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REV 3

Doc # : RS900DA3.ODT

**GENERAL DESCRIPTION**

The RS900 receiver is designed to answer signals from the TS900 or TS200 version 2 ultrasonic transmitters (modulated ultrasonic signal). When a signal is received, a red LED lights up and a radio message is sent to the master receiver. Upon reception of a confirmation from the master station, the LED will flash for a programmable period of time (typically 30 seconds).

The RS900 has an adjustable sensor which allows it to pinpoint the detection zone, from a few feet to more than 25 feet, in all directions (Omni-directional). Each receiver monitors its battery and reports periodically to the master receiver. All radio communications are bi-directional and an acknowledgement is always generated from the master station so no communications are lost.

**USE:**

Contrary to radio waves, ultrasonic signals bounce off walls, floors and ceilings. Therefore a transmitter will only activate the receiver located in the same room no matter the size of the room. The use of ultrasound is most recommended when an emergency happens and one quickly needs to find the exact location of a person in distress within a building which has many different closed rooms.

**APPLICATIONS:**

The ultrasonic transmitter is commonly used for the localization of personnel (through the use of a panic button) in hospital psychiatric wards, in laboratories and centers for troubled youths.

**FULLY SUPERVISED:**

The RS900 receiver monitors its battery, the cover of the box (tamper switch) and also its ultrasonic sensor (exclusive feature from Nordicom). The receiver reports itself to the master receiver at regular, programmable intervals and reports any problem. In case of complete loss of communication, the master receiver can generate a trouble event (messages sent to display, email, and pagers, activation of a contact, etc.)

**BI-DIRECTIONAL MULTI-CHANNEL RADIO COMMUNICATION:**

The RS900 communicates with the master central M900 through the radio communication standard IEEE 802.15.4. but over the basic protocols features. The Securalert system adds features like multi-channel scanning and auto-detect that enables the system to change channel in case of interference or conflicts with other radio equipments. The Securalert also uses a special radio module that uses the full maximum power permitted on the ISM band (60mW) compared to other equipments normally operating in this band (1mW), so radio communication is guaranteed under a radius distance of 100 feet (30 meters) in any condition. Also, communication is bi-directional between device and master central M900. Additional acknowledgement is sent in all communications (in addition to the basic acknowledgement included in the 802.15.4 protocol) so communication reliability is guaranteed.

**BATTERY OPERATED (DEFAULT):**

The receiver is typically powered by a 3,7V lithium battery that can work for up to 5 years, depending on the configuration of the system. Optional battery can be used for a longer life.

**OPTION (CONNECTOR BOARD RS900-OB):**

An optional connector board can be added to the RS900 to power the receiver from a wired 12Vdc source. This board also provides a form C relay output to activate external device like corridor lamp, buzzer or to connect to a security panel. A future communication BUS to replace the radio link by a wired link is also available on this optional board.

**CASING:**

The receiver is provided by default in an ivory external 1 gang box that can be mounted on wall or ceiling easily. The box can be installed by double side tape or by screw on the bottom of the box.

Alternatively, the circuit is mounted on a braquet that fits in a 1 gang box. So the circuit can be put inside an electrical box for recess installation. The cover is a heavy duty stainless steel plate.



**TECHNICAL SPECIFICATIONS**

- Operational ultrasonic frequency : 40.6KHz +/- 100Hz Modulated
- Range : Adjustable from 1m<sup>2</sup> to 50m<sup>2</sup> minimum.
- Decoder : RISC Microprocessor controlled.
- Visual indicator : Red LED.

**RADIO**

- Operational frequency : ISM band 2400 to 2483.5 MHz  
12 channels auto-detect
- Maximum power : 60mW. (+20dBm)
- RF data rate: 250Kbps.
- RF Protocol : IEEE 802.15.4
- Approval: FCC part 15 & ETS 300-32
- Global License free : International (USA,EUROPE,ASIA)

**ELECTRICAL AND PHYSICAL SPECIFICATIONS**

- Power : 2.5 to 5 Volts DC
- Current consumption: Average: 1uA
- Peak (transmitting): 200mA
- Operating temperature : 0°C to 65°C
- Material / color : Stainless steel ( brushed )
- Weight (with 5 year battery): 10 oz ( 300 g )
- Dimensions (external box):
  - height 2" (48mm)
  - width 3.5"(87mm)
  - length 5.2" (132mm)