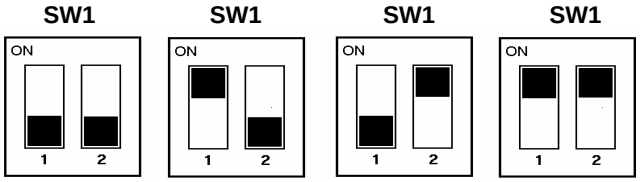
RTX 2251 – RTX 2252

GB

868 MHz radio system to be used as safety device in the automation of sliding gates and rolling gates (EN 12978). It consists of one transceiver device (Base) RTX 2251 to be connected to a motor control unit, and of one or more battery operating transceiver devices RTX 2252 (Sensor), for the connection of 8.2 kohm resistive and mechanical safety edges, normally found in the gate's mobile part. System corresponding to Category 2 of EN13849-1.

FUNCTIONING FREQUENCY SELECTION

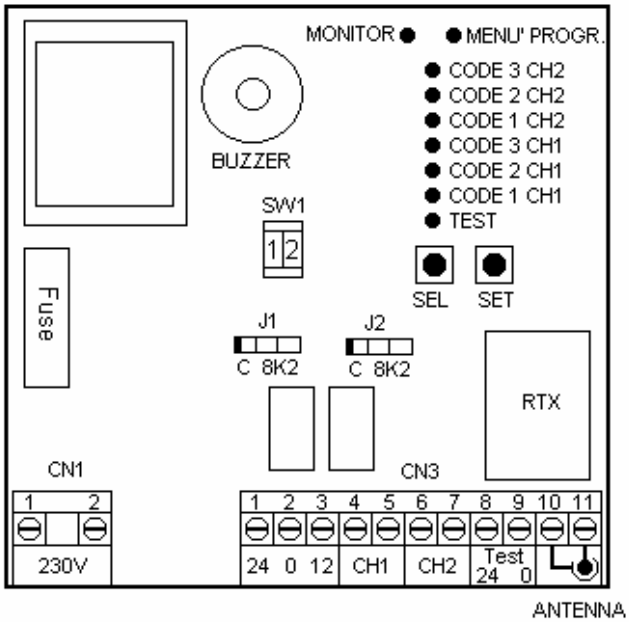
The system allows the selection of four 868 MHz band frequencies.
Set the same frequency on the RTX2251 (Base) and on the memorised RTX 2252 (Sensor) devices.
Use Dip Switch SW1 on both the RTX 2251 and RTX 2252 devices for the selection.



FREQUENCY A **FREQUENCY B** **FREQUENCY C** **FREQUENCY D**

RTX 2251 (BASE)

- Mod. **RTX 2251** : 12-24 VAC-DC
- Mod. **RTX 2251 230V** : 230 VAC



ANTENNA

TECHNICAL DATA

- Power supply:	See model
- Max. consumption:	4.5 W
- Work frequency:	868 MHz FSK Band
- No. 2 control relay for CH1 and CH2:	30VDC 1A
- Memorisable RTX 2252 sensors:	Max 3 for each channel
- Range in free space:	10÷20 m max.
- Response time:	200 ms
- Working temperature:	-10℃ ÷ 55℃
- Dimensions:	110x121x47mm
- Container:	ABS (UL94V-0)
- Protection rating:	IP54

CN1 TERMINAL BOARD CONNECTIONS

1: 230V~ Line input (Phase).
2: 230V~ Line input (Neutral).

CN3 TERMINAL BOARD CONNECTIONS

1: 24V AC-DC Power supply input.
2: 0V Power supply input.
3: 12V AC-DC Power supply input.
4: CH1 Control output.
5: CH1 Control output.
6: CH2 Control output.
7: CH2 Control output.
8: 12-24V AC-DC Test Input.
9: 0V Test Input.
10: Aerial earth input.
11: Aerial hot pole input.

FUNCTIONING DESCRIPTION

The RTX 2251 (Base) device controls one or more RTX 2252 (Sensor) devices through radio-frequency, for connection of sensitive edges.
The RTX 2251 (Base) allows the display of 2 menus:

- MONITOR MENU
- PROGRAMMATION MENU

By means of MONITOR MENU and acoustic signals (Buzzer) the Device highlights the following informations:

TEST ANOMALY SIGNAL:

LED switch-on + Buzzer.
Highlights an anomaly in executing the test by the control unit (see "DEVICE TEST" paragraph).

ALARM SIGNAL:

LED Switch-on + Buzzer.
Informs which of the RTX 2252 memorised devices is in alarm. A short Beep corresponds to every LED of reference switch-on.

