PB-LORA wireless panic button – installation and setup manual

Installation and setup manual for the Trikdis PB-LORA wireless panic button: parts, DIP switch, indicator light, mounting, adding it to the FLEXi SP3 through the RF-LORA transceiver – up to 8 buttons in the Modules list or 250 buttons by enrolment –, deletion, frequently asked questions.



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1. Overview

The Trikdis **PB-LORA** wireless panic button works with the FLEXi SP3 alarm control panel and the Protegus 2 app, for calling for help in an emergency. Because it is wireless, it can be placed anywhere, and it can also be moved.

This manual describes the **4F** (433 MHz) version; it does not cover the 8F (868 MHz) versions.

Up to 250 panic buttons can be connected to one system (depending on the panel's firmware, 1.1). With a clear line of sight the range is up to **5000 metres**, so it can also be used in large buildings and over large areas (factories, business sites, industrial parks).

The PB-LORA sends the emergency message by radio: the call for help is started by pressing the button. The message is received by the **RF-LORA** transceiver, which is connected to the **FLEXi SP3** alarm control panel.

The "up to … m" distances are theoretical maximums achievable under ideal conditions. In practice, the quality and routing of the cable, sources of interference and, for radio links, walls and terrain give a considerably shorter range. Plan with a margin, and on long runs check the connection during commissioning.

1.1 What does it work with?

The PB-LORA is compatible with the **FLEXi SP3** alarm control panel. It always connects through the **RF-LORA** transceiver: the RF-LORA is wired to the panel on the RS485 bus, and it reaches the panic button by radio.

How many PB-LORA units can connect to the panel depends on the panel's firmware:

- **Up to 8 panic buttons** if the panel runs firmware 1.17 or newer (for example SP3_xxxx_0117.fw). You add the buttons to the **Modules** list by their serial number (chapter 3). The 8 is the combined number of LoRa modules (iO-LORA, iO8-LORA, PB-LORA).
- **Up to 250 panic buttons** if the panel runs "release 2" firmware, version 1.16 or newer (for example SP3_xxx2_0116.fw). You enrol the buttons in the **Wireless sensors** window, in learning mode (chapter 4). This does not work with SP3_xxx4 firmware: with that, up to 8 panic buttons can be used.

The structure of the firmware file name is described in section 1.7 of the "FLEXi" SP3 alarm control panel – installation and programming manual.

The wiring and setup of the RF-LORA are described in the RF-LORA manual. The transceiver in the shop:

Trikdis RF-LORA wireless expander module

1.2 Technical data

Parameter	Value
Frequency	433.3–434.7 MHz
Modulation	LoRa
Power supply	3 V, CR123A battery
Battery life	at least 3 years
Current consumption	up to 0.008 mA in standby · up to 50 mA briefly, while transmitting

Parameter	Value
Message encryption	yes
Range in open space	up to 5000 m
Operating environment	−10 °C … +50 °C, relative humidity up to 80% (at +20 °C)
Dimensions	62 × 77 × 25 mm
Weight	80 g

1.3 Parts

The indicator light, controls and battery of the PB-LORA on the front cover and on the printed circuit board:

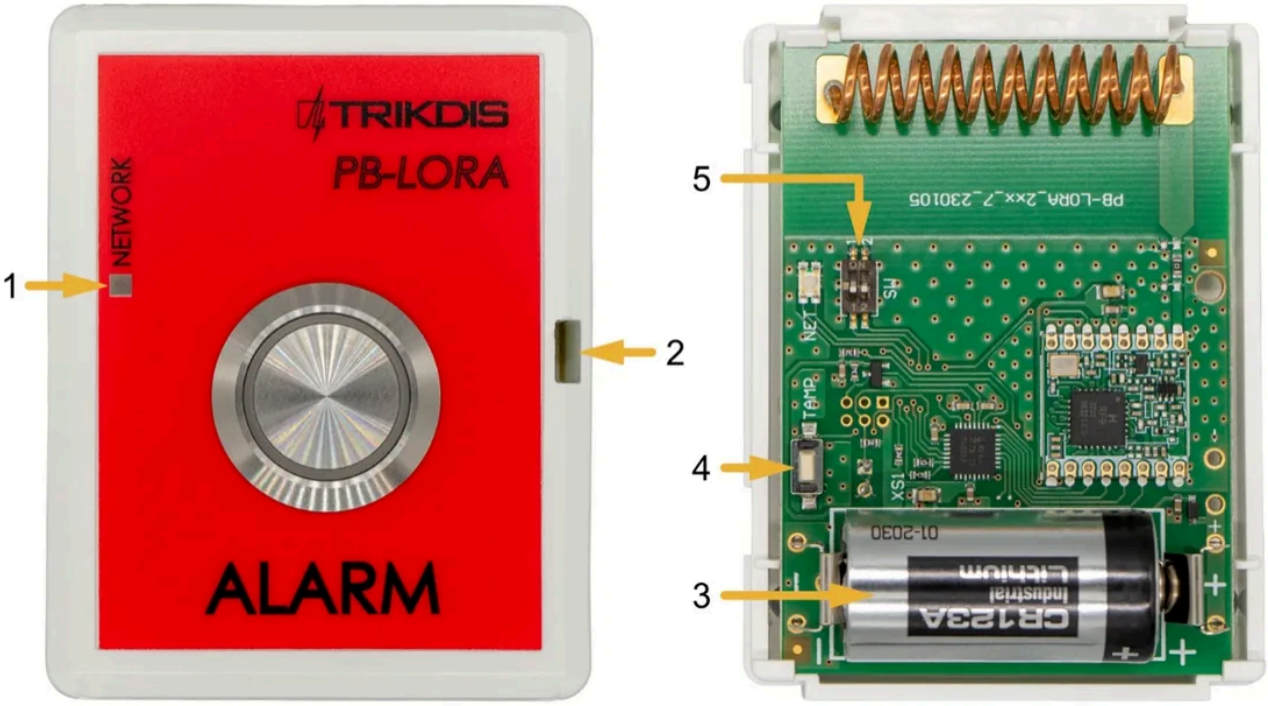

Figure 1. Parts of the PB-LORA – on the left the front cover with the **ALARM** button, on the right the printed circuit board without the cover.

