RADOM

s.r.o.

RADOM SECURITY
Object Safeguard System

Issue: May 2008

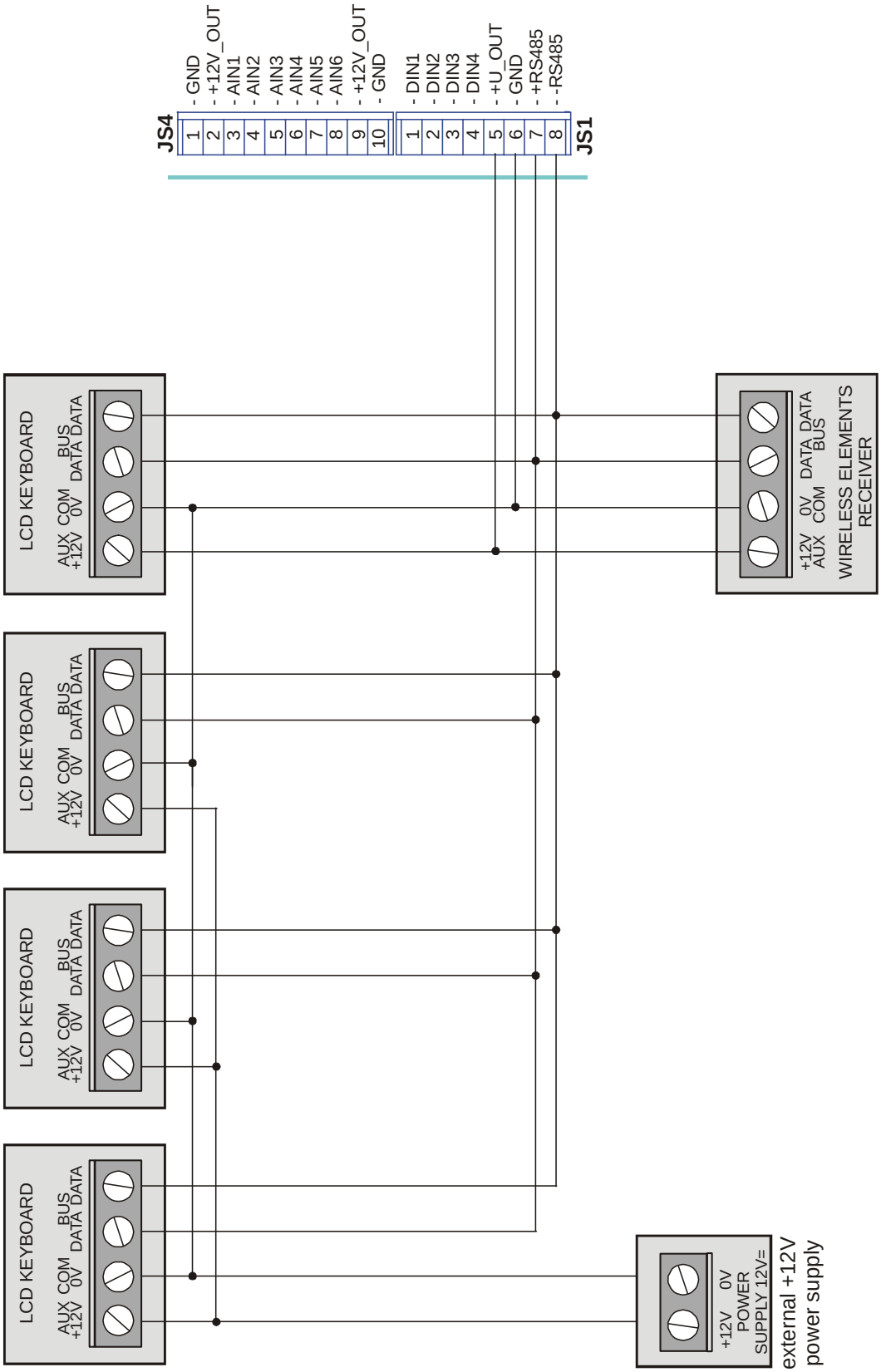
Assembly Instruction for Electronic Alarm Control Panel with PITBUL GSM Communicator

Jiřího Potůčka 259
530 09 Pardubice
tel.: +420 466 414 211
fax: +420 466 413 315
e-mail: info@radom.eu
internet: www.radom.eu

Authors: Milan Bis
Adam Panchártek

Sheets: 97
№ of document: KD 800 133
EČZ: 05
Firmware version 2.00

10.3 Example of Connecting Bus LCD Keyboards and Wireless Elements Receiver



1. HISTORY OF VERSIONS OF THE PITBUL COMMUNICATOR ASSEMBLY AND OPERATING INSTRUCTION

Date	FW Version	Version of instruction (EČZ)	Author	Description of changes
Sept. 2007	1.01	00	MBi + AdP	Creating Assembly instruction of PITBUL GSM communicator
Sept. 2007	1.02	01	MBi	Memory of events.
October 2007	1.03	02	MBi	New FAULTY CODE event after repeated inserting an erroneous code on LCD keyboard.
April 2008	2.00	03	MBi	Changed behavior of control panel at an alarm sound. User codes can be assigned to particular subsystems.
May 2008	2.00	04	MBi	Repeater support added.

2. INTRODUCTION

Electronic alarm control panel (hereinafter EZS) with the GSM communicator is designed for alarm messages transmission from single houses, cottages, flats, garages, etc. to the centralized protection console (hereinafter PCO) and to the cellular phone. The equipment enables information transfer from ten wire inputs (digital, analog) to eight telephone numbers maximum in the form of SMS message and voice call (ring through). In addition, data can be transmitted from the equipment by GPRS to two PCO (two IP addresses) maximum. The equipment can be also used with limited performance in "Detector" mode when an arbitrary EZS central commercial workstation can be connected to it. The PITBUL equipment features follow up the SXS22, SXS23 models manufactured by RADOM company.

3. SPECIFICATIONS

3.1 Operating Conditions

The equipment is designed for application in an environment protected against climatic effects with the conditions classification acc. to ČSN EN 60721-3-3 standard.

K: climatic effects for an environment

- range of operating temperatures	-5℃ ÷ +55℃
- range of air relative humidity	75%, 10 days a year 95% @ +40℃, other days occasionally 85%
- range of barometric pressure	86 ÷ 106 kPa
- w/o condensation, glaze and ice production	

Z: special conditions	3Z1 negligible thermal radiation
B: biological conditions	3B1 w/o flora and fauna presence
C: chemical conditions	3C1
S: mechanical active substances	3S1
M: mechanical conditions	3M1

Mass	ca 540 g
Dimensions (w x h x d)	ca 200 x 145 x 80 mm

Cross section of connectable conductors	0,2 - 0,35 mm²

IP rating acc. to ČSN EN 60 529	IP 20
Electromagnetic compatibility (EMC)	acc. to ČSN EN 50130-4

The product is approved by ČTÚ in sense of general authorization
№ VO-R/10/05.2006-22

The product corresponds to:	ČSN EN 60950
	ČSN ETS 300342-1

3.2 Power Supply

The equipment is supplied from the AC voltage mains of 230 V. The supply voltage is duplicated by means of a lead 6 V accumulator.

The equipment enables connecting appliances fed by 12 V. Their common maximum consumption must not exceed 150 mA (e.g. for feeding PIR sensors, keyboards etc.).

Supply voltage (JR5 terminal):

- 230V ±10% / 50Hz / max. 15VA

Reserve accumulator (J3, J4 terminals):

- built-in, lead, hermetically sealed, gel, maintenance-free accumulator 6 V / 4.5 Ah

Output voltage (+12V_OUT terminals):

- direct-current 12 V ±0,5 V / 0.15 A max. (electronically limited)

Operating period with reserve accumulator (in case of the main supply failure):

- ca 12 hrs (at fully charged accumulator and zero consumption from the output of +12 V/Out)

WARNING:
The equipment is not protected against deep accumulator discharge!

3.3 Inputs

Inputs are designed for direct connection of sensors, or for the connection with output module of the EZS control panel. Connecting points of outputs see Fig. 1.

3.3.1 Inputs Wiring Design

number of inputs:	10
inputs design:	not electrically isolated

All DIN1-DIN4 and AIN1-AN6 wire inputs can be wired like digital dead inputs, while the DIN1-DIN4 inputs can be moreover connected like potential inputs. In addition, the AIN1-AIN6 inputs can be wired like analog inputs with simple balancing.

For DIN1-DIN4 inputs, the wiring method is defined by a jumper wiring in the JP2 connector on the printed circuit board (viz.). By means of conductive interconnection of points 2-3 of the JP2 connector, all four DIN1-DIN4 inputs are wired like potential inputs, and by means of points 1-2 interconnection – like dead inputs.

In addition, the AIN1-AIN6 inputs can be connected like analog inputs with simple balancing.

Way of inputs wiring shall be defined with the help of configuration parameters (see chapter 5.2.7). Inputs wiring examples see chapter 10.1.

Dead Wiring of DIN1-DIN4 and AIN1-AIN6 Wire Inputs:

All wire inputs can be connected like digital dead inputs. The inputs are controlled by earthing (GND terminal). The input quiescent value can be set by means of a configuration parameter (see chapter 5.2.7).

LOG „0” conductive connection of input terminal with GND terminal (0 – 1kΩ)
LOG „1” input terminal is disconnected (20kΩ - ∞)

Potential Wiring of DIN1-DIN4 Wire Inputs:

DIN1-DIN4 wire inputs can be connected like digital potential inputs. The inputs are controlled by positive voltage application. The input quiescent value can be set by means of a configuration parameter (see chapter 5.2.7).

LOG „0” connection of 0V ÷ +1V voltage (towards ground)
LOG „1” connection of +5V ÷ +15V voltage (towards ground)

Analog Design of AIN1-AIN6 Inputs (Balanced Inputs)

AIN1-AIN6 can be connected like analog with a simple balancing. Inputs of balanced loops are quiet so far as 1kΩ resistor towards ground (GND terminal) connected to them. Alarm shall be generated in case of the balance loss by more than ±30% lasting more than 10msec. The input shall be balanced, if a resistor in the range of 700Ω ÷ 1300Ω towards ground (GND) connected to it.

WARNING: Voltage must not be connected to balanced inputs, otherwise, danger of the equipment threatens.

3.4 Wire LCD Keyboard

The PITBUL equipment enables connection of up to four RP128KCL000A wire LCD keyboards. The LCD keyboard requires application of supply DC voltage of 13,8±10%V/100mA. Output 12V DC voltage of the PITBUL equipment can be applied on JS1.5 (U_OUT) or JS4.2 (+12V_OUT) terminals can be utilized for the keyboard supply. The LCD keyboard wiring see chapter 10.3.

3.5 Wireless Receiver for Wireless Elements Installation

A single receiver of wireless elements can be connected to the PITBUL equipment. Namely, either by means of the RP128EW0800A, which enables reception of up to 8 wireless elements, or RP128EW1600A, which enables reception up to 16 wireless elements. It shall be connected to JS1.7 and JS1.8 terminals. The wireless receiver requires application of supply DC voltage of 13,8±10% V/40mA. For other elements supply, the output 12V DC voltage of the PITBUL equipment on JS4.2 and JS4.9 (+12V_OUT) terminals can be utilized. Wiring of the receiver for wireless elements see chapter 10.3.

3.6 Outputs

The SIRENA output (JS2-7 and JS2-8 terminals) is designed for an electric equipment control (e.g. piezoelectric siren) for an alarm signaling.

„Siren”:
- output design: w/o electrical isolation
- transistor with open drain
- integrated overvoltage protection and protection against reversal of connected voltage polarity
- maximum loading: 30V / 2A
- voltage drop in closed state: max. 1,5V

BUZZER output (J2-1 and J2-2 terminals) serves for an audio converter connection for acoustic indication of the changeover from/to the HLÍDÁNO *[guarded]* status, PŘEDPOPLACH (PŘÍCHOD) *[prealarm (arrival)]* or indication of pressing buttons on the DANIUSII panel.

Output1 (JS2-2 terminal), Output2 (JS2-3 terminal) and Output3 (JS2-4 terminal) are universal outputs that can be controlled as follows:

- by the user’s SMS messages or with the help of DTMF tones (it requires voice connection with the equipment)
- by program according to the input loops state
- remote control with the help of wireless buttons

„Output 1", „Output 2", „Output 3" and „BUZZER":
- output design: w/o electrical isolation
- transistor with open drain
- integrated overvoltage protection and protection against reversal of connected voltage polarity
- maximum loading: 30V / 1A
- voltage drop in closed state: max. 0,5V @ 1A

Warning:

Particular inputs and outputs are not electrically isolated, therefore it is necessary to take heed to following operations:

- connecting any equipment with different ground potential;
- connecting any equipment at greater distance;
- connecting higher number of devices.

3.7 GSM Modem

The PITBUL24 equipment is outfitted with a four-band communication GSM module TELIT GE864-QUAD (JE1 connector). The modem communicates with a customer's cellular phone or with PCO via GSM/GPRS network of selected user, namely in the band of 850 / 900 / 1800 / 1900 MHz. The SIM card shall be inserted to the SIM card reader (JS3). The SIM card must support GPRS with fix IP addresses, application of dynamic allocated IP addresses must be consulted with the manufacturer (transmission security shall be significantly decreased in such case). The SIM card application with defined payment tariff is recommended. To ensure as highest operation reliability as possible, it is appropriate to choose SIM cards from the same network operator (GSM operator) for the equipment and customer's cellular phone (PCO). Telephone numbers, APN and IP addresses shall be set in configuration (see chapter 5.2). APN equipment and PCO must be identical.

For optimal performance of the PITBUL equipment, the signal intensity of the GSM network on the equipment site should be at least -93dBm or better (see chapter 7.10.1.3.6).

3.8 Printed Circuit Board

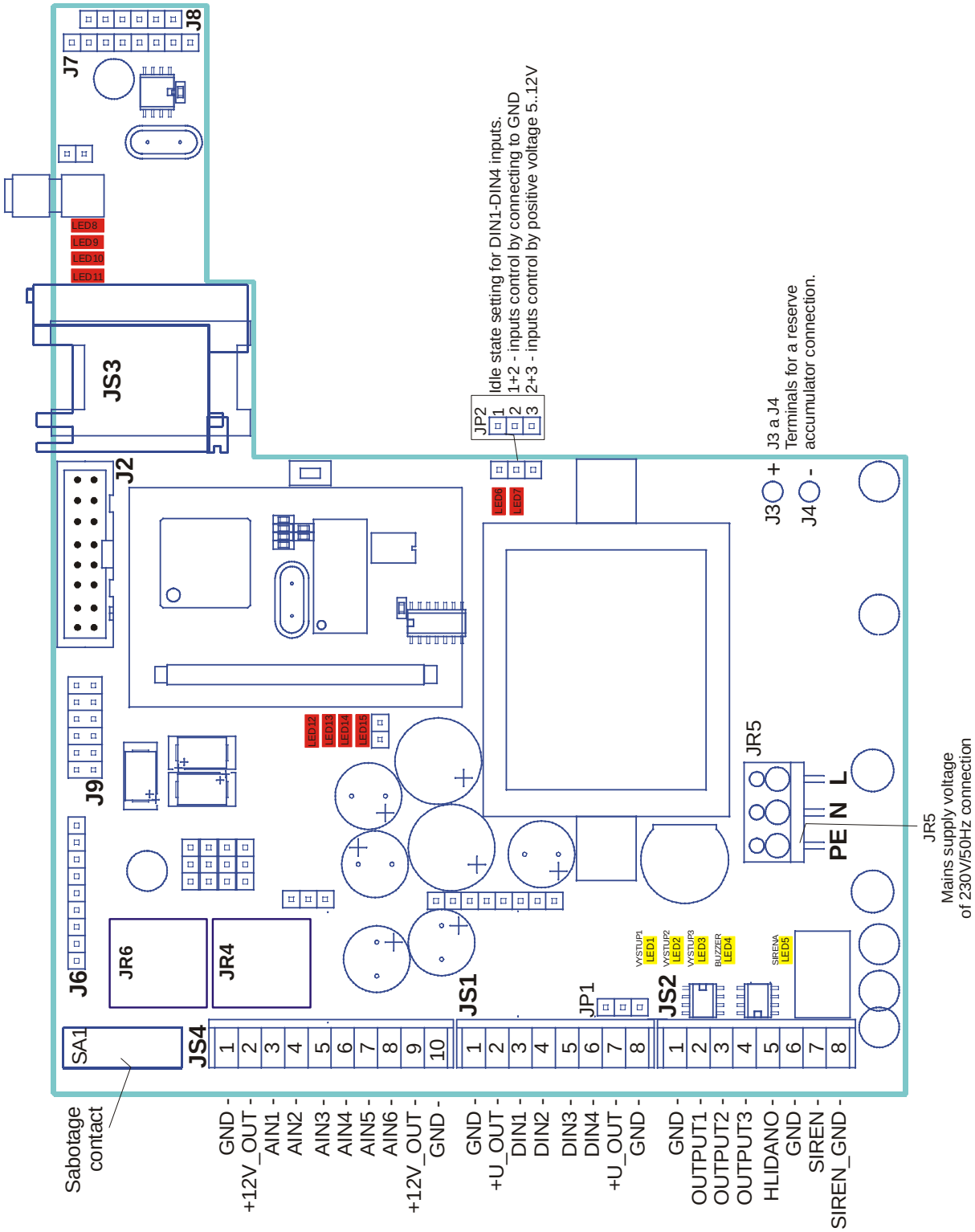


Fig. 1 – Printed circuit board

4. OPERATION VARIANTS

The PITBUL equipment can be operated in two modes – control panel, or communicator.

In the **control panel** mode, it is possible to set the EZS alarm control panel properties, i.e. to discern states when inputs are to be or are not to be guarded (status GUARDED/NOT GUARDED). In addition, this mode autonomously ensures guarding objects and information transmission (particularly alarms) to the PCO or cellular phone.

The **communicator** mode permanently evaluates all changes of inputs. It can operate for information transmission to the PCO or cellular phone from any EZS control panel, or from another device connected to the PITBUL equipment.

Various application possibilities are determined by the configuration.

4.1 Equipment Operating like a Control Panel

The equipment utilizes 10 wire inputs for alarm loops. In addition, input alarm loops can be extended by up to 16 wireless elements in case of the wireless elements receiver connection to the RS-485 interface.

To allow for the possibility of controlling the control panel GUARDED/NOT GUARDED capability, a bus LCD keyboard (RP128KCL000A) shall be connected to the RS485 interface.

Function:

The equipment evaluates the mains supply state, state of built-in accumulator, sensor supply voltage, and possible sabotage. After the changeover from NOT GUARDED status to the GUARDED status, also state of input loops shall be evaluated.

At the alarm, following operations shall optionally occur:

- GPRS datagrams transmission to PCO
- SMS messages transmission in data form (8-bit coding) to PCO
- SMS messages transmission in text form (7-bit coding) to the user's cellular phone
- telephone numbers ringing through
- Siren output activation (with adjustable time of activation: 0-255 sec)

These steps can be arbitrarily combined by an appropriate setting of configuration parameters, while two IP addresses, and for SMS messages and calling, up to 8 telephone numbers can be defined for the data transmission in GPRS.

HLÍDÁNO state is internally divided in several modes (see Fig. 2):

1. DEPARTURE – time determined by expiry of so called departure delay, this delay is configurable
2. GUARDED
3. PREALARM (ARRIVAL) – time determined by expiry of so called arrival delay, this delay is configurable.
4. ALARM

At the changeover from the NOT GUARDED to GUARDED state, the equipment automatically changes to the DEPARTURE state. In the DEPARTURE state, the departure delay is running. After the departure delay time expiry, the equipment changes to the GUARDED mode. In course of this changeover, all loops should be in idle state. If it is not the case, **BYPASS** function shall be applied to the loop, which is active at lock-in (guard beginning).Consequently, such loop stops guarding (regardless its condition, it looses influence upon an alarm sound). Unguarded loop (bypass) can be identified according to the yellow LED **BYPASS** lighting on the LCD keyboard. In addition, this information is a part of possible SMS messages that are transmitted during the guarding.

Exception are so called continual loops – see point 5.2.7, they are guarded permanently regardless the GUARDED/NOT GUARDED *state, the **BYPASS** feature is not applied on them.*

After the departure delay expiry, the DEPARTURE mode is replaced by GUARDED mode, and loops begin to compare themselves with configured idle value. If any loop activated any time during the GUARDED mode and set like arrival loop in the configuration (arrival delay is evaluated for it), the control panel changes to the PREALARM (ARRIVAL) mode.

In the PREALARM mode, the GUARDED state termination is awaited during the arrival delay. If the NOT GUARDED state does not occur during set time, or if, into the bargain, a loop is activated, which is not configured like arrival loop, or which is a continual loop (guarding proceeds permanently 24 hrs), the control panel immediately changes to the POPLACH mode.

