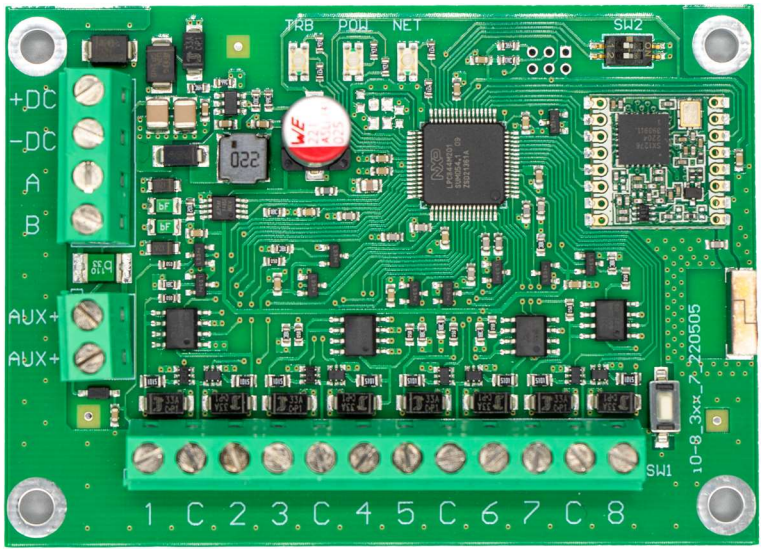


iO-8-LORA Wireless Expander

Installation manual

May, 2023

www.trikdis.lt UAB Trikdis Draugystės g. 17, LT-51229 Kaunas, Lietuva +370 37 408 040 info@trikdis.lt

Contents

Safety precautions

The ***iO-8-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.

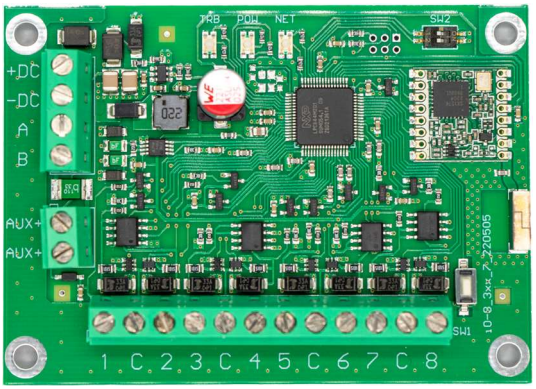
Please adhere to your local waste sorting regulations and do not dispose of this equipment or its components with other household waste.

1 Description

iO-8-LORA wireless expanders with ***RF-LORA*** transceiver increase the number of inputs and outputs of the ***"FLEXi" SP3*** security panel using two-way RF communication.

The ***iO-8-LORA*** wireless expander has 8 I/O terminals, each of which can be set as an input (IN) or as an output (OUT).

Features



Communication:

- Line-of-sight wireless range up to 5000 m.
- Up to 8 ***iO-8-LORA*** wireless expanders can be connected to the ***"FLEXi" SP3*** control panel.
- Products from HW iO8_x5xx_7_230419 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:

- 8 I/O terminals, each one can be set as an input (IN) or output (OUT). Input (IN) types: ATZ, EOL, NC, NO. Different value of resistors can be used in EOL and ATZ type circuits.

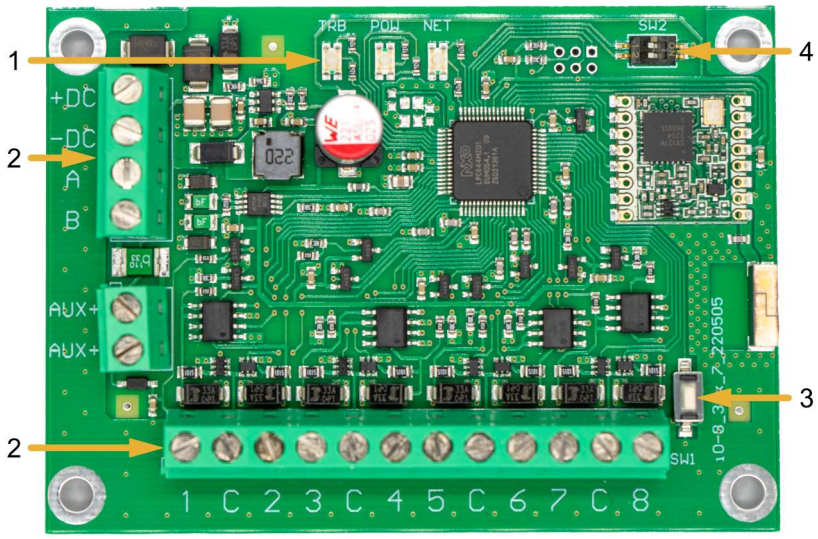
Connection:

