KARBU KIT

Gas price display Kit

See the instruction manual inside the box to wire the KARBU KIT with Xtream modems and 110V power supply.

Installation and operating manual

Bodet

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Upon delivery, make sure the product has not been damaged during transport under the responsibility of the carrier.

Table of contents

I – General presentation

I.1 - Introduction

The system permits, through a keyboard, to drive the display of gas prices.

I.2 - Verification of the equipment

KARBU KIT 3 lines in single face (ref.: 917483) :
– An weatherproof box with 2 DIN rails, 1 CPU board and 1 transformer.
– 1 connection box to connect the keyboard.
– 3 flat cables for a single face.

KARBU KIT 4 lines in single face (ref.: 917484) :
– An weatherproof box with 2 DIN rails, 1 CPU board and 1 transformer.
– 1 connection box to connect the keyboard.
– 4 flat cables for a single face.

KARBU KIT 5 lines in single face (ref.: 917485) :
– An weatherproof box with 2 DIN rails, 1 CPU board and 1 transformer.
– 1 connection box to connect the keyboard.
– 5 flat cables for a single face.

KARBU KIT 6 lines in single face (ref.: 917486) :
– An weatherproof box with 2 DIN rails, 1 CPU board and 1 transformer.
– 1 connection box to connect the keyboard.
– 6 flat cables for a single face.

KARBU KIT 3 lines in double face (ref.: 917493) :
– An weatherproof box with 2 DIN rails, 1 CPU board and 1 transformer.
– 1 connection box to connect the keyboard.
– 3 flat cables for double face.

KARBU KIT 4 lines in double face (ref.: 917494) :
– An weatherproof box with 2 DIN rails, 1 CPU board and 1 transformer.
– 1 connection box to connect the keyboard.
– 4 flat cables for double face.

KARBU KIT 5 lines in double face (ref.: 917495) :
– An weatherproof box with 2 DIN rails, 1 CPU board and 1 transformer.
– 1 connection box to connect the keyboard.
– 5 flat cables for double face.

KARBU KIT 6 lines in double face (ref.: 917496) :
– An weatherproof box with 2 DIN rails, 1 CPU board and 1 transformer.
– 1 connection box to connect the keyboard.
– 6 flat cables for double face.

KARBU KIT without module flat cables (ref.: 917480) :
– An weatherproof box with 2 DIN rails, 1 CPU board and 1 transformer.
– 1 connection box to connect the keyboard.

KARBU PAD keyboard with a 2 x 16 characters display (ref.: 917453).

A separate modem unit (ref.: 917457) : this reference is obligatorily used in addition to a HF KARBU. Used for driving a second digital display independently from the first one.

KARBU HF, HF modem set (ref.: 917458) :
– 2 modems.
– 1 connection box to connect the power supply of the keyboard.
– 1 mains adapter.

I.3 – Fittings of KARBU KIT

There is a large number of possible fittings depending on the desired number of display lines, single or double face, wire or HF radio, etc.
The following tables describe the equipment necessary for the majority of possible installations.

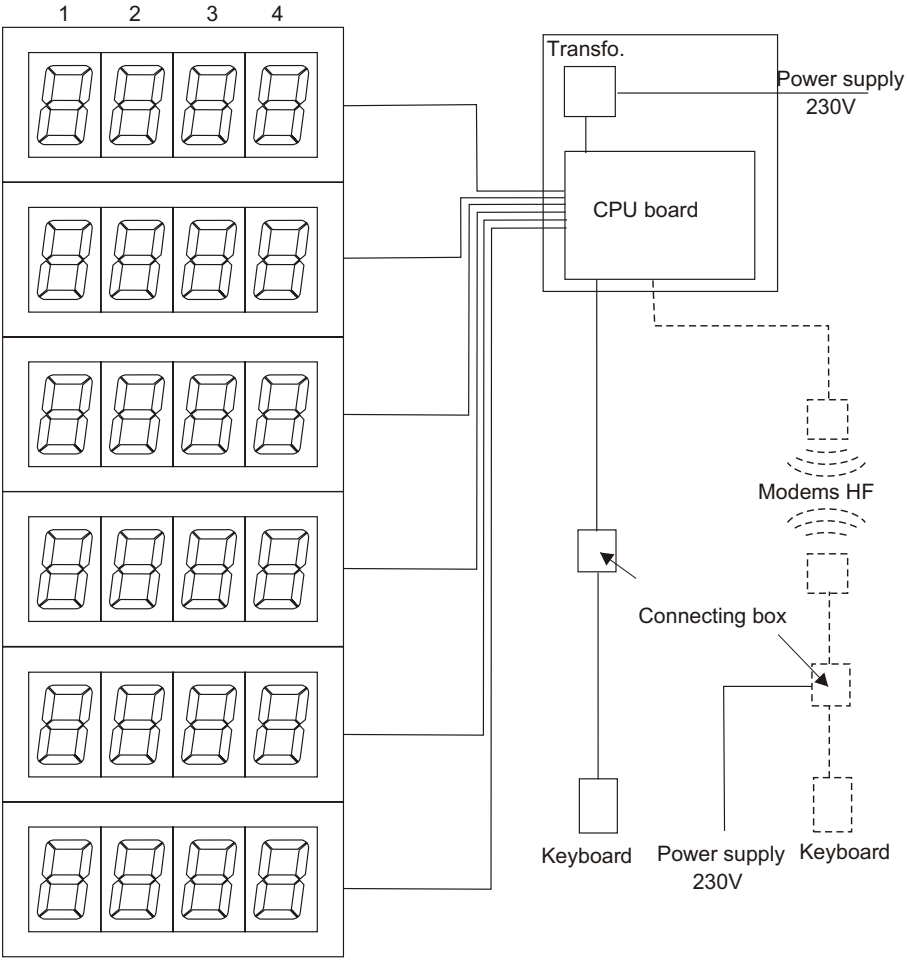
Explanation of the terms used in the tables :
SF : Single Face.
DF : Double Face.
TF : Triple Face.
BC : Back Control.
XLY : X lines up to Y digits (3L4 or 3 lines of 4-digits max.).

References for wire-mode installation	KARBU KIT 3 L SF 917483	KARBU KIT 4 L SF 917484	KARBU KIT 5 L SF 917485	KARBU KIT 6 L SF 917486	KARBU KIT 3 L DF 917493	KARBU KIT 4 L DF 917494	KARBU KIT 5 L DF 917495	KARBU KIT 6 L DF 917496	KARBU PAD 917453
1 sign SF 3L4 (or 1L8) with or without BC	1								1
1 sign SF 4L4 (or 2L8) with or without BC		1							1
1 sign SF 5L4 with or without BC			1						1
1 sign SF 6L4 (or 3L8) with or without BC				1					1
1 sign SF 7L4 (or 3L8) with or without BC	1	1							1
1 sign SF 8L4 (or 4L8) with or without BC		2							1
1 sign SF 9L4 (or 4L8) with or without BC	1			1					1
1 sign SF 10L4 (or 5L8) with or without BC		1		1					1
1 sign SF 11L4 with or without BC			1	1					1
1 sign SF 12L4 (or 6L8) with or without BC				2					1
1 sign DF 3L4 (or 1L8) without BC					1				1
1 sign DF 4L4 (or 2L8) without BC						1			1
1 sign DF 5L4 without BC							1		1
1 sign DF 6L4 (or 3L8) without BC								1	1
1 sign DF 3L4 (or 1L8) with BC	2								1
1 sign DF 4L4 (or 2L8) with BC		2							1
1 sign DF 5L with BC			2						1
1 sign DF 6L4 (or 3L8) with BC				2					1
1 sign TF 3L4 (or 1L8) without BC	1				1				1
1 sign TF 4L4 (or 2L8) without BC		1				1			1
1 sign TF 5L without BC			1				1		1
1 sign TF 6L4 (or 3L8) without BC				1				1	1
2 signs SF 3L4 (or 1L8) with or without BC	2								1
2 signs SF 4L4 (or 2L8) with or without BC		2							1
2 signs SF 5L4 with or without BC			2						1
2 signs SF 6L4 (or 3L8) with or without BC				2					1

References for HF-mode installation	KARBU KIT 3 L SF 917483	KARBU KIT 4 L SF 917484	KARBU KIT 5 L SF 917485	KARBU KIT 6 L SF 917486	KARBU KIT 3 L DF 917493	KARBU KIT 4 L DF 917494	KARBU KIT 5 L DF 917495	KARBU KIT 6 L DF 917496	KARBU PAD 917453	KARBU HF 917458	HF Modem alone 917457
1 sign SF 3L4 (or 1L8) with or without BC	1								1	1	
1 sign SF 4L4 (or 2L8) with or without BC		1							1	1	
1 sign SF 5L4 with or without BC			1						1	1	
1 sign SF 6L4 (or 3L8) with or without BC				1					1	1	
1 sign SF 7L4 (or 3L8) with or without BC	1	1							1	1	
1 sign SF 8L4 (or 4L8) with or without BC		2							1	1	
1 sign SF 9L4 (or 4L8) with or without BC	1			1					1	1	
1 sign SF 10L4 (or 5L8) with or without BC		1		1					1	1	
1 sign SF 11L4 with or without BC			1	1					1	1	
1 sign SF 12L4 (or 6L8) with or without BC				2					1	1	
1 sign DF 3L4 (or 1L8) without BC					1				1	1	
1 sign DF 4L4 (or 2L8) without BC						1			1	1	
1 sign DF 5L4 without BC							1		1	1	
1 sign DF 6L4 (or 3L8) without BC								1	1	1	
1 sign DF 3L4 (or 1L8) with BC	2								1	1	
1 sign DF 4L4 (or 2L8) with BC		2							1	1	
1 sign DF 5L with BC			2						1	1	
1 sign DF 6L4 (or 3L8) with BC				2					1	1	
1 sign TF 3L4 (or 1L8) without BC	1				1				1	1	
1 sign TF 4L4 (or 2L8) without BC		1				1			1	1	
1 sign TF 5L without BC			1				1		1	1	
1 sign TF 6L4 (or 3L8) without BC				1				1	1	1	
2 signs SF 3L4 (or 1L8) with or without BC	2								1	1	1
2 signs SF 4L4 (or 2L8) with or without BC		2							1	1	1
2 signs SF 5L4 with or without BC			2						1	1	1

I.4 – Principle of operation

The keyboard is connected to the Control Unit (CPU) board via a wire or a HF radio link. The CPU board then becomes responsible for driving each line of the modules via a flat cable.



