TECNIPLAST

Remote Alarm System
Instructions for Use

Technical Support

For technical support, call +39-0332-809711 or send an E- mail to *service@tecniplast.it* or *tecnicom@tecniplast.it*

I.   PREFACE

Dear Customer,

This manual is aimed at providing the user with all the information and safety standards required for the correct and safe installation, use and maintenance of the equipment you have purchased.

Keep the manual in an easily accessible place, known by the Installer, the operator, the supervisor and the service technician who should carefully read it to have a clear understanding of the installation, use, and maintenance procedures as well as hazardous applications to avoid.

This manual is an integral part of the equipment and should follow it, even in the event of a change of ownership, until final decommissioning.
Should the manual get damaged or lost, a copy can be requested from TECNIPLAST.

In order to receive technical assistance, spare parts or optional extras not required on order, contact TECNIPLAST and give the equipment serial number, version, and year of manufacture (see label on the equipment).

The Operator, the Supervisor and the Service Technician must know all the standards reported in this manual before using the equipment or carrying out maintenance procedures.

II.   COMPANY CONFORMITY TO ENVIRONMENTAL POLICIES

At TECNIPLAST both our production facilities and our end products reflect our commitment towards environmental policies in terms of:

- compliance with the principles and contents of current laws and regulations concerning the environment;

- reduction of the environmental impact deriving from our activities, maintaining the right balance between environmental, social and economic responsibilities;

- on-going quest for innovative applications in order to reduce the environmental impact deriving from waste materials, energy consumption and to improve the use of natural resources and raw materials.

- preventive evaluation of the environmental impact of new plants and processes and improvement of existing ones using all possible and economically sustainable solutions to increase our environmental performances.

- incentivation and co-responsibility of employees towards this policy by means of adequate training

- use of effective tools to communicate principles and goals of such an environmental policy to our dealers during meetings and training courses;

- defining during the design and development of new products the correct use and dismantling instructions to minimize environmental impact.

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1   INTRODUCTION

1.1   MANUFACTURER'S DETAILS

TECNIPLAST S.p.A.
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TECNIPLAST S.p.A. reserves the right to modify the specifications to improve the product at any time.

1.2   TECHNICAL ASSISTANCE

Requests for Technical Assistance should be addressed to TECNIPLAST or the authorized Dealer.

1.3   UNAUTHORISED MODIFICATIONS

No modifications to the equipment or its components are to be made without written permission from TECNIPLAST.
Unauthorised modifications could cause changes to the original functioning and consequently:
1.   All forms of warranty regarding the entire equipment will be null and void.
2.   If the equipment is used in a manner that is not specified by the manufacturer, the protection provided by the equipment may be impaired.

1.4   TECHNICAL SPECIFICATIONS

1.4.1   TX-WW MODULE

Value	Min	Typ	Max
Power supply	21,6V DC	24V DC	26,4V DC
Power consumption		20mA	
Operating frequency EMEA+AU+NZ module		434,4 MHz	
Operating frequency for China		431 MHz	
Operating frequency for Japan		429,825 MHz	
Installation frequency		433,2 MHz	
Radiated power for EMEA+AU+NZ+China module	+6dBm	+8dBm	+10dBm
Radiated power for Japan	+3dBm	+6dBm	+7dBm
Radio sensitivity		-113dBm	
Dimensions		5,2x11,5 cm	
Operating temperature	0 °C		40°C
Protection rating		IP20	

1.4.2 TX-AMERICA

Value	Min	Typ	Max
Power supply	21,6V DC	24V DC	26,4V DC
Power consumption		20mA	
Operating frequency for America		913 MHz	
Installation frequency		910 MHz	
Radiated power for America	-6dBm	-3dBm	-2dBm
Radio sensitivity		-113dBm	
Dimensions		5,2x11,5 cm	
Operating temperature	0 °C		40 °C
Protection rating		IP20	

1.4.3 CX/RX-WW

Value	Min	Typ	Max
Power supply	110V AC		240V AC
Frequency	50Hz		60Hz
Power supply model (UL:NO)		Morsun LH10 – 10C0512-02 (10W)	
Power consumption		0,1A	
Relay dry contacts		30Vcc 120Vac 2A	
Operating frequency for EMEA+AU+NZ module		434,4 MHz	
Operating frequency for China module		431 MHz	
Operating frequency for Japan module		429,825 MHz	
Installation frequency		433,2 MHz	
Radiated power for EMEA+AU+NZ+Cina	+6dBm	+8dBm	+10dBm
Radiated power for Japan	+3dBm	+6dBm	+7dBm
Radio sensivity		-113dBm	
Dimensions		23x21,5 cm	
Operating temperature	0 °C		40 °C
Protection rating		IP50	

1.4.4 CX/RX-AMERICA

Value	Min	Typ	Max
Power supply	110V AC		240V AC
Frequency	50Hz		60Hz
Power supply model (UL:NO)		Morsun LH10 – 10C0512-02 (10W)	
Power consumption		0,1A	
Relay dry contacts		30Vcc 120Vac 2A	
Operating frequency for America module		913 MHz	
Installation frequency		910 MHz	
Radiated power for America	-6dBm	-3dBm	-2dBm
Radio sensivity		-113dBm	
Dimensions		23x21,5 cm	
Operating temperature	0 °C		40 °C
Protection rating		IP50	

IMPORTANT: CHANGES AND MODIFICATIONS NOT APPROVED BY TECNIPLAST COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

1.5 OPERATING ENVIRONMENTAL CONDITIONS

The equipment has been designed to perform under the following conditions:
- Indoor use
- Altitude up to 2000m
- Temperatures 5°C to 40°C
- Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.
- Mains supply voltage fluctuations up to ± 10% of the nominal voltage
- Transient overvoltages typically present on the mains supply (OVERVOLTAGE CATEGORY II as per IEC 60364-4-443)
- Pollution degree 2

1.6 COMPLIANCE TO EU DIRECTIVES

DIRECTIVE 1999/05/EC R&TTE
STANDARD EN/60950 - 1:2006 + A11:2009
STANDARD EN/300220 - 2 V2.3.1
STANDARD EN/301489 - 3 V1.4.1

TECNIPLAST S.p.A. reserves the right to modify the specifications to improve the product at any time.

1.7 DECLARATION OF CONFORMITY

The equipment technical documentation includes the DECLARATION OF CONFORMITY in compliance with EU Equipmentry Directive 1999/05/EC R&TTE.

1.8 RESPONSIBILITY OF THE CUSTOMER

Unless otherwise specified in the contract conditions, the Client shall supply:
- Electrical supply complete with EARTH in the vicinity of the equipment.

1.9 SPARE PARTS AND TECHNICAL ASSISTANCE

In order to conform to the terms and duration of the Warranty and to ensure perfect inter-changeability, only original TECNIPLAST spare parts are to be used.
Requests for Technical Assistance should be addressed to TECNIPLAST or the authorized Dealer.

1.10 UNAUTHORISED MODIFICATIONS

No modifications to the equipment or its components are to be made without written permission from TECNIPLAST. Unauthorised modifications could cause changes to the original functioning and consequently:

1. All forms of warranty regarding the entire equipment will be null and void.
2. If the equipment is used in a manner that is not specified by the manufacturer, the protection provided by the equipment may be impaired

1.11 WASTE ELECTRIC AND ELECTRONIC EQUIPMENT

Tecniplast is committed to meeting the requirements of the EU directive 2002/96/EC amended by 2003/108/EC on Waste Electric and Electronic Equipment (WEEE) and, therefore, promotes "the reuse, recycling and other forms of recovery of such wastes (WEEE) so as to reduce the disposal of waste. It also seeks to improve the environmental performance of all operators involved in the life cycle of electrical and electronic equipment, e.g. producers, distributors and consumers..."

Tecniplast has worked closely with its suppliers to eliminate hazardous materials from its products. There are instances, however, where it has not yet been possible to completely eliminate all such materials. Consequently, some products are labelled with a crossed-out "wheelie" symbol, indicating that special care must be applied to their disposal and / or recycling.

DO NOT dispose of WASTE ELECTRIC AND ELECTRONIC EQUIPMENT as unsorted municipal waste.

Waste electric and electronic equipment is to be collected and disposed of separately in specialised treatment facilities in compliance with EU legislation and any laws and regulations in force in the country where the machinery is installed.

1.12 DISPOSAL OF OTHER MATERIALS

DO NOT dispose of plastic material as unsorted municipal waste. Any plastic material is to be collected and disposed of separately in compliance to any norm and regulation in force in the country where the machinery is installed.

DO NOT dispose of metallic material as unsorted municipal waste. Any metallic material is to be collected and disposed of separately in compliance to any norm and regulation in force in the country where the machinery is installed.

Contact Tecniplast to have detailed specifications and procedures on how to disassemble the EQUIPMENT.

2 SAFETY PRECAUTIONS

2.1 SAFETY NOTES

The following words and symbols are used in order to explain safety procedures.

- This symbol is used in safety messages and on labels when there is an imminently hazardous situation which, if not avoided, may result in death, serious injury or serious damage to the equipment.
These safety messages also describe how the hazard can be avoided.

- This symbol is used to explain any procedures which, if performed incorrectly, could cause damage or potential problems to the equipment.

- This symbol is used to indicate the need to wear personal protective equipment to carry out a specific procedure.

- This symbol is used to indicate that a certain procedure is to be carried out by trained service personnel only.

- This symbol is used to indicate the need to use specific tools and equipment.

- This symbol is used in safety messages and on labels whenever there is the need to refer to product instructions for use.

NOTE - Annotations are made for information which requires specific consideration about any procedures, but for which there is no risk of damaging the equipment.
Pay special attention to all Safety Warnings given throughout the instructions
For any doubts regarding safety, contact TECNIPLAST.

2.2 GENERAL PRECAUTIONS

The equipment is to be used by authorised and qualified personnel only.
Follow all the precautions, procedures and safety measures prescribed by the standards in force to safeguard personal health and safety.
Before using the equipment the user must have a clear understanding of the positioning and functions of the commands.

