

matrix

Universal Transmitter

Installation guide



KSI5003001.300

INTRODUCTION

matrix module is a bi-directional universal radio interface for connecting third-party low power consumption motion detectors to the lares 4.0 platform, at 868 MHz frequency band, and it is compatible with OPTEX sensors series:

- BXS (PIR or PIR+AM/ curtain coverage right and left sides);
- VXS (PIR+AM/ PIR+AM+MW/ 90° coverage);
- WXI (PIR/ PIR+AM/ 180° coverage right and left sides);
- WXS (PIR+AM/ PIR+AM+MW/ 180° coverage right and left sides);
- QXI (PIR/ PIR+MW/ 120° coverage right and left sides);

allowing their remote management (configuration data and detailed alarm signalling).

matrix directly feeds the connected motion detector with its own standard CR 123A batteries, from 1 to 3 batteries (second and third are optional) dependently on the consumption of the connected motion detector. Through the supervision function, the control panel verifies the persistence of the radio communication with all the wireless devices. Two dedicated inputs (alarm and sabotage) detect any disappearance and/or sabotage of the connected detector. **matrix** itself has a tamper protection vibration sensor (accelerometer), which allows, for example if it is mounted on a joint, to detect even a simple rotation or change of position. To connect third-party motion detectors it provides a connection terminal on board (if programmed as **UNIVERSAL**) and, alternatively, a serial port that is compatible with **OPTEX** sensors (if programmed as **OPTEX**).

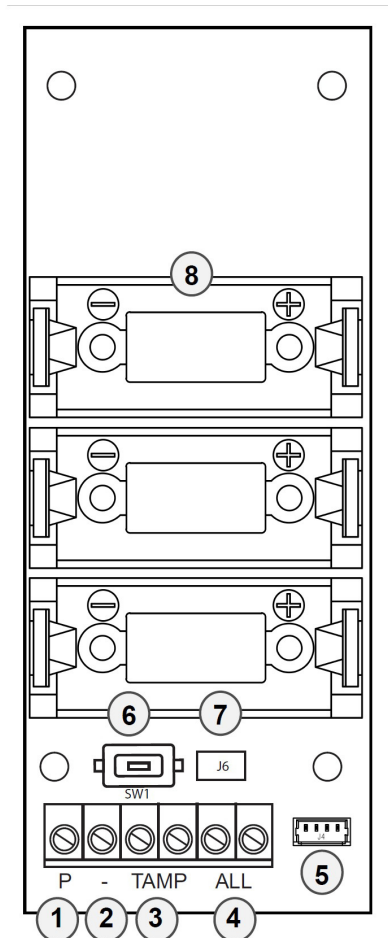
WARNING! OPTEX sensors series WXI, WXS, QXI are compatible with **matrix** device whose serial number is equal or higher than **004000**.



TECHNICAL DATA

- Operating frequency: 868MHz
- Inputs: no. 1 alarm NC - NA type / no. 1 sabotage NC type
- Serial interface compatible with OPTEx detectors
- Lithium batteries power supply CR-123A (from 1 to 3)
- 3-axis mems accelerometer for sabotage
- Range in open air: up to 300m
- Operative Temperature Range: -10 / + 55°C
- Humidity: 95%
- Dimensions: 100x43x17mm (h x w x d)

DESCRIPTION OF THE PRODUCT



LEGEND

- ① P power supply output voltage (3V, 50mA max)
- ② – negative power supply (3V, 50mA max)
- ③ TAMP tamper terminal blocks (T/-)
- ④ ALL alarm terminal blocks (A/-)
- ⑤ UART port compatible with OPTEx* sensors for exchanging communication and configuration data via RS-232
- ⑥ SW1 Enroll / Test radio button
- ⑦ J6 jumper closed: tamper (③) not used
jumper closed: tamper (③) used
- ⑧ BATTERIES - 3 slots for lithium batteries CR-123A (code KSI7203015.000**) (battery powered device from 1 to 3 batteries (second and third are optional) it depends on the power consumption of the connected motion detector)

WARNING! DO NOT connect external power sources to matrix power supply outputs (P and – on screen-printing). It could cause damage to your device.

* Use only the cable supplied for serial connection with OPTEx.

** **WARNING!** Risk of explosion if the battery is replaced by an incorrect battery type.

INSTALLATION

matrix can be installed in the special housing inside the sensor that will be used.

Remember that OPTEX sensors WXI, WXS, QXI series are compatible with **matrix** device whose serial number is equal or higher than **004000**.

Programmed as **UNIVERSAL** to connect third-party motion detectors (not OPTEX), **matrix** provides a connection terminal on board to connect the outputs of the third-party sensors on TAMPER and ALARM inputs (TAMP and ALL on screen-printing).

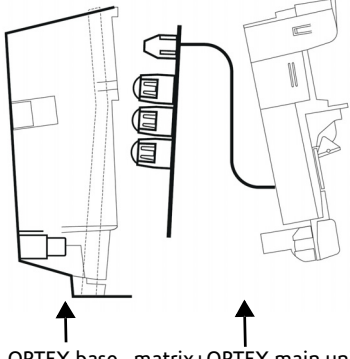
Power to the sensor is supplied by connecting the outputs indicated on screen-printing with [P and -].