Front view of sign

** HF Installation of the keyboard is shown in dotted line.*

II - Installation

Thank you for choosing KARBU KIT BODET. This product has been carefully designed to satisfy you based on quality standard ISO9001.
Your are advised to carefully read this manual before starting to install and operate the KARBU KIT.

II.1 – Electrical and mechanical safety standards

The installation and maintenance of this equipment must be carried out by qualified personnel.
With KARBU KIT systems being connected to the mains, their installation must observe the standard IEC 364 (NFC 15.100 in France).
Installation inside a digital display unit.
This equipment must be fixed before powering it up.
Grounding scheme of the installation is either GG-or EN-scheme (Earth/Earth or Earth/Neutral).

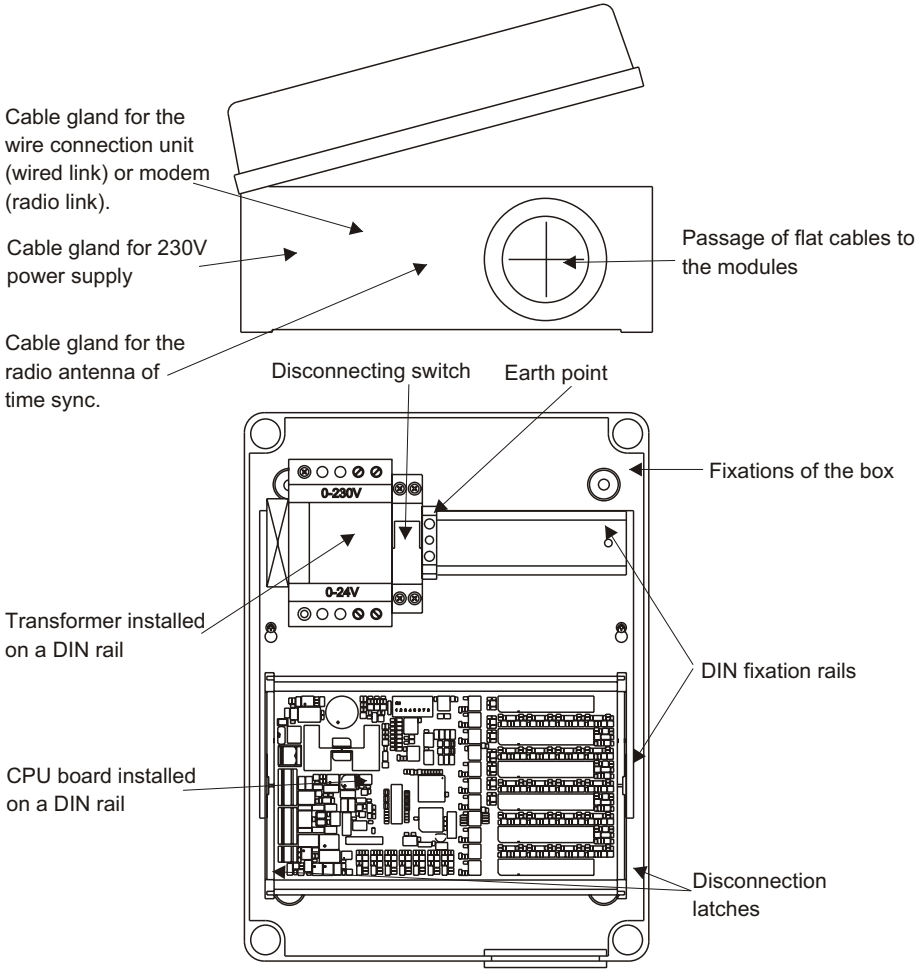
Important : before any installation, carefully read this manual and refer to paragraph “Technical specifications” page 34.
Attention : there is no compatibility between the old and new-generation of electronic cards. Therefore, interoperability between the old and new units is not possible. The same applies to keyboard.

Bodet company is not responsible for any use that is not compliant with this manual.

Any modification on the product turns the warranty void.

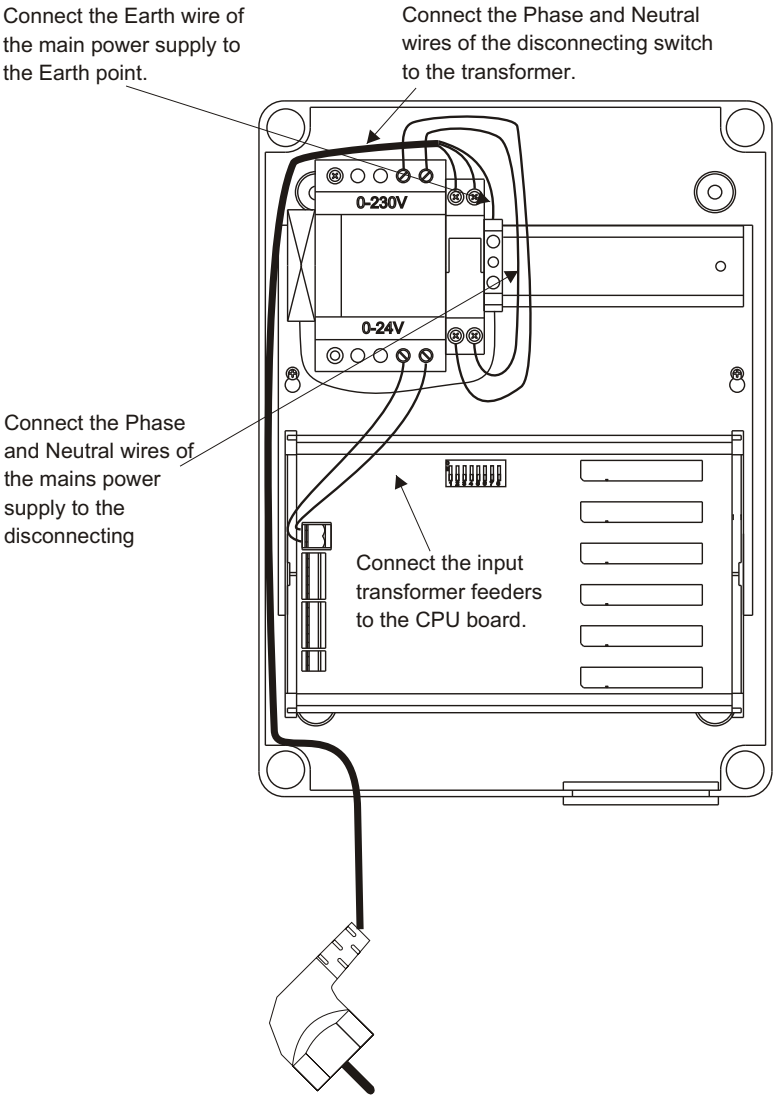
II.2 – Recommendations for installation

It is strongly recommended to place the control box in the bottom of the price sign in order to facilitate access for maintenance purposes. The unit must imperatively be placed vertically with the outputs of cables directed downward. Specific modules are used for the back control function and are different from other modules. Note : never activate back control when using KARBU KIT in double face in order to avoid the risk of bad functioning (modules in parallel). The box is protected to class IP23, which implies an exclusively indoor installation.



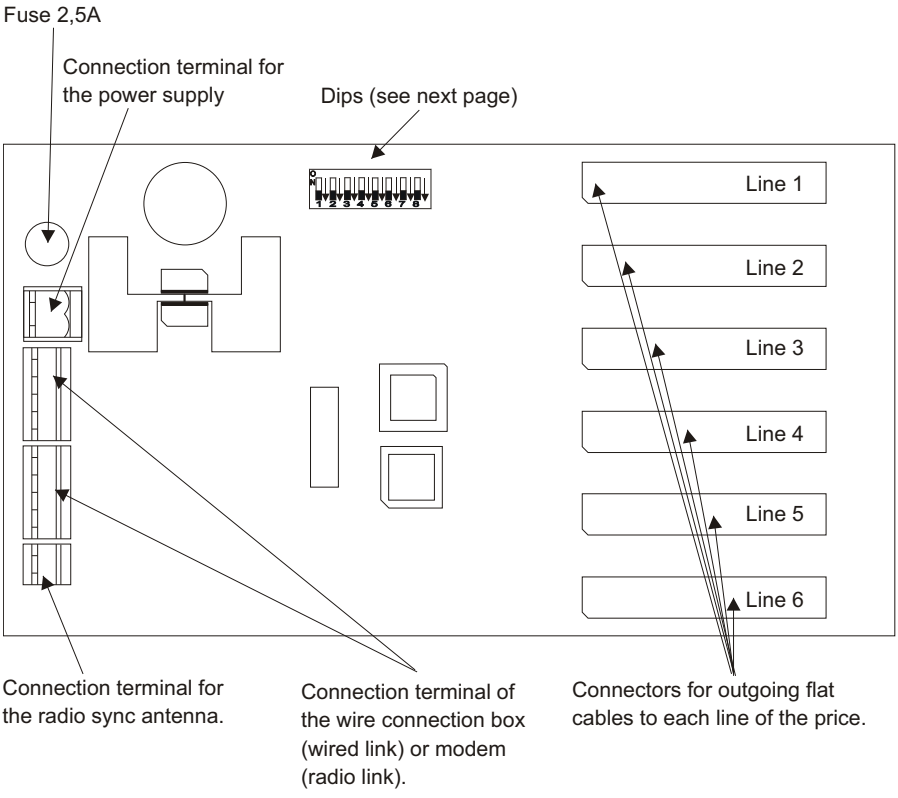
II.3 – Control box

The control box is composed of an electronic card (CPU) and a transformer, all in the same box.

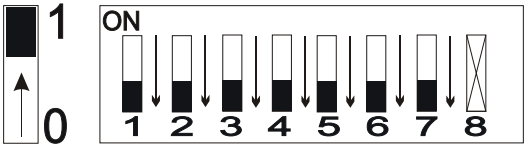


II.4 – CPU board

A CPU board permits to drive 6 lines of 4 modules maximum (or 3 lines of 8 modules maximum). It is possible to double the modules in order to double the information capacity).
It is powered up, via a transformer, from a 230V+/-10% 50Hz mains.
It is possible to cable a master and a slave CPU board in parallel in order to multiply the number of lines and/or of modules.
The CPU board is powered with 18 VDC. The board is protected by means of a 2,5A fuse.



