





CE

prf-lcd-a2\_en 02/23



SATEL sp. z o.o. • ul. Budowlanych 66 • 80-298 Gdańsk • POLAND tel. +48 58 320 94 00 **www.satel.pl** 

# IMPORTANT

The device should be installed by qualified personnel.

Read carefully this manual before proceeding to installation.

Changes, modifications or repairs not authorized by the manufacturer shall void your rights under the warranty.

The name plate of the device is located on the enclosure base.

**(F** The device meets the requirements of the applicable EU directives.

The device is designed for indoor installation.

The device must not be disposed of with other municipal waste. It should be disposed of in accordance with the existing rules for environment protection (the device was placed on the market after 13 August 2005).

SATEL aims to continually improve the quality of its products, which may result in changes in their technical specifications and software. The current information on the introduced modifications is available on our website. Please visit us at: https://support.satel.pl

Hereby, SATEL sp. z o.o. declares that the radio equipment type PRF-LCD-A2 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.satel.pl/ce

The following symbols may be used in this manual:

- note,



caution.

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The PRF-LCD-A2 wireless keypad is used to operate and program the PERFECTA 64 M control panels. It is designed to work within the ABAX 2 two-way wireless system.

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The keypad is supported by the ACU-220 / ACU-280 controller with firmware version 6.06 (or newer).

The keypad is not supported by the ARU-200 radio signal repeater.

This manual applies to the keypad with electronics version 2.2 (or newer).



## 1. Features

- Display 2 x 16 characters with backlight.
- LEDs indicating the state of partitions and system.
- 12 keys for data entry, with labels according to telephone standard.
- 4 additional keys for menu navigation and arming/disarming.
- Backlit keys.
- Built-in proximity card reader.
- Built-in sounder.
- Encrypted two-way radio communication in the 868 MHz frequency band (AES standard).
- Transmission channel diversity 4 channels for automatic selection of the one that will enable transmission without interference with other signals in the 868 MHz frequency band.
- Remote update of the keypad firmware.
- Tamper protection against enclosure opening and removal from mounting surface.
- Power source:
  - two CR123A 3 V batteries (required),
  - SATEL APS-055 power supply (optional).

## 2. Description

#### Radio communication

The keypad connects to the controller every 4 minutes to give information about its state (periodical communication). Additional communication takes place:

- when the keypad is in use,
- in the case of keypad tamper,
- when the controller is sending commands to the keypad.

#### Power source

You must install two CR123A 3 V batteries in the keypad. Optionally, you can connect the keypad to the SATEL APS-055 power supply (external power source). The APS-055 is a flush-mounted 5 VDC / 0.5 A power supply. When the keypad is powered by the APS-055 power supply, it operates similarly to a wired keypad. The batteries are then used only if the external power source is lost.

#### Operating modes of battery-powered keypad

When the keypad is powered by the batteries, it operates in one of the two modes:

Wake-up – this mode is started by pressing any key. Additionally, the keypad can be woken up automatically after entry or exit delay countdown begins, the system is armed, or an alarm occurs (see description of the *Wake-up duration* parameter p. 10). When the keypad is in the wake-up mode, it works in much the same way as the wired LCD keypad. The display is on. The backlight (of display and keys), LED indicators, sound signaling and proximity card reader are enabled.

**Sleep** – this mode is started:

- after 20 seconds since the last key press,
- after signaling is over for the event that has woken up the keypad (see description of the *Wake-up duration* parameter p. 10).

The purpose of this mode is to save energy. The display is off. The backlight, LED indicators, sound signaling and proximity card reader are disabled (if a time different from 0 is preset for the *Wake-up duration* parameter, CHIME from zones will be signaled).

#### Support for proximity cards

The built-in proximity card reader enables the users to operate the system by using proximity cards (any 125 kHz passive transponder in the form of a card, tag, etc.). Where proximity cards are not to be used, the reader can be disabled (to prolong the battery life).