- The ***iO-8-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	10-26 V DC
Current consumption	Up to 50 mA (stand-by) Up to 120 mA (short-term, while sending)
Report encryption	Yes
Range in open space	Up to 5000 m
Dual purpose terminals [I/O]	8, IN or OUT function selected during programming. When IN is selected, available types: NC, NO, EOL, EOL_T, 3EOL, ATZ, ATZ_T. When OUT is selected, the terminal becomes open collector (OC) type with up to 100 mA current
Operating environment	Temperature from –20 °C to +50 °C, relative humidity – up to 80% at +20 °C
Dimensions	65 x 90 x 12 mm
Weight	80 g

1.2 Expander elements



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

Note: DIP switch "SW2" settings (for product HW iO8_x5xx_7_230419 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 *iO8-LORA* and *RF-LORA* devices, the positions of the "SW" switch must match! Otherwise, the radio communication will not work!

1.3 Purpose of terminals

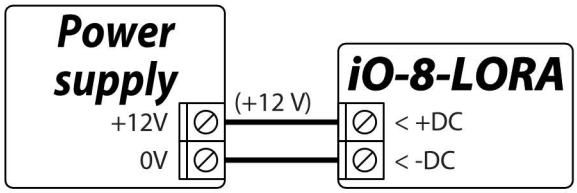
Terminal	Description
+DC	Power terminal (10-26 V DC positive)
-DC	Power terminal (109-26 V DC negative)
A	Terminal A of *RS485* data bus
B	Terminal B of *RS485* data bus
1- 8	Input/output terminals
C	Common negative terminal

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 3
POWER	Off	No supply voltage
	Green blinking	Normal supply voltage level
	Yellow blinking	Low supply voltage level (≤11.5 V)

2 Wiring schematics

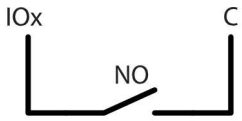
2.1 Schematic for connecting the power supply



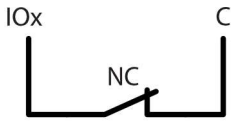
2.2 Schematics for connecting inputs

There are 8 terminals ***IO1–IO8*** (inputs) on the ***iO-8-LORA*** expander board for connecting sensor circuits. Any terminal can be set as an input and assigned zone attributes: circuit type (NO, NC, EOL, EOL_T, 3EOL, ATZ, ATZ_T); sensitivity to temporary circuit events; zone function (Delay, Instant, Instant Stay, Interior, Interior Stay, Fire, Keyswitch, 24_hour, Silent, Silent 24h).

Normaly open (NO)

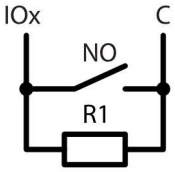


Normaly close (NC)

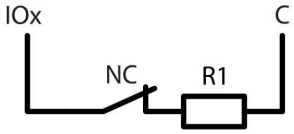


RT	R1	R2
2.2k	2.2k	4.7k
1k	1k	2.2k
5.6k	5.6k	3.3k
5.6k	3.3k	5.6k
3.3k	6.8k	3.3k
2.2k	4.7k	8.2k

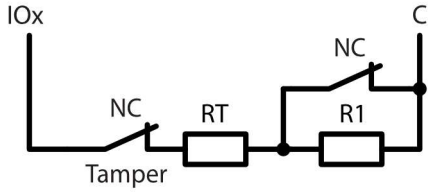
Normaly open with End of line resistor (EOL)



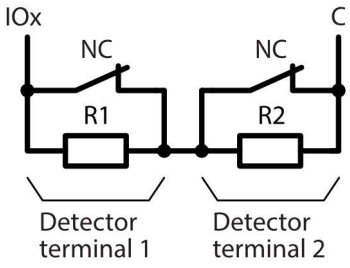
Normaly closed with End of line resistor (EOL)



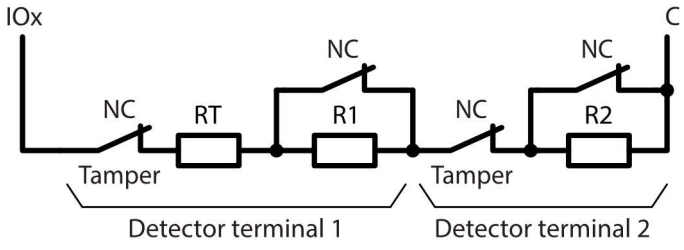
Normaly closed with End of line resistor, with tamper and wire fault recognition (EOL_T)



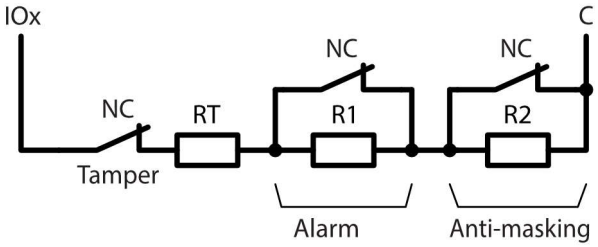
Normaly closed without EOL (ATZ)



Normaly closed with EOL, with tamper and wire fault recognition (ATZ_T)

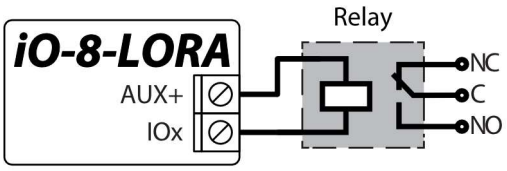


Normaly closed with End of line resistor, with tamper and wire fault recognition (3EOL)

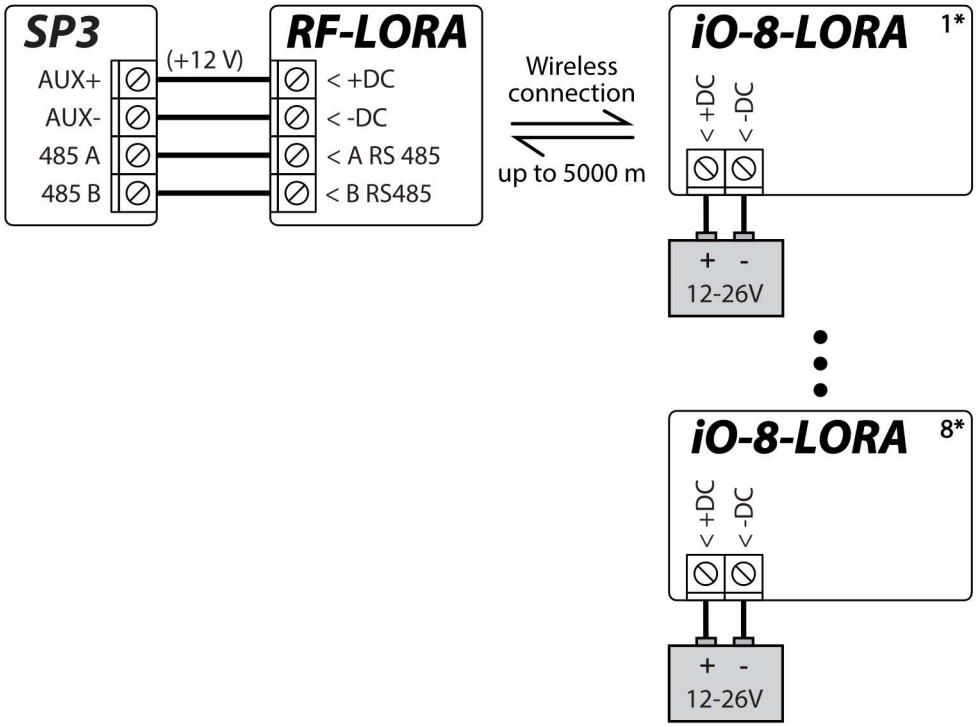


2.3 Schematic for connecting a relay

Using the relay terminals, it is possible to remotely control (turn on/off) various electrical devices. The ***iO-8-LORA*** wireless expander universal I/O terminal must be configured as an output (OUT) and must have the definition "**Remote control**" assigned.



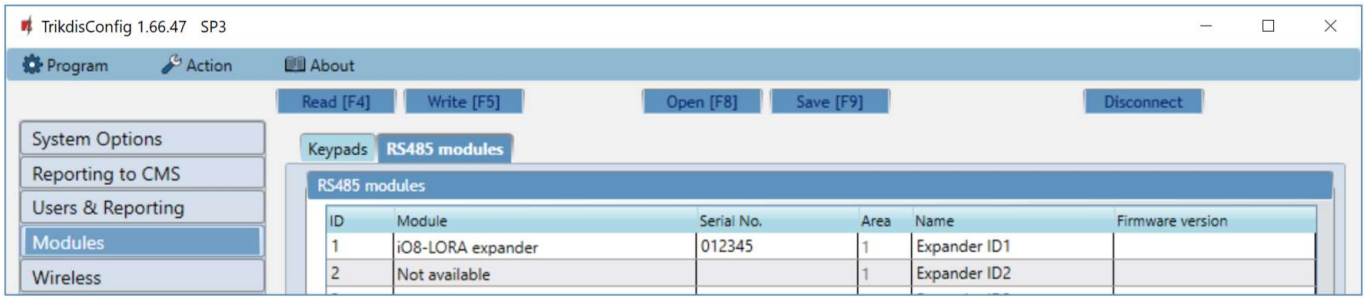
2.4 Schematic for connecting iO-8-LORA expanders to the control panel "FLEXi" SP3



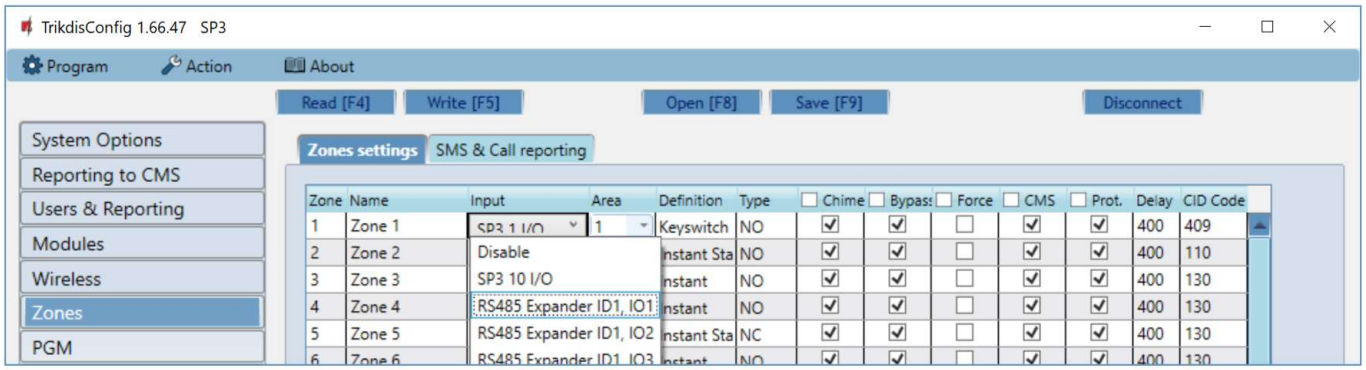
Note:	An ***RF-LORA*** transceiver must be connected to the "***FLEXi***" ***SP3*** security panel and then up to 8 pcs. can be connected ***iO-8-LORA*** wireless expanders**.**

3 Registering the iO-8-LORA wireless expander to the control panel “FLEXi” SP3

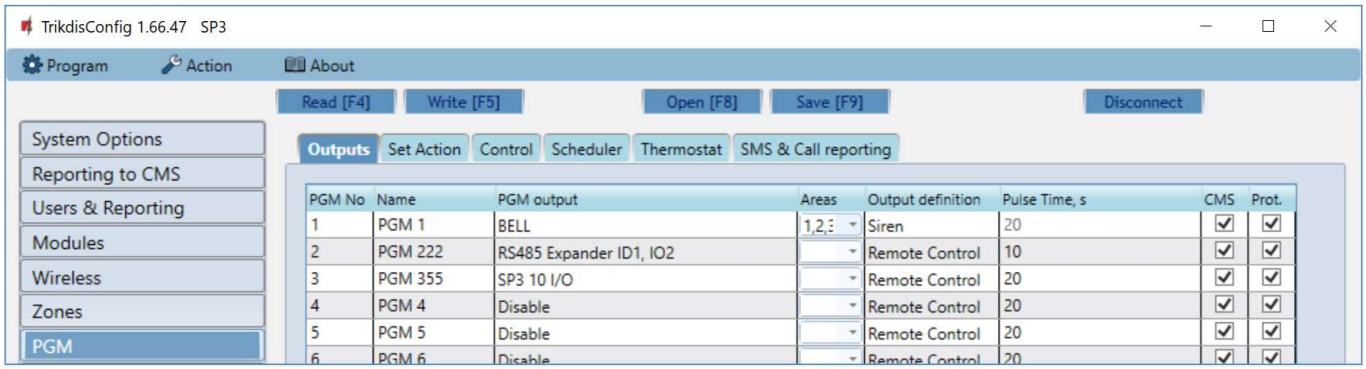
1. An ***RF-LORA*** transceiver must be connected to the ***"FLEXi" SP3*** control panel.
2. Turn on the power supply of the ***"FLEXi" SP3*** control panel.
3. Turn on the power supply to the ***iO-8-LORA*** wireless expander.
4. Launch ***TrikdisConfig***.
5. Connect the ***"FLEXi" SP3*** to a computer 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-8-LORA expander**".
8. In the "**Serial No.**" field, enter the serial number of the module ***iO-8-LORA***.



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



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



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