→ Configuration of dip switches



Default configuration : most usual configuration

Functions	Dips
Normal operating (default)	Dip 1 = OFF = 0
Permant test of modules	Dip 1 = ON = 1
Normal operating (default)	Dip 2 = OFF = 0
HF Keyboard number saved	Dip 2 = ON = 1
No activation of back control (default)	Dip 3 = OFF = 0
Activation of back control	Dip 3 = ON = 1
1 to 6 price lines (sign 1) (default)	Dip 4 = OFF = 0
7 to 12 price lines (sign 2)	Dip 4 = ON = 1
4 number price (default) (used for petrol price display)	Dip 5 = OFF = 0
8 number price (only used for particular applications)	Dip 5 = ON = 1
Impulse duration of 150 ms (default) (S710/S715/S725/S730/S745)	Dip 6 = OFF = 0
Impulse duration of 250 ms (S758)	Dip 6 = ON = 1
Master card (sign 1) (default)	Dip 7 = OFF = 0
Slave card (sign 2)	Dip 7 = ON = 1

Dip 1 : permits to keep the digital display in test mode permanently.
Dip 2 : permits to memorize the number displayed by the keyboard (see page 19).
Dip 3 : permits to activate the back control (in option) : this is a system that permits to know in real time the status of segments of a module and to act accordingly. **Do not activate back control modules in double face.**
Dip 4 : permits to use a digital display of more than 6 lines (12 lines maximum) (in option). It is therefore imperative to use 2 control boxes:
- A first one configured as Master driving lines 1 to 6.
- And a second one configured in Slave driving lines 7 to 12.

Dip 5 : permits to determine the maximum number of modules necessary for 1 single line (4 or 8 digits). **Do not modify the default configuration for gaz price display.** Note : in case of an 8-digit display, the maximum number of lines is 6.
Dip 6 : permits to select the duration of the control pulse of the modules :
- use 150 ms for the modules S710, S715, S725, S730 and S745.
- use 250 ms for the module S758.

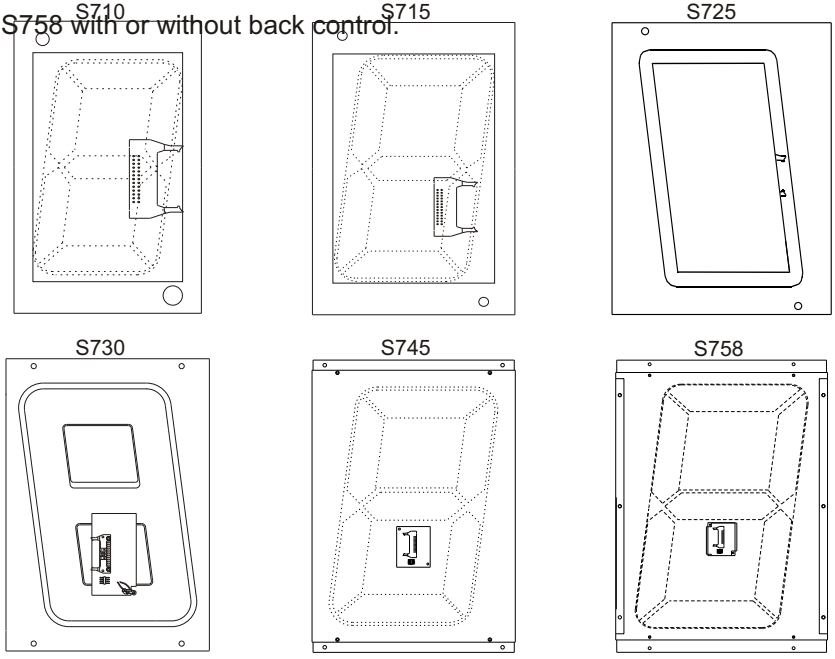
Dip 7 : permits to define the status of the CPU board (in option) :
- configured as Master (price sign 1).
- configured as Slave (price sign 2).

Dip 8 : free.

II.5 – U-links of the modules

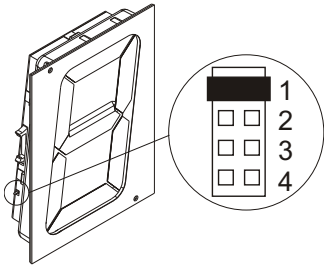
The modules used (S700) are specific to the KARBU KIT system :

– S710 without back control.
– S715 without back control.
– S725 with or without back control.
– S730 with or without back control.
– S745 with or without back control.
– S758 with or without back control.



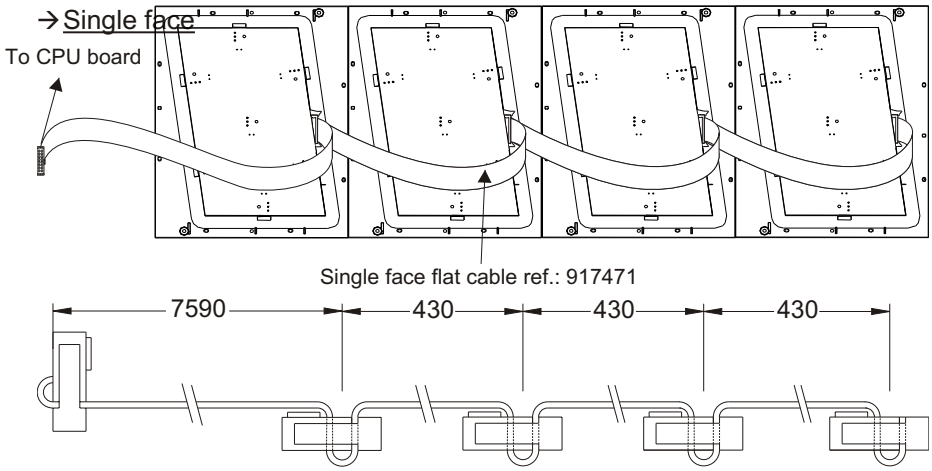
They all have an identification U-link at the back of the modules. The identification U-link permits to activate a number (from 1 to 4) in the modules of the same line.

Note : it is imperative to assign a number to each module for each line. In double-sided display, the same number must be assigned to the same digit (impossible to assign the same number for more than 2 modules per line).

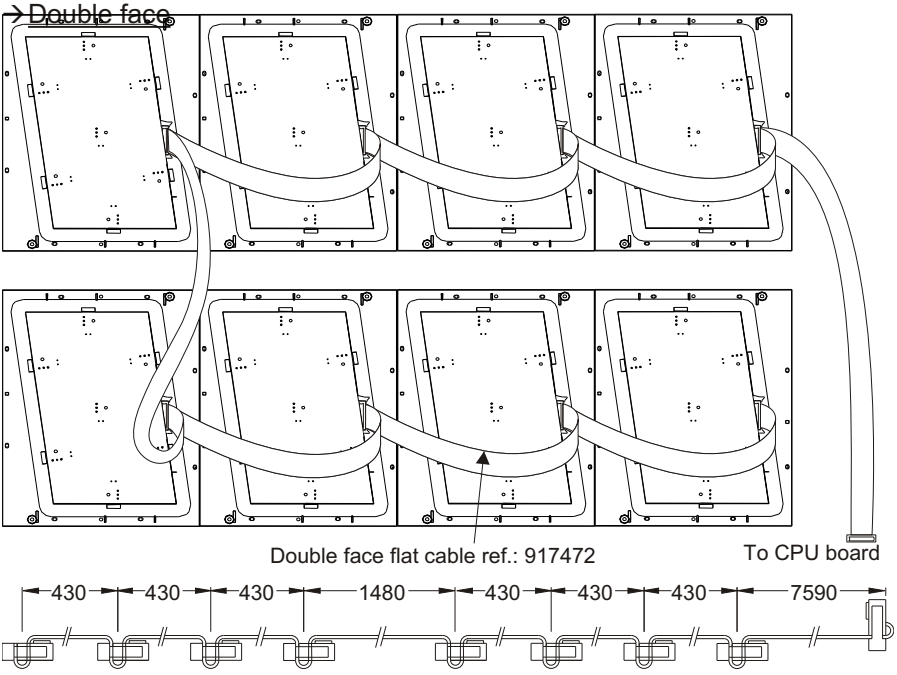


II.6 – Module cabling

→ Single face



→ Double face



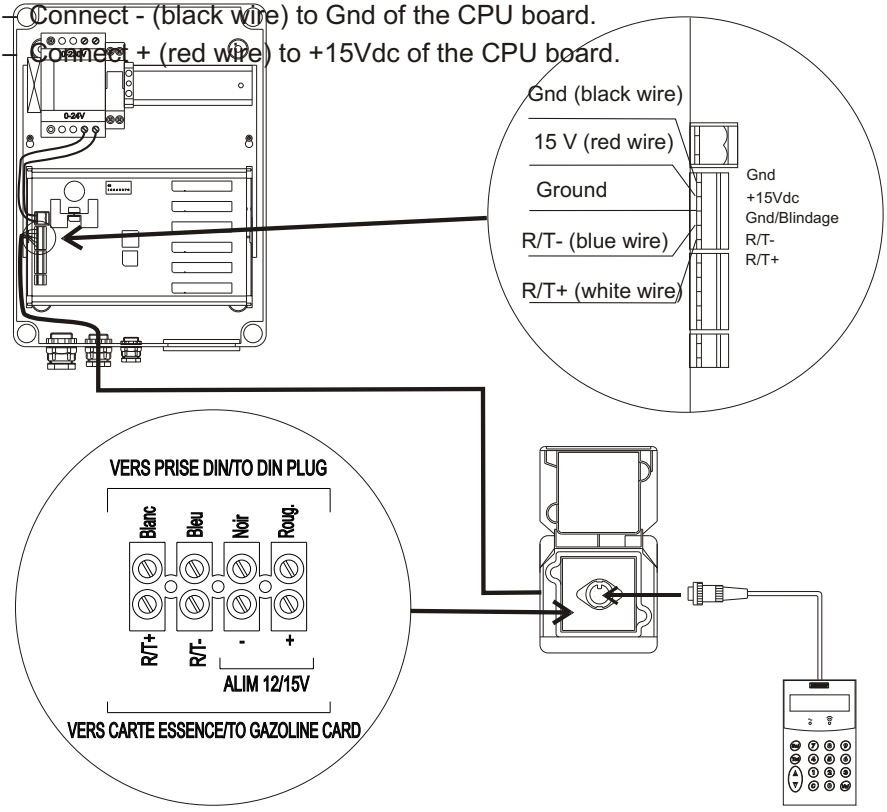
II.7 - Keyboard KARBU PAD

There are 2 means of communication between the keyboard and the CPU board : in wire or in HF mode.
The use of the keyboard is strictly the same regardless of the communication mode (see the use of keyboard, page 26).

