

# 433 MHZ SLP PROGRAMMABLE RADIO CONTROL & FAACILE PROGRAMMER

## 1. INTRODUCTION

The programmable radio control system has developed from the 433 SL code self-learning radio control. As well as being able to control one or more accesses, it is also able to identify the codes of up to 1000 transmitters and to manage each radio control by means of the **FAACILE** programmer. The system is suitable for use in medium to large apartment buildings, shopping centres, industrial complexes, clubs, camping sites, hotels and other private areas.

## 2. TECHNICAL CHARACTERISTICS

MODEL	FAACILE
Power supply	12 ÷ 35 Vdc
Current draw	25 mA (12 Vdc) 85 mA (35 Vdc)
Temperature range	-10°C +55°C
Memory	4 Kb EEPROM
Display	LCD 16 characters - 1 line
Keyboard	numerical - 16 keys
Battery	12 V alkaline 2h cont. - 8000h std-by
Acoustic warning device	buzzer
SL code input	optical
Max. code recognition distance	3 cm
Serial port	RS 232 / 9 pin
Communication port for Decoder SLP	on 10-pin connector
STOP output	Open Collector
Housing protection	IP 30
Dimensions	160 x 95 x 36 mm

MODEL	DECODER SLP
Power supply	12 ÷ 35 Vdc
Current draw	3.6 mA (12 Vdc) 13.5 mA (35 Vdc)
Temperature range	-10°C +55°C
Relay output	free NO NC contact
Open collector output	on plug-in connector J1
Max. no. of channels	1
No. of storable codes	max. 1000
Dimensions	47 x 50 x 20 mm

MODEL	433SLP
Transmission frequency	433.92 MHz ± 100 kHz
Output power	-14.0 dbm (40 µW) ± 3 dB
Temperature range	-10°C +55°C
Power supply	battery 12 V ± 10%
Current draw	12 mA
No. of available codes	16,777,215
No. of channels	2 - 4
Housing protection	IP 40
Dimensions	40 x 90 x 16 mm

MODEL	RADIOCODER
Transmission frequency	433.92 MHz ± 100 kHz
Output power	- 14.0 dbm (40 µW) ± 3 dB
Temperature range	-10°C +55°C
Power supply	from FAACILE 12 ÷ 35 Vdc
Current draw	14 mA
Housing protection	IP 40
Dimensions	40 x 80 x 20 mm

## 3. GENERAL DESCRIPTION

The **FAACILE** programming unit, together with the **DECODER SLP**, forms a programmable radio control system capable of dynamically controlling up to 1000 SL codes. Each individual SL code can be memorised in the SLP decoder using the **FAACILE** in two different ways:

- a) learning of an SL or SLP transmitter code using an optical system
- b) setting of an SL code directly from the keyboard.

The **RADIOCODER** must teach the code to the transmitter. Once memorised on the Decoder SLP, each code can be disabled, enabled or deleted using the **FAACILE**.

The **FAACILE** is able to be permanently connected to the system. Equipped with a real time clock, it can enable/disable each individual transmitter according to time bands which can be set by the user.

In this case the Decoder SLP can be housed inside the **FAACILE** using the relevant connector.

The device can be connected to a PC using the RS-232 interface. This gives more immediate access to the various menus and also allows the installer to manage his data archive in a more rapid and efficient manner.

## 4. FUNCTIONAL DESCRIPTION

### 4.1. FAACILE PROGRAMMER

This is the instrument that memorises and manages SL codes, both incoming (learning via optical system) and outgoing (transmission with Radiocoder).

These codes are memorised and managed by the **FAACILE** programmer as follows:

- **Entering code:** The code is available on the Decoder SLP and is active over all time bands.
- **Deleting code:** The previously entered code is eliminated from the Decoder SLP.
- **Enabling code:** Enabling of a code, including for time bands.
- **Disabling code:** The code remains memorised on the Decoder SLP but is disabled.

A password must be entered to access the various functions over all time bands. Entering the Installer PW accesses all menus; entering the User PW accesses all menus except for: Enter TX, Delete TX, Special functions.

**FAACILE** sends Open impulses (from the Decoder SLP) and/or Stop impulses (direct from programmer) to the electronic control unit.

### 4.2. DECODER SLP CARD

This card stores the codes (up to 1000). On recognising any of them it sends an Open impulse to the electronic control unit.

### 4.3. RADIOCODER

Transmits the predetermined codes from the **FAACILE** to transmitters 433SL-SLP for distribution to users.

### 4.4. 433 SLP TRANSMITTER

Transmitters encoded by the Radiocoder or with their own random initial code.

5. ELECTRICAL CONNECTIONS

5.1. PRECAUTIONS

Never under any circumstances connect two Decoder SLPs to the same programmer (one internal, the other external). This is liable to damage the electronics.

Never connect two power sources to the programmer, e.g.: external power pack and electronic control unit on J1. Use either one power source or the other.

5.2 ELECTRICAL POWER SUPPLY

FAACILE can be powered by the electronic control unit via the Decoder SLP or by an external power pack with an output voltage between 12 and 35 V.

FAACILE can be fitted with a 12 V alkaline battery.