#### **Battery status control**

The keypad controls the status of the batteries. If the voltage is lower than 2.75 V:

- low battery information is sent during each periodic transmission,
- a low battery message is displayed.

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The battery life depends on how the keypad is used. When the keypad is powered by the batteries, the more frequently it is woken up, the quicker the batteries will be depleted.

# 3. Installation

Disconnect power before making any electrical connections.

There is a danger of battery explosion when using a different battery than recommended by the manufacturer, or handling the battery improperly. Do not crush the battery, cut it or expose it to high temperatures (throw it into the fire, put it in the oven, etc.).

Do not expose the battery to very low pressure due to the risk of battery explosion or leakage of flammable liquid or gas.

Be particularly careful during installation and replacement of the battery. The manufacturer is not liable for the consequences of incorrect installation of the battery.

The used batteries must not be discarded, but should be disposed of in accordance with the existing rules for environment protection.

The keypad is designed for indoor installation. The place of installation should be readily accessible to the system users. When selecting the mounting location, take into account the range of radio communication.

1. Open the keypad enclosure (Fig. 2).



- 2. Install the batteries and add the keypad to the ABAX 2 system (see "Adding the keypad to the ABAX 2 system").
- 3. Put the cover on the catches and snap the enclosure shut.
- 4. Place the keypad in the location intended for its installation.

If you want to hold the keypad in your hand when checking the radio signal level, grab the device from its left side (on its right side, there is the antenna, which must not be covered).

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- 5. Check the level of signal received from the keypad by the ABAX 2 controller. If the signal level is lower than 40%, select another place for installation. It may be sufficient to shift the device ten or twenty centimeters.
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The ARF-200 tester makes it possible to check the radio signal strength at the place of future installation without having to put the keypad there.

- 6. Open the keypad enclosure (Fig. 2).
- 7. Place the enclosure base against the wall and mark location of the mounting holes.
- 8. Drill the holes in the wall for wall plugs (anchors).
- 9. If the keypad is to be powered by the APS-055 power supply, run the power wires through the opening in the enclosure base. Use flexible wires with a cross-section of 0.5-0.75 mm<sup>2</sup>.
- 10. Using wall plugs (anchors) and screws, secure the enclosure base to the wall. Select wall plugs specifically intended for the mounting surface (different for concrete or brick wall, different for plaster wall, etc.). When installed, the device must withstand a pull-off force of at least 50 N.
- 11. If the APS-055 power supply is used, connect the power wires to the "+" and "-" terminals (Fig. 3). Use a 1.8 mm flathead screwdriver.
- 12. Put the cover on the catches and snap the enclosure shut.
- 13. Lock the cover using screws.





## 3.1 Adding the keypad to the ABAX 2 system

You can add the wireless keypad to the ABAX2 system using a computer with PERFECTA SOFT program installed. You can register up to 4 PRF-LCD-A2 keypads in the controller.

- 1. Click on the "Hardware" tab.
- 2. Click on one of the unused keypads. Address of this keypad will be assigned to the wireless keypad after the adding procedure is finished.
- 3. Click 🥑. The wireless device adding panel will be displayed.
- 4. In the "Serial no." field, enter the serial number of the keypad. You will find it on the keypad electronics board.
- 5. Press any key on the keypad being added.
- 6. When the "Device's data read" message will be displayed, click "OK". The wireless device adding panel will be closed.
- 7. Click  $\widehat{\mathbf{\Omega}}$  to save changes.

# 3.2 Deleting the keypad from the ABAX 2 system

- 1. Click on the "Hardware" tab.
- 2. Click on the wireless keypad you want to delete.
- 3. Click —. The "Device deleting" window will be displayed.
- 4. Click "Delete". The "Device deleting" window will be closed.
- 5. Click 1 to save changes to the control panel.