A) Wire-mode installation

Connect the connection box to one of the two communication terminals of the CPU board. Connect the DIN plug of the keyboard to the connection box. **The locking ring of the DIN plug must be correctly engaged in order to avoid communication problems.**

– Connect R/T- (blue wire) to R/T- of the CPU board.
– Connect R/T+ (white wire) to R/T+ of the CPU board.
– Connect - (black wire) to Gnd of the CPU board.
– Connect + (red wire) to +15Vdc of the CPU board.

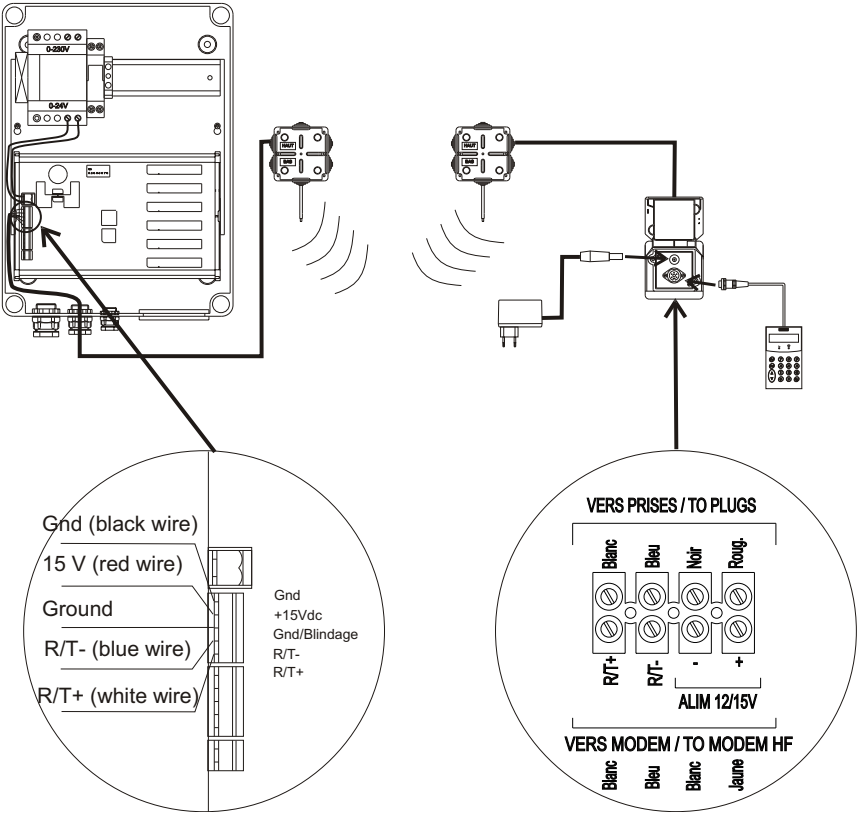


B) HF-mode installation

Install the HF modems with antennas oriented downward.
Connect the connection box to one of the two modems :

– Connect R/T- (blue wire) to R/T- (white wire) of the modem.
– Connect R/T+ (while wire) to R/T+ (blue wire) of the modem.
– Connect - (black wire) to - (white wire) of the modem.
– Connect + (red wire) to + (yellow wire) of the modem.

Connect the DIN plug of the keyboard as well as the transformer to the connection box. **The locking ring of the DIN plug must be correctly engaged in order to avoid communication problems.**



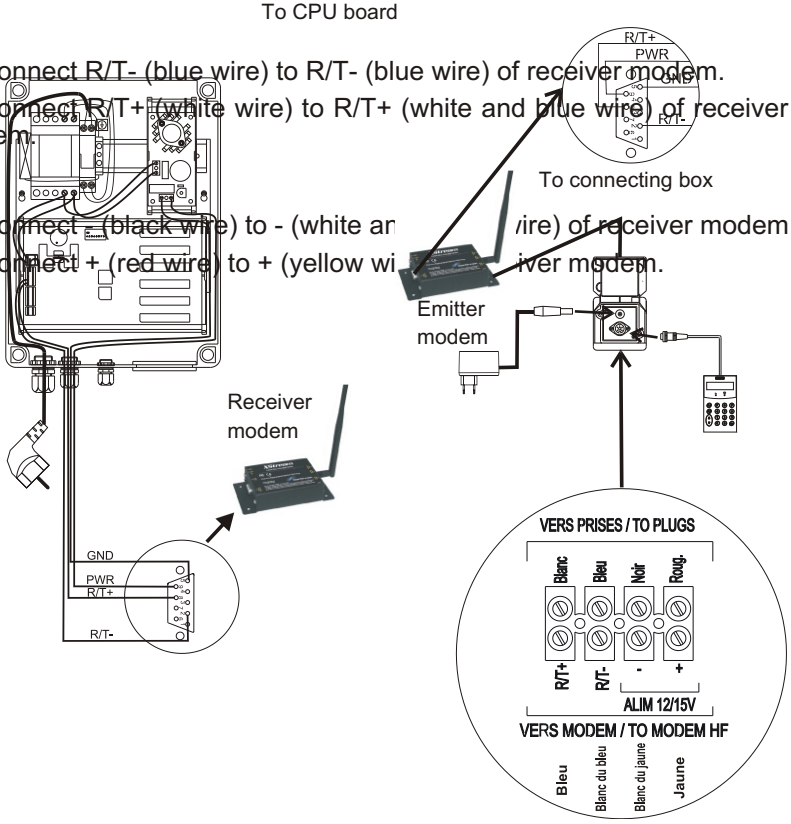
Connect the second modem (price sign side) to the CPU board (same connection).
Note : it is possible to hard-wire connect in parallel a keyboard to the free connector of the CPU board. In this case, the information displayed is that of the last message sent via HF radio- or wire-linked keyboard.

C) HF-mode with Xstream modems

Connect the connection box to emitter modem :

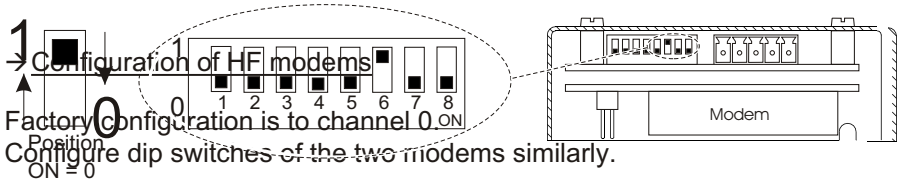
– Connect R/T- (blue wire) to R/T- (blue wire) of emitter modem.
– Connect R/T+ (white wire) to R/T+ (white and blue wire) of emitter modem.
– Connect - (black wire) to - (white and yellow wire) of emitter modem.
– Connect + (red wire) to + (yellow wire) of emitter modem.

Connect the DIN plug of the keyboard as well as the transformer to the connection box. **The locking ring of the DIN plug must be correctly engaged in order to avoid communication problems.**
Connect the receiver modem (price sign side) to the CPU board (same connexion that emitter modem).



– Connect R/T- (blue wire) to R/T- (blue wire) of receiver modem.
– Connect R/T+ (white wire) to R/T+ (white and blue wire) of receiver modem.
– Connect - (black wire) to - (white and yellow wire) of receiver modem.
– Connect + (red wire) to + (yellow wire) of receiver modem.

Fig. 2 : modem dips.



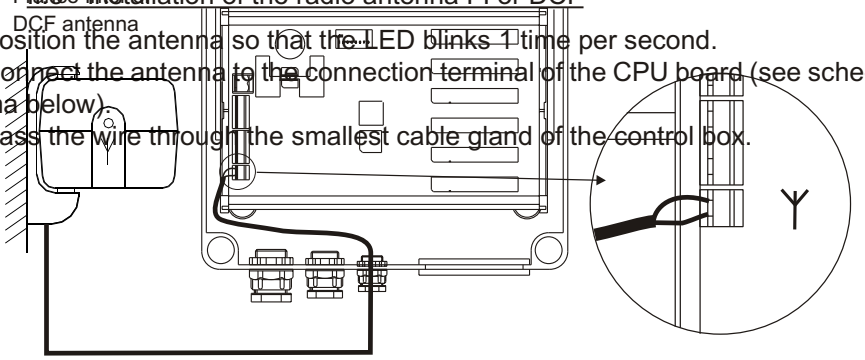
Configuration of HF modems

Factory configuration is to channel 0.
Configure dip switches of the two modems similarly.

Coding dips								Channel number
1	2	3	4	5	6	7	8	
0	0	0	0	0	1	0	0	Channel 0
1	0	0	0	0	1	0	0	Channel 1
0	1	0	0	0	1	0	0	Channel 2
1	1	0	0	0	1	0	0	Channel 3
0	0	1	0	0	1	0	0	Channel 4
1	0	1	0	0	1	0	0	Channel 5

II.8. Installation of the radio antenna FI or DCF

Position the antenna so that the LED blinks 1 time per second.
Connect the antenna to the connection terminal of the CPU board (see schema below).
Pass the wire through the smallest cable gland of the control box.



III – Putting into service of the price sign

III.1 - Testing of modules

Each time the CPU is powered on, it automatically performs a test of all the connected lines, it is not necessary that the keyboard be connected to launch the test. This test permits to verify proper connection of modules to the lines and to quickly detect a possible fault or bad addressing.

III.2 – Memorization of the keyboard's number

Each time the price sign is used for the first time, it is indispensable to memorize the number of the keyboard in each CPU board (Master and Slave, if any).

Attention : for installation with a Slave board, the “Sign Nb setting” (number of price signs) in the menu of the keyboard should imperatively be configured to 2 (see page 30) before proceeding to the acquisition of the number entered into the keyboard.

1 - Power off the CPU board(s).

2 - Switch dip 2 of the CPU board(s) over to position 1 (ON).

3 - Connect the keyboard to the connection box.

4 - Power on the CPU board(s) then verify :

- Brief display of the message “Karbu Kit Date XXXX” on the display unit, followed by a quick blinking of the red diode. If no display is visible on the keyboard, refer to “What to do if” page 33.
- Then, the welcoming prompt “Petrol prices” appears a few seconds later. If it is not displayed, the message “Error com” is displayed instead (refer to “What to do if” page 33).

5 - Power off the CPU board(s) and switch dip 2 over to 0 (OFF).

The KARBU KIT works correctly, it is now possible to display the prices on the digital display(s).