Alarm mode is indicated by fast blinking **ARM** LED and acoustic signal.

If at least one input in alarm state, arrival delay of further loops shall not be evaluated more. If consecutively (in the ALARM mode) all loops quiet down, the control panel changes back to the GUARDED mode. The **ARM** LED maintains blinking (like in the ALARM mode) till the alarm coming to rest.

Examples of the control panel behavior depending on the input loops state (acc. to Fig. 2):

1. In the NOT GUARDED state, no response appears at this loop activation. During the changeover from the NOT GUARDED state to the GUARDED state, this loop has to be at rest so that the BYPASS feature not applied. Activation during the departure delay (DEPARTURE mode) has no influence upon possible alarm putting out. After the departure delay expiry, the control panel changes to the GUARDED mode. If no activation of the input loop occurs during this time, the control panel remains in the GUARDED mode till the control panel deactivation occurs with consecutive change to the NOT GUARDED state.
2. Similar to previous case, however, in the GUARDED mode, the input loop activation occurred. The control panel immediately changes to the PREALARM mode and the arrival delay is running. If during the PREALARM mode, no control panel deactivation (and consecutive change to NOT GUARDED state) occurs, the control panel changes to the **ALARM** mode after the arrival delay expiry.

3. This input loop remained active during the changeover from the DEPARTURE mode to the GUARDED mode. Accordingly, the BYPASS feature shall not be applied to it (its state shall not be evaluated more). Consequently, if the loop activated in the GUARDED mode, it does not result in the **ALARM** putting out.
4. Example of a loop, which is set like “continual” (it is permanently evaluated regardless the GUARDED/NOT GUARDED state). At this loop activation, the changeover to the **ALARM** mode occurs in any moment.

4.2 Equipment Operating like Communicator

The equipment evaluates state of the mains supply, built-in accumulator, supply voltage and sabotage. Ten wire inputs are utilized like loops, and the GUARDED/NOT GUARDED state is not evaluated – 10 alarms. At the communicator operation, the LCD keyboard and wireless elements are not supported. Other features remain similar to the equipment operated like a control panel.

If the inputs used for status information transmission (MAINS, BATERRY, SABOTAGE, DEY/NIGHT) and 6 alarm loops, corresponding outputs of any available EZS control panel can be connected to them. In such case, the PITBUL equipment can be utilized for the transmission of messages from this control panel. If the inputs provided with defined user labels (5.2.7.1), the PITBUL can be used also for a series of further applications, which the GUARDED/NOT GUARDED state need not to be distinguished in (e.g. telemetric information transmission etc.). In such case, all inputs shall be equivalent.

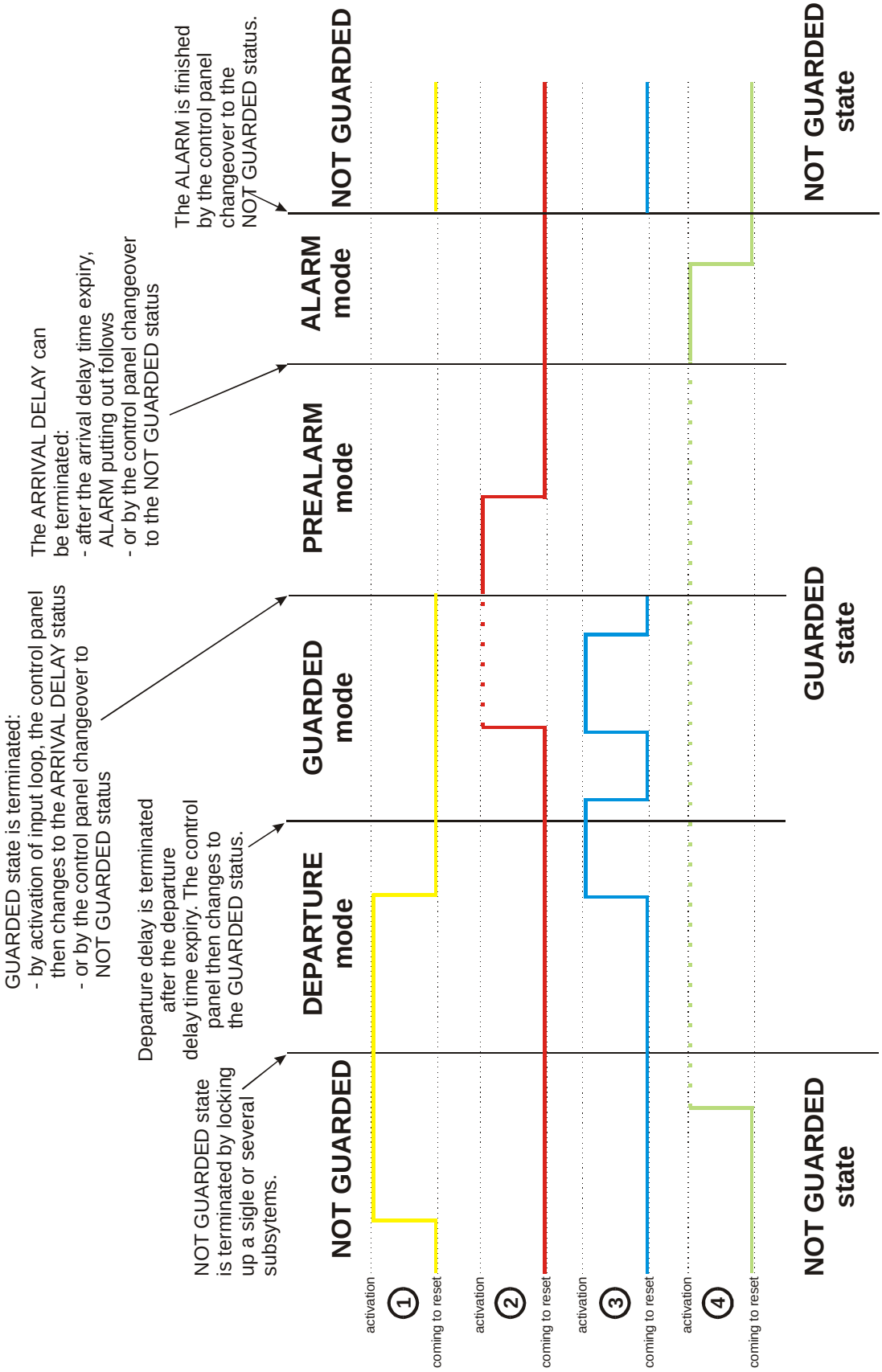


Fig. 2 – Example of control panel states

5. CONFIGURATION

5.1 Configuration Parameters Storing to the Equipment Memory

Configuration parameters shall be set before the installation. Configuration parameters shall be stored to the equipment memory with the help of PC, or in the Remote configuration mode by means of SMS message.

In case of the configuration by PC, a connecting cable shall be used, one end of which is connected to the computer serial port on the computer side, and the other end to the JR4 connector on the PITBUL side. Connecting cable by Radom KK 650 57 application is recommended.

The PITBUL equipment configuration can be performed by means of the PitbulConf configuration program (see chapter 5.1.2) – **MOST RECOMMENDED!** – or it can be carried out with the help of any program of terminal type (see chapter 5.1.1).

Utilized computer serial port is to be set in accordance with following parameters: 57600 bps baud rate, 8 data bits, 1 stop bit, no parity.

5.1.1 Entering Configuration Parameters by Terminal Type Program

In this case, any program of terminal type shall be used for the configuration parameters entering, e.g. Hyperterminal program, which is a part of all Windows operating systems. For Hyperterminal program setup, proceed acc. to chapter 0.

At the configuration parameters, comply with following instructions:

a) After the PITBUL equipment connecting to the computer and after the hyperterminal program launch, readable characters shall appear in the terminal printout. Concerned is the logging of the equipment internal communication. The communication serves for the manufacturer internal purposes and has no meaning for the user. At the changeover to the configuration mode. internal communication logging shall be interrupted.

b) The equipment configuration is accomplished by means of configuration commands transmitted with configuration parameters. The equipment configuration is possible in a special configuration mode only, to which the equipment can be changed after the **K** command enter. “K” character (4B hexadecimal, or 6B in ASCII code) can be transmitted to the equipment in any moment. The equipment shall remain in configuration mode till the configuration left by means of the “ESC” character transmission (1B hexadecimal in ASCII code), or till the expiration of 5 minutes period, during which the equipment did not received any character. At the changeover to the configuration mode (command **K**), the equipment shall send survey of supported configuration commands to the port. For enter to the configuration must be PITBUL in NOT GUARDED mode.

c) Configuration commands:

- **K** or **k** (4Bh or 6Bh) – Configuraqtion – initiation of configuration mode, which the equipment can be configured in.

- **N** or **n** (4Eh or 6Eh) – Read – all configuration parameters shall be read off the equipment and sent to the computer.

- **J** or **j** (4Ah or 6Ah) – Read individually – a single configuration parameter shall be read off the equipment and sent to the computer. Further parameters follow after the command repeated transmission. Return to the main menu of the configuration mode is possible with the help of "ESC" command.

- **U** or **u** (55h or 75h) – Save – configuration parameters following this command shall be saved to the memory. Return to the main menu of the configuration mode is possible with the help of "ESC" command.

- **S** or **s** (53h or) – Delete – all configuration parameters shall be deleted

- ***R*** *or* ***r*** *(52h or 72h) – it does not bear on configuration directly, however, with the events memory reading off (see chapter 9.6)*.

- **Esc** (1Bh) – End – it terminates configuration command or entire configuration mode. If a change of any configuration parameter occurred during the configuration, the equipment shall be automatically reset so that new operating configuration launched after the equipment start.

d) Configuration parameters shall be saved in the PITBUL memory in configuration mode after the **U** (Save) configuration command entering. The parameters can be entered singly or all at once (e.g. all parameters can be entered consecutively, or only a single parameter can be entered; the saving mode or entire configuration can be finished by **Esc** key after it). The parameters can be entered manually, from the keyboard, or automatically by means of terminal program procedure – script initiation or transmission of the general configuration file contents. Whether configuration parameter entered from the keyboard, or sent to the port from a file, they have to meet similar rules:

- Each line with configuration parameter begins with the name of the parameter.

- A space follows (character 20h) together with the configuration parameter value with quotation marks (", character 22h).

- Each line with configuration parameter has to be finished by CR character (0Dh – return to the beginning of a new line), or each parameter has to be entered on a separate line (a single line must not contain more than one parameter). At the manual entering, the CR character shall be entered by Enter (↵) key pressing.

- All texts (name of configuration parameter) can be entered both in upper and lower case (e.g. "HLASIC" or "hlasic") without diacritical marks.

- Applicable parameters are described in following paragraphs of this chapter. Space, quotation marks and carriage return (CR) characters are not specified

more, however, they are due and necessary for entering any of parameters mentioned below:

- Sample line:

  IPADR1 "174.16.138.100"

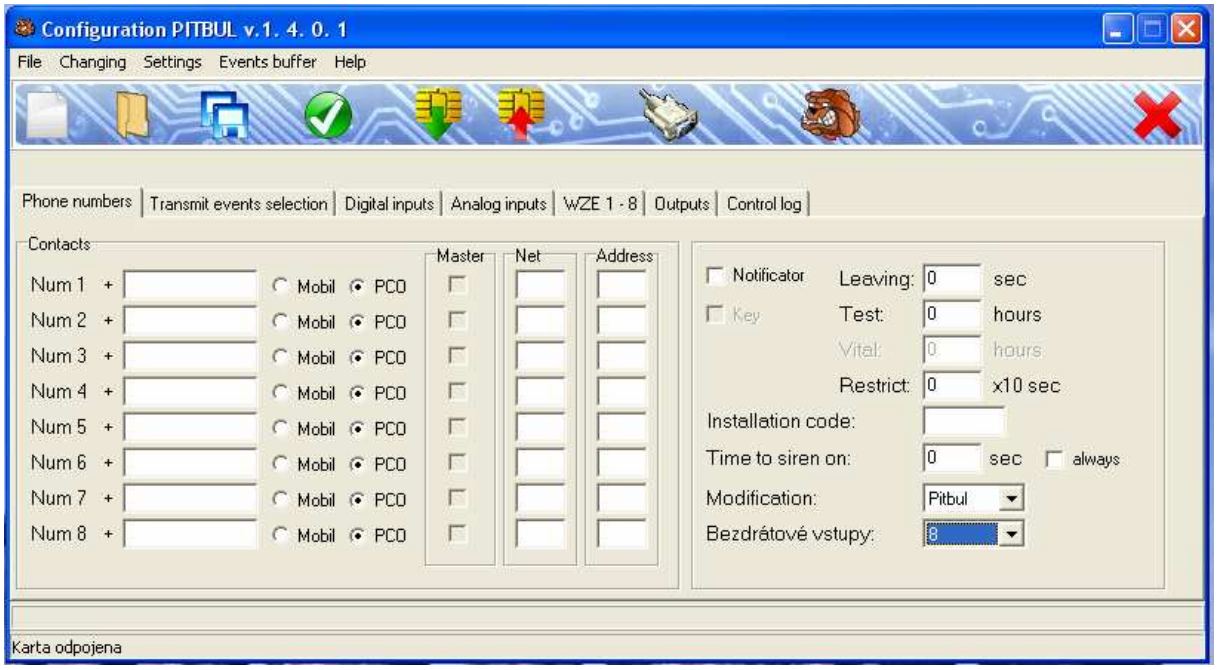
  hexadecimal in ASCII:

  49 50 41 44 52 31 20 22 31 37 34 2E 31 36 2E 31 33 38 2E 31 30 30 22 0D

e) Successful entering configuration parameter(s) can be verified after the Store command exit (by means of End command (Esc)), by means of configuration data reading (by means of Read, or Read singly commands).

5.1.2 Entering Configuration Parameters by means of PitbulConf program

A window shown below should appear on the screen after the PITBUL interconnection with the computer and the PitbulConf configuration program initiation. Next, configuration values shall be directly entered.



5.1.3 Remote Control of Configuration Parameters by SMS Message

Configuration parameters can be also remote entered and downloaded with the help of SMS message by a cellular phone, number of which is already stored in the equipment configuration with the MASTER authorization.

5.1.3.1 Change of Configuration Parameters by SMS Message

To ensure the remote configuration capability by SMS message, the PITBUL shall be first changed to so called Remote configuration mode. It shall be executed so that an SMS message with “CONFIG” text shall be sent to the PITBUL telephone number (acc. to used SIM card) from the cellular phone. The cellular phone number must be stored in the equipment configuration parameters in advance (see chapter 5.2.4) with the MASTER authorization (see chapter 5.2.18). **WARNING: If the equipment in Remote configuration mode, input loops states or other data, e.g. sabotage, accumulator voltage, mains voltage etc., shall not be evaluated.**

After the SMS message reception with “CONFIG” text, the PITBUL sends acknowledging SMS message on changeover to the Remote configuration mode. From that time, the equipment shall evaluate only received SMS message and change configuration parameters according to the SMS form.

The SMS message with a configuration parameters shall be in similar form like at the configuration parameters entering in Configuration mode (see chapter 5.1.1). In addition, a configuration parameter must end with a semicolon (character 0x3B), and entire message must be limited from left by the „<“ (less than) symbol – character 0x3C, and from right by the „>“ (greater than) – character 0x3E).

Sample: <config. parameter name "config. parameter value";>

Several configuration parameters can be set in a single SMS message. Particular configuration parameters shall be separated by a semicolon (character 0x3B).

Example of SMS message:

<CISLO1M “420777666555”;IPADR1 “111.222.333.444”;>

This SMS message shall change telephone number1 to 420777666555 (see chapter 5.2.4) and IP address1 to 111.222.333.444 (see chapter 5.2.3).

Permanent saving and setting changes of configuration parameters occurs only after the Remote configuration mode exit. For this purpose, send an SMS message with “END” text to the PITBUL. The “end” command can be also entered directly to the SMS message with configuration parameters.

Example:

<CISLO1M “420777666555”;IPADR1 “111.222.333.444”;end>

This SMS message shall change values of given configuration parameters, store them and finish the Remote configuration mode.

5.1.3.2 Reading Configuration Parameters by SMS Message

To ensure the configuration parameters reading by SMS message, the PITBUL shall be first changed to so called Remote configuration mode (see chapter 5.1.3.1).

Configuration parameters reading can begin after the PITBUL changeover to the Remote configuration mode and reception of acknowledging SMS message.

The reading shall be executed by the SMS message sending in the same form like at the configuration parameters entering in the Remote configuration mode (see

chapter 5.1.3.1) except that a question mark “character 0x3F” shall be entered instead of the configuration parameter value.

Sample: <config. parameter name "?";>

Several configuration parameters can be interrogated in a single SMS message. Particular configuration parameters must be separated by a semicolon (character 0x3B).

Example:

<CISLO1 “?”;IPADR1 “?”;>

Inquiry for telephone number1 and IP address1.

SMS message with an inquiry about configuration parameters value must not be terminated by “end” command for the Remote configuration mode exit.

After the inquiry about configuration parameters value, the PITBUL sends an SMS message with values of particular configuration parameters.

Example of SMS message sent by PITBUL:

CISLO1M ´420777666555´;IPADR1 ´111.222.333.444´

Only now, a discrete “end” command for the Remote configuration mode exit may be sent off.

The equipment remains in the remote configuration mode 5 minutes maximum since the last SMS message reception with valid configuration parameters.

5.2 Configuration Parameters

Following configuration parameters can be set in the configuration framework:

5.2.1 PIN

If the PIN code functionality of inserted SIM card is to be maintained, the PIN code must be defined in the configuration.

It is saved in following format:

Name: **PIN**

Value: *>number< 8 digits max*

Example:

Name:	PIN
Value:	1234

PIN of inserted SIM is 1234

If the value not entered, PIN must not be enabled/switched on the SIM card. It is recommended to have PIN switched off on the SIM card.

5.2.2 APN

The equipment and PCO IP addresses must be in the same APN.

It is saved in following format:

Name: **APN**

Value: *>text< where the text is APN name (20 characters max.)*

Example:

Name:	APN
Value:	our APN

APN of the console and object equipment is “our APN”.

If the APN not entered, the equipment remains in the GSM mode and does not change to GPRS. Consequently, if equipment is to be commissioned with SIM card, which has not enabled GPRS operation, the APN can be set with zero value (empty quotation marks) and the PITBUL operated in GSM (SMS) only.

5.2.3 IP Addresses

The equipment enables information transmission up to two IP Addresses of two PCOs with the help of GPRS datagrams. IP Address is mandatory for messages transmission to PCO via GPRS. It must correspond to required IP address of particular PCO (provided by PCO user) and shall be in the same APN like PITBUL.

It is saved in following format:

Name: **IPADRx**, where **x** is number 1 – 2

Value: *>a.b.c.d< where a,b,c,d are numbers 0-255* (IP address of PCO)

Example:

Name:	IPADR1
Value:	174.16.138.100

IP Address of the first PCO is 174.16.138.100

Without entering at least a single IP address, the data shall not be transferred to PCO via GPRS.

5.2.4 Telephone Numbers

Save telephone number(s) with name(s), which the SMS message is to be sent to, to the configuration. You can enter up to 8 telephone numbers distinguished by index (1-8). It is necessary to differ whether a cellular phone number or PCO number is concerned (letter M or P). A PCO outfitted with SW system by Radom company (WRS32) is considered the centralized protection console (PCO). Messages transmitted to the PCO are in a special Radom data format which excludes transfer to the consoles outfitted with SW systems by other manufacturers. However, transfer of messages in the format similar to the cellular phone can be sometimes utilized for the data transmission to such consoles.

It is saved in following format:

Name: **CISLOxM** or **CISLOxP,** where

M means cellular phone telephone number

P means PCO telephone number

x is number 1 – 8.

Value: >telephone number in international format < tel. number 12 digits w/o initial +

Example:

Name:	CISLO1M
Value:	420603111111
Name:	CISLO2P
Value:	420603222222
Name:	CISLO3M
Value:	420603333333

In this case, the GSM communicator shall at alarm send SMS message first to the telephone number **603111111**, then **603222222**, and then **603333333**. Any number can be saved separately under an arbitrary index (e.g. only ***CISLO3M*** can be in the configuration).

Without entering at least a single number, the data shall not be transferred via SMS message.

5.2.5 An Event Transfer Option

The equipment enables information transfer to eight telephone numbers maximum, namely in the form of SMS message and voice call. The GPRS datagrams (if their transmission set) are sent each time, at any change (event). Configuration parameters described in this paragraph define information (events) that shall be sent to specified telephone numbers (in specified form). Parameters for SMS messages and calls are entered for each used telephone number. In addition, a parameter distinguishing the telephone number, which the change of particular input loops is to be sent to. It is possible to determine with the help of these parameters, whether an SMS message should be sent to given telephone number, or given telephone number should be called at a particular event, and which telephone number is to be called, or to which telephone an SMS message is to be sent at activation of alarm of particular input loops.

