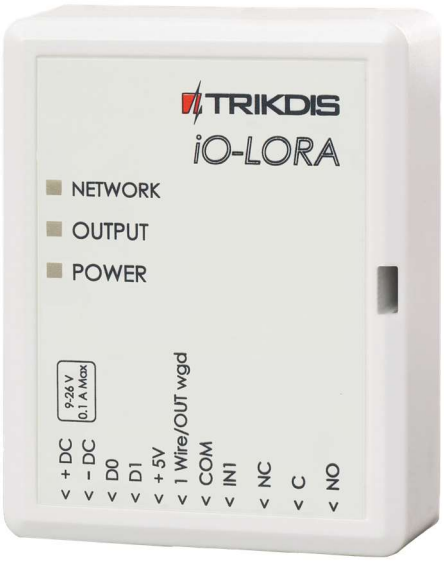

iO-LORA Wireless Expander

Installation manual

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Safety precautions

The ***iO-LORA*** wireless expander should only be installed and maintained by qualified personnel.

Please read this manual carefully prior to installation in order to avoid mistakes that can lead to malfunction or even damage to the equipment.

Always disconnect the power supply before making any electrical connections.

Any changes, modifications or repairs not authorized by the manufacturer shall render the warranty void.

Please adhere to your local waste sorting regulations and do not dispose of this equipment or its components with other household waste.

1 Description

iO-LORA wireless expanders with ***RF-LORA*** transceiver increase the number of inputs and outputs of the ***"FLEXi" SP3*** control panel using two-way RF communication.

Temperature sensor (1 pcs.) and readers of contact ("iButton") keys can be connected to the ***iO-LORA*** expander. The PGM output (relay) of the expander can be remotely controlled (on/off) by various electrical devices. ***iO-LORA*** has one digital input.

Features

Communication:

- Line-of-sight wireless range up to 5000 m.
- Up to 8 ***iO-LORA*** wireless expanders can be connected to the ***"FLEXi" SP3*** control panel.
- Products from HW iO-LO_x30x_7_230418 version come with a standard antenna suitable for most applications. **In cases where it is necessary to provide high-quality communication at the maximum possible distance, an antenna (AX-ANT-KIT – 433 MHz, AX-ANT01S SF – 868 MHz) with a higher radio signal gain should be used**.

Inputs and outputs:

- Bus "**1-Wire**" is intended for connection of temperature sensor (1 pcs.) and readers of contact ("iButton") keys.
- 1 input, of selectable type: NC, NO.
- 1 output (relay).

Connection:

- The ***iO-LORA*** wireless expander is connected to the ***"FLEXi" SP3*** control panel via the ***RF-LORA*** transceiver.

1.1 Specifications

Parameter	Description
Transmission frequency	4F modification: 433,3 - 434,7 MHz 8F modification: 867 - 869 MHz
Modulation type	LORA
Power supply voltage	9-26 V DC
Current consumption	Up to 50 mA (stand-by) Up to 100 mA (short-term, while sending)
Report encryption	Yes
Range in open space	Up to 5000 m
Input	1, selectable type: NC, NO
Output	1, relay, 250 V AC, 4 A
Temperature sensor	1, Maxim®/Dallas® DS18S20, DS18B20
Operating environment	Temperature from –20 °C to +50 °C, relative humidity – up to 80% at +20 °C
Dimensions	62 x 77 x 25 mm
Weight	80 g

1.2 Expander elements

1. Light indicators.
2. Frontal case opening slot.
3. Terminal for external connections.
4. "SW2" button for linking the device and checking the connection.
5. DIP switch „SW1“.

Note: DIP switch "SW1" settings (for product HW iO-LO_x30x_7_230418 version):

1 - Radio frequency ("**OFF**" - RF1; "**ON**" - RF2). Intended for changing the radio channel if the current channel is heavily loaded.