▪ **Do not carry out modifications that might alter the performance or the working conditions of the equipment; TECNIPLAST disclaims all responsibility for personal injury or material damage caused by mishandling of the equipment.**
▪ **If the equipment is used in a manner that is not specified by the manufacturer, the protection provided by the equipment may be impaired.**
▪ **Do not use the equipment in an explosive environment.**
▪ **Read the user manual before use.**
▪ **Ensure the equipment is stable and balanced before starting operating.**
▪ **DO NOT leave the equipment unattended while working.**

3 APPLICATIONS AND WORKING PRINCIPLE

Tecniplast Remote Alarm System (RAS) has been developed to simplify the work of facility managers and operators by providing them with an easy-to-use monitoring of Tecniplast equipment and machines.
Each piece of equipment features a transmitter (the TX) which transmits any alarm condition to a receiver (the RX). Each receiver (ideally located inside one of the facility rooms), is designed to receive signals from 10 transmitters and to send at the same time an alarm message to a centralised receiver (the CX) which can monitor a number of RX simultaneously (maximum 10).

Any time an alarm is transmitted to the RX (and CX), the system sends a voice message to the phone numbers recorded in the RX setting pages by means of a PSTN dialer *.
Voice messages may be customised by the user following the dialer instructions for use directly on the phone.
Up to 100 Alarm messages are logged by the system in FIFO logic.
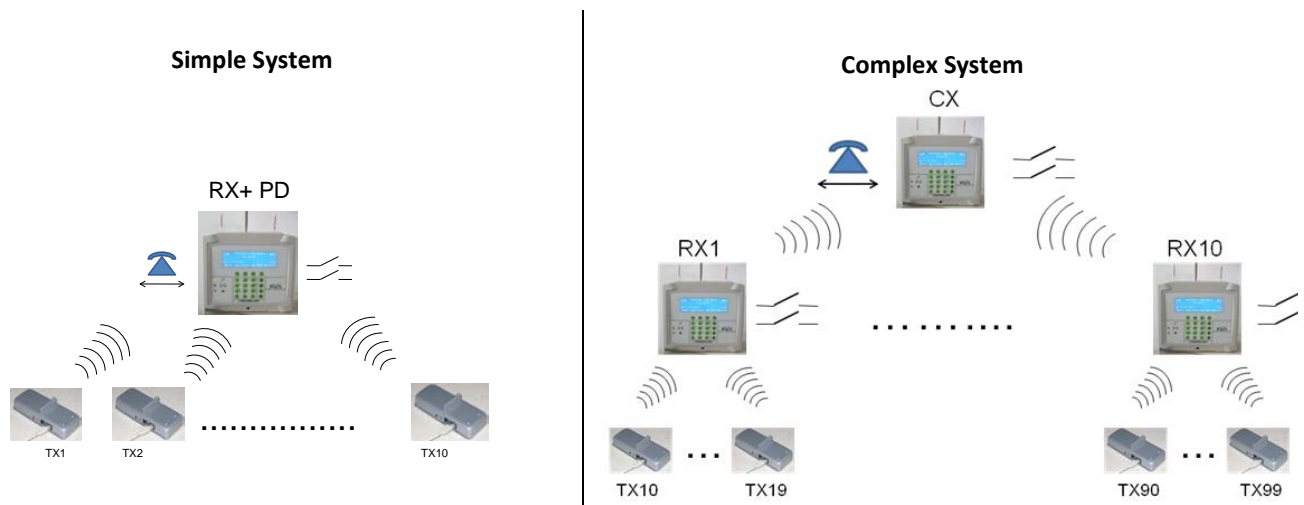
3.1 HAZARDOUS AND INAPPROPRIATE APPLICATIONS

Tecniplast disclaims all responsibility for any uses other than those stated in this User Manual unless previously authorised.

Here is a list of some hazardous applications that should be avoided:

- Operation by inexperienced or untrained personnel.
- Housing in an environment not compliant to the "Environmental Requirements" described in TABLE 1 - TECHNICAL SPECIFICATIONS
- Operation of the equipment with highly flammable materials.
- Operation of the equipment in an explosive environment.

TECNIPLAST disclaims all responsibilities deriving from improper use and incorrect maintenance
If the equipment is used in a manner that is not specified by the manufacturer, the protection provided by the equipment may be impaired
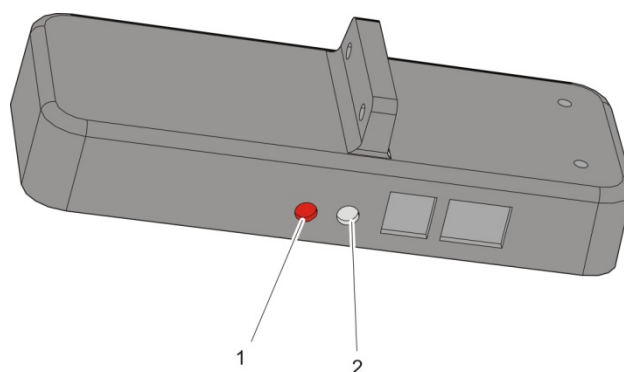
* The PSTN dialer is installed in the WW version only. All the related function will not be available on the AMERICA version unit.

3.2 MAIN FEATURES

3.2.1 TX TRANSMITTER

1. LED
2. TX Connection Key

TX LED STATUS (on-line, off-line)

TX STATUS	LED
Not linked	blink
Linked , on-line	Off (On during transmission every 30 – 45 seconds)
Linked , off-line	On

3.2.2 RX AND CX

1. RAS system control panel
2. Screen
3. Antenna
4. Red LED
5. Green LED
6. Yellow LED
7. Alpha-numerical keypad
8. F1, F4 control keys
9. Scroll arrows.

4 HANDLING AND TRANSPORTATION

4.1 DISPOSAL OF THE PACKAGING

Dispose of the packaging in compliance with laws and regulations in force in the country where the equipment is installed.

Collect the packaging and disposed of it separately in compliance with any law and regulation in force in the country where the equipment is installed.

DO NOT dispose of plastic film wrapping as unsorted municipal waste.
Any plastic material is to be collected and disposed of separately in compliance to laws and regulations in force in the country where the equipment is installed.

4.2 HANDLING

The handling of the equipment and of its separate accessories must be carried out by trained personnel.

It is advisable to transport the RAS directly to the site where it is going to be installed before removing the packaging.

4.3 INCOMING INSPECTION

Upon delivery, unpack the equipment and inspect it for damage. If the equipment has been mishandled, dented or damaged, alert the carrier and Technical Assistance immediately.

4.4 STORAGE

The RAS is designed for indoor use only.
Always keep the equipment in a dry place, whether packaged or not.

If the equipment is not deemed to be used, cover it with a piece of cloth or plastic to protect it from dust and store it in an environment compliant with the environment requirements specified in paragraph 1.5 "OPERATING ENVIRONMENTAL CONDITIONS" on page 6.

If the equipment has been moved, packed and stored, after a period of use (e.g. if there is a change of laboratory or plant), contact Tecniplast technical assistance or the distributor in order to have accurate and precise instructions on how to put it back into service

5 RAS SYSTEM INSTALLATION GUIDELINES

5.1 RX AND CX ELECTRICAL CONNECTIONS

ⓘ The RAS is to be connected to the power supply protected by suitable protections in compliance with laws and regulations in force in the country where the machine is installed.
The RAS is to be installed in compliance with IEC/EN 60950 Standard, and controlled by an external cut off switch.

Before installing the system, connect the Rx and CX to the power supply cable, phone cable and outputs as shown hereunder:

- Insert the cables into the slot on the RX and CX housing.

- Carry on with the following electrical connections:

M5	L PE N	POWER SUPPLY CABLE CONNECTION POINT
F1	FUSE	5X20mm – 1,6 A (TIME LAG) LOW BREAKING CAPACITY 250 Vac. – T1.6AL 250V
J4 J3	LINE PHONE	TELEPHONE CABLE Rj11 – 4 poles
M3 CONNECTOR ⓘ CONNECT ONLY SELV (SAFETY EXTRA LOW VOLTAGE) OPERATING CIRCUITS	1 2	DIRECT OUTPUT 1
	3 4	DIRECT OUTPUT 2
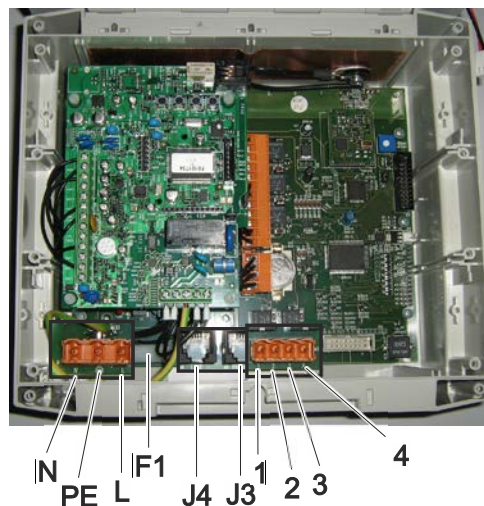
- Insert the connectors into their housing (M5 - power supply, M3 – alarm contact, if required by installation specs) and, if necessary, fix them into position.

