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RS-4000 radio signalization system

RT4-5se radio transmitter

(v. 3.1.7)

Installation manual

2012

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General information

RT4-5se is designed for gathering information about secured object, it's handling and transmitting to alarm receiver. **RT4-5se** also controls it's power level and transmits a message, if it is below normal state or returns to normal. If during a long time period device input state haven't been changed, a test message is created.

RT4-5se object device is made in closed metal frame. Appearance and units of control and indication are shown on the Pic.1.

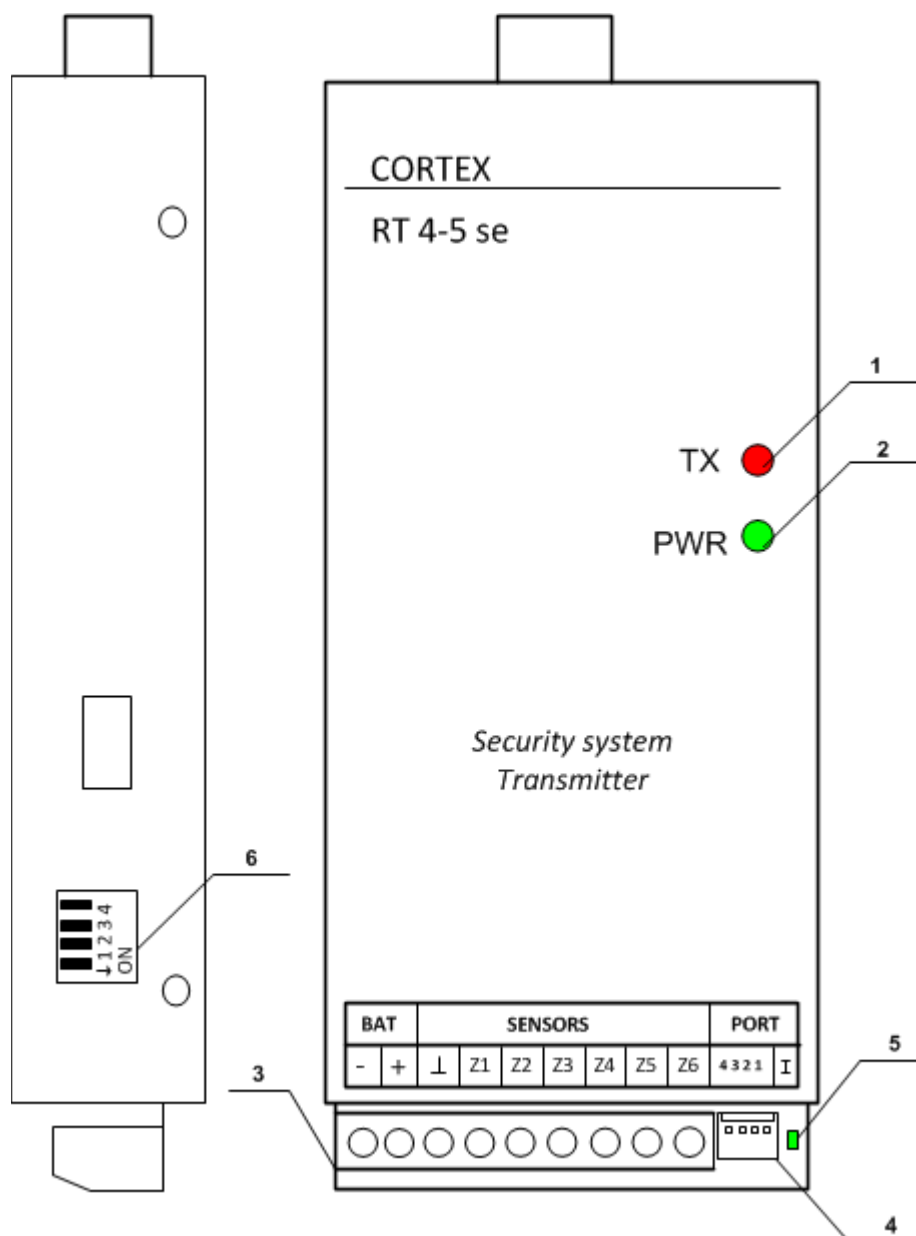
RT4-5se version 3.1 transmitter has 7* switchable modes: 1 – working with Serial BUS (same as RT4-5se v.2.0), 2 – control panel mode, 3 - working with Esprit control panels, 4 - working with Magellan control panels, 5 – working with RS-BUS (multifunctional address bus), 6 - working with one- or two-partitioned DSC control panels, using Key-BUS protocol, 7 - working with multipartitioned (more than two partitions) DSC control panels, using Key-BUS protocol.

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

General technical characteristics

Frequency range	139 -174MHz
Radiation class	8K0F1D
Carrier power, at most	5W
Frequency deviation, at most	2,5kHz
Carrier frequency instability, at most	10ppm
Off-frequency emission power, at most	0.25mW
Transmitting time	128ms
Time between transmissions	640 ms*
Number of transmissions for one event	3*
Number of test transmissions	3*
Test transmission period, hours	10*
Entry delay	25 s*
Exit delay	25 s*
Power supply	11-14 V
Input current:	
in asleep mode, at most	15 mA
in transmitting mode, at most	1,7 A
Dimensions, mm	160x70x25
Category temperature range	from -10° to +50 °C

** Programmable parameter. Default value specified.*



Pic. 1. Device appearance

1. Transmission indicator.
2. Power and diagnostics indicator.
3. Terminal for power supply and sensor wiring.
4. Interface port for additional device connection.
5. Communication indicator.
6. Dip-switch for setting the working mode.

Setting the working modes

RT4-5se transmitter has seven working modes.

1. Parallel inputs with serial interface connection (Serial BUS).

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



In this mode device works like 6-input transmitter. It transmits to the Central Station every change of the input status. Input types can be set by the first switch of the dip-switch. All inputs can work with signals like «Short to ground» (Pull Up) or «short to +12V» (Pull Down).



Also in this mode you can connect interface modules to the interface port, for acquiring information from control panels.

2. Control panel mode.

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



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

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

Attention! In this mode transmitter inputs must be in Pull Up state (work with signals like «Short to ground»).

3. Esprit mode.

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



In this mode you can connect a **PARADOX ESPRIT 7x8** series (V 3.00 and higher) control panel to the transmitter. Panel is connected to transmitter's interface port through panel's specialized serial port.

Transmitter inputs function the same way as in the mode 1.

4. Magellan mode

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



In this mode you can connect a **PARADOX E, SP** and **MG** series control panel to the transmitter. Panel is connected to transmitter's interface port through panel's specialized serial port.