When FAACILE is configured without time bands it is not necessary to use the battery. When it is configured with time bands the battery keeps the clock running in the event of a mains power failure. It does not power the Decoder SLP.

It is inadvisable to use the FAACILE keyboard without the mains power supply connected.

A message appears on the display when the battery is almost discharged or has not been installed.

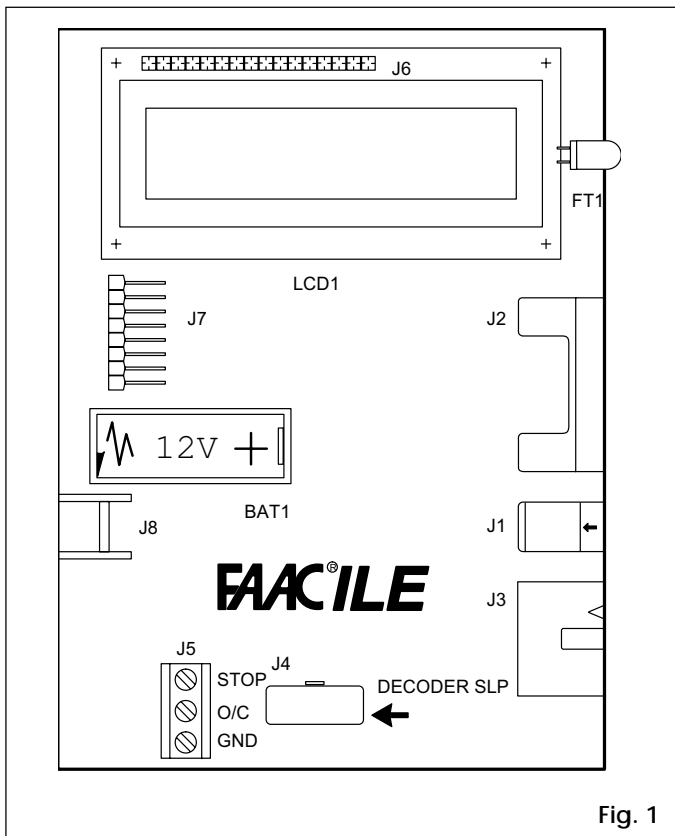


Fig. 1

Table1 FAACILE components

LCD1	LCD DISPLAY 16 CHARACTERS 1 ROW
FT1	RECEIVER PHOTOTRANSISTOR
J1	POWER SUPPLY CONNECTOR
J2	RS 232 SERIAL LINE CONNECTOR
J3	CONNECTOR FOR EXTERNAL DECODER SLP
J4	CONNECTOR FOR INTERNAL DECODER SLP
J5	TERMINAL BLOCK FOR OPEN / STOP COMMANDS
J7	KEYBOARD CONNECTOR
J8	RADIOCODER CONNECTOR
BAT	A23 12 V ALKALINE BATTERY

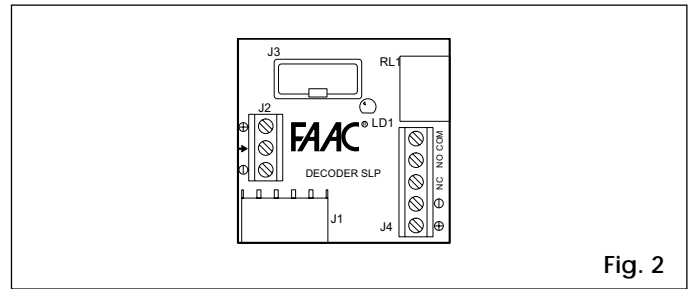


Fig. 2

Table 2 DECODER SLP components

RL1	RELAY WITH FREE CONTACTS (NO NC)
J1	PLUG-IN CONNECTOR FOR OPEN COMMAND AND FAAC ELECTRONIC CONTROL UNIT
J2	TERMINAL BLOCK FOR CONNECTION TO PLUS 433 E RECEIVER
J3	CONNECTOR FOR CONNECTION TO FAACILE
J4	TERMINAL BLOCK FOR POWER SUPPLY VIA CABLE AND RL1 FREE CONTACTS (NO NC)

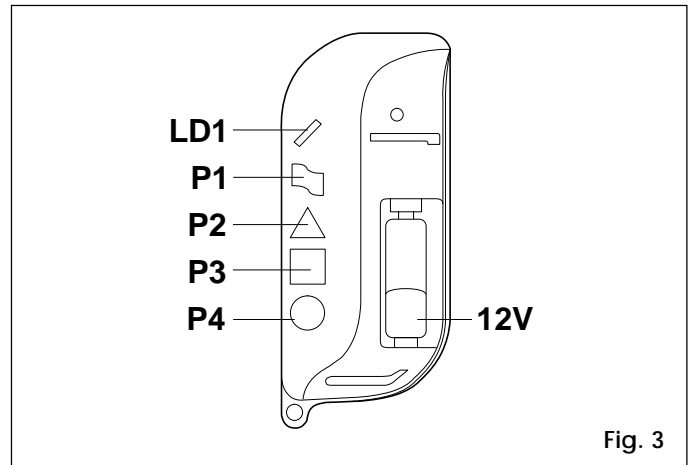


Fig. 3

Table 3 TML 433SLP components

LD1	SL CODE TRANSMISSION SIGNALLING LED
P1 - P2	CODE TRANSMISSION BUTTONS
P3 - P4	CODE TRANSMISSION BUTTONS
BAT	A23 12 V ALKALINE BATTERY