ℹ **Connect the power supply cable and signal cables so as to guarantee adequate clearance between mains and SELV circuits so that they do not get in contact.**
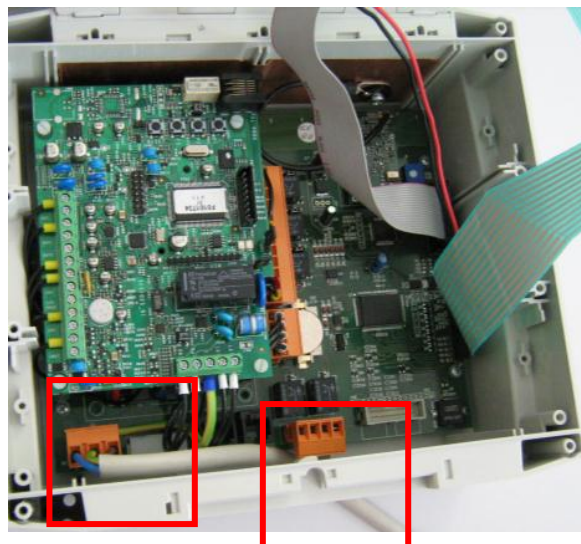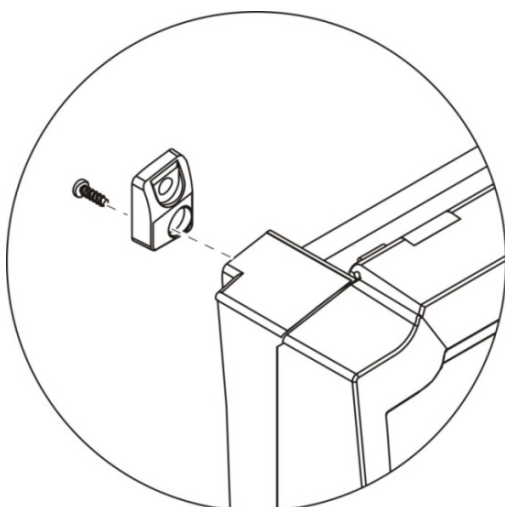
- Screw the support plates to the RX – CX housing
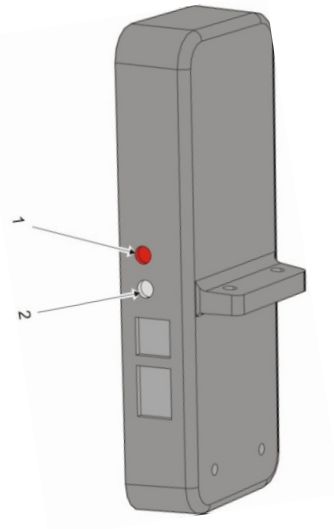
- Mark four holes on the wall at the most convenient height
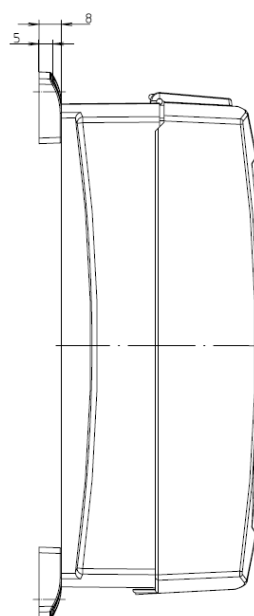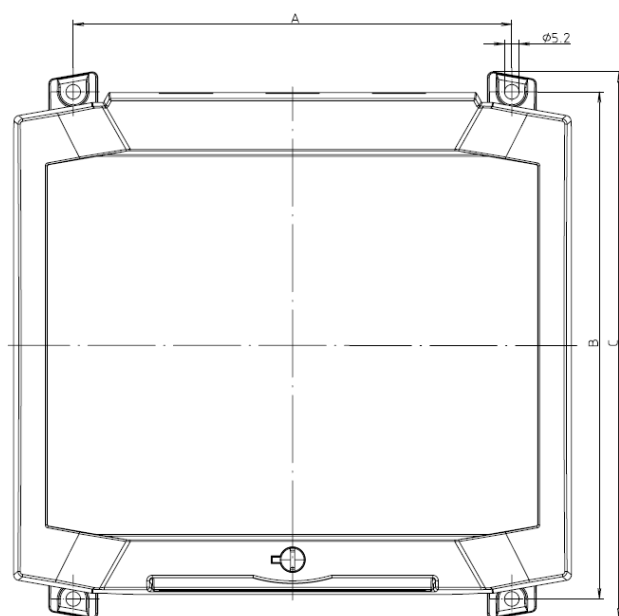
- Drill the wall and insert the screw anchors.
- Screw the RX – CX housing to the wall.

5.3 RX, CX AND TX CONNECTION

1. Turn on the CX (if present)	
2. Set an ID for each CX ![i] If there are many CX installed in the same site, each CX must be given a different ID.	➔SETTINGS➔UNIT➔RF➔ID CX.
3. Set an ID for each RX	➔SETTINGS➔UNIT➔RF➔ID RX
4. Set the Country where the system is installed ![i] Ensure the selected Country Setting is the same on both the CX and RX before connecting them. Such setting is enabled only during the first start-up or after resetting the sub-network or before connecting the RX.	➔SETTINGS➔UNIT➔RF➔COUNTRY
5. Connect the RX to the CX (if present)	• RX: SETTINGS➔UNIT➔CONJUNCTION • CX: MENU➔UNIT➔RECORD
6. The RX screen displays the detected CX.	Push ↵ to connect the RX to the CX
7. Enter the RX Name on CX	
8. Connect the TX to RX	• Check the TX is connected. Record the TX on the RX • RX: MENU➔UNIT➔RECORD➔RECORD THE UNIT • Press the connection key on the TX (picture below, n. 2) (led 1 off means connected) • Enter the TX name on RX.

9. (i) Switch off a Unit already registered into the system without generating any Alarm (e.g. for disinfection activity on the Unit)	• Before switching off the Unit, press the connection Key for 2 sec and the LED will be ON. • On the RX the Unit will be considered OFFLINE and any alarm triggered by the AHU will not be sent to the RX. • Press the connection Key again for 2 sec and the Unit will be ON-LINE again.
10. Reset the TX (If any problem arises)	• Turn off the AHU. • Keep pressed the connection key (2) and turn on the AHU again. • Keep pressed for at least 10 seconds. • System should be set again from the beginning.

Follow the same procedure to connect all the RX, CX and TX .

6 RAS SYSTEM RECEIVER (RX) SOFTWARE USER GUIDE

6.1 MAIN MENU

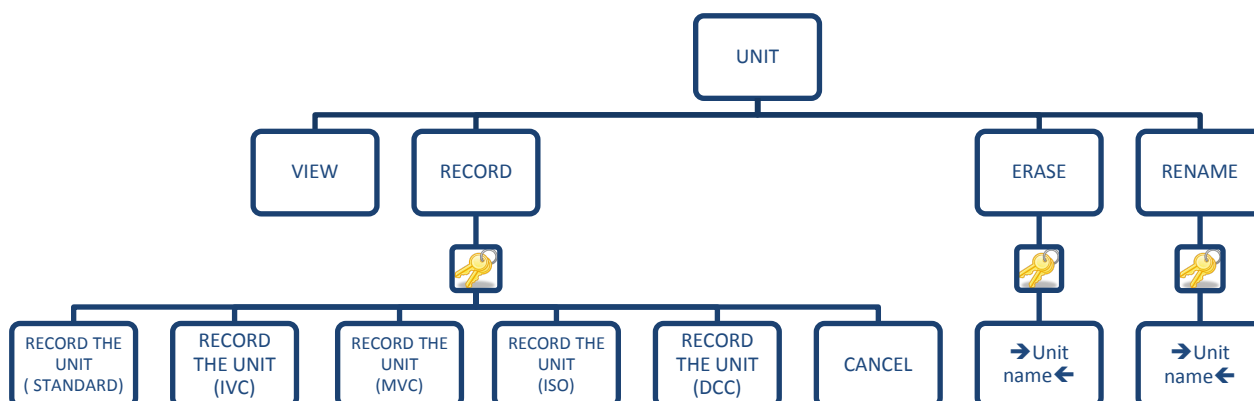To open the main menu, press key F1.

```
                    ┌──────────────┐
                    │     MENU     │
                    └──────┬───────┘
          ┌────────────────┼────────────────┐
   ┌──────┴──────┐  ┌──────┴──────┐  ┌───────┴────────┐
   │    UNIT     │  │   ALARMS    │  │  PSTN DIALER   │
   └─────────────┘  └─────────────┘  └────────────────┘
```

ⓘ ACCESS TO SOME FUNCTIONS IS ALLOWED TO SUPERVISORS ONLY.

|	
UNIT	This function allows the user to view, record, delete and rename the units connected to the system. Select UNITS from the MENU list using the UP/DOWN arrows, then push ↵ to enter the sub-menu.
ALARMS	This function allows to view the alarm log. Select ALARMS from the MENU list using the UP/DOWN arrows, then push ↵ to enter the sub-menu.
PSTN DIALER*	This function allows the user to display the phone numbers to which the system has to send the notifications according to the different alarm priority. Select PSTN DIALER from the MENU list using the UP/DOWN arrows, then push ↵ to enter the sub-menu.

VIEW		This function allows to check the connected TX state. To check the connected transmitters (TX) connection status push
RECORD	Record the unit (standard)	After confirming the password push . The system will ask to press the pushbutton on the unit transmitter (Tx) to record the TX to the RAS system. In this configuration it is not possible to send any alarm.
	Record the unit (IVC)	After confirming the password push . The system will ask to press the pushbutton on the IVC unit transmitter (Tx) to record the TX to the RAS system.
	Record the unit (MVC)	After confirming the password push . The system will ask to press the pushbutton on the Ventilated Cabinet unit transmitter (Tx) to record the TX to the RAS system.
	Record the unit (ISO)	After confirming the password push . The system will ask to press the pushbutton on the ISOCAGE unit transmitter (Tx) to record the TX to the RAS system.
	Record the unit (DCC)	After confirming the password push . The system will ask to press the pushbutton on the DCC unit transmitter (Tx) to record the TX to the RAS system.
CANCEL	Returns to the Menu	
ERASE	This function allows to delete the TX from the RX. After confirming the password push and delete the TX which you do not want to be recorded any longer.	
RENAME	This function allows to rename the TX ID. After confirming the password push and rename the TX	

6.3 ALARM FUNCTIONS

This sub-menu allows to view all the alarms raised by the system.
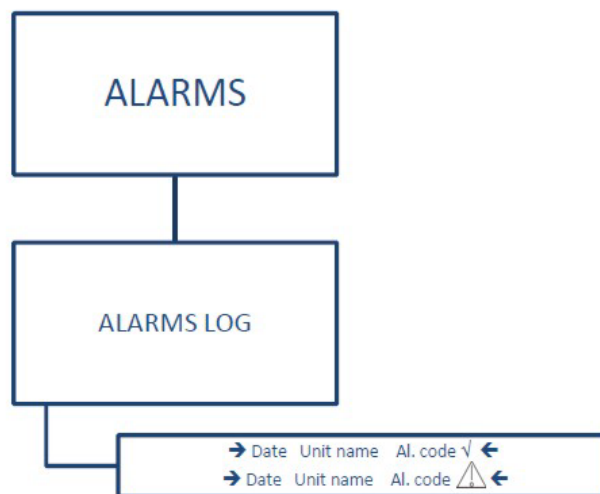
ALARMS

After selecting ALARMS it is possible to see the alarm log screen and check the reported alarm status.