It is saved in following format:

Name: **CxS, CxV** where

S – means SMS message sending off

V – means call **(using telephone calls at the data transfer via GPRS to PCO is not recommended)**

x is a number 1 – 8, it shall correspond with entered telephone numbers (1 - CISLO1M, 2 - CISLO2P etc.)

Value: >number 1-7 digits acc. to the code of events type <

Codes of event type:

0 – no event transferred
1 – unlocking, change to the NOT GUARDED state
2 – locking, change to GUARDED state
3 – alarm, sabotage (sabotage contact release)
4 – recovery after an alarm (in case of SMS message sending to the console, recovery of each input loop is sent separately; in case of SMS message sending to the cellular phone, recovery is sent at all alarms coming to rest only)
5 – a failure (MAINS, ACCU, sensors – see chapter 9.9)
6 – recovery after failure
7 – other (maintaining messages)

Name: **CxI** where

I – distinguishing inputs, that are to be sent to given telephone number

x – number 1 – 8 must correspond with entered telephone numbers (1 - CISLO1M, 2 - CISLO2P etc.). **Warning:** CxI parameter is valid for SMS message sent to the cellular phone and call only

Value: >names of inputs separated by comma <
Possible values: DIN1, DIN2, DIN3, DIN4, AIN1, AIN2, AIN3, AIN4, AIN5, AIN6, WZE01, WZE02, WZE03, WZE04, WZE05, WZE06, WZE07, WZE08, WZE09, WZE10, WZE11, WZE12, WZE13, WZE14, WZE15, WZE16

Examples:

Name:	C1S
Value:	35
Name:	C1V
Value:	0
Name:	C1I
Value:	DIN1,DIN3,AIN1,AIN5
Name:	C2S
Value:	123
Name:	C2V
Value:	3
Name:	C2I
Value:	DIN1,DIN2,AIN3,AIN6

In this case, the GSM communicator

to the CISLO1 number

- it sends always an SMS message at sabotage or equipment failure (C1S name, 35 value)
- it shall not ring through any number at any event (C1V name, 0 value)
- only for text SMS message sent to the cellular phone: it sends an SMS message at input loops activation connected to DIN1, DIN3, AIN1 and AIN5 inputs (C1I name, DIN1, DIN3, AIN1, AIN5 value)
  for data SMS message sent to PCO: SMS message shall be sent at any input loop activation

to the CISLO2 number

- it sends always an SMS message at sabotage or equipment changeover to the GUARDED/NOT GUARDED state (C2S name, 123 value)
- it shall ring through the telephone number at sabotage (C2V name, 3 value)

- only for text SMS message sent to the cellular phone: it sends an SMS message at input loops activation connected to DIN1, DIN2, AIN3 and AIN6 inputs (C1I name, DIN1, DIN2, AIN3, AIN6 value)
  for data SMS message sent to PCO: an SMS message shall be sent at the activation of any input loop.

- it rings through the telephone number (C2V name, 3 value) at the activation of input loops connected to DIN1, DIN2, AIN3 and AIN6 inputs (C2I name, DIN1, DIN2, AIN3, AIN6 value)

- *If no CxS configuration parameter entered, no events shall be transmitted with the help of SMS message. Exception are SMS messages of a reply to question (see equipment control through MS) and GPRS reserve (see BACKUP), they are sent off regardless these settings.*

5.2.6 Minimal Time between Events

In common service, information (SMS, GPRS) transfer to PCO or cellular phone occurs immediately after an event appearance. In some cases (e.g. violation), several events may appear in a short time period (pursuant the sensor enable and disable, the PITBUL changes from the ALARM mode to the QUIET mode and aback). To avoid ineffective overloading by messages, a minimal necessary time period between events transmission can be configured. Information from the PITBUL shall not be transferred during this period, however, its performance remains retained.

It is saved in following format:

Name: **OMEZIT**

Value: *>number 0-120<* (minimal time [x 10sec] between events, 120*10s maximum, accordingly 20min)

Example:

Name:	OMEZIT
Value:	3

Next SMS message sending off occurs 30 seconds after the previous event.

If set "0" value, no limitation occurs and entire information shall be transferred in as short time as possible.

5.2.7 User's Setting of Inputs

User's description specifies name and function of particular inputs.

5.2.7.1 User's Setting of Input Wire Loops

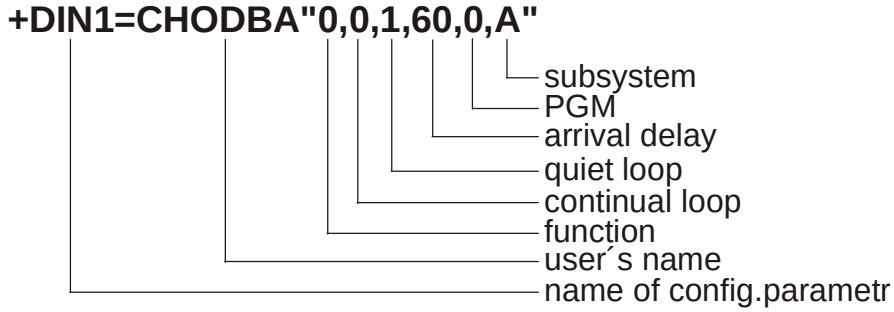
PITBUL enables connection of 10 wire input loops and up to 16 wireless input loops. Wire loops are connected to DIN1-DIN4 (digital inputs) and AIN1-AIN6 (analog inputs).

Each input loop has to be described by a configuration parameter, which contains input name, user's name (not liable) and several configuration readings separated by comma and quotation marks.

Sample:

name of config. parameter=user's name "function, continual, quiet, arrival delay, PGM, subsystem"

Example:



name of config. parameter:
it contains name of **+DINx** input (for digital inputs), **AINx** (for analog inputs) where **x** is a number of pertinent input.

user's name:
input name defined by the user max. 8 characters long, which shall be displayed in the cellular phone in case of an alarm (not liable).

function
>***0*** - ***2***< specifies way of input loop wiring

- **0 -** digital wiring with defined LOG 0 quiescent value
- **1 -** digital wiring with defined LOG 1 quiescent value
- **2 -** analog wiring with simple balancing

continual
>***0*** or ***1***< defines whether input loop continual (24 hrs)

- **0 -** input loop not continual
- **1 -** input loop continual (evaluated permanently regardless the GUARDED/NOT GUARDED) state

quiet
>***0*** or ***1***< defines whether input loop acts like so called “quiet loop”

0 - input loop not “quiet”
1 - input loop acts like a “quiet” loop

If so called “quiet” input loops activated, the SIREN output closing does not occur; all other features (transmission of information on an event, program output activation) remain retained. The parameter is appropriate, for example, for technological, non-security loops: if activation occurs, the user shall be provided with the information, however, the siren shall not be initiated.

arrival delay
>***0*** - ***255***< arrival delay in seconds (time for arrival and decoding)

If the value zero, the input loop is not arrival loop (immediate response to its activation). The delay shall be set in seconds. In the communicator function, value of this parameter is meaningless.

program
>**PGMx**<
where **x** is the output number (1-3)

It sets the input like a program input (see chapter) assigned to the output. If the input is not to be set like a program input, enter **0**.

subsystem
>**A** or ***B*** *or* ***C***<

It allocates the input loop to particular subsystems. If subsystem not entered, the loop shall be automatically assigned to the A subsystem.

Examples:

Name:	+DIN1=CHODBA
Value:	0,0,1,60,0,A
Name:	+DIN2=POZAR
Value:	1,1,0,0,PGM1,B
Name:	+AIN1
Value:	2,0,0,100,PGM2,C

DIN1 input: it is connected like a digital input with quiescent value of 0, the loop is not continual (evaluated at the GUARDED state only), defined like “quiet” (the siren not initiated in case of activation) with arrival delay of 60 sec (alarm shall be called up after 60 sec of the input activation), the input is not a program input and assigned to the A subsystem.
DIN2 input: it is connected like a digital input with quiescent value of 1, the loop is continual (it is evaluated permanently, regardless the GUARDED/NOT GUARDED state,

not defined like “quiet” (the siren shall be initiated in case of activation), without arrival delay (alarm shall be called up immediately at the input activation), the input is set like a program input assigned to output 1 (output1 closing occurs at the DIN2 input activation), allocated to the B subsystem.

AIN1 input: it is connected like an analog input, the loop is not continual (evaluated at the GUARDED state only), not defined like “quiet” (the siren shall be initiated in case of activation), with arrival delay of 100 sec (alarm shall be called up after 100 sec of the input activation), the input is set like a program input assigned to the output2 (output2 closing occurs at the AIN1 input activation), allocated to the C subsystem.

5.2.7.2 User's Setting of Input Wireless Loops

PITBUL supports connection of up to 16 wireless elements (acc. to type of connected wireless receiver).

Each utilized wireless element must be described by a configuration parameter, which contains the element name, user's name, and several configuration readings separated by comma and quotation marks.

Sample:

name of config. parameter=user's name "continual;quiet;arrival delay;PGM;subsystem"

name of config. parameter:
it contains name of **WZExx** input
where **xx** is two-digit number of pertinent input.

user's name:
input name defined by the user up to 8 characters long, which shall be displayed in the cellular phone in case of an alarm (not liable).

continual
>***0*** or ***1***< it defines whether the input loop continual (24 hrs) loop

- **0 -** input loop not continual
- **1 -** input loop continual (permanently evaluated regardless GUARDED/NOT GUARDED state)

quiet
>***0*** or ***1***< it defines whether the input loop acts like so called "quiet loop"

- **0 -** input loop not "quiet"
- **1 -** input loop acts like "quiet" loop

If so called "quiet" input loops activated, the SIREN output closing does not occur; all other features (transmission of information on an event, program output activation) remain retained. The parameter is appropriate, for example, for technological, non-security loops: if activation occurs, the user shall be provided with the information, however, the siren shall not be initiated.

arrival delay
>***0*** - ***255***< arrival delay in seconds (time for arrival and decoding)

If the value zero, the input loop is not arrival loop (immediate response to its activation). The delay shall be set in seconds. In the communicator function, value of this parameter is meaningless.

program
>**PGMx**<
where **x** is the output number (1-3)

It sets the input like a program input (see chapter) assigned to the output. If the input is not to be set like a program input, enter **0**.

subsystem
>**A** or ***B*** *or* ***C***<

It allocates the input loop to particular subsystems. If subsystem not entered, the loop shall be automatically assigned to the A subsystem.

Examples:

Name:	WZE01=CHODBA
Value:	0,1,60,0,A
Name:	WZE10=POZAR
Value:	1,0,0,PGM1,B

WZE01 wireless loop: it is not continual (evaluated at the HLÍDANO state only), defined like “quiet” (if activated, the siren shall not be initiated) with arrival delay of 60 sec (alarm shall be called up after 60 sec of the input activation), the input is not a program input and assigned to the A subsystem.

WZE10 wireless loop: it is continual (evaluated permanently regardless the HLÍDÁNO/NEHLÍDÁNO state), not defined like “quiet” (the siren shall be initiated in case of activation), without arrival delay (alarm shall be called up immediately at the input activation), the input is set like a program input assigned to output 1 (output1 closing occurs at the DIN2 input activation), allocated to the B subsystem.

5.2.8 User's Setting of Outputs

Besides the SIREN output for a siren connection and BUZZER output for an acoustic converter connection, additional three outputs are available (Output 1, Output 2 and Output 3) for general application. User's description of the three outputs can be entered. The outputs can be user controlled with the help of SMS messsages or DTMF tones (see 0), of a program (automatically acc. to inputs state – **applicable for the control panel feature only – see user's description of particular input loops)**, or by means of a wireless transmitter with four RP128T4RC00A buttons. In addition, Output 3 can be in the communicator mode utilized for the indication of the superior system (control panel) communication loss for the communication changeover to the reserve transmission path (e.g. VTS – public telephone network).
Way of control is apparent from the user's description of outputs:

It is saved in following format:

Name: **+OUTPUT=**<user's name 8 characters max.> (for Output 1)
Value: *>any number <*

Name: **+ OUTPUT=**<user's name 8 characters max.> (for Output 2)
Value: *>any number <*

Name: **+ OUTPUT=**<user's name 8 characters max.> (for Output 3)
Value: *>any number <*

If the value of the digit configuration parameter value equals 1, the output shall be controlled by means of SMS messages or DTMF tones.

If the value begins with the „#" character, the output shall be closed during the activity of its configured input loop – PGM feature.

If the value begins with the "E" character, the output state shall be changed in the moment of pressing button of the RP128T4RC00A wireless transmitter. A number following the "E" character determines the number of the wireless transmitter (1 to 4). A character follows, which determines the button itself on the wireless transmitter (A or B) (see chapter 8.2.2.5). If the output is to be controlled with the help of several buttons, all of them shall be entered including the "E" character and separated by comma.

Examples of outputs setting:

Name:	+VYSTUP1=TOPENI
Value:	1
Name:	+VYSTUP2=SVETLO
Value:	#1
Name:	+VYSTUP3
Value:	∗1A

Name:	+VYSTUP3
Value:	∗1A, ∗2A, ∗3B,

Output 1 with user's name "HEATING" shall be controlled by SMS message or DTMF signal. Output 2 with user's name "LIGHT" shall be controlled by an allocated input.

Output 3 without user's name shall be controlled by means of a wireless transmitter configured under the number 1, button A.

Another demonstration of the output 3 configuration. Output 3 without user's name is controlled both by a wireless transmitter configured under the number 1, button A, and by a wireless transmitter configured under the number 2, button A, and by a wireless transmitter configured under the number 3, button B.

If no user's description entered, the "OUTPUT1", "OUTPUT2" or "OUTPUT3" text shall be utilized in the SMS message like a description of this output.

5.2.9 Selection of Communicator/Control Panel Operation

If the equipment is to be operated like a GSM communicator, store the "COMMUNICATOR" parameter to the configuration with value of "1". If "0" set, it shall operate like a control panel.

It is saved in following format:

Name: **HLASIC**

Value: *>number 0 or 1<* where 1 – activates/0 – deactivates the parameter

Example:

Name:	HLASIC
Value:	1

The equipment shall be set to operate like a communicator, not like a control panel.

Without this setting, the equipment operates like a control panel (see chapter 4).

5.2.10 Departure Delay – Time for Departure

It applies to all loops. If the value not entered, or if zero, the departure delay shall not be enabled (response to any loop change shall be instantaneous). The delay is set in seconds. This parameter is meaningless in the communicator feature – do not enter.

Is it saved in following format:

Name: **ODCHOD**

Value: *>number 0-255<* (departure delay [s])

Example:

Name:	ODCHOD
Value:	30

The departure delay is set to 30 seconds.

5.2.11 Time of Siren Activation

Setting of the SIREN output activation time (at an alarm). It is set in seconds.

It is saved in following format:

Name: **SIRENA**

Value: *>number 0-255<* (Siren output activation time [sec])

If the value begins with the „#" character, the siren shall be activated regardless the GUARDED/NOT GUARDED state (e.g. at the alarm from continual loop in the NOT GUARDED state), otherwise at the alarm in the GUARDED state only.

Example:

Name:	SIRENA
Value:	30
Name:	SIRENA
Value:	#30

At an alarm, the output shall be activated for half a minute.

If the value zero, the output shall not be enabled.

5.2.12 Number of Object

Number of an object (address) is an identification used for this object in the Uni_konektSG GPRS connector. Number of entered numbers of objects shall correspond to the number of defined IP addresses of the console (2 max.), while the configuration value with the object number must have the same index (number x) like IP address for corresponding PCO.

It is saved in following format:

Name: **OBJEKTx**, where ***x*** is number 1 – 2

Value: *>number 0-65535<* (number of object / address in GPRS connector)

Example:

Name:	OBJEKT1
Value:	70
Name:	OBJEKT2
Value:	12

Identification number of guarded object for PCO with IP address saved like ***IPADR1*** is 70.
Identification number of guarded object for PCO with IP address saved like ***IPADR1***2 is 12.

5.2.13 Number of Network

Number of network shall be entered only in case of messages transmission to the PCO with the help of SMS messages, and is obligatory in this case. It shall correspond to the GSM network number of particular PCO (provided by the PCO owner). Number of entered network numbers shall correspond to the number of defined telephone numbers for a console (8 max.), while configuration value with the network number shall have similar index (number x) like telephone number of corresponding PCO (CISLOxP).

It is saved in following format:

Name: **SITx**, where ***x*** is number 1 – 8

Value: *>number 0-255<* (number of network for PCO)

Example:

Name:	SIT2
Value:	12

Object network number for PCO with telephone number saved like ***CISLO2P*** is 12.

5.2.14 Address

The address is entered only in case of SMS messages transfer to PCO, and is obligatory in such case. It shall correspond to the object required address of a particular PCO (provided by the PCO owner). Number of entered addresses shall correspond to the number of defined telephone numbers on the PCO (8 max.), while configuration value with the address shall have similar index (number x) like telephone number of corresponding PCO (CISLOxP).

It is stored in following format:

Name: **ADRESAx**, where **x** is number 1 – 8

Value: *>number 0-255<* (address of object equipment for PCO)

Example:

Name:	ADRESA2
Value:	240

The object address for PCO with telephone number stored like ***CISLO2P*** is 240.

5.2.15 Period of Maintaining GPRS messages

The PITBUL transmits maintaining datagrams (GPRS) with a configurable period. The period is set in multiples of 15 sec, and shall be identical for all configured GPRS connections (all IP addresses).

It is stored in following format:

Name: **UDRZ**

Value: *>number 1-255<* (period of maintaining messages x 15sec)

Example:

Name:	UDRZ
Value:	40

Maintaining GPRS datagram is transmitted once per 10 minutes.

If the value zero, maintaining GPRS datagrams shall be transmitted with undefined period (1 sec up to 63 min).

5.2.16 Confirm Maintaining GPRS messages

Maintaining messages transferred in GPRS can be of two kinds, namely unconfirmed (hereinafter message of type A) and confirmed (hereinafter message of type B). Both types of message are transmitted according to the maintaining messages period setting (UDRZ parameter). If the equipment sends GPRS message B to the PCO and does not obtain response (confirmation), it shall repeat it (altogether x-times according to the POKUSY *[attempts]* configuration parameter by approx. 15 sec). It is apparent that transmitting messages B increases the transmission security, however, results in higher financial costs. Ratio of messages A and B is given by this configuration parameter specifying number of messages A, after which the message B follows.

It is stored in following format:

Name: **POMERAB**

Value: >*number 0-10*< (number of messages A before B), with following meaning:

0 – only B	1 – 1x A, 1x B
2 – 2x A, then 1x B	3 - 3x A, 1xB
.....	.....
9 – 9x A, then 1x B	10 – only A

Example:

Name:	**POMERAB**
Value:	10

A check datagram of type A shall be sent off. Datagram of type B is not transmitted.

5.2.17 Period of Maintaining SMS messages

The PITBUL transmits an SMS message on current state during set time. The period is set in hours and shall be the same for all configured SMS connections (all SMS PCO). The time countdown occurs since the moment of the configuration downloading to the PITBUL.

It is stored in following format:

Name: **TEST**

Value: >*number 0-255*< (period of maintaining messages x 1hr)

Example:

Name:	TEST
Value:	24

The check SMS is sent off once per day.

If the value zero, maintaining SMS shall be suppressed.

5.2.18 Telephone Numbers with Authorization

Status of any feature of the PITBUL equipment can be controlled only from telephone numbers with authorization (outputs control, equipment subsystems changeover to GUARDED/NOT GUARDED state).

It is stored in following format:

Name: **MASTER**

Value: *>8 numbers 1-8 max.<* (indices of tel. numbers with authorization)

Example:

Name:	MASTER
Value:	12

It sets authorization for telephone numbers entered like ***CISLO1*** a ***CISLO2*** (it is all the same whether a number to PCO or to cellular phone is concerned). If several telephone numbers identical (e.g. CISLO2P and CISLO3M), and at least one of them should be with authorization, all such identical numbers shall be configured like master.

If nothing or value 0 entered, no number shall be provided with authorization.

5.2.19 Backup of GPRS Operation

Backup of the GPRS operation can be realized in several ways including their combination: confirmed maintaining messages (B) can be used, selected events can be transferred (see 5.2.5) with the help of SMS messages, or backup of particular confirmed GPRS datagrams can be configured (at possible repeated absence of confirmation) by means of an alternate single SMS message. A response is expected after the confirmed GPRS datagrams transmission; if a failure occurs, the datagram shall be repeated (x-times according to the POKUSY *[atempts]* parameter with possible modem restart). If all attempts spent and following configuration parameter set to 1, an alternative SMS shall be sent off. Alternative SMS shall be sent off also in case of exceeding maximum time acc. to LHUTA *[term]* parameter. If value 0 entered, particular GPRS datagrams are not backed up. If connection with IPADR1 IP address lost, the SMS shall be transmitted to the CISLO1P, otherwise to CISLO2P. The configuration must be suitably adapted.

