

INSTRUCTIONS

WARNING

Among the different ways to operate NEMO PLUS, it is possible to control NEMO PLUS by voice.

Activating NEMO PLUS with the voice is the most user-friendly and quickest means, but it requires some discipline : the words to be pronounced must be the same as those chosen during vocal training (if the word « Light » is chosen, the word “lamp“ should not be said instead).

Likewise, the volume of the voice must be identical to that used during vocal training (if NEMO PLUS does not wake up the first time after saying the word that had been chosen, it is needless to talk louder as NEMO PLUS is not deaf).

To wake NEMO PLUS up, you need to pronounce its name (the wake-up word that had been chosen during vocal training and that appears on the standby screen).

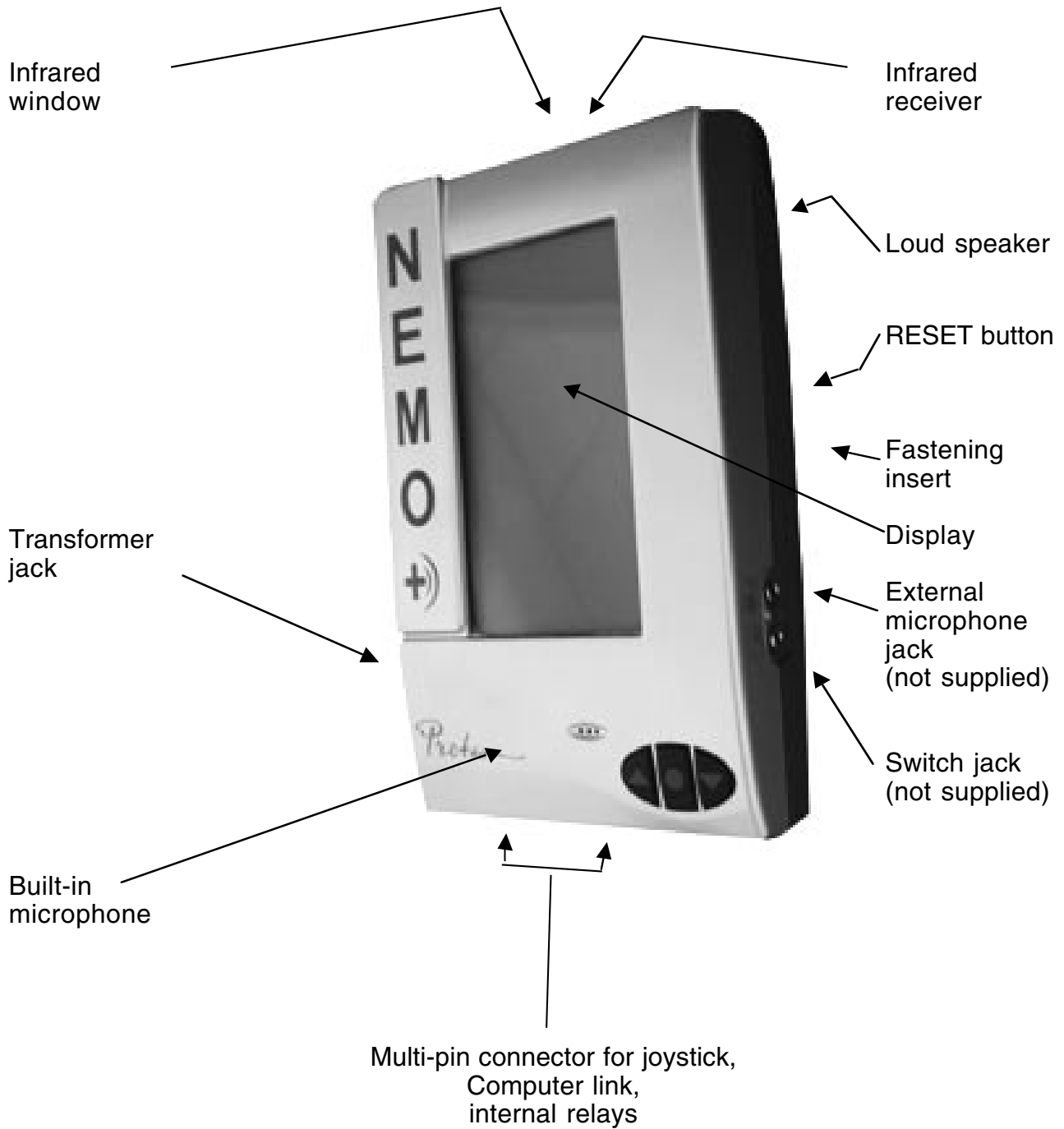
Three situations can occur :

1. NEMO PLUS wakes up : choose an order in the list (see chapter Using NEMO PLUS)
2. Nothing happens : repeat the wake-up word.
3. The wake-up word flashes on the screen : confirm the wake-up word with saying “OK“.

CAUTION

**NEMO PLUS IS NOT AN ALARM SYSTEM
NOR A SECURITY DISPOSAL**

NEMO



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Part 1: INTRODUCTION

- 1 - What is an environment controller ?
- 2 - What is NEMO PLUS ?
- 3 - NEMO PLUS's environment

1 - 1 : What is an environment controller ?

An environment controller is a device that enables the user to control one or more electrical appliances in the home or in his/her room (phone, TV-set, electrically operated door, etc.).

1 - 2 : What is NEMO PLUS ?

NEMO PLUS is an environment controller that can be adapted for all types of disability. NEMO PLUS controls electrical appliances remotely, no wires attached, by infrared signals (just like a TV-set remote control). But where needed, NEMO PLUS has a connector for cable or radio-control of a call system, alarm or door with no infrared controls. (Ask for details)
e.g. Electric door fitted with a radio receiver.

The user can operate NEMO PLUS in any of three ways depending on what he/she wants to do or can do :

■ By voice

The users speaks commands. NEMO PLUS understands the commands and operates the equipment in question.

■ By sensor (or switch)

There is a complete range of switches for all types of disability (switches that can be operated by blowing, by the head or arm, by eyelid movement, etc.)

■ By joystick

See the section on USING NEMO PLUS.

1 - 3 : NEMO PLUS's environment

As has already been said, NEMO PLUS operates electrical appliances principally by infrared control. The appliances that are to be controlled must therefore be equipped with infrared receivers :

- remote-controlled audio-visual equipment
- infrared telephones
- all power sockets equipped with infrared receivers
- drive motors: doors, roller blinds, windows, etc.

The different drive motors must be equipped with infrared receivers (or possible radio receivers for doors).

- Lighting: light switches must be the infrared type
- Beds, page-turners, etc. to be equipped with infrared receivers. (Ask for details)

Part 2 :

CHARACTERISTICS

- 1 - Access peripherals
- 2 - Outputs
- 3 - Screen
- 4 - Multi-pin connector
- 5 - Infrared decoding
- 6 - Voice learning
- 7 - Installation
- 8 - Programming

2 - 1 : Access peripherals

- **Microphone**

NEMO PLUS has a built-in microphone to receive spoken commands from the user (after learning). Nevertheless, NEMO PLUS can be connected up to an external microphone (supplied as an option). This may be useful for better voice recognition under certain circumstances.

- **Sensor (supplied as option)**

If the user is unable to speak, NEMO PLUS can be operated by a suitable switch for the user's particular disability, even with severe disabilities. (Ask for details)

- **Joystick (supplied as option)**

A joystick allows some users fast access to the different selections where voice activation is either not possible or not desirable.

2 - 2 : How does nemo control electrical appliances ?

- **By infrared**

When the user chooses, NEMO PLUS sends out an infrared code into the room (just like a TV-set remote control) corresponding to what the user has selected. e.g. "Television" "1" emits the code for the first TV channel.

Of course, the infrared codes must first have been learned. NEMO PLUS must be taught the infrared codes it will have to emit (see the section on Infrared Learning, page 28).