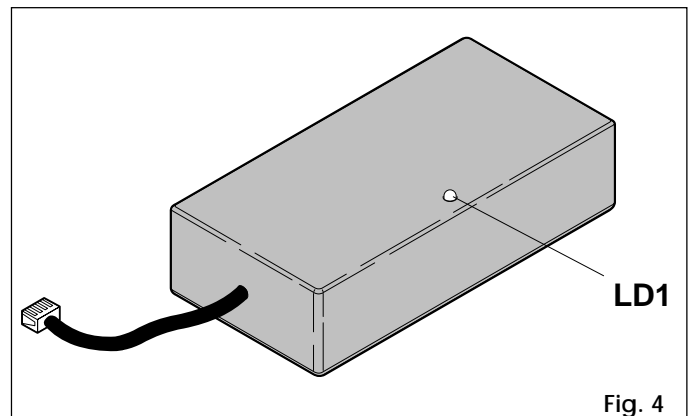


Fig. 4

Table 4 RADIOCODER components

LD1	SL CODE TRANSMISSION SIGNALLING LED
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6. TYPICAL SYSTEM

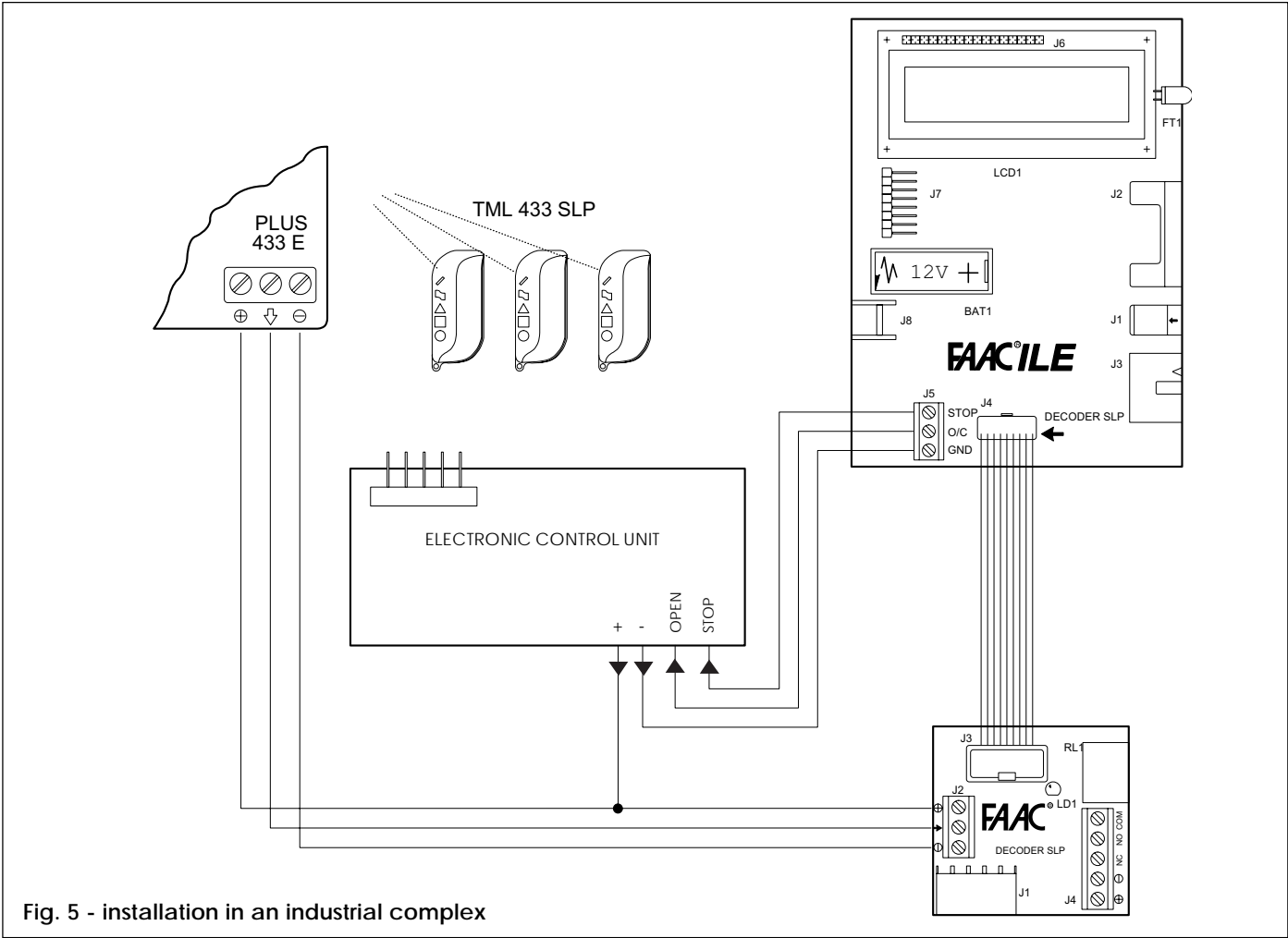


Fig. 5 - installation in an industrial complex

