computer USB port by using a USB cable. Computer must have the USB driver installed.

USB driver installation: If the module is connected to a computer for the first time, MS Windows OS should open the window **Found New Hardware Wizard** for installing USB drivers. Download the USB driver file *USB_COM.inf* for MS Windows OS from the website www.trikdis.lt. In the wizard window select the function **Yes, this time only** and press the button **Next**. When the window **Please choose your search and installation options** opens, press the button **Browse** and select the place where the file *USB_COM.inf* has been saved. Follow the remaining wizard instructions to finish the USB driver installation.

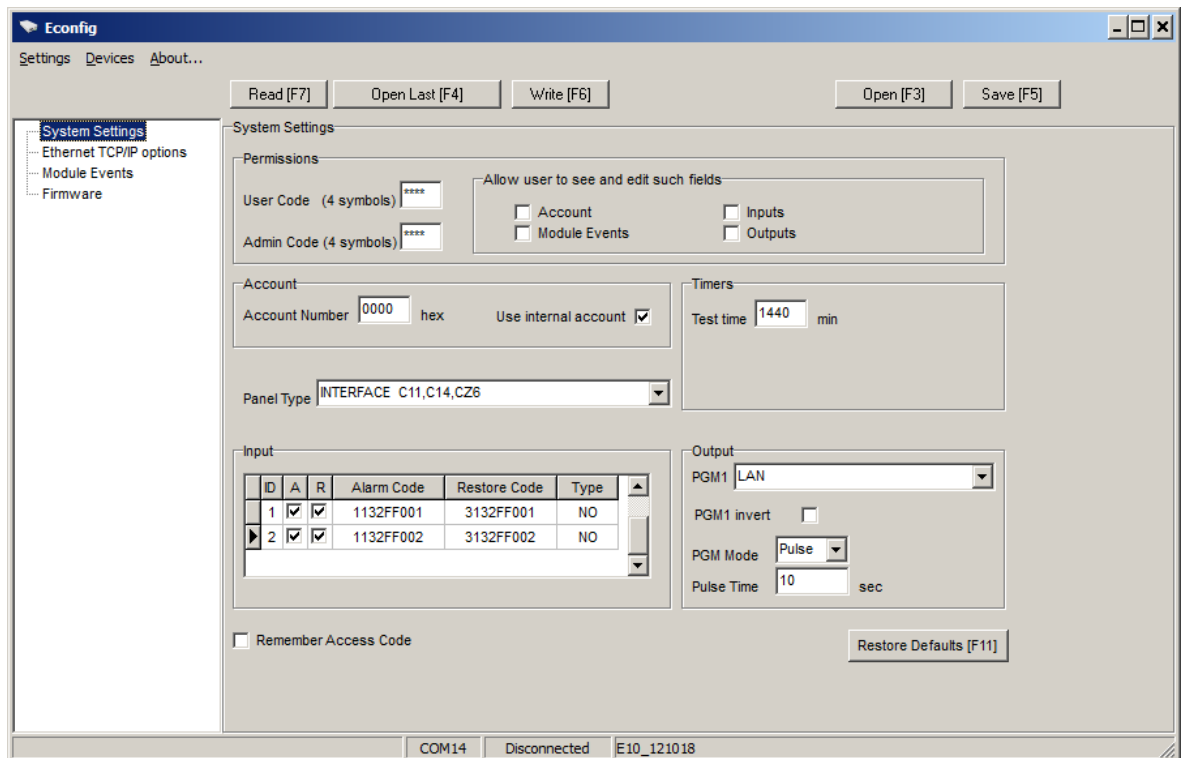
2. Start the *Econfig* software.



3. Choose the command **Settings** in the menu bar and select the port to which the module is connected in the **Serial port** list. Press the button **OK**.

Note: specific port will appear only when the module is connected and USB driver is installed correctly.

