WAVE-SENSE

Wireless Device

INSTALLATION MANUAL

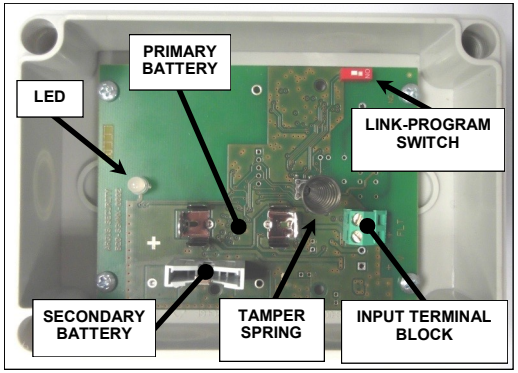
TI-002253

WIRELESS SINGLE CHANNEL INPUT MODULE (865 MHZ)

GENERAL DESCRIPTION

The wireless input module allows the switched on / off status of an external device to be transmitted to the control panel through translator / expanders devices. These module types are intended to interface a control panel and normally open contact devices. The connection between the module and the external device is supervised with the aid of an end of line resistor.Communication between the input module and the translator / expanders modules is wireless.

Picture 1 - General view of the product



Picture 2 - The PCB of the device

MODULES VISUAL LED INDICATOR

The wireless input module is equipped with a bi-colour LED (red / green) that provides visual indication for functional conditions and battery levels as indicated in table 1. The input module has the LED positioned as illustrated in picture 2.

DEVICE'S POWER SUPPLY AND LINKING

The linking operation permits the configuration of the wireless input module on the translator module.
The linking operation described below does not change if made directly from the translator or from the PC configuration program.

1) Verify that the secondary battery is present; if not, insert the battery into its housing, referring to the polarities printed on the PCB.
2) Move the link-program switch to position ON.
3) Insert the main battery.

Ensure that both battery's polarities are correct.

Table 1

Device Status	Green LED	Red LED
Switching into operating mode	Short blinks	-
Switching into programming mode	-	4 short blinks
Normal mode	-	-
Alarm condition	-	Blinking (0.5 second on / 1 second off)
Main battery fault (low level)	-	Blinking (orange tonality) (0.1 second on / 5 seconds off)
Secondary battery fault (low level)	Blinking (0.1 second on / 5 seconds off)	-
Both batteries fault	Sequential bicolor blinking (with orange tonality) (0.1 second on / 5 seconds off)	

The visual LED indicator switches green once, then four times red (programming mode) and will, successively, turn off. This indicates that the device is ready to be linked to the translator module.

4) Move the switch in position 1 to trigger the communication between the module and the translator.

The green LED switches on once, then it blinks many times (operating mode), and, finally, after alternating green-red for one second, the indicator turns off: this indicates that the linking procedure has been performed correctly and the device has programmed itself .

The input module is linked and all the parameters (address, system code etc.) necessary to work correctly are stored. If the LED remains switched on the red light it means that the linking operation failed. In this case remove the main battery, switch over alternatively the ON / 1 switch a few times in order to discharge the internal capacitor and then start again from point 2).

TECHNICAL SPECIFICATIONS *

Open space communication range with its parent translator or expander	200 m	Ideal operating range: may vary consistently according to environmental conditions
Operating frequency	865 MHz	
Modulation type	FSK	
Operating frequency channels	7	
Radiated power	5 dBm (3 mW)	Typical
Transmission message period	60 seconds	Default
Main battery type	Type CR123A	
Backup battery type	Type CR2032A	
Main battery lifespan	> 4 years	These lifespan values refer to the device being programmed with a control signals transmission period of 12 seconds
Backup battery lifespan	2 months typical	When a low battery condition is indicated, both, main and secondary, batteries must be changed altogether
Ingress protection rating	IP 65	
Operating temperature range	From -30 °C to +55 °C	

*** Check latest version of document TDS-SGMI2 for further data, obtainable from your supplier.**

IMPORTANT NOTE! Programming is considered to be completed successfully only if there is an indication of programming success on the device and on the translator or on the window of the PC configuration program.

COMMUNICATION QUALITY ASSESSMENT

It is possible to assess the wireless communication quality of the module by using a testing feature built in the device.
After a successful linking operation, by switching the link-programming switch on the ON position, the module's indicator will start blinking according to table 2.
Always remember to reposition the switch to 1 after the assessment operation: device will NOT work operatively while the switch is positioned on the ON position.

Communication quality	Assessment	Device's indication
No connection	Fail	Two red blinks
Link margin is less than 10 dB	Poor	One red blink
Robust communication with link margin from 10 dB to 20 dB	Good	One green blink
Robust communication with link margin over 20 dB	Excellent	Two green blinks

Table 2

MODULE PLACEMENT

It is strongly advised to mount the device as far as possible from metal objects, metal doors, metal window openings, etc. as well as cable conductors, cables (especially from computers), otherwise the operating distance may greatly drop. The device should not be installed near electronic devices and computer equipment that can interfere with the reception's quality.

1) Select the position of the module before installing it. **Verify, from that position, that the communication between the device and the translator or the expander is correctly established and working (see the COMMUNICATION QUALITY ASSESSMENT paragraph).**
2) Install and fix the device's box in the selected position using the provided screws and their indicated lodgment holes (picture 3).