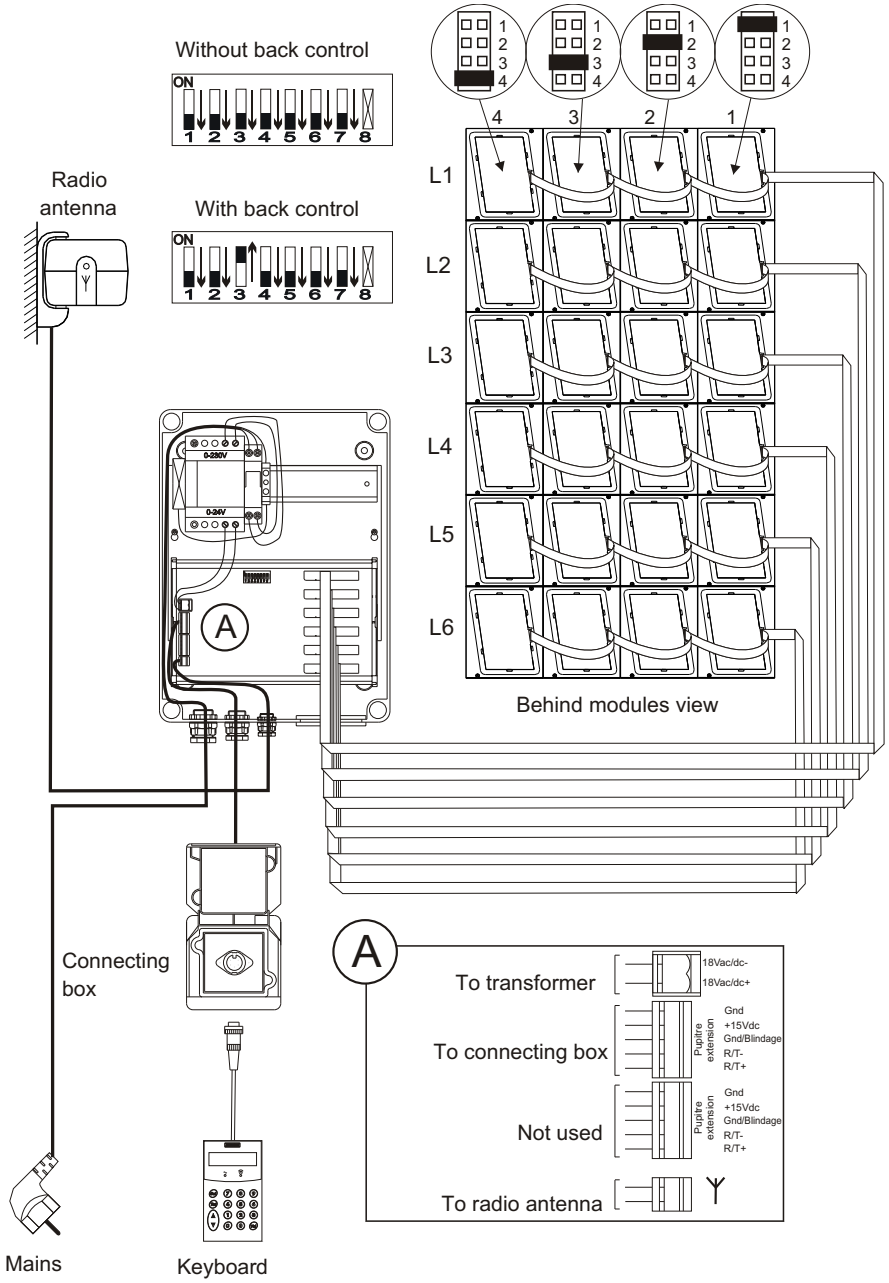
If after having set the time, the message "error com" appears and the Karbu Pad is not recognized, go to the configuration menu (4934), then to keyboard number. Once in the menu, enter the keyboard number again, then repeat the keyboard recognition process. If after two tries, the message is still appearing then see "What to do if...?" page 33.

III.3 – Special cases

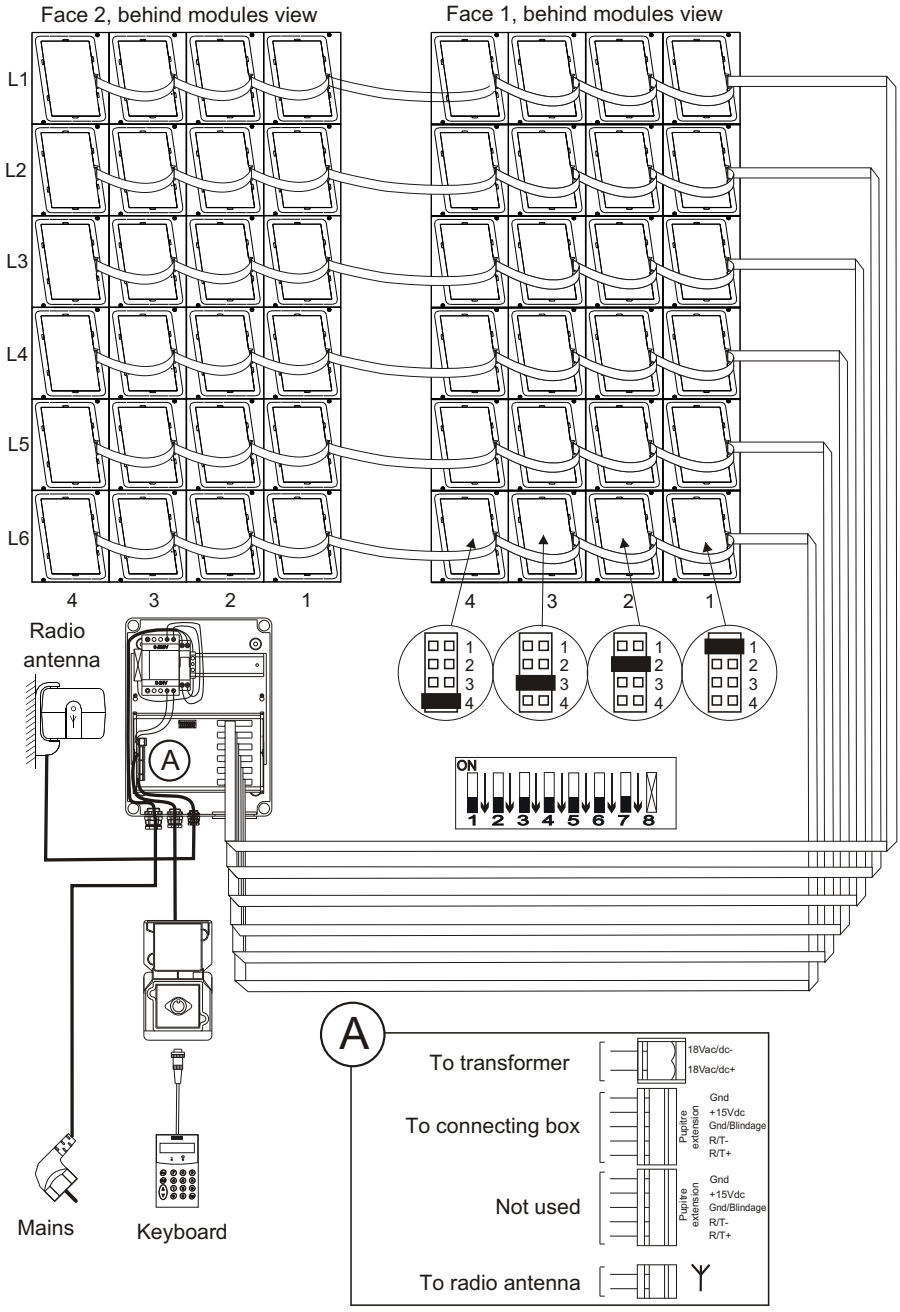
The use of back control on each one of the 2 faces of a of a price sign (Master-Slave mode) requires a special configuration. Two boards are indispensable for the use of back control on each of the 2 faces of a price sign. It is therefore imperative to identify each of the boards by designating one as Master and the other as Slave. The Master configuration being the default configuration, it suffices to declare one of the boards as Slave by switching dip 7 over to position 1 (ON). Then, follow the steps of the 1st-time power on in paragraph III.1 above.

IV - Examples of installation

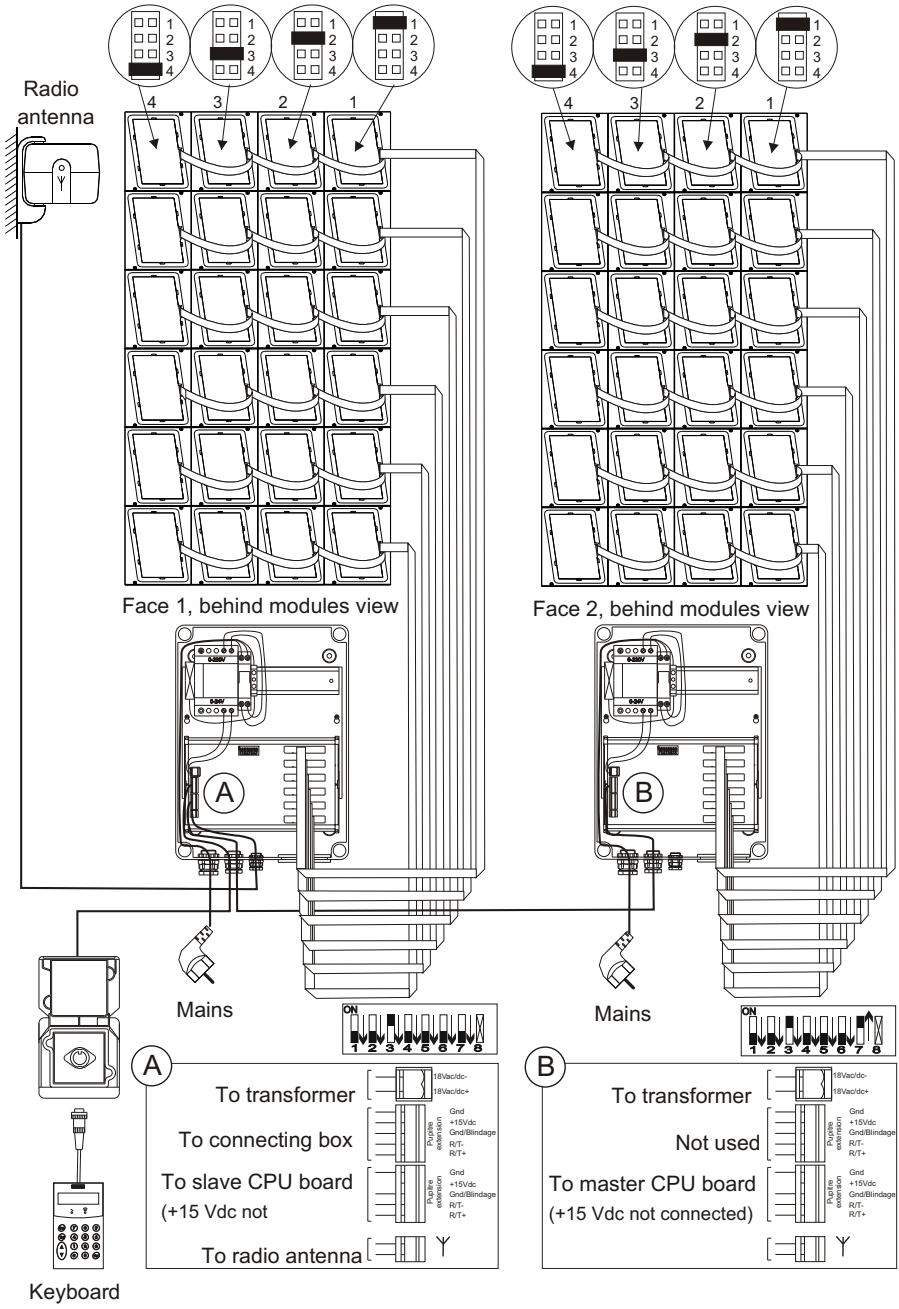
IV.1 – Installation in single face with or without back control