It is stored in following format:

Name: **ZALOHOVAT**

Value: *>number 0 or 1<* where 1 – enables/0 – disables the feature

Example:

Name:	**ZALOHOVAT**
Value:	1

The SMS message shall be sent off in case of unsuccessful repetition of the GPRS datagram.

5.2.20 Number of Attempts at GPRS Data Transmission

A response is expected for 15 sec after the transmission of confirmed GPRS datagrams; in case of a failure, the datagram shall be repeated, or the modem shall be reset between particular attempts. Number of attempts before and after the reset is determined by following parameter. If number of attempts after the modem reset zero, the modem shall not be reset. The modem reset lasts approx. 1-1.5 min. If 3 attempts before reset and 1 attempt after the reset adjusted, backup SMS shall be sent off after approximately 3x15 + 60 + 1x15 sec, consequently, in two minutes in the rough. The parameter shall be applied at the backup SMS channel setting, when the equipment logged in GPRS, however, it does not obtain GPRS responses.

It is stored in following format:

Name: **POKUSY**

Value: *>a,b<* where - *a* is number of attempts before reset <1-5>
- *b* is number of attempts after reset <0-5>

Example:

Name:	**POKUSY**
Value:	3,1

5.2.21 Maximum Term for GPRS Data Confirmation

This configuration parameter defines overall period, during which the equipment can expect confirmation of transmitted GPRS data. If the modem cannot successfully login in course of determined period, expiry of maximum term for GPRS data transmission occurs, and accumulated data shall be sent off with the help of a backup SMS. If the term shorter than the sum of intervals needed for all repetitions according to the POKUSY *[attempts]* parameter, changeover to backup channel occurs even before spending all attempts. Attention: time of real backup SMS transmission serves for orientation only according to the actual internal status of the equipment in the moment of specified term expiry.

It is stored in following format:

Name: **LHUTA**

Value: *>number 6 - 24<* (max. time for GPRS data confirmation x10sec)

Example:

Name:	**LHUTA**
Value:	8

It sets term, in which changeover to the backup channel occurs after approximately 80 sec expiry.

5.2.22 Installation Code Setting

It sets value of the installation code.

It is stored in following format:

Name: **KOD**

Value: *>four-digit number <*

Example:

Name:	KOD
Value:	0123

It sets the installation code to the value of 0123.

5.2.23 Identification Number Setting

Identification number is entered only in case of messages transfer to the PCO with the help of GPRS; it is mandatory in this case. It sets the identification number value for the Contact ID message needed for the information transfer to the console via GPRS (provided by the PCO owner).

It is stored in following format:

Name: **IDCISLO**

Value: *>four-digit number <*

Example:

Name:	IDCISLO
Value:	1035

Its sets the identification number of the Contact ID message to the value of 1035.

5.2.24 HW Type Setting

Eight-digit number, with the help of which the equipment (PITBUL) type is set, and other connected modules (wireless elements receiver) are defined.

It is stored in following format:

Name: **MODIFIKACE**

Value: *>eight-digit number <*

Configuration parameter value consists of two parts. The first four digits define type of the equipment. It is 4002 for the PITBUL equipment. Further four digits define type of connected wireless receiver. If wireless receiver not connected, 0000 shall be entered. It is 0001 for the RP128EW0800A wireless receiver, which enables communication with 8 elements maximum. It is 0002 for the RP128EW1600A, which enables communication with 16 elements maximum.

Examples:

Name:	MODIFIKACE
Value:	40020000
Name:	MODIFIKACE
Value:	40020001
Name:	MODIFIKACE
Value:	40020002

Example 1: The equipment is defined like PITBUL without connected wireless receiver.

Example 2: The equipment is defined like PITBUL with connected eight-element RP128EW0800A wireless receiver.

Example 3: The equipment is defined like PITBUL with connected sixteen-element RP128EW1600A wireless receiver.

6. COMMISSIONING

6.1 Mechanical Assembly

At the box edges, there are four fastening holes, with the help of which the equipment is attached to a suitable base. Supposed is a vertical assembly position on a wall without vibrations, however, an arbitrary space orientation of the communicator is allowable (according to user's demands). It is recommended to situate the equipment as near connected sensors or alarm control panel (or controlled device) as possible, nevertheless so that the best GSM signal level maintained. Connected conductors can be lead through holes in the bottom part (if the conductors embedded under the plaster), or through side slot (if the conductors embedded under a batten).

6.2 Power Supply

For the mains voltage supply, connect the supply two-strand (three-strand) cable to the clamp of the JR5 mains voltage terminal board (see Fig. 1 and Fig. 3). Fix the mains cable appropriately by a clip against ripping out.

Standby supply accumulator 6V can be connected to J3 and J4 terminals. The battery positive pole (labeled +) shall be connected to the J3 terminal, the battery negative pole (labeled -) shall be connected to the J4 terminal.

Output voltage of +12V on +12V_OUT terminals can be utilized for the PIR sensors or other appliances feeding. Common maximum consumption from these outputs must not exceed 150mA.

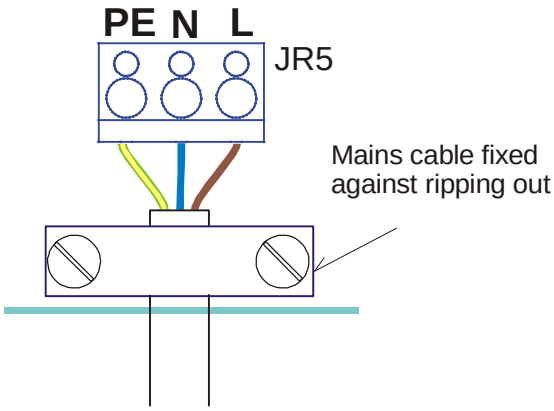


Fig. 3 – Mains cable connection

6.3 Connectors Layout

Labeling and meaning of particular connecting switchboards is shown in table below.

Clamp	Labeling	Signal (at control panel operation)
JS4-1	GND	GND (ground)
JS4-2	+12V_OUT	+12V supply output
JS4-3	AIN1	analog input 1
JS4-4	AIN2	analog input 2
JS4-5	AIN3	analog input 3
JS4-6	AIN4	analog input 4
JS4-7	AIN5	analog input 5
JS4-8	AIN6	analog input 6
JS4-9	+12V_OUT	+12V supply output +12V
JS4-10	GND	GND (ground)
JS1-1	DIN1	digital input 1
JS1-2	DIN2	digital input 2
JS1-3	DIN3	digital input 3
JS1-4	DIN4	digital input 4
JS1-5	+U_OUT	supply output acc. to JP1
JS1-6	GND	GND (ground)
JS1-7	+RS485	system serial bus
JS1-8	-RS485	system serial bus
JS2-1	GND	GND (ground)
JS2-2	OUT1	output 1
JS2-3	OUT2	output 2
JS2-4	OUT3	output 3
JS2-5	GUARDED	input for GUARD contact connection
JS2-6	GND	GND (ground)
JS2-7	SIRENA	output for siren connection
JS2-8	SIRENA_GND	siren GND (ground)
J6		designed for DANIUS panel connection
J9		auditory microphone connection
J2		extending wireless receiver connection
J1		designed for future application
J10		external GSM antenna connection
J7		designed for manufacturer’s needs
J8		designed for manufacturer’s needs
JE1		GSM module connector
JS3		SIM card holder
JR3		designed for system camera connection
JR4		connector for PC connection
JR5		230V/50Hz supply connector
J3		connection of standby AKU positive terminal

J4		connection of standby AKU negative terminal
J5		active loudspeakers connection

Table 1

6.4 Important Elements on Board

Labeling and meaning of particular important elements on board is shown in table below.

Clamp	Meaning (at control panel operation)
SA1	sabotage contact
JP4	type of JR3 connector serial interface setting 1+2 → RS422 2+3 → RS485 Set pursuant to JP3 !!!
JP3	type of JR3 connector serial interface setting 1+2 → RS422 2+3 → RS485 Set pursuant to JP4 !!!
JP7	output voltage value on JR4 connector setting 1+2 → +5 ÷ 7V 2+3 → +12V
JP6	indication enable for all LEDs on card closed → LED indication enabled open → LED indication disabled
JP1	output voltage value on JS1.5 connector setting 1+2 → +12V 2+3 → +5 až 7V
JP2	idle mode setting for DIN1 ÷ DIN4 inputs 1+2 → inputs control by earthing to GND 2+3 → inputs control by positive voltage 5 ÷ 12V application
SW1	RESET button of card processor
FU3	T100mA/250V mains fuse

Table 2

6.5 Meaning of Indicators (LED) on Printed Circuit Board

Labeling and meaning of particular LED indicators on the board is shown in table below.

LED	COLOR	STATE	MEANING
LED1	Yellow	on	output 1 closed
		off	output 1 open
LED2	Yellow	on	output 2 closed
		off	output 2 open
LED6	Yellow	on	output 3 closed
		off	output 3 open
LED7	Yellow	on	BUZZER output closed
		off	BUZZER output open
LED5	Yellow	on	output for siren connection closed
		off	output for siren connection open
LED8	Red	250/250	active loop(s) (communicator), POPLACH (control panel)**
		continuously	sabotage, PŘEDPOPLACH (control panel)
		off	loops in idle state or not guarded
LED9	Yellow	continuously	failure of supply (AKU, MAIN, sensor), system
		off	w/o failure
LED10	Red	continuously	HLÍDÁNO (NIGHT)
		off	NEHLÍDÁNO (DAY)
LED11	Green	250/250	normal operating conditions
		continuously	configuration mode
		off	system failure, or power supply missing
LED3	Red		DTMF signal from GSM indication
LED4	Red		GSM module state indication
LED12	Yellow	on	indication of level „0“ on IN1 input
		off	indication of level „1“ on IN1 input
LED13	Yellow	on	indication of level „0“ on IN2 input
		off	indication of level „1“ on IN2 input
LED14	Yellow	on	indication of level „0“ on IN3 input
		off	indication of level „1“ on IN3 input
LED15	Yellow	on	indication of level „0“ on IN4 input
		off	indication of level „1“ on IN4 input

Table 3

6.6 SIM Card Installation

Switch the SIM card PIN off (**RECOMMENDED!)**. In the most of cellular phones, the PIN code can be switched off in menu “Security” → “PIN code”. If the PIN code functionality is to be maintained, it shall be entered to the configuration – see PIN configuration parameter.

Check or enter the number of service center for SMS messages on the SIM card (on new SIM cards, this parameter is already set by the operator). Generally, it can be found in menu “Messages” → “Setting” → “Service center”. Telephone numbers of service centers of particular operators in the Czech Republic are as follows:

O2	-	+420 602 909 909
T-Mobile	-	+420 603 052 000
Vodafone	-	+420 608 005 681

Delete all SMS messages on the SIM card!

After obligatory parameters setting, insert the SIM card to a reader. The SIM card shall be removed and inserted always with disconnected supply voltage.

If conductors connected to input clamps, and – if need be – also outputs assembled, it is possible to connect the power supply and standby accumulator (disconnected at the manufacturer), and verify wiring and configuration by means of a functional test.

Attention: The equipment is inoperable without inserted SIM card (it remains in its initialization sequence), however, particular configuration parameters can be set in Configuration mode!

7. EQUIPMENT CONTROL BY SYSTEM BUS KEYBOARD WITH LCD DISPLAY

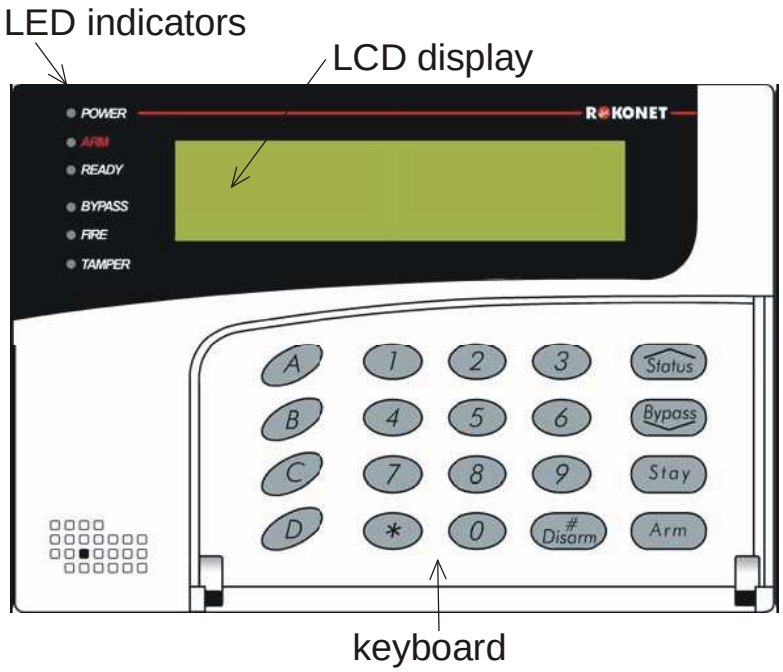


Fig. 4

Study carefully the LCD keyboard operating instructions before operation on the LCD keyboard.

Entire equipment can be comfortably controlled with the help of the keyboard with LCD display. The LCD display is a screen with 32 characters, which displays the system states, user's messages, functional menu etc.

The system current state is also displayed on LED diodes left from display for fast orientation.

7.1 LCD Keyboard Connection

Up to four wire keyboards with LCD display can be connected to the PITBUL equipment (see chapter 10.3). A unique address shall be set on each keyboard (see chapter 10.4). Addresses from **01** to **04** are available, while always must exist a keyboard with address **01**. Other keyboard must have address **02** (particular addresses cannot be skipped). Example: If two keyboards with LCD display are connected to the PITBUL equipment, one of them must have address **01** and the other address **02**.

7.2 Meaning of LED diodes on the LCD keyboard

LED	COLOR	STATE	MEANING
POWER	GREEN	on	normal operating state
		off	supply voltage disconnected
		blinks slowly	keyboard does not communicate with control panel
		blinks fast	failure of any equipment part
ARM	RED	on	PITBUL in the GUARDED mode at least of a single subsystem
		off	PITBUL in the NOT GUARDED mode of all subsystems
		blinks slowly	PITBUL in the DEPARTURE DELAY mode
		blinks fast	PITBUL in the ALARM mode
READY	GREEN	on	input loops in idle mode
		off	any of input loops not in idle mode
BYPASS	YELLOW	on	some input loops “bypassed”
		off	all input loops operate normally
FIRE	RED		not used
TAMPER	RED	on	any of sabotage contacts enabled
		off	none of sabotage contacts enabled

7.3 Acoustic Signals of LCD Keyboard

Besides optical indicators, the LCD keyboard is provided with acoustic signals for various events indication.

EVENT	SOUND OF KEYBOARD
confirmation tone	one-second tone
error tone	three fast bleeps
System enabled/disabled	one-second tone at correct operation, three bleeps at an error
Alarm	non-intermittent tone
Arrival delay	intermittent tone
Departure delay	short tone five and ten seconds before the departure delay expiry

7.4 Subsystems, Division of Input Loops in Subsystems

One of the PITBUL features with the control keyboard consists in the possibility of dividing input loops in three independent subsystems, namely A, B and C. Particular subsystem can be autonomously enabled/disabled. Input loops allocation to the subsystem shall be set with the help of a configuration parameters, see chapter 5.2.7.1.

7.5 Departure Delay, Change to GUARDED State

Change to GUARDED state means that each activation of guarded input loops results in an alarm putting out. To enable departure from guarded object without the alarm putting out, so called departure delay can be set for all guarded loops. It shall be set with the help of a configuration parameters, see chapter 5.2.10. The departure delay is indicated by slow blinking of the ARM LED on the LCD keyboard. Ten and five seconds before the departure delay expiry, this state is also indicated by the LCD keyboard short bleep. After the departure delay expiry, the system changes to the GUARDED state, and the ARM LED lights permanently.

7.5.1 Subsystem activation

Each subsystem may be perceived like an autonomous security system, which can be enabled/disabled regardless other subsystem. Subsystems activation means that only some of them are turned on the guarding. They are turned on typically at night when only those subsystems are guarded, where no persons appear during the night, or only subsystem guarding windows or doors opening or breaking is turned on, while free movement in rooms is guaranteed.

The subsystems can be activated simultaneously or individually.

Subsystems activation:

1) Press the Arm button on the board.
2) Enter user's code on the keyboard.
3) With the help of ***A***, ***B*** and ***C*** buttons, select subsystems that are to be enabled, or select ***D*** for activation of all subsystems simultaneously.
4) Press Arm button for activation of all selected subsystems.
5) If the BYPASS feature applied for some input loops (see chapter 9.1), these loops shall be displayed on the LCD. If you agree with input loops bypassing (the loops shall not be evaluated during the GUARDED state), acknowledge it by pressing Arm button. If it is not the case, refuse it by pressing * button.

Examples:

Activation of A subsystem by 1234 code.

Arm -**1-2-3-4-A-** Arm

Activation of B, C subsystems by 1234 code.

Arm -**1-2-3-4-B-C-** Arm

Activation of all subsystems by 1234 code.

Arm -**1-2-3-4-D-** Arm

7.6 Change to NOT GUARDED State

Change to the NEHLÍDÁNO state means that any change of non-guarded input loops does not put the alarm out. **WARNING: Input loops configured like continuous are evaluated permanently regardless the GUARDED/NOT GUARDED state.**

7.6.1 Subsystems Deactivation

The subsystems deactivation makes the changeover of particular subsystems to the NEHLÍDÁNO *[not guarded]* state possible.

Subsystems deactivation:

1) Press # Disarm button on the keyboard.
2) Enter user's code on the keyboard.
3) With the help of ***A***, ***B*** and ***C*** buttons, select subsystems that are to be deactivated, or select ***D*** for deactivation of all subsystems at once.
4) Press # Disarm button for deactivation of all selected subsystems.

Examples:

Deactivation of A subsystem by 1234 code.

Disarm **-1-2-3-4-A-** # Disarm

Deactivation of B, C subsystems by 1234 code.

Disarm **-1-2-3-4-B-C-** # Disarm

Deactivation of all subsystems by 1234 code.

Disarm **-1-2-3-4-D-** # Disarm

7.7 Arrival Delay, Alarm and Alarm Coming to Rest

If an input loop violation occurs during the "guarded" state, such input loop changes to an arrival delay state. The arrival delay is set for each input loop separately with the help of configuration parameters (see chapter 5.2.7). The arrival delay serves for subsystems deactivation without an alarm putting out. The time of arrival delay is indicated by an intermittent tone from the LCD keyboard.

After the arrival delay expiry, the equipment changes to the ALARM state. This state is indicated by fast blinking the ARM LED diode and non-intermittent tone from the LCD keyboard. The alarm coming to rest can be attained by pressing the # Disarm

button and entering the user's code. List of violated input loops can be find out by means of the event memory printout.

7.8 Installation and User's Codes

Installation and user's codes are needed for the PITBUL equipment control via keyboard. With the help of them, the equipment can be put in GUARDED/NOT GUARDED state, programmed, etc.

Two kinds of code are available.

Installation code (entered with the help of a configuration parameter 5.2.22) serves for changeover to the programming mode with the help of the LCD keyboard (7.10.1.3).

User's code (entered in the Programming menu 7.10.1.3). With the help of this code, particular subsystems of the control panel can be put in GUARDED/NOT GUARDED state only.

Warning: If a wrong code three times consecutively entered, the control panel shall put out the FAULTY CODE alarm.

7.9 Forced Code Feature

Forced code feature meaning is as follows: if the control panel in GUARDED state, and somebody compels us to enter the code for the control panel changeover to the NOT GUARDED state, we can use our set user's code increased by 1, i.e. instead of our 1234 code, 1235 code shall be entered. The control panel changes to NOT GUARDED state as if we have entered correct code, however, it simultaneously generates the FORCED CODE alarm message and transmits it to the PCO, or by means of SMS.

7.10 Functional Menu

Functional menu can be displayed on the LCD with the help of the ***STATUS*** key (see Fig. 5), which gives access to another features of the PITBUL equipment. You can browse through particular items of this menu by means of ***STATUS*** and ***BYPASS*** keys: **DISPLAY – SETTING TIME AND DATE – PROGRAMMING**. Use (# Disarm) key for the selection confirmation.

7.10.1.1 DISPLAY Menu

In the display menu, two items are available, namely **DISPLAY FAILURES** and **DISPLAY EVENTS.** Use (# Disarm) for the item selection confirmation.

7.10.1.1.1 DISPLAY -› FAILURES Menu

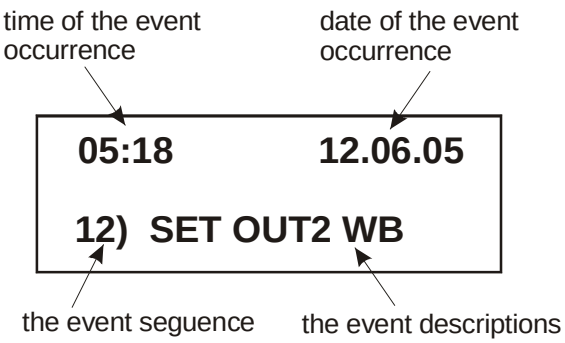
In this menu, all possible failures of the PITBUL equipment and connected parts shall be printed out (see Table 4). You can browse through failures with the help of Status and Bypass buttons.