4. Choose the command **Devices** in the menu bar and select **E10** or **E10C** depending on which module is connected to a computer.
5. Press the button **Read [F7]** for the operating parameters set in the module to be read. If Access code request window opens, enter your personal access code and click its button **OK**. The previously set parameters will be displayed in configuration software windows and information about the connected module will be displayed in its status bar.
6. Choose the directory **System Settings** and set the following parameters:



Admin code

Section for entering an administrator code (default 1234). When connected using an *Administrator* code, all module parameters can be changed and access to parameter change for persons connecting with the *User* code can be restricted or allowed by marking **Allow user to see and edit fields** fields.

User Code

Section for entering a user code. When connected by using a *User* code, only those module parameters can be changed, which were allowed to be changed by the administrator.

Account Number

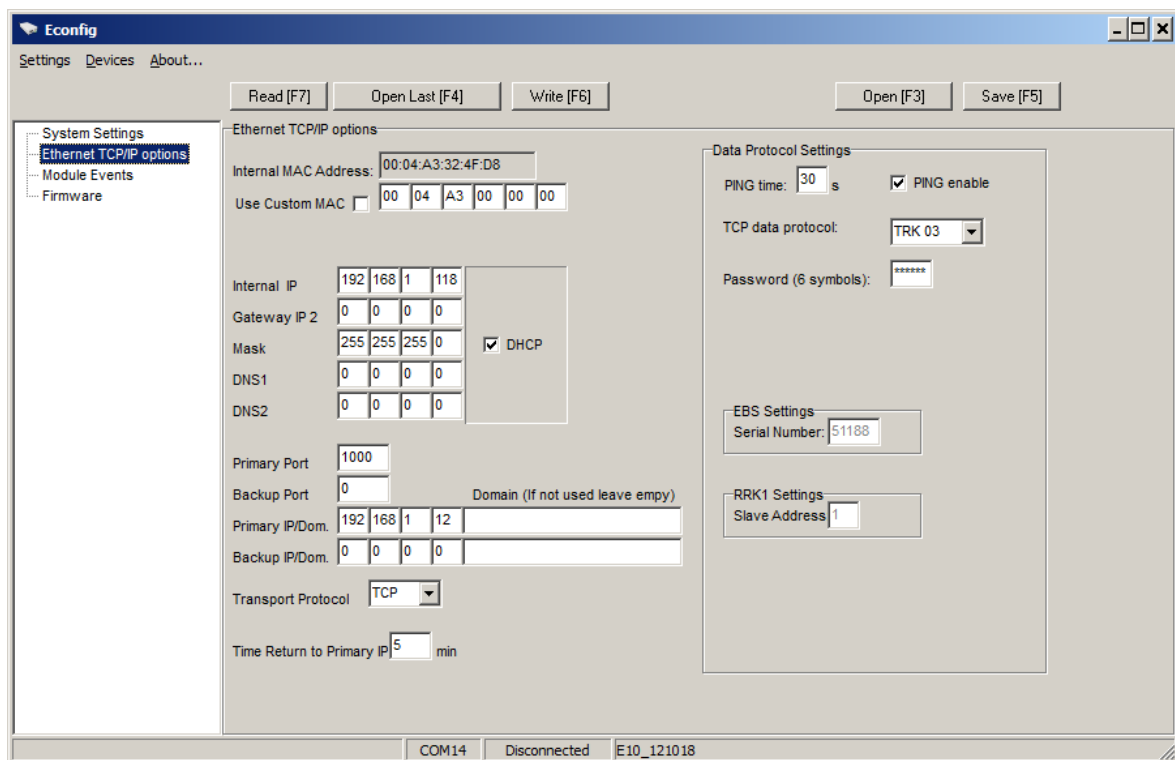
Section for entering a 4-digit module identification code.

Use internal account

Select this checkbox if transmitted messages from the security control panel must contain its identification number.

- Panel Type** Select the security control panel type, which is connected to the module *E10*. If interface *C11*, *C14* or *CZ6* is connected to the module, select the **INTERFACE C11, C14, CZ6**.
- Test time** Periodic test messages will be sent according to a time interval set in this section.
- Input** After break of external circuit of input *IN*, a message will be sent with an **Alarm Code**, and when the circuit is restored – with a **Restore Code**.
- A and R** By selecting these checkboxes it can be chosen if messages about breaching external circuits of inputs *IN* (**A**) and their restoring (**R**) should be sent.
- Type** Section for selecting the desirable type of external circuits of inputs *IN*. Available types NC, NO or EOL=2.2 kΩ.
- Output** Output *OUT1* state will be inverted after particular event occurs which type can be set in the list **PGM1**. When the option **LAN** is selected then the output state will change after losing internet connection; when the option **Communication trouble** is selected then the output state will change after losing connection with IP receiver. If there is selected the option **Pulse** in the list **PGM Mode**, the output state will change for the time which duration can be specified in the section **Pulse time**.

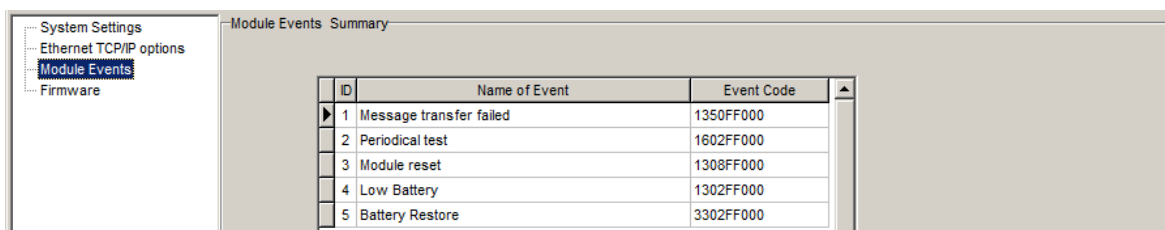
7. Choose the directory **Ethernet TCP/IP options** and set the following parameters for module connecting with the monitoring station:



- Internal MAC Address** A unique module physical address. It can be changed by selecting the checkbox **Use Custom MAC** and entering desired values to the appropriate fields.
- DHCP** When this checkbox is selected, module registration in the network will be done automatically. If automatic registration is unsuccessful, enter **Internal IP** address, **Gateway IP 2** address and subnet **Mask** manually.
- Primary Port** Section for entering the port number of IP receiver at monitoring station. If a backup IP receiver exists, enter its port number in the section **Backup Port**.
- Primary IP** Section for entering the IP address of the monitoring station IP receiver. If a backup IP address exists, enter its value in the section **Backup IP**.
- Transport Protocol** List for setting transport protocol TCP/IP or UDP/IP for messages to be transmitted.
- Time Return to Primary IP** This section is used when both primary and backup IP addresses are set. The duration of time should be entered for how long the module will send messages to the backup IP address when primary communication is failed.
- PING time** The module sends periodic **PING** signals for Internet connection to be managed. Enter desirable time period and mark the checkbox **PING enable**.
- TCP data protocol** List for setting an encryption protocol for messages to be sent to the monitoring station.
- Password** Section for entering an encryption password for messages sent to the monitoring station. This password must be identical to the decryption password entered in IP receiver.

IP address, port number, network protocol, message encryption protocol and password and other parameters should be provided by the administrator of the monitoring station.

- In the directory **Module Events** a list of events is given, after occurring of the event the module will send messages with codes in Contact ID format to the monitoring station:



Event	CID code	Description
Message transfer failed	1350FF000	Message transfer error, network problems
Periodical test	1602FF000	Periodic module <i>Test</i> message
Module reset	1308FF000	Module operation has been restarted
Low Battery	1302FF000	Module power supply voltage is lower than 11,5 V
Battery Restore	3302FF000	Module power supply voltage has returned to 12,6 V

- Press the button **Write** and values which were entered in fields of software *Econfig* will be transferred to the module *E10*. Unplug the USB cable from the USB socket.