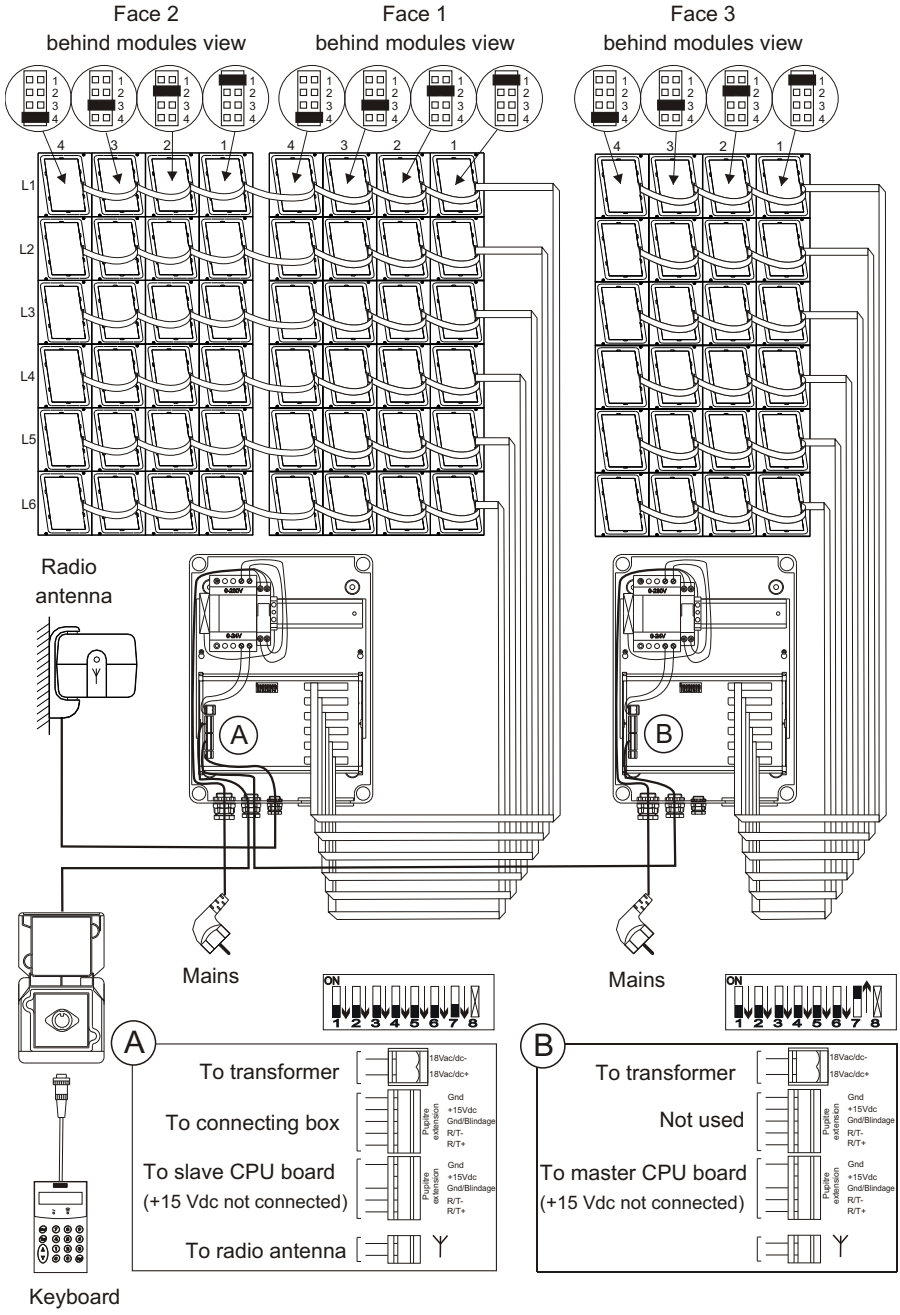
IV.2 – Installation in double face without back control



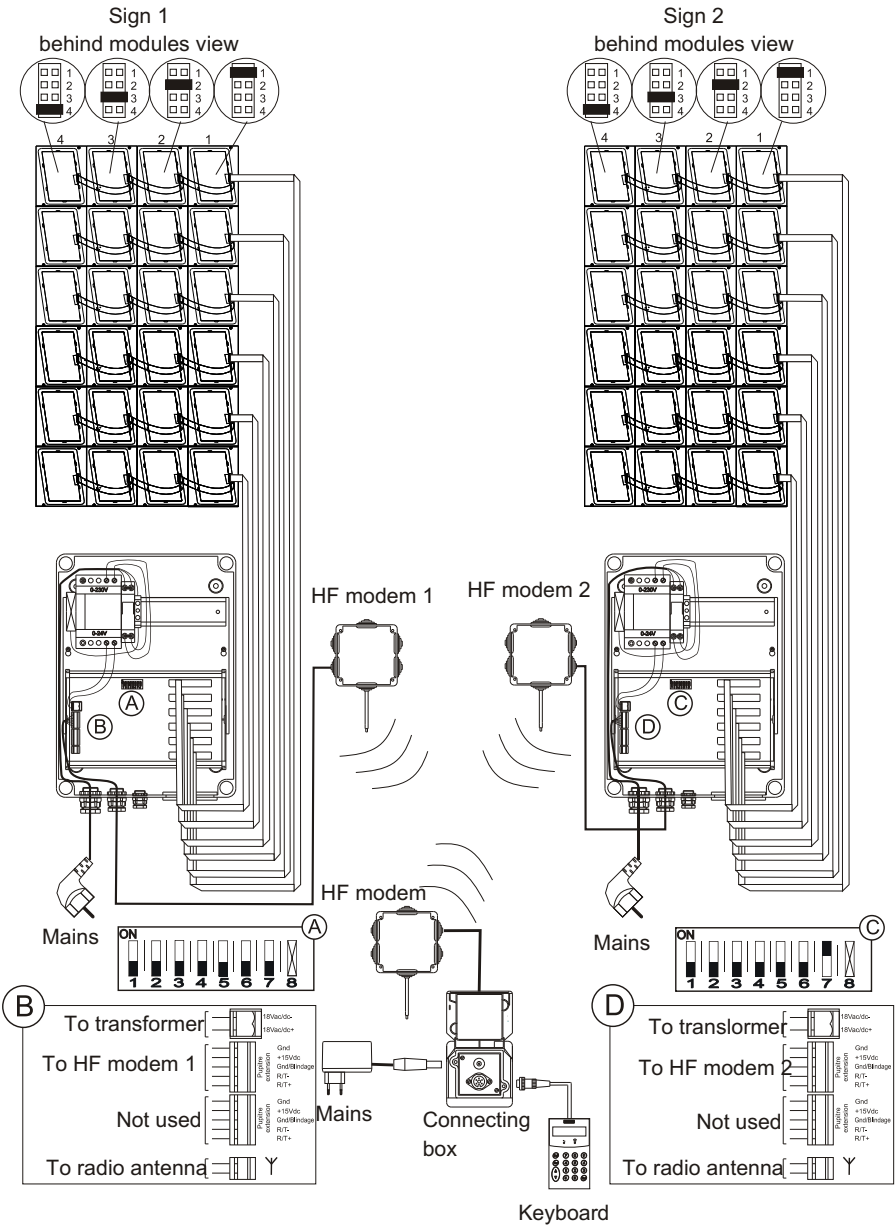
IV.3 - Installation in double face with back control



IV.4 - Installation in triple face without back control

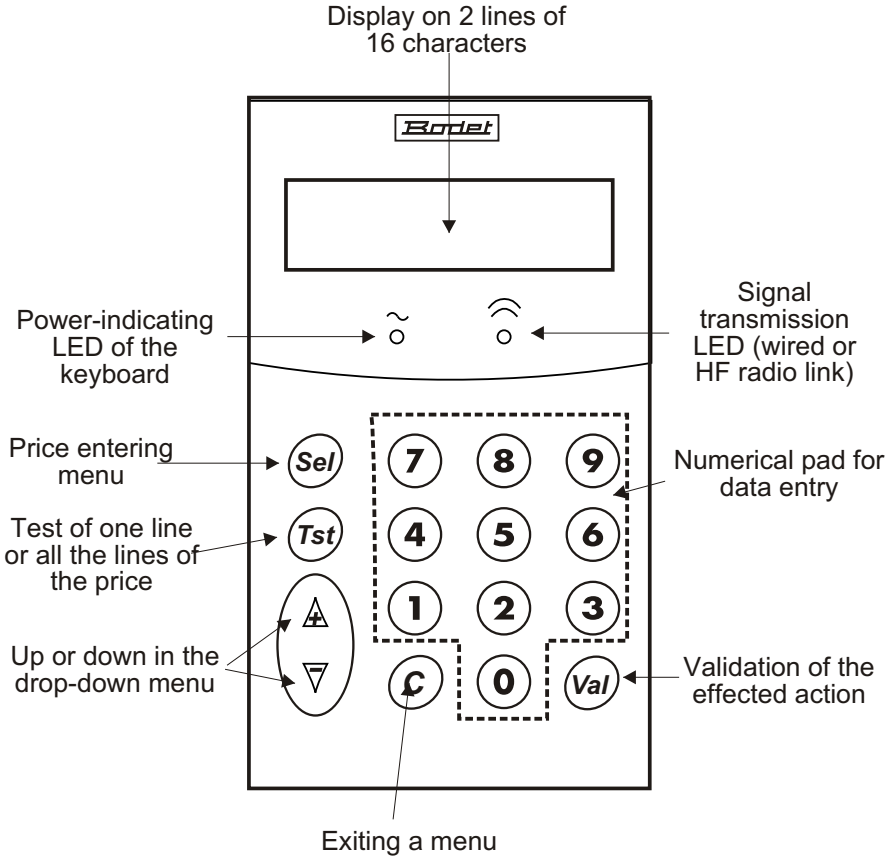


IV.5 - Installation of 2 price signs in HF radio mode



V - Use of the keyboard

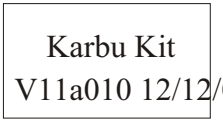
V.1 - Description the keyboard's keys



V.2 - User menu

A) Startup of the keyboard

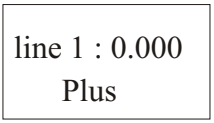
After the keyboard is connected, the version of the unit software is displayed.