---------- MONITOR MENU ----------		
LED Reference	**LED Off**	**LED On**
1) TEST	Test = OK	Test = INC.
2) CODE 1 CH1	No Alarm	CODE 1 CH1 Alarm
3) CODE 2 CH1	No Alarm	CODE 2 CH1 Alarm
4) CODE 3 CH1	No Alarm	CODE 3 CH1 Alarm
5) CODE 1 CH2	No Alarm	CODE 1 CH2 Alarm
6) CODE 2 CH2	No Alarm	CODE 2 CH2 Alarm
7) CODE 3 CH2	No Alarm	CODE 3 CH2 Alarm

DISCHARGED BATTERY SIGNAL:

LED Switch-on (quick Flashes) + Buzzer.
Informs which of the memorised RTX 2252 devices has discharged batteries. Every minute two quick Buzzer Beeps are transmitted and the LED of reference switches-on.

---------- MONITOR MENU ----------		
LED Reference	**LED Off**	**Flashing LED**
1) TEST	NOT USED	NOT USED
2) CODE 1 CH1	Battery OK	Battery LOW
3) CODE 2 CH1	Battery OK	Battery LOW
4) CODE 3 CH1	Battery OK	Battery LOW
5) CODE 1 CH2	Battery OK	Battery LOW
6) CODE 2 CH2	Battery OK	Battery LOW
7) CODE 3 CH2	Battery OK	Battery LOW

As for PROGRAMMATION MENU see paragraph “Programming Keys and Indicator Leds”.

8K2/CONTACT FUNCTIONING MODE SELECTION

The RTX 2251 (Base) device selects the CH1 and CH2 relay control outputs.

Selection is through Jumper 1 – 2:
J1 pos. 1-2 = NC CH1 relay output (default).
J1 pos. 2-3 = 8K2 CH1 relay output.
J2 pos. 1-2 = NC CH2 relay output (default).
J2 pos. 2-3 = 8K2 CH2 relay output.

DEVICE TEST

The RTX 2251 (Base) device has a "Test" input to be used when the control unit it 's coupled with is equipped with Safety Devices test function. Test is performed as follows: the control unit must switch the signal in "Test" input from high logic level (12-24 Vac-dc during normal functioning) to low logic level: the RTX 2251 device must respond varying the state of the two CH1 and CH2 channels outputs to pass the test.

CONTROL OF THE SELECTED FREQUENCY

Before programming the RTX 2252 (Sensors) codes associated to the RTX 2251 (Base) it's necessary to select one of the four frequency channels available (see paragraph "Functioning Frequency selection") and it's advisable to verify that the channel selected is free; to do that proceed ad follow: with SET button go to PROGRAMMATION MENU; the Base makes a scanning of the channel selected and if it's busy the Base will signalize this with an alternately flashing of LED MONITOR and LED MENU PROGR.. In this case choose an other frequency (on Base and on Sensor). If the channel selected is free, makes the programming of the Sensor as indicated in the next paragraph.

PROGRAMMING KEYS AND INDICATOR LEDS

SEL Key: selects the type of function to memorise, the choice is indicated by the flashing of the LED. Repeatedly press the key to position oneself on the desired function. After 15 seconds of activation displayed by the flashing LED, the device returns to original state.

SET Key:
- selects between Monitor Menu and Programming Menu: the Monitor Menu is automatically selected after 1 minute of SEL and SET keys inactivity.
- programs the function chosen with the SEL key.

Indicator LED
LED on: option memorised.
LED off: option not memorised.
Flashing LED: option selected.

---------- PROGRAMMING MENU ----------		
LED Reference	**LED Off**	**LED On**
1) TEST	Test Saf. Dev. = OFF	Test Saf. Dev. = ON
2) CODE 1 CH1	No Pgm. Code	Code 1 on CH1 Pgm.
3) CODE 2 CH1	No Pgm. Code	Code 2 on CH1 Pgm.
4) CODE 3 CH1	No Pgm. Code	Code 3 on CH1 Pgm.
5) CODE 1 CH2	No Pgm. Code	Code 1 on CH2 Pgm.
6) CODE 2 CH2	No Pgm. Code	Code 2 on CH2 Pgm.
7) CODE 3 CH2	No Pgm. Code	Code 3 on CH2 Pgm.

1) **TEST** (RTX 2251 (Base) device functional test).

Functional test of RTX 2251 (Base) device, if combined with motor control unit equipped with Safety Devices test (see "RTX2251-DEVICE TEST" paragraph).
Test enabling on the Device is carried out as follows: press SEL and TEST LED will start to flash. Press SET, the TEST LED remains on and programming is complete. Repeat the procedure to restore previous configuration without active TEST.