- **By cable or radio control**

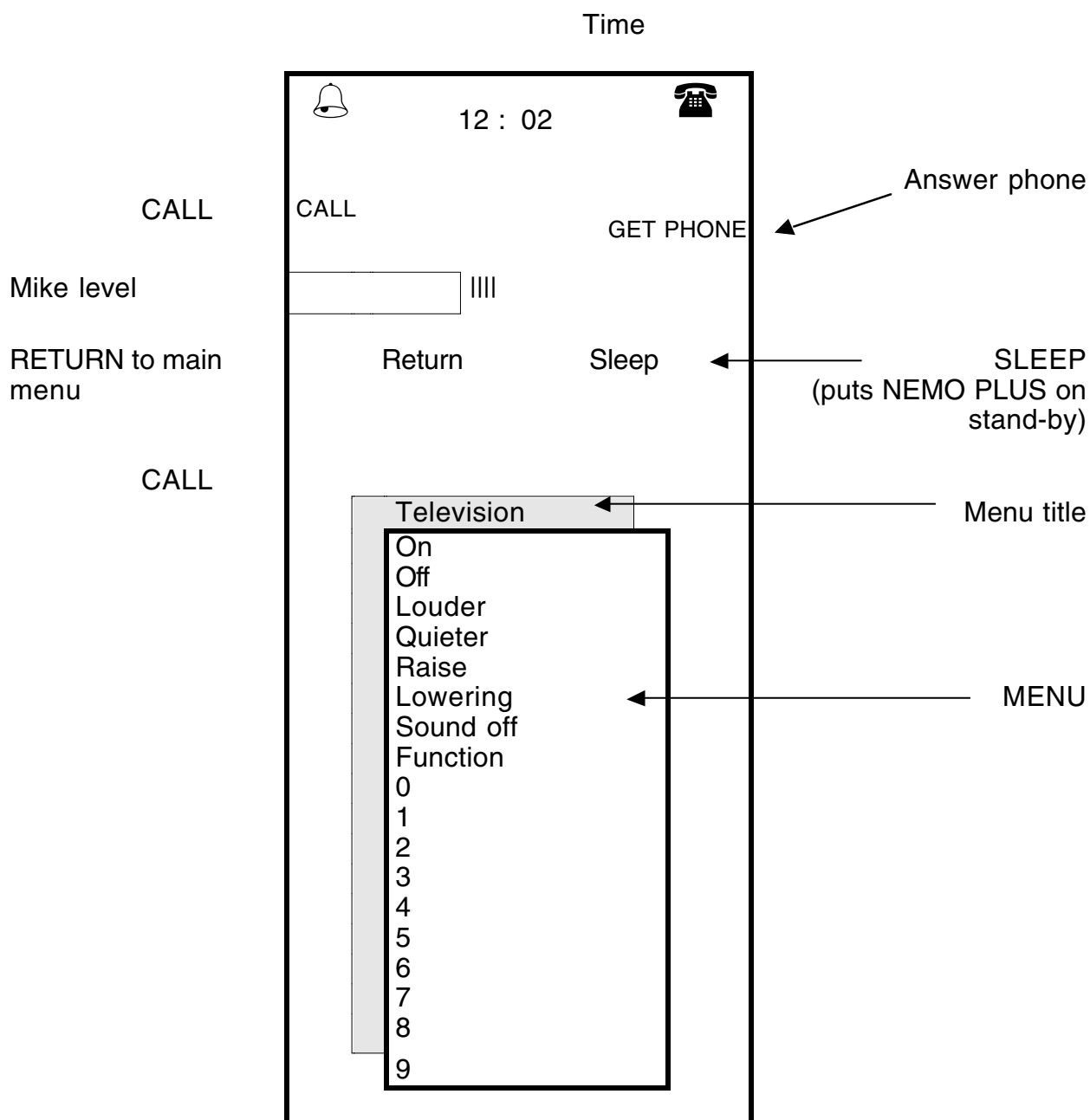
Because many remote alarm and door drive systems work by radio control and not infrared control, NEMO PLUS has been equipped with a special connector. By fitting the radio control with a connector (ask for details) it can be hooked up to NEMO PLUS and therefore control the door and/or alarm system in question. This connector may also be cabled directly to the "nurse call" system, for example.

**N.B. Maximum voltage : 24 V
Maximum current : 500 mA**

2 - 3 : Screen

NEMO PLUS is a compact device. However, the display is made large enough so the user can read all the selections easily.

Here is an example display:



2 - 4 : Multi-pin connector

This connector is located under NEMO PLUS and is used to connect a joystick or to link up with two appliances not equipped with infrared receivers.

This connector is also used for computer links for maintenance work.

2 - 5 : Infrared decoding

NEMO PLUS is able to learn the different infrared codes emitted by the different remote controls usually found around the house (TV-set, video-recorder, hi-fi system, descramblers, etc.). This is described in the section 3 - Programming (page 15).

Once it has learned the codes, NEMO PLUS knows which code to send when the user tells it to.

e.g. : The user asks NEMO PLUS to turn on TV channel number 1. NEMO PLUS emits the infrared code corresponding to number 1 on the TV-set remote control.

2 - 6 : Vocal training

Users who do not control NEMO PLUS by voice can skip this section. If voice control is to be used, to achieve high-quality voice leasing NEMO PLUS must be taught the commands used as spoken by the user. This vocal leasing is described in the section on programming.

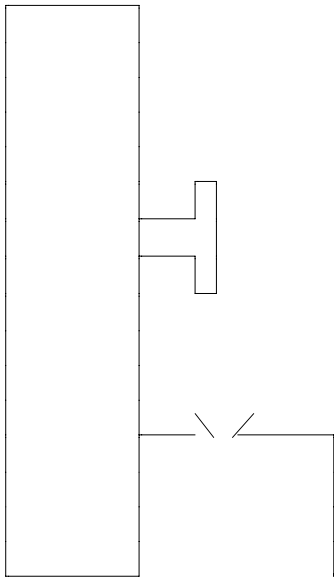
See the section on Using NEMO PLUS too.

2 - 7 : Installation

NEMO PLUS comes with a table bracket, a fastening screw, a transformer and this instruction manual.

1. Fit the screw provided on the back of NEMO PLUS into the metal insert. Do not tighten the screw completely.

2. Slide the screw fastened to NEMO PLUS into the slot on the table bracket.



3. Tighten the screw to lock NEMO PLUS in position.

4. Connect the transformer to NEMO PLUS (jack on the left-hand side of NEMO PLUS) and then plug the transformer into a mains socket.

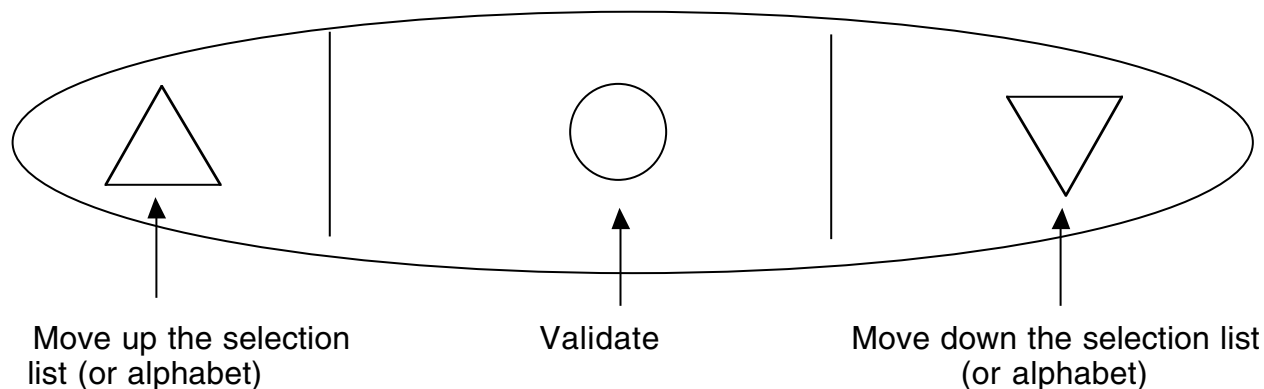


**ONLY USE NEMO PLUS WITH THE TRANSFORMER PROVIDED.
DO NOT USE NEMO PLUS WITH ANY OTHER TRANSFORMER.**

2 - 8 : Programming

NEMO PLUS can be programmed directly with no need to connect it up to a computer.