NOT FAILURES	no failure detected on the PITBUL equipment
FAILURE BATTERY	indication of standby accumulator low voltage
FAILURE MAINS	power supply – mains voltage failure
FAILURE SUPPLY SENSORS	indication of low output 12V voltage on +12V_OUT output (JS4.2 and JS4.9 terminals)
SABOTAGE	violation of the PITBUL equipment cover (sabotage contact opening)
SABOTAGE WIRELESS RECEIVER	wireless receiver not connected though it should be connected according to the configuration
FAILURE BATTERY SENSORS WZE01 ..... WZE16	indication of low voltage of wireless sensors battery incl. pertinent sensors label printout
SABOTAZ SENSORS WZE01 ..... WZE16	violation of wireless sensors cover incl. pertinent sensors printout
LOSS SENSORS WZE01 ..... WZE16	loss of communication with wireless sensors incl. pertinent sensors label printout
NOT GSM SIGNAL	GSM network not available on the PITBUL equipment site
FAULTY CODE ENTRED	fault code entered three-times consecutively via LCD keyboard

Table 4 – Possible failures of the PITBUL equipment

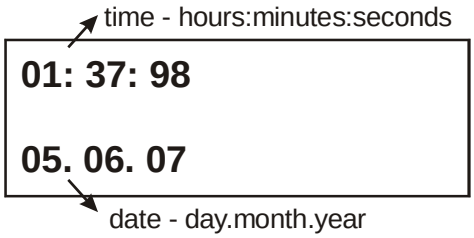
7.10.1.1.2 DISPLEY -› EVENTS Menu

In this menu, last events arisen on the PITBUL equipment are printed out. Format of displayed data is shown in figure. You can browse through the events with the help of Status and Bypass buttons. Last 256 events can be displayed this way. Description of possible events, see 10.9.



7.10.1.2 SETTING TIME AND DATE Menu

In this menu, you can set current time and date. After the **SETTING TIME AND DATE** menu item selection confirmation (by means of # Disarm button), actual time and date shall appear on the display. Select the item (hours, minutes etc.) that is to be changed (cursor blinks under currently selected item) with the help of # Disarm button, and change the item with the help of Status and Bypass buttons. Confirm the setting change by means of the # Disarm button and go to the next item. Exit the **SETTING TIME AND DATE** menu by pressing the * button.



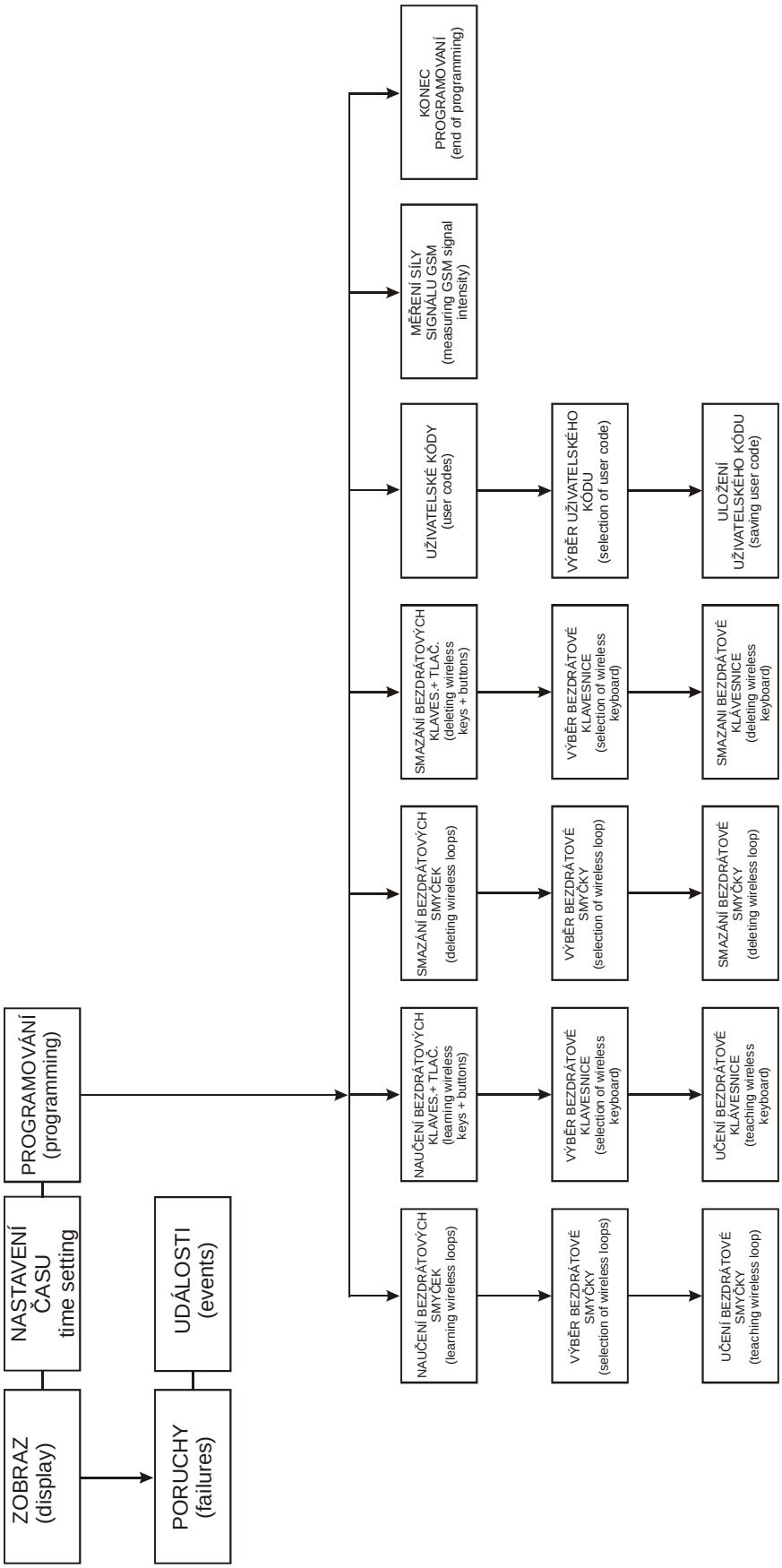


Fig. 5 – Functional menu structure

7.10.1.3 PROGRAMMING Menu

The **PROGRAMMING** menu contains five items.

Warning: At the **PROGRAMMING** menu exit, the control panel reset occurs, and possible change to the NOT GUARDED state may occur.

7.10.1.3.1 LEARNING WIRELESS LOOPS Menu

With the help of this menu, wireless receiver can learn codes of particular wireless elements.

Select number of determined loop with the help of Status and Bypass buttons. This number shall correspond with defined feature of given loop with the help of WZExx configuration parameter (see chapter 5.2.7.2) where xx is the loop number. Information, whether this loop is free and a wireless element can be taught on its position, follows the loop number. Confirm the loop number selection by # Disarm key.

SELECTION LOOP:

LOOP: 01 - FREE

number of determined loop

Time countdown shall be initiated on the display, in course of which the wireless receiver expects reception of learning code. Learning code shall be sent off from the wireless sensor, which is to be allocated to this loop number (ways of transmission of learning codes of particular wireless elements see chapter 8).

RECEIVING CODE:

REST TIME: 28

After successful code reception, **OK** message shall be printed out.

OK

7.10.1.3.2 LERNING WIRELESS KEYBOARDS + BUTTONS Menu

With the help of this menu, wireless receiver can learn codes of up to four wireless keyboards and up to four wireless transmitters (buttons).

Select number of determined keyboard (button) 01 – 04 with the help of Status and Bypass. Information, whether this position is free and a wireless element can be taught on its position, follows the loop number. Confirm the keyboard (button) number by means of the # Disarm key.

SELECT KE. / BU.:

KEYBOARD: 01 - FREE

Time countdown shall be initiated on the display, in course of which the wireless receiver expects reception of learning code.

For learning code transmission, press twice Arm button on the wireless keyboard.

If the receiver obtains learning code from the wireless keyboard (button), **OK** message shall be printed out. For wireless buttons, subsystems that can be controlled by this button shall be also selected.

7.10.1.3.3 DELETING WIRELESS LOOPS Menu

With the help of this menu, wireless element can be removed from taught elements received by the receiver of wireless elements.

With the help of Status and Bypass buttons, select number of loop, which is to be removed from loops taught by the wireless elements receiver, and confirm it by # Disarm key.

OK shall appear on the display for confirmation of the loop deletion.

7.10.1.3.4 DELETING WIRELESS KEYBOARDS + BUTTONS Menu

With the help of this menu, wireless keyboard (button) can be removed from taught elements received by the wireless receiver.

With the help of Status and Bypass buttons, select number of keyboard (button), which is to be removed from elements taught by the wireless elements receiver, and confirm it by # Disarm key.

OK shall appear on the display for confirmation of the keyboard (button) deletion.

7.10.1.3.5 USERS CODE Menu

With the help of this menu, user's access codes can be changed, with the help of which, the PITBUL equipment can be changed to the GUARDED/NOT GUARDED state. Entered user's access codes are 10 maximum. Each user's code can be assigned to any subsystem. All codes are four-digit codes. Installation code cannot be changed in this menu. This code can be changed by means of the KOD configuration parameter only (see chapter 5.2.22).

After the **USERS CODE** menu selection confirmation (by # Disarm button), number of codes that are to be change shall be available. Select code number by means of Status and Bypass buttons and confirm it (by means of # Disarm button). Enter the new four-digit user's code. In addition, enter types of possible subsystems that can be controlled by this code, with the help of A, B, C buttons and confirm it by means of the # Disarm button.

If given user's code is to be deleted, enter four zeroes "0000" instead of the code. User's code on given position shall be deleted.

7.10.1.3.6 MEASURING GSM SIGNAL INTENSITY Menu

After this menu selection, the GSM network signal intensity on the equipment site shall appear on the LCD. The signal intensity is shown in dBm, where xxx is a number from -113 (the worst) to -51 (the best). Display of ??? instead of the signal quality number means that it was not possible to detect the signal for any reason (e.g. the GSM network signal is too low). The signal measurement occurs periodicall by each 10-15 seconds.

For optimum PITBUL equipment performance, the GSM network signal intensity on the equipment site should be at least -93dBm or better.

7.10.1.3.7 END PROGRAMMING Menu

It serves for exiting and saving modifications. Press # Disarm button for selection. REALLY FINISH PROGRAMMING message appears on the display, which shall be confirmed by means of the # Disarm button repeated pressing.

8. WIRELESS ELEMENTS

8.1 Receiver of Wireless Elements

Wireless elements reception by the PITBUL equipment is conditional on connected receiver of wireless elements. Available is either RP128EW0800A wireless receiver for connecting up to 8 wireless safety elements and up to 4 wireless keyboards, or RP128EW1600A for connecting up to 16 wireless safety elements and up to 4 wireless keyboards.

RP128EW0800A	Extending module of radio zone (receiver) (8 zones), 868 MHz
RP128EW1600A	Extending module of radio zone (receiver) (16 zones), 868 MHz

8.2 Wireless Elements Allocation to Receiver

For connecting wireless receiver to the PITBUL equipment, wireless elements shall be first allocated to this receiver that shall be received by it and their state consecutively evaluated. Learning itself occurs with the help of connected wire keyboard to the PITBUL equipment in PROGRAMMING menu (see chapter 7.10.1.3).

8.2.1 Wireless Keyboard

Prior to the wireless keyboard operation, study carefully the wireless keyboard operating instructions.

Wireless keyboard is a transmitter with floating code utilized for the PITBUL equipment remote control. It enables the system activation and deactivation.

Properties:

Battery type:	lithium battery 3V, CR2430
Current consumption:	standby mode 5µA, max.20mA at transmission
Frequency:	868 MHz
Max. range:	250m in clearance space
Modulation type:	ASK
Battery service life:	3 years (acc. to usage)
Dimensions:	162mmx122mmx30mm
Operating temperature:	0ºC ÷ 55ºC
Storage temperature:	-20 ºC ÷ 70ºC

Indication by LED

: The TX LED blinks at each pressing any key, and any transfer from the keyboard to the receiver is indicated this way.

: If the keyboard battery discharged and should be replaced, the Low Battery diode and TX LED shall blink at each pressing any key.

Battery replacement: see Wireless keyboard operating instruction.

Transmission of learning code:

For learning code transmission, press twice the Arm button consecutively on the wireless keyboard.

8.2.2 Types of Wireless Safety Elements

Kinds of available wireless elements allocable to the receiver of wireless elements:

RWT92086800A	PIR movement radio detector 868 MHz
RWT92P86800A	PIR movement radio detector 868 MHz with immunity towards animals
RWT32S86800A	smoke radio detector
RWT72C86800A	radio transmitter of magnetic contact 868 MHz
RWT72M86800A	radio transmitter of magnetic contact 868 MHz + magnet
RWT50P86800A	radio transmitter with a single button
RP128T4C00A	radio transmitter with four buttons

All mentioned wireless elements contain the battery discharge detection in transmitters. If a battery of any wireless element discharged, the EQUIPMENT FAILURE shall be put out. This information is then sent off in the SMS message; the battery discharge is also indicated by blinking POWER LED on connected LCD keyboard. Particular number (user's name) of the wireless element with discharged battery is then written in SMS message (see chapter 9.9.1), and can be also found in the User's menu on the LCD keyboard (see chapter 7.10.1.1). This event is also a part of messages transferred to the PCO.

Wireless elements also contain a single or several sabotage contacts (detection of sensor box violation). If a sabotage contact closure occurs, the SABOTAGE shall be put out. This information is then sent off in the SMS message. The sabotage is also indicated by means of the TAMPER LED lighting up. Particular number (user's name) of the wireless element, which the sabotage put out on, is then written in the SMS message (see chapter 9.9.1), and can be also found in the User's menu on the LCD keyboard (see chapter 7.10.1.1). This event is also a part of messages transferred to the PCO.

In addition, all elements contain so called supervision feature. This feature serves for detection of the communication loss between a wireless elements and a wireless element receiver. If the communication with the wireless element lost (evaluated once per hour), an ALARM shall be put out. This information is then sent off in the SMS message. The communication loss is also indicated by blinking POWER LED on connected LCD keyboard. Particular number (user's name) of the wireless element, which the communication was lost with, is then written in the SMS message (see chapter 9.9.1), and can be also found in the User's menu on the LCD keyboard (see chapter 7.10.1.1). This event is also a part of messages transferred to the PCO.

8.2.2.1 PIR Movement Radio Detector

Prior to the installation and setup of this detector, study carefully the PIR movement radio detector operating instructions.

Concerned is a wireless infrared detector (PIR) supplied by lithium 3V battery.

Properties:

Battery type:	3V lithium battery CR123
Current consumption:	20µA in standby mode
Supervision transmission:	every 65 or 12min
Modulation type:	ASK
Battery service life:	3 years in normal mode
Range:	up to 400m at direct visibility
Frequency:	868 MHz
Dimensions:	127x64x40mm
Operating temperature:	0ºC ÷ 50 ºC
Storage temperature:	-20ºC ÷ 60 ºC

Performance setup:

Various detector features can be set with the help of interconnecting jumpers (J5-J7) situated on the detector board. For correct performance of the detector with the PITBUL equipment, shift the jumper plug to the J7 – FAST MON position. In this mode, the detector transmits a message on its state every 12 minutes. Message on the area violation or sabotage contact shall be sent off immediately. So called “dead” time of 2.5 minute exists between particular transmitted detections.

For installation and testing, it is recommended to shift the jumper plug to the J5 – FULL SIGN position, when no “dead” time between detections exists. After the detector learning for the wireless receiver, it is recommended to shift the jumper plug to the J6 – NORM position.

Indication by LED (LD1):

The LED lights shortly at each message transmission to the wireless elements receiver. If the battery discharged, the LED shall blink.

Leaning code transmission:

The learning code shall be transmitted so that both sabotage switches (rear side and cover contact) are pressed for at least 3 seconds.

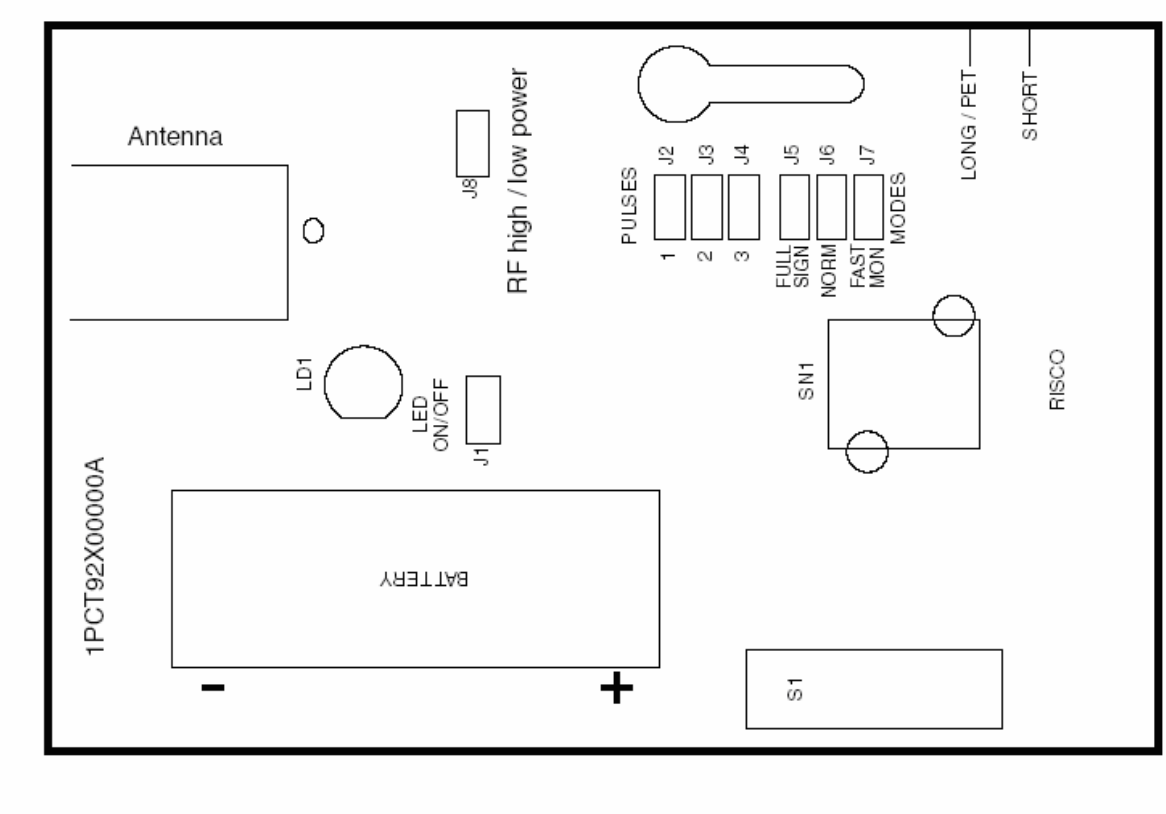


Fig. 6 – PIR movement detector card

8.2.2.2 Radio Transmitter of Magnetic Contact

Prior to the installation and setup of this detector, study carefully the radio transmitter of magnetic contact operating instructions.

Concerned is a multipurpose transmitter, which can be connected to magnetic contacts (door or window protection), or to other sensors with an output contact. The transmitter is supplied by 3V lithium battery.