The alarm log displays the date and time when the alarm was triggered together with the TX unit name and alarm code.

• Icon **√** next to the alarm message, indicates that the alarm was solved.

• Icon ⚠ indicates that the alarm is active.
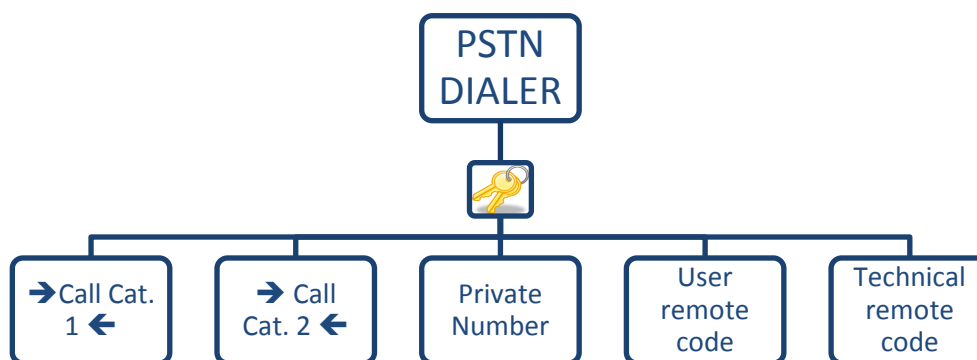
The RAS records up to 100 alarms in FIFO Logic.

6.4 PSTN DIALER FUNCTIONS[1]

This sub-menu displays the set phone numbers to which the RAS system sends a warning call whenever one of the TX units is triggering an alarm, as well as the user and technical remote codes and RX private phone line number.

The phone numbers must be set on the phone dialler (see the phone dialer IM). This sub-menu is only a visualization that act as a reminder for these numbers
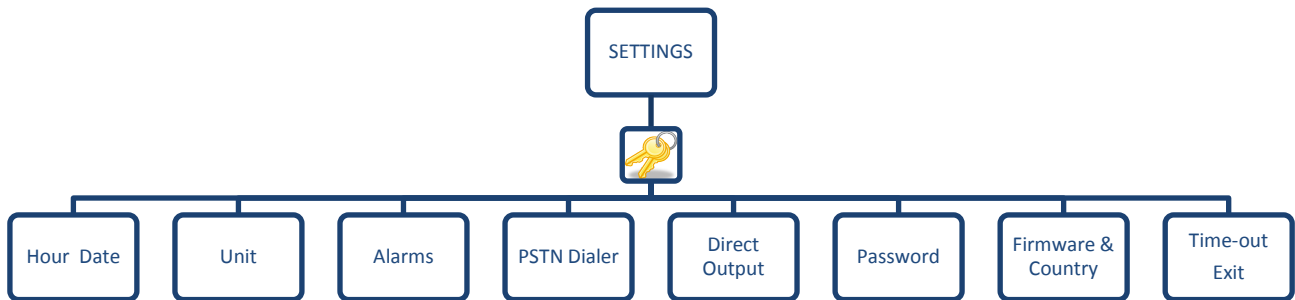
```
                    PSTN
                    DIALER
                      🔑
    ┌──────────┬──────────┼──────────┬──────────┐
 ➜Call Cat.   ➜ Call    Private    User        Technical
   1 ←         Cat. 2 ←  Number     remote      remote
                                    code        code
```

CALL CAT. 1	After confirming the password it is possible to see 5 different phone numbers.
CALL CAT. 2	After confirming the password it is possible to see 4 different phone numbers
PRIVATE NUMBER	Through this function it is possible to see a private number.
USER REMOTE CODE	Through this function it is possible to see the user remote code with 6 digits.
TECHNICAL REMOTE CODE	Through this function it is possible to see the technical remote code with 6 digits.

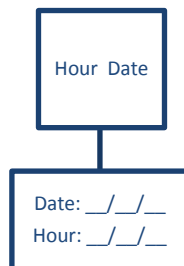[1] This menu is enabled only if the set model with PSTN dialer

6.5   SETTINGS FUNCTIONS

```
                    ┌─────────────┐
                    │  SETTINGS   │
                    └──────┬──────┘
                          🔑
  ┌────────┬────────┬──────┼──────┬────────┬────────┬────────┐
┌──────┐┌──────┐┌──────┐┌──────┐┌──────┐┌──────┐┌──────┐┌──────┐
│Hour  ││ Unit ││Alarms││ PSTN ││Direct││Pass- ││Firm- ││Time- │
│Date  ││      ││      ││Dialer││Output││word  ││ware &││out   │
│      ││      ││      ││      ││      ││      ││Country││Exit │
└──────┘└──────┘└──────┘└──────┘└──────┘└──────┘└──────┘└──────┘
```

To access the settings functions, push F2 on the numerical key pad

After confirming the password it is possible to access different functions such as hour/date, units, alarms, PSTN dialer, direct output, password and firmware & country.

6.5.1   HOURS AND DATE SETTING

```
        ┌─────────────┐
        │             │
        │  Hour  Date │
        │             │
        └──────┬──────┘
        ┌──────┴──────┐
        │ Date: __/__/__│
        │ Hour: __/__/__│
        └─────────────┘
```
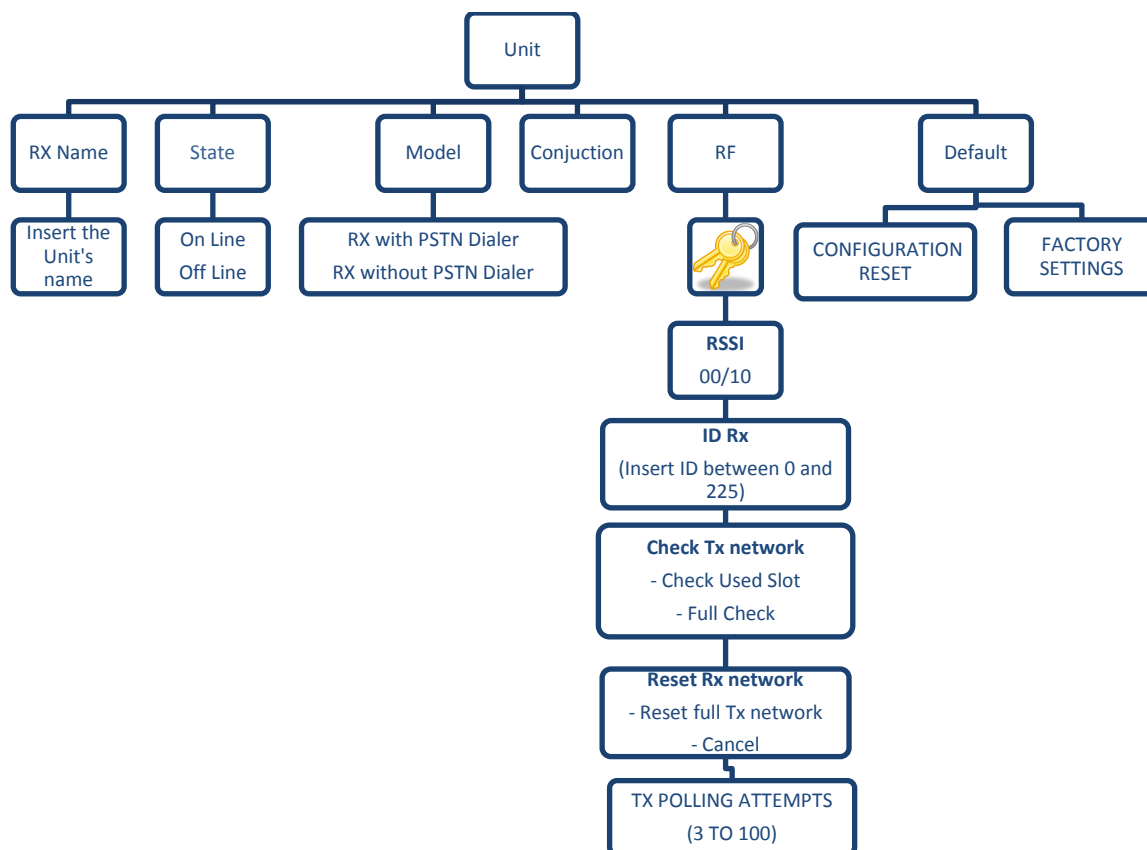
HOUR / DATE