Transmitter inputs function the same way as in the mode 1.

5. RS-BUS mode

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



In this mode you can connect to transmitter interface port various amount of interface and external devices that support large amount of objects, object control and long loops.

Transmitter inputs function the same way as in the mode 1.

6. DCS 1

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



In this mode transmitter is connected to the Key-BUS of DSC control panel that has one or two partitions.

Transmitter inputs function the same way as in the mode 1.

7. DSC 2

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



In this mode transmitter is connected to the Key-BUS of DSC control panel that has more than two partitions.

Transmitter inputs function the same way as in the mode 1.

Indication

General indication	
TX LED	
Blinks red	Transmitting a message
PWR LED	
Constantly green	Power supply OK
Blinks once per second	Power low
Blinks once per 2 seconds	Control panel mode activated
Blinks 4 times per second	ROM failure or false programming
Blinks with a series of quick sparks once per second	"Antijamming" mode activated

Indication in interface port mode	
Communication indicator	
Blinks green	Data transferring
Indication in control panel mode	
Key reader or key switch LED	
Constantly lightened	Ready to arm
Not lightened	Not ready to arm
Double blink every 2 seconds	System armed
Fast blinking	User key programming mode
Triple blinking once 2 seconds	Guard key programming mode
Indication in Esprit and Magellan modes	
Communication indicator	
Blinks green	Data transferring
Indication in RS-BUS mode	
Communication indicator	
Blinks green once per second	Communication OK
Quickly blinks green	RS-BUS communication failure
Indication in DSC 1 and DSC 2 modes	
Communication indicator	
Blinks green	Data transferring
Quickly blinks green for 2 seconds	Wrong mode is set

Installation hints

It is recommended to use backup battery or **VSC-3,0/VSCS-1,5** device to power the transmitter.

Before powering up you have to connect the antenna – either way, directly to the transmitter connector (pin) or using a coaxial cable.

Mounting place should be chosen depending on the best signal receiving rates on the central station.

When mounting the transmitter you should take into consideration the following moments:

- wires from the battery to the transmitter must be as short as possible;
- wires that are connected to the transmitter should not be mounted near the antenna and under no circumstances must be parallel it;
- if using "dipole" antenna, it's cable should go perpendicularly antenna body for at least 1m;
- it's recommended to mount all devices in the metal box, and if using pin antenna, transmitter body must be wired to the box;

Working with transmitter in control panel mode

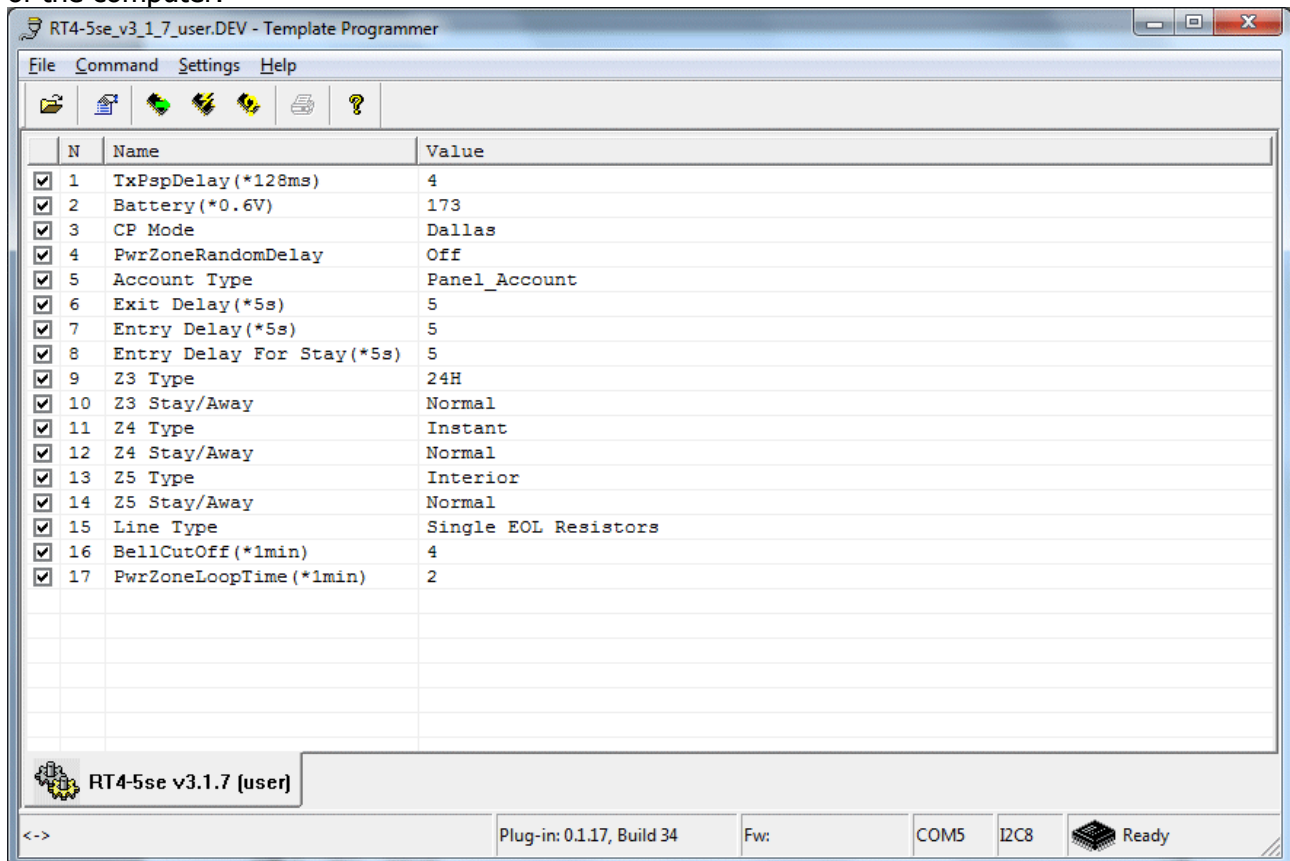
In this mode device is monitoring it's inputs status, depending on the arming status (armed/disarmed). Arming is made using Dallas touch memory keys or key-switch option. Key reader or key-switch is connected to the serial port.

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) and further message transmission to the Central Station. Zone restores are also transmitted to the Central Station.

Transmitter programming

Transmitter programming is made using **USB-Prg** programmer that is connected to USB-port of the computer.



Programming and information reading from the transmitter is only possible if in the lower-right corner of the screen **Ready** sign appears.

Programmer settings window can be opened by pressing F9 key.

Checkboxes near parameters determine whether this parameter will be modified (active) or no (not active). Parameter value change is made by selecting desired value from dropdown menu. Numeric values are entered using keyboard.

Value range for a certain parameter or event is displayed in popup window.

To program transmitter press F5 key.

To read information programmed in the transmitter press F6 key.

You can set the following parameters:

TxPSPDelay – time between transmissions (from 1 to 255)

Battery – battery normal state value (from 170 to 178)

CP mode – arming type in control panel mode. Dallas touch memory keys or Key-switch.

PwrZoneRandomDelay – turn of random reaction time for transmitter 6-th zone. In this mode transmitter 6-th zone is made for power supply monitoring and has random reaction time that depends on the transmitter address. Reaction time may vary from 0 to 13 minutes. This mode is designed to prevent network overload when 6-th zone triggers on a lot of transmitters at once.

Account Type – depending on the type chosen, panel account in transmission either left unchanged (Panel_Account) or changed to the "0000" (Zero_Account).

Antijamming – mode that allows relieving network load when a redundant amount of messages are sent by transmitter. If during 15 minute period the amount of transmissions exceeds 80, than time between transmissions increases to 1 minute for 15 minutes.

Exit Delay – exit delay (from 1 to 255)

Entry Delay – entry delay (from 1 to 255)

Entry Delay For Stay – entry delay for STAY ARM mode (from 1 to 255)

Z3 Type – zone 3 type. Can be one of the following:

24h. Always monitored and sets of the alarm, not depending whether the system is armed or disarmed.

Instant. Usually used for door and window contacts and has an exit delay, but will be immediately triggered if exit delay expires.

Interior. After delayed zone is triggered, interior zone works the same way as delayed zone. If delayed zone wasn't triggered - works like instant zone.

Z3 Stay/Away – parameter of the third zone that determines if zone will be ignored when arming in STAY ARM mode (Stay/Arm) or not (Normal). If zone type is 24h, this parameter is ignored.

Z4 Type – zone 4 type. Identical to the third zone types.

Z4 Stay/Away - parameter of the fourth zone that determines if zone will be ignored when arming in STAY ARM mode (Stay/Arm) or not (Normal). If zone type is 24h, this parameter is ignored..

Z5 Type - zone 5 type. Identical to the third zone types.

Z5 Stay/Away - parameter of the fifth zone that determines if zone will be ignored when arming in STAY ARM mode (Stay/Arm) or not (Normal). If zone type is 24h, this parameter is ignored.

Line Type – loop type. With End Of Line resistor (Single EOL Resistors) or normally closed (NC).

BellCutOff – bell duration when alarm occurs (from 1 to 255)

PwrZoneLoopTime – PWR zone delay in control panel mode (from 1 to 255)

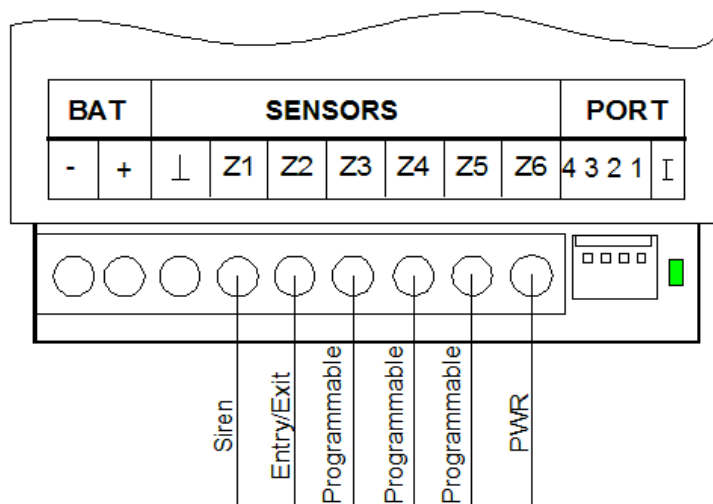
Transmitter zone configuration

All zones are strictly loaded to «+» (contact 1 on the dip switch must be turned off), i.e. react to «0»/«break» signals.

Part of transmitter zone functions are strictly programmed and cannot be changed.

Zone functions are following (see Pic.2):

- ⌚ 1-st input: **Siren**. Siren output. To this you should connect the siren that is activated when alarm occurs. When transmitter is powered up it turns on the siren for 3-second test.
- ⌚ 2-nd input: **Entry/Exit**. Delayed. 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: **IProgrammable 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. Zone reaction time can be changed. Default value - 2 minutes.
- ⌚ 7-th input (virtual): **Battery**. Battery voltage level monitoring. Activates if input voltage decreases lower than permissible level. Works in every mode.
- ⌚ 8-th input (virtual): **Arm/Disarm**. Status input. Input is in state 1 – object is armed, in state 0 - disarmed.

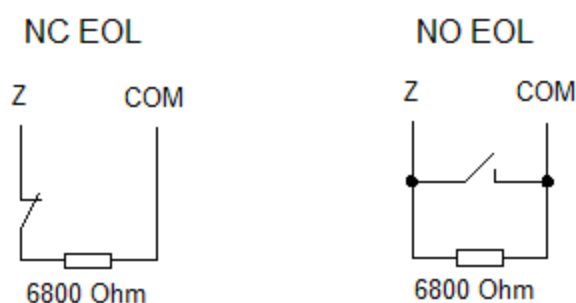


Pic. 2.

Dallas mode

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

Sensor loop connection in EOL mode



loop resistance in normal state must be 6,8kΩ

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.

STAY ARM mode

In order to arm object in STAY ARM mode you have to have at least one zone with the active Stay/Away parameter. In that case, when arming, Entry/exit zone status is controlled during exit delay. If the zone wasn't triggered during the delay (door wasn't open) STAY ARM mode is activated. In this mode alarms of the zones with the active Stay/Away parameter are ignored. You can also set additional entry delay for that mode.

If during the exit delay Entry/exit zone was triggered (door was open), than object is armed in the normal 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 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.

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.

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.

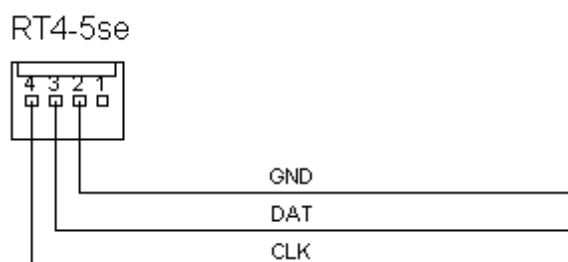
Disarming

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

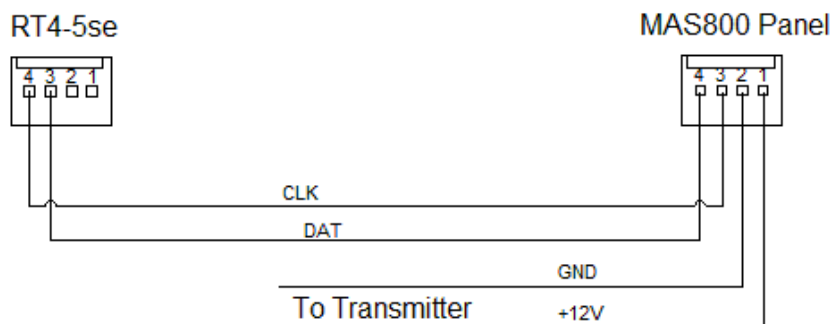
You have to disarm the system (disconnect the contacts) before delay hasn't expired. In that case "Disarmed" message will be sent to the Central Station. Otherwise an alarm message will be sent.

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.

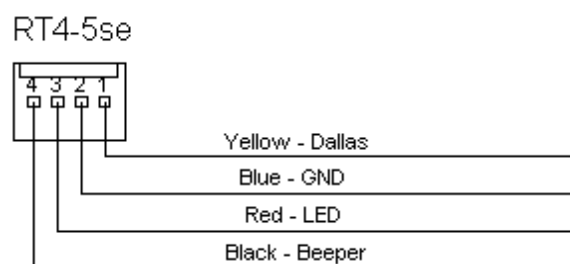
External device connecting to the interface port



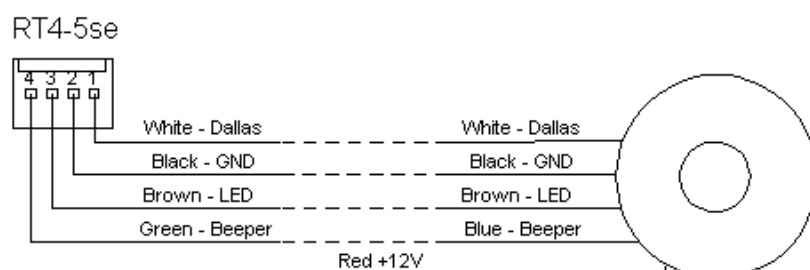
Connecting the modules that support Serial BUS (1-st mode)



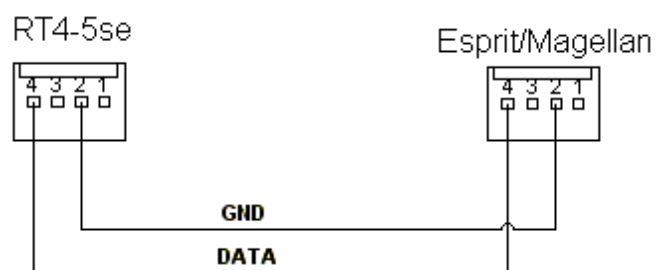
Connecting the MAS800 control panel (1-st mode)



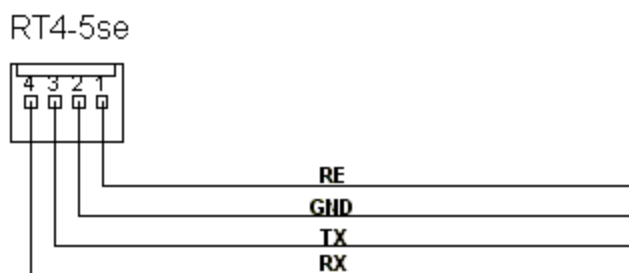
Connecting the key reader in control panel mode (2-nd mode)



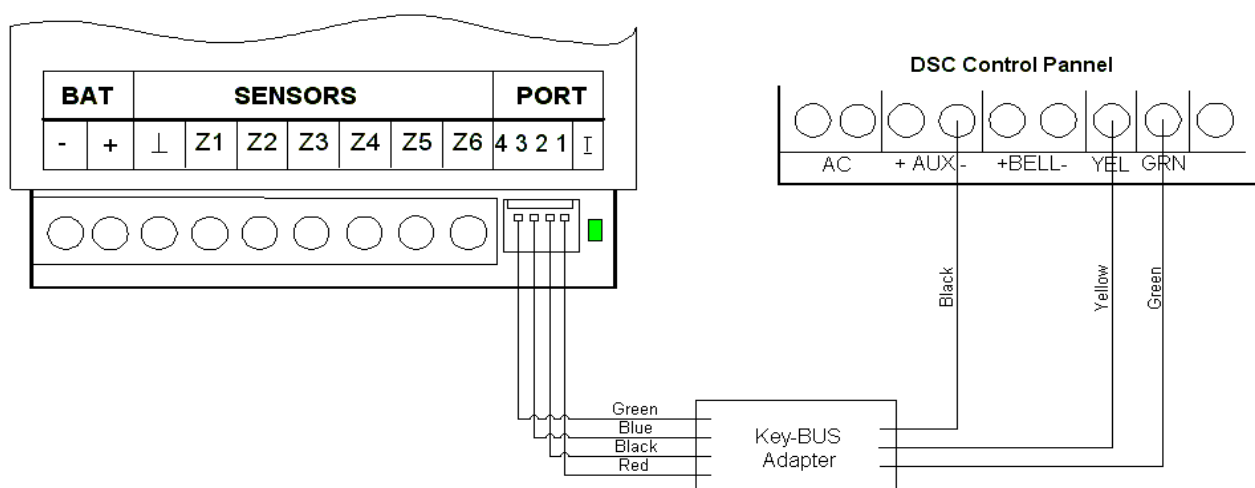
Connecting proximity reader in control panel mode (2-nd mode)



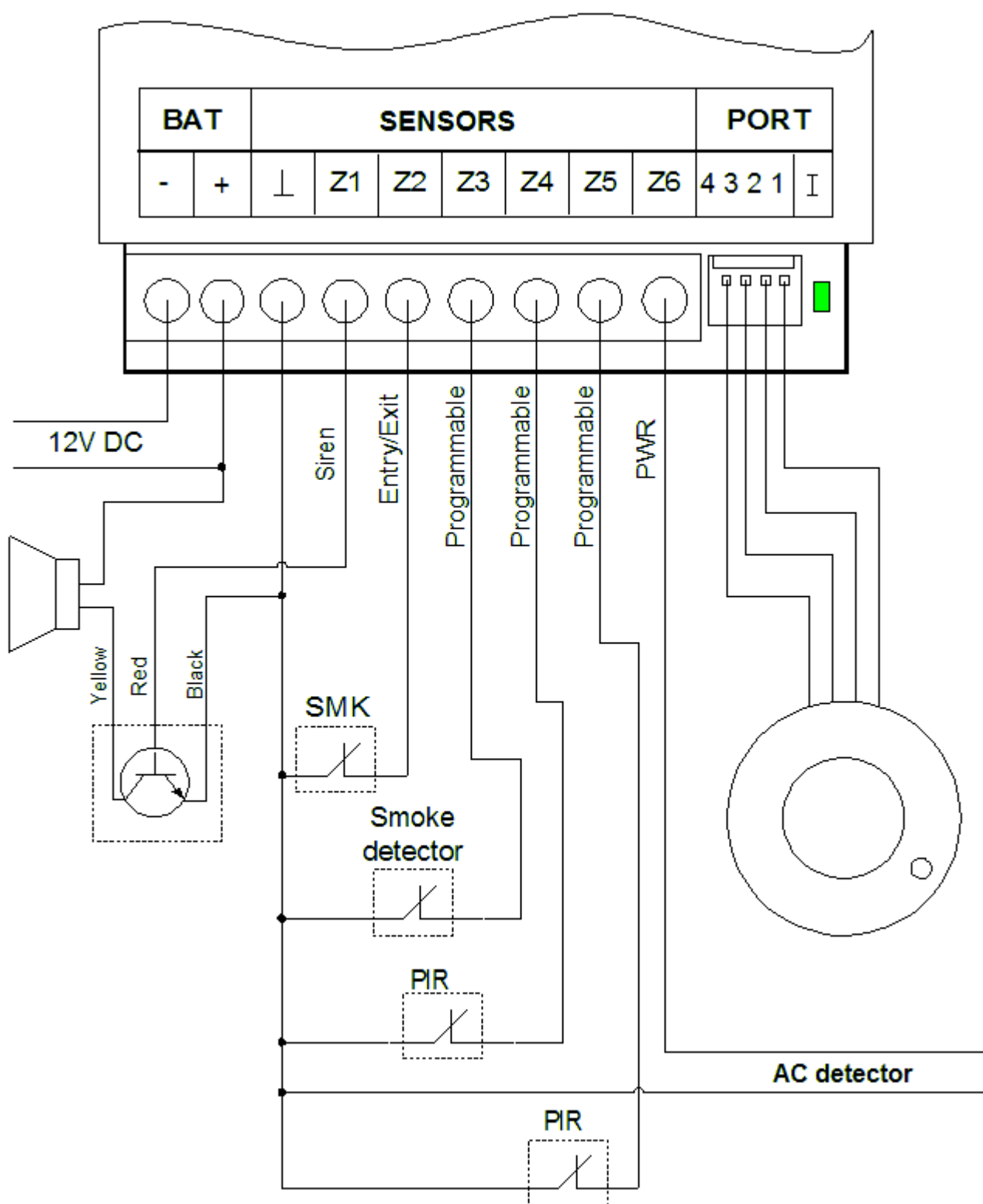
Connecting Esprit and Magellan control panels (3-rd and 4-th modes)



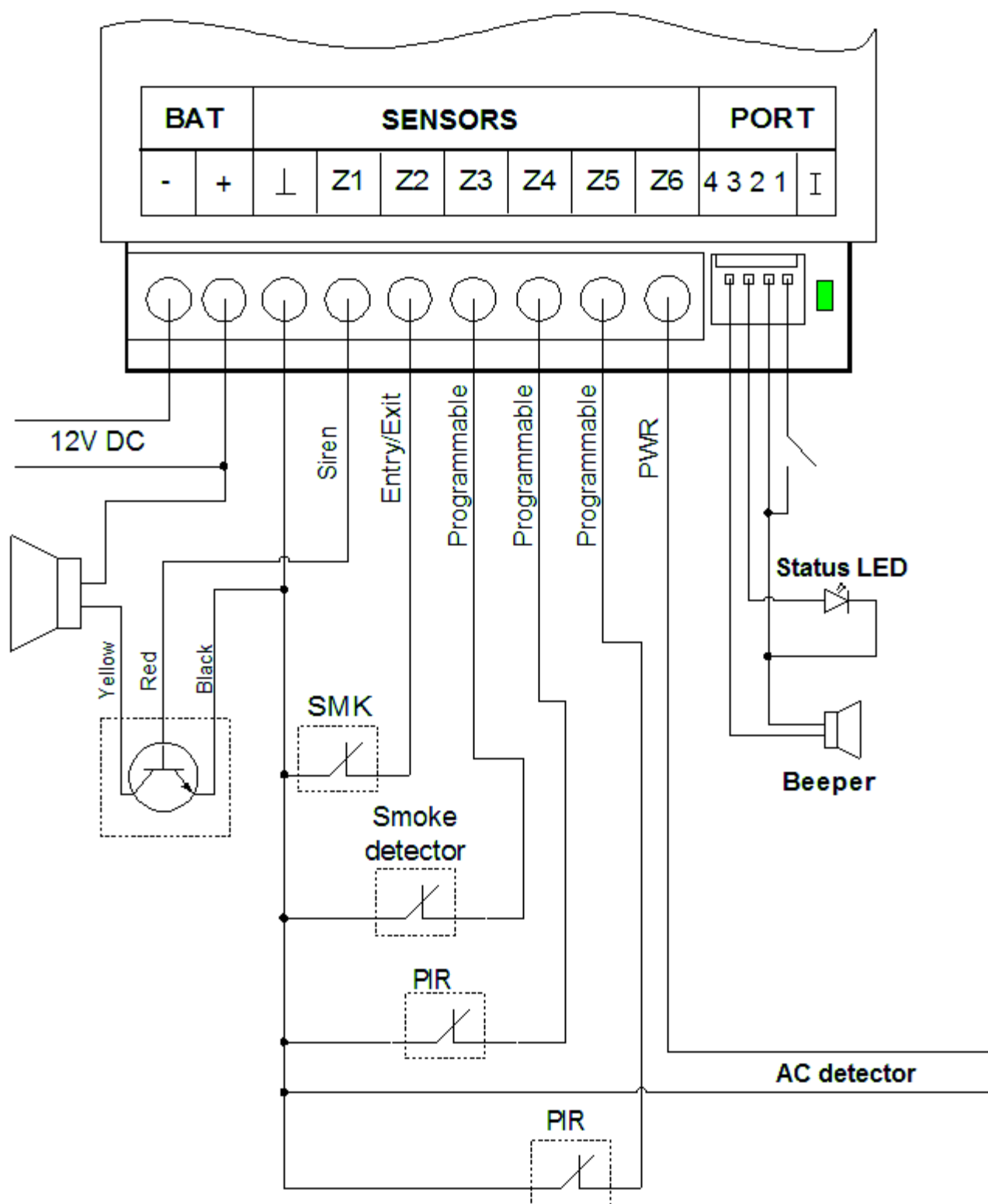
Connecting the modules that support RS-BUS (5-th mode)



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



Connecting external devices in control panel mode (2-nd mode)



Connecting external devices in control panel mode (2-nd mode)

Enclosures

Enclosure 1: Transmitter event codes in control panel mode

Event code	Description
1429000	Key registration mode entry
1430000	Key registration mode exit
34010xx	Armed by user. xx – user number
14010xx	Disarmed by user. xx – user number
34410xx	Armed in STAY ARM mode. xx – user number
14410xx	Disarmed in STAY ARM mode. xx – user number
1421000	Unregistered key touched key reader
14580xx	Guard key touched key reader. xx – guard number

Enclosure 2: PARADOX ESPRIT 7X8 codes

Number (HEX)	Group of events	Number (HEX)	EVENT (Assigned at each group)
4A	NON-REPORTABLE EVENT	00 01 02 03	Midnight TLM trouble Fail to communicate Alarm reset
5B 4B 7B 58 48 78	DISARM SYSTEM (No partition) DISARM SYSTEM A DISARM SYSTEM B ARM SYSTEM (No partition) ARM SYSTEM A ARM SYSTEM B	00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 FF	Master User 1 User 2 User 3 User 4 User 5 User 6 User 7 User 8 User 9 User 10 User 11 User 12 User 13 User 14 User 15 User 16 User 17 User 18 User 19 User 20 User 21 User 22 User 23 User 24 User 25 User 26 User 27 User 28 User 29 User 30 User 31 User 32 User 33 User 34 User 35 User 36 User 37 User 38 User 39 User 40 User 41 User 42 User 43 User 44 User 45 User 46 User 47 User 48 ESPLOAD

Number (HEX)	Group of events	Number (HEX)	EVENT (Assigned at each group)
59 49 79 5E 4E 7E 5F 4F 7F 5D 4D 7D	ALARM ZONE(No partition) ALARM ZONE (System A) ALARM ZONE (System B) ALARM RESTORE (No partition) ALARM RESTORE (System A) ALARM RESTORE (System B) ZONE BYPASS (No partition) ZONE BYPASS (System A) ZONE BYPASS (System B) TAMPER ZONE (No partition) TAMPER ZONE (System A) TAMPER ZONE (System B)	01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 12 13 14 15 16 17 18	Zone 1 Zone 2 Zone 3 Zone 4 Zone 5 Zone 6 Zone 7 Zone 8 Zone 9 Zone 10 Zone 11 Zone 12 Zone 13 Zone 14 Zone 15 Zone 16 Zone 17 Zone 18 Zone 19 Zone 20 Zone 21 Zone 22 Zone 23 Zone 24
53	TROUBLE	00 01 02 03 04 05	Auxiliary Bell Battery Power supply Fire loop Timer loss
50	TROUBLE RESTORE	00 01 02 03 04 05 06 07	Auxiliary Bell Battery Power supply Fire loop Timer prog. General tamper TLM
57	PROGRAMMING IN	00 01	Esplod login Installer on site
55	SPECIAL	00 01 02 03 04 05 06 07 08	Test report Panic 1 Panic 2 Panic 3 Late to lose No movement Partial arming Recent close Duress

Enclosure 3: Key-BUS protocol event codes*

Event code	Description
11300xx	Zone xx alarm, where xx – zone number
31300xx	Zone xx restored, where xx – zone number
1110000	Auxiliary alarm
3110000	Auxiliary restore
1115000	Fire alarm
3115000	Fire restore
1120000	Panic
3120000	Panic restore
1121000	Duress code entered
1139000	Cross zone (Police code) alarm
1143000	Zone expander supervisory alarm
3143000	Zone expander supervisory restore
1301000	AC trouble
3301000	AC restore
1302000	Battery low
3302000	Battery restore
3305000	Cold start (System reset)
1321000	Bell circuit trouble
3321000	Bell circuit restore
13330xx	Lost communication with module xx, where xx - module address
33330xx	Restored communication with module xx, where xx - module address
1351000	TLM failure
3351000	TLM restore
1354000	Phone number 1 or 2 FTC restoration
1373000	Fire trouble
3373000	Fire restore
13800xx	Zone xx fault, where xx - zone number
33800xx	Zone xx restore, where xx - zone number
13830xx	Zone xx tamper alarm, where xx - zone number
33830xx	Zone xx tamper restore, where xx - zone number
1384000	Wireless key battery low
3384000	Wireless key battery restore
13840xx	Wireless sensor battery low, where xx - sensor address
33840xx	Wireless sensor battery restore, where xx - sensor address
1400000	Special opening
3400000	Special closing
14010xx	Opened by user xx, where xx - user number

34010xx	Closed by user xx, where xx - user number
1402040	Opened by master-code
3402040	Closed by master-code
1405000	Auto-arm cancellation
1406000	Opening after alarm
1421000	Keypad lockout
1429000	Programming mode entry
1430000	Programming mode exit
1459000	Recent closing
1470000	Partial closing
1601000	System test
1602000	Periodic test

* - Table may be expanded in the future versions

Enclosure 4: code table for transmitter zone statuses

Event code	Zone status	Event code	Zone status	Event code	Zone status	Event code	Zone status
00	-, -, -, -, -, -*	20	-, -, -, -, 6, -	40	-, -, -, -, 7, -	60	-, -, -, -, 6, 7, -
01	1, -, -, -, -, -	21	1, -, -, -, 6, -	41	1, -, -, -, 7, -	61	1, -, -, -, 6, 7, -
02	-, 2, -, -, -, -	22	-, 2, -, -, 6, -	42	-, 2, -, -, 7, -	62	-, 2, -, -, 6, 7, -
03	1, 2, -, -, -, -	23	1, 2, -, -, 6, -	43	1, 2, -, -, 7, -	63	1, 2, -, -, 6, 7, -
04	-, -, 3, -, -, -	24	-, -, 3, -, 6, -	44	-, -, 3, -, 7, -	64	-, -, 3, -, 6, 7, -
05	1, -, 3, -, -, -	25	1, -, 3, -, 6, -	45	1, -, 3, -, 7, -	65	1, -, 3, -, 6, 7, -
06	-, 2, 3, -, -, -	26	-, 2, 3, -, 6, -	46	-, 2, 3, -, 7, -	66	-, 2, 3, -, 6, 7, -
07	1, 2, 3, -, -, -	27	1, 2, 3, -, 6, -	47	1, 2, 3, -, 7, -	67	1, 2, 3, -, 6, 7, -
08	-, -, -, 4, -, -	28	-, -, -, 4, 6, -	48	-, -, -, 4, 7, -	68	-, -, -, 4, 6, 7, -
09	1, -, -, 4, -, -	29	1, -, -, 4, 6, -	49	1, -, -, 4, 7, -	69	1, -, -, 4, 6, 7, -
0A	-, 2, -, 4, -, -	2A	-, 2, -, 4, 6, -	4A	-, 2, -, 4, 7, -	6A	-, 2, -, 4, 6, 7, -
0B	1, 2, -, 4, -, -	2B	1, 2, -, 4, 6, -	4B	1, 2, -, 4, 7, -	6B	1, 2, -, 4, 6, 7, -
0C	-, -, 3, 4, -, -	2C	-, -, 3, 4, 6, -	4C	-, -, 3, 4, 7, -	6C	-, -, 3, 4, 6, 7, -
0D	1, -, 3, 4, -, -	2D	1, -, 3, 4, 6, -	4D	1, -, 3, 4, 7, -	6D	1, -, 3, 4, 6, 7, -
0E	-, 2, 3, 4, -, -	2E	-, 2, 3, 4, 6, -	4E	-, 2, 3, 4, 7, -	6E	-, 2, 3, 4, 6, 7, -
0F	1, 2, 3, 4, -, -	2F	1, 2, 3, 4, 6, -	4F	1, 2, 3, 4, 7, -	6F	1, 2, 3, 4, 6, 7, -
10	-, -, -, -, 5, -	30	-, -, -, -, 5, 6, -	50	-, -, -, -, 5, 7, -	70	-, -, -, -, 5, 6, 7, -
11	1, -, -, -, 5, -	31	1, -, -, -, 5, 6, -	51	1, -, -, -, 5, 7, -	71	1, -, -, -, 5, 6, 7, -
12	-, 2, -, -, 5, -	32	-, 2, -, -, 5, 6, -	52	-, 2, -, -, 5, 7, -	72	-, 2, -, -, 5, 6, 7, -
13	1, 2, -, -, 5, -	33	1, 2, -, -, 5, 6, -	53	1, 2, -, -, 5, 7, -	73	1, 2, -, -, 5, 6, 7, -
14	-, -, 3, -, 5, -	34	-, -, 3, -, 5, 6, -	54	-, -, 3, -, 5, 7, -	74	-, -, 3, -, 5, 6, 7, -
15	1, -, 3, -, 5, -	35	1, -, 3, -, 5, 6, -	55	1, -, 3, -, 5, 7, -	75	1, -, 3, -, 5, 6, 7, -
16	-, 2, 3, -, 5, -	36	-, 2, 3, -, 5, 6, -	56	-, 2, 3, -, 5, 7, -	76	-, 2, 3, -, 5, 6, 7, -
17	1, 2, 3, -, 5, -	37	1, 2, 3, -, 5, 6, -	57	1, 2, 3, -, 5, 7, -	77	1, 2, 3, -, 5, 6, 7, -
18	-, -, -, 4, 5, -	38	-, -, -, 4, 5, 6, -	58	-, -, -, 4, 5, 7, -	78	-, -, -, 4, 5, 6, 7, -
19	1, -, -, 4, 5, -	39	1, -, -, 4, 5, 6, -	59	1, -, -, 4, 5, 7, -	79	1, -, -, 4, 5, 6, 7, -
1A	-, 2, -, 4, 5, -	3A	-, 2, -, 4, 5, 6, -	5A	-, 2, -, 4, 5, 7, -	7A	-, 2, -, 4, 5, 6, 7, -
1B	1, 2, -, 4, 5, -	3B	1, 2, -, 4, 5, 6, -	5B	1, 2, -, 4, 5, 7, -	7B	1, 2, -, 4, 5, 6, 7, -
1C	-, -, 3, 4, 5, -	3C	-, -, 3, 4, 5, 6, -	5C	-, -, 3, 4, 5, 7, -	7C	-, -, 3, 4, 5, 6, 7, -
1D	1, -, 3, 4, 5, -	3D	1, -, 3, 4, 5, 6, -	5D	1, -, 3, 4, 5, 7, -	7D	1, -, 3, 4, 5, 6, 7, -
1E	-, 2, 3, 4, 5, -	3E	-, 2, 3, 4, 5, 6, -	5E	-, 2, 3, 4, 5, 7, -	7E	-, 2, 3, 4, 5, 6, 7, -
1F	1, 2, 3, 4, 5, -	3F	1, 2, 3, 4, 5, 6, -	5F	1, 2, 3, 4, 5, 7, -	7F	1, 2, 3, 4, 5, 6, 7, -

Event code	Zone status	Event code	Zone status	Event code	Zone status	Event code	Zone status
80	-,-,-,-,-,8	A0	-,-,-,-,6,-,8	C0	-,-,-,-,-,7,8	E0	-,-,-,-,-,6,7,8
81	1,-,-,-,-,-,8	A1	1,-,-,-,-,6,-,8	C1	1,-,-,-,-,-,7,8	E1	1,-,-,-,-,-,6,7,8
82	-,-,2,-,-,-,-,8	A2	-,-,2,-,-,-,6,-,8	C2	-,-,2,-,-,-,-,7,8	E2	-,-,2,-,-,-,-,6,7,8
83	1,2,-,-,-,-,-,8	A3	1,2,-,-,-,-,6,-,8	C3	1,2,-,-,-,-,-,7,8	E3	1,2,-,-,-,-,-,6,7,8
84	-,-,3,-,-,-,-,8	A4	-,-,3,-,-,-,6,-,8	C4	-,-,3,-,-,-,-,7,8	E4	-,-,3,-,-,-,-,6,7,8
85	1,-,3,-,-,-,-,8	A5	1,-,3,-,-,-,6,-,8	C5	1,-,3,-,-,-,-,7,8	E5	1,-,3,-,-,-,-,6,7,8
86	-,-,2,3,-,-,-,-,8	A6	-,-,2,3,-,-,-,6,-,8	C6	-,-,2,3,-,-,-,-,7,8	E6	-,-,2,3,-,-,-,-,6,7,8
87	1,2,3,-,-,-,-,-,8	A7	1,2,3,-,-,-,-,6,-,8	C7	1,2,3,-,-,-,-,-,7,8	E7	1,2,3,-,-,-,-,-,6,7,8
88	-,-,-,4,-,-,-,-,8	A8	-,-,-,4,-,-,-,6,-,8	C8	-,-,-,4,-,-,-,-,7,8	E8	-,-,-,4,-,-,-,-,6,7,8
89	1,-,-,4,-,-,-,-,8	A9	1,-,-,4,-,-,-,6,-,8	C9	1,-,-,4,-,-,-,-,7,8	E9	1,-,-,4,-,-,-,-,6,7,8
8A	-,-,2,-,4,-,-,-,-,8	AA	-,-,2,-,4,-,-,-,6,-,8	CA	-,-,2,-,4,-,-,-,-,7,8	EA	-,-,2,-,4,-,-,-,-,6,7,8
8B	1,2,-,4,-,-,-,-,-,8	AB	1,2,-,4,-,-,-,-,6,-,8	CB	1,2,-,4,-,-,-,-,-,7,8	EB	1,2,-,4,-,-,-,-,-,6,7,8
8C	-,-,-,3,4,-,-,-,-,8	AC	-,-,-,3,4,-,-,-,6,-,8	CC	-,-,-,3,4,-,-,-,-,7,8	EC	-,-,-,3,4,-,-,-,-,6,7,8
8D	1,-,-,3,4,-,-,-,-,-,8	AD	1,-,-,3,4,-,-,-,-,6,-,8	CD	1,-,-,3,4,-,-,-,-,-,7,8	ED	1,-,-,3,4,-,-,-,-,-,6,7,8
8E	-,-,2,3,4,-,-,-,-,-,8	AE	-,-,2,3,4,-,-,-,-,6,-,8	CE	-,-,2,3,4,-,-,-,-,-,7,8	EE	-,-,2,3,4,-,-,-,-,-,6,7,8
8F	1,2,3,4,-,-,-,-,-,-,8	AF	1,2,3,4,-,-,-,-,-,6,-,8	CF	1,2,3,4,-,-,-,-,-,-,7,8	EF	1,2,3,4,-,-,-,-,-,-,6,7,8
90	-,-,-,-,5,-,-,-,-,8	B0	-,-,-,-,5,6,-,-,-,8	D0	-,-,-,-,5,-,-,-,-,7,8	F0	-,-,-,-,5,6,7,8
91	1,-,-,-,5,-,-,-,-,-,8	B1	1,-,-,-,5,6,-,-,-,-,8	D1	1,-,-,-,5,-,-,-,-,-,7,8	F1	1,-,-,-,5,6,7,8
92	-,-,2,-,-,5,-,-,-,-,-,8	B2	-,-,2,-,-,5,6,-,-,-,-,8	D2	-,-,2,-,-,5,-,-,-,-,-,7,8	F2	-,-,2,-,-,5,6,7,8
93	1,2,-,-,-,5,-,-,-,-,-,8	B3	1,2,-,-,-,5,6,-,-,-,-,8	D3	1,2,-,-,-,5,-,-,-,-,-,7,8	F3	1,2,-,-,-,5,6,7,8
94	-,-,-,3,-,5,-,-,-,-,-,8	B4	-,-,-,3,-,5,6,-,-,-,-,-,8	D4	-,-,-,3,-,5,-,-,-,-,-,7,8	F4	-,-,-,3,-,5,6,7,8
95	1,-,-,3,-,5,-,-,-,-,-,-,8	B5	1,-,-,3,-,5,6,-,-,-,-,-,-,8	D5	1,-,-,3,-,5,-,-,-,-,-,-,7,8	F5	1,-,-,3,-,5,6,7,8
96	-,-,2,3,-,-,5,-,-,-,-,-,-,8	B6	-,-,2,3,-,-,5,6,-,-,-,-,-,-,8	D6	-,-,2,3,-,-,5,-,-,-,-,-,-,7,8	F6	-,-,2,3,-,-,5,6,7,8
97	1,2,3,-,-,5,-,-,-,-,-,-,-,8	B7	1,2,3,-,-,5,6,-,-,-,-,-,-,-,8	D7	1,2,3,-,-,5,-,-,-,-,-,-,-,7,8	F7	1,2,3,-,-,5,6,7,8
98	-,-,-,4,5,-,-,-,-,-,-,-,8	B8	-,-,-,4,5,6,-,-,-,-,-,-,-,8	D8	-,-,-,4,5,-,-,-,-,-,-,-,7,8	F8	-,-,-,4,5,6,7,8
99	1,-,-,-,4,5,-,-,-,-,-,-,-,-,8	B9	1,-,-,-,4,5,6,-,-,-,-,-,-,-,-,8	D9	1,-,-,-,4,5,-,-,-,-,-,-,-,-,7,8	F9	1,-,-,-,4,5,6,7,8
9A	-,-,2,-,4,5,-,-,-,-,-,-,-,-,8	BA	-,-,2,-,4,5,6,-,-,-,-,-,-,-,-,8	DA	-,-,2,-,4,5,-,-,-,-,-,-,-,-,7,8	FA	-,-,2,-,4,5,6,7,8
9B	1,2,-,-,4,5,-,-,-,-,-,-,-,-,-,8	BB	1,2,-,-,4,5,6,-,-,-,-,-,-,-,-,-,8	DB	1,2,-,-,4,5,-,-,-,-,-,-,-,-,-,7,8	FB	1,2,-,-,4,5,6,7,8
9C	-,-,-,3,4,5,-,-,-,-,-,-,-,-,-,8	BC	-,-,-,3,4,5,6,-,-,-,-,-,-,-,-,-,8	DC	-,-,-,3,4,5,-,-,-,-,-,-,-,-,-,7,8	FC	-,-,-,3,4,5,6,7,8
9D	1,-,-,-,3,4,5,-,-,-,-,-,-,-,-,-,-,8	BD	1,-,-,-,3,4,5,6,-,-,-,-,-,-,-,-,-,-,8	DD	1,-,-,-,3,4,5,-,-,-,-,-,-,-,-,-,-,7,8	FD	1,-,-,-,3,4,5,6,7,8
9E	-,-,2,3,4,5,-,-,-,-,-,-,-,-,-,-,8	BE	-,-,2,3,4,5,6,-,-,-,-,-,-,-,-,-,-,8	DE	-,-,2,3,4,5,-,-,-,-,-,-,-,-,-,-,7,8	FE	-,-,2,3,4,5,6,7,8
9F	1,2,3,4,5,-,-,-,-,-,-,-,-,-,-,-,8	BF	1,2,3,4,5,6,-,-,-,-,-,-,-,-,-,-,-,8	DF	1,2,3,4,5,-,-,-,-,-,-,-,-,-,-,-,7,8	FF	1,2,3,4,5,6,7,8

* - "**Zone number**" - zone in alarm state, "-" - zone in normal state.

Example: "-,2,-,-,5,-,7,-" 2-nd, 5-th and 7-th zones are in alarm state, 1-st, 3-rd, 4-th, 6-th and 8-th zones are in normal state.