INTERRUTTORE
ORARIO/ASTRONOMICO DIGITALE

Manuale d'Uso

memo BUS

Digital time/astronomical switch: User Manual

CE

vemer SPA

Index

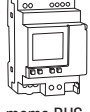
English

USER MANUAL

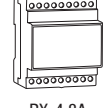
English

Memo BUS is an electronic digital time switch for the management over time of the electrical devices. It allows time programming (periodicity: daily, weekly or annual) or astronomical programming.
Memo BUS has an on-board relay but it's able to control up to nine different channels (relay); the other eight channels are realized by two remote actuators RX4-8A (available as an accessory), connected to the memo BUS via BUS. Each channel can be associated with a different programming (time or astronomical).
Memo BUS also offers the possibility to connect via BUS a GPS module, GEO-1 (available as an accessory), that captures the time and the position through the satellite system, ensuring high accuracy over time.
The backup battery keeps the settings even in case of power failure and can be replaced through the cover (sealable).

Code	Model	Description
VE747400	memo BUS	Astronomical time switch with bus for connecting GPS modules and remote actuators
VE747200	GEO-1	GPS module for receiving time and position from satellites
VN943700	RX-4 8A	Remote actuator module with 4 auxiliary relays of 8A / 250V


memo BUS


GEO-1


RX-4 8A

TECHNICAL FEATURES

- Power supply: 115 ÷ 230 Vac (-15% ÷ +10%) 50/60 Hz
- Power consumption: 7 VA (2.6W)
- Lithium backup battery: 3V, CR14250 type (replaceable)
- 9 available channels*
- Terminals for:
  - device power supply (terminals 1-2)
  - auxiliary power supply output of 12V dc ±10%, 80mA, 1W (compatible with GEO-1 power supply) (terminals 3-4)
  - communication bus for the connection of RX4-8A and GEO-1 additional modules (terminals 5-6)
  - monostable change-over relay with maximum switchable load of 16A / 250V (terminals 7-8-9)
- Terminal block for cables with maximum cables section of 2.5 mm^2
- Display LCD with backlight (active with AC power supply)
- Storable programs: 450 (900 events) (divisible on 9 channels)
- Actions type: 1B
- Operating temperature: 0 ÷ 50°C
- Operating humidity: 20 ÷ 90% non condensing
- Storage temperature: -10 ÷ + 70°C
- Container: 3 DIN modules
- Protection degree: IP20
- Insulation: reinforced between accessible parts (front) and all the other terminals

* The 9 channels are realized physically by as many relays. The channel 1 is realized by the relay mounted on the memo BUS; the other 8 channels are realized through the connection via bus of 2 RX4-8A additional modules.

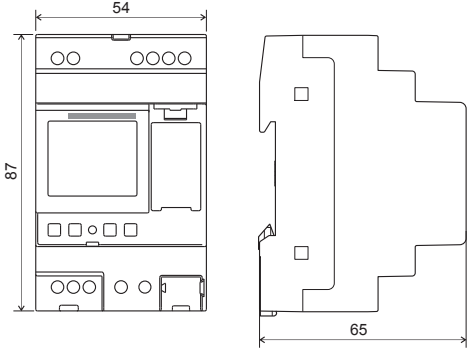
English

SAFETY WARNINGS

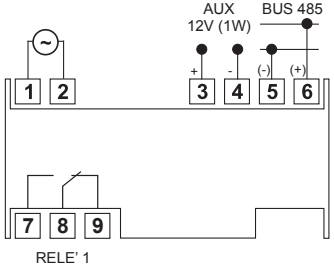
■ ***During product installation and operation it is necessary to observe the following instructions:***

1) The instrument must be installed by a qualified person, strictly in observance of the connection diagrams shown in this manual.
2) After installation inaccessibility to the terminals without using dedicated tools must be guaranteed.
3) Before accessing the connection terminals, make sure that the leads are not live.
4) Do not connect or feed the instrument if any part of it is damaged.
5) The product must be installed and activated in compliance with current electric systems standards.
6) Do not use the instrument for anything other than the indicated purpose.
7) In the electrical system upstream of the instrument must be installed a protection device against the overcurrents
8) The product can be used in environments with Measurement Category III and Pollution degree 2, according to the Standard IEC 60730-1