# 4. Programming

You can configure all the wireless keypad settings using a computer with PERFECTA SOFT program installed. Not all settings can be configured using the keypad. Names of parameters and options from the PERFECTA SOFT program are used in this manual. When a parameter or option is described, you will find one of the following information in square brackets:

- name of the function used to configure a parameter or option in the keypad,
- name of a parameter or option from the keypad.

# 4.1 Keypad settings

😣 PERFECTA Soft: PERFECTA 6	54 M					_		×
oerfecto	PERFECTA 64M v2.00 2	2023-02-02	1 PLAY 4G		4 - CO- COM2	∿	企幣	≡
						_	_	
PROJECT	KEYPAD	Alarm i	n part.: 1: Part	er 🔻				
HARDWARE	Name: PRF-LCD 3		•					
: Mainboard	Type: PRF-LCD-A2	Version	3.01 2022-08-25	Address: 3				
GSM phone	Ontions		Data/time formati	1.3 12:00:00	_			
PRF-LCD 0	LED set:	п	LCD backlight	I Jan, 12:00:00	• _			
PRF-LCD 1	✓ Show partition 1 status ✓ Show partition 2 status		Kourpad baddiebtu	not present	• _			
INT-KSG2R	Show partition 3 status		Reypau backlight:	auto	•			
Screensaver	☐ Show partition 4 status Quick arm - partition 1		Auto backlight:	NOT PRESENT	•			
PRF-LCD 3	Quick arm - partition 2		Partition:	- 1 +				
((パ)) ACU-280 0×08	Quick arm - partition 3		Chime					
INT-E OXOE	Show code entering		1 2 3 4 5 6 7 17181920212223	8 9 10 11 12 13 14 15 10 24 25 26 27 28 29 30 31 32	5			
	Quick control		33 34 35 36 37 38 39	40 41 42 43 44 45 46 47 44	3			
	Key 7 - troubles review		49 50 51 52 53 54 55	56 57 58 59 60 61 62 63 64				
U INI-I-2 0X16	Key 9 - change disp. mode		Volume	20 M				
H PARTITIONS			54)) - 20 +	(m) )) - 20	+			
C ZONES	MEDICAL alarm		4 <u>(</u> ))) - 20 +	)) - 20	+			
	FIRE alarm		(中) - 20 +	_î) - 20	+			
C OUTPUTS			(⇒)) - 20 +	(⚠) - 0	+			
င့်္ခိ FUNCTIONS		I			_			
S USERS	Serial no. : 1068		Wake-up duration: -	0 + sec.				-
	Wireless keypad initial greeting:		Łączenie					
EVENTS	Card reader		Presence control					
Proximity cards         Arming: <ul> <li></li></ul>								
	🔄 State disp.							
	Fig. 5. PERFECT	A SOF	r program: k	eypad setting	js.			

Name [28.Names] – individual name of the keypad (up to 16 characters).

Alarm in part. [22.Partitions] – the partition in which alarm will be generated in the event of keypad tamper (opening of enclosure or loss of communication).

