RT4-5gc object module
V.3.0

User manual

2013

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General information

RT4-5gc object device is designed for collecting information from control panel, it's processing and transmitting it to the Central Unit and/or 3 registered mobile phones. Device has 5 general purpose inputs, power supply control input, 2 outputs that can be used either as PGM or as manually activated outputs and communication port that is used for connecting various security panels.

Since version 3.0 **RT4-5gc** has 7* switchable working modes: 1 – working with Serial BUS (same as RT4-5se v.2.0), 2 – control panel mode, 3 - working with Esprit control panels, 4 - working with Magellan control panels, 5 - working with one- or two-partitioned DSC control panels, using Key-BUS protocol, 5 - working with multipartitioned (more than two partitions) DSC control panels, using Key-BUS protocol, 7 - working with Digiplex control panels.

** Number of working modes may be enhanced in the future.*

Device preferences

- Ability to transmit information via SMS and GPRS;
- 63 event log;
- USB port for module settings programming;
- GSM-modem state, signal strengths and data transmitting indication;
- 5 general purpose inputs;
- power supply control input;
- 2 manually activated/PGM outputs;
- Communication port for connecting to various security pannels;
- Ability to work in control panel mode;
- Supports up to 3 users + installer;
- Two switchable message modes: "User" and "Modem";
- Periodic channel test;

Technical information

GSM-protocol	E-GSM 900/1800/GPRS
GSM-modem	Quectel M12
SIM interface	3 and 1,8 V
Number of users	3 + installer
Output capacity	1A
Maximum voltage on closed output	30V
Maximum voltage on closed inputs	30V
Supply voltage	11 – 30V
Input current (at 12V supply)	15mA
Input current in GPRS mode	150mA
Overall dimensions, mm	160x70x25

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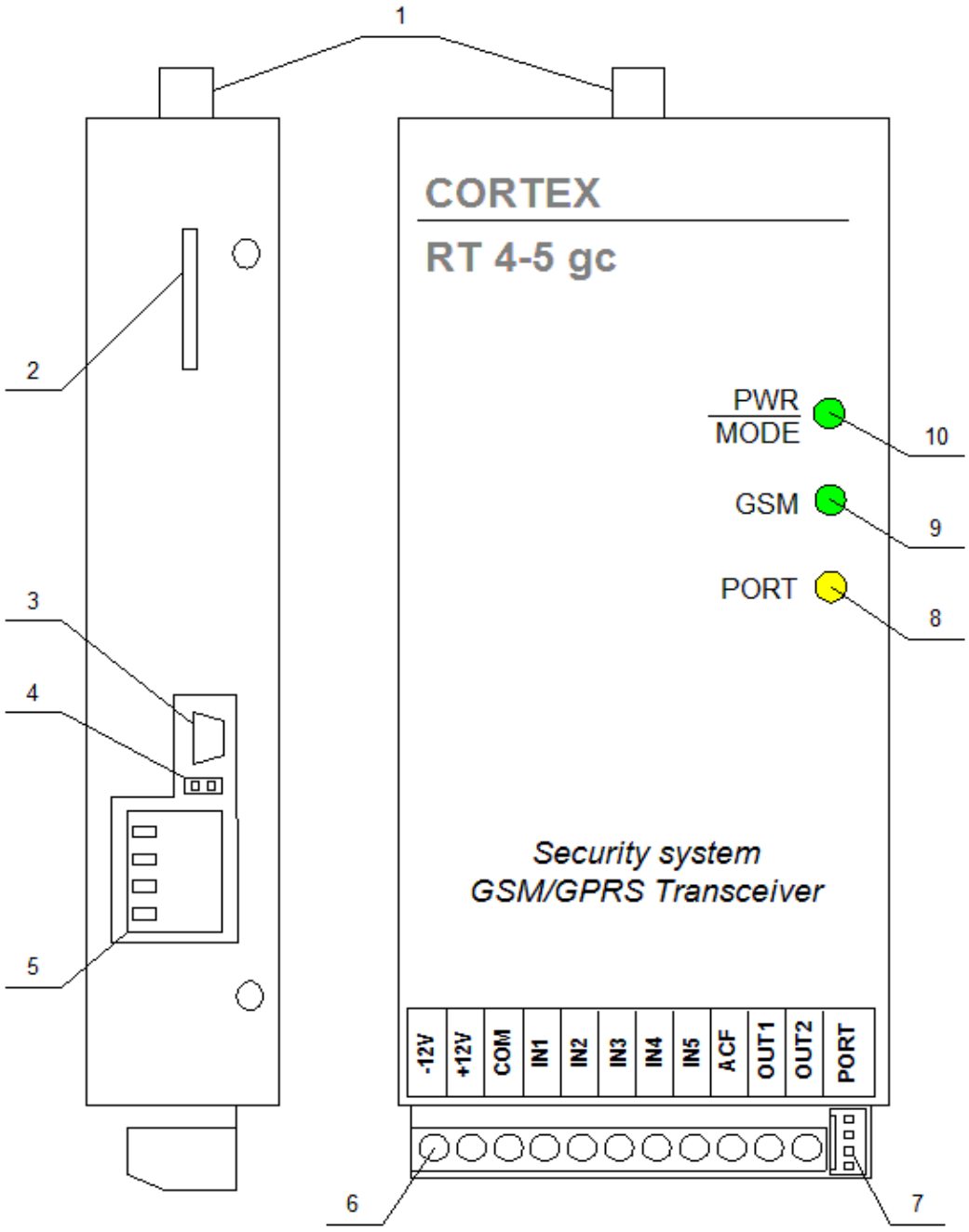
Module appearance



Pic.1. RT4-5gc

1. GSM antenna connector (SMA-F)
2. SIM holder
3. USB-port for module programming
4. Jumper to control input load
5. Dip-Switch for changing working mode
6. Terminal block for power supply and external device connection
7. Communication port for connecting security panels
8. Communication indicator
9. GSM signal indicator
10. Power and mode indicator

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User configuration

You can program four phone numbers into the device. The first three numbers are user numbers, and the fourth is the installer's number. Installer doesn't receive any SMS-messages (excluding replies on some commands) and has full rights to control and program the module. Installer's rights are hardcoded and cannot be changed.

In order for module to function correctly numbers of the first user and installer must be programmed. Other two numbers can be added if needed. First users and installer's numbers can be the same.

Device inputs and outputs.

Device inputs can be loaded to «0» or to «+». Choice is made using the jumper. If jumper is removed, inputs are loaded to «+» (reacts to «0»/«break» signals), if set – loaded to «0» (reacts to «+»/«break» signals). Maximum voltage on the input - **+30V**.

By default all general purpose inputs (IN1-5) are programmed as NO and power supply control input (I6) as NC.

Attention! When jumper is set all the inputs change their status to opposite.

If you need to change input type, you have to connect all external devices, make sure they are in the normal state and send the following command to the module: **00.xxxx** where xxxx – module security code. After receiving this command, module will set all input state as normal.

Device outputs can work either as manually activated outputs or PGM outputs.

Manually activated output is activated and deactivated using SMS-message. You can also activate it on time.

PGM-output can react to the following troubles: GSM-signal lost, cannot connect to server or cannot establish GPRS connection.

Outputs are configured using **USB_Reader** software. By default – manually activated.

First start and general programming.

Make sure that no phone numbers are saved in the SIM memory and the SIM card is activated. If PIN request is activated, make sure it is set as „0000". After that you can insert the SIM into module.

After that you can start module programming. Module is programmed using **USB_Reader** software. To turn on programming mode, just connect the USB cable and power the module. When **POWER/MODE** indicator will turn red you can start programming.

First you must program installer's and the first user's numbers, module account and, if you are going to use module in GPRS mode, server IP-address, TCP-port, APN and module Online ID. In order for the module to work correctly with TLF_Server and WinSC software, OnlineID must be set the same as the module telephone number (without international code).

In case if it is not possible to use **USB_Reader** software, you can program the module using SMS messages.

To do so, power the module and, after successful initialization (green ST indicator is on), send to the module the following message: **94.xx...xx** where **xx...xx** – installer's phone number (if the phone is registered with the international code, you must use + before it).

After that, installer will receive "**Reply SECURITY CODE"** message. Installer must reply to that message with the module security code (default – 1234). It must be done within 10 minutes after receiving the message. Otherwise phone number will be deleted from the device memory and you will have to start all over. If the number is successfully programmed, installer will receive „**OK**" message.