One of the main features of NEMO PLUS is that it is easy to program. The key pad is used for programming.



Programming takes account of user settings, choice of appliances to be controlled, storage of phone numbers, voice learning if necessary, infrared code learning (see the section on Programming, page 85).

N.B. : If the programming procedure is launched but none of the three NEMO PLUS keys is pressed for three minutes, NEMO PLUS returns to normal operating mode.

Part 3 :

PROGRAMMING

- 1 - Introduction
- 2 - Settings
- 3 - Equipment
- 4 - Phone list
- 5 - Infrared training
- 6 - Vocal training
- 7 - Restore / Save
- 8 - Switching NEMO PLUS off

3 - 1 : Introduction

NEMO PLUS is programmed with the three keys located below the screen (at the bottom right of NEMO PLUS).

Program access :

Press the two keys ▲ and ▼ simultaneously and hold them down until the configuration menu is displayed:

CONFIGURATION	
Version X X X X X X	
SETTINGS	User settings
EQUIPMENTS	Choice of menus and appliances to control
PHONE LIST	Store phone numbers
VOCAL LEARNING	Voice learning if required
INFRARED TRAINING	Store remote control infrared codes
SAVE/RESTORE	Back-up on PC (MAINTENANCE)
NEMO PLUS OFF	Switch NEMO PLUS off (optional)
QUIT	Return to normal operating mode

The ▲ and ▼ keys are used to move up and down through the menu.

The ○ key is used to validate the selection that is highlighted.

N.B. : If the programming procedure is launched but none of the three NEMO PLUS keys is pressed for three minutes, NEMO PLUS returns to normal operating mode.

!

THE KEYS HAVE A TIME-DELAY FEATURE SO THEY CANNOT BE PRESSED TWICE ACCIDENTALLY. PRESSING A KEY VERY QUICKLY WILL THEREFORE HAVE NO EFFECT.

3 - 2 : Settings

Press \circ if Settings is highlighted. If not, highlight Settings by pressing the \blacktriangle and \blacktriangledown keys.

CONFIGURATION		
<input type="text"/>		Microphone sensitivity level
WAKE UP WORD : NEMO PLUS		Select wake-up word
HOURS	: XX	Time setting (hours)
MINUTES	: XX	Time setting (minutes)
CONTRAST	: 0	Display contrast setting
BACK-LIGHT	: 1	Display contrast setting
MIKE SENSITIVITY	: 22	Microphone sensitivity setting
VOLUME	: 18	NEMO PLUS Voice volume setting
SCAN SPEED	: 1,	Scan speed setting
VOCAL CONFIGURATION		Vocal recognition setting
QUIT		Used to exit the settings menu

3 - 2.1 : Wake up word

Validate by pressing \circ if "Wake-up word" is highlighted (framed by a box). The word NEMO PLUS is replaced by the cursor flashing on letter A. Press the \blacktriangle and \blacktriangledown keys to select the first letter of the chosen name and then press \circ to move on to the next letter (the cursor shifts one place to the right). Continue until you have entered the complete name.

You can give NEMO PLUS any name you want (e.g. CHARLIE, ARTHUR, etc.) up to eight characters long.

When you have entered the name, press \blacktriangledown key to display \blacktriangleleft and then valid by pressing \circ .



If you validate a letter by mistake it is not possible to go back. Instead you must exit by validating ↵ by pressing ○ and then press ○ once more to begin again.



It is best to chose names with two syllables that are pronounced differently (avoid MAMA, GEE-GEE, COCOA for example and use instead CHARLIE, PETER, ALBERT, etc.). This is particularly important for vocal commands.

3 - 2.2 : Times (Hours)

Press ▼ to highlight Hours.

Press ○ to validate.

The cursor flashes behind the figure.

Press ▲ or ▼ to select the hour and then validate by pressing ○.

3 - 2.3 : Time (minutes)

Press ▼ to highlight Minutes.

Validate by pressing ○ and then repeat the same operation as for Hours.

3 - 2.4 : Contrast

The NEMO PLUS display is set for near maximum contrast before leaving the factory. The contrast can be altered by pressing ○ to validate Contrast , and then pressing ▲ or ▼.

3 - 2.5 : Back-lighting

This turns the NEMO PLUS display light on or off.

The back-lighting is factory set to "1", meaning the back-light is on. By pressing ○ to validate Back-light and selecting ○ by pressing ▲ or ▼, the screen light is switched off. To light the screen again select "1". Validate your choice with the ○ key.

The figure on the right is able to be the value 2, in that case the backlighting of the screen is temporised. It lights up when you use it and it lights down automatically after 15 seconds of non using.

This mode seems to be the most interesting.

3 - 2.6 : Microphone sensitivity

This is only to be used when NEMO PLUS is controlled vocally.

The sensitivity of the microphone is adjusted by pressing **O** to validate Microphone sensitivity and then pressing **▲** and **▼** and validating with the **O** key.

Microphone sensitivity is adjusted so that the microphone pick-up level (the bar that moves at the top of the screen under Settings) moves as close as possible to the right-hand side of the frame, without reaching it, when a word like "Alarm" or "Phone" is spoken.

As a guide, for a normal voice, this setting is usually about 20 (built-in mike) or 19 (external mike).

If NEMO PLUS is being used in noisy surroundings, microphone sensitivity must be slightly reduced or the external microphone moved closer to the mouth. Validate the chosen setting by pressing **O**.

3 - 2.7 : Volume

Validate by pressing **O** when Volume is selected and then select the required sound level for NEMO PLUS's voice with the **▲** and **▼** keys. Then validate (**O** key).

3 - 2.8 : Scan speed

If a switch is being used, NEMO PLUS scans through the different choices visually and audibly. This scanning speed can be adjusted in half-second steps from 0.5 seconds to 5 seconds.

3 - 2.9 : Voice setup

This setup allows to modify the voice recognition requirement for the "wake-up" and the "confirmation" words.

The "mark" is going from 70 to 85. The higher the mark is, the lower the recognition requirement is (NEMO PLUS recognizes more easily the voice, but the risk of confusion with another word increases).

Wake up word :	70
OK :	70

Of course, more NEMO PLUS is "adaptable", more it is able to confuse a word with an other. Then, it is advised to use this adjustment carefully and not to away to the value 75.

3 - 2.10 : Menu setup

This setup allows to modify the menus and sub-menus by deleting useless words, modifying the word order or deciding if NEMO PLUS will go back to sleep after a word or will stay in the menu.

NEMO PLUS displays all the words of the main menu followed by “↵ “

By moving with the arrows and validating a word, you can then modify the sign “↵ “ in 0, 1 or 2.

- 0 to get the word out of the menu.
- 1 to change the word place : then you just have to move to the place where the word must be and to validate.
- 2 to have NEMO PLUS go to sleep after this word. If 2 is placed after a sub-menu title (television for example) NEMO PLUS will go back to sleep after all the words of this sub-menu.

To get the same result in any sub-menu you just have to validate two times the sub-menu title.

3 - 2.11 : “Quit”, when validated, takes you back to the previous menu.

3 - 3 : Equipment

3 - 3.1 : Devices

Select and validate " Equipment

EQUIPMENT	
ALARM	: 1
INFRARED	: 1
CALL	: 1
INFRARED	: 1
RELAY	: 1
INTERPHONE	: 1
INFRARED	: 1
DOOR	: 1
INFRARED	: 1
RELAY	: 1
LIGHT	: 1
INFRARED	: 1
LIFT	
NEXT	QUIT

Select or deselect device
Number of infrared codes required for device listed above

Return to main menu

↙ To go to next list

This menu is used to select the devices to be controlled by NEMO PLUS :

NEMO PLUS lists the devices it can control. This list appears on a series of three screens which can be accessed by validating NEXT or RETURN.

- List 1 Alarm, Call, Interphone, Door, Light, Lift
- List 2 Blind, Bed, TV, Phone, Video, Appliance
- List 3 Socket, Hi-Fi, Radio, Cassette, Player, CD, Satellite

This menu is easy to use. If the figure opposite the name of the device is 0, then that device will not be included in the list of choices NEMO PLUS offers the user. Therefore that device will not be controlled by NEMO PLUS.

e.g. Interphone : 0 - interphone not controlled by NEMO PLUS.

If the figure opposite the name is different from "0", that device will be included in the choices listed by NEMO PLUS.

The figure will be "1" for most devices, or "2", "3" or even "4" for others.

Up to 1 for	Alarm Call Interphone Bed TV Phone Video	Lift Hi-Fi Radio Cassette Player CD Satellite
Up to 3 for	Door Blind	
Up to 4 for	Light Socket Appliance	

The numbers 1, 2, 3 or 4 correspond to the number of devices that can be operated per room (e.g. in the bedroom. Different devices can therefore be operated in the lounge).

3 - 3.1 : Infrared

In the Equipment menu, "IR:1" is written under each word.

By pressing the key to validate IR it is possible to select the figure 1, 2 or 3.

That means NEMO PLUS can be asked to emit 1, 2 or 3 infrared codes per device.

This is a limited but important feature.

For exemple :

- To use two different TV-sets in two different rooms. In this case, NEMO PLUS emits both infrared codes and the TV-set in the same room as NEMO PLUS is activated.

- To have a TV channel with two figures (e.g. Channel 14).

In most cases IR:1 is sufficient.

You need to be familiar with operating NEMO PLUS before using numbers 2 and 3 with IR demands. Ask for details.

NOTA BENE

It is possible to chose the figures 0 and 1 for CD, Radio, Cassette or Player.

- If 0, the word does not appear in the Hi-fi menu.
- but if 1 the word appears in the Hi-fi menu, **and not in the main menu.**

3 - 4 : Phone list

Phone list allows NEMO PLUS to store 35 phone numbers (5 pages of 7 numbers)

Press when phone list is highlighted.

PHONE
MEMORY
1
2
3
4
5
6
7
NEXT PAGE
QUIT

Validate the number you chose by pressing key.

Press ▲ or ▼ to choose **the letter** you want, validate with ○, quit by validate ↵.

Press ▲ or ▼ to choose **the number** you want, validate with ○, quit by validate ↵.

You can choose a “ P ” to have a pause in phone number dialling.

When using NEMO PLUS, the user has to say « memory » then the number « ~ » of the line then « dial ». NEMO PLUS will dial the phone number.

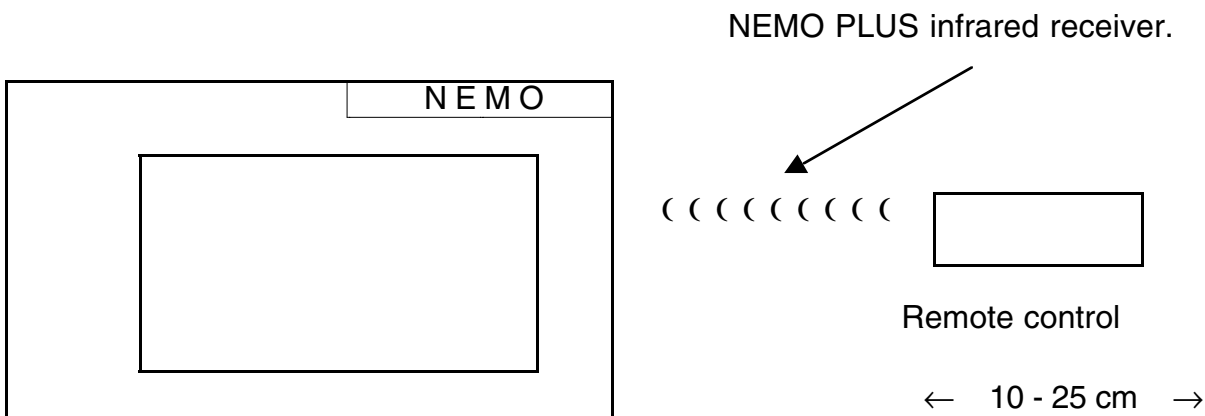
3 - 5 - Infrared training

Infrared learning allows NEMO PLUS to store the different codes of the different remote controls around the house (TV-set, video recorder, Hi-Fi, etc.). For infrared controls :

3.5.1 Training

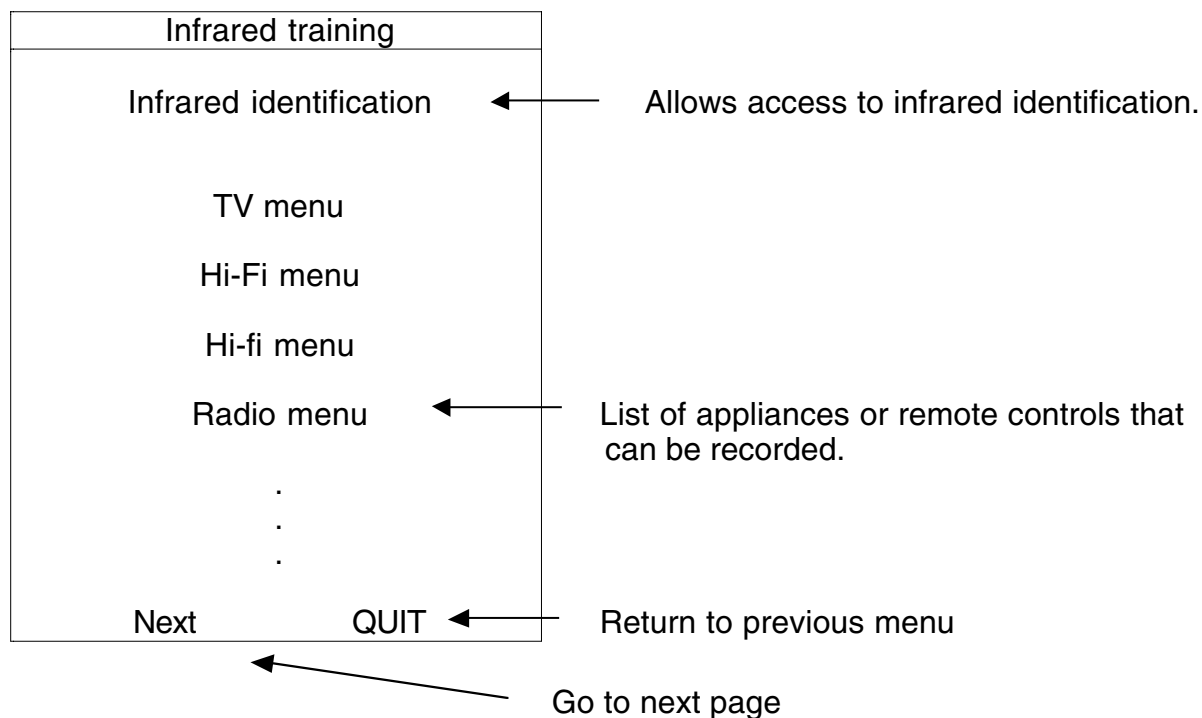
Point the remote at NEMO PLUS's infrared receiver.
This receiver is indicated in the central part of NEMO PLUS's infrared window.

This operation can be done more easily by placing NEMO PLUS flat on a table.



NEMO PLUS must be between 10 and 25 cm (4 – 10 inches) away from the remote control.

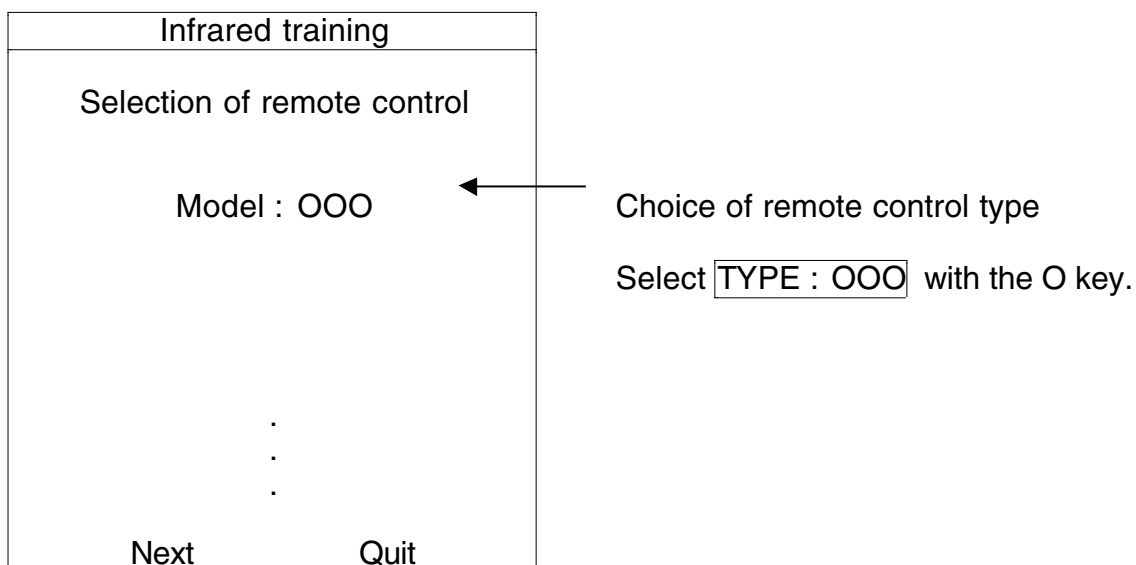
Select infrared learning in the main programming menu with the ○ key.



3 - 5.2 : Identification

It is almost always necessary to identify the type of codes used by the remote control before they can be recorded.

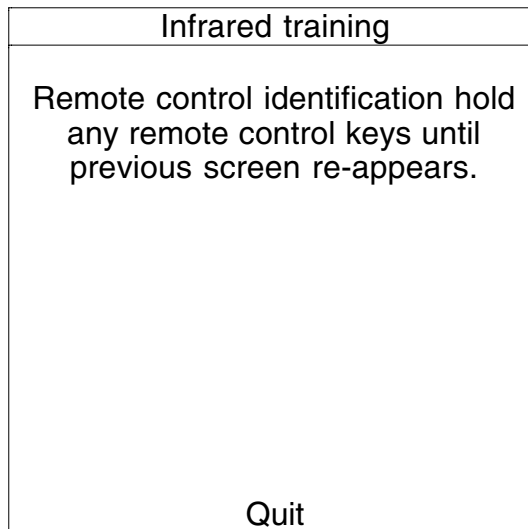
Select **Infrared Identification** with the **O** key.



Choose the type of remote control with **▲** or **▼** and validate with **O**.

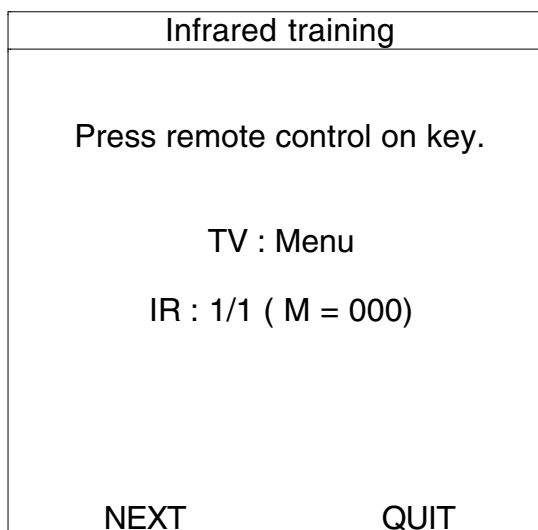
Unless otherwise stated (see appendix on remote control types or ask for details). The type of remote control selected by default is 000, so you can usually validate "Next" immediately.

The screen below appears :



As the instructions on the screen say, hold down any of the remote control keys until you are returned to the previous screen (about 4 seconds). If you do not press a key, NEMO PLUS returns to the previous screen after a longer time delay or you may need to select Quit with the ▲ or ▼ and ○ keys. This operation has allowed NEMO PLUS to recognise the type of code used, but has not stored them.

Select from the list the menu for the remote control to store and validate: e.g. TV-set. NEMO PLUS emits a beep to indicate it is waiting for the first code and displays:



As shown, you must press the relevant key on your remote control.

N.B. : DO NOT HOLD THE REMOTE CONTROL KEY DOWN (1 second maximum).

The indicator at the top of the screen moves, showing the information is being stored. If the bar | at the top left of the display does not move, check the remote control works or change the battery (Check it is an infrared remote control). NEMO PLUS moves automatically to the next choice. If there is no code for your remote control, validate NEXT by pressing ○.

In this way you can store all the infrared codes under the corresponding NEMO PLUS menu for the different appliances (remote controls).

N.B. While storing infrared codes, NEMO PLUS may interrupt the process and indicate : MEMORY SATURED at the bottom of the display. If this happens

1. Repeat the remote control learning procedure in question but pressing the keys for a shorter time (where possible the key action must be instantaneous).
e.g. : adjustment of TV-set or Hi-Fi volume requiring a long infrared code (maximum 1 second).
2. Make sure no infrared codes are stored in unused menus.
To do this call up the Equipment menu and set the device in question (e.g. Hi-Fi) to 1. Then return to Infrared Learning and then to the relevant menu (e.g. Hi-Fi) and check that the screen displays M: OOO at the top indicating an infrared code is stored. Then validate "clear" to delete the code.

3 - 6 : Vocal Training

N.B. : This choice is only for users who want to give NEMO PLUS spoken orders.

Voice learning allows NEMO PLUS to recognise the user's voice.

3 - 6.1 : Internal microphone :

NEMO PLUS must be pointed towards the user and no more than 75 cm (30 inches) away. Microphone sensitivity must be about 20 (see the section on Settings). It is easier to put NEMO PLUS on the adjustable stand available as an option (product number 7T21).

3 - 6.2 : External microphone : (product number 7T22)

Microphone sensitivity must be about 19 for an external mike (see the section on Settings).

The microphone must be close to the speaker's mouth or fastened to his or her clothing near the collar, or to the sheet or pillow (15 - 25 cm / 4 - 10 inches from the mouth) or fastened on the stand (15 - 25 cm from the mouth).

N.B. : It is recommended that NEMO PLUS be used subsequently in the same position (microphone position) as for voice learning.

N.B. : Words should be spoken naturally without straining the voice. NEMO PLUS may ask you to repeat a word or speak louder. In this case raise your voice just slightly.

Validate Vocal Training with **O** to obtain this menu :

Vocal training	
NUMBER OF RECORDING 2	Choice of number of recordings
TOTAL	Learn all vocabulary
PARTIAL	Choose individual words to be learned
WAKE-UP WORD	Learning the word chosen to activate NEMO PLUS
CHECK	Check the words have been stored
QUIT	Quit

3 - 6.3 : Number of recordings :

Two or three recordings can be chosen by validating with the **O** key and pressing **▲** or **▼**. Three improves voice learning but increases learning time slightly.

3 - 6.4 : Total :

By validating **TOTAL** with the **O** key, NEMO PLUS emits a signal and begins to ask you to say the different words for the menus and appliances selected in the equipment menu. Say the words naturally without straining and without rushing.

3 - 6.5 : Partial:

This choice allows you to teach NEMO PLUS individual words:
- either when a word has not been correctly learned during total learning,
- or as a test.

Partial training	
ALARM	
CALL	
.	
.	
.	
.	
NEXT	QUIT

List of all possible vocabulary.

Select the word you want from the list with the ▲ or ▼ keys and validate with ○.

NEMO PLUS asks you to say the word two or three times (depending on the number of recordings selected).

3 - 6.6 : Wake-up word :

To learn the wake-up word only.

Validate by pressing ○ and say the word that is displayed.

3 - 6.7 : Verification :

When this choice is validated NEMO PLUS automatically reviews all the words learned and may ask you to repeat some of them.

If there are difficulties, it is best to re-teach the word in question. Where there are difficulties with the voice, it is recommended to use a switch simultaneously or permanently (see the section on Using NEMO PLUS).

N.B. : For a user with a normal voice, NEMO PLUS should react to the vocal command immediately or after just 1 or 2 repetitions.

3 - 7 - Restore / Save

This choice can only be used with special software and connection cable.

The instructions for use are provided with the software.

This choice makes it possible to back-up NEMO PLUS's program on computer. NEMO PLUS has non-erasable memories so its program cannot be lost.

This option is used for maintenance purposes only.

3 - 8 - Switching NEMO PLUS off

NEMO PLUS can be used as a stationary device connected to a socket outlet via the transformer supplied or on an electrical wheelchair battery (see appendix for electrical characteristics) with a cable that is available as an option.

However, in the event of a power failure, NEMO PLUS has an internal battery for 30 minutes operation (when fully charged).

NEMO PLUS warns the user by sounding a beep and displaying a message if the electrical supply is cut. Then after about 30 minutes displays the battery low information and sounds another beep. Two to three minutes after that NEMO PLUS says "battery low - about to shut down" and switches off.

If NEMO PLUS is to be unplugged for a long time, it can be turned off immediately without having to run down the battery.

To do this:

1. Validate NEMO PLUS OFF with the ○ key
2. Choose Yes with the ▲ or ▼ key
3. Then unplug NEMO PLUS.
4. Validate with the ○ key

Part 4 :

USING NEMO PLUS

- 1 - Switches
- 2 - Joystick
- 3 - Using NEMO PLUS in vocal mode
- 4 - For all access modes
- 5 - Phone

4 - 1 : Using NEMO PLUS with switches

- Plug the switch into the jack marked | | on the right-hand side of NEMO PLUS (lower 3.5 jack connector)
- Press the switch. Either of two things may happen :
 1. Only the wake-up word appears on NEMO PLUS's stand-by display. In this case NEMO PLUS wakes up and lists the words for the different choices, highlighting the different choices on the display in turn at adjustable scan speed (see section on Programming, Settings, Scan Speed).
Press the switch when NEMO PLUS indicates the desired choice.
 2. The stand-by screen displays the wake-up word and the words Call and/or Get phone.
NEMO PLUS highlights the wake-up word, then Call and then Answer in turn.
Press the required choice. If this is the wake-up word, NEMO PLUS wakes up and lists the different choices. Press the switch when NEMO PLUS proposes the choice you want.

N.B. : If the switch is not used after running through the list three times, NEMO PLUS goes back to sleep.

3. For NEMO PLUS in switch mode, you have to press more than three seconds on the switch wherever you are in the menu. This possibility allows you to save a lot of time in NEMO PLUS using.

4 - 2 : Using NEMO PLUS with a joystick

1. Plug the joystick into the multi-pin connector at the base of NEMO PLUS.
2. By moving the joystick to the ↑ and ↓ keys you can highlight the word you want to select. By moving the joystick to the → and ← keys you can validate the choice.

4 - 3 : Using NEMO PLUS in vocal mode

N.B. : This can only be done after voice learning (see the section on Programming - voice learning) and by placing NEMO PLUS in the same position as during voice learning (distance / microphone, etc.).

- Say the wake-up word (NEMO PLUS by default), NEMO PLUS wakes and displays the choices available. If not repeat the wake-up word.

If NEMO PLUS fails to wake up see the section on Problems?

- Say one of the choices available. One of five things can occur :
 1. NEMO PLUS recognises the command and obeys.
 2. NEMO PLUS asks you to repeat the command :
Make sure the word is in the list. If it is, say it again.
 3. NEMO PLUS asks you to confirm the word. Say "OK". In this case, you may repeat the word, but it is better to say "OK".
 4. NEMO PLUS asks you to confirm another word that you have not said
Repeat the word you want.
 5. NEMO PLUS may ask you to speak :
a little louder or
a little quieter.

4 - 4 - For all access modes:

- Some words in the list have an arrow > after them. This means they give access to a sub-menu.
- In all menus NEMO PLUS displays the words:
 - "Return" to return to the main menu and
 - "Sleep" to go back to sleep.

N.B. The word "sleep" is important when using NEMO PLUS with voice control. NEMO PLUS will not return to the stand-by screen but will listen and pick up noise from your surroundings until you say "Sleep". It will therefore ask you to repeat continually. For this reasons, you should say "Sleep" as soon as you no longer need NEMO PLUS to do anything for you.

To modify this, see chapter "Setup", "Menu setup".

- If chosen in the Equipment programming (see the section on Equipment programming) the words " Call " and " Get phone " are available in all the menus, including the stand-by screen, for fast access to these two urgent functions.
- When you are in a sub-menu, you can say the title of the previous sub-menu to return to it directly.

e.g. : in the Radio sub-menu of the Hi-Fi menu (which is in turn a sub-menu of the main menu). Saying "Hi-Fi" will return you directly to the Hi-Fi menu.

Now, NEMO PLUS falls asleep again automatically after the words « PICK UP », "HANG UP", « DIAL ». This new possibility increases a lot the comfort for the user and the using rapidity.

Look at the phone using for more precisions

4 - 5 Using the phone

In the case of a mobile phone : contact us for compatibility.

In this case the mobile phone must be connected to the multi-pin connector with the optional cable.

- To use number that are already in memory :

Select PHONE in the main menu, then MEMORY, then the number of the line corresponding to the relevant name and number, say "DIAL".

NEMO PLUS goes back to sleep automatically. It is not necessary to hang up previously. NEMO PLUS makes it automatically.

- To dial new numbers

With automatic mode

Select PHONE in the main menu, then say the figures.

Say "DIAL". NEMO PLUS dials automatically the number and you do not have to hang up previously. NEMO PLUS automatically goes back to sleep.

With figure by figure mode

This mode is interesting with a phone that would not receive well the infra-red codes because it allows to repeat a figure if the phone has not take it. This mode must be used to call a voice server that requires to press additional keys to reach a service.

Say "phone", then "hang up", then the figures. The phone line is taken as soon as the word "hang up" is said.

Caution : After having dialled the number, you have to say "SLEEP" to make NEMO PLUS go to sleep again.

Use the same procedure for a mobile phone.

PARTICULAR CASE OF A SATELLITE MENU

Sometimes it is interesting to have direct access to television channels with figures higher than 10, even 100, also the higher figure with NEMO PLUS is 9.

In this case you have to select first the word "dial", then to say the figures ("back" allows to correct a mistake) and then to say again "dial".

Part 5:

ACCESSORIES

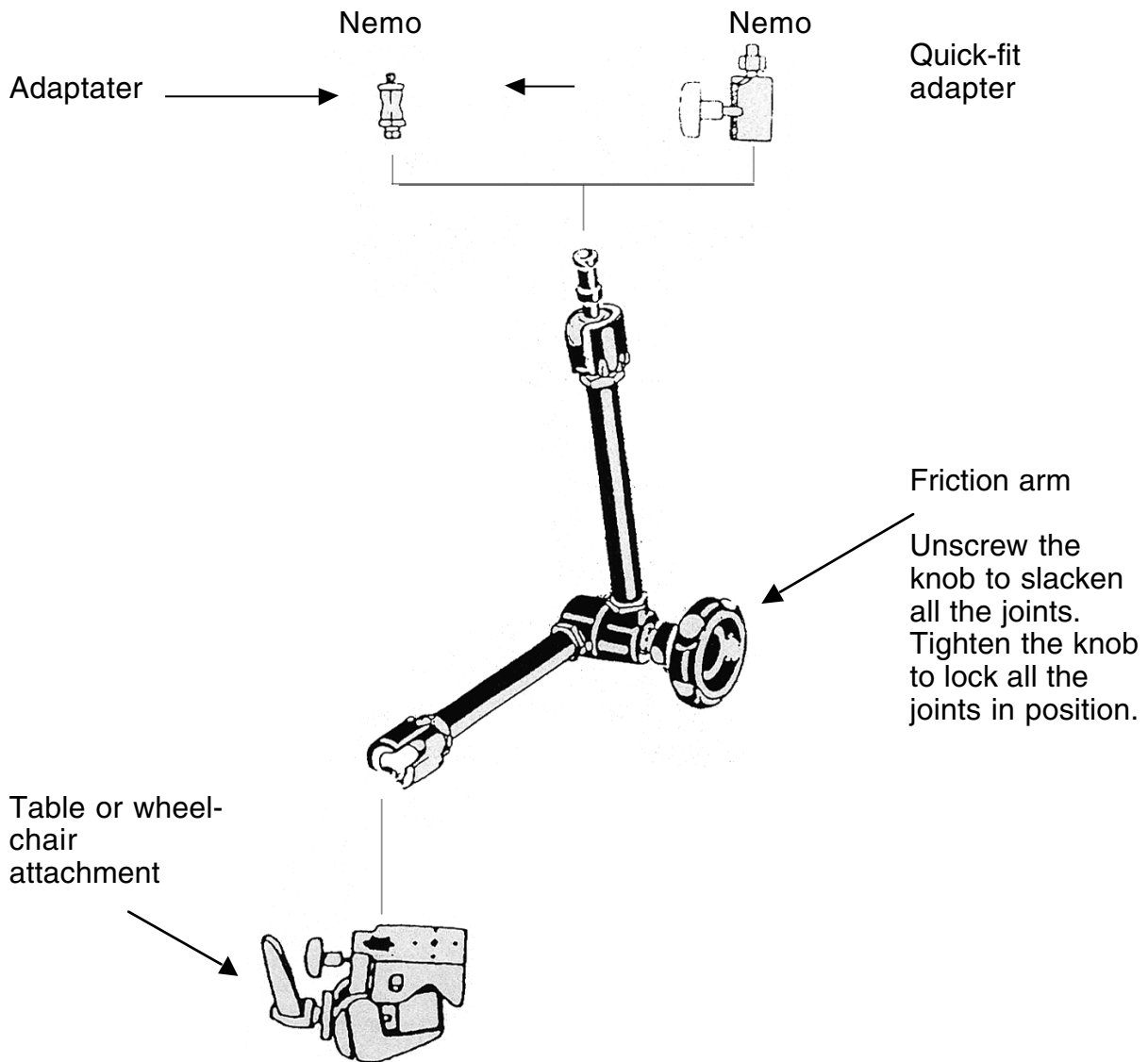
- 1 - External microphone
- 2 - Adjustable stand
- 3 - Switches
- 4 - Joystick
- 5 - Power cord for electric wheel-chair

5 - 1 : External microphone

This microphone helps to improve the level of voice recognition and means you can use NEMO PLUS in noisy surroundings (adjust microphone sensitivity in the Settings menu in this case).

5 - 2 : Adjustable stand

Installation of adjustable stand 7T21 on the table or wheel-chair with use of arm



This stand is designed to be easy to fit, robust and extremely rigid for use on wheel-chairs where they may be a lot of vibration.

5 - 3 : Switches

NEMO PLUS can be used with any closure-type switch fitted with a 3.5 mono jack plug.
The manufacturer, PROTEOR, cannot be held liable for any damage done to NEMO PLUS by connecting any non approved switches.

5 - 4 : Joystick

A suitable joystick may be connected to NEMO PLUS.

The joystick selected as an accessory is a contact-type joystick (non proportional).

Selecting up or down allows the user to move up or down in the menus.

Selecting right or left allows the user to validate the choice.

(See appendix for connection diagram)

The manufacturer, PROTEOR, cannot be held liable for any damage done to NEMO PLUS by connecting any non approved joysticks.

5 - 5 : Power cord for electric wheel-chair

This cord must be connected to the two batteries as in the diagram below:
(see Appendix V)

(For electric wheel-chairs fitted with a single battery ask for details)

Part 6 : PROBLEMS

- 1 - No display
- 2 - NEMO PLUS fails to obey spoken orders
- 3 - NEMO PLUS fails to speak
- 4 - NEMO PLUS fails to operate electrical appliances selected by user from menus.
- 5 - Switch or joystick fail to work.
- 6 - NEMO PLUS is jammed.

6 - 1 : No display

CAUTION ! When first switched on the display is blank for 4 to 5 seconds.

Is NEMO PLUS connected to a mains socket outlet or a battery?

If YES:

- Was the transformer supplied by PROTEOR or an approved supplier?
- Is the wheel-chair power cord connected in accordance with the manufacturer's instructions? (see the section on Accessories)
- Is the socket outlet into which the transformer is plugged live?

After checking these points, if the NEMO PLUS display is still blank we recommend you check the transformer and/or output voltage of the wheel-chair power cord which should provide output of between 11 and 16 Volts.

If this fails, we recommend you check the transformer connector or power cord connector at the NEMO PLUS end (small circular jacks).

If this fails, contact us.

6 - 2 : NEMO PLUS fails to obey spoken ordres

Check whether the bargraph (the cursor at the top of the screen) is working (moves).

If YES:

- Have you completed the voice learning procedure? (see the section on Programming in the partial training section, page 111).
- If the built-in microphone is used, NEMO PLUS should not be more than 50 cm (maximum) away and partial training must have been done with the built-in microphone.
- If the external microphone is used, it should not be more than 25 cm away and either on a stand, or clipped to the user's clothing, and voice learning must have been done with the external microphone.
- In either case, the external microphone or the built-in microphone must be in the same position as for voice learning.
- If used with an external microphone, is the mike connected? And to the proper jack (right-hand side of NEMO PLUS, top jack).

If NO:

Is microphone sensitivity properly set? (See the section on Programming: Microphone sensitivity setting)

If this fails, contact us.

6 - 3 : NEMO PLUS fails to speak ?

Check the volume of the loud speaker is not set to zero. (See the section on Programming: volume setting)

6 - 4 : NEMO PLUS fails to operate electrical appliances selected by the user in the different menus proposed ?

- Except for special cases (words "CALL" and "DOOR" that may work by radio control), check that the different appliances are fitted with infrared receivers and work with infrared remote controls (TV-set type).

- **Has infrared learning been completed?**

- If not, NEMO PLUS says so ("infrared code not decoded").

- **Is NEMO PLUS in the same room as the infrared receiver in question?**

- Infrared codes do not go through walls.

- NEMO PLUS and the infrared receivers in question must not be "concealed" in a cupboard or behind a curtain as infrared signals do not go through obstacles.

- NEMO PLUS may not have learned the infrared code correctly. Repeat the infrared code learning at a different distance between NEMO PLUS and the infrared control.

- During infrared learning NEMO PLUS may give a Memory Saturated message. If this happens, begin the learning process again pressing the remote control button for a short time (do not hold the key down) (see the section on Programming - Infrared learning).

- Check whether the relevant infrared remote controls work or if the relevant infrared receivers work.

If this fails, contact us.

6 - 5 : Switch or joystick fail to work

Test the switch or joystick (see the appendices for the joystick pin-out).

- **Was the joystick supplied by PROTEOR or approved by PROTEOR ?** (see section on Using a joystick)

If this fails, contact us.

6 - 6 : NEMO PLUS is jammed

No voice learning, keys do not work, etc.

Use a sharp object (e.g. ball-point pen tip) to press the RESET button at the back of NEMO PLUS (lower left).

If this fails, contact us.

APPENDICES

APPENDIX 1 :

TECHNICAL CHARACTERISTICS

NEMO PLUS has the following resources :

- main power supply
- battery (7.2. V / 600 mA)
- main power supply monitoring circuit
- main power supply control circuit

A logic section composed of the following items:

- safe-guarded real time clock
- 240 x 180 pixel EL back-lit LCD display
- switch input
- infrared receiver
- six infrared emitters (pointing in four directions)
- two single N/O contact dry relays
- RS232 serial link

A voice acquisition and synthesis section composed of the following items:

- built-in microphone
- AT 831 microphone input
- adjustable power amplifier for loud-speaker
- 8 ohms - 300 mW loud-speaker

APPENDIX 2

INPUTS - OUTPUTS

The hardwired inputs/outputs are distributed to the four NEMO PLUS connectors.

- **Power inputs**

On the POWERJACK connector and card-edge connector. 2 wires (12 V and ground)

- **External microphone connection**

On stereo JACK connector, 2 outputs (Microphone power supply and analog ground) and 1 input (microphone signal).

- **Switch input**

On stereo JACK connector and on card-edge connector. 3 wires (signal and ground).

- **N/O contact outputs**

On card-edge connector. 2 wires per relay.

Remarks:

Signals switched by the relays must comply with the following characteristics:

- Maximum voltage: 24V dc
- Maximum current: 500 mA

- **Joystick input**

On card-edge connector. 4 wires (1 COMMON and 3 inputs).

On card-edge connector, 6 wires.