Options

- **Show partition 1 status** [Show part.1] if this option is enabled, the keypad indicates the status of partition 1 (display / LED indicators / audible signal).
  - **LED set:** I [I LED set part.1] if you select this option, the I-labelled LEDs indicate the status of partition 1.
  - **LED set: II** [II LED set part1] if you select this option, the II-labelled LEDs indicate the status of partition 1.
- **Show partition 2 status** [Show part.2] if this option is enabled, the keypad indicates the status of partition 2 (display / LED indicators / audible signal).
  - **LED set:** I [I LED set part.2] if you select this option, the I-labelled LEDs indicate the status of partition 2.
  - **LED set: II** [II LED set part2] if you select this option, the II-labelled LEDs indicate the status of partition 2.
- **Show partition 3 status** [Show part.3] if this option is enabled, the keypad indicates the status of partition 3 (display / LED indicators / audible signal).
  - **LED set:** I [I LED set part.3] if you select this option, the I-labelled LEDs indicate the status of partition 3.
  - **LED set: II** [II LED set part3] if you select this option, the II-labelled LEDs indicate the status of partition 3.
- **Show partition 4 status** [Show part.4] if this option is enabled, the keypad indicates the status of partition 4 (display / LED indicators / audible signal).
  - **LED set:** I [I LED set part.4] if you select this option, the I-labelled LEDs indicate the status of partition 4.
  - **LED set: II** [II LED set part4] if you select this option, the II-labelled LEDs indicate the status of partition 4.
- **Quick arm partition 1** [Quickarm part.1] if this option is enabled, the user can arm partition 1 from the keypad without using code / card.
- **Quick arm partition 2** [Quickarm part.2] if this option is enabled, the user can arm partition 2 from the keypad without using code / card.
- **Quick arm partition 3** [Quickarm part.3] if this option is enabled, the user can arm partition 3 from the keypad without using code / card.
- **Quick arm partition 4** [Quickarm part.4] if this option is enabled, the user can arm partition 4 from the keypad without using code / card.
- **Show code entering** [Show code enter.] if this option is enabled, entering the code is presented on the keypad display by asterisks.
- **Quick control** [Quick control] if this option is enabled, the users can control the outputs by using the number keys. The *15. Controlled* outputs must be assigned to the keys (see: PERFECTA 64 M control panel *Programming* manual).
- **Key 7 troubles review** [Troubles review] if this option is enabled, the user can press and hold **T**<sub>PORS</sub> for 3 seconds to view the troubles.
- **Key 8 chime on/off** [Chime on/off] if this option is enabled, the user can press and hold  $(\mathbf{8}_{TUV})$  for 3 seconds to enable/disable the chime signal.
- **Key 9 change disp. mode** [Disp.mode change] if this option is enabled, the user can press and hold **9**<sub>wxvz</sub> for 3 seconds to switch the keypad between the normal mode and the system preview mode.
  - Define the types of information to be displayed in the system preview mode. You can only do it in the PERFECTA SOFT program (see: "State display" p. 11).

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- Alarm 3 incorrect codes [3 wrng codes al.] if this option is enabled, entering incorrect code three times will generate the alarm.
- **MEDICAL alarm** [Medical alarm] if this option is enabled, the user can generate the medical alarm by pressing and holding **O •** for 3 seconds.
- **FIRE alarm** [Medical alarm] if this option is enabled, the user can generate the fire alarm by pressing and holding **\* •** for 3 seconds.
- **PANIC alarm** [Medical alarm] if this option is enabled, the user can generate the panic alarm by pressing and holding **# D** for 3 seconds.
- **Silent PANIC** [Silent panic] if this option is enabled, the panic alarm generated from the keypad will be a silent one, i.e. the keypad will not indicate it, there will be no audible signal, but the alarm will be reported to the monitoring station. The silent panic alarm is useful when the control panel is sending events to the monitoring station, but unauthorized persons should not be aware of the alarm being generated. The option is available, if the *PANIC alarm* option is enabled.

### Display and keys

**Date/time format** [210.ClockFormat] – mode of presentation of time and date on the display.

**LCD backlight** [26.LCDbacklight] – the way the display backlight will work. If the keypad is powered by the batteries, the backlight will work only when the keypad is woken up. The settings should be interpreted as follows:

not present - disabled.

permanent 50% - enabled: brightness 50%.

permanent 100% – enabled: brightness 100%.

auto 0-50% - enabled: brightness 50%.

auto 0-100% - enabled: brightness 100%.

auto 50%-100% – enabled: brightness 100%.

**Keypad backlight** [27.KEYbacklight] – the way the keys backlight will work. If the keypad is powered by the batteries, the backlight will work only when the keypad is woken up. The settings should be interpreted as follows:

not present - disabled.

auto – enabled.

permanent - enabled.

## Chime

The keypad can audibly signal violation of selected zones.