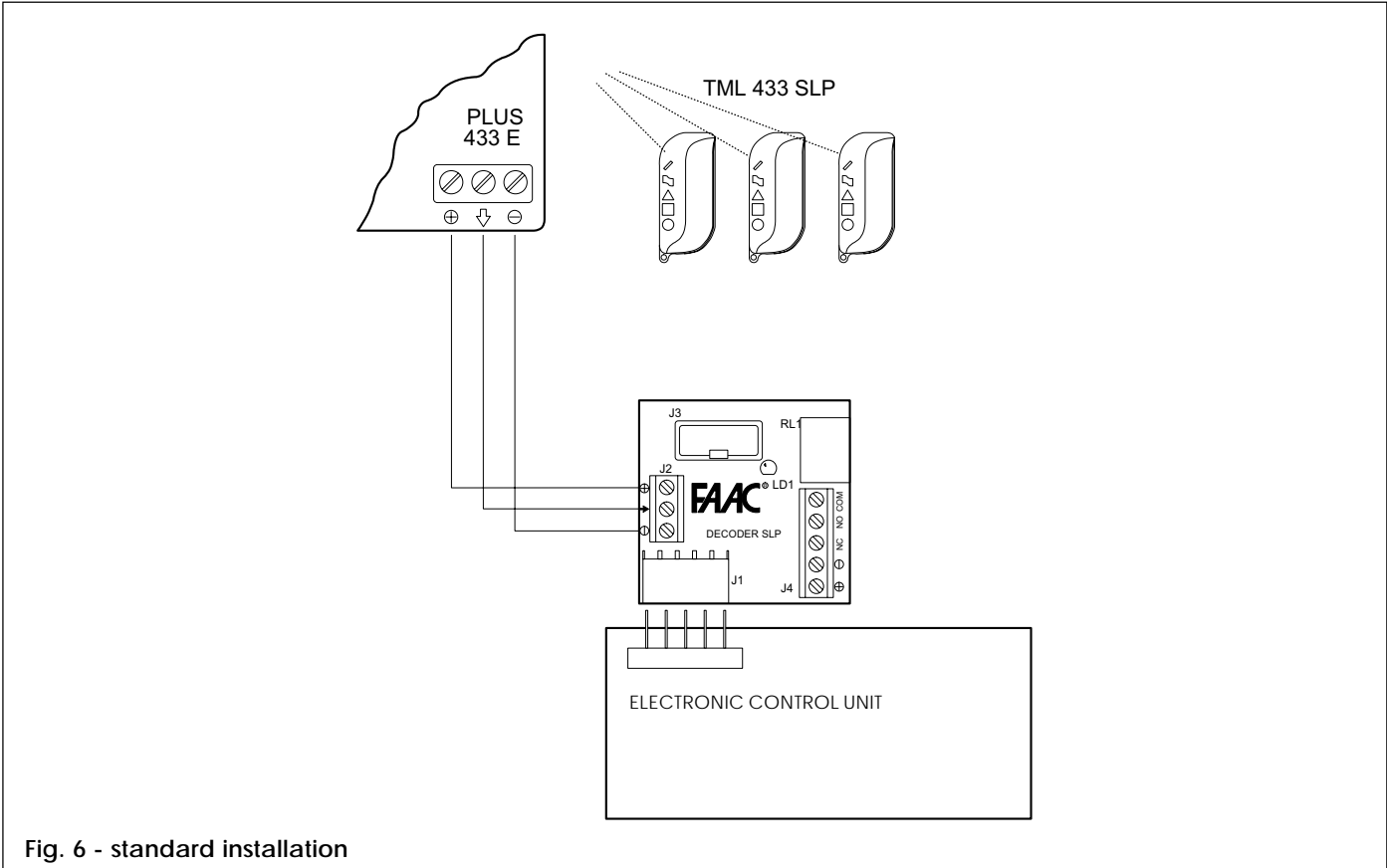


Fig. 6 - standard installation

- A: OPTICAL LEARNING. THE CODE IS READ BY FT1 AND TRANSFERRED TO DECODER SLP
- B: USING RADIOCODER TO SET SL CODE KEYED INTO TRANSMITTER AND SIMULTANEOUSLY MEMORISED ON DECODER SLP