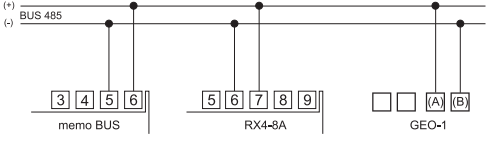
DIMENSIONS



WIRING DIAGRAMS

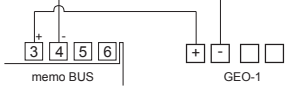


Connection of devices on the bus



GEO-1 power supply

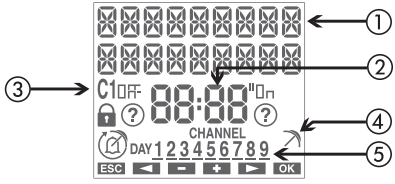
GEO-1 must be powered by a DC voltage at 12V.
This power supply can be obtained from terminals 3-4 of memo BUS (see figure).

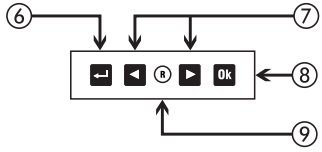


Note: for details of the connections of GEO-1 and RX4-8A see the instructions supplied with the products.

English

DISPLAY AND KEYBOARD DESCRIPTION





① General indications
② Time indication
③ Channel 1 status indication
C1 On / C1 OFF channel status
blocked switchings
active random switchings
active holiday program
active pulse program
active manual program
④ Data transmission from GEO-1 in progress indication
⑤ Channels status indication (CHANNEL) / days of the week (DAY)
2 configured channel (in off status)
2 configured channel (in on status)
2 failed configured channel (no communication)

⑥ Turn on the display
Access the menu
ESC (one level back)
⑦ Increase / decrease value
Scroll through the menu items
⑧ Confirm selection
⑨ Hardware reset

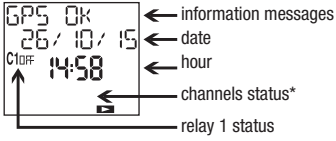
INITIAL OPERATION

- Once out of the package, memo BUS is off: press the key ↵ and wait a moment before activating the display
- The set language is Italian. To change it, press the key ↵ for at least 3 seconds. Choose among: Italian, English, Spanish, French or German and confirm with Ok
- Make connections following the diagrams on page 5 of this manual
- Power memo BUS: the backlight turns on permanently. Power possible additional connected modules (RX4-8A, GEO-1)
- The presence of the backup battery allows the memo BUS to have updated date and time.
  To make the other settings follow the following steps:

Date	- format: DD/MM/YY - 1st day of the week: Monday
Astronomical coordinates	- country: Italy - city: Agrigento - latitude: North (37° 19' 12") - longitude: East (13° 34' 12")
Daylight Saving time (DST) change: active	- start of daylight saving time (DST): last Sunday of March at 02:00 o'clock - end of daylight saving time (DST): last Sunday of October at 03:00 o'clock
Time correction:	- sunrise: +0:00 - sunset: +0:00
Time zone:	+1:00 UTC
Random switchings:	- minimum: 1 minute - maximum: 5 minutes
PIN protection:	disabled (---)
GPS module:	active

English

START PAGE (or main)



English

Information messages
- day of the week
- GPS status (if enabled)
- battery status (only if discharged)
- NO MAINS**

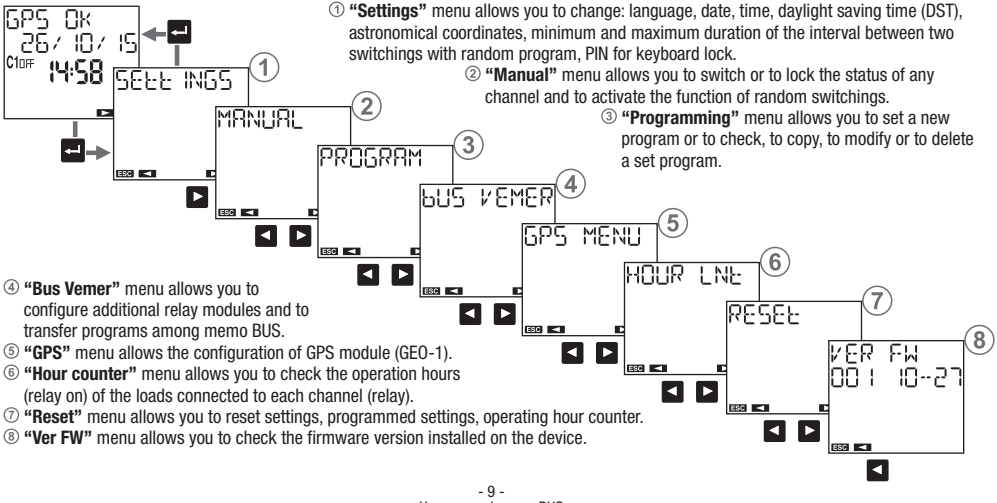
* See page 6. In this case there isn't any configured channel (no number turned on)

** Only if memo BUS is not powered by mains.
In this condition the backlight is not active and the relay is in off status.