- 1 indicator light (**NETWORK**)
- 2 opening slot of the cover
- 3 3 V battery (CR123A)
- 4 **TAMP** button – pairing the device and checking the connection
- 5 **SW** DIP switch

The two switches of the **SW** DIP switch:

- **Switch 1 – radio channel:** OFF = RF1, ON = RF2. Change it if the current channel is heavily loaded.
- **Switch 2 – modulation:** OFF = fast, ON = slow. In the ON position the range roughly doubles, depending on the environment, but battery consumption increases and system performance decreases. If the link is also of good quality in the OFF position, leave it OFF.

The switch positions must match

The **SW** DIP switches of the PB-LORA and of the RF-LORA must be in the same position, otherwise there is no radio link.

1.4 Indicator light

The single indicator light of the PB-LORA, **NETWORK**, signals with flashes after a button is pressed:

Button	Flash	Meaning
ALARM	1st green	the message has been sent, the battery voltage is good
ALARM	1st red	the message is being sent, the battery voltage is low
ALARM	2nd red	the RF-LORA's confirmation has arrived: the message has been delivered
TAMP	1st green	the message has been sent, the battery voltage is good
TAMP	1st red	the message is being sent, the battery voltage is low
TAMP	2nd red	the RF-LORA's confirmation has arrived: the message has been delivered
TAMP	3rd–12th	the radio signal level*

* Use it with at least four flashes.

After inserting the battery

After inserting the battery, wait at least 10 seconds before using the device.

2. Mounting and system wiring

Figyelem!
Tilos a vezetékezést feszültség alatt álló eszközön elvégezni. A munka előtt a megfelelő áramtalanításról és érintésvédelemről (beleértve a szünetmentes működést biztosító akkumulátorokat) gondoskodni kell.

2.1 Mounting

You fix the base of the panic button's case in the desired place with screws:

1. Remove the cover: insert a screwdriver into the opening slot of the cover (1.3, marker 2), then press its handle down to separate the front cover from the base.

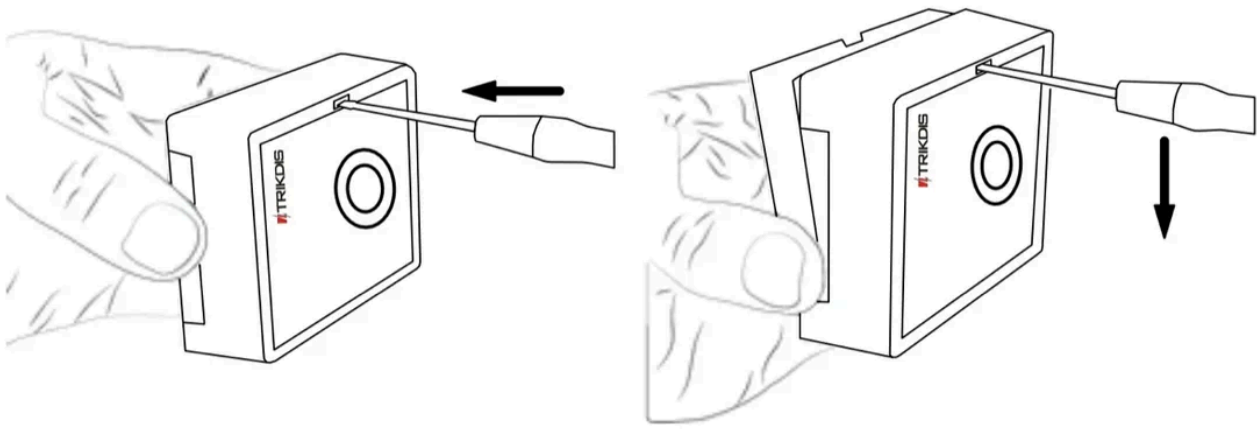

Figure 2. Removing the cover: insert the screwdriver into the slot (left), then press its handle down and the front cover separates from the base (right).