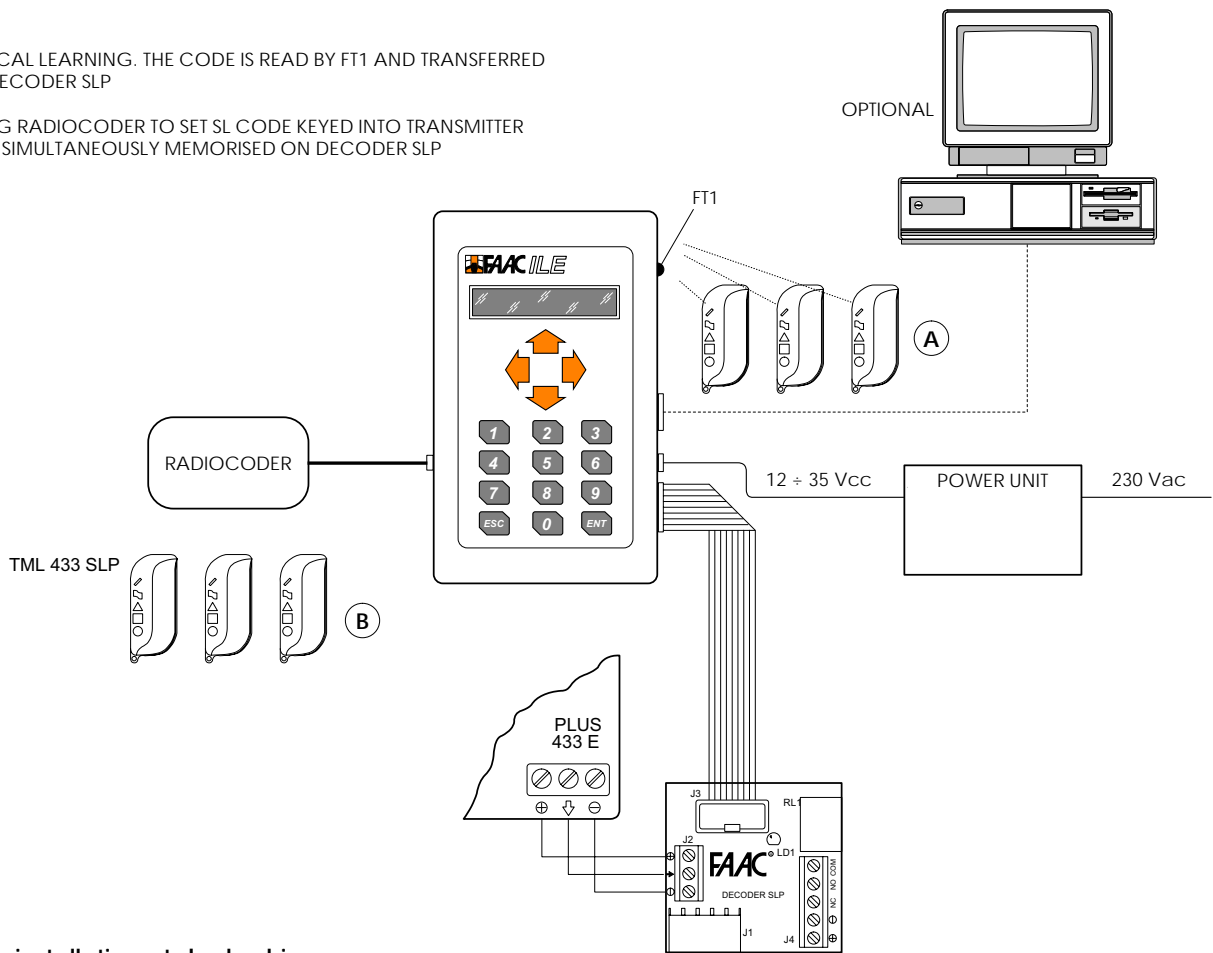


Fig. 7 - installation at dealership

7. QUICK GUIDE

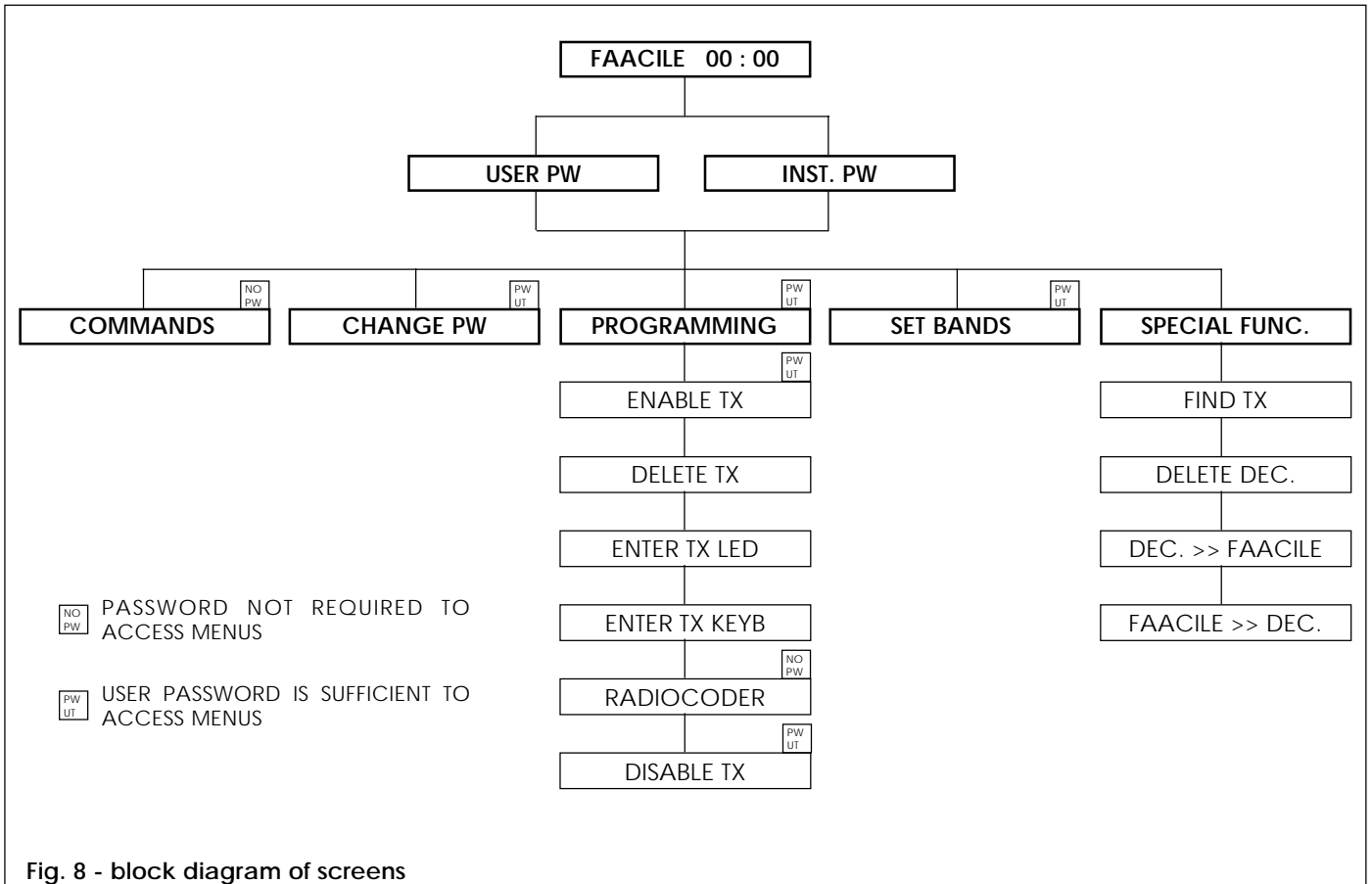


Fig. 8 - block diagram of screens

8. SOFTWARE

8.1. EXPLANATION OF SCREENS

FAACILE

Main screen (configuration without time bands).

FAACILE 00 : 00

Main screen showing clock with hours and minutes (configuration with time bands and battery charged).

BATT. 00 : 00

Main screen showing clock with hours and minutes (configuration with time bands, without battery or with battery discharged).

USER PW ? ----

Password to access menus reserved for user: COMMANDS, CHANGE PW (user), PROGRAM (enable TX - disable TX), SET BANDS.

INST. PW ? ----

Password to access all menus.

PROGRAMMING

This is the programming menu which allows the following functions to be performed:

ENABLE TX

Enables SL codes for time bands memorised on the Decoder SLP. In the configuration without time bands, the radio control is enabled for the whole day.

A: 1 B: 1 C: 1 D: 1

Indicates that the transmitter is enabled in the four time bands: A,B,C,D: 1-enabled, 0-not enabled. The number relating to the time band to be programmed flashes on the display. You can choose to enable one transmitter for time band A only, one for time band B, another for time bands C and D and so on.

DELETE TX

Deletes the SL code memorised on the Decoder SLP.

ENTER TX LED

ENTER TX KEYB

Enters SL codes in Decoder SLP memory in two ways: From the LED (FT1) or from the KEYBOARD by typing in the SL code from the FAACILE keyboard. In the second case the Radiocoder transmits the SL code to be learned by the transmitter concerned.

RADIOCODER

This screen is used to transmit an SL code typed in from the FAACILE keyboard to the transmitter concerned. It is not memorised on the Decoder SLP.

DISABLE TX

Disables an SL code memorised on the Decoder SLP. The code is disabled for all time bands.

ENTER TX NO.

The question refers to the transmitter location (from 0 to 999).

SET BANDS

Allows the four available time bands to be set throughout the day.

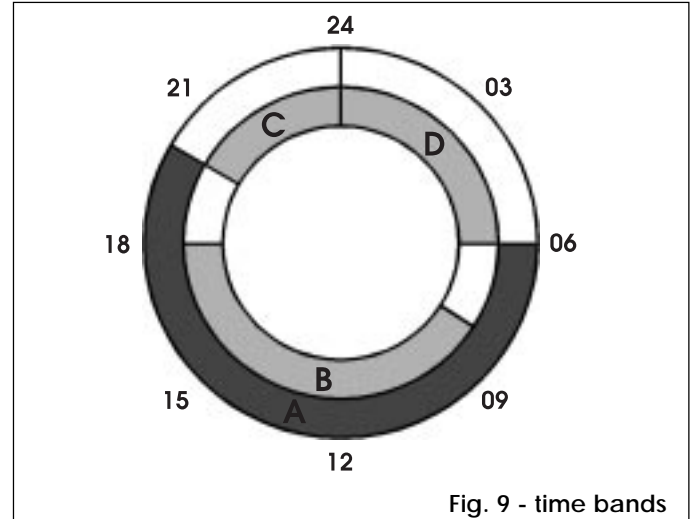


Fig. 9 - time bands

For example consider a company with a FAACILE programmer. Time band A: from 06.00 to 20.00 reserved for the company gatekeeper.

Time band B: from 08.00 to 18.00 reserved for company employees.

Time band C: from 20.00 to 23.59 reserved for patrolling night-watchmen.

Time band D: from 00.00 to 06.00 reserved for patrolling night-watchmen.

**Important:** The four time bands must be set within the 24 hour period from 00.00 to 23.59. If you have to program time periods that span midnight, as in the example, use two different time bands.

SPECIAL FUNC.

This menu allows you to perform the following functions:

FIND TX

By transmitting a transmitter code to the FAACILE LED FT1 you can find where the code is located (TX no.).

DELETE DEC.

This function deletes all the SL codes memorised on the Decoder SLP. It can be useful if you wish to clear and reprogram the memory.

DEC. >> FAACILE

This function transfers all the data (SL codes) from the Decoder SLP to the FAACILE.

FAACILE >> DEC.

This function transfers all the data (SL codes) from the FAACILE to the Decoder SLP.

COMMANDS

The COMMANDS screen can be used to send Open and Stop impulses to the FAAC electronic control unit.

8.2. SOFTWARE PROGRAM

When turned on, the following screen appears on the display:

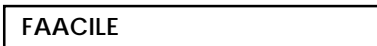


Pressing the two ↑↓ arrow keys together brings up the following screen:



The first letter on the left indicates the selectable language. Press the ⇄ arrow key to scroll through the 5 available languages: I - F - D - ENG - ESP. Position the cursor at the desired language. The message on the right indicates whether the **FAACILE** keyboard connection is without time bands (N) or with time bands (Y). Press the ⇄ arrow key to toggle between N/Y. Select the desired configuration and press ENT.

In the configuration without time bands the message without the clock appears:



In the configuration with time bands the time appears on the display:

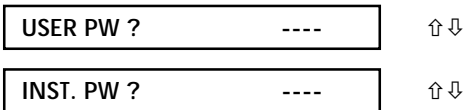


TO SET THE TIME:

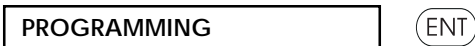
Press the ⇄ keys together. The hours will begin to flash. Use the ↑↓ keys to set the hours. Press ⇄ and repeat the operation for minutes.

When you have finished, press ENT to confirm the operation and zero the seconds on exiting, or press ESC to exit without zeroing the seconds.

Pressing ENT displays the password request message:

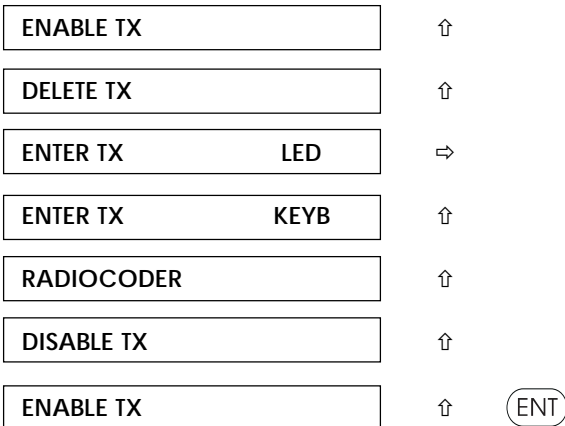


Type in the password and press ENT to enter the menu:

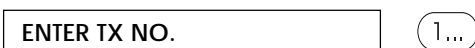


The ↑↓ arrow keys can be used to move between the various menus. See diagram in fig. 8.

Press ENT to access the following menus:



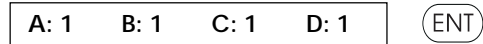
Pressing ENT brings up the following screen:



Enter the radio control location number.



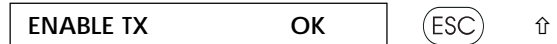
Pressing ENT brings up the time band menu:



Use ⇄ to move from one time band to another. The position is shown by the flashing cursor.

Press ↑ to toggle between 1 and 0 for time bands A, B, C, D. 1 enables time band, 0 disables it.

When you have chosen the time bands you wish radio control X to be enabled for, press ENT.



If OK appears, it means that the code has been enabled. If KO appears, it means that there is no connection.

Press ESC and the ↑ arrow key to go to the next screen:



Pressing ENT brings up the following screen:



Enter the location number of the transmitter you wish to eliminate and press ENT.



If OK appears it means the code has been deleted. Press ESC and the ↑ key to select:



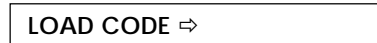
Use ⇄ to select whether you wish to enter the SL code using the optical system (LED) or from the keyboard (KEYB).



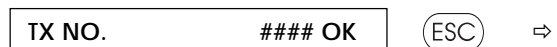
Pressing ENT brings up:



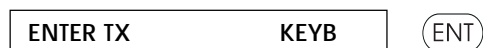
Enter the radio control location number and press ENT. The following message appears:



Position the transmitter with the LED near the **FAACILE** phototransistor FT1 and hold down the button for a few seconds. The OK message will appear to show that the code has been learned, otherwise an error message will appear (see Table 5).



Press ESC and the ⇄ key. Procedure for SL code learning with keyboard.



Pressing ENT brings up the following message:

ENTER TX NO.      ###      (ENT)

Enter the radio control location number and press ENT. The following message appears:

SL CODE      #####      (1...)      (ENT)

Use the number keys to enter the SL code from 1 to 1677215 and press ENT.

The SL code is transferred to the Decoder SLP and transmitted by the Radiocoder for 10 sec. to allow it to be memorised by the transmitter.

The OK message appears for a few seconds to confirm that the code has been learned.

Other messages (see Table 5).

TX NO.      #### OK      (ESC)      (ESC)

Press ESC twice to return to:

ENTER TX      KEYB      ↑

Pressing ↑ selects the following screen:

RADIOCODER      (ENT)

Press ENT and use the number keys to enter the SL code from 1 to 1677215, then press ENT

SL CODE      #####      (1...)      (ENT)

The RADIOCODER will transmit the SL code for 10 seconds. Place the transmitter to be encoded near to it and hold down the button for a few seconds.

Pressing ESC interrupts transmission of the SL code.

RADIOCODER      ↑

Press ↑ to select the following screen:

DISABLE TX      (ENT)

Pressing ENT brings up the following screen:

ENTER TX NO.      (1)      (ENT)

ENTER TX NO.      ###      (ENT)

Enter the radio control location number and press ENT to disable the transmitter. The following screen appears as confirmation:

DISABLE TX      OK      (ESC)

Press the ESC key twice to return to the following screen:

PROGRAMMING      ↑↓

Use the ↑↓ keys to display the following screen:

CHANGE PW      ----      (ENT)

Enter the new Password and press ENT.

Return to the programming menu:

PROGRAMMING

Use the ↑↓ keys to display the following screen:

SET BANDS      (ENT)

START A      (ENT)

START A      00 : 00      (ENT)

Use ↑↓ to set the hours

Use ⇒ to go to the minutes

Use ↑↓ to set the minutes and press ENT.

END A      (ENT)

END A      00 : 00      (ENT)

Use ↑↓ to set the hours

Use ⇒ to go to the minutes

Use ↑↓ to set the minutes and press ENT.

START B      (ENT)

START B      00 : 00      (ENT)

Use ↑↓ to set the hours

Use ⇒ to go to the minutes

Use ↑↓ to set the minutes and press ENT.

END B      (ENT)

END B      00 : 00      (ENT)

Use ↑↓ to set the hours

Use ⇒ to go to the minutes

Use ↑↓ to set the minutes and press ENT.

Proceed in the same manner to set the other time bands.

Press ESC and use the ↑↓ keys to return to:

SPECIAL FUNC.      (ENT)

**Important:** Read the instructions carefully before using this menu.

FIND TX      (ENT)

LOAD CODE ⇒

Place the transmitter with the LED near the **FAACILE** phototransistor FT1 and hold down the button for a few seconds.

One of the following messages will appear:

TX NO.      ### E1

The first four numbers indicate the transmitter location (from 1 to 1000).

The last two numbers indicate the following messages:

E1: SL code found in the Decoder SLP memory.

E4: SL code not found in the Decoder SLP memory.

Press ESC to return to:

FIND TX      ↑↓

DELETE DEC.      (ENT) (ENT)

**Important:** Pressing ENT twice deletes all the codes memorised on the Decoder SLP. The operation takes about 4 seconds, during which time the Decoder SLP LED illuminates.

DELETE DEC.      ↑↓

Use the ↑↓ keys to find:

DEC. >> FAACILE      (ENT)

Pressing ENT transfers all data (SL codes) from the Decoder SLP to the **FAACILE**. An OK message appears on the display to confirm the operation.

**Important:** All data on the **FAACILE** except for the time bands will be overwritten with those from the Decoder SLP.

DEC. >> FAACILE      ↑↓

Use the ↑↓ keys to find:

FAACILE >> DEC.      (ENT)

Pressing ENT transfers all the data (SL codes) from the **FAACILE** to the Decoder SLP. An OK message appears on the display to confirm the operation. **Important:** All data on the Decoder SLP will be overwritten with those from the **FAACILE**.

FAACILE >> DEC.      (ESC)

Press ESC to return to the menu:

SPECIAL FUNC.      ↑↓

Use ↑↓ to find:

COMMANDS      (ENT)

Press ENT to bring up the following screen:

1 : OPEN    2 : STOP      (1) (2)

Pressing 1 sends an OPEN impulse from the Decoder SLP. Pressing 2 sends a STOP impulse from the **FAACILE** to the electronic control unit.

Press ESC twice to return to the main screen:

FAACILE      17 : 30

Table 5 Messages shown on the display

MESSAGE	DESCRIPTION
E1	SL code found in Decoder SLP memory.
E2	Location occupied, try again.
E3	Memorisation error.
E4	SL code not found in Decoder SLP memory. In this case the message is preceded by 1000 because the system searches all the memorisable codes up to the last code.
OK	Operation successful.
KO	Unexpected error. Refer to troubleshooting guide.