Some input/outputs have no wires. These are:

- **IR read input**

By infrared receiver located in the centre of the infrared window

- **IR send input**

By (6) infrared emitters located at each end of the infrared window in groups of three and directed in four different directions.

- **Built-in microphone input**

By microphone built into NEMO PLUS and located under the display close to the keys.

APPENDIX 3

ELECTRICAL POWER SUPPLY

The appliance is powered by external dc voltage V_e via a POWERJACK connector ($V_e = 11$ to 16 V).

The appliance includes a battery providing occasional stand-alone operation of up to 30 minutes.

The battery is charged continually by the power supply. Consequently the charge current is limited to about 30 mA. IC charging time is about 20 hours.

• Characteristics

POWER SUPPLY	VOLTAGE	MEAN CURRENT 1	MAXIMUM CURRENT 2
External (mains)	12 V rated 11 - 16 V	250 mA (for 12 V)	1 A
Battery	7.2 V rated 6.9 - 8.4 V	300 mA (for 7.2 V)	1 A

1. Mean current on stand-by.
2. Maximum current during emission of infrared code for 1 second.

• Power supply supervision

NEMO PLUS monitors every supply voltage by comparison with a reference standard.
Mains failure:

If the **external power supply** falls below a set value, NEMO PLUS emits a jingle and displays the "mains failure" alarm.

The alarm is displayed until the fault is corrected and NEMO PLUS is operating.

After detecting a "mains failure" NEMO PLUS runs for 30 minutes with the internal battery. After 30 minutes NEMO PLUS switches off automatically. NEMO PLUS remains off until external power is restored.

Battery failure:

If during the 30 minutes for which NEMO PLUS operates on the battery, the battery voltage falls below the set value, NEMO PLUS emits a jingle and displays the "Battery low" alarm.

After detecting the "Battery low" alarm, NEMO PLUS works for three minutes and then speaks the "about to shut down" message and then switches off.

NEMO PLUS stays off until the external power supply is restored.

APPENDIX 4

CONNECTOR PIN-OUT

Connector pin-out

Power supply connector pin-out

POWERJACK 90° male base

Pin	Signal	Sens	Function
1	GND	In	Ground
	Sens		Function

Positive Signal of Power = middle point of the switch

Card-edge connector pin-out (J2)

Pin	Signal	Sens	Function
1	CR2	In/Out	N/O RELAY 1 contact
2	CR1	In/Out	COMMON RELAY 1 contact
4	TJ3	In	JOYSTICK input (down arrow)
5	TJ2	In	JOYSTICK input (validate)
6	TJ1	In	JOYSTICK input (up arrow)
7	TJ	Out	JOYSTICK common
8	NPC2	In	SWITCH present
9	NEC2	In	SWITCH input
10	CR4	In/Out	N/O RELAY 2 contact
11	CR3	In/Out	COMMON RELAY 2 contact
17	GNDEXT	In	External supply ground
18	GNDEXT	In	External supply ground
19	DTR	Out	RS232 serial link DTR
20	RTS	Out	RS232 serial link RTS
21	TX	Out	RS232 serial link TRANSMIT
22	CTS	In	RS232 serial link CTS
23	RX	In	RS232 serial link RECEIVE
24	GNDSC	In/Out	RS232 serial link and contactor ground
25	VE2	In	+ external supply (11 – 16 V)
26	VE2	In	+ external supply (11 – 16 V)

Pins 3, 12, 13, 14, 15 and 16 are not used.

External Microphone (J7) connector pin-out

3-pin stereo 3.5 mm 90° female socket with cut-out

Pin	Signal	Direction	Function
1	GND A	Out	Analog ground
2	VAM	Out	+ microphone supply (2.4 V - 12 mA max)
4	MICIN	In	Microphone signal

Inserting the external microphone JACK cuts out the built-in microphone.

Switch (J9) connector pin-out

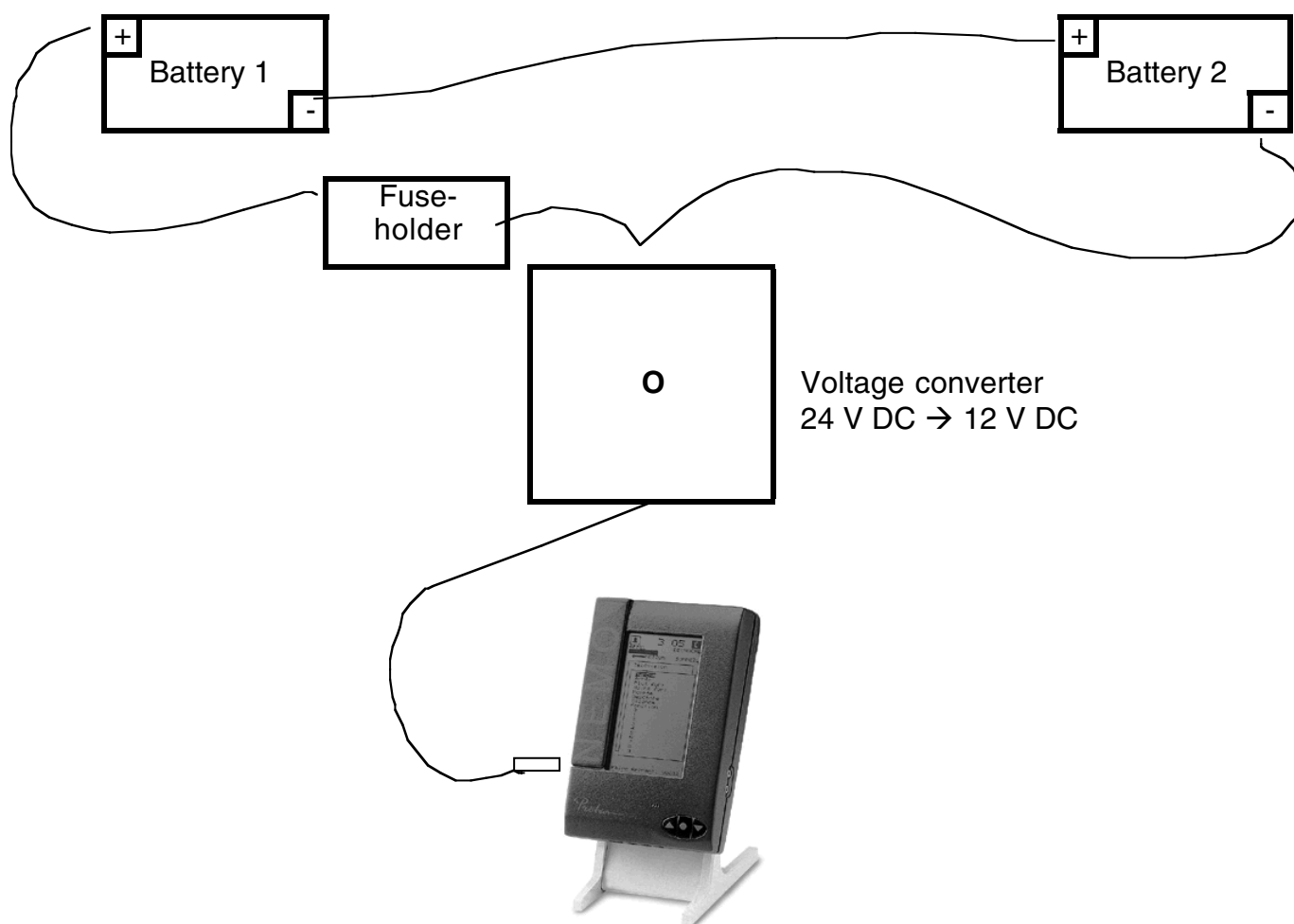
3-pin stereo 3.5 mm 90° female socket with cut-out

Pin	Signal	Direction	Function
1	GNDSC	Out	Logic ground
2	NEC1	In	Switch input
4	NPC1	In	Switch present detection

The NPC1 signal pin is used for detecting whether the JACK connector is inserted.

APPENDIX 5

NEMO PLUS WIRING DIAGRAM TO WHEEL-CHAIR



Nota-Bene :

PROTEOR cannot be held liable for installations where power cords are fitted by others.