2 - Modulation type ("**OFF**" - fast; "**ON**" - slow). The "**ON**" position allows you to increase the communication distance by about 2 times (depending on the environmental conditions). But if a quality connection is ensured using the "**Off**" position, it is recommended to use it. In the "**On**" position system performance decreases.

NOTE: In *iO-LORA* and *RF-LORA* devices, the positions of the "SW1" switch must match! Otherwise, the radio communication will not work!

1.3 Purpose of terminals

Terminal	Description
+DC	Power terminal (9-26 V DC positive)
-DC	Power terminal (9-26 V DC negative)
D0	Not used
D1	Not used
+5V	Positive 5 V power terminal for "**1-Wire**" devices
1Wire / OUT wgd	"**1-Wire**" data bus terminal („**OUT wgd**“ – not used)
COM	Common negative terminal
IN1	1 input, of selectable type NO, NC (factory setting: NO)
NC	Relay terminal NC
C	Relay terminal C
NO	Relay terminal NO

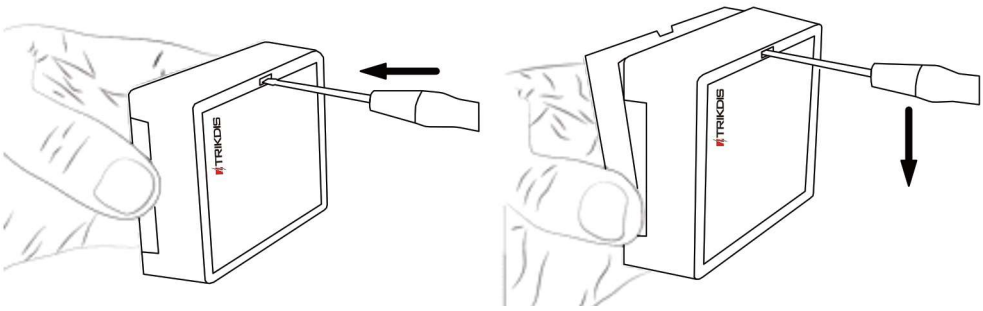
1.4 LED indication of operation

Indicator	Light status	Description
NETWORK	Off	No RF signal
	Green blinking	RF signal level from 0 to 10. Sufficient strength is 4.
OUTPUT/KEY	Green solid	Relay output activated
	Yellow solid	Dallas contact key activated
POWER	Off	No supply voltage
	Green blinking	Normal supply voltage level
	Yellow blinking	Low supply voltage level (≤11.5 V)

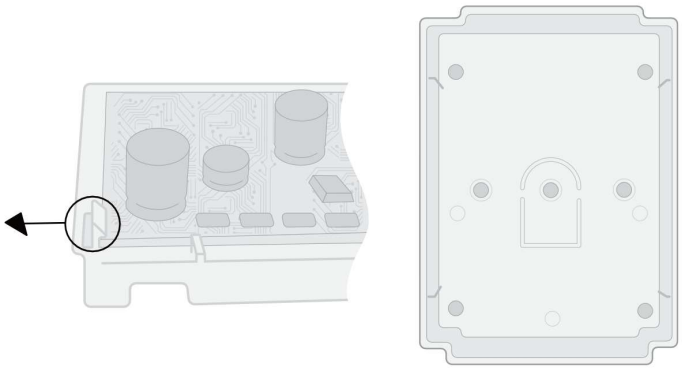
2 Wiring schematics

2.1 Fastening

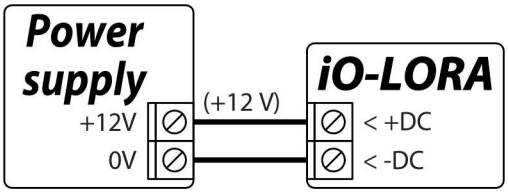
1. Remove the top lid.



2. Remove the PCB board.
3. Fasten the base of the case in the desired place using screws.
4. Reinsert the board.
5. Close the top lid.