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- When the wireless keypad is powered by the batteries:
  - the CHIME signaling is enabled no more than once every 30 seconds,
  - the keypad in the sleep mode signals the CHIME if Wake-up duration is different from 0.

## Volume

- [251.Keys] volume of the beeps generated during keypad operation (key pressing, confirmation of performed operation, etc.).
- [252.Chime] volume of the beeps generated after zone violation (CHIME).
- [253.Entry delay] volume of the entry delay signaling.
- $\mathbb{N}$  [254.Exit delay] volume of the exit delay signaling.

- (%) [255.Fire alarm] volume of the fire alarm signaling.
- $\bigcirc$  [256.Burg.alarm] volume of the burglary, panic and medical alarm signaling.
- (257.Warn.alarm] volume of the warning alarm signaling.
- (258.New trouble] volume of the trouble signaling.

## Wireless keypad

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Additional settings of the PRF-LCD-A2 keypad can only be configured in the PERFECTA SOFT program.

- **Wake-up duration** maximum length of time for which the keypad can be woken up automatically (applies to the keypad powered by the batteries). If you enter a value different from 0:
  - the keypad will be woken up automatically when entry or exit delay countdown has begun, the system has been armed, or alarm has been generated,
  - the CHIME from zones will also be signaled when the keypad is in the sleep mode.

If you enter 0, the keypad will not be woken up automatically.

If the Wake-up duration is different from 0, the keypad will be awaiting for transmissions with information on events. As a result, the energy consumption will be growing and the battery life will be considerably reduced.

The keypad is woken up not more frequently than every 30 seconds. If the event that is to wake up the keypad occurs before the 30 seconds have elapsed since the last automatic wake-up, the keypad will stay asleep.

The Wake-up duration is the maximum time, i.e. if the event signaling takes less time, the sleep mode will be resumed in the keypad earlier.

It may take a few seconds for the keypad to wake up after the event occurred.

- **Wireless keypad initial greeting** message displayed on the wireless keypad after wake-up. The message is the same in all PRF-LCD-A2 keypads.
- $\label{eq:card_reader} \textbf{Card} \ \textbf{reader} \textbf{if this option is enabled, the card reader is supported.}$
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If the card reader is not to be used, disable the Card reader option. This will reduce the keypad's power consumption. If the keypad is powered by the batteries, this will prolong the battery life.

**Presence control** – if this option is enabled, the keypad presence is being monitored. If there is no transmission from the keypad for 20 minutes, missing keypad will be reported.

## Buttons

- click to add the wireless keypad.
  - click to delete the wireless keypad.

## **Proximity cards**

Arming – methods to arm the system using the proximity card:

**card read** – if you select this option, the system will be armed when the user brings the card close to the keys.

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**card hold-down** – if you select this option, the system will be armed when the user brings the card close to the keys and holds it for 3 seconds.



In the keypad service menu, use the Prox.card – arms option to define the method of arming with card (option enabled = card read; option disabled = card hold-down).

**Card hold-down control outputs** [216.Card c.out.] – outputs that the user can control by using the proximity card. To switch the output, the user has to bring the card close to the keys and hold it for about 3 seconds. Select the *15. Controlled* type outputs. It is possible to control the outputs using the proximity card if the *card read* arming method is selected.

**State disp.** – click to open the "State disp." window.

State disp. 3: PRF-LCD 3								
Text			-					
V	$\bigcirc$		Ð					
				Text:				
				පි	Import	🔗 ок	🔀 Cancel	
Fig. 6. "State disp." window.								

### 4.1.1 State display

**[Item]** – in this field you can select which items are to be shown on the display. Click  $\checkmark$  to drop down the list of available items, then click the item you want to select. Click  $\bigcirc$  to add the selected item to the display.

Text – text entered by you.