Note! If the installer's phone is not programmed, module will ignore all SMS-messages except for **94.xx...xx.**

After programming installer's number, you have to program first user's (Central Unit) number. To do so, send from installer's phone the following message **91.xx...xx** where **xx...xx** – first user's phone number (if the phone is registered with the international code, you must use + before it).

Then you have to change device account. To do so, send from installer's phone the following message **95.xxxxyyyy** where xxxx – module security code (default – 1234) and yyyy – new account.

After that you can program the module to connect to the TLF_Server software. Full command list is set in the "Working in GPRS mode" paragraph.

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Message format

Module events and events from the security panels in modes 3 - 6 are always transmitted in ContactID.

In WinSC software messages are looking the following way:

Partitions=PP EventCode=FEEEZZZ

F – Event type identifier: E — alarm/disarming, R — restore/arming.
EEE – Event code.
PP – Partition. Module own messages are transmitted with partition 99.
ZZZ – Zone/User number.
On the mobile phone information is displayed the following way:

FF, AAAA,EEEPPZZZ:<date>-<time>*<CS>

FF – Event type identifier: 06 — alarm/disarming, 07 — restore/arming.
AAAA - Account
EEE – Event code.
PP –Partition. Module own messages are transmitted with partition 99.
ZZZ – Zone/User number.
<CS> - Check sum.
Messages that are transmitted via communication port in the first mode are not converted into ContactID and their format depends on the connected device type.

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Indication

POWER/MODE indicator	
Off	Module not ready to work
Green	Module is ready to work
Blinks green fast	Message is transmitted
Flashes green once per second	Low voltage
Red	Module in programming mode
Flashes red	SIM-card is not registered in the module
GSM indicator	
Green. Flashing once every 2-3 seconds	Module in GPRS mode. GSM signal at high level
Orange. Flashing once every 2-3 seconds	Module in GPRS mode. GSM signal at medium level
Red. Flashing once every 2-3 seconds	Module in GPRS mode. GSM signal at low level
Flashing green once every 2-3 seconds	Module in SMS mode. GSM signal at high level
Flashing orange once every 2-3 seconds	Module in SMS mode. GSM signal at medium level
Flashing red once every 2-3 seconds	Module in SMS mode. GSM signal at low level
Flashing red once per second	Out of GSM coverage
PORT indicator	
Indication in Serial BUS mode	
Flashes yellow	Transmitting information via communication port
Indication in Esprit and Magellan modes	
Flashes yellow	Transmitting information via communication port
Indication in DSC 1 and DSC 2 modes	
Flashes yellow	Transmitting information via communication port
Blinks yellow fast for 2 seconds	Wrong working mode is selected
Key reader or key switch LED	
Constantly on	Disarmed. Ready to be armed
Off	Disarmed. Not ready to be armed
Double flashing once every 2 seconds	Armed
Flashes constantly	User key programming mode ON
Triple flashing once every 2 seconds	Guard key programming mode ON

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Setting communicator working mode

RT4-5gc has six different communication port modes:

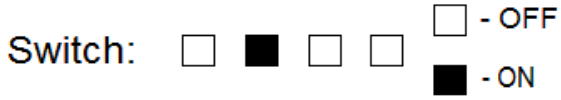
- **Serial interface mode (Serial BUS).**

To activate this mode you have to set the following combination on the dip-switch:

In this mode you can connect interface modules to the communication port, for acquiring information from control panels. In this mode all the messages are transmitted in the same format they are generated by the device, connected to the port (no conversion into ContactID format are made). When connecting security panel to the device in this mode, make sure that their accounts are identical.

- **Control panel mode**

To activate this mode you have to set the following combination on the dip-switch:

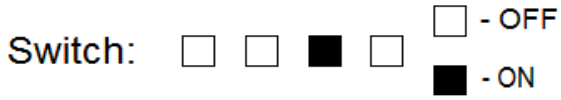


In this mode device is monitoring it's inputs status, depending on the arming status (armed/disarmed). Arming is made using Dallas touch memory keys, proximity chips or key-switch option. Key or proximity readers are connected to the serial port.

For further information see paragraph «**Working with transmitter in control panel mode**».

- **Esprit mode**

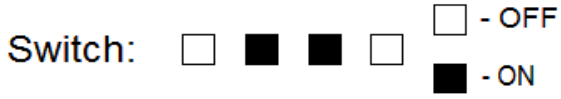
To activate this mode you have to set the following combination on the dip-switch:



In this mode you can connect **PARADOX ESPRIT 7x8** (V 3.00 and higher) security panel. Panel is connected via it's specialized serial port. All the panel's messages are converted into ContactID format (see table 6). All messages are transmitted with the **RT4-5gc** account.

- **Magellan mode**

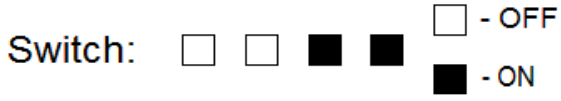
To activate this mode you have to set the following combination on the dip-switch:



In this mode you can connect **PARADOX** panels of the **E, SP** and **MG** series**.** Panel is connected via it's specialized serial port. All the panel's messages are converted into ContactID format (see table 6). All messages are transmitted with the **RT4-5gc** account.

- **DCS 1**

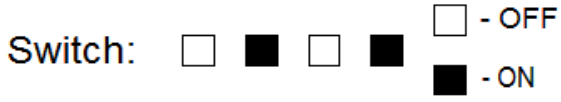
To activate this mode you have to set the following combination on the dip-switch:



In this mode communication port is connected to the Key-BUS line of the one- and two-partitioned DSC security panels. All messages are transmitted with the **RT4-5gc** account.

- **DSC 2**

To activate this mode you have to set the following combination on the dip-switch:



In this mode communication port is connected to the Key-BUS line of the DSC security panels that has more than two partitions. All messages are transmitted with the **RT4-5gc** account.

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Working in SMS mode.

In SMS mode each user can receive information in two formats: "modem" and "user". Format selection is made by user and depends on the module usage strategy. Each user can change the format by sending "*" message to the module.

"Modem" format is designed for receiving by CU-GSM central unit and WinSC software.

"User" format is used if information is send to the mobile phone.

You should pay attention to the accuracy of the commands sent to the module. In case of lost or redundant symbol (including spaces) command will be ignored.

Working with the phone numbers of the defined length.

Module identifies users by the phone number. Module can define phone number by the specified number of digits, instead of the whole number.

Symbol count starts from the end of the number. Maximum number of symbols is 16, "+" is not counted.

Number of symbols is set using 99.Nx command, where x – number of symbols. If you will send 99.N0 command – module will work only with fully specified phone numbers. By default number length is set as 8.

This option can also be configured using **USB_Reader** software.

Working in GPRS mode.

Using GPRS, module can directly transmit information into WinSC software.

Attention! In GPRS mode, module ignores any SMS messages, received from the first user, and doesn't send him any SMS.

GPRS-settings

In order for module to work correctly in GPRS mode you must configure the following parameters: **APN** (Access point name to connect to the GPRS service), Central Unit **IP-address**, Central Unit **TCP PORT**, **Online ID** (module online identifier), Central unit **Domain name** (if used), Central Unit **DNS Server IP** (if used). These parameters can be configured using **USB_Reader** software or by sending a command to the module:

99.I<IP>	IP-address
99.A <access point>	APN
99.P<port>	TCP-port
99.R<attempts>	Number of attempts to connect to server
99.W<ID>	Online identifier
99.M<min>	Time between attempts to connect to server
99.DI<IP>	IP-address of DNS server (if used)
99.DD<domain name>	Domain name (if used)

You can configure the module to automatically go into GPRS mode and connect to server after powering on. To do so, you have to set “**Attempts For Reconnect Online”** parameter in **USB_Reader** software as 255 (see Programming manual) or send a **99.R255** message to the module (see table 4).

Note! If IP-address is set as 0.0.0.0 than module ignores **Attempts For Reconnect Online** parameter and doens't try to establish GPRS connection.

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Forced exit from GPRS mode

For power saving purposes module can exit GPRS mode if there are troubles with power supply.

You can specify conditions on which module will exit GPRS. Those can be specified either by **USB_Reader** software, or by the following SMS commands:

99.F0 – Don't exit GPRS unless command **86.**<security code> is received
99.F1 – Exit GPRS if power low.
99.F2 – Exit GPRS if 220V lost.
99.F3 – Exit GPRS if power low or 220V lost.

If this option is enabled and the battery is low and/or power is lost (depends on the settings), the module will send **E804000** (in ”modem” mode) or **Check bat or power** (in ”User” mode) message when an attempt to turn GPRS mode on is made.

Mobile operator authorization for GPRS activation.

In case if for GPRS activation you need to authorize with the mobile operator, you have to specify login and password.

Those can be specified either by **USB_Reader** software, or by the following SMS commands:

Login is set by the **99.Y1xxxx** command, where xxxx – login. Password is set by the **99.Y2xxxx** command, where xxxx – password. Number of symbols in login and password must not exceed 8.

If you have to delete login or password send the following commands to the module: **99.Y1**(delete login) and **99.Y2** (delete password).

Online identifier

In order to send a message to the module from the **WinSC** software, you have to assign a unique ID for it. In order for module to work correctly with the **TLF_Server** and **WinSC** software, ID would be the same as module phone number (without international code).

Attention! ID must only contain digits and be maximum 15 symbols long.

You can set online ID either by using **USB_Reader** software, or by sending **99.Wxxxx** message, where xxxx – identifier.

By default online ID is set as 11111111.

By sending **99.Wi** command, you can set GSM-modem IMEI as module Online ID.

Possible errors

- If failed to establish GPRS connection:

GPRS error (in „User” mode) or **E854001** (in „Modem” mode).

Possible causes: wrong APN setting or unavailability of this service at the current mobile operator.

- If failed to connect to software or Central unit:

Online error (in „User” mode) or **E854002** (in „Modem” mode).

Possible causes: wrong IP, TCP PORT settings. Firewall restrictions on the Central Unit.

Working in Control panel mode

In this mode device is monitoring it's inputs status, depending on the arming status (armed/disarmed). Arming is made using Dallas touch memory keys or key-switch option. Key reader or key-switch is connected to the serial port.

In „Disarmed” mode any zone violation is monitored, but transmitted only violation of 24H zone and PWR zone. Other zone status is ignored.

In ”Armed” mode any zone violation leads to device activation (depending on the input configuration and sequence of zone violation), siren activation and further message transmission to the Central Station. Zone restores are also transmitted to the Central Station

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Device programming

Device programming is made using **USB_Reader** software via computer USB-port.

To turn on programming mode, just connect the USB cable and power the module. When **POWER/MODE** indicator will turn red you can start programming.

In order to program control panel parameters you have to open programming window through the main menu **File/Read** or by pressing  icon and than select **Panel mode** tab.

You can configure the following parameters:

EntryDelay – entry delay

EntryDelayForStay – entry delay for the STAY ARM mode

Exit Delay – exit delay

BellCutOff – siren working time when alarm is activated

Z1 Type – type of the first zone. Three options available:

24h. Always activated and causes the alarm regardless of the system status (armed/disarmed)
Interior. After the delayed zone has been activated, interior zone works same as delayed. If delayed zone wasn't activated, it works as instant zone.
Instant. Zone with this parameter has an exit delay, but will immediately activate the alarm when triggered after the exit delay is over.

Z1 StayAway checkbox – first zone parameter that determines if zone will be ignored when system is armed in STAY ARM mode (Stay/Arm) or not (Normal). If zone type is 24h, than this parameter is ignored.

Z3 Type – type of the third zone. Options are the same as for the first zone.

Z3 StayAway checkbox – third zone parameter that determines if zone will be ignored when system is armed in STAY ARM mode (Stay/Arm) or not (Normal). If zone type is 24h, than this parameter is ignored.

Z4 Type – type of the fourth zone. Options are the same as for the first zone.

Z4 StayAway checkbox – fourth zone parameter that determines if zone will be ignored when system is armed in STAY ARM mode (Stay/Arm) or not (Normal). If zone type is 24h, than this parameter is ignored.

Z5 Type - type of the fifth zone. Options are the same as for the first zone.

Z5 StayAway checkbox – fifth zone parameter that determines if zone will be ignored when system is armed in STAY ARM mode (Stay/Arm) or not (Normal). If zone type is 24h, than this parameter is ignored.

KeySwitch checkbox – determines whether arming will be made using electronic keys (deactivated), or key-switch (activated).

PwrZone(Input6)RandomDelay checkbox **–** not used in current version.

LinesWithSingleEOLResistor checkbox **–** determines type of the security loops. With EOL resistor (activated) or NC (deactivated).

Settings are saved by pressing "**OK**" key.

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Module zone configuration

Some module zones functions are strictly programmed and cannot be changed.
Zone functions are following (see Pic.2):

1-st input: Programmable zone.

2-nd input: **Entry/Exit**. Delayed zone. Has entry and exit delays and usually is used for the front door. Entry and exit delays can be programmed for the duration you need.

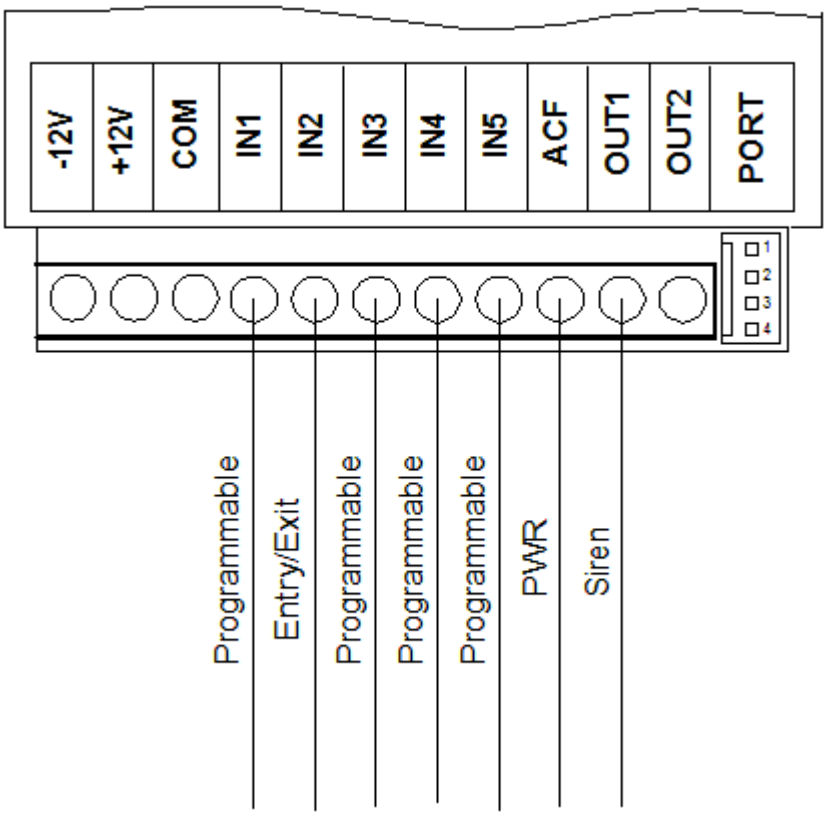
3-rd input: Programmable zone.

4-th input: Programmable zone.

5-th input: Programmable zone.

6-th input: **PWR**. Input is designed for power supply monitoring and must be connected to the «ACF» output of the **VSCS-1,5/VSC-3,0-12** devices or to the «OUT» output of the **AC_detector** device.

1-st output: Siren. In the control panel mode the first output is strictly programmed to work as a **Bell PGM**.



Pic.2.

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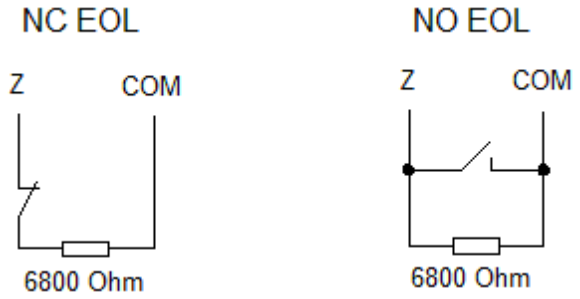
Dallas mode

In this mode arming and disarming is made using Dallas touch memory keys or proximity chips.

Zone wiring in EOL mode



Loop resistance in the normal state must be 6,8κΩ

Arming

Before arming close all secured doors and windows and stop moving within the sensor range. If at least one zone is triggered (opened) than object is not ready for arming and LED on the key reader won't be lightened. System can be armed only if LED constantly lightened, i.e. all zones are in normal state and system is ready for arming.

To arm the system you have to touch key reader with registered touch memory key. If you will touch the key reader while LED is turned off (not ready to arm), arming operation will be ignored and you will hear long sound signal. Additionally you will be shown the number of the violated zones by the LED blinking (number of blinks – number of the first violated zone). To arm the system, remove all causes that prevent arming and once again touch the key reader with the key.

After the system is armed exit delay will be started. During this you can leave the secured space without triggering the alarm. Delay is indicated by sound signal that will beep once every two seconds and once a second during the last ten seconds of delay. After exit delay expires the system will be armed (LED will double-blink once every two seconds) and a message will be sent to the Central Station.

If during exit delay you will touch the key reader with the registered key, the system will return to the disarm state without sending any message to the Central Station.

Arming in STAY ARM mode

To arm in STAY ARM mode at least one zone must have Stay/Away parameter enabled. If so, during the exit delay Entry/Exit zone (IN2) activation is monitored. If zone didn't activate (door wasn't open) **STAY ARM** mode is activated. In this mode, activation of the zone with enabled **Stay/Away** parameter is ignored. You can also set separate entry delay for this mode.

If during the exit delay Entry/Exit zone was activated (door was opened) than arming is made in the standard mode.

Disarming

When entering secured space, delayed zone triggers. At that moment entry delay is started. Delay is indicated by constant sound signal.

You have to disarm the system (touch the key reader with registered touch memory key) before delay hasn't expired. In that case "Disarmed" message will be sent to the Central Station. Otherwise an alarm message will be sent.

Touch memory/proximity key registration

You can program three key types in the device:

"Master"-key – the first key that was put to the key reader. Using this you can turn on key programming modes.

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User keys – keys that are used to arm and disarm the system.

Guard keys – keys that are used to confirm that security crew arrived to the object after alarm receiving. You can't arm or disarm the system or deactivate the siren using these keys. When this key is put to the key reader, transmitter forms and sends a special message to the Central Station.

Registering the "Master"-key is made the following way: Touch the key reader with the "master"-key and wait for the triple beep.

Registering the user keys is made the following way:

Touch the key reader with the "master"-key (for approximately 1 second) – the device will turn on user key registration mode (indication LED blinks fast). Touch the key reader with the user keys, one after another. After touching the key reader with the key, you should either hear triple beep (if registration is successful) or one long beep (if the key is already registered). Maximum number of user keys is 16.

To exit user key programming mode you have to wait 1 minute without touching the key reader (device will return to it's normal mode) or touch the key reader with the "master"-key (device will switch to guard key registration mode).

Registering the guard keys is made the following way:

Touch the key reader with the "master"-key two times (for approximately 1 second each) – the device will turn on guard key registration mode (indication LED blinks three times once every 2 seconds). Touch the key reader with the guard keys, one after another. After touching the key reader with the key, you should either hear triple beep (if registration is successful) or one long beep (if the key is already registered). Maximum number of guard keys is 16.

To exit user key programming mode you have to wait 1 minute without touching the key reader or touch the key reader with the "master"-key.

To delete all registered keys, including the „master"-key you have to connect input 2 and the first contact on the interface port and power up the transmitter.

To delete all registered user keys, you have to connect input 3 and the first contact on the interface port and power up the transmitter.

To delete all registered guard keys you have to connect input 4 and the first contact on the interface port and power up the transmitter.

Attention! When deleting master-key, module status is always changed to "Disarmed.

Key-switch mode

In this mode you can arm and disarm the system by connecting the 1-st and the 2-nd contacts on the interface port.

Arming

Before arming close all secured doors and windows and stop moving within the sensor range. If at least one zone is triggered (opened) than object is not ready for arming and LED on the key reader won't be lightened. System can be armed only if LED constantly lightened, i.e. all zones are in normal state and system is ready for arming.

To arm the system you have connect the 1-st and the 2-nd contacts on the interface port. If you will connect them while LED is turned off (not ready to arm), arming operation will be ignored and you will hear long sound signal. Additionally you will be shown the number of the violated zones by the LED blinking (number of blinks – number of the first violated zone). To arm the system, remove all causes that prevent arming, disconnect the contacts and then connect them again.

After the system is armed exit delay will be started. During this you can leave the secured space without triggering the alarm. Delay is indicated by sound signal that will beep once every two seconds and once a second during the last ten seconds of delay. After exit delay expires the system will be armed (LED will double-blink once every two seconds) and a message will be sent to the Central Station.

If during exit delay you will disconnect the contacts, the system will return to the disarm state without sending any message to the Central Station.

Disarming

When entering secured space, delayed zone triggers. At that moment entry delay is started. Delay is indicated by constant sound signal.

You have to disarm the system (disconnect the contacts) before delay hasn't expired. In that case "Disarmed" message will be sent to the Central Station. Otherwise an alarm message will be sent.

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Attention! To deactivate the siren that has activated during the disarmed state (24H zone) you have to connect and then disconnect the 1-st and the 2-nd contacts on the interface port.

Remote arming and disarming

Module can be armed and disarmed using SMS message.

Attention! Valid remote arming and disarming is possible **only** in Dallas mode.

Remote arming

In order to remote arm the module you have to send it the following message **11.xxxx** where **xxxx** — module security code.

When message is received, module analyses all it's input status and, depending on the result, performs one of the two actions:

1) If all zones are in the normal state than module changes it's status to "armed" and **Remote ARM** (**R840016** in "modem" mode) message is sent to the users.

2) If one or more zones are in the alarm state, than the module sends back the status message, where all of the alarmed zones are listed. Module stays in "Disarmed" state.

This function is only available to the first three registered users. Installer doesn't have the rights to send this message.

Remote disarming

In order to remote arm the module you have to send it the following message **12.xxxx** where **xxxx** — module security code.

When message is received, module changes it's status to "Disarmed" and **Remote DISARM** (**E840016** in "modem" mode) message is sent to the users.

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Request status and settings commands

For the status and settings request there are 4 commands:

99.C1 —GPRS connection settings request. Reply has the following appearance:

V:3210, **L:**, **P:**, **IP:**0.0.0.0, **PORT:**923, **APN:**internet.lmt.lv, **QTime:**30s, **RTime:** 3m, **RAtt:** 255, **GprsAtt:**2, **ForceOff:**1

V: - module firmware version.
L: - login for establishing GPRS connection.
P: - password for establishing GPRS connection.
IP: - IP-address.
PORT: - TCP port.
APN: - APN.
Qtime: - connection test time in GPRS mode.
RTime: - number of attempts to reconnect to server.
Ratt: - time between attempts to reconnect to server.
GprsAtt: - Number of attempts to establish GPRS connection.
ForceOff: - Force offline mode. 0 — don't go offline, 1 — go offline if battery low, 2 — go offline if AC lost, 3 - go offline if battery low or AC lost.

99.C2 — general settings request. Reply has the following appearance:

V:3210, **TestTime:**144, **SIA IP:** OFF, **Lnr:**8, **OUT1:** General Output, **OUT2:** General Output

V: - module firmware version.
TestTime: - Test message period*10minutes.
SIA IP: - SIA IP mode. Not used in current module version.
LNr: - Number of digits to determine phone number.
OUT1: - OUT1 working mode.
OUT2: - OUT2 working mode.

99.C3 — GSM network status request. Reply has the following appearance::

V:3210, **CSQ:** 24,0; **COPS:** 0,0,"LMT GSM"; **CGREG:** 1,1

V: - module firmware version.
CSQ: - GSM signal strength. Acceptable level 15-20, good – 20–30.
COPS: - Mobile operator.
CGREG: - GPRS service availability. Must be 1,1.

99.C4 — Current module status request. Reply has the following appearance:

V:3210, **Mode:** panel, **IN:** , **OUT:** , **PanStat:** D(1), **Users:** U1(code) U4 (txt), **Security**: OFF, **SimLock:** OFF, **Online:** ON

V: - module firmware version.
Mode: - current working mode.
IN: - list of activated inputs.
OUT: - list of activated outputs.
PanStat: - status (only in Control panel mode). D - disarmed, A - armed, StayA – armed in Stay Arm. In brackets is shown user number that changed the module status last.
Users: - list of registered users. In brackets is shown message format: text or codes.
Security: - security mode. ON/OFF.
SimLock: - SIM-card strict assignment for the module. ON/OFF
Online: - Shows if module is in the GPRS node or not.

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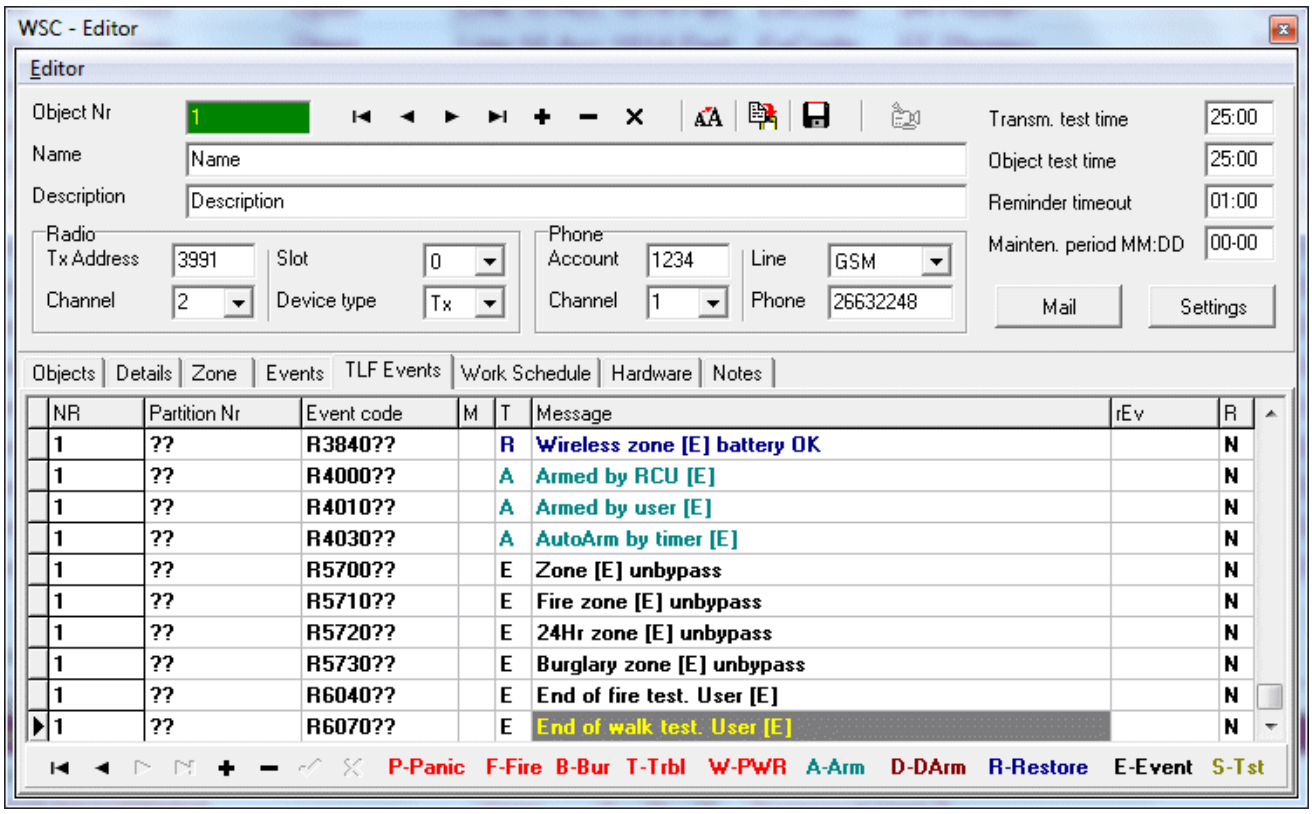
Module registration in the WinSC software

In order to work correctly module must be registered in the software the following way:



Radio block is not used an may be left unfilled.

In the **Phone** block you must enter the following RT4-5gc parameters.

Account – Device account. Every device must have it's own unique account.
Channel – number of the receiving (IP Client).
Line – must be set as GSM
Phone – Phone number of the RT4-5gc. Without international code.

Transm.test time – must be set as 00:00.
Object test time –RT4-5gp/security panel test period
Reminder timeout – with this time period not restored alarm events from the "Alarm list" window will be repeated.

Into the **TLF Events** tab you have to load RT4-5gs decoding card.

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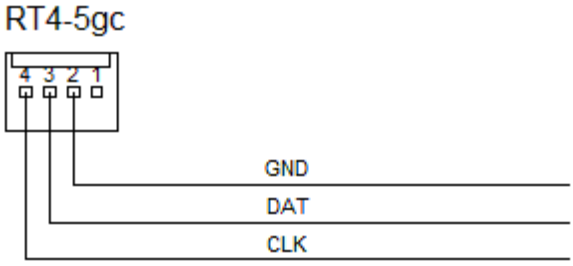
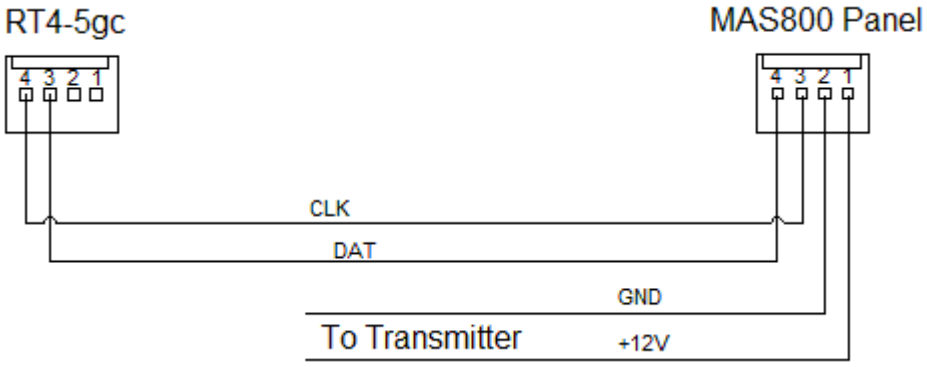
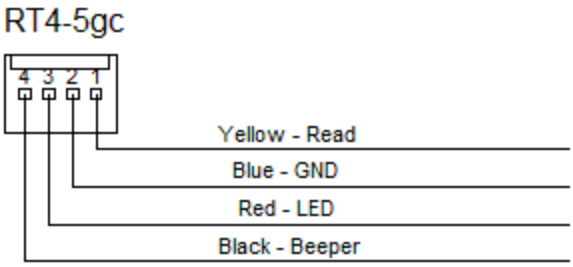
Connecting external devices



Connecting interface modules with Serial BUS support (1-st mode)

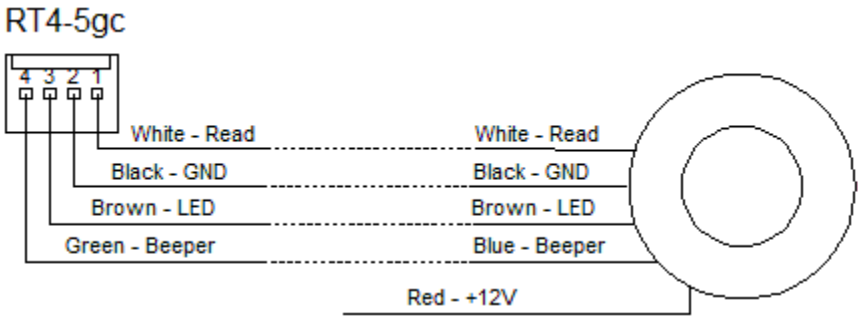


Connecting security panel of the MAS800 system(1-st mode)



Connecting the key reader in control panel mode (2-nd mode)

Attention! Depending on reader model, wire colors may vary



Connecting proximity reader in control panel mode (2-nd mode)

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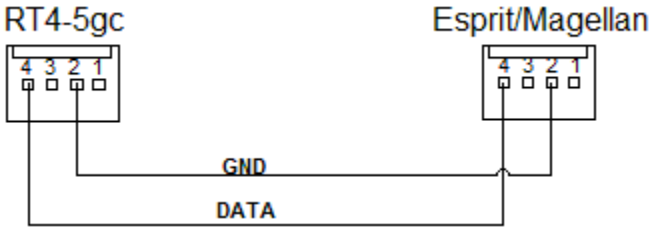
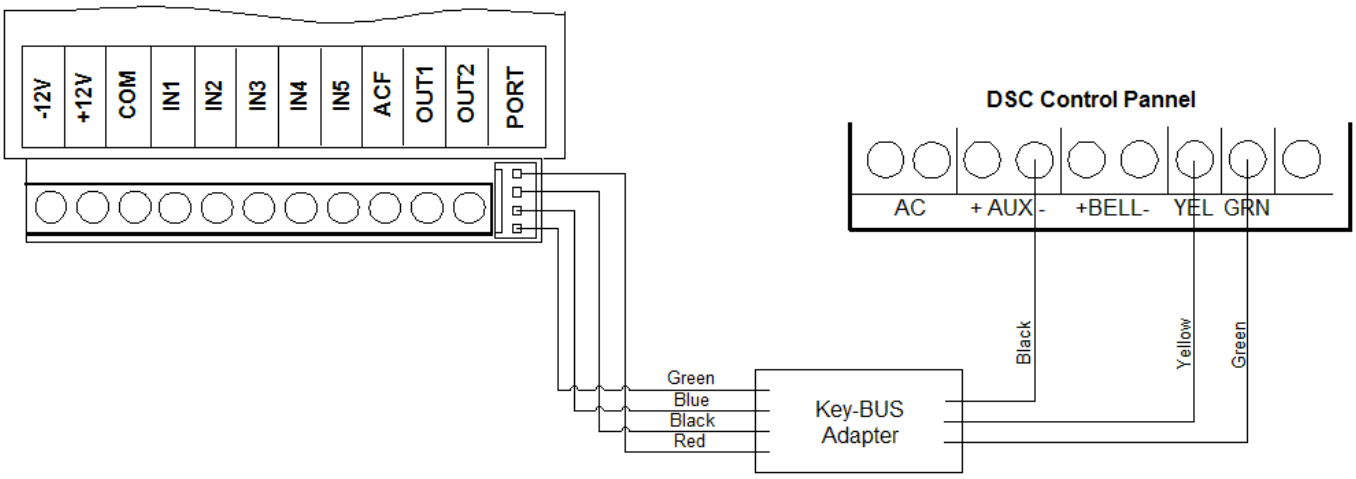
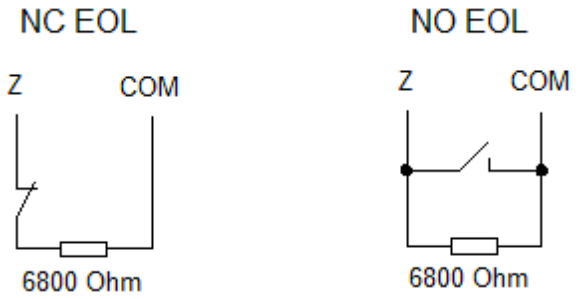


Connecting Esprit and Magellan control panels (3-rd and 4-th modes)



Connecting to the Key-BUS of the DSC control panel (6-th and 7-th modes)



Zone wiring in EOL loop mode

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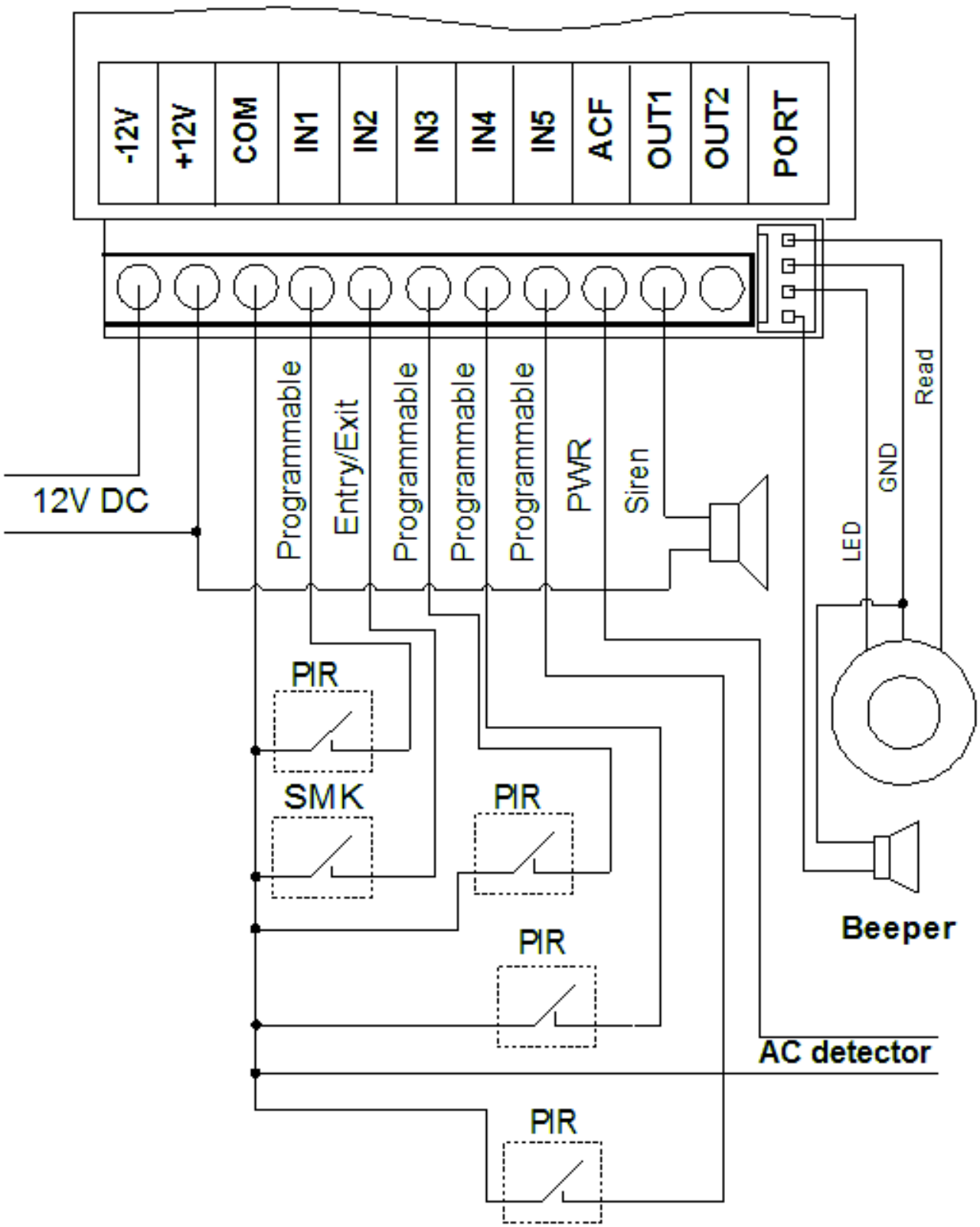

Connecting external devices in control panel mode (2-nd mode)
Attention! Piezoelectric beeper must be connected to the reader.

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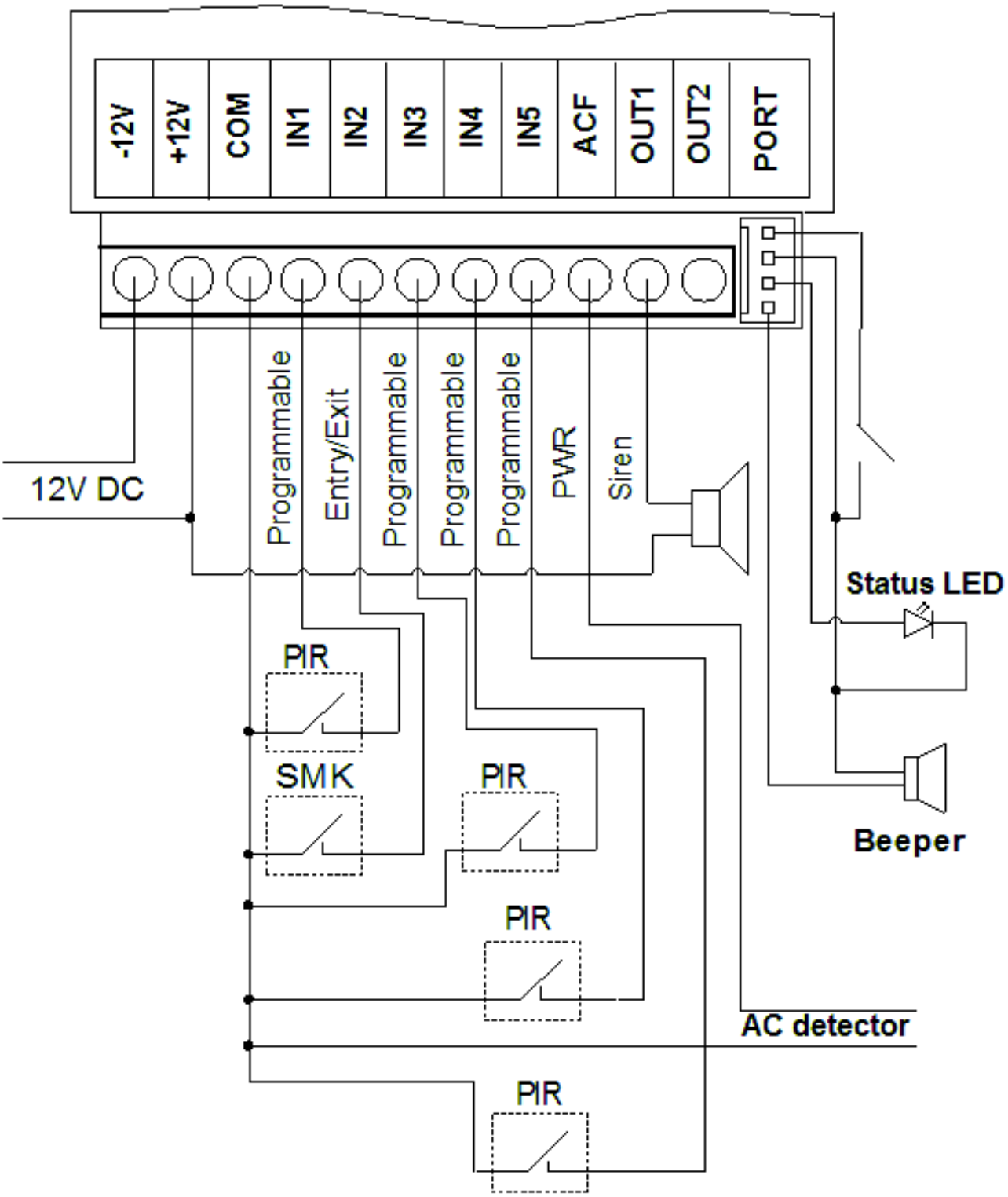

Connecting external devices in control panel mode (2-nd mode)
Attention! Piezoelectric beeper must be connected to the reader.

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Enclosure 1. Terminal block pins

Table 1.

Pin	Name	I/O	Description
1	12V-	I	Module power supply
2	12V+	I	
3	⊥		Ground
4	IN1	I	Alarm input 1
5	IN2	I	Alarm input 2
6	IN3	I	Alarm input 3
7	IN4	I	Alarm input 4
8	IN5	I	Alarm input 5
9	ACF	I	AC lost input
10	OUT1	O	Output 1
11	OUT2	O	Output 2

Enclosure 2. Module control commands.

Table 2.

Command	Description	Reply	By default allowed to:
*****	Change message format	/Status/[1]	Everyone
0	Request status	/Status/	Everyone
1	Activate Out 1	E802001	U1, U2, U4[2]
2	Deactivate Out 1	R802001	U1, U2, U4
1.xxx	Activate Out 1 on time (xxx – minutes)	E802001	U1, U2, U4
3	Activate Out 2	E802002	U1, U2, U4
4	Deactivate Out 2	R802002	U1, U2, U4
3.xxx	Activate Out 2 on time (xxx – minutes)	E802002	U1, U2, U4
081.xxxx	Restart module (xxxx – security code)	R308000	U1, U4
85	Restart GPRS mode to apply new settings (only in GPRS mode)	---	Server
11.xxxx	Remote arming (in control panel mode)	Depending on the result[3]	U1
12.xxxx	Remote disarming (in control panel mode)	E840016	U1

Notes:

1) Status is a list of all active modes and alarms.
2) U1, U2, U3, U4 – User numbers; U1 – Master, U4 - Installer
2) See paragraph «Remote arming and disarming».

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Enclosure 3. Module service commands.

Table 3.

Command	Description	Reply	By default allowed to:
00.xxxx	Set current state as normal (xxxx – module security code)	/Status/	U1, U4
81	Request master phone number	/TLF number/	U1, U4
82	Request 2-nd user phone number	/TLF number/	U1, U4
83	Request 3-rd phone number	/TLF number/	
84	Request installer's phone number	/TLF number/	
92	Delete 2-nd user phone number	E801000	U1, U4
93	Delete 3-rd phone number	E801000	U1, U4
94	Delete installer's phone number	E801000	U1, U4
91.xx...xx[1]	Change master phone number	E801000	U1, U4
92.xx…xx	Change 2-nd user phone number	E801000	U1; U2
93.xx…xx	Change 3-rd phone number	E801000	U1; U3
94.xx…xx	Change installer's phone number[2]	E801000	U1; U4
95.xxxxyyyy	Change module account xxxx – security code, yyyy – new account	E803000	U1, U4
96.xxxxyyyy	Change security code xxxx – old code, yyyy – new code	E803000	U1, U4
87.xxxx	Turn on GPRS-mode (xxxx - module security code)	Depending on the result[4]	U1, U4
99.CddMMyyhhmmss[3]	Set time and date (dd – day, MM – month, yy – year, hh – hours, mm – minutes, ss - seconds)	E801000	U1, U4
99.Wxxxx	Set module online ID. xxxx – identifier (15 digits max.)	E801000	U1, U4
99.Txxx	Set test period (xxx – time *10 minutes. Max. - 255)	E801000	U1, U4
99.I<IP>	Set server IP-address	E801000	U1, U4
99.DI<IP>	Set DNS-server IP-address (if used)	E801000	U1, U4
99.DD<domain name>	Set domain name (if used)[4]	E801000	U1, U4
99.A<access point>	Set APN	E801000	U1, U4
99.P<port>	Set TCP-port	E801000	U1, U4

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Command	Description	Reply	By default allowed to:
99.R<attempts>	Number of attempts to connect to server. Max. - 255	E801000	U1, U4
99.O<sec>	GPRS channel test period Min - 15. Max - 255	E801000	U1, U4
99.M<min>	Time between attempts to reconnect to server Max - 255	E801000	U1, U4
99.Y1<login>	Set login for GPRS service Max – 8 symbols	E801000	U1, U4
99.Y2<password>	Set password for GPRS service Max – 8 symbols	E801000	U1, U4
99.Nx	Set number of symbols for number recognition. Max - 16	E801000	U1, U4
99.C1	Show module online configuration	/Configuration/	U1, U4
99.C2	Show module general configuration	/Configuration/	U1, U4
99.C3	Show operator and GSM-signal strength[5]	/Configuration/	U1, U4
99.C4	Show user configuration, current working mode, input and output status and configuration	/Configuration/	U1, U4

Notes:

1. Phone numbers can be registered either with international code or without it. Inf international code is used than it must contain «+» before it (for example, Latvia: +371xxxxxxx, Estonia: +372xxxxxxx, Russia: +7xxxxxxxxxx). Maximum phone length – 15 digits.
2. When changing installer, new installer will receive **Reply SECURITY CODE** message. New installer must reply with a security code within 10 minutes. Otherwise old phone number will remain registered.
3. Date and time are added to every message. To receive the correct time you either have to activate GPRS mode or send this SMS-message.

   Attention! After restarting module time and date will be lost and you will have to set them again.
4. See paragraph «Working in GPRS mode».
5. If you need to stop using domain name and start using IP-address again, just delete DNS-server IP-address. You can do so by sending **99.DI** message.
6. Normal signal strength - 15-20 points, good – 20-30.

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Enclosure 4. Module events.

Event code in WinSC software	SMS-message on mobile phone (by default)	Description	By default sent to:
E802001	OUT 1 activated	Out 1 activated	Command sender
E802002	OUT 2 activated	Out 2 activated	Command sender
R802001	OUT 1 deactivated	Out 1 deactivated	Command sender
R802002	OUT 2 deactivated	Out 2 deactivated	Command sender
E803000	Code changed	Account/Security code changed	Command sender
E830001	Alarm zone 1	Alarm zone 1	U1, U2
E830002	Alarm zone 2	Alarm zone 2	U1, U2
E830003	Alarm zone 3	Alarm zone 3	U1, U2
E830004	Alarm zone 4	Alarm zone 4	U1, U2
E830005	Alarm zone 5	Alarm zone 5	U1, U2
E830006	AC lost	AC lost	U1
E822000	Battery low	Battery low	U1
E804000	Check bat or power	Forced exit from GPRS mode	U1
E801000	Configuration changed	Module configuration changed	Command sender
E854001	GPRS error	Error establishing GPRS connection	U1
E854002	Online error	Error connecting to server	U1
R830001	Restore zone 1	Restore zone 1	U1, U2
R830002	Restore zone 2	Restore zone 2	U1, U2
R830003	Restore zone 3	Restore zone 3	U1, U2
R830004	Restore zone 4	Restore zone 4	U1, U2
R830005	Restore zone 5	Restore zone 5	U1, U2
R830006	AC restored	AC restored	U1
R822000	Battery restored	Battery restored	U1
E823000	Test	Test message	U1
R808000	Ready	Module is ready to work	U1
E829000	Key program mode ON	Key registration mode entry	U1
R829000	Key program mode OFF	Key registration mode exit	U1
R8400xx	Armed by user xx	Armed by user xx	U1
E8400xx	Disarmed by user xx	Disarmed by user xx	U1
R840016	Remote ARM	Module is remotely armed	U1
E840016	Remote DISARM	Module is remotely disarmed	U1
R8410xx	Stay Armed. User xx	User xx armed module in Stay Arm mode	U1
E8410xx	Stay Disarmed. User xx	User xx disarmed module in Stay Arm mode	U1
E8580xx	Guard key xx	Guard xx touched the reader with his key	U1
E833020	Port failure	Communication port failure	U1
R833020	Port OK	Communication port restored	U1

Note! Module events are transmitted with partition 99

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Enclosure 5. Event codes for Esprit security panel

Event code	Description
E100000	Auxiliary alarm
E115000	Fire alarm
E120000	Panic
E121000	Duress alarm
E1300xx	Alarm! Zone xx, where xx - zone number
R1300xx	Zone xx restored, where xx - zone number
E1370xx	Tamper alarm! Zone xx, where xx - zone number
R1370xx	Tamper restore. Zone xx, where xx - zone number
E301000	AC fail
R301000	AC restore
E302000	Battery low
R302000	Battery restore
E312000	Power supply over current limit
R312000	Power supply restore
E321000	Bell trouble
R321000	Bell OK
E351000	Telephone line fail
R351000	Telephone line restore
R354000	Communication restore
E373000	Fire zone trouble
R373000	Fire zone restore
E401000	Special disarming
R401000	Special arming
E4010xx	Disarmed by user xx, where xx - user number
R4010xx	Armed by user xx, where xx - user number
E405000	Auto-arm canceled
E406000	Alarm canceled
E421000	Keypad lockout
E452000	Late open/close
E459000	Recent closing
E456000	Partial arming
E5700xx	Zone bypass, where xx - zone number
E602000	Periodic test
E626000	Date/time loss
E625000	Date/time restore
E627000	Programming mode entry

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Enclosure 6. Event codes for Magellan security panel

Event code	Description
E100000	Auxiliary alarm
E1000xx	Medical alarm, where xx - user number
E1100xx	Fire zone alarm, where xx - zone number
R1100xx	Fire zone restore, where xx - zone number
E115000	Fire alarm
E120000	Panic
E121000	Duress alarm
E1300xx	Alarm! Zone xx, where xx - zone number
R1300xx	Zone xx restore, where xx - zone number
E1370xx	Tamper alarm. Zone xx, where xx - zone number
R1370xx	Tamper restore. Zone xx, where xx - zone number
E1430xx	Module trouble, where xx - module address
R1430xx	Module restore, where xx - module address
E1450xx	Wireless module tamper alarm, where xx - module address
R1450xx	Wireless module tamper restore, where xx - module address
E301000	AC fail
R301000	AC restore
E302000	Battery low
R302000	Battery restore
E305000	System reset
E308000	System shutdown
E312000	Power supply over current limit
R312000	Power supply restore
E321000	Bell trouble
R321000	Bell restore
E333000	Expansion module trouble
R333000	Expansion module restore
E338000	Expansion module low battery
R338000	Expansion module battery restore
E341000	Expansion module tamper alarm
R341000	Expansion module tamper restore
E342000	Expansion module AC lost
R342000	Expansion module AC restore
E344001	RF jamming
E344002	GSM jamming
R344001	RF restored
R344002	GSM restored
E350000	GSM – no service

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E350001	IP – no service
R350000	GSM - service restored
R350001	IP - service restored
E351000	Telephone line 1 fail
R351000	Telephone line 1 restore
E352000	Telephone line 2 fail
R352000	Telephone line 2 restore
E354001	Communication fault (voice report)
E354002	Communication fault IP1 (GPRS)
E354003	Communication fault IP2 (GPRS)
E354004	Communication fault IP1
E354005	Communication fault IP2
R354000	Communication restored
R354001	Communication restored (voice report)
R354002	Communication restored IP1 (GPRS)
R354003	Communication restored IP2 (GPRS)
R354004	Communication restored IP1
R354005	Communication restored IP2
E373000	Fire zone trouble
R373000	Fire zone restore
E3800xx	Sensor trouble, where xx - sensor number
R3800xx	Sensor restore, where xx - sensor number
E381000	Loss of supervision — RF
E381001	Loss of supervision — GSM
E381002	Loss of supervision — IP
R381000	Supervision restore — RF
R381001	Supervision restore - GSM
R381002	Supervision restore – IP
E3840xx	Wireless sensor battery low, where xx - sensor number
R3840xx	Wireless sensor battery restore, where xx - sensor number
E400000	Open after alarm (Winload/keyswitch)
E4000xx	Open after alarm, where xx - user number
R400000	Special closing
E401000	Disarmed (Winload/keyswitch)
E4010xx	Disarmed, where xx - user number
R4010xx	Armed, where xx - user number
R403000	Auto-arming
E405000	Auto-arm canceled
R408000	Quick arm
R409000	Arming using Keyswitch

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E406000	Alarm canceled (Winload/keyswitch)
R4060xx	Alarm canceled by user, where xx - user number
E421000	Keypad lockout
E452000	Late open/close
E456000	Partial arming
E4580xx	Disarmed using StayD, where xx - zone number
E459000	Recent closing
E531000	Module added
E532000	Module deleted
E5700xx	Zone bypass, where xx - zone number
E602000	Periodic test
E625000	Date/time restore
E626000	Date/time lost
E627000	Programming mode entry
E628000	Programming mode exit
E654000	System inactivity

Enclosure 7: Key-BUS event codes

Event code	Description
E1300xx	Alarm! Zone xx, where xx - zone number
R1300xx	Zone xx restored, where xx - zone number
E100000	Auxiliary alarm
R100000	Auxiliary alarm restored
E115000	Fire alarm
R115000	Fire alarm restored
E120000	Panic
R120000	Panic restored
E111000	2-wire smoke detector alarm
R111000	2-wire smoke detector restore
E121000	Duress alarm
E139000	Intrusion verify
E143000	Expansion module trouble
R143000	Expansion module restore
E1450xx	Expansion module tamper alarm, where xx — module address
R1450xx	Expansion module tamper restore, where xx — module address
E301000	AC lost
R301000	AC restore
E302000	Battery low
R302000	Battery restore

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R305000	System reset (Cold start)
E321000	Bell trouble
R321000	Bell restore
E3330xx	Module fail, where xx - module address
R3330xx	Module restore, where xx - module address
E351000	Telephone line fail
R351000	Telephone line restore
R354000	Communication restore
E373000	Fire zone trouble
R373000	Fire zone restore
E3830xx	Zone xx tamper alarm, where xx - zone number
R3830xx	Zone xx tamper restore, where xx - zone number
E384000	Wireless key battery low
R384000	Wireless key battery restore
E3840xx	Wireless sensor battery low, where xx - sensor number
R3840xx	Wireless sensor battery restore, where xx - sensor number
E400000	Special opening
R400000	Special closing
E4010xx	Disarmed by user xx, where xx - user number
R4010xx	Armed by user xx, where xx - user number
E402040	Disarmed with master code
R402040	Armed with master code
E405000	Auto-arm canceled
E406000	Open after alarm
E421000	Keypad lockout
E459000	Recent closing
E470000	Partial arming
E601000	System test
E602000	Periodic test
E627000	Programming mode entry
E628000	Programming mode exit

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