2. Take out the printed circuit board.
3. Fix the base of the case in the desired place with screws.

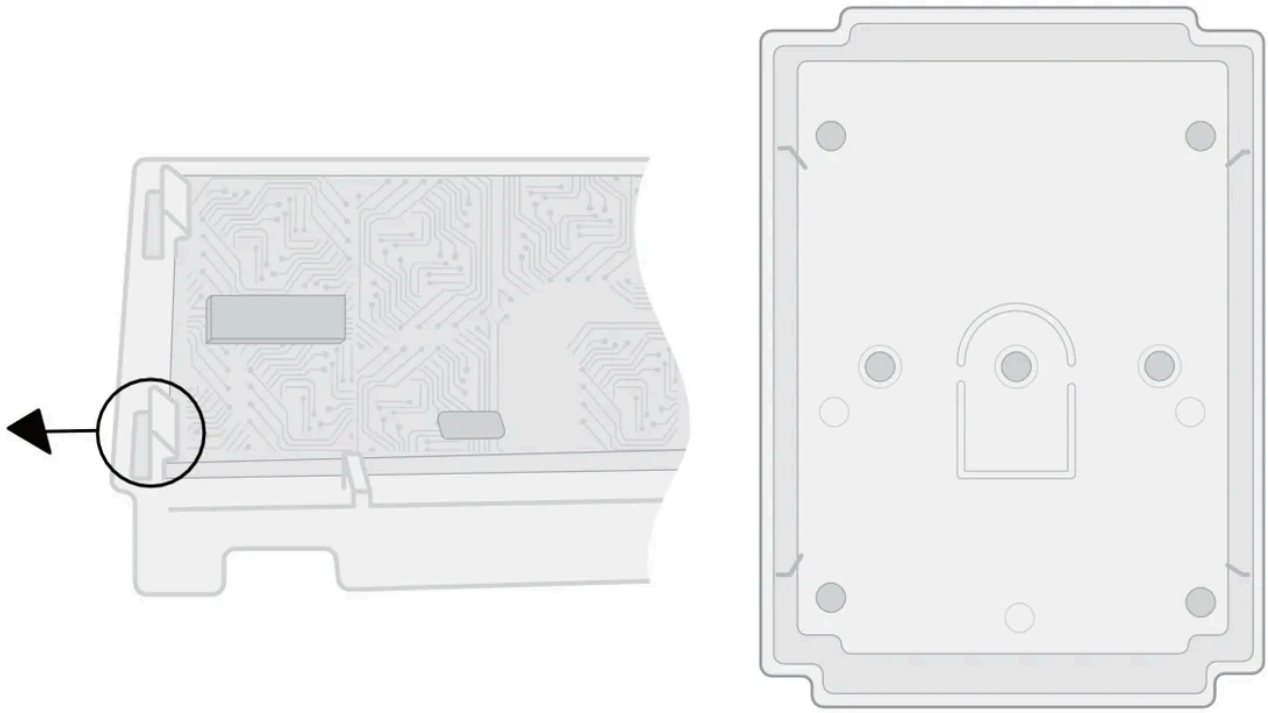

Figure 3. Left: the tab holding the printed circuit board (circled) – pushing it outwards releases the board. Right: the empty base of the case with the fixing holes.

4. Put the printed circuit board back.
5. Insert the battery (3 V, CR123A). Wait at least 10 seconds before use (1.4).
6. Put the cover back.

2.2 System wiring

The PB-LORA does not need to be wired: it runs on a battery and connects to the **RF-LORA** transceiver by radio. Only the RF-LORA is wired, to the RS485 bus of the FLEXi SP3:

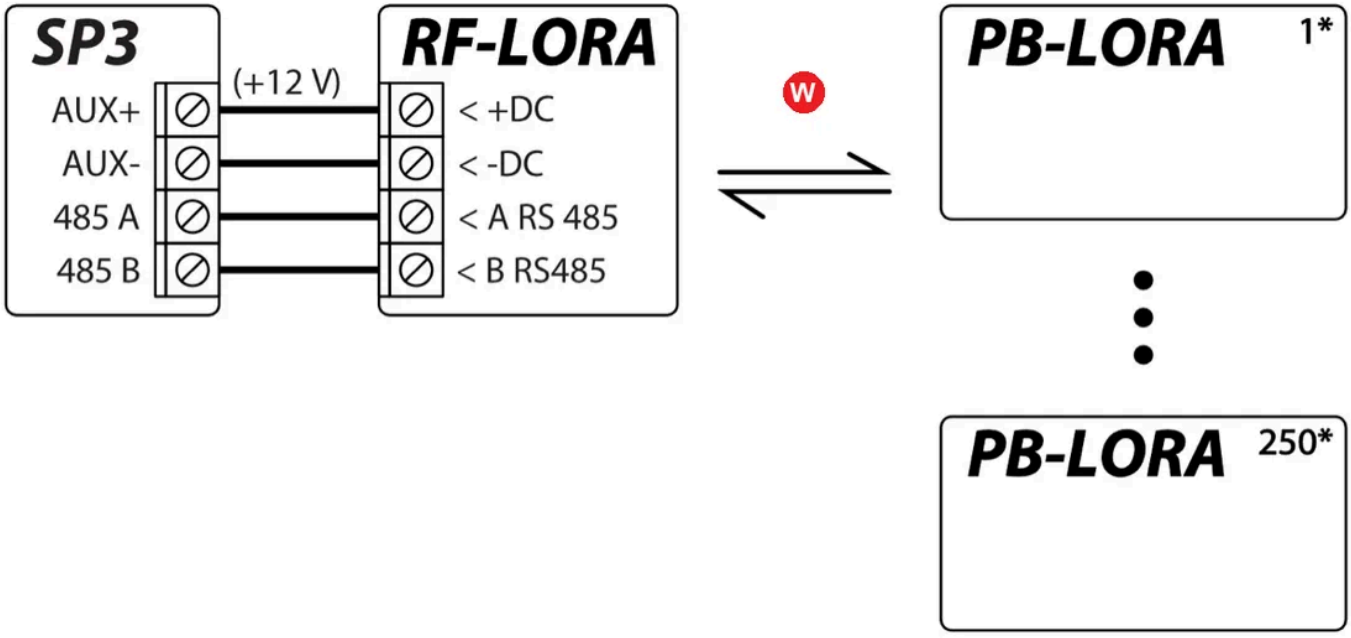

Figure 4. FLEXi SP3 – RF-LORA – PB-LORA panic buttons. SP3 **AUX+** (+12 V) → RF-LORA **+DC**, **AUX−** → **−DC**, **485 A** → **A RS 485**, **485 B** → **B RS485**. The RF-LORA reaches the panic buttons (1* … 250*) by radio ("Wireless connection": wireless link, up to 5000 m).

- W wireless link ("Wireless connection"), up to 5000 m ("up to 5000 m")

The "up to … m" distances are theoretical maximums achievable under ideal conditions. In practice, the quality and routing of the cable, sources of interference and, for radio links, walls and terrain give a considerably shorter range. Plan with a margin, and on long runs check the connection during commissioning.

The RF-LORA transceiver must be connected to the FLEXi SP3 alarm control panel. Up to 8 PB-LORA panic buttons can be assigned to the panel if it runs firmware 1.17 or newer (for example SP3_xxxx_0117.fw), or up to 250 if it runs "release 2" firmware 1.16 or newer (for example SP3_xxx2_0116.fw).

3. Adding it to the FLEXi SP3 (up to 8 buttons)

This method is for a FLEXi SP3 panel running firmware 1.17 or newer (for example SP3_xxxx_0117.fw): you add the panic button to the TrikdisConfig **Modules** list by its serial number.

Az összes Trikdis eszköz egy közös szoftverrel programozható. A program neve TrikdisConfig és a gyártó honlapjáról letölthető.

TrikdisConfig Letöltés a trikdis.com oldalról.

Letöltést követően telepítsd a programot. Ha bármikor a TrikdisConfig indításakor a program azt jelzi, hogy új verzió jelent meg, töltsd le az ajánlott frissítést és telepítsd!

1. The RF-LORA transceiver must be connected to the FLEXi SP3 (2.2).
2. Switch on the supply voltage of the FLEXi SP3.
3. There must be a battery in the PB-LORA panic button.
4. Start TrikdisConfig.
5. Connect the FLEXi SP3 to the computer with a USB Mini-B cable, or connect to it remotely.
6. Press the **Read [F4]** button: the program reads the panel's settings. If the program asks for it, enter the six-character administrator code.

7. In the **Modules** list, select the **PB-LORA Panic button** item.
8. In the **Serial No.** field, enter the serial number of the PB-LORA.

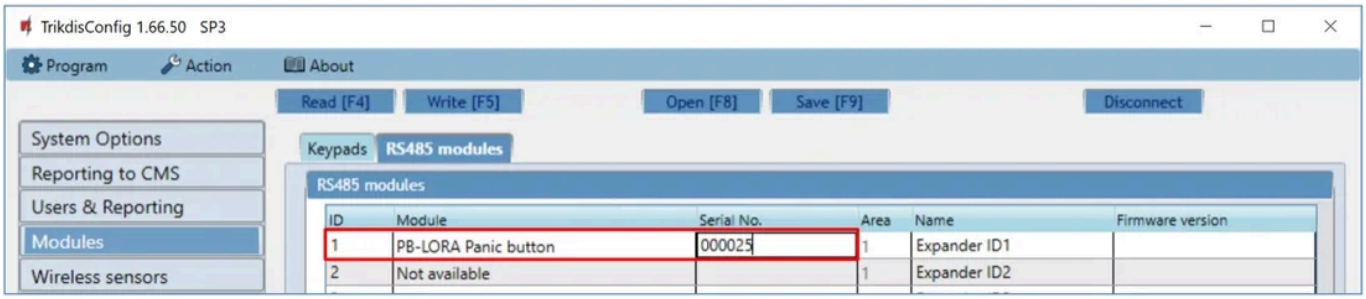

Figure 5. TrikdisConfig – FLEXi SP3, **Modules** → **RS485 modules**: in row 1 the **PB-LORA Panic button** with its serial number (**Serial No.**; a demo number in the example) and name (**Name**: Expander ID1).

9. On the **Zones** tab, set up the panic button's zone.

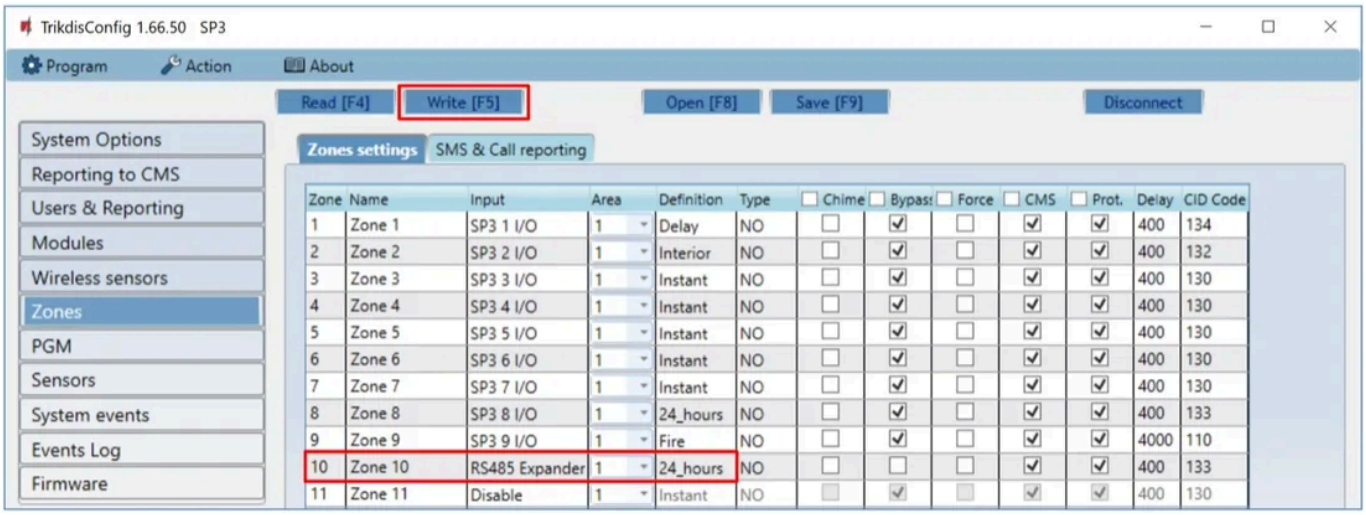

Figure 6. Zones → **Zones settings**: the input (**Input**) of zone 10 is the **RS485 Expander**, that is, the panic button, and its zone function (**Definition**) is **24_hours**; after the setup, **Write [F5]**.