- Partition state symbol that indicates the partition state. After you add the item, select the partition (click ▼ to drop down the list of partitions, then click the partition whose state is to be shown on the display).
- Zone state symbol that indicates the zone state. After you add the item, select the zone (click ▼ to drop down the list of zones, then click the zone whose state is to be shown on the display).
- Output state symbol that indicates the output state. After you add the item, select the output (click ▼ to drop down the list of outputs, then click the output whose state is to be shown on the display).

- **Temperature** information on temperature from an ABAX 2 wireless device. After you add the item:
  - select the zone to which the ABAX 2 device is assigned (click to drop down the list of zones, then click the zone to which the ABAX 2 device is assigned),
  - decide if the temperature is to be displayed in degrees Celsius or Fahrenheit.
- Day (digit) number of the day of the month made up of one or two digits.
- **Day (2 digits)** number of the day of the month made up of two digits (numbers 1-9 will be preceded by 0, e.g. 01).
- Day of week name of the day of the week abbreviated to three letters.
- Month (digit) number of the month made up of one or two digits.
- Month (2 digits) number of the month made up of two digits (numbers 1-9 will be preceded by 0, e.g. 01).
- Month (name) name of the month abbreviated to three letters.
- Year (2 digits) last two digits of the year.
- Year (4 digits) year in full.
- Hour number of hours made up of one or two digits.
- Hour (2 digits) number of hours made up of two digits (numbers 1-9 will be preceded by 0, e.g. 01).
- Minutes number of minutes made up of one or two digits.
- Minutes (2 digits) number of minutes made up of two digits (numbers 1-9 will be preceded by 0, e.g. 01).
- Seconds number of seconds made up of one or two digits.
- Seconds (2 digits) number of seconds made up of two digits (numbers 1-9 will be preceded by 0, e.g. 01).
- colon (blinking) blinking colon to separate items.
- Keypad number name given to the keypad.
- Power measuring information on the power consumption of the appliance connected to the ASW-200 smart plug. After you add the item, select the output to which the ASW-200 plug is assigned (click ▼ to drop down the list of outputs, then click the output to which the ASW-200 plug is assigned).
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If you want to add space between the items, add the Text type item and enter space.

- Use the second secon
- $\bigcirc$  click to move up the item selected in the field below ([List of displayed items]).
- click to delete the item selected in the field below ([List of displayed items]).
- click to add the item selected from the list above ([Item]). The item will be displayed in the field below ([List of displayed items]).
- [List of displayed items] list of items displayed in the system preview mode is presented in this field. The items are displayed in the same sequence as they are presented on the

list (top to bottom). To change the sequence, use the V and 🚺 buttons.

[Display preview] – display preview shows how the items are arranged.

**Import** – click to import system preview settings from another keypad.

- $\mathbf{OK}-\mathbf{click}$  to confirm the changes and close the window.
- **Cancel** click to close the window without saving the changes.

# 5. Operation

You can use the wireless keypad in the same way as the wired LCD keypad.

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If the wireless keypad is powered by the batteries, first press any key to wake up the keypad. In addition to waking up the keypad from sleep, pressing a key will also have other consequences, as appropriate for the given key. The keypad will treat each key pressing exactly in the same way.

For instructions on how to use the keypad, refer to the control panel manuals. The manuals are available in electronic form on the www.satel.pl website.

# 6. Specifications

Operating frequency band	868.0 MHz ÷ 868.6 MHz
Radio communication range (in open area)	up to 800 m
Batteries	2 x CR123A 3 V
Standby current consumption from battery	5 μΑ
Maximum current consumption from battery (card reader disabled)	50 mA
Maximum current consumption from battery (card reader enabled)	60 mA
Supply voltage (power supply)	5 VDC
Standby current consumption from power supply	17 mA
Maximum current consumption from power supply	42 mA
Environmental class according to EN50130-5	II
Operating temperature range	10°C+55°C
Maximum humidity	93±3%
Enclosure dimensions	139 x 124 x 22 mm
Weight	