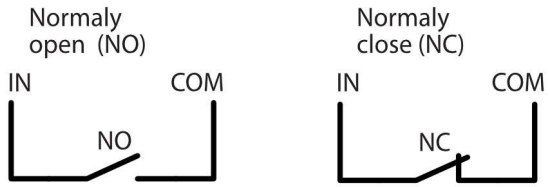


2.2 Schematic for connecting the power supply



2.3 Schematic for connecting input

iO-LORA has one input. Input type can be set: NC, NO.

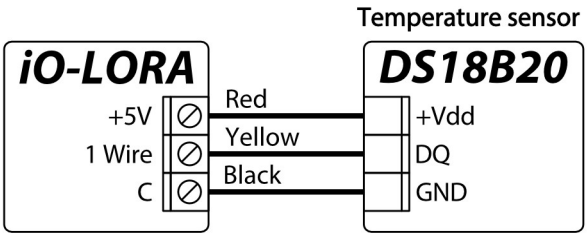


2.4 Schematic for connecting a temperature sensor

Temperature sensors should be connected according to the given schematic. Maxim®/Dallas® DS18S20, DS18B20 temperature sensor (1 pcs.) can be connected to the ***iO-LORA*** wireless expander.

If a wire longer than 0,5 meters is used to connect a temperature sensor, we recommend using twisted pair cable (UTP4x2x0,5 or STP4x2x0,5).

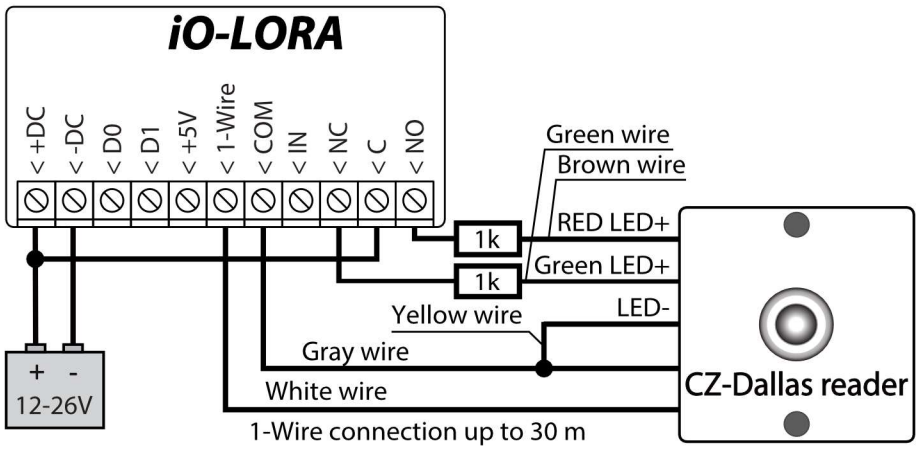
The „**+5V**" terminal on the board is for supplying devices connected to the "**1-Wire**" data bus with 5 V DC voltage.



The maximum output current is 0,2 A. The output is protected from overload. If the maximum allowed current is exceeded, the power will automatically be switched off. The ***"FLEXi" SP3*** control panel automatically recognizes and links connected temperature sensor.