Properties:

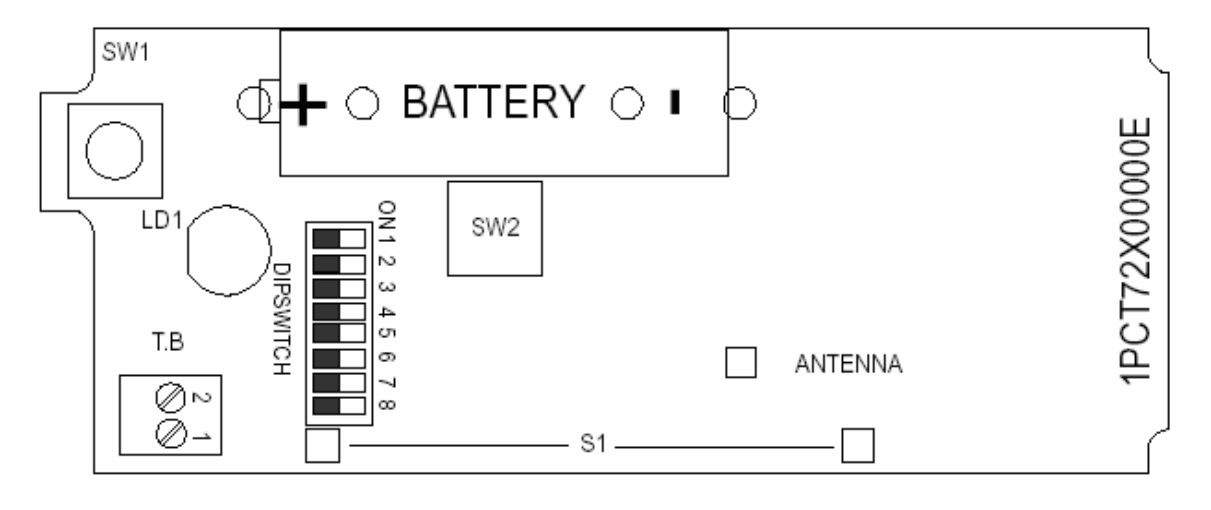
Battery type:	3V lithium battery CR123
Current consumption:	6µA in standby mode
Supervision transmission:	every 65 or 15min
Modulation type:	ASK
Battery service life:	3 years in normal mode
Range:	up to 400m at direct visibility
Frequency:	868 MHz
Dimensions:	81x35x32mm
Operating temperature:	0ºC ÷ 55 ºC
Storage temperature:	-20ºC ÷ 60 ºC

Performance setup:

Correct transmission performance can be set with the help of DIP switches. The transmitter is provided with 8 DIP switches (see figure).

Leaning code transmission:

The learning code shall be transmitted so that both sabotage switches (rear side and cover contact) are pressed for at least 3 seconds.



№ of DIP switch	Feature
1, 2	No used – switched off position **OFF**
3	Time of supervision transmission, **ON** – every 15 min, **OFF** – every 65 min For correct performance of the PITBUL equipment, set to **ON**.
4	Internal reed switch approval, **ON** – disable, **OFF** – enable
5	Contact mode determination, **ON** – closed at rest (NC), **OFF** – open at rest (NO)
6	Response time setup, **ON** – slow response – 500msec (for application with magnetic contacts), **OFF** – fast reaction – 10msec
7	Dead time setup, **ON** – dead time of 2.5 min. between alarm detection transmissions **OFF** – no dead time between alarm detection transmissions (the unit sends of alarm after each detection).
8	Transmission power setup, **ON** – low power (if the transmitter near the receiver only), **OFF** – increased power (recommended setting!)

Indication by LED (LD1):

The LED lights shortly at each message transmission to the wireless elements receiver. If the battery discharged, the LED shall blink.

8.2.2.3 Smoke Wireless Detector

For correct installation and application of the detector, study carefully the smoke radio detector operating instructions.

Concerned are battery photoelectric smoke detectors with built-in radio transmitter. It is supplied by two 3V lithium batteries.

If sufficient quantity of smoke accumulates, the detector activates an alarm buzzer and the transmitter sends off the ALARM message. The alarm output in the receiver remains active till the alarm conditions disappear.

Leaning code transmission:

The learning code shall be transmitted automatically 10 seconds from batteries inserting.

8.2.2.4 Wireless Transmitter with a Single Button (Emergency Button)

Concerned is a battery wireless transmitter with a single button. After the button pressing, the alarm putting out at the control panel occurs.

Properties:

Battery type:	12V battery 23AE
Current consumption:	100µA at transmission
Supervision transmission:	w/o supervision transmission
Battery service life:	5 years acc. to transmissions number
Range:	up to 200m at direct visibility
Frequency:	868 MHz
Operating temperature:	0ºC ÷ 50 ºC

Leaning code transmission:

The learning code shall be transmitted after the long (5 sec minimum) pressing the button on the transmitter.

8.2.2.5 Wireless Transmitter with Four Buttons

Concerned is a battery wireless transmitter with four buttons. These buttons operate like buttons with predefined function. This transmitter teaching occurs in the LEARNING WIRELESS KEYBOARDS + BUTTONS menu.

Properties:

Battery type:	3V lithium battery CR2430
Current consumption:	1µA in standby mode
Supervision transmission:	w/o supervision transmission
Battery service life:	3 years at normal application
Range:	up to 200m at direct visibility
Frequency:	868 MHz
Operating temperature:	0ºC ÷ 50 ºC

ARM button – serves for the PITBUL equipment complete putting into the state HLÍDÁNO of all subsystems.

DISARM button – serves for the PITBUL equipment complete putting into the state NEHLÍDÁNO of all subsystems.

A button – programmable button, with the help of which, any output can be controlled.

B button – programmable button, with the help of which, some of outputs can be controlled.

Leaning code transmission:

The learning code shall be sent off after the long (ca 3 sec) pressing the **ARM** button.

8.3 Repeater 868MHz – RP128EWR000A-B

Repeater (amplifier) increases the range due to the connection of wireless elements with wireless receiver. The receiver receives messages signaling an alarm from transmitters and transfers them to the receiver. The amplifiers may create a chain, and each of them can more than duplicate the range.

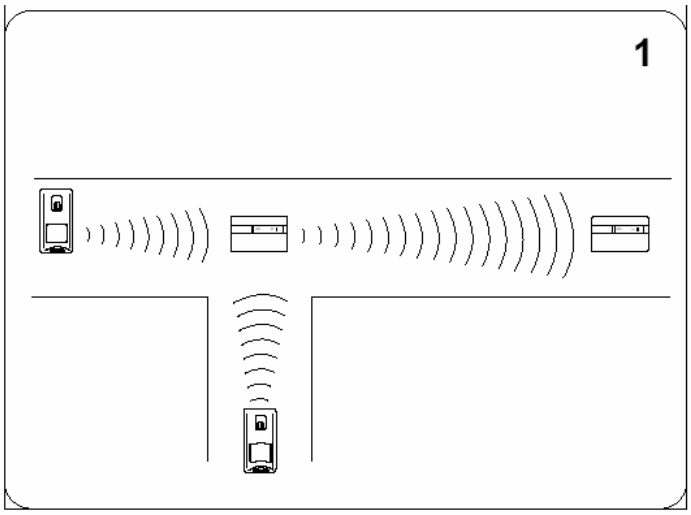
Prior to the repeater installation and setup, study carefully the repeater operating instructions.

Properties:

Supply voltage:	10V ÷ 15V AC/DC
Reserve battery type:	charging AA batteries AA (not delivered with the repeater)
Current consumption:	100mA in transmission mode 100mA in reception mode 250 mA at batteries charging
Supervision transmission:	every 15 minutes
Frequency:	868 MHz
Operating temperature:	0ºC ÷ 50 ºC

8.3.1 Amplifier Assembly

The amplifier is to be installed between transmitters and next receiver or amplifier in minimum height 1.5 m above the ground and 50 cm under the ceiling. Do not mount the amplifier near big metal objects or electronic equipment emitting electromagnetic field, e.g. computers and monitors, because the amplifier sensitivity could be decreased.



8.3.2 Amplifier – Receiver Communication Supervision Setup

It is possible to set the amplifier so that it transmits own tamper signals, discharged batteries state, and supervision signals to the system receiver. The supervision time is fixed to 15 minutes.

It you want to set the communication with the receiver, the amplifier should be identified by system receivers similar way as the communication setup occurs with any radio zone.

1. Press the WRITE button for 3 sec and release it so that the amplifier changes to WRITE mode.
2. Select any zone, which the amplifier shall be allocated to.
3. Send off the “Write” message by means of pressing both tamper buttons (rear side and cover) for at least 3 sec. Verify whether the amplifier identified by the receiver.
4. Set the receiver to the normal mode.

8.3.3 Transmitter Registration and Setting for Single Amplifier

1. Set all 8 DIP switches TXID and RXID to switch-off position.
2. Press the WRITE button for 3 sec and release it so that the amplifier changes to WRITE mode. Both LEDs shall blink once for 1 sec.
3. Press the WRITE button shortly so that the amplifier “teaches” the transmitter. Upper LED shall blink once for the first transmitter.

4. Send off the WRITE from any transmitter. Both LEDs blink once for 1 sec to acknowledge successful programming.
5. Repeat phases 3 and 4 till up to 12 transmitters programmed. Upper LED blinks 2x, 3x, 4x, 5x and 6x for transmitters 1 to 6 (number of blinks corresponds to the transmitter number). For transmitters 7 ÷ 12, only lower diode shall blink; similarly for upper LED: 1 ÷ 6 blinks for transmitters 7 ÷ 12.
6. Return to the normal mode – you can exit “Write” mode any time and return to the normal mode (“Normal”) by pressing and holding the WRITE button during approx. 3 sec. Both LEDs blink once per 1 sec to acknowledge the action.

8.3.4 System Test

After definitive allocation of transmitters, amplifiers and receiver, the test of entire system shall be performed as follows:

Activate (enable) transmitters that were programmed for the receiver, and monitor response of the receiver. Lower diode lighting acknowledges the inserted amplifiers receiving action. If both LEDs are on, it means that an interference in channel occurred. If need required, displace transmitters or amplifier and search a place where correct receiver response attained.

Note: The receiver can receive signals both from the amplifier, and directly from the transmitter. In such case, two receiver responses may occur because amplifier restrains the transmission to avoid interference with the transmitter signal.

9. EQUIPMENT OPERATION

9.1 Bypass Function – Input Loops Bypass

At the changeover from the NOT GUARDED state to the GUARDED state, the equipment changes automatically to the DEPARTURE mode. All input loops should by in idle state during this changeover. Otherwise, the **BYPASS** function shall be applied to the loop, which is active at lock-in (beginning of guarding). Consequently, such loop ceases guarding (regardless to its state, it does not influence alarm putting out more). Lighting LED BYPASS on the LCD keyboard indicates the state when any loop not guarded (bypass). This information is a part of pertinent SMS messages that are sent off during the guarding. An exception consists in so called continuous loops – see 5.2.7 – which are guarded permanently regardless the GUARDED/NOT GUARDED state: the **BYPASS** function does not apply to them.

9.2 Transmission of Events

A situation when the equipment state changes compared with the last transmitted state is considered an event appearance, while the most of events can be designated either like activation (inputs activation including changeover to the HLÍDÁNO state, failures rise), or recovery (inputs changeover to idle state including changeover to NOT GUARDED state, recovery after a failure). An exception in this classification consists in responses to the interrogation and maintaining messages that can be included between activations, however, corresponding recoveries are missing. All events can be transmitted with the help of GPRS data, SMS or both of them (see chapter 5.2.5). In following paragraph, the entire process of transmitting the GPRS data to configured IP address, SMS messages sending off or both of them shall be designated like an event transfer by reason of simplification.

Transferred information (particularly SMS) should truly describe the state, in which the equipment was and currently is (namely if the frequency of events transmission limited – see chapter 5.2.6). For the sake of this, the PITBUL operates as follows:

a) Current state is permanently detected and evaluated independently on the manner and time of the event transfer. Active states (activations) are saved.

b) If an event instantaneous transfer cannot occur (during previous event transfer, or if minimum period expiry between events awaited), all active states (activations) shall be saved.

c) After all transfers termination and minimum time between events expiry, saved state shall be compared with the last transferred state. If different, transfer occurs, sent of state is saved like a new transferred state, while saved state shall be deleted.

Accordingly, the equipment passes through following cycles during its operation:

a) -> c) -> a) …, or a) -> b) -> c) -> a) -> c) -> a) -> b) -> c) … etc.

It is apparent from previous text that the information loss on an arbitrary activation cannot occur during transfers; such information can be at most delayed by the time corresponding to the minimum time between events. Under certain circumstances, only loss of information on recovery may occur, namely if shorter than minimum time between events. Following applies to the information transfer via SMS: if no SMS arrives during the time longer than minimum time between events, it can be taken for granted (at least from the PITBUL side, transmission in the GSM network is never fully guaranteed) that the last delivered state corresponds to the actual state of the equipment. Attention: during the transmission of several SMS within the framework of the GSM network, sequence of SMS delivered to the cellular phone can be changed compared with the SMS sequence transferred from the PITBUL!

Way of events transfer is apparent from following examples:

Examples:

1) PITBUL in function of communicator, in idle state, minimum time between events 30 sec.

   Input 7 (loop 4) is activated. An SMS message is then sent off (active loop 4). After 10 seconds, input 6 (loop 3) is activated for 5 sec, and then both activated inputs change to the idle state. 30 seconds after the first SMS, the other SMS is sent off, which contains all stored activations (loop 3, loop 4). Continuously saved state is deleted, and just transferred state saved like the last sent-off state. After next 30 seconds, difference between continuously saved state (all in idle state) and the last transferred state (loop 3, 4) is evaluated, and based on this evaluation, the third SMS (idle state) is sent off.

2) PITBUL in function of communicator, in idle state, minimum time between events 30 sec.

   Input 4 (loop 1) is activated. An SMS message is then sent off (active loop 1). After 5 seconds, input 4 coming to rest and activation of input 5 (loop 2) occurs. After next 5 sec, input 6 (loop 3) is activated, and input 5 changes to idle state. After next 5 sec, input 6 recovery occurs, and activation of input 7 (loop 4) as well. The communicator remains in this state. 30 seconds since the first SMS, the other SMS message is sent off, which contains all saved activations (loop 1, 2, 3, 4). Continuously saved state is deleted, and just transferred state saved like the last sent-off state. After next 30 seconds, difference between continuously saved state (only loop 4 active) and the last transferred state is evaluated, and based on this evaluation, the third SMS (loop 4) is sent off.

3) PITBUL in function of communicator, in idle state, minimum time between events 30 sec.

   Input 4 (loop 1) activated. An SMS message is then sent off (active loop 1). After 5 seconds, input 4 recovery occurs for 20 sec, and then its reactivation occurs. After 30 sec from the first SMS message, difference between continuously saved state (active loop 1) and the last transferred state (active loop 1) is evaluated, consequently, no SMS sent off.

Way of events transfer philosophy in the GPRS is similar to the way of transfer via SMS messages.

9.3 Data Transmission

Except for data transferred to the cellular phone in the form of text SMS message, all data are transmitted to the PCO either in the SMS data format, or in GPRS packets. The console configuration shall correspond to it. The GSM operation needs following conditions: connected GSM modem and GSM connector (Uni_konektGSM.exe) application – see KD 800 48 (Uni connectors) manual, for operation in GPRS mode with SIM card with enabled GPRS and application of GPRS connector (Uni_konektSG.exe, version 2.00 and higher) – see KD 800 112 manual, while the Uni_konektSG connector is used only for data transmission and transformation from the modem to the PCO. Internal connector options cannot be used for the PITBUL setup, and settings displayed here have no bearing upon the PITBUL states. An example of translation telephone table for PCO is enclosed. This translation table serves both for GPRS codes translation, and for translation of codes in data SMS messages from the PITBUL. PCO version (WRS32.exe) must be 2.2.0.7 or higher.

The data in GPRS are transmitted in UDP packets. For confirmed datagrams (all new events, maintaining datagrams of type B), repetition is ensured, if not response obtained in limit. It should be considered that the data transmission in the GPRS is not fully guaranteed and that the datagram continuity via GPRS network is not constant in course of the time. The connection quality is affected by a series of aspects. Generally, the transmission security increases with the number of transmitted packets per time unit (maintaining datagrams period decrease), and with increasing ratio of confirmed datagrams to non-confirmed datagrams. The compromise between the security on the one hand, and price for transfers on the other hand, shall be selected also pursuant the long-term observed quality of connection on given site. It is only a virtual paradox that the connection quality can be increased by increasing number of connected devices.

The GPRS data reception is affected also by the computer setting, which the PCO is installed on. If a computer protection activated limiting or inhibiting the internet access (firewall), suppression of discrete datagrams arriving from PITBUL may occur, and only responses to the console/connector interrogations may be accepted (after the connection failure report). If such troubles occur, it shall not be necessary to switch off entire firewall and decrease the computer security this way; it is usually sufficient to change the firewall setting. If need be, consult the setting with the Radom company engineers. If the computer works under the Windows XP operating system with installed Service Pack 2 (SP2), the Uni_konektGPRS connector creates automatically exception in the firewall rules, so that it can remain fully operational without limiting data continuity from the PITBUL. If the WinXP OS without SP2 used, it shall be necessary to create manually exception in the firewall for services on the 1501 port.

9.4 Mains and Accumulator Voltage Measurement

Both voltages are measured 1 per minute. Accordingly, short-time (1 min max) power supply failures need not to be detected.

9.5 Protection against Sabotage

Access to the equipment is protected mechanically. At an attempt at the equipment cover removal, sabotage contact closes and alarm is put out (sabotage).

9.6 Events Memory

The equipment involves a memory of events that appeared on the PITBUL. The memory capacity is 255 events. Three ways of retrieving these events are available:

1. With the help of LCD keyboard in **DISPLEY -› EVENTS** menu (see chapter 7.10.1.1.2).
2. With the help of a computer connected to the PITBUL equipment (see chapter 5.1). After the configuration initiation, entire events memory can be retrieved by means of the “R” button. The memory retrieval can be finished any time by means of the “Esc” button.
3. With the help of a computer and PitbulCon configuration program (see chapter 5.1.2).

9.7 Equipment Control by SMS Messages

It is possible to communicate with the equipment with the help of SMS messages. Considering the period of incoming messages testing, the response to the command occurs approx. within 30 seconds since the SMS delivery. Keep in mind that certain (undefined) time is spent for the SMS delivery in the operator’s network. The number, which the SMS message transferred from, shall be saved in configuration parameters (see chapter 5.2.4) and shall be defined like MASTER (see chapter 5.2.18).

Supported commands involve following:

- **Equipment state request**. It is entered in the SMS message form „**STAV**” sent to the equipment telephone number. Response is the SMS message in standard form (valid for all SMS messages sent to the cellular phone) comprising the information on the equipment according to the actual state.

- **Outputs control** by means of „**VYSTUP1=x**”, „**VYSTUP2=x**” a „**VYSTUP3=x**” commands, where x is number 0 (switch output off) or 1 (switch output on). Instead of the „VYSTUP1” or „VYSTUP2” text, a text according the user’s output description may be used.
- By means of the „**UZAMKNOUT** x**,**x**,**x“ SMS message, the equipment can be changed to the HLÍDÁNO state, where x can be replaced by subsystem numbers. For example: „**UZAMKNOUT A,B**“ results in A and B subsystems locking up.
- Similarly, „**ODEMKNOUT** x**,**x**,**x“ SMS message changes entered subsystems to the NEHLIDANO state. Example: „**ODEMKNOUT A**“, A subsystem changes to the non-guarded status.

9.8 Equipment Control by Phonic Call

The equipment operation can be any time verified by a phonic call. At detecting call to its telephone number, the communicator shall evaluate number of caller and then:

- if the number corresponds with any number saved in the configuration, the communicator waits for hanging up the receiver and initiates a call to given number **(it is true only if the GSM communicator for GPRS messages transfer to PCO not utilized)**. If the number saved in the configuration like MASTER (see 5.2.18), the call shall be put through at the attempt at connection. If this number not saved in the configuration like MASTER, the connection shall be immediately finished at the attempt at call connection.
- if calling number saved in the configuration like MASTER, connection shall be established only after five[1] repeated ringing tones.

Attention: For correct performance, the user must not use SIM card with activated voice box in his/her cellular phone!

Note: *Telephone calls should not be used at the data transmission with the help of GPRS to PCO by reason of possible connection failures with PCO.*

9.8.1 Equipment Control by DTMF

If connection with the equipment established (caller number shall be saved in the equipment configuration like MASTER), it is possible to detect and control outputs state, activate acoustic monitoring (if microphone connected – acc. to Appendix) with the help of entered DTMF tones (pressing pertinent keys on the phone). Response (again in form of DTMF tones) to particular options is instantaneous; it defines current state and is sent off always (in case of a query and in case of a change). Connection is terminated by hanging up calling or receiving phone, and its maximum length is 5 minutes.

Option	Meaning
1	output 1 state request
#1	change output 1 state
2	output 2 state request
#2	change output 2 state
3	output 3 state request
#3	change output 3 state
4	turn acoustic monitoring out
5	turn acoustic monitoring on

[1] If GSM communicator used for GPRS messages transfer to the console, incoming call need not to be immediately detected (GSM module in GPRS mode) at the attempt at call to the GSM communicator. Consequently, if the GSM communicator used for GPRS messages transfer, the call may be received only after more than five repetitions of ringing tone.

Response	Meaning (acc. to previous option)
5x DTMF tone 300msec long	output active, monitoring on, state HLÍDÁNO
1x DTMF tone 900msec long	output disabled, monitoring off, state NEHLÍDÁNO

9.9 Operational Information

9.9.1 SMS Contents

All SMS messages sent off to the cellular phone are uniform and vary by contained information according to the equipment state. If the message does not go in a single SMS due to its length, it shall be divided in two SMS messages. In case of a message, which does not go in two SMS messages, the rest of the message exceeding two SMS size shall be truncated (not transferred). The SMS message can contain only following texts in given sequence.