The zone functions are described in section 6.7 of the "FLEXi" SP3 alarm control panel – installation and programming manual. The factory example uses **24_hours**: a zone that is always monitored; when it is violated, the siren and the strobe switch on and the event report is sent. **Silent 24h** is the silent version suited to panic buttons: the event report is sent immediately, but the siren and the strobe do not start.

10. At the end of the setup, press the **Write [F5]** button.
11. Wait until writing is finished.
12. Press the **Disconnect** button and unplug the USB cable.
13. Wait 1 minute, then press the **ALARM** button of the PB-LORA.
14. Plug the USB Mini-B cable back into the FLEXi SP3.
15. Press the **Read [F4]** button.
16. The firmware version of the PB-LORA appears in the **Modules** window.

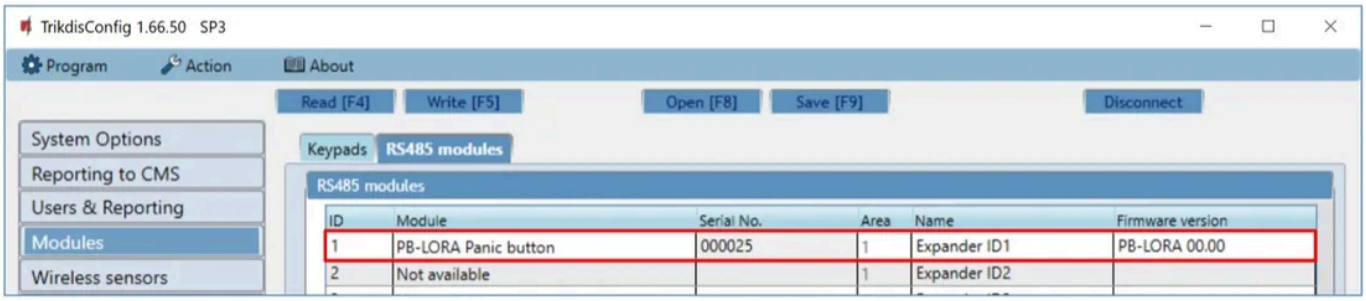

Figure 7. After reading, the firmware version (**Firmware version**) appears in the row of the **PB-LORA Panic button**: the panic button has connected to the panel.

17. Press the **Disconnect** button and unplug the USB cable.

Warning

While the device is connected to a computer via USB cable, it is in programming mode: its normal operation stops, it does not monitor, does not report, cannot be controlled, is powered from USB, and restarts once the cable is unplugged. Therefore the device must not be freely accessible: keep it in a closed metal enclosure with tamper protection or with a motion detector covering the enclosure. More in the FAQ

Deleting a panic button from the memory of the FLEXi SP3

1. Start TrikdisConfig.
2. Connect the FLEXi SP3 to the computer with a USB Mini-B cable, or connect to it remotely, and press the **Read [F4]** button.
3. In the **Module** column of the **Modules** window, select **Not available** instead of the **PB-LORA Panic button** to be deleted, and press the **Write [F5]** button. This deletes the panic button from the panel's memory.

4. Enrolling 250 panic buttons in the FLEXi SP3

This method is for a FLEXi SP3 panel running "release 2" firmware 1.16 or newer (for example SP3_xxx2_0116.fw). It does not work with SP3_xxx4 firmware: with that, up to 8 panic buttons can be used (chapter 3). You register the RF-LORA transceiver in the **Modules** list, and enrol the panic buttons in the **Wireless sensors** window, in learning mode.

1. The RF-LORA transceiver must be connected to the FLEXi SP3 (2.2).
2. Switch on the supply voltage of the FLEXi SP3.
3. There must be batteries in the PB-LORA panic buttons.
4. Start TrikdisConfig.
5. Connect to the FLEXi SP3 remotely.

Conditions for remote configuration

Remote configuration only works if, on the FLEXi SP3:

1. the WiFi or LAN connection is set up, or there is an activated SIM card in it, and the PIN code is entered or disabled;
2. mobile data is switched on for the SIM card;
3. the Protegus cloud service is switched on;
4. the supply voltage is switched on (the **PWR** LED flashes green);

5. there is a network connection (the **NET** LED is steady green and flashes yellow).
6. In the **Unique ID** field of the TrikdisConfig **Remote access** group, enter the IMEI number of the FLEXi SP3. The IMEI number is on the sticker on the panel and on its packaging.