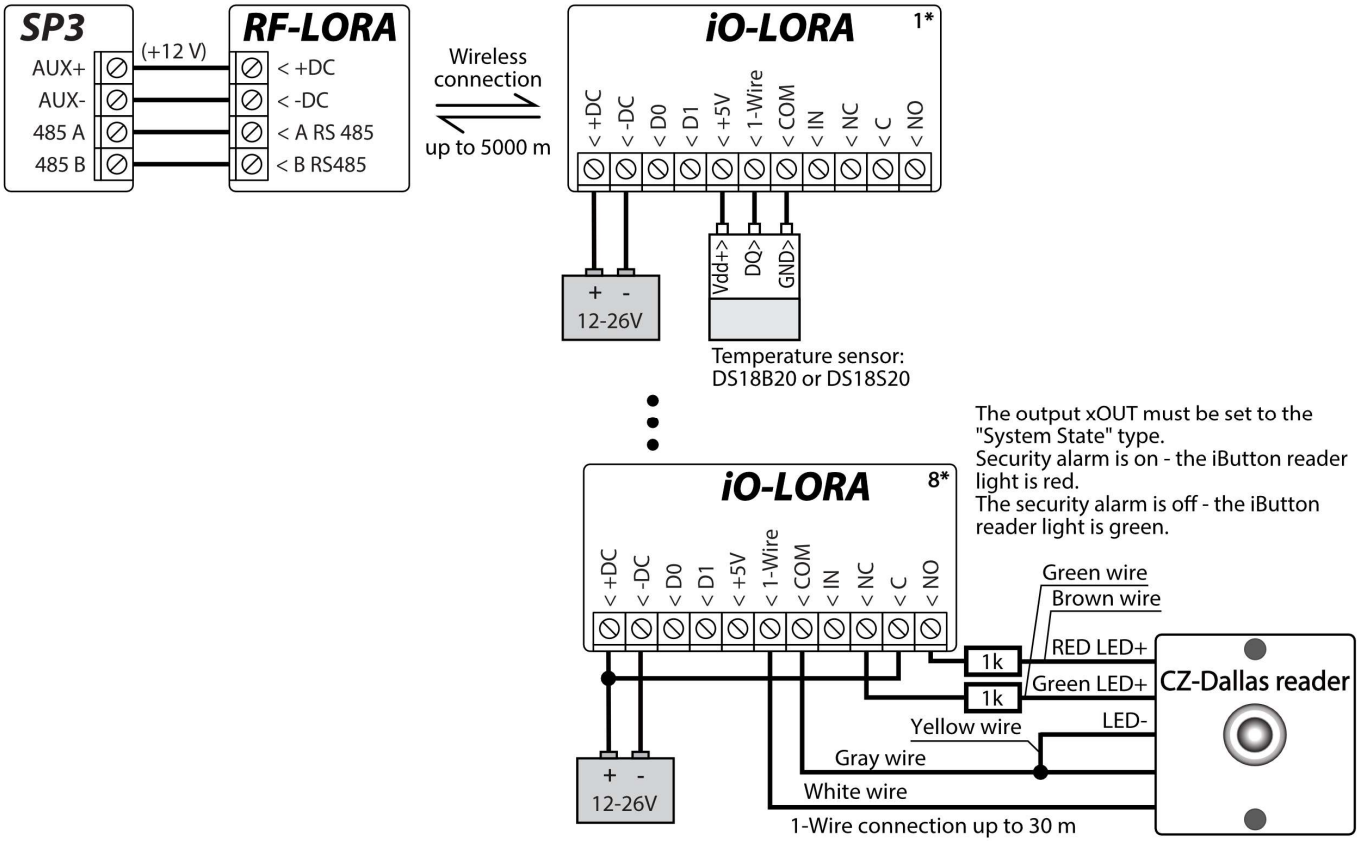
2.5 Schematics for connecting CZ-Dallas reader

The **CZ-Dallas** iButton key reader connects to the ***iO-LORA*** using the "**1 Wire**" data bus. The length of the wires connecting to the data bus can be up to 30 m.



The output xOUT must be set to the "System State" type.
Security alarm is on - the iButton reader light is red.
The security alarm is off - the iButton reader light is green.

2.6 Schematics for connecting iO-LORA modules



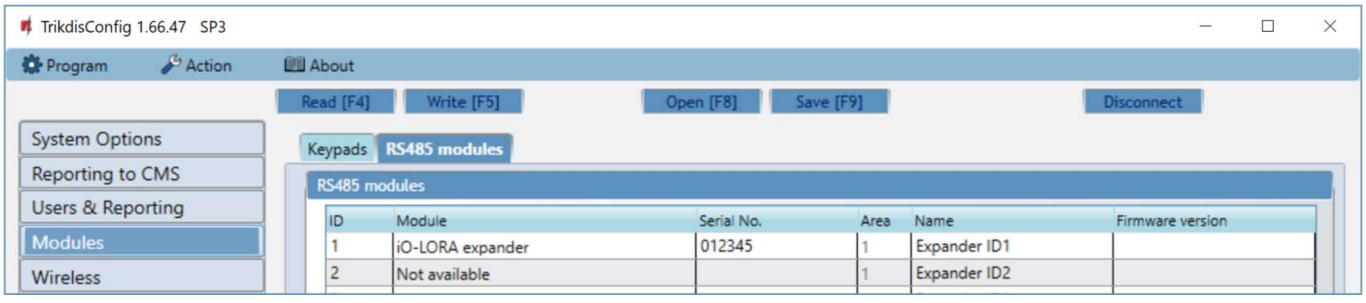
Note: An ***RF-LORA*** transceiver must be connected to the "***FLEXi***" ***SP3*** control panel and then up to 8 pcs. can be connected ***iO-LORA*** wireless expanders.

It is recommended to use a twisted pair cable (UTP4x2x0.5 or STP4x2x0.5) to connect the temperature sensor.

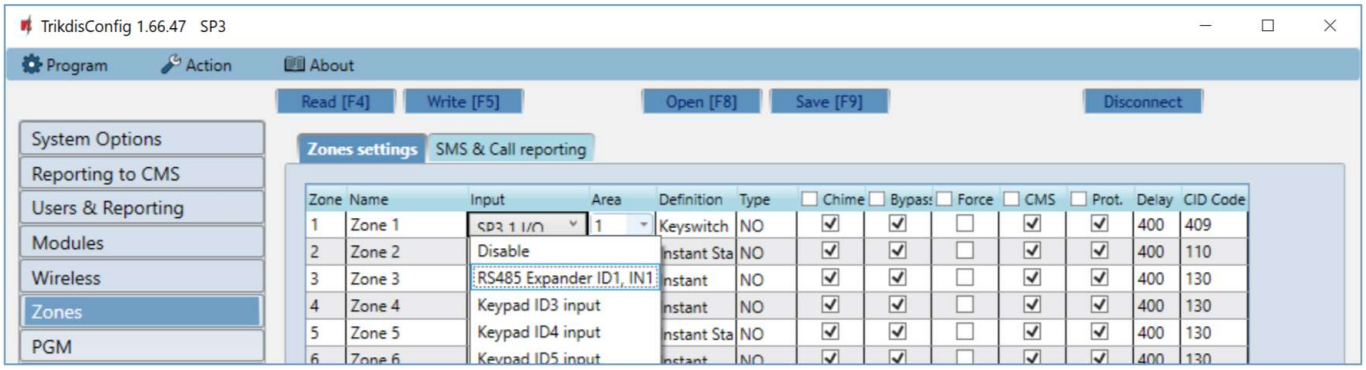
CZ-Dallas iButton key readers and temperature sensor must be connected to "**1-Wire**" bus**.**