After confirming the password and selecting hour/date it is possible to record the current time

and date using the numerical keypad. To confirm the setting push ↵
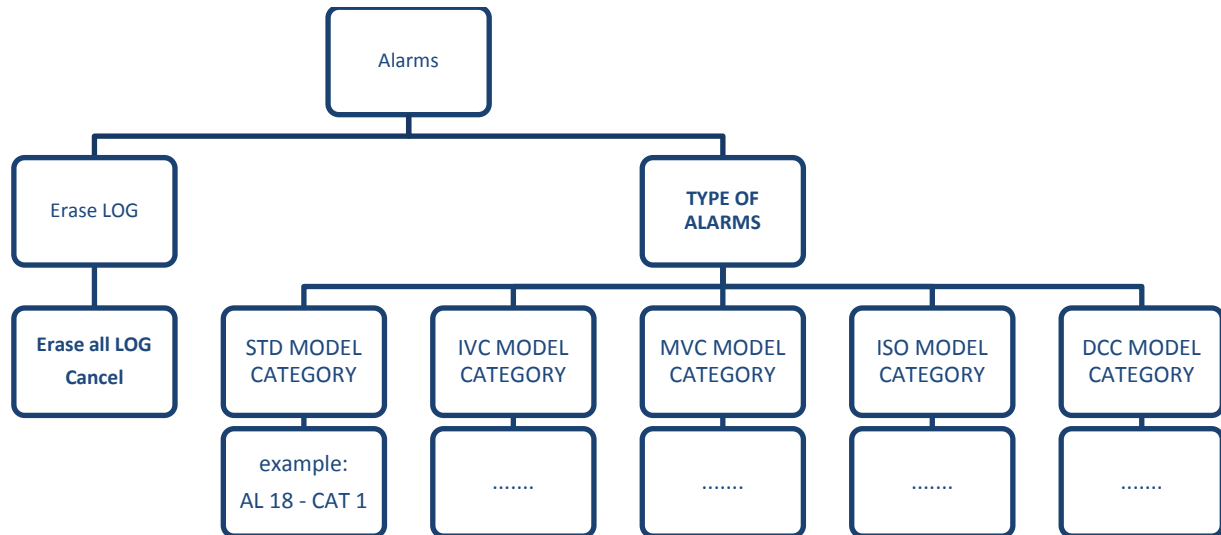
RX Name	Through this function it is possible to set the Unit name (ex. LAB 01). Press ⏎ to confirm.
State	This function allows to set 2 different states: On Line and Off Line. Whenever one unit is online, all information on alarms are transmitted from the TX on the unit to the central receiver RX and alarms are logged by the system. If the unit is offline, the system "sees" the unit but does not record any messages. Press ⏎ to confirm.
Model	Through this function it is possible to choose two different models: RX with PSTN Dialer and Rx without PSTN Dialer. To select either models, press ⏎
Conjuction	Push ⏎ whenever a record request has been sent by centralized receiver CX. ✦ Refer to paragraph **5.3 "RX, CX and TX connection"**.
RF	RSSI: after confirming the password, press ⏎ to see the received signal level (minimum 1 maximum 10).
	ID Rx: after confirming the password, it is possible to insert the RX ID number between 0 and 225 using the numerical keypad. Press ⏎ to confirm
	Check Tx network: after confirming the password, it is possible to check the Tx network in 2 different ways: 1. Check Used Slot: only the Tx recorded will be checked. 2. Full Check: all the Tx recognized will be checked. Press ⏎ to confirm.
	Reset Rx network: after confirming the password, it is possible to reset the network: 1. Reset full TX network. 2. Cancel.

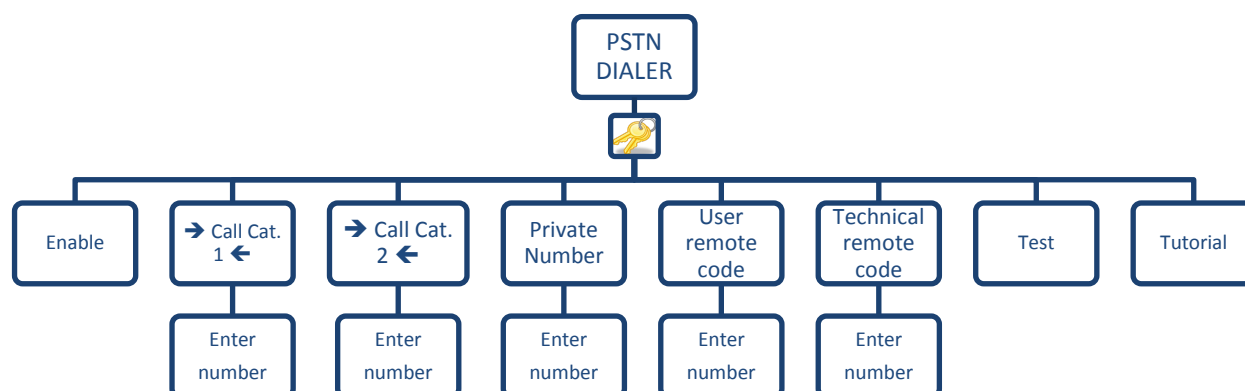|	
RF	To select either function press **TX polling attempts 3 to 100:** after confirming the password it is possible to set the number of polling attempts after which the system automatically triggers the "TX Missing" Alarm.
Default	This function allows to go back to default CONFIGURATION or FACTORY SETTINGS

6.6.1   ALARM SETTING PAGE

Erase LOG	Through this function it is possible to erase all logged alarms or go back to the menu. Press to confirm either function.
Type of Alarms	Through this function it is possible to set the priority for each alarm triggered by the connected unit. 2 different priority levels may be set: CAT 1, high priority, CAT 2, low priority. To save the right configuration press to cancel press **F1**

6.6.2 PSTN DIALER SETTINGS[2]

```
                          ┌──────────┐
                          │  PSTN    │
                          │  DIALER  │
                          └────┬─────┘
                               🔑
   ┌──────────┬──────────┬─────┴────┬──────────┬──────────┬──────────┐
┌──────┐ ┌────────┐ ┌────────┐ ┌────────┐ ┌────────┐ ┌────────┐ ┌──────┐ ┌────────┐
│Enable│ │➔ Call  │ │➔ Call  │ │Private │ │  User  │ │Technical││ Test │ │Tutorial│
│      │ │ Cat. 1←│ │ Cat. 2←│ │Number  │ │ remote │ │ remote  ││      │ │        │
│      │ │        │ │        │ │        │ │ code   │ │ code    ││      │ │        │
└──────┘ └───┬────┘ └───┬────┘ └───┬────┘ └───┬────┘ └───┬────┘ └──────┘ └────────┘
         ┌───┴───┐ ┌───┴───┐ ┌───┴───┐ ┌───┴───┐ ┌───┴───┐
         │ Enter │ │ Enter │ │ Enter │ │ Enter │ │ Enter │
         │number │ │number │ │number │ │number │ │number │
         └───────┘ └───────┘ └───────┘ └───────┘ └───────┘
```

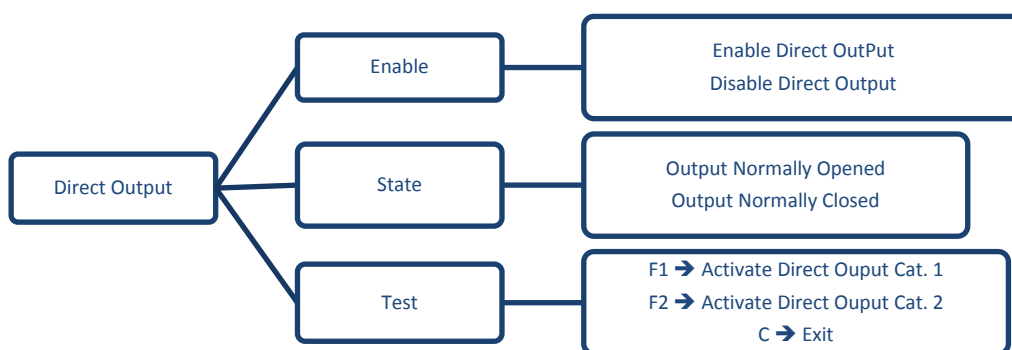|	
Enable	Through this function it is possible to enable/disable the PSTN dialer. Choose between Yes or No and press ↵ ⓘ **ENABLE THE DIALER AFTER CARRYING OUT THE SYSTEM SETTINGS IN ORDER TO AVOID TRIGGERING ALARMS**
Call Cat. 1	Through this function it is possible to save 5 different phone numbers (maximum 26 digits) as a visual reminder of the numbers which the system will contact any time there is a HIGH PRIORITY alarm (the system will call the numbers previously stored in the dialer). ✦ Please refer to the dialer operating manual. Enter the numbers using the numerical keyboard and press ↵ To delete the number press C
Call Cat.2	Through this function it is possible to save 4 different phone numbers (maximum 26 digits) as a visual reminder of the numbers which the system will contact any time there is a LOW PRIORITY alarm (the system will call the numbers previously stored in the dialer). ✦ Please refer to the dialer operating manual. Enter the numbers using the numerical keyboard and press ↵ To delete the number press C
Private Number	This page is used to record the RX line phone number (the system will call the numbers previously stored in the dialer). ✦ Please refer to the dialer operating manual. Enter the number using the numerical keypad and press ↵ To delete the number, press C

---

[2] This menu is enabled only if the set model with PSTN dialer

User Remote Code	Through this page it is possible to record (with 6 digits) and view the User remote code which is needed to set up some functions in the dialer. ✦ Please refer to the dialer operating manual. Enter the code using the numerical keypad and press ↵ To confirm the code, press ↵ , press **C** to delete it.
Technical Remote Code	Through this page it is possible to record (with 6 digits) and view the Technical remote code which is needed to set up some functions in the dialer. ✦ Please refer to the dialer operating manual. Enter the code using the numerical keypad and press ↵ To confirm the code, press ↵ , press **C** to delete it.
Test	Through this function it is possible to test the automatic dialer phone calls. **F1** ➔ Run Cat. 1 (HIGH PRIORITY) call. **F2** ➔ Run Cat. 2 (LOW PRIORITY) call **C** ➔ Exit
Tutorial	PSTN DIALER INSTRUCTIONS FOR USE

6.6.3 DIRECT OUTPUT

```
                                    ┌─────────────────────────────┐
                     ┌──────────┐   │   Enable Direct OutPut       │
                 ┌───│  Enable  │───│   Disable Direct Output      │
                 │   └──────────┘   └─────────────────────────────┘
                 │
┌──────────────┐ │   ┌──────────┐   ┌─────────────────────────────┐
│ Direct Output│─┼───│  State   │───│   Output Normally Opened     │
└──────────────┘ │   └──────────┘   │   Output Normally Closed     │
                 │                  └─────────────────────────────┘
                 │
                 │   ┌──────────┐   ┌─────────────────────────────┐
                 └───│   Test   │───│ F1 ➔ Activate Direct Ouput Cat. 1 │
                     └──────────┘   │ F2 ➔ Activate Direct Ouput Cat. 2 │
                                    │          C ➔ Exit           │
                                    └─────────────────────────────┘
```

Enable	Through this function it is possible to ENABLE/DISABLE the direct output Select the desired option and press ⏎
State	Through this function it is possible to set the output state: **OUTPUT NORMALLY OPEN** and **OUTPUT NORMALLY CLOSED.** Select the desired option and press ⏎
Test	Through this function it is possible to test the direct output: **F1** ➔ Activate Direct Output Cat. 1 **F2** ➔ Activate Direct Output Cat. 2 **C** ➔ Exit

```
┌─────────────────────────────┐
│          Password           │
└─────────────────────────────┘
              │
    ┌───────────────────┐
    │ Insert new password│
    │      ▸      ◂      │
    └───────────────────┘
```
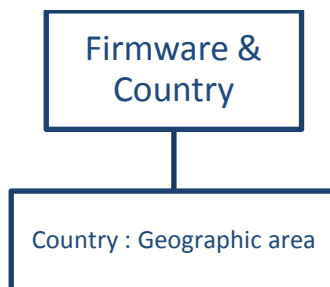
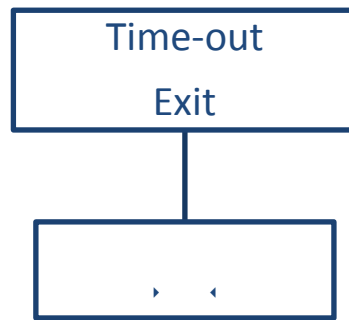| Insert new password | Through this function it is possible change password.
Enter the new password using the numerical field. Confirm and enter the password again.