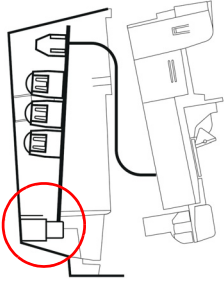
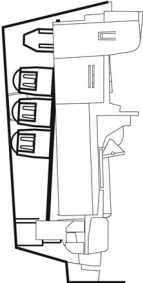
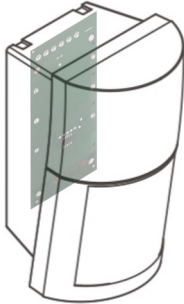
Programmed as **OPTEX** to connect BXS, VXS, WXI, WXS, QXI sensors, connect one side of the cable supplied to the serial port (indicated with no.5 at paragraph ["DESCRIPTION OF THE PRODUCT" page 2](#)) and the other side to the OPTEX serial port (for further information, please consult the manual of the sensor itself).

Thanks to this serial link, installers avoid the terminal block wiring and the configuration of OPTEX sensors can be performed via Ksenia SecureWeb or APP Ksenia PRO; the OPTEX switch manual settings are completely avoided.

WARNING! JUST in case you are installing matrix inside OPTEX series QXI, follow the instructions below.

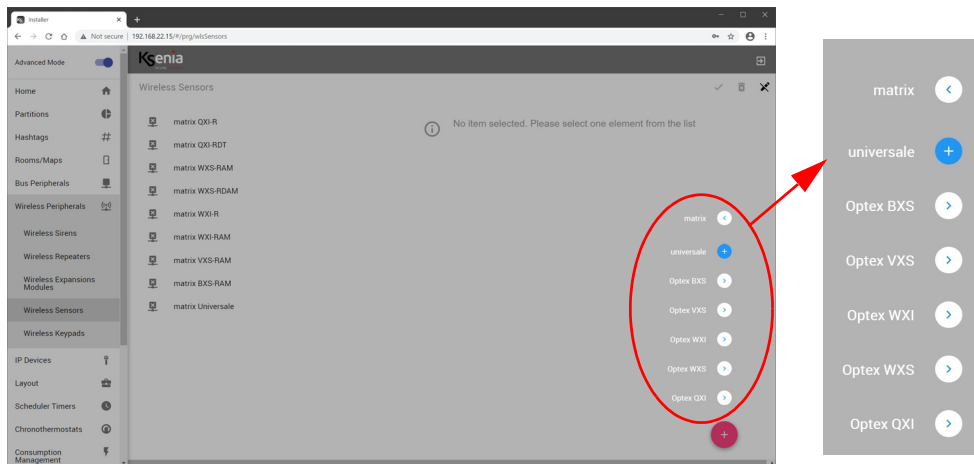
Due to the small size of the OPTEX QXI series, to allow the OPTEX tamper to function correctly and to avoid damaging the matrix or the OPTEX sensor itself, pay particular attention when installing **matrix** inside the case.

1	<p>After having mounted the OPTEX QXI case and connected the cable supplied for serial connection, insert the matrix into the sensor base by placing it on the right side, with the batteries in contact with the OPTEX base and the terminal block facing upwards.</p>	 <p>The diagram illustrates the physical installation of the matrix device. On the left is the 'OPTEX base', which is a rectangular housing with a terminal block on its side. On the right is the 'matrix+OPTEX main unit', which is a smaller, more complex device with a cable extending from it. The cable connects the main unit to the terminal block on the base. Two arrows point upwards from the labels 'OPTEX base' and 'matrix+OPTEX main unit' to their respective components in the diagram.</p>
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2	<p>Make sure that matrix PCBA does not cover the support highlighted in the next image, the space left will be occupied by the sensor tamper.</p>	
3	<p>Be careful not to compress the cable when repositioning the OPTEX QXI main unit.</p>	
4	<p>Close the sensor cover in a way that is close-fitting.</p>	

CONFIGURATION

Starting from the configuration program of lares 4.0 control panel, it is possible to customize the type of functioning requested to the wireless sensor -> matrix, by choosing between UNIVERSAL (for third-party motion detectors) or OPTEX (for Optex BXS, VXS, WXI, WXS, QXI motion detectors).



In case of UNIVERSAL operation, the configuration is limited to general information about **matrix** (serial number, supervision and tamper protection).

In case of OPTEX operation, the customization involves the connected OPTEX sensor so that, in addition to the general information written above, the configuration also includes enabling/disabling PIR sensor, tamper/accelerometer, switch on board, alarm notification with LED, inhibition time, anti-masking, PIR settings (PIR sensitivity and PIR pulse number) and micro-wave settings (micro-wave sensitivity and micro-wave immunity).

For more details, please refer to "Lares 4.0 Programming Manual".

COMPLIANCE

Europe - CE, Rohs



Technical specification, appearance, functionality and other product characteristics may change without notice.