- Press the key:
  ↵ to access the menu of the instrument
  ◀ and ▶ to scroll through the messages of memo BUS
  Ok to display the calculated sunrise and sunset times***

*** The displayed times take into account possible entered values of correction (see page 16)
if the display shows _ _ _ _ means that the calculated sunrise time is after the sunset time if the display show _ _ _ _ means that the calculated sunrise time is before 00:00 or that the calculated sunset is at 23:59

MENU DESCRIPTION



① **"Settings"** menu allows you to change: language, date, time, daylight saving time (DST), astronomical coordinates, minimum and maximum duration of the interval between two switchings with random program, PIN for keyboard lock.

② **"Manual"** menu allows you to switch or to lock the status of any channel and to activate the function of random switchings.

③ **"Programming"** menu allows you to set a new program or to check, to copy, to modify or to delete a set program.

④ **"Bus Vemer"** menu allows you to configure additional relay modules and to transfer programs among memo BUS.

⑤ **"GPS"** menu allows the configuration of GPS module (GEO-1).

⑥ **"Hour counter"** menu allows you to check the operation hours (relay on) of the loads connected to each channel (relay).

⑦ **"Reset"** menu allows you to reset settings, programmed settings, operating hour counter.

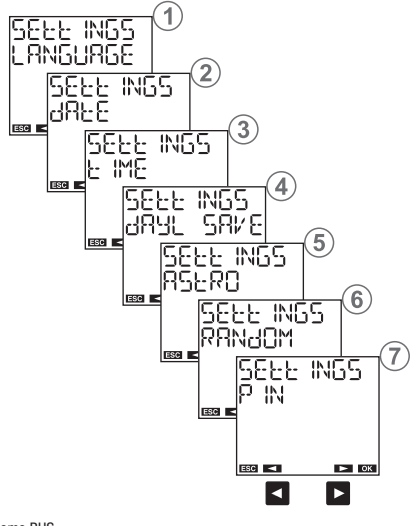
⑧ **"Ver FW"** menu allows you to check the firmware version installed on the device.

English

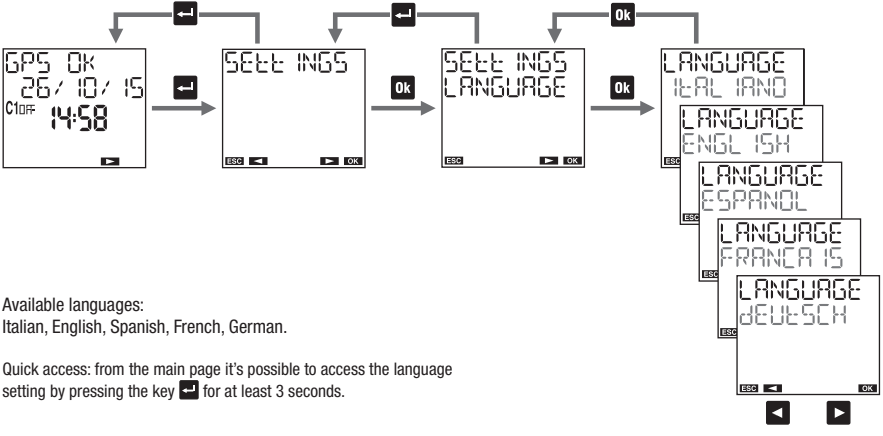
SETTINGS MENU

“Settings” menu allows you to view and eventually to modify the the general operation settings of memo BUS, such as:

① language
② date
③ time
④ automatic daylight saving time (DST) change
⑤ position (astronomical coordinates)
⑥ interval duration between two random switchings
⑦ keys protection by PIN