Press ⏎ to confirm, press Ⓒ to delete. |

6.7   FIRMWARE

```
┌─────────────────────────────┐
│        Firmware &           │
│         Country             │
└─────────────────────────────┘
              │
    ┌───────────────────────┐
    │ Country : Geographic area│
    └───────────────────────┘
```

| Country: Geographic area | Through this function it is possible to see:
− The firmware version loaded in the RX unit.
− The geographic area setting RX network. |

6.8   TIME-OUT EXIT

```
┌─────────────────────────┐
│        Time-out         │
│                         │
│          Exit           │
└─────────────────────────┘
            │
            │
┌─────────────────────────┐
│                         │
│            ▸    ◂        │
└─────────────────────────┘
```
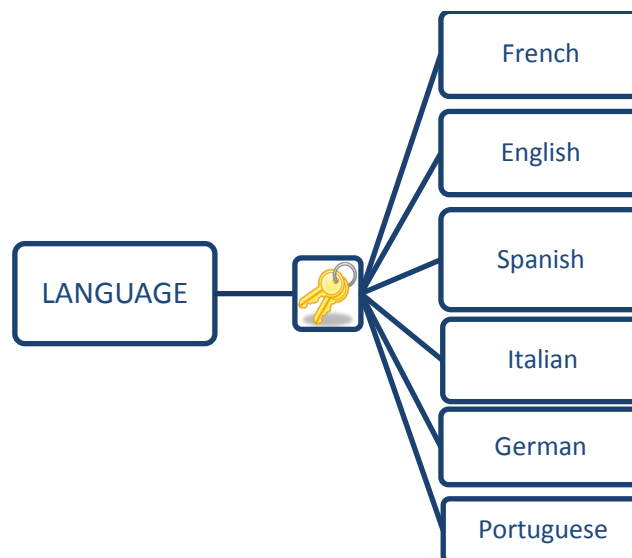
Time-Out Exit[3]

Through this function it is possible to set the time-out value after which the system automatically returns to the home page:
Enter the numerical value (minimum 5 second maximum 240 second)

To confirm, press ↵ . To delete, press **C** .

To exit, press **F1** .

6.9   LANGUAGE SETTING PAGE

```
                              ┌──────────────┐
                              │    French    │
                              └──────────────┘
                              ┌──────────────┐
                              │   English    │
                              └──────────────┘
┌──────────────┐    🔑       ┌──────────────┐
│   LANGUAGE   │─────┐       │   Spanish    │
└──────────────┘             └──────────────┘
                              ┌──────────────┐
                              │    Italian   │
                              └──────────────┘
                              ┌──────────────┐
                              │    German    │
                              └──────────────┘
                              ┌──────────────┐
                              │  Portuguese  │
                              └──────────────┘
```

Language

Touch **F3** , after inserting the password it is possible to choose among 6 different languages: Italian, French, English, Spanish and German and Portuguese.
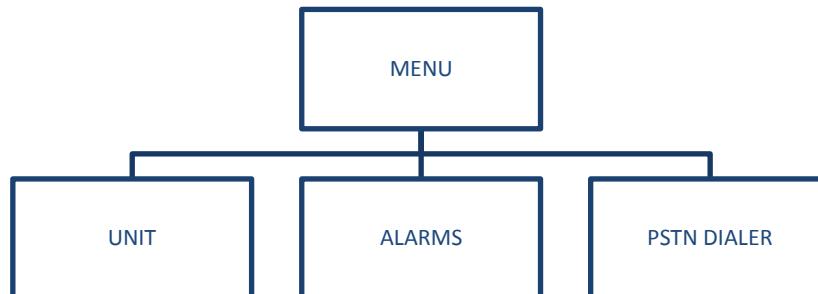
To select the language press ↵

---

[3] This function is not enabled in the pages where it is possible to insert data (i.e.Hour/Date page)

7 RAS SYSTEM CENTRALISED RECEIVER(CX) SOFTWARE USER GUIDE
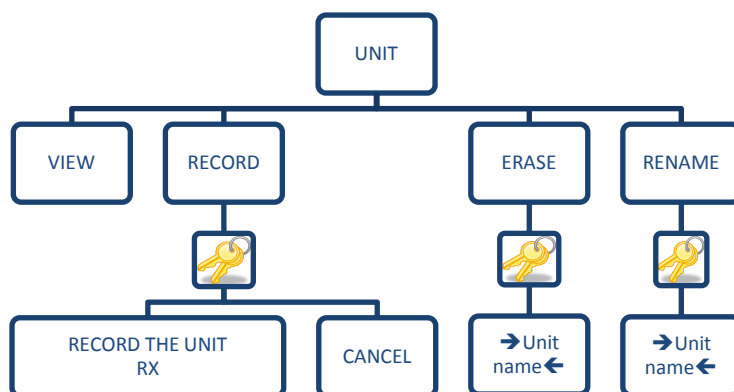
7.1 MAIN MENU

To open the main menu, press key F1.

```
                    ┌─────────────┐
                    │    MENU     │
                    └─────────────┘
            ┌────────────┼────────────┐
    ┌─────────────┐ ┌─────────────┐ ┌─────────────┐
    │    UNIT     │ │   ALARMS    │ │ PSTN DIALER │
    └─────────────┘ └─────────────┘ └─────────────┘
```

ℹ ACCESS TO SOME FUNCTIONS IS ALLOWED TO SUPERVISORS ONLY.

MENU NAME	FUNCTION
UNIT	This function allows the user to view, record, delete and rename the units connected to the system. Select UNITS from the MENU list using the UP/DOWN arrows, then push ⏎ to enter the sub-menu.
ALARMS	This function allows to view the alarm log. Select ALARMS from the MENU list using the UP/DOWN arrows, then push ⏎ to enter the sub-menu.
PSTN DIALER	This function allows the user to display the phone numbers to which the system has to send the notifications according to the different alarm priority. Select PSTN DIALER from the MENU list using the UP/DOWN arrows, then push ⏎ to enter the sub-menu.

MENU NAME	FUNCTION	
VIEW	This function allows to check the connected RX state. To check the connected transmitters (RX) connection status push ⏎	
RECORD	Record the RX unit	After confirming the password push ⏎ . The system will ask to press the pushbutton on the RX unit transmitter to record the unit to the RAS system. ✦ Refer to paragraph **5.3 "RX, CX and TX connection"**.
CANCEL	Returns to the Menu	
ERASE	After confirming the password push ⏎ and delete the RX which you do not want to be recorded any longer.	
RENAME	After confirming the password push ⏎ and rename the unit	

This sub-menu allows acknowledge all the alarms raised by the system.
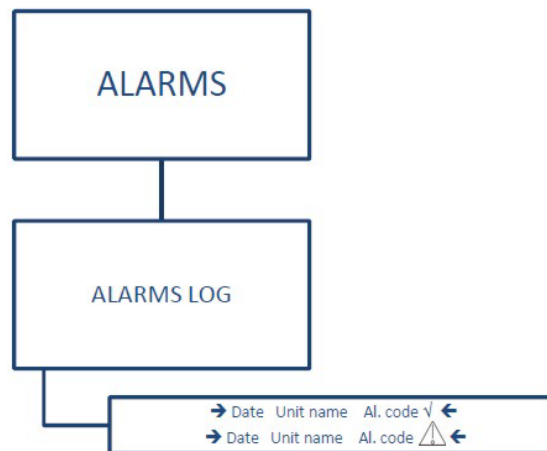
ALARMS

After selecting ALARMS it is possible to see the alarm log screen and check the reported alarm status.
The alarm log displays the date and time when the alarm was triggered together with the TX unit name and alarm code.

• Icon **√** next to the alarm message, indicates that the alarm was solved.

• Icon ⚠ indicates that the alarm is active.
The RAS records up to 100 alarms in FIFO Logic.

7.4 PSTN DIALER FUNCTIONS[4]

This sub-menu displays the set phone numbers to which the RAS system sends a warning call whenever one of the TX units is triggering an alarm, as well as the user and technical remote codes and RX private phone line number.

ℹ️ **The phone numbers must be set on the phone dialler (see the phone dialer IM). This sub-menu is only a visualization menu that acts as a reminder for these numbers**

CALL CAT. 1	After confirming the password it is possible to see 5 different phone numbers.
CALL CAT. 2	After confirming the password it is possible to see 4 different phone numbers
PRIVATE NUMBER	Through this function it is possible to see a private number.
USER REMOTE CODE	Through this function it is possible to see the user remote code with 6 digits.
TECHNICAL REMOTE CODE	Through this function it is possible to see the technical remote code with 6 digits.

7.5 SETTINGS FUNCTIONS
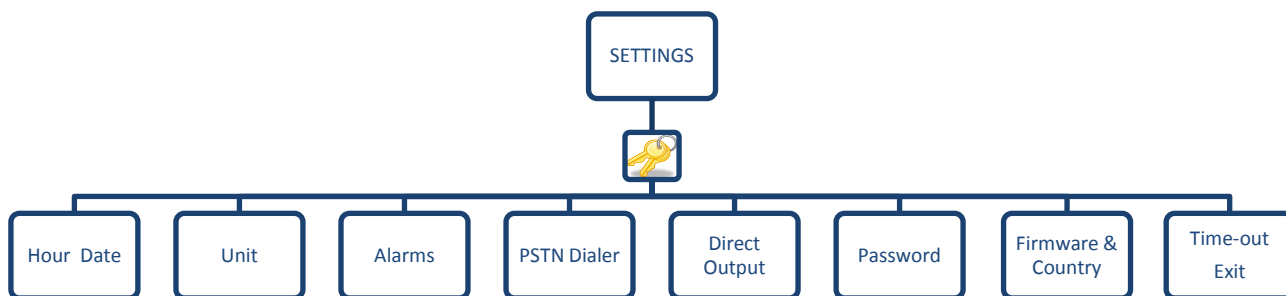
To access the settings functions, push F4 on the numerical key pad	After confirming the password it is possible to access different functions such as hour/date, units, alarms, PSTN dialer, direct output, password and firmware & country.

---

[4]This menu is displayed only when the model is set with PSTN dialer
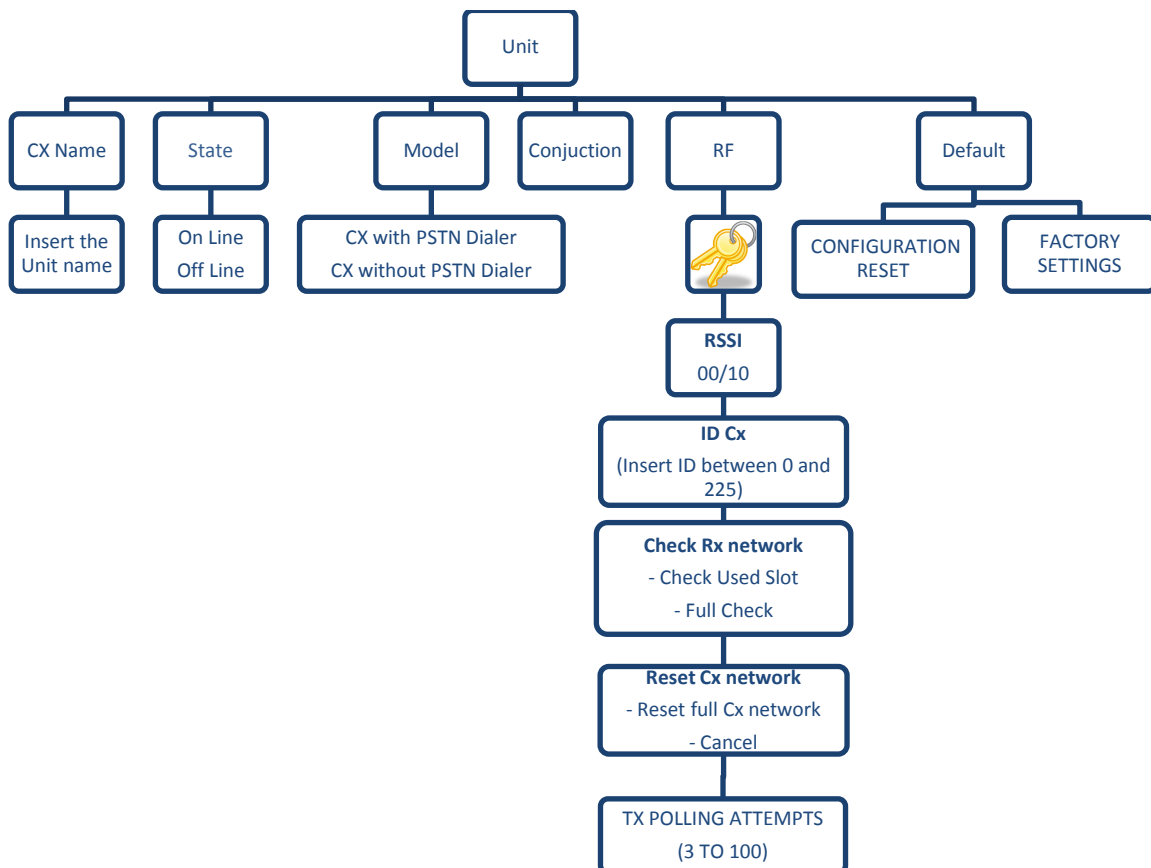
7.5.1 HOURS AND DATE SETTING

```
┌─────────────┐
│  Hour  Date │
└─────────────┘
┌─────────────────┐
│ Date: __/__/__  │
│ Hour: __/__/__  │
└─────────────────┘
```

HOUR / DATE	After confirming the password and selecting hour/date it is possible to record the current time and date using the numerical keypad. To confirm the setting push ⏎

7.6 UNIT SETTINGS

```
                          ┌──────┐
                          │ Unit │
                          └──────┘
   ┌──────────┬──────────┬──────────┬──────────┬──────────┐
┌────────┐ ┌───────┐ ┌───────┐ ┌──────────┐ ┌──────┐ ┌─────────┐
│CX Name │ │ State │ │ Model │ │Conjuction│ │  RF  │ │ Default │
└────────┘ └───────┘ └───────┘ └──────────┘ └──────┘ └─────────┘
```

CX Name	State	Model	RF	Default
Insert the Unit name	On Line / Off Line	CX with PSTN Dialer / CX without PSTN Dialer	🔑	CONFIGURATION RESET / FACTORY SETTINGS

RSSI 00/10

ID Cx (Insert ID between 0 and 225)

Check Rx network - Check Used Slot - Full Check

Reset Cx network - Reset full Cx network - Cancel

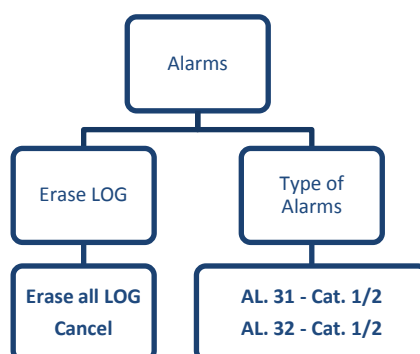TX POLLING ATTEMPTS (3 TO 100)

CX Name	Through this function it is possible to set the Unit name (ex. LAB 01). Press ⏎ to confirm.
State	This function allows to set 2 different states: On Line and Off Line. Whenever one unit is online, all information on alarms are transmitted from the TX on the unit to the central receiver RX and alarms are logged by the system. If the unit is offline, the system "sees" the unit but does not record any messages. Press ⏎ to confirm.
Model	Through this function it is possible to choose two different models: RX with PSTN Dialer and Rx without PSTN Dialer. To select either models, press ⏎

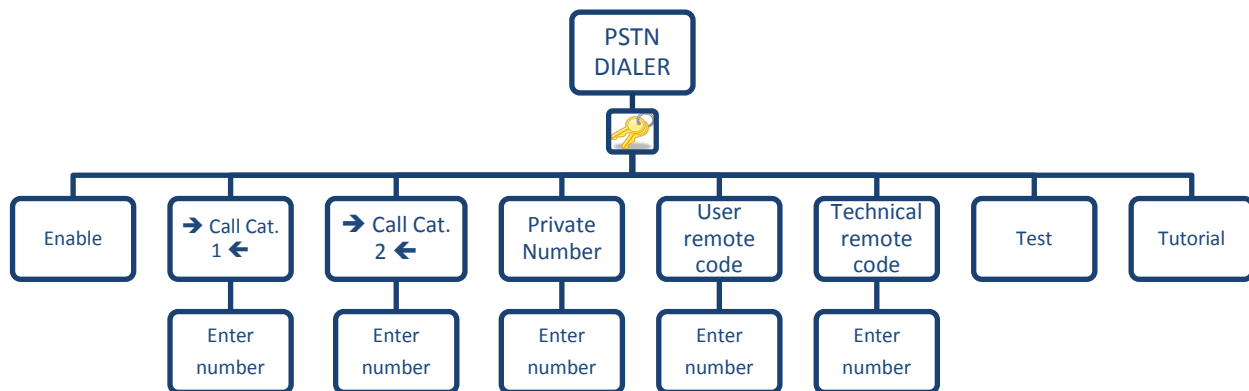|	
Conjuction	Push ⏎ whenever a record request has been sent by centralized receiver CX. ✦ Refer to paragraph **5.3 "RX, CX and TX connection"**.
RF	RSSI: after confirming the password, press ⏎ to see the received signal level (minimum 1 maximum 10).
	ID Rx: after confirming the password, it is possible to insert the RX ID number between 0 and 225 using the numerical keypad. Press ⏎ to confirm

	Check Tx network: after confirming the password, it is possible to check the Tx network in 2 different ways:
	    3. Check Used Slot: only the Tx recorded will be checked.
	
	    4. Full Check: all the Tx recognized will be checked. Press ⏎ to confirm.

	Reset Rx network: after confirming the password, it is possible to reset the network:
	    3. Reset full TX network.
	    4. Cancel.
	
	To select either function press ⏎

	TX polling attempts 3 to 100: after confirming the password it is possible to set the number of polling attempts after which the system automatically triggers the "TX Missing" Alarm.
Default	This function allows to go back to default CONFIGURATION or FACTORY SETTINGS

7.6.1 ALARM SETTING PAGE

Erase LOG	Through this function it is possible to erase all logged alarms or go back to the menu. Press ⏎ to confirm either function.
Type of Alarms	Through this function it is possible to set the priority for each alarm triggered by the connected unit. 2 different priority levels may be set: CAT 1, high priority, CAT 2, low priority. To save the right configuration press ⏎ to cancel press F1

```
                              ┌──────────┐
                              │   PSTN   │
                              │  DIALER  │
                              └────┬─────┘
                                 🔧
   ┌──────┬──────────┬──────────┬──────────┬──────────┬──────────┬──────────┐
┌──────┐┌────────┐┌────────┐┌────────┐┌────────┐┌────────┐┌──────┐┌────────┐
│Enable││➔Call   ││➔Call   ││Private ││User    ││Technical││Test  ││Tutorial│
│      ││Cat. 1 ←││Cat. 2 ←││Number  ││remote  ││remote   ││      ││        │
│      ││        ││        ││        ││code    ││code     ││      ││        │
└──────┘└───┬────┘└───┬────┘└───┬────┘└───┬────┘└───┬─────┘└──────┘└────────┘
        ┌───────┐┌───────┐┌───────┐┌───────┐┌───────┐
        │Enter  ││Enter  ││Enter  ││Enter  ││Enter  │
        │number ││number ││number ││number ││number │
        └───────┘└───────┘└───────┘└───────┘└───────┘
```

Enable	Through this function it is possible to enable/disable the PSTN dialer. Choose between Yes or No and press ↵ ℹ️ **ENABLE THE DIALER AFTER CARRYING OUT THE SYSTEM SETTINGS IN ORDER TO AVOID TRIGGERING ALARMS**
Call Cat. 1	Through this function it is possible to save 5 different phone numbers (maximum 26 digits) as a visual reminder of the numbers which the system will contact any time there is a HIGH PRIORITY alarm (the system will call the numbers previously stored in the dialer). ✦ Please refer to the dialer operating manual. Enter the numbers using the numerical keyboard and press ↵ To delete the number press **C**
Call Cat.2	Through this function it is possible to save 4 different phone numbers (maximum 26 digits) as a visual reminder of the numbers which the system will contact any time there is a LOW PRIORITY alarm (the system will call the numbers previously stored in the dialer). ✦ Please refer to the dialer operating manual. Enter the numbers using the numerical keyboard and press ↵ To delete the number press **C**
Private Number	This page is used to record the RX line phone number (the system will call the numbers previously stored in the dialer). ✦ Please refer to the dialer operating manual. Enter the number using the numerical keypad and press ↵ To delete the number, press **C**
User Remote Code	Through this page it is possible to record(with 6 digits) and view the User remote code which is needed to set up some functions in the dialer. ✦ Please refer to the dialer operating manual. Enter the code using the numerical keypad and press ↵ To confirm the code, press ↵ , press **C** to delete it.

Technical Remote Code	Through this page it is possible to record (with 6 digits) and view the Technical remote code which is needed to set up some functions in the dialer. ✦ Please refer to the dialer operating manual. Enter the code using the numerical keypad and press (↵) To confirm the code, press (↵) , press (C) to delete it.
Test	Through this function it is possible to test the automatic dialer phone calls. (F1) ➔ Run Cat. 1 (HIGH PRIORITY) call. (F2) ➔ Run Cat. 2 (LOW PRIORITY) call (C) ➔ Exit
Tutorial	PSTN DIALER INSTRUCTIONS FOR USE

7.6.3 DIRECT OUTPUT

Direct Output
- Enable
  - Enable Direct OutPut
  - Disable Direct Output
- State
  - Output Normally Opened
  - Output Normally Closed
- Teste
  - F1 ➔ Activate Direct Ouput Cat. 1
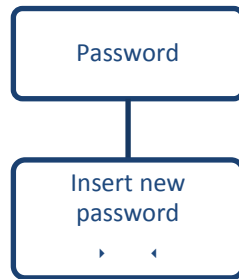 - F2 ➔ Activate Direct Ouput Cat. 2
  - C ➔ Exit

Enable	Through this function it is possible to ENABLE/DISABLE direct output Select the desired option and press (↵)
State	Through this function it is possible to set the output state: **OUTPUT NORMALLY OPEN** and **OUTPUT NORMALLY CLOSED.** Select the desired option and press (↵)
Test	Through this function it is possible to test the direct output: (F1) ➔ Activate Direct Output Cat. 1 (F2) ➔ Activate Direct Output Cat. 2 (C) ➔ Exit

7.6.4 PASSWORD SETTING

```
┌─────────────────────┐
│                     │
│      Password       │
│                     │
└──────────┬──────────┘
           │
┌──────────┴──────────┐
│     Insert new      │
│      password       │
│                     │
│       ▸    ◂        │
└─────────────────────┘
```

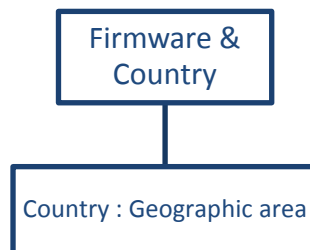**Insert new password**

To change password:
Enter the new password using the numerical field. Confirm and enter the new password again.

Press ⏎ to confirm, press Ⓒ to delete.

7.7 FIRMWARE

```
┌─────────────────────┐
│     Firmware &      │
│      Country        │
└──────────┬──────────┘
           │
      ┌────┴─────────────────┐
      │ Country : Geographic area │
      └──────────────────────┘
```
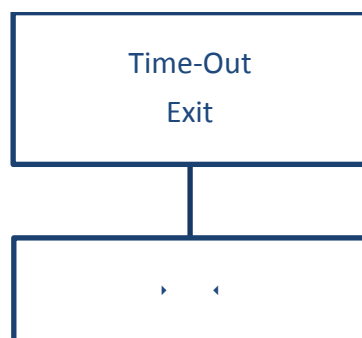
Country: Geographic area

Through this function it is possible to see:
−   The firmware version loaded in the RX unit.
−   The geographic area setting RX network.

7.8 TIME-OUT EXIT

```
┌─────────────────────┐
│      Time-Out       │
│                     │
│        Exit         │
└─────────────────────┘
           │
┌─────────────────────┐
│        ▸  ◂         │
└─────────────────────┘
```
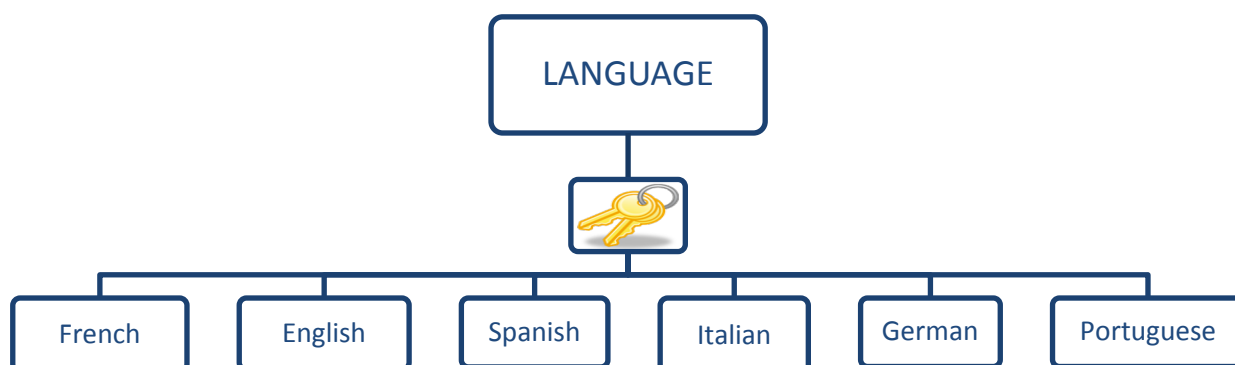
Time-Out Exit[5]

To set the time-out value after which the system automatically returns to the home page:
Enter the numerical value (minimum 5 second maximum 240 second)

To confirm, press ↵ . To delete, press **C** .

To exit, press **F1** .

7.9 LANGUAGE SETTING PAGE

```
              ┌─────────────────────┐
              │      LANGUAGE       │
              └─────────────────────┘
                        │
                    🔑 (keys)
    ┌───────┬────────┬────────┼────────┬─────────┬──────────┐
┌────────┐┌────────┐┌────────┐┌────────┐┌────────┐┌───────────┐
│ French ││English ││Spanish ││ Italian││ German ││Portuguese │
└────────┘└────────┘└────────┘└────────┘└────────┘└───────────┘
```

Language

Touch **F3** , after inserting the password it is possible to choose among 6 different languages such as Italian, French, English, Spanish, German and Portuguese.

To select the language, press ↵

---

[5] This function is not enabled in the pages where it is possible to insert data (i.e.Hour/Date page)

8 ALARMS REPORTED BY THE SYSTEM

8.1 ALARMS RAISED BY THE TRANSMITTER (TX)

The RAS is to be connected to the power supply protected by suitable protections in compliance with laws and regulations in force in the country where the machine is installed.

Hereunder is the list of the alarm messages which might be sent by the transmitter (TX) to the RX, according to the equipment type.

NOTE: Refer to the equipment user manual for a complete troubleshooting.

IVC/MVC
AL01 MIN SUPPLY FLOW
AL02 MAX SUPPLY FLOW
AL03 MIN EXHAUST FLOW
AL04 MAX EXHAUST FLOW
AL05 MIN PRESSURE
AL06 MAX PRESSURE
AL07 MIN TEMPERATURE
AL08 MAX TEMPERATURE
AL09 MIN RH%
AL10 MAX RH%
AL11 REPL SUPPLY HEPA
AL12 REPL EXHAUST HEPA
AL13 SUPPLY AIR FLOW
AL14 EXHAUST AIR FLOW
AL16 FLOODING ALARM
AL23 SUPPLY HOUR-COUNTER WARNING
AL24 EXHAUST HOUR-COUNTER WARNING

ISOCAGE
AL01 MIN PRESSURE
AL02 MAX PRESSURE
AL03 AIRFLOW
AL04 REPL SUPPLY HEPA
AL05 REPL EXHAUST HEPA
AL06 UPS BATTERY LOW

AL07 UPS FAULT
AL08 MIN TEMPERATURE
AL09 MAX TEMPERATURE
AL10 MIN HUMIDITY
AL11 MAX HUMIDITY
AL23 SUPPLY HOUR-COUNTER WARNING
AL24 EXHAUST HOUR-COUNTER WARNING

DCC
AL03 AIRFLOW
AL05 REPL EXHAUST HEPA
AL06 UPS BATTERY LOW
AL07 UPS FAULT
AL08 MIN TEMPERATURE
AL09 MAX TEMPERATURE
AL10 MIN HUMIDITY
AL11 MAX HUMIDITY
AL24 EXHAUST HOUR-COUNTER WARNING

GENERAL
AUX 1 ALARM
AUX 2 ALARM
AL19 TX POWER FAILURE
AL20 TX MISSING
AL21 485 COMMUNICATION FAILURE
TX OFFLINE

8.2 ALARMS RAISED BY THE RX

RX Power failure
RX Missing
RX Offline