2) **CODE 1 CH1** *(Programming of n.1 RTX 2252 Sensor transceiver device coupled with CH1)*

The n.1 RTX 2252 (Sensor) Transceiver Device coupled with CH1 of RTX 2251 (Base) Transceiver Device, is programmed as follows: press SEL and CODE 1 CH 1 LED starts flashing; the Base broadcasts to all Sensors, searching for one to be memorised: press SET key of the Sensor you want to program to send the memorisation confirmation code (TX LED makes 5 quick flashes); CODE 1 CH LED remains on and programming is complete. The Base device exits programming if no confirmation code is received within 15 seconds.

Deletion The memorised code is deleted as follows: press SEL and CODE 1 CH1 LED starts flashing; press SET, CODE 1 CH1 LED switches off and the procedure is complete.

3) **CODE 2 CH1** *(Programming of n.2 RTX 2252 Sensor transceiver device coupled with CH1)*

Proceed as described in point "2) CODE 1 CH1" to program the transmission code of n. 2 RTX 2252 (Sensor) Transceiver Device coupled with CH1 of RTX 2251 (Base) Transceiver Device.

4) **CODE 3 CH1** *(Programming of n.3 RTX 2252 Sensor transceiver device coupled with CH1)*

Proceed as described in point "2) CODE 1 CH1" to program the transmission code of n.3 RTX 2252 (Sensor) Transceiver Device coupled with CH1 of RTX 2251 (Base) Transceiver Device

5) **CODE 1 CH2** (*Programming of n.1 RTX 2252 Sensor transceiver device coupled with CH2)*

Proceed as described in point "2) CODE 1 CH1" to program the transmission code of n.1 RTX 2252 (Sensor) Transceiver Device coupled with CH2 of RTX 2251 (Base) Transceiver Device.

6) **CODE 2 CH2** *(Programming of n.2 RTX 2252 Sensor transceiver device coupled with CH2)*

Proceed as described in point "2) CODE 1 CH1" to program the transmission code of n. 2 RTX 2252 (Sensor) Transceiver Device coupled with CH2 of RTX 2251 (Base) Transceiver Device.

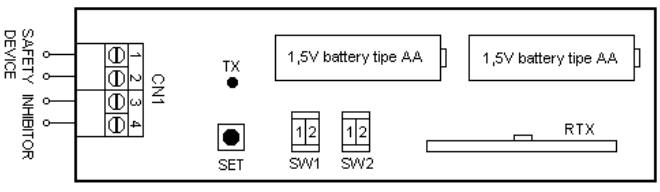
7) **CODE 3 CH2** *(Programming of n.3 RTX 2252 Sensor transceiver device coupled with CH2)*

Proceed as described in point "2) CODE 1 CH1" to program the transmission code of n.3 RTX 2252 (Sensor) Transceiver Device coupled with CH2 of RTX 2251 (Base) Transceiver Device.

RESET

Keep the SEL and SET keys simultaneously pressed for more than 2 seconds so that all indicator LEDs briefly switch on at the same time accompanied by three quick Buzzer Beeps, if the device must be reset to company configuration.

RTX 2252 (SENSOR)



TECHNICAL DATA

- Battery power supply:	2 x 1.5Vdc Alkaline (AA)
- Work frequency:	868 MHz FSK Band
- Range in free space:	10÷ 20 m max.
- Working temperature:	-10÷55℃
- Dimensions:	120x80x50 mm.
- Container:	ABS UL94V-0 (IP56)

CN1 TERMINAL BOARD CONNECTIONS

CN1:

1 : (NC) or 8K2 Safety device input
2 : (NC) or 8K2 Safety device input.
3 : Inhibitor Input (NC).
4 : Inhibitor Input (NC).

FUNCTIONING DESCRIPTION

The RTX 2252 (Sensor) device enables connection of NC (normally closed contact) classic type or 8K2 resistive type sensitive edges, normally found in the gate's mobile part.

Only works coupled with the RTX 2251 control (Base). The device is battery powered to exclude every type of cable connection.

Once memorised (see "RTX 2251 - Programming Keys and Indicator LED" paragraph) it can send the following information to the RTX 2251 (Base) device:

- ***Survival signal:***
used to periodically check the correct radio connection between the devices.
- ***Alarm signal:***
used to inform the Base device that the safety device is activated.
- ***Discharged battery signal:***
used to inform the Base of the battery state.

ATTENTION! If one RTX 2252 (Sensor) is no more used, remove the batteries to avoid the Device goes on transmitting.

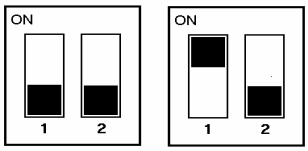
NC OR 8K2 FUNCTIONING MODE SELECTION

RTX 2252 device enables connection of NC (normally closed contact) classic type or 8K2 resistive type sensitive edges. Use n. 1 Dip Switch SW2 to select:

DIP 1 = OFF NC input (default).

DIP 1 = ON 8K2 input .

SW2 **SW2**



NC **8K2**

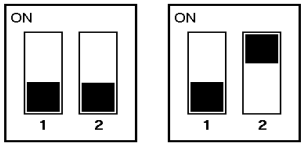
TRANSMISSION MODE SELECTION

The RTX 2252(Sensor) allows to select two different transmission modes, “normal” or “ low power”. The difference between the two modes is the transmission power of the Sensor. In “low power” mode the power is lower: the battery duration increase, but the range is smaller; consider that when you make an installation.

DIP 2 = OFF “normal”(default).

DIP 2 = ON “low power” .

SW2 **SW2**



LP=OFF **LP=ON**

INHIBITOR INPUT FUNCTIONING MODE

RTX 2252 (Sensor) device enables connection of an (NC) contact for the temporary inhibiting of the sensitive edge it is connected to.

ATTENTION! If not used the inhibitor must always be jumped.

DISCHARGED BATTERY SIGNAL

The RTX 2252 (Sensor) device signals the discharged battery state through quick flashing of the TX LED. The same information is also sent to RTX 2251 (Base) device, that signals the event with visual and acoustic warnings.

ATTENTION! We recommend immediately replacing the device batteries if TX LED flashes.

RESET

To reset the factory configuration, press and hold the SET key for more than 2 seconds until the TX LED flashes 3 times.

ATTENTION

-For excellent functioning, annually replace the 1.5V (AA) alkaline batteries.

-To change batteries open by the means of a screwdriver the case of the Sensor.

-Dispose of the used batteries in appropriate containers.

the product:

RTX 2251-RTX 2252 Radio system

is conform with Directives R&TTE 99/5/EC, EMC 2004/108/EC, LVD 2006/95/EC specifications.

CE

Important for the installer

- *The RTX 2251-RTX 2252 radio system is designed to help the installer to automate gates in compliance with Machinery Directive 2006/42/EC.*
- *The installer must check that all requirements in the com plete automation prescribed in EN 12453 and EN 12445 are satisfied.*
- *IMPORTANT: In order to obtain the required safety level, (EN 12978) the device must be used in conjunction with control units equipped with the function to test the security devices and activate the "Test" function on the RTX2251 (Base) device.*
- *The control unit has no sectioning device for the 230 Vac electrical supply, therefore the installer must provide a sectioning device. An omnipolar switch with overvoltage category III . This must be positioned so that is protected against accidental closure as set for in point 5.2.9 of EN 12453.*
- *For a higher safety level we recommend to use control units with the safety devices test function and activate the "Test" function on the RTX 2251 (Base) device.*
- *Carefully choose the place of installation to obtain excellent radio system functioning. Capacity is not only related to the device technical data, but also varies depending on the site's radio-electric conditions.*
- *The RTX 2251 device is equipped with rigid wire section antenna. Connect an RG58 50 OHM coaxial cable tuned antenna if wanting to increase sensitivity. Place the antenna externally in clearly visible points and away from metal structures.*
- *It is not possible to install two RTX 2251 (Base) Transceiver Devices that are not at least 5 m away from each other.*

Warning

All operations that require the opening of the casing (cables connection, programming, etc.) must be carried out by expert personnel during installation. For any further operation which requires the casing to be re-opened (re-programming, repair or installation amendments) contact the after-sales assistance.

IMPORTANT FOR THE USER

- The device must never be used by children or persons with reduced physical-psychological abilities, unless supervised or trained on the functioning and the use modalities.
- Do not allow children to play with the device and keep the radiocontrols away from their reach.
- Ensure there is no-one immediately near-by until the door is not fully open or closed.
- ATTENTION: keep this instruction manual and respect the important safety prescriptions contained herein. The non compliance with the prescriptions may cause damages and serious accidents.
- Frequently examine the plant to detect any signs of damaging. Do not use the device if a repair intervention is necessary.

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Usage restrictions:The RTX 2251 – RTX 2252 radio system may not be used on equipment excluded from being subject to EN12978, such as:
- protective equipment to be installed on doors meant for a use other than those on vehicle or pedestrian access, covered by the regulation and whose main use is to give secure access to industrial, commercial, public or residential locations.
- devices used only for the normal control and stop, including emergency stop, of motorized doors.
- safety equipment or safety devices for use on machines other than doors.

ATTENTION: Any changes to the product or the configuration of the equipment may not be performed without first consulting the manufacturer or its authorized representative.
The safety device installer must supply the final user with the following:
- the safety devices must be made known to all appropriate persons.
- the areas that access the devices must be kept free of obstacles;
- the requirements for cleanliness in order to prevent any dangerous accumulation of material;
- possible details for a restart procedure to be performed after an emergency or accidental stop caused by the control system.

Changes to the design or configuration of the equipment without consulting the manufacturer or its authorized representative could create dangerous situations.