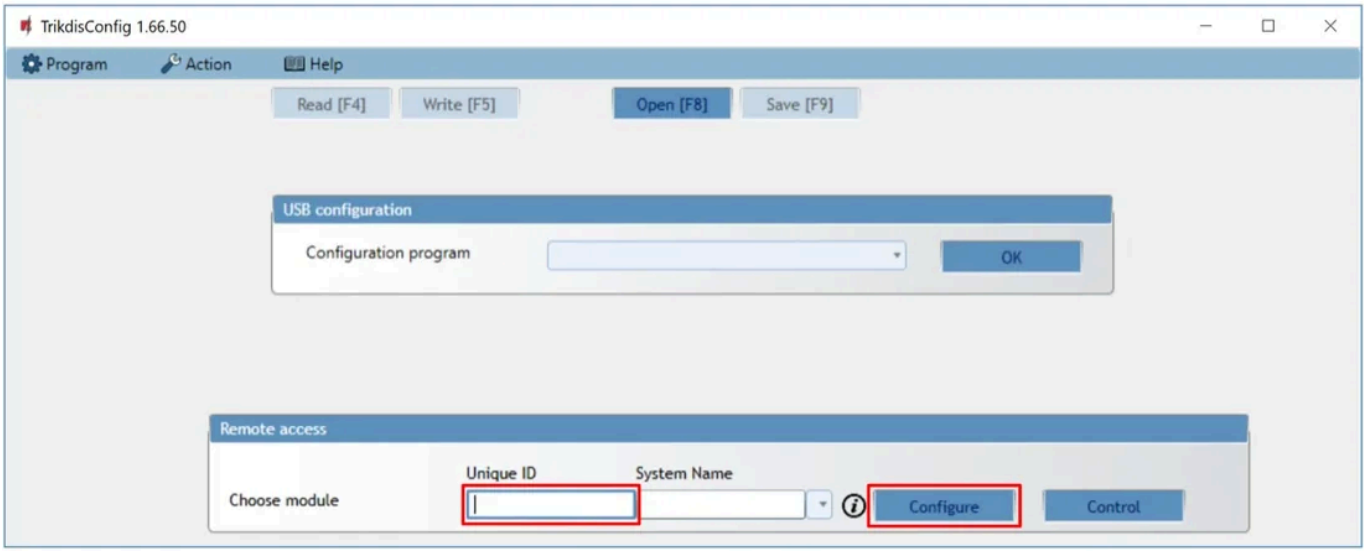

Figure 8. The TrikdisConfig start screen: the **Unique ID** field of the **Remote access** group and the **Configure** button.

7. Press the **Configure** button.
8. Press the **Read [F4]** button: the program reads the panel's settings. If the program asks for it, enter the six-character administrator code.
9. In the **Modules** list, select the **RF-LORA transceiver** item.
10. In the **Serial No.** field, enter the serial number of the RF-LORA.
11. Press the **Write [F5]** button.
12. Wait until writing is finished.

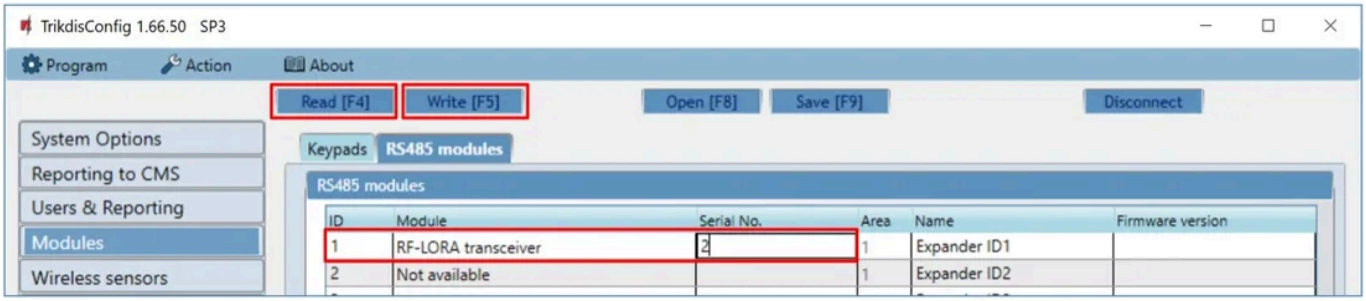

Figure 9. Modules → RS485 modules: in row 1 the **RF-LORA transceiver** with its serial number (**Serial No.**), then **Write [F5]**.

13. Wait 1 minute.
14. Press the **Read [F4]** button.
15. The firmware version of the RF-LORA appears in the **Modules** window.

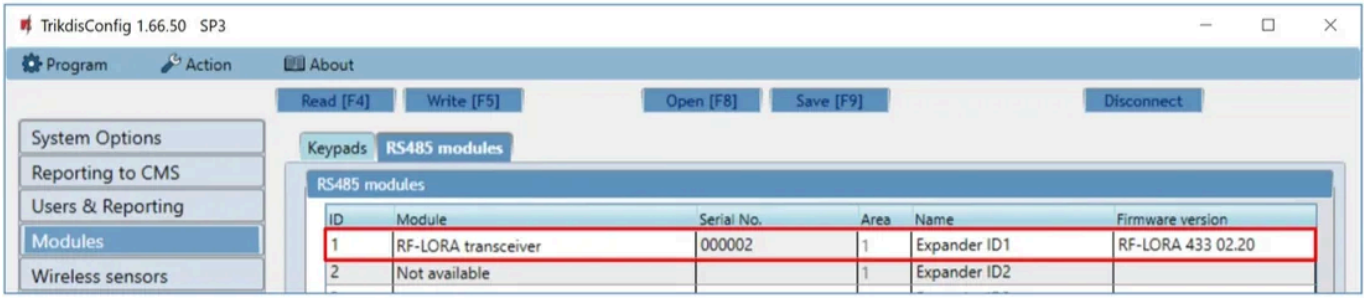

Figure 10. After reading, the firmware version (**Firmware version**) appears in the row of the **RF-LORA transceiver**: the transceiver is registered.

16. Open the **Panic buttons** tab of the **Wireless sensors** window.
17. Press the **Learn sensors** button.

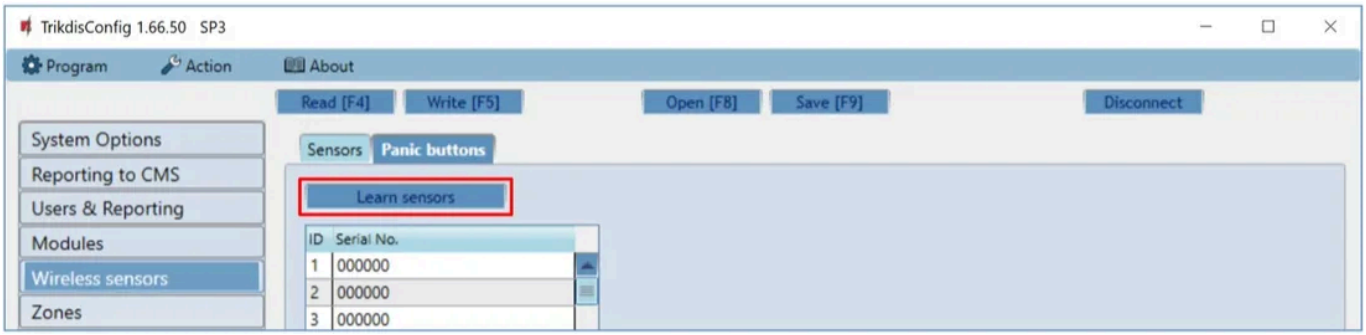

Figure 11. Wireless sensors → Panic buttons: the **Learn sensors** button starts learning mode; below it, the list of panic buttons (**ID**, **Serial No.**).

All at once

You can also enrol all the panic buttons at once. During enrolment, the RF-LORA should be at least 1 m away from the panic buttons.

18. The **DATA/TROUBLE** light of the RF-LORA starts flashing red and green: the transceiver switches to learning mode, and TrikdisConfig opens the panic button enrolment window.
19. Briefly press the **TAMP** button on the printed circuit board of the PB-LORA.
20. The **DATA/TROUBLE** light of the RF-LORA turns green for a few seconds, then continues flashing red and green.
21. After a few seconds the PB-LORA appears in the list. The **UID** number must match the serial number on the panic button's sticker.
22. For the next panic button, again briefly press the **TAMP** button on its printed circuit board.
23. At the end of enrolment, press the **Stop learning** button.

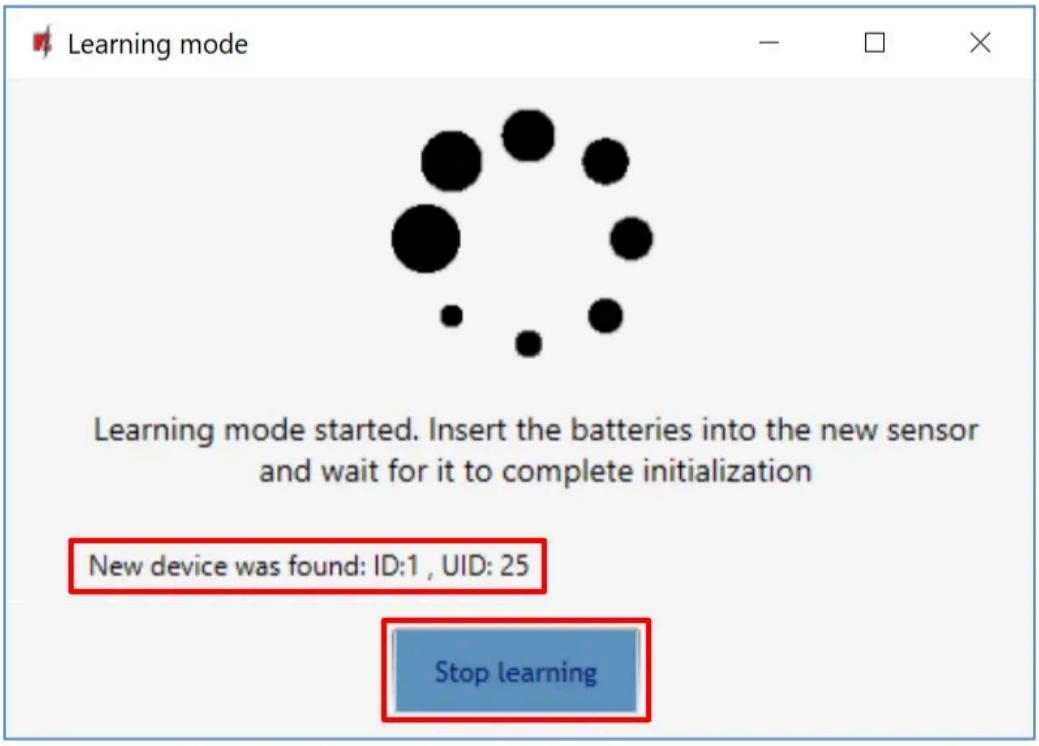

Figure 12. The learning window (**Learning mode**): "New device was found" – a new device has been added, with its identifier (**ID**) and **UID** number; below it, the **Stop learning** button.

24. At the question ("Do you want to save new parameters to the module?"), press the **Yes** button: the panic buttons are written to the FLEXi SP3.
25. Wait a few minutes, then press the **Read [F4]** button.

TrikdisConfig lists the enrolled panic buttons in the **Wireless sensors** window. The number in the **Serial No.** field must match the serial number written on the back of the panic button's case.

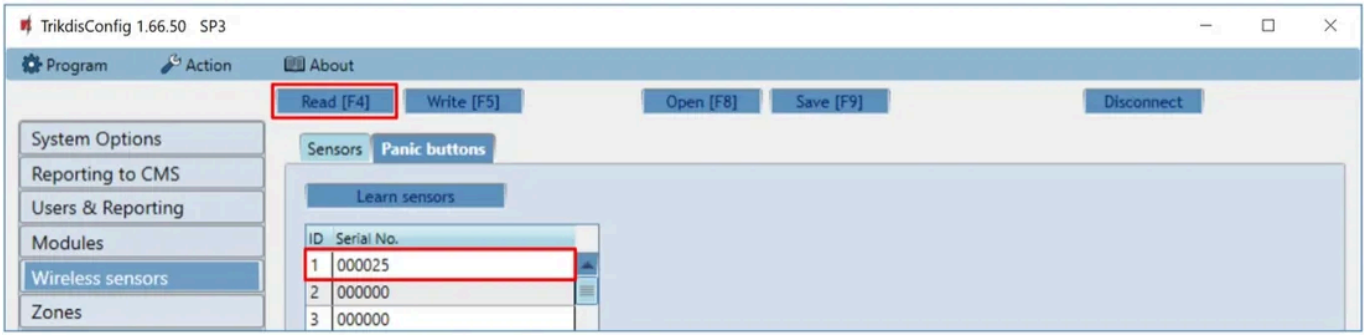

Figure 13. Wireless sensors → **Panic buttons** after **Read [F4]**: in row 1 the serial number (**Serial No.**) of the enrolled panic button (a demo number in the example).

Deleting a panic button from the memory of the FLEXi SP3

1. Start TrikdisConfig.
2. Connect the FLEXi SP3 to the computer with a USB Mini-B cable, or connect to it remotely, and press the **Read [F4]** button.
3. In the **Wireless sensors** window, enter **0** in the **Serial No.** field of the panic button to be deleted, and press the **Write [F5]** button. This deletes the panic button from the panel's memory.

5. Frequently asked questions

How do I know that the signal has been delivered?

Watch the **NETWORK** light after pressing the **ALARM** button: the first, green flash shows that the message has been sent, and the second, red flash shows that the RF-LORA's confirmation has arrived (1.4). If the second flash does not come, go through the points of the next question.

There is no radio link with the RF-LORA – what should I check?

1. Whether both switches of the **SW** DIP switch are in the same position on the PB-LORA and on the RF-LORA (1.3) – with different positions there is no radio link.
2. Whether there is a battery in the panic button and whether its voltage is good: with low voltage the first flash of the **NETWORK** light is red (1.4). After inserting the battery, wait at least 10 seconds.
3. Whether the serial number in the **Modules** or the **Wireless sensors** list is correct (chapters 3 and 4).
4. Check the signal level at the mounting location: remove the cover and briefly press the **TAMP** button. The 3rd–12th flashes of the **NETWORK** light show the radio signal level; at least four flashes are recommended.
5. With a weak signal, set switch 2 to ON (slow modulation) on the RF-LORA and on all the LoRa modules – this roughly doubles the range, but battery consumption increases.

The NETWORK light flashes red first

The battery voltage is low: replace the battery (3 V, CR123A). The battery life is at least 3 years. After replacing it, wait at least 10 seconds before using the button.

How many panic buttons can be connected to one FLEXi SP3?

It depends on the panel's firmware: with firmware 1.17 or newer, up to **8** (in the **Modules** list, chapter 3); with "release 2" firmware 1.16 or newer, up to **250** (by enrolment in the **Wireless sensors** window, chapter 4). With SP3_xxx4 firmware, up to **8**. In both cases the signals are received by the **RF-LORA** transceiver.

Which switch position should I choose?

By default, fast modulation (switch 2 OFF). If there is no reliable link because of the distance, slow modulation (ON) roughly doubles the range, depending on the environment, but battery consumption increases and system performance decreases. Change the channel (switch 1) if the current channel is heavily loaded. Whichever you change, set it the same way on the RF-LORA and on every LoRa module.

6. Safety instructions

Figyelem!

Az elektromosság veszélyes! Személyi sérülést vagy HALÁLT, valamint anyagi kárt okozhat!

A telepítés során elektromos berendezéssel történik munkavégzés, amit az érvényes erős- és gyengeáramú rendelkezések betartásával kell kivitelezni!

A garancia (jótállás) érvényesítésének is feltétele, hogy az eszközt szakképzett személy telepítse az elektromos berendezések telepítésére vonatkozó előírások betartásával és az elektromos berendezések biztonságos üzemeltetésére vonatkozó hatályos előírásokat követve.

- The PB-LORA panic button may only be installed and maintained by qualified persons.
- Before installation, read this manual carefully to avoid mistakes that could lead to malfunction or even damage to the equipment.
- Disconnect the power before making any connection.
- Changes, modifications or repairs not authorized by the manufacturer void the warranty.
- Do not throw the device and its parts in household waste: follow the local waste sorting regulations.

See also

- RF-LORA wireless transceiver – installation and setup manual – wiring, DIP switch and indicator lights of the transceiver.
- "FLEXi" SP3 alarm control panel – installation and programming manual – wiring and setting up the panel, including the firmware versions (1.7), the wireless devices (6.6) and the zone functions (6.7).
- Trikdis documentation: docs.trikdis.com – PB-LoRa Wireless Panic Button.

Related products

Trikdis PB-LORA wireless panic button | **Trikdis RF-LORA wireless expander module**

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