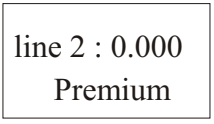
Locking ring of the unit plug must be correctly engaged in order to avoid communication problems.

B) Entering the prices

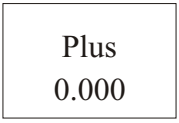
In order to enter in the price menu, press the key (Sel).



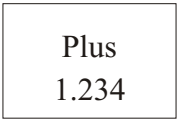
A drop-down menu appears. Using the keys ▲ and ▼ navigate through the menu. It is possible to exit the menu at any moment with the key (C).



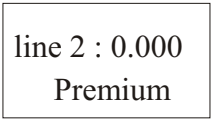
To select a line, press key (Val).



With the numerical pad, enter the desired price for the selected line. Validate with the key (Val).
The number of digits to enter depends on the format of the selected price (see § F page 31).



Once the entered price is validated, move to the next line.

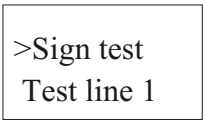


Repeat the operation for each line.

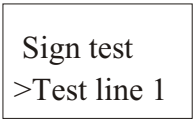
C) Test

It is possible to test the modules of the modules of the price sign in two ways : overall or line-by-line test.

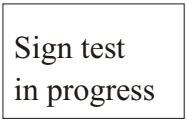
Press on the key (Tst) to enter the test menu.



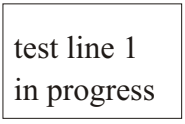
A drop-down menu appears. Using the keys ▲ and ▽ navigate through the menu. It is possible to exit the menu at any moment with the key (C).



To test all lines, validate the selection of “Sign test” with the key (Val). The test is carried out to digital display.



To test a single line, validate the selection “Test ligne X” with the key (Val). With the numerical pad, select the line to be tested. Validate with (Val). The test is carried out to the corresponding line.

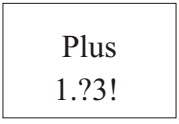


To cancel the running test (overall or single line), press (Val) or (C).

D) Back control option

Attention : works only if the back control option is available on the modules.

The keyboard displays in real time the progress of display whether it be during the entering of a price or in test mode. If a fault is detected in a module, its localization will therefore be indicated on the display.



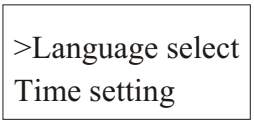
If the keyboard displays a “!”, a module has a problem on its segments.
If the keyboard displays a “?”, a module is absent (see configuration of dip switches).

In the case several faulty modules are detected during the entering, the display will show alternatively the different faults with their locations.

V.3 - Configuration menu

In order to enter the configuration menu, from the welcoming prompt, enter the 4-digits numerical code : **4934.**

A drop-down menu appears. Using the keys ▲ and ▼ navigate through the menu. It is possible to exit the menu at any moment with the key (C).



A) Language selection

It is possible to select among French, English, German, Spanish, Italian and American.

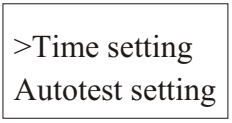
Using the keys ▲ and ▼ select the language. Validate with (Val).

Once the validation is made, time setting menu appears. To exit the menu without validation, press the key (C) .

Note : changing of the language influences the selection of the gas name.

B) Time setting

It permits to set the time manually.



Use the numerical pad or touch ▲ or ▼ to enter the minutes. Validate with (Val).

Then enter the hours using the numerical pad or key ▲ or ▼. Validate with (Val) .

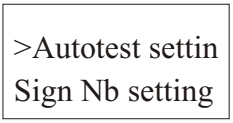
The selected time is then displayed. Validate with (Val).

Once the validation is made, the cycling test configuration menu appears. To exit the menu without validation, press the key (C).

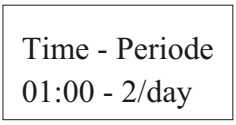
Attention : if an antenna is connected to a petrol price, the radio hour will automatically be the reference.

C) Cyclic test

It permits to perform a regular test of the modules.



Use the numerical pad or key ▲ or ▽ to enter the hour of the first cycle then the number of cycle by day. Validate with (Val).



Once the validation is made, the periodicity configuration menu appears. To exit the menu without validation, press the key (C).

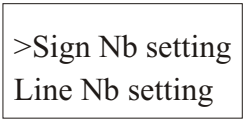
The test is performed at the selected time and periodically so. It lasts 7 minutes. The display of prices returns once the test is performed. If the number of cycle = 0, no autotest.

Once the validation is made, the menu for setting the number of digital displays appears. To exit the menu without validation, press the key (C).

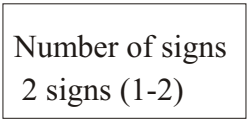
D) Number of digital displays

It permits to set the number of digital displays (1 or 2 digital display(s)).

Use the numerical pad or the keys ▲ or ▽ to enter the number of lines desired (1 or 2). Validate with (Val).



Attention : for an installation with a double-sided price sign with back control, enter "2".

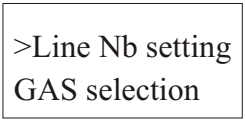


The selected time is then displayed. Validate with (Val).

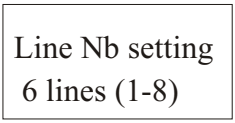
Once the validation is made, the menu for setting the number of lines appears. To exit the menu without validation, press the key (C).

E) Number of lines

It permits to set the number of lines on the digital display (1 to 8 lines).



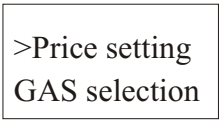
Use the numerical pad or key ▲ or ▼ to enter the desired number of lines (0 to 8 lines). Validate with (Val).



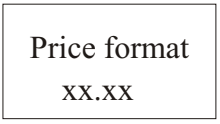
Once the validation is made, the menu for price format configuration appears. To exit the menu without validation, press the key (C).

F) Price format

It permits to select the position of the floating point and the number of digits of a price.



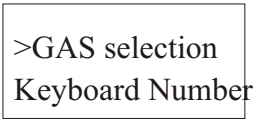
Using keys ▲ and ▼ select the desired format. Validate with (Val).



Once the validation is made, the menu for price format configuration appears. To exit the menu without validation, press the key (C).

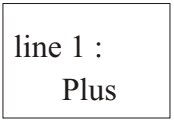
G) Gas name personalization

It permits to attribute a gas name to a line. A wide selection is possible : and it varies according to the language.

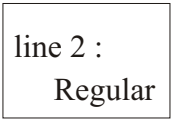


The gas names available in English are : Plus, Premium, Supergrade, Regular, Diesel, LPG, Two-stroke, Domestic.

Using keys ▲ and ▼ select the desired type of gas. Validate with (Val), we will then be moved to the next line.



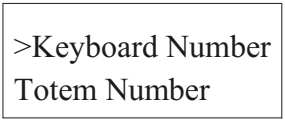
Carry out the operation for each line.



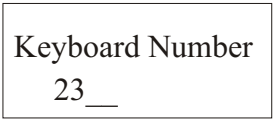
(C)

H) Identification number of the keyboard

It permits to attribute an identification number to the keyboard (from 0000 to 9999).



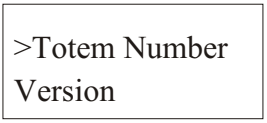
Using the numerical pad, enter a 4-digits number. Validate with (Val). To know the complete identification procedure of the keyboard, see page 19.



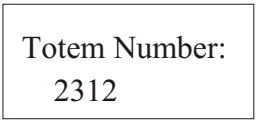
Once the validation of all the lines is made, we will be returned to the language selection menu. To exit the menu without validation, press the key (C).

I) Identification number of the price sign

Allows to know the identification number of the price sign.



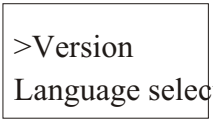
Display of the identification number of the price sign. This number cannot be modified.



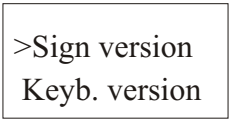
To exit without validate, press the key (Val) or (C).

J) Software version

It permits to know the version of the keyboard and that of the CPU board.



Using touches ▲ and ▼ select the desired version : keyboard or CPU board. Validate with (Val).



Then the version of the keyboard software or the CPU software is displayed. Validate with (Val).

(C)

VI – What to do if … ?

→ What to do if the CPU board went out of order ?

Proceed to replace the board :
– Power off the control box.
– Disconnect all various connectors including flat cables.
– Take the CPU board off carefully from the fixing rail.
– Put the new board in its place.
– Reconnect various connectors including flat cables.
– Power on the control box.

→ What to do if any module went out of order ?

Verify the power supply of the unit (see page 10) :
– The transformer must be correctly connected.
– Verify that auto-cut protection of the transformer is not active.
– The power supply terminal of the CPU board must be correctly connected to the transformer. The LED in the bottom-left has to be blinking.

Check proper connection of the flat cables of the modules (see page 14).
Verify that the U-link on each module is correctly placed (see page 14).

→ What to do if the segments of modules are not properly switching over ?