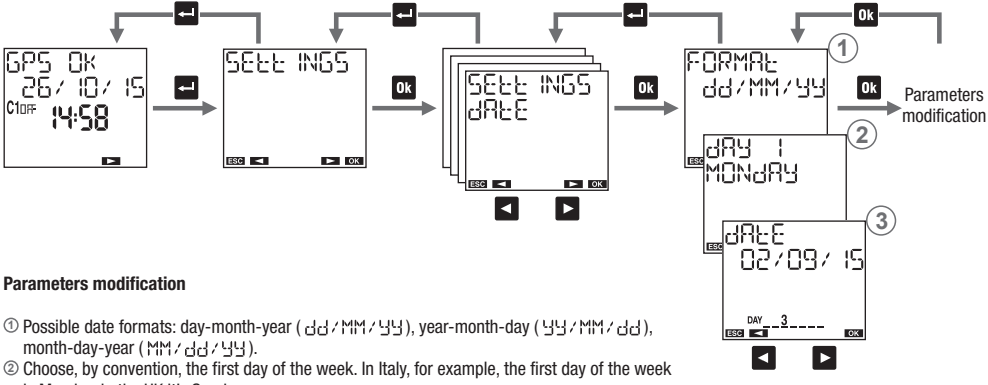
Language setting menu



Available languages:
Italian, English, Spanish, French, German.

Quick access: from the main page it's possible to access the language setting by pressing the key ↵ for at least 3 seconds.

Date setting menu

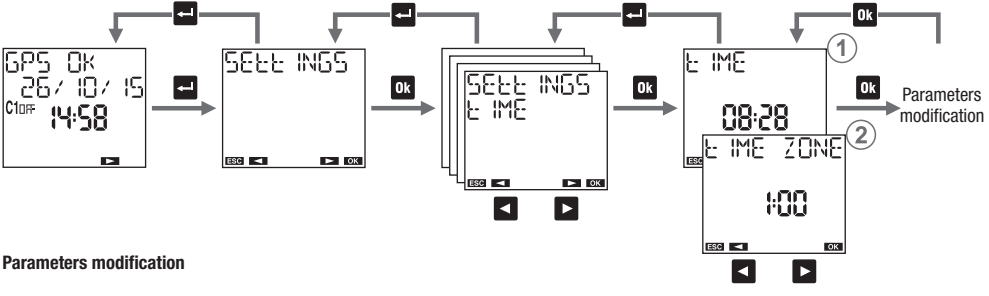


Parameters modification

① Possible date formats: day-month-year (dd/MM/YY), year-month-day (YY/MM/dd), month-day-year (MM/dd/YY).
② Choose, by convention, the first day of the week. In Italy, for example, the first day of the week is Monday, in the UK it's Sunday.
③ Enter the date: day, month, year.

If GEO-1 is connected and active, memo BUS synchronizes date, time and coordinates (longitude, latitude) thanks to the received GPS signal. Synchronization occurs automatically every 30 minutes and is indicated by the flashing symbol (2 times).
The data received from GPS signal overwrite possible changes made manually.

Time setting menu



Parameters modification

① Set the time: hours, minutes.
② Set the time zone*. Range: -14:00 ÷ +14:00 (at 15 minutes steps).
For Italy set +1:00.

* The time zone must be set manuallly also with connected GEO-1 module.

If GEO-1 is connected and active, memo BUS synchronizes date, time and coordinates (longitude, latitude) thanks to the received GPS signal. Synchronization occurs automatically every 30 minutes and is indicated by the flashing symbol ↗ (2 times).
The data received from GPS signal overwrite possible changes made manually.

English

Daylight saving time (DST)/winter time (CET) change setting menu

Daylight saving time (DST)/winter time(CET) change and vice versa can occur in an automatic way. In this case, memo BUS:
- increases by an hour in the passage from winter time (CET) to daylight saving time (DST)
- decreases by an hour in the passage from daylight saving time (DST) to winter time (CET)

For every change it's necessary to specify:

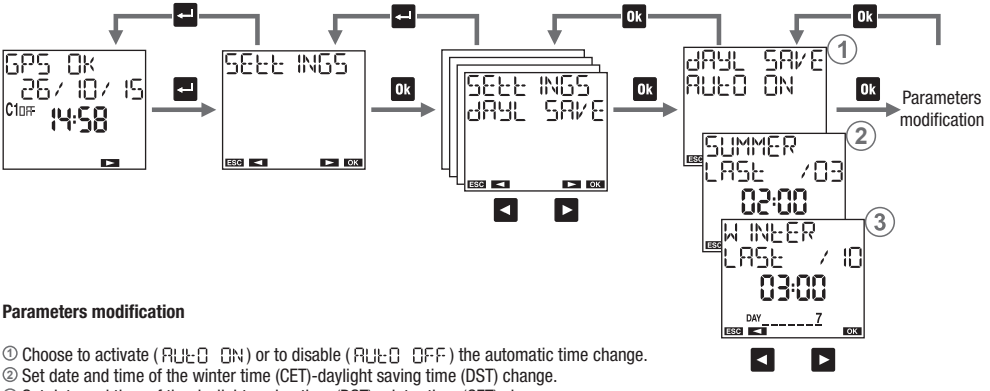
the week of the month during which the time change occurs (first, second, third, fourth, last)

the day of the week (Monday: 1, Tuesday: 2, ...)