3 Registering the iO-LORA wireless expander to the control panel “FLEXi” SP3

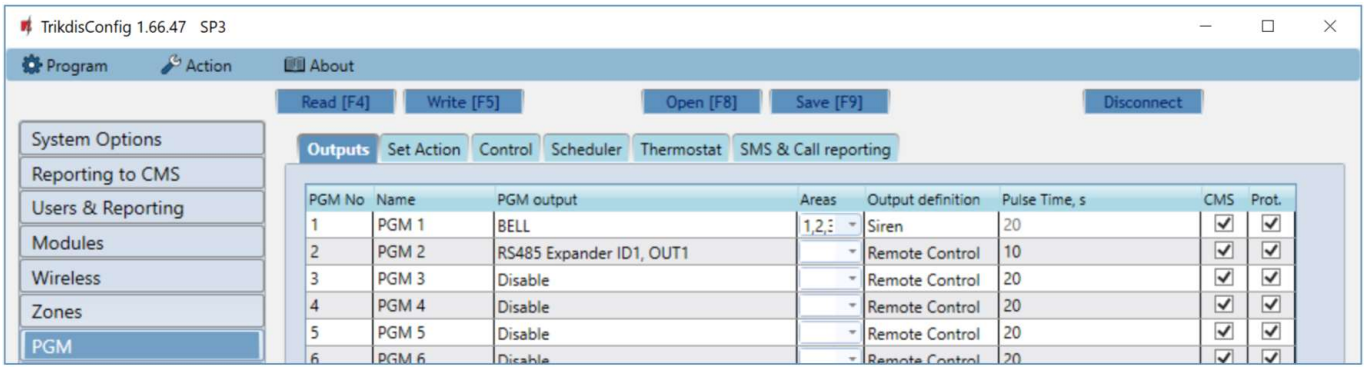
1. An ***RF-LORA*** transceiver must be connected to the ***"FLEXi" SP3*** control panel.
2. Turn on the power supply of the ***"FLEXi" SP3*** control panel.
3. Turn on the power supply to the ***iO-LORA*** wireless expander.
4. Launch ***TrikdisConfig***.
5. Connect the ***"FLEXi" SP3*** to a computer using a USB Mini-B cable or connect to the ***"FLEXi" SP3*** remotely.
6. Click the button **Read [F4]** for the program to read the parameters currently set for the ***"FLEXi" SP3*** control panel. If a window for entering the Administrator code opens, enter the six-symbol administrator code.
7. In the "**Modules**" list, select "**iO-LORA expander**".
8. In the "**Serial No.**" field, enter the serial number of the module ***iO-LORA***.



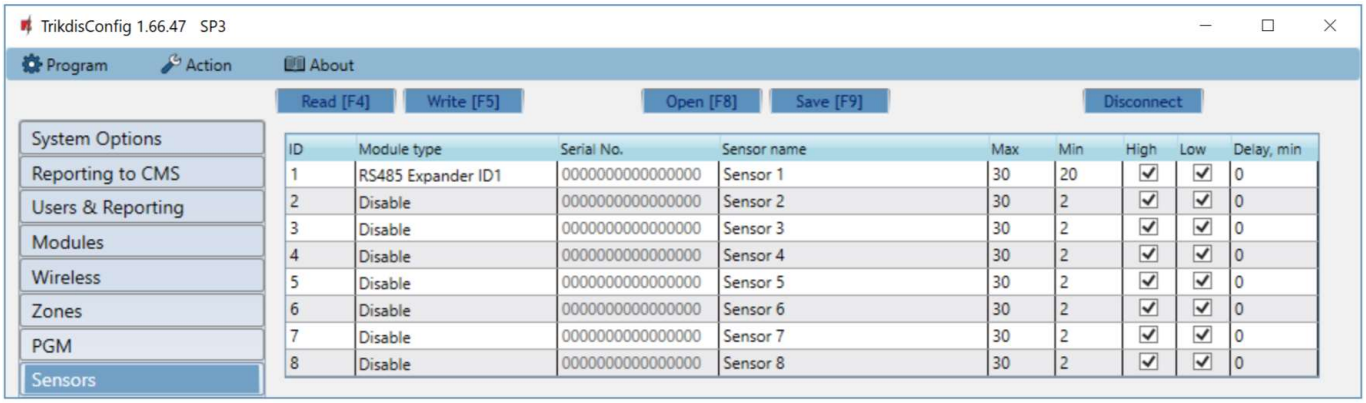
9. In the "**Zones**" tab, make settings for the expander's input.



10. In the "**PGM**" tab, configure the expander's PGM output.



11. Temperature sensors will be included in the "**Sensors**" list if a temperature sensor is connected to the ***iO-LORA*** expander.



12. Once configuration is complete, click the **Write [F5]** button.
13. Wait for the updates to finish.
14. Click the "**Disconnect**" button and disconnect the USB cable.