The flat cables of the modules must be correctly connected (see page 14).
Pulse duration (dip 6 of the CPU board) must be correctly set :
– Use 150 ms for modules S710, S715, S725, S730 and S745.
– Use 250 ms for the module S758.

→ What to do if antenna reception is bad ?

Position the antenna correctly. If the reception is good the LED on antenna FI or DCF must blink 1 time per second (see page 18).
Advice : use a Long Waves radio set and tune to France Inter station, then re-orient the antenna similarly as your radio set, with the diode directed to the transmitter. As a rule of thumb, the favourable position corresponds to an orientation perpendicular to the direction of the transmitter.

→ What to do if the HF transmission is bad ?

The antennas of HF modems must be oriented downward. Displace, if necessary, one of the modems around a free space.
Check proper cabling of the modems to the CPU board and the connection box (see page 16).
Check proper configuration of the modems dip switches : configuration must be strictly the same on both modems.

→ What to do if the price on the keyboard is not in the same order as on the digital display ?

Check the position of U-links on the modules (see page 14).

→ What to do if the price does not appear on the correct line of the digital display ?

Check the position of flat cables on the CPU board : line 1 must be connected to the upper connector.

→ What to do if a module displays nothing ?

Check that the flat cable is well connected to the back of the module and that the U-link of the module is well inserted (see page 14).

→ What to do if the keyboard displays a "&" or "!" when a price is entered ?

– If the keyboard displays a "&", a module has a problem on its segments.
– If the keyboard displays a "!", a module is absent (see configuration of dip switches).

Check the cabling of the modules (see page 14).
In the example, the module displaying the 3rd digit is absent and the 1st one has a problem of segments.

→ What to do if the keyboard does not work ?

The green diode (power on) is off and no display is visible, then check :
– If the plug of the keyboard is well engaged in the connection box.
– Good continuity of the flat cables connecting the connection box to the CPU board.
– That there is no reverse polarity of power supply or communication wires.
– That there is no reverse of + and - power supply cables connection.

The green diode (power on) is lit but no display, then check :

– The presence of a minimum voltage of 11V at the power terminal of the keyboard.
– That there is no reverse polarity of power supply or communication wires.

→ What to do if the keyboard displays “Error Com” ?

The keyboard starts up, but after 30 seconds, displays “Error Com” and beeps 3 times.
The message “Error com” indicates a bad communication between the control box board and the keyboard.

– In wire mode :
  – Check acquisition of the number of the keyboard (page 19).
  – Check that the plug of the keyboard is well engaged in the connection box.
  – Check that there is no inversion between communication wires T+ and T-.
  – Check good continuity of the cables between the connection box and the control box board
– In HF mode :
  – Check acquisition of the number of the keyboard (page 19).
  – Check that the plug of the keyboard is well engaged in the connection box.
  – Check proper configuration of the modems.
  – Check that both modems are well tuned to the same channel.
  – Check that max. distance between the two modems is shorter than the max. recommended distance.
  – Check that power wires of the modems are correctly connected. The green diode indicating the presence of the power is lit.
  – Check that there is no inversion between communication wires T+ et T-.
  – Check good continuity of the cables between the connection box and the control box board.

→ What to do if the keyboard displays a message like "Premium : ?.???" ?

Check the connection of the flat cables to the CPU board.
Check that the number of lines entered in the keyboard is in accordance with the number of lines wired (see page 29).

→ How to replace a keyboard ?

Plug the new keyboard and follow the procedure to memorize its identification number into the CPU board (see page 18).

VII – Technical specifications

→ Power supply

230V+/- 10% transformer with a 1A fuse for the control unit.
230V circuit breaker.
Modules powered by the CPU board.
In wire mode, the keyboard is powered by the CPU board.
In HF mode, the keyboard is powered by a Mains adapter via the connection box.

→ Communication

In wire mode : communication is via a RS485 link (the cable must not be longer than 300m).
In HF mode : communication is via a HF 433 MHz link (the range is nearly 100m).

→ Internal clock

Maximum deviation of 1 second per day at 25°C.
Powered by a Lithium battery of 20 years life.

→ Mechanical specifications

Weatherproof box : IP23.
Dimensions in mm of the weatherproof box : 300 x 220 x 120
Tropical design of the CPU board.

→ Environment

Working temperature : -20°C to +70°C.
Humidity : 93 % to +40°C.

→ Standards

Radiated emission : EN50293 (2000).
Radiated immunity : EN50293 (2000).

VIII – Installation instructions

Do not put flammable material (e.g. wood) under the KARBU LED box for safety reasons.

VIII.1 – Dismantling of the CPU board

In order to dismantle the CPU board, it suffices to push upward the 2 catch pins (Fig.1) then lift up the set of electronic board + plastic section in order to derail it from the DIN fixing rail (Fig.2).
The plastic section is composed of 3 parts : the section itself, and two lateral latches on both sides.
Attention : the lateral latches are relatively fragile and are the ones that allow fixing of the DIN rail.

Fig.1 :

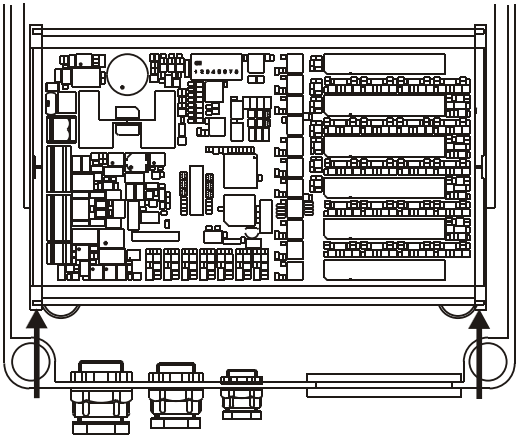
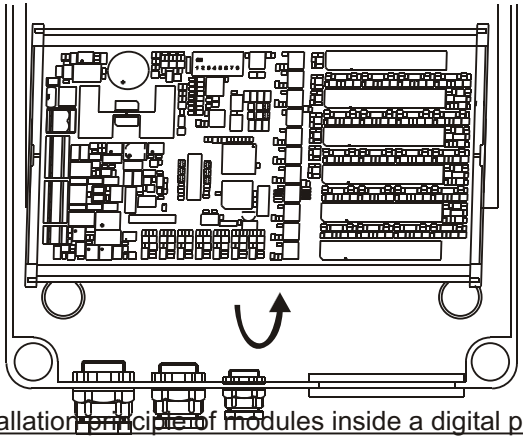
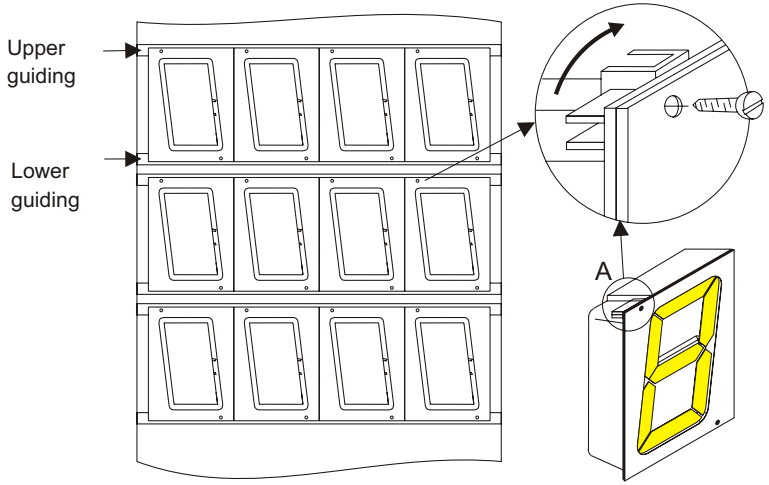


Fig.2 :

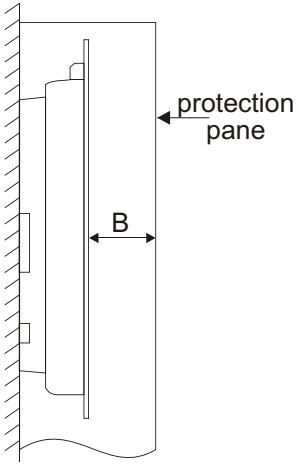


VIII.2 - Installation principle of modules inside a digital price sign

Fix the modules on the upper and lower guiding rails using the 2 twist locks of each module.



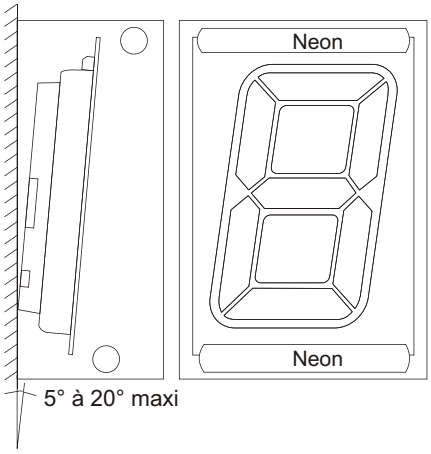
With the modules being generally protected by a protection pane, it is imperative to leave a minimum clearance of 25 mm (B) between the protection pane and the module in order to avoid a segment being blocked.



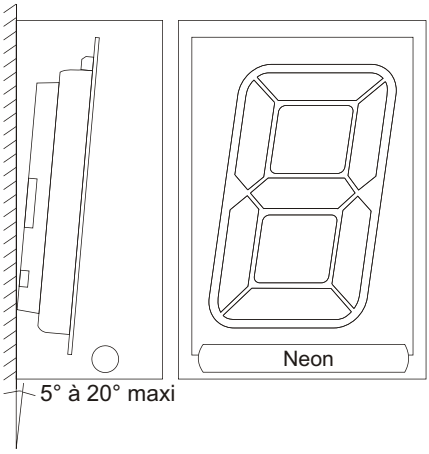
VIII.3 - Installation principle of modules lighting

For optimal lighting of modules, it is important to have them inclined with nearly 5°.
For small modules (S710/S715/S725), use a 18 to 36 W neon tube.
For large modules (S730/S745/S758), use two 36 to 58 W neon tubes.
Leave a minimum clearance between the neon and the module in order to avoid a segment being blocked by a neon tube.

Lighting modules S730/S745/S758



Lighting modules S710/S715/S725



VIII.3 - Ventilation of the price sign

In order to avoid any condensation problems inside the digital display, it is recommended to provide ventilation.

Ventilation is ensured by making holes at the upper and lower sides of the digital display.

In order to avoid penetration of insects or small animals, it is preferable to place anti-insect grids on each aeration hole.