In control panel function:

"GUARDED" or "NOT GUARDED"	according to the equipment state with possible printout of guarded subsystems
"SABOTAGE"	if the equipment in sabotage state
"WRONG CODE"	faulty code was entered via LCD keyboard three times consecutively
"QUIET" or "ALARM:" + …	according to state; if an alarm put out, survey of active inputs follows
"BYPASS:"	it is displayed, if the bypass feature applied to any loop; survey of bypassed inputs follows
"FAILURE:"	equipment faulty state – if it is the case, the failure description follows
"MAINS"	mains voltage supply failure
"AKU"	low voltage of reserve accumulator
"SENSORS"	permitted consumption exceeded on the +12V-Out terminal intended for sensors feeding
"DAMAGE SENSORS:"	in case of communication loss with any wireless element; survey of elements with the communication loss follows
"BATTERY SENSORS:"	in case of the voltage drop of the wireless sensor battery followed by elements survey

"SABOTAGE SENSORS:"	in case of wireless sensor box violation followed by a survey
"OUT1"	if the output 1 in closed state
"OUT2"	if the output 2 in closed state
"OUT3"	if the output 3 in closed state
n"dBm"	signal intensity on the equipment site in dBm, where n is a number -113 (the worst) up to -51 (the best)

In communicator function:

"SABOTAGE"		if the equipment in sabotage state
"OUT:"		active inputs printout
"FAILURE"		equipment failure state – if it is the case, the failure description follows
	"MAINS"	mains voltage supply failure
	"AKU"	low voltage of reserve accumulator
	"SENSORS"	permitted consumption exceeded on the +12V-Out terminal intended for sensors feeding
"OUT1"		if the output 1 in closed state
"OUT2"		if the output 2 in closed state
"OUT3"		if the output 3 in closed state
n"dBm"		signal intensity on the equipment site in dBm, where n is a number -113 (the worst) up to -51 (the best)

10. APPENDICES

10.1 Examples of Wire Input Loops Wiring

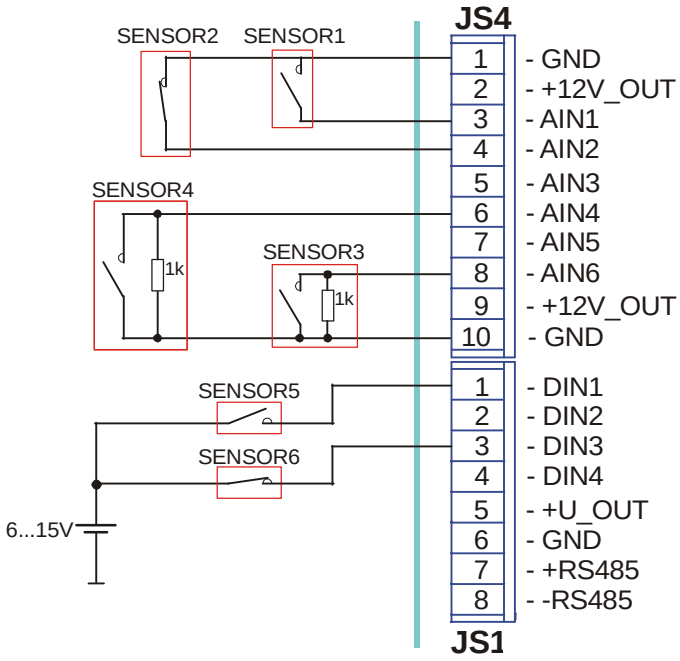


Fig. 7

SENSORS1 – this input loop is connected like a dead loop. The input is controlled by connection to earth (GND clamp). Idle value of this input – "LOG1" input terminal open.

Example of the configuration parameter setting:

+AIN1=CHODBA "1,0,0,60,0,A"

AIN1 input with CHODBA1 user's name is connected like a digital input with idle value 1, not continuous, input loop not "quiet" and defined like an arrival loop with delayed response of 60 seconds. The input is not program input allocated to the A subsystem.

SENSORS2 – this input loop is connected like a dead loop. The input is controlled by connection to earth (GND clamp). Idle value of this input – "LOG0" conductive connection of input terminal with GND clamp.

Example of the configuration parameter setting:

+AIN2=CHODBA2 "0,0,0,120,0,A"

AIN2 input with CHODBA2 user's name is connected like a digital input with idle value 0, not continuous, input loop not "quiet" and defined like an arrival loop with delayed response of 120 seconds. The input is not a program input allocated to the A subsystem.

SENSORS3 – this input loop is connected like an analog loop with simple balancing. The input shall be balanced, if resistor of 1kΩ ±30% connected to it. Anything off this allowance is evaluated like an alarm.

Example of the configuration parameter setting:

+AIN6=POKOJ1 "2,0,1,0,0,A"

AIN4 input with POKOJ1 user's name is connected like an analog input with simple balancing. It is not set like continuous, input loop is "quiet" (SIREN output shall not be closed at its activation), arrival or program input is not concerned, and is allocated to the A subsystem.

SENSORS4 – this input loop is connected like an analog loop with simple balancing. The input shall be balanced, if resistor of 1kΩ ±30% connected to it. Anything off this allowance is evaluated like an alarm.

Example of the configuration parameter setting:

+AIN4=POZAR "2,1,0,0,PGM1,B"

AIN4 input with POZAR user's name is connected like an analog input with simple balancing. It is set like continuous (permanently evaluated regardless the HLÍDÁNO/NEHLÍDÁNO state), input loop is not "quite" or arrival loop. The input is set like a program input (output1 shall be closed in case of the loop balance loss) and allocated to the B subsystem.

SENSORS5 – this loop is connected like a potential loop (jumper on JP2 clamp must connect 2-3 pins). The input is controlled by applying positive voltage of 5-12V towards ground. Idle value of this input – "LOG 0" connected voltage of 0-2V towards ground.

Example of the configuration parameter setting:

+DIN1=KUCHYN "0,0,0,0,PGM2,C"

DIN1 input with KUCHYN user's name is connected like a digital input with 0 idle value, not continuous, input loop not "quiet" and not set like an arrival loop. The input is a program input (output2 shall be closed at the loop activation) and allocated to the C subsystem.

SENSORS 6 – this input loop is connected like a potential loop (jumper on JP2 clamp must connect 2-3 pins). The input is controlled by applying positive voltage of 5-12V towards ground. Idle value of this input – "LOG 0" connected voltage of 0-2V towards ground.

Example of the configuration parameter setting:

+DIN3= "1,0,1,0,0,C"

DIN3 input without a user's name is connected like a digital input with 1 idle value, not continuous, input loop is "quiet" and not set like an arrival loop. The input is not a program input and allocated to the C subsystem.

10.2 Example of Outputs Wiring

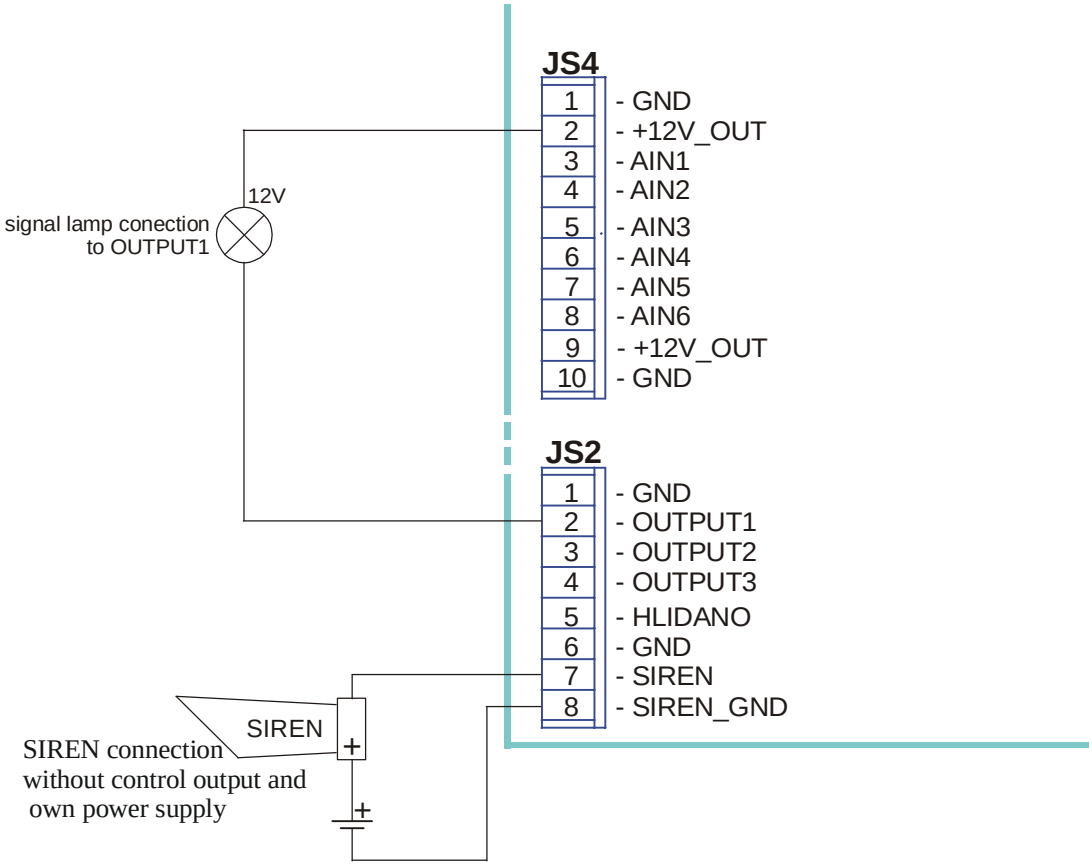


Fig. 8

10.3 Example of Connecting Bus LCD Keyboards and Wireless Elements Receiver

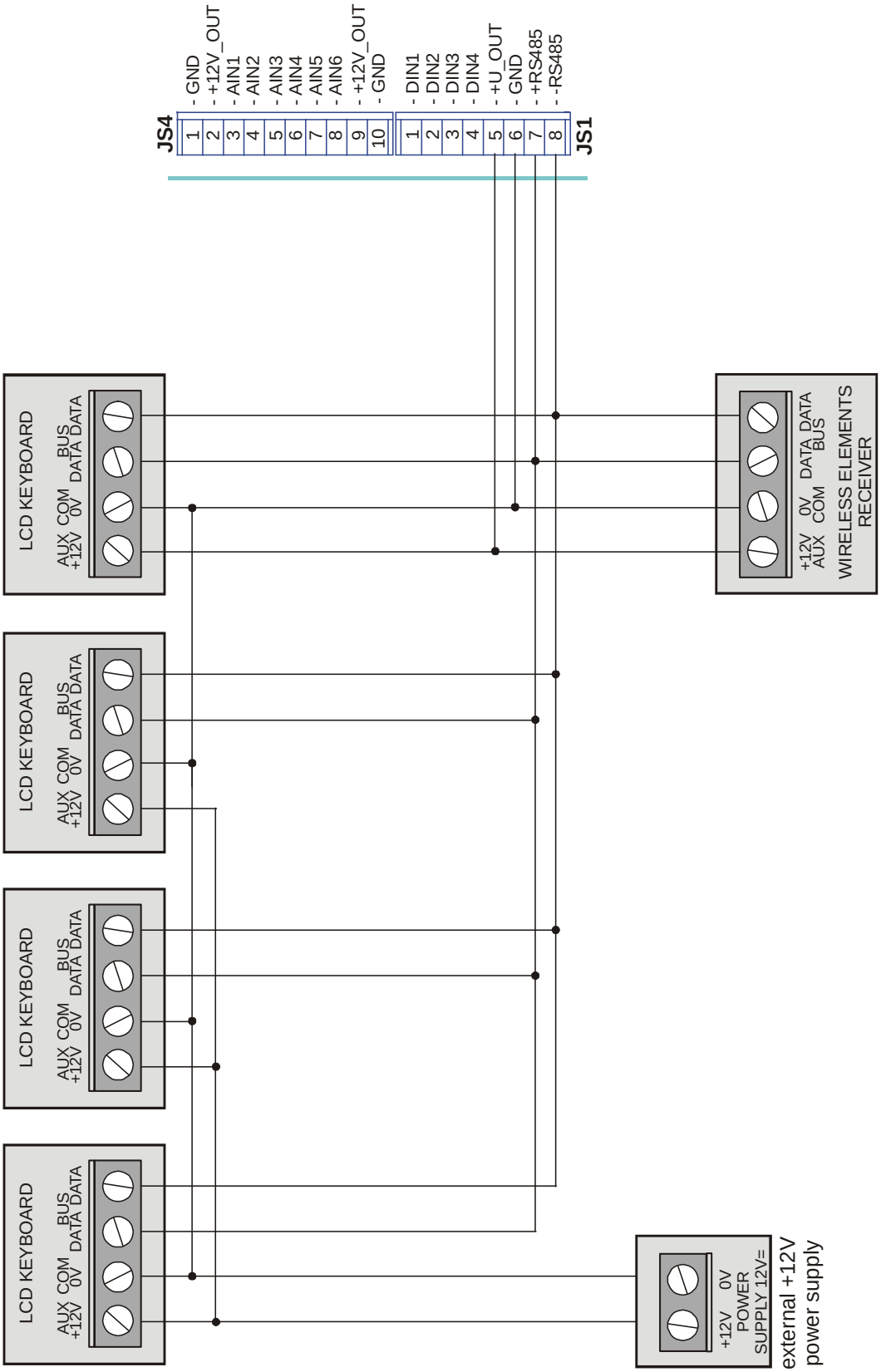


Fig. 9 – Connection of elements on RS485 bus

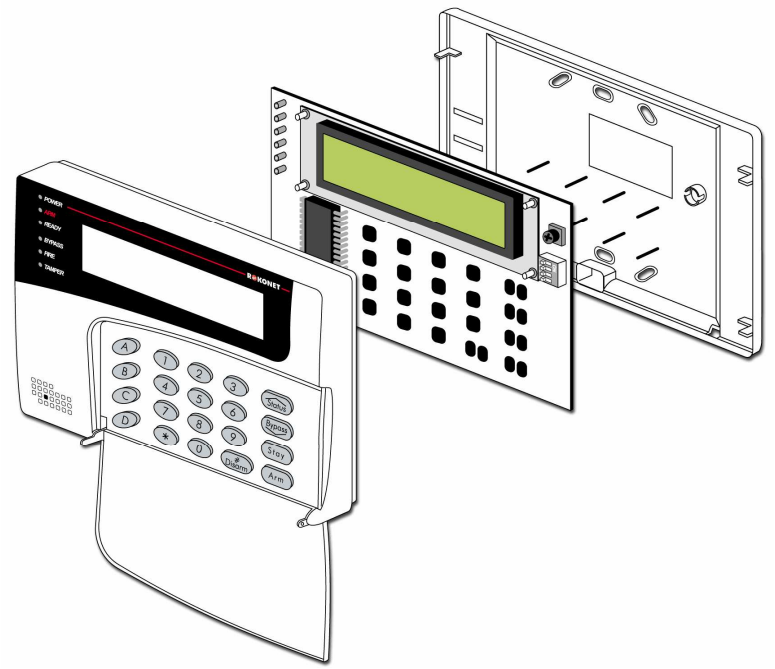
10.4 Installation of Bus LCD Keyboard

Keyboard installation procedure:

1. **Open the keyboard cap:** Remove rear side of the keyboard cap and press latches with the help of a screwdriver to separate the keyboard rear cover. Be attentive to avoid touching circuits of keyboard keys.
2. **Set DIP switches:** Program identification number by setting DIP switches according to the table shown in Fig. 10.
3. DIP switches setting corresponds to identification numbers (**01** = the first keyboard, **02** = the second keyboard, etc.).
4. **Connect the bus conductors:** Connect conductors leading from pertinent switchboards to the keyboard to an appropriate connector on the PITBUL equipment terminals. Use high-quality four-core cable of corresponding thickness for interconnecting receiver and PITBUL equipment (maximum length of line for all bus branches is 300m). The conductors are color labeled, see the table below.

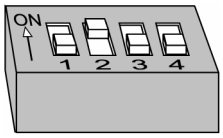
Note: A trimming resistor on right side of the keyboard (nearby DIP switches) enables setting contrast of the LCD display.

	CONNECTING CLAMPS OF LCD KEYBOARD			
	AUX (+12V)	**COM (0V)**	**BUS (DATA+)**	**BUS (DATA-)**
Color	RED (red)	BLK (black)	YEL (yellow)	GRN (green)



Setting the equipment communication addresses connected to the RS485 bus:

The equipment addresses are set by means of DIP switches on the board as shown below.



address	1	2	3	4
01	OFF	OFF	OFF	OFF
02	ON	OFF	OFF	OFF
03	OFF	ON	OFF	OFF
04	ON	ON	OFF	OFF
05	OFF	OFF	ON	OFF
06	ON	OFF	ON	OFF
07	OFF	ON	ON	OFF
08	ON	ON	ON	OFF
09	OFF	OFF	OFF	ON
10	ON	OFF	OFF	ON
11	OFF	ON	OFF	ON
12	ON	ON	OFF	ON
13	OFF	OFF	ON	ON
14	ON	OFF	ON	ON
15	OFF	ON	ON	ON
16	ON	ON	ON	ON

Fig. 10

Allocate address number **01** to the first keyboard, **02** to the second keyboard, **03** to the third keyboard, and the fourth keyboard **04**.
Address of the wireless elements receiver shall be always **01**.

10.5 Installation of Wireless Elements Radio Receiver

Radio receiver assembly
At the radio receiver assembly, following rules shall be considered:
- Do not install the radio receiver nearby metal objects and devices generating electromagnetic field, for example, TV sets or computers.
- The receiver shall be mounted in the height of at least 1.5 m (5 ft) above floor.
- The receiver shall be installed on site, which is relatively near transmitters, between them.

Radio transmitter connection
The radio transmitter is connected to the RS485 bus (JS1.7, JS1.8)

Use high-quality four-core cable of corresponding thickness for interconnecting receiver and PITBUL equipment (maximum length of line for all bus branches is 300m).