Note: Values entered in *Econfig* windows can be saved in computer by pressing the button **Save [F5]**. A file with an extension *.tcfg* will be created. It can be used later as a template to configure other modules.

Updating module firmware version

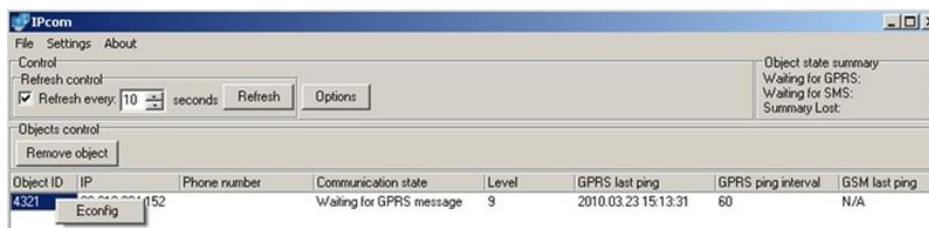
When the manufacturer adds new features to the module *E10* or *E10C*, firmware of the previously bought module can be updated:

- Download the latest *Econfig_xxx.exe* file from the website www.trikdis.lt and install it on a computer.
- Connect the module *E10* or *E10C* to the computer with USB cable. Start the software *Econfig* and select the folder **Firmware** and press the button **Browse**. In a newly opened window select the file *E10.enc* and press the button **Open**.
- Press the button **Start FW Update**. Updating process starts by pushing micro switch **Reset** (see [Module overview](#)) on the module. After **Updating process** bar completely fills up push the micro switch **Reset** one more time on.
- Press the button **Read [F7]**. New firmware version will be displayed in the status bar of the software *Econfig*.
- After firmware update parameters of the module are restored to default (factory) settings. Module parameters must be set again according to the instructions given in the chapter **Setting of operating parameters**.
- Unplug the USB cable.

Setting of operating parameters remotely

To change settings or update firmware of the modules E10 and E10C remotely *Econfig* software has to be opened in *IPcom* software environment.

1. Open the window of *IPcom*. Select ID number [Object ID] of the module which will be configured and right-mouse click it on.



2. Click start button of software *Econfig* which appears beside the object ID.
3. After opening software *Econfig* window click the button **Read** on. If Internet connection with the module is, the software *Econfig* will display the state **Connected** of this connection in its status bar.
4. Operation parameters of the module *E10* or *E10C* are configured in the same way as the module connected with USB cable (see [Setting of operating parameters](#)).
5. If you choose the folder **Firmware** of the software *Econfig* you'll be able to update the module with a new firmware version. Just click on the button **Browse**. Select the file *E10_Remote.enc* or *E10C_Remote.enc* and click the button **Open**. Then click the button **Start FW Update** on. After **Updating process** bar completely fills up click the button **Read [F7]**. The firmware version of the module will be displayed in status bar of software *Econfig*.
6. After entering desirable operating parameters into boxes of software *Econfig* click the button **Write** for storing configuration in memory of the module. After closing the software *Econfig*, Internet connection session with the module will be cancelled too.

Technical parameters

Power supply voltage	DC 12,6 ± 3 V
Current consumption	120 mA (stand-by) Up to 250 mA (transmitting)
Ethernet connection	IEEE802.3, 10 Base-T, RJ45 socket
Data pack content	Contact ID format codes
Memory	Up to 100 messages
Inputs	2, NC/NO/EOL-2,2 kΩ type (4 – E10C)
Output	1 OC type, commutating voltage up to 30 V and current up to 500 mA
Configuration	Through the USB port with software <i>Econfig</i>
Operating environment	From -10 °C to 50 °C, with relative air humidity 80% when +20 °C
Dimensions	65 x 79 x 25 mm

Package content

Module E10 (E10C)	1 pc.
User manual	1 pc.
Two-sided adhesive tape (10 cm)	1 pc.