The input module box is designed with 6 cable entry knockout holes, distributed on the lateral sides of the device's box, allowing sealed, gland fitted cables to be connected to the device and, at the same time, to preserve the original IP protection rating (picture 4).

3) Fit the cable's gland (or glands) into the "knocked out" device box's cable entry.
4) Feed the cables into the box, giving them sufficient length for a secure connection.
5) Extract the supply batteries from their lodgment on the PCB, in order to power the device off.
6) Connect the cable's terminals to the device's input terminal blocks as indicated in the following paragraph.
7) Reinsert correctly the batteries into their PCB lodgments, in order to power up again the device.
8) Test the module, then install and screw securely the cover onto the module's box.

WARNINGS AND LIMITATIONS

Our devices use high quality electronic components and plastic materials that are highly resistant to environmental deterioration. However, after 10 years of continuous operation, it is advisable to replace the devices in order to minimize the risk of reduced performance caused by external factors. Ensure that this device is only used with compatible control panels. Detection systems must be checked, serviced and maintained on a regular basis to confirm correct operation.

Smoke sensors may respond differently to various kinds of smoke particles, thus application advice should be sought for special risks. Sensors cannot respond correctly if barriers exist between them and the fire location and may be affected by special environmental conditions.

Refer to and follow national codes of practice and other internationally recognized fire engineering standards.

Appropriate risk assessment should be carried out initially to determine correct design criteria and updated periodically.

WARRANTY

All devices are supplied with the benefit of a limited 3 years warranty relating to faulty materials or manufacturing defects, effective from the production date indicated on each product.
This warranty is invalidated by mechanical or electrical damage caused in the field by incorrect handling or usage.

Product must be returned via your authorized supplier for repair or replacement together with full information on any problem identified.

Full details on our warranty and product's returns policy can be obtained upon request.

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EN 54-18:2005

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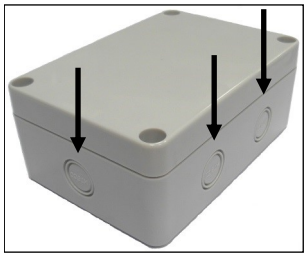
For use in compatible fire detection and alarm system

Picture 3 - Wall fixing screw entry points

Picture 4 - Cable entry knockout holes

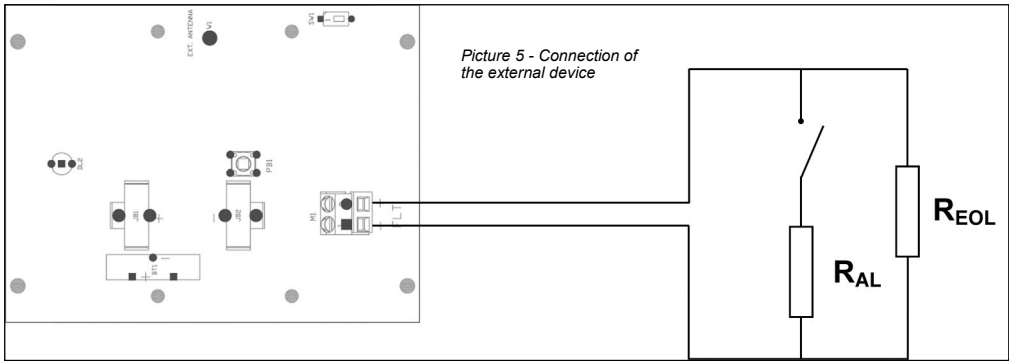


Resistors	Value	Note
R_{eol}	5.6 kOhm (10% tolerance)	End of line resistor for the supervision of the line
R_{al}	2.2 kOhm (10% tolerance)	Alarm resistor

Table 3

WIRING CONNECTION

Following is illustrated the electrical scheme for the connection of the input module to the external device which transmits the input signal to the module. End of line supervision resistor's and external device alarm resistor's specifications are given in table 3.



Picture 5 - Connection of the external device

TAMPER DETECTION FEATURE

The wireless input module is provided with a tamper detection switch-spring system, and, in case of removal of the cover from its box, it sends a tamper detection message to the control panel. For this reason assure that the front cover is well inserted and closed.

FAULTS

If a fault condition is detected by the input module, a message indicating such condition is sent to the control panel.
The faults are locally signaled by the module's visual LED indicator (see table 1).
A fault condition can normally be determined by a low battery power supply.

TESTING

In order to test the functionality of the installed input module the following test must be performed: activate the external device: the module must transmit the alarm message to the control panel through the translator / expander and switch on the LED indicator (blink red as per table 1).
After each test the module must be reset from control panel (see the RESET paragraph).

All devices must be tested after installation and, successively, on a periodic basis.

RESET

To reset the input module from an alarm condition it is necessary to reset from control panel: the module's LED indicator (indicating alarm) will be turned off.

MAINTENANCE

1) Before starting any maintenance work (e.g. batteries substitution), disable the system in order to avoid accidental and unwanted fault detection conditions.
2) Remove the front cover from the device's box.
3) Perform the planned necessary maintenance operations.
4) After the device has been serviced, reinstall correctly the front cover onto its box, reactivate the system and check correct operation as described under the TESTING paragraph.

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