	CONNECTING CLAMPS of radio receiver			
	AUX (+12V)	**COM (0V)**	**BUS (DATA+)**	**BUS (DATA-)**
Color	RED (red)	BLK (black)	YEL (yellow)	GRN (green)

10.6 Survey of Codes and Example of their Setting in PCO (tlf.) Translation Table

10.6.1 Example for control panel mode:

Code	Symbol	Meaning	Shift	Comments
1800	+	NOC		A subsystem changeover to GUARDED state
1801	+	NOC		B subsystem changeover to GUARDED state
1802	+	NOC		C subsystem changeover to GUARDED state
1803	+	SAB		control panel sabotage
1804	+	SIT		control panel power supply failure
1805	+	AKU		control panel battery failure
1806	+	SAB		faulty code entered
1807	+	SAB		constraint code
1808	+	SAB		WZE01 sensor sabotage
1809	+	SAB		WZE02 sensor sabotage
1810	+	SAB		WZE03 sensor sabotage
1811	+	SAB		WZE04 sensor sabotage
1812	+	SAB		WZE05 sensor sabotage
1813	+	SAB		WZE06 sensor sabotage
1814	+	SAB		WZE07 sensor sabotage
1815	+	SAB		WZE08 sensor sabotage
1816	+	SAB		WZE09 sensor sabotage
1817	+	SAB		WZE10 sensor sabotage
1818	+	SAB		WZE11 sensor sabotage
1819	+	SAB		WZE12 sensor sabotage
1820	+	SAB		WZE13 sensor sabotage
1821	+	SAB		WZE14 sensor sabotage
1822	+	SAB		WZE15 sensor sabotage
1823	+	SAB		WZE16 sensor sabotage
1824	+	AKU		WZE01 sensor battery discharge
1825	+	AKU		WZE02 sensor battery discharge
1826	+	AKU		WZE03 sensor battery discharge
1827	+	AKU		WZE04 sensor battery discharge
1828	+	AKU		WZE05 sensor battery discharge
1829	+	AKU		WZE06 sensor battery discharge
1830	+	AKU		WZE07 sensor battery discharge
1831	+	AKU		WZE08 sensor battery discharge
1832	+	AKU		WZE09 sensor battery discharge
1833	+	AKU		WZE10 sensor battery discharge
1834	+	AKU		WZE11 sensor battery discharge
1835	+	AKU		WZE12 sensor battery discharge
1836	+	AKU		WZE13 sensor battery discharge
1837	+	AKU		WZE14 sensor battery discharge
1838	+	AKU		WZE15 sensor battery discharge

1839	+	AKU		WZE16 sensor battery discharge
1840	+	111		loss of communication with WZE01 sensor
1841	+	112		loss of communication with WZE02 sensor
1842	+	113		loss of communication with WZE03 sensor
1843	+	114		loss of communication with WZE04 sensor
1844	+	115		loss of communication with WZE05 sensor
1845	+	116		loss of communication with WZE06 sensor
1846	+	117		loss of communication with WZE07 sensor
1847	+	118		loss of communication with WZE08 sensor
1848	+	119		loss of communication with WZE09 sensor
1849	+	120		loss of communication with WZE010 sensor
1850	+	121		loss of communication with WZE011 sensor
1851	+	122		loss of communication with WZE012 sensor
1852	+	123		loss of communication with WZE013 sensor
1853	+	124		loss of communication with WZE014 sensor
1854	+	125		loss of communication with WZE015 sensor
1855	+	126		loss of communication with WZE016 sensor
1860	+	1		DIN1 loop alarm
1861	+	2		DIN2 loop alarm
1862	+	3		DIN3 loop alarm
1863	+	4		DIN4 loop alarm
1864	+	5		AIN1 loop alarm
1865	+	6		AIN2 loop alarm
1866	+	7		AIN3 loop alarm
1867	+	8		AIN4 loop alarm
1868	+	9		AIN5 loop alarm
1869	+	10		AIN6 loop alarm
1870	+	11		WZE01 loop alarm
1871	+	12		WZE02 loop alarm
1872	+	13		WZE03 loop alarm
1873	+	14		WZE04 loop alarm
1874	+	15		WZE05 loop alarm
1875	+	16		WZE06 loop alarm
1876	+	17		WZE07 loop alarm
1877	+	18		WZE08 loop alarm
1878	+	19		WZE09 loop alarm
1879	+	20		WZE10 loop alarm
1880	+	21		WZE11 loop alarm
1881	+	22		WZE12 loop alarm
1882	+	23		WZE13 loop alarm
1883	+	24		WZE14 loop alarm
1884	+	25		WZE15 loop alarm
1885	+	26		WZE16 loop alarm
3800	-	DEN		A subsystem changeover to NOT GUARDED state
3801	-	DEN		B subsystem changeover to NOT GUARDED

				state
3802	-	DEN		C subsystem changeover to NOT GUARDED state
3803	-	SAB		control panel sabotage coming to rest
3804	-	SIT		control panel power supply OK
3805	-	AKU		control panel battery OK
3807	$			Maintaining telegram (SMS)
3808	-	SAB		WZE01 sensor sabotage coming to rest
3809	-	SAB		WZE02 sensor sabotage coming to rest
3810	-	SAB		WZE03 sensor sabotage coming to rest
3811	-	SAB		WZE04 sensor sabotage coming to rest
3812	-	SAB		WZE05 sensor sabotage coming to rest
3813	-	SAB		WZE06 sensor sabotage coming to rest
3814	-	SAB		WZE07 sensor sabotage coming to rest
3815	-	SAB		WZE08 sensor sabotage coming to rest
3816	-	SAB		WZE09 sensor sabotage coming to rest
3817	-	SAB		WZE10 sensor sabotage coming to rest
3818	-	SAB		WZE11 sensor sabotage coming to rest
3819	-	SAB		WZE12 sensor sabotage coming to rest
3820	-	SAB		WZE13 sensor sabotage coming to rest
3821	-	SAB		WZE14 sensor sabotage coming to rest
3822	-	SAB		WZE15 sensor sabotage coming to rest
3823	-	SAB		WZE16 sensor sabotage coming to rest
3824	-	AKU		WZE01 sensor battery OK
3825	-	AKU		WZE02 sensor battery OK
3826	-	AKU		WZE03 sensor battery OK
3827	-	AKU		WZE04 sensor battery OK
3828	-	AKU		WZE05 sensor battery OK
3829	-	AKU		WZE06 sensor battery OK
3830	-	AKU		WZE07 sensor battery OK
3831	-	AKU		WZE08 sensor battery OK
3832	-	AKU		WZE09 sensor battery OK
3833	-	AKU		WZE10 sensor battery OK
3834	-	AKU		WZE11 sensor battery OK
3835	-	AKU		WZE12 sensor battery OK
3836	-	AKU		WZE13 sensor battery OK
3837	-	AKU		WZE14 sensor battery OK
3838	-	AKU		WZE15 sensor battery OK
3839	-	AKU		WZE16 sensor battery OK
3840	-	111		communication with WZE01 sensor OK
3841	-	112		communication with WZE02 sensor OK
3842	-	113		communication with WZE03 sensor OK
3843	-	114		communication with WZE04 sensor OK
3844	-	115		communication with WZE05 sensor OK
3845	-	116		communication with WZE06 sensor OK
3846	-	117		communication with WZE07 sensor OK
3847	-	118		communication with WZE08 sensor OK

3848	-	119		communication with WZE09 sensor OK
3849	-	120		communication with WZE010 sensor OK
3850	-	121		communication with WZE011 sensor OK
3851	-	122		communication with WZE012 sensor OK
3852	-	123		communication with WZE013 sensor OK
3853	-	124		communication with WZE014 sensor OK
3854	-	125		communication with WZE015 sensor OK
3855	-	126		communication with WZE016 sensor OK
3860	-	1		DIN1 loop recovery
3861	-	2		DIN2 loop recovery
3862	-	3		DIN3 loop recovery
3863	-	4		DIN4 loop recovery
3864	-	5		AIN1 loop recovery
3865	-	6		AIN2 loop recovery
3866	-	7		AIN2 loop recovery
3867	-	8		AIN4 loop recovery
3868	-	9		AIN5 loop recovery
3869	-	10		AIN6 loop recovery
3870	-	11		WZE01 loop recovery
3871	-	12		WZE02 loop recovery
3872	-	13		WZE03 loop recovery
3873	-	14		WZE04 loop recovery
3874	-	15		WZE05 loop recovery
3875	-	16		WZE06 loop recovery
3876	-	17		WZE07 loop recovery
3877	-	18		WZE08 loop recovery
3878	-	19		WZE09 loop recovery
3879	-	20		WZE10 loop recovery
3880	-	21		WZE11 loop recovery
3881	-	22		WZE12 loop recovery
3882	-	23		WZE13 loop recovery
3883	-	24		WZE14 loop recovery
3884	-	25		WZE15 loop recovery
3885	-	26		WZE16 loop recovery

1355 and 3355 codes, or 1982 and 3982 codes are transferred directly via connector with the communication loss/recovery meaning.

10.7 Setting the Hyperterminal Program for Configuration

Following items are to be set for correct performance:

- At a new connection establishment, following items shall be entered to the port setting tab:
- bits per second - 57600
- data bits - 8
- parity – w/o parity
- number of stop bits - 1
- flow control - none
    - after the connection establishing and its saving to (file *.ht), following items shall be selected (checked off) in the File/Properties/Setting/ASCII setting tab:
    - Copy written characters locally
    - Add line feed code behind incoming lines

10.8 Most Often Emerging Problems

I. Outputs cannot be controlled by means of SMS messages

The equipment sends off own SMS messages and returns SMS response to the STATE SMS query, however, it does not answer to outputs setting with the help of VYSTUP1=1 command, etc.

Possible solution:

Check whether the number, which the SMS message transferred to the PITBUL equipment from, is authorized for change outputs, i.e. whether it is configured like MASTER (see chapter 5.2.18).

Check whether the output you want to control is not configured like a program output, or whether it is not set for the wireless transmitter control.

II. Output 1, 2 or 3 closed (LED OUT1, OUT2 or OUT3 is lighting), however, voltage on output clamp is absent

The equipment works well. However, outputs are of “open drain” type, consequently, they are not conceived like potential outputs, but switching outputs. The output remains grounded in its active state (closed in relation to GND terminal).

10.9 Survey and Description of Events Saved in the Equipment Memory

Event	Event description
RESET	Equipment restart
SET OUT1 WB	Output 1 closure by wireless button
SET OUT2 WB	Output 2 closure by wireless button
SET OUT3 WB	Output 3 closure by wireless button
SET OUT1 PGM	Output 1 closure depending on allocated input state
SET OUT2 PGM	Output 2 closure depending on allocated input state
SET OUT3 PGM	Output 3 closure depending on allocated input state
SET OUT1 SMS	Output 1 closure by SMS message
SET OUT2 SMS	Output 2 closure by SMS message
SET OUT3 SMS	Output 3 closure by SMS message
SET OUT1 DTM	Output 1 closure by DTMF signal
SET OUT2 DTM	Output 2 closure by DTMF signal
SET OUT3 DTM	Output 3 closure by DTMF signal
CLR OUT1 WB	Output 1 opening by wireless button
CLR OUT2 WB	Output 2 opening by wireless button
CLR OUT3 WB	Output 3 opening by wireless button
CLR OUT1 PGM	Output 1 opening depending on allocated input state
CLR OUT2 PGM	Output 2 opening depending on allocated input state
CLR OUT3 PGM	Output 3 opening depending on allocated input state
CLR OUT1 SMS	Output 1 opening by SMS message
CLR OUT2 SMS	Output 2 opening by SMS message
CLR OUT3 SMS	Output 3 opening by SMS message
CLR OUT1 DTM	Output 1 opening by DTMF signal
CLR OUT2 DTM	Output 2 opening by DTMF signal
CLR OUT3 DTM	Output 3 opening by DTMF signal
NOT GUARD A	Subsystem A change to NEHLÍDÁNO state
GUARDED A	Subsystem A change to HLÍDÁNO state
NOT GUARD B	Subsystem B change to NEHLÍDÁNO state
GUARDED B	Subsystem B change to HLÍDÁNO state
NOT GUARD C	Subsystem C change to NEHLÍDÁNO state
GUARDED C	Subsystem C change to HLÍDÁNO state
SABOTAGE OK	Control panel sabotage button coming to rest
SABOTAGE	Control panel sabotage button activation
MAINS OK	End of control panel mains supply failure
FAIL MAINS	Control panel mains supply failure
BATTERY OK	End of control panel accumulator failure
FAIL BATTERY	Control panel accumulator failure
SAB WZE01 OK	WZE01 wireless sensor sabotage coming to rest
SABOT WZE01	WZE01 wireless sensor sabotage
SAB WZE02 OK	WZE02 wireless sensor sabotage coming to rest
SABOT WZE02	WZE02 wireless sensor sabotage
SAB WZE03 OK	WZE03 wireless sensor sabotage coming to rest
SABOT WZE03	WZE03 wireless sensor sabotage
SAB WZE04 OK	WZE04 wireless sensor sabotage coming to rest

SABOT WZE04	WZE04 wireless sensor sabotage
SAB WZE05 OK	WZE05 wireless sensor sabotage coming to rest
SABOT WZE05	WZE05 wireless sensor sabotage
SAB WZE06 OK	WZE06 wireless sensor sabotage coming to rest
SABOT WZE06	WZE06 wireless sensor sabotage
SAB WZE07 OK	WZE07 wireless sensor sabotage coming to rest
SABOT WZE07	WZE07 wireless sensor sabotage
SAB WZE08 OK	WZE08 wireless sensor sabotage coming to rest
SABOT WZE08	WZE08 wireless sensor sabotage
SAB WZE09 OK	WZE09 wireless sensor sabotage coming to rest
SABOT WZE09	WZE09 wireless sensor sabotage
SAB WZE10 OK	WZE10 wireless sensor sabotage coming to rest
SABOT WZE10	WZE10 wireless sensor sabotage
SAB WZE11 OK	WZE11 wireless sensor sabotage coming to rest
SABOT WZE11	WZE11 wireless sensor sabotage
SAB WZE12 OK	WZE12 wireless sensor sabotage coming to rest
SABOT WZE12	WZE12 wireless sensor sabotage
SAB WZE13 OK	WZE13 wireless sensor sabotage coming to rest
SABOT WZE13	WZE13 wireless sensor sabotage
SAB WZE14 OK	WZE14 wireless sensor sabotage coming to rest
SABOT WZE14	WZE14 wireless sensor sabotage
SAB WZE15 OK	WZE15 wireless sensor sabotage coming to rest
SABOT WZE15	WZE15 wireless sensor sabotage
SAB WZE16 OK	WZE16 wireless sensor sabotage coming to rest
SABOT WZE16	WZE16 wireless sensor sabotage
BAT WZE01 OK	End of WZE01 wireless sensor battery failure
BATER WZE01	WZE01 wireless sensor battery failure
BAT WZE02 OK	End of WZE02 wireless sensor battery failure
BATER WZE02	WZE02 wireless sensor battery failure
BAT WZE03 OK	End of WZE03 wireless sensor battery failure
BATER WZE03	WZE03 wireless sensor battery failure
BAT WZE04 OK	End of WZE04 wireless sensor battery failure
BATER WZE04	WZE04 wireless sensor battery failure
BAT WZE05 OK	End of WZE05 wireless sensor battery failure
BATER WZE05	WZE05 wireless sensor battery failure
BAT WZE06 OK	End of WZE06 wireless sensor battery failure
BATER WZE06	WZE06 wireless sensor battery failure
BAT WZE07 OK	End of WZE07 wireless sensor battery failure
BATER WZE07	WZE07 wireless sensor battery failure
BAT WZE08 OK	End of WZE08 wireless sensor battery failure
BATER WZE08	WZE08 wireless sensor battery failure
BAT WZE09 OK	End of WZE09 wireless sensor battery failure
BATER WZE09	WZE09 wireless sensor battery failure
BAT WZE10 OK	End of WZE10 wireless sensor battery failure
BATER WZE10	WZE10 wireless sensor battery failure
BAT WZE11 OK	End of WZE11 wireless sensor battery failure
BATER WZE11	WZE11 wireless sensor battery failure
BAT WZE12 OK	End of WZE12 wireless sensor battery failure

BATER WZE12	WZE12 wireless sensor battery failure
BAT WZE13 OK	End of WZE13 wireless sensor battery failure
BATER WZE13	WZE13 wireless sensor battery failure
BAT WZE14 OK	End of WZE14 wireless sensor battery failure
BATER WZE14	WZE14 wireless sensor battery failure
BAT WZE15 OK	End of WZE15 wireless sensor battery failure
BATER WZE15	WZE15 wireless sensor battery failure
BAT WZE16 OK	End of WZE16 wireless sensor battery failure
BATER WZE16	WZE16 wireless sensor battery failure
WZE01 OK	Communication recovery with WZE01 wireless sensor
LOST WZE01	Loss of communication with WZE01 wireless sensor
WZE02 OK	Communication recovery with WZE02 wireless sensor
LOST WZE02	Loss of communication with WZE02 wireless sensor
WZE03 OK	Communication recovery with WZE03 wireless sensor
LOST WZE03	Loss of communication with WZE03 wireless sensor
WZE04 OK	Communication recovery with WZE04 wireless sensor
LOST WZE04	Loss of communication with WZE04 wireless sensor
WZE05 OK	Communication recovery with WZE05 wireless sensor
LOST WZE05	Loss of communication with WZE05 wireless sensor
WZE06 OK	Communication recovery with WZE06 wireless sensor
LOST WZE06	Loss of communication with WZE06 wireless sensor
WZE07 OK	Communication recovery with WZE07 wireless sensor
LOST WZE07	Loss of communication with WZE07 wireless sensor
WZE08 OK	Communication recovery with WZE08 wireless sensor
LOST WZE08	Loss of communication with WZE08 wireless sensor
WZE09 OK	Communication recovery with WZE09 wireless sensor
LOST WZE09	Loss of communication with WZE09 wireless sensor
WZE10 OK	Communication recovery with WZE10 wireless sensor
LOST WZE10	Loss of communication with WZE10 wireless sensor
WZE11 OK	Communication recovery with WZE11 wireless sensor
LOST WZE11	Loss of communication with WZE11 wireless sensor
WZE12 OK	Communication recovery with WZE12 wireless sensor
LOST WZE12	Loss of communication with WZE12 wireless sensor
WZE13 OK	Communication recovery with WZE13 wireless sensor
LOST WZE13	Loss of communication with WZE13 wireless sensor
WZE14 OK	Communication recovery with WZE14 wireless sensor
LOST WZE14	Loss of communication with WZE14 wireless sensor
WZE15 OK	Communication recovery with WZE15 wireless sensor
LOST WZE15	Loss of communication with WZE15 wireless sensor
WZE16 OK	Communication recovery with WZE16 wireless sensor
LOST WZE16	Loss of communication with WZE16 wireless sensor
QUIET DIN1	DIN1 loop recovery
ALARM DIN1	DIN1 loop alarm
QUIET DIN2	DIN2 loop recovery
ALARM DIN2	DIN2 loop alarm
QUIET DIN3	DIN3 loop recovery
ALARM DIN3	DIN3 loop alarm
QUIET DIN4	DIN4 loop recovery

ALARM DIN4	DIN4 loop alarm
QUIET AIN1	ANI1 loop recovery
ALARM AIN1	AIN1 loop alarm
QUIET AIN2	ANI2 loop recovery
ALARM AIN2	AIN2 loop alarm
QUIET AIN3	ANI3 loop recovery
ALARM AIN3	AIN3 loop alarm
QUIET AIN4	ANI4 loop recovery
ALARM AIN4	ANI4 loop alarm
QUIET AIN5	ANI5 loop recovery
ALARM AIN5	ANI5 loop alarm
QUIET AIN6	ANI6 loop recovery
ALARM AIN6	AIN6 loop alarm
QUIET WZE01	WZE01 loop recovery
ALARM WZE01	WZE01 loop alarm
QUIET WZE02	WZE02 loop recovery
ALARM WZE02	WZE02 loop alarm
QUIET WZE03	WZE03 loop recovery
ALARM WZE03	WZE03 loop alarm
QUIET WZE04	WZE04 loop recovery
ALARM WZE04	WZE04 loop alarm
QUIET WZE05	WZE05 loop recovery
ALARM WZE05	WZE05 loop alarm
QUIET WZE06	WZE06 loop recovery
ALARM WZE06	WZE06 loop alarm
QUIET WZE07	WZE07 loop recovery
ALARM WZE07	WZE07 loop alarm
QUIET WZE08	WZE08 loop recovery
ALARM WZE08	WZE08 loop alarm
QUIET WZE09	WZE09 loop recovery
ALARM WZE09	WZE09 loop alarm
QUIET WZE10	WZE10 loop recovery
ALARM WZE10	WZE10 loop alarm
QUIET WZE11	WZE11 loop recovery
ALARM WZE11	WZE11 loop alarm
QUIET WZE12	WZE12 loop recovery
ALARM WZE12	WZE12 loop alarm
QUIET WZE13	WZE13 loop recovery
ALARM WZE13	WZE13 loop alarm
QUIET WZE14	WZE14 loop recovery
ALARM WZE14	WZE14 loop alarm
QUIET WZE15	WZE15 loop recovery
ALARM WZE15	WZE15 loop alarm
QUIET WZE16	WZE16 loop recovery
ALARM WZE16	WZE16 loop alarm
FAULTY CODE	Faulty code entered 3 times consecutively via LCD keyboard

10.10 PITBUL Equipment Commissioning

At the PITBUL electronic alarm control panel commissioning, check the procedure according particular points.

- Is the SIM card inserted in the PITBUL equipment?
- Is the PIN switched off on the SIM card? (If it remains switched on, is the PIN correctly set in configuration parameters (**PIN**)?)
- Is reserve accumulator connected?
- Is the 230V/50Hz mains voltage connected?
- Is the mains voltage applied via a three-strand cable? Phase conductor shall be connected to JR5 connector clamp labeled “L”, neutral conductor to “N” clamp, and guard wire to “PE” clamp.
- Is internal or external GSM antenna connected to the modem?
- Are all input loops connected correctly?
- Are outputs connected correctly?
- Are all configuration parameters set correctly?
  - Is the equipment type (**MODIFIKACE**) set correctly?
  - Are telephone numbers set correctly in case of events transfer by text SMS message to cellular phone (**CISLOxM**), and are these events correctly selected (**CxS, CxI**)?
  - Are telephone numbers set correctly in case of events transfer by data SMS message to PCO (**CISLOxP**)?
    - Is address and network number for events transmission by data SMS message to PCO (**SITx, ADRESAx**) set correctly?
  - Is communication path for data GPRS messages transmission to PCO set correctly?
    - Is APN (**APN**) set correctly?
    - Is PCO IP address (**IPADRx**) set correctly?
    - Is object number (**OBJEKTx**) set correctly?
    - Is identification number (**IDCISLO**) set correctly?
    - Is period of maintenance GPRS messages (**UDRZ**) set correctly?
  - Are digital, analog and wireless inputs (**+DINx, +AINx, WZE**) set correctly?
  - Are outputs (**VYSTUPx**) set correctly?
  - Is the control panel/communicator equipment mode (**HLASIC**) set correctly
  - Is departure delay (**ODCHOD**) set?
  - Is siren activation time (**SIRENA**) set?
  - Is installation code (**KOD**) set?

In control panel mode only

- Does POWER green LED light correctly on LCD keyboard?
- Is current date and time shown on LCD display?
- Is the signal for GSM operation sufficient?
- Are user’s codes set?
- Does work the equipment changeover from NOT GUARDED to GUARDED and backwards?
- Does the equipment react correctly to inputs activation?