the month

the hour

In Italy,for example, daylight saving time (DST) begins occurs the last (LASt) Sunday (**7**) of March (03) at 02:00 o'clock, and ends the last (LASt) Sunday (**7**) of October (10) at 03:00 o'clock.



Parameters modification

① Choose to activate (AUtO ON) or to disable (AUtO OFF) the automatic time change.
② Set date and time of the winter time (CET)-daylight saving time (DST) change.
③ Set date and time of the daylight saving time (DST)-winter time (CET) change.

English

Astronomical coordinates setting menu

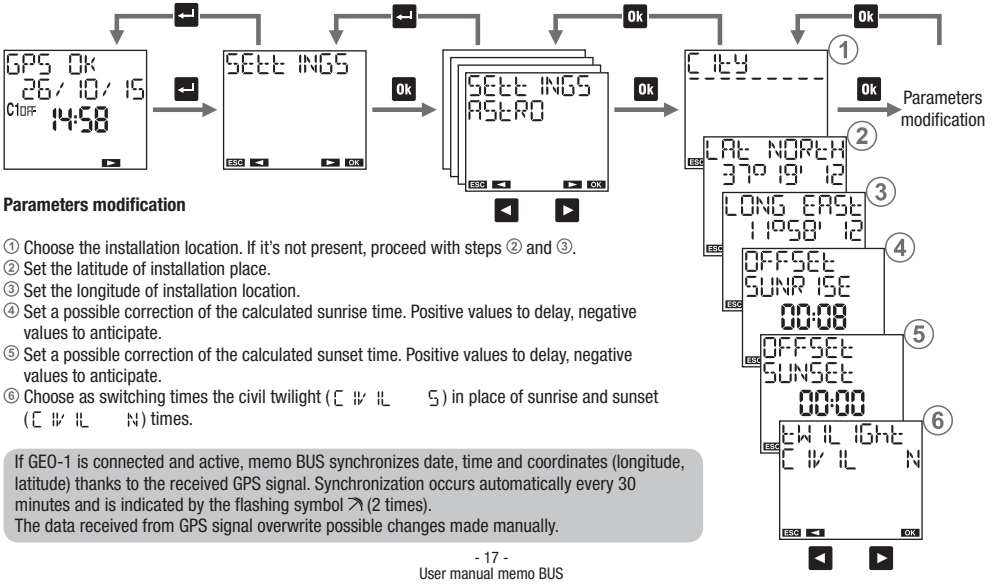
The setting of the geographical coordinates of the installation place allows memo BUS to calculate, for each day of the year, sunrise and sunset times.
To simplify the procedure, in the memo BUS are stored the coordinates of the locations listed below; if your location is among them you can select it from the menu ①, otherwise it's necessary to enter the coordinates of latitude and longitude (menu ② ③).

Note: the display on point ① shows "---------" if the coordinates have been entered manually or captured via GPS.

Location stored in memo BUS:
- Italy: all provinces
- United Kingdom: Cardiff, Belfast, Edinburgh, London
- Spain: Barcelona, Madrid, Seville, Valencia
- France: Lyon, Marseille, Paris, Toulouse
- Germany: Berlin, Hamburg, Cologne, Monaco

The correction of sunrise and sunset times is useful for applications that require the turning on of lights in particular localities. It's possible, in fact, that the presence of disturbing elements, such as the mountains, can influence actual times of sunrise and sunset, making it necessary to advance or delay of a few minutes the calculated times.

The twilight is the time interval before sunrise, or after sunset, characterized by the permanence of the light due to the spread by the atmosphere of the Sun light. During these time intervals it's possible to distinguish clearly objects and conduct outdoor activities without using additional lighting. Therefore, in some applications it is more interesting to take as times of switching on and off the twilight (civil) in place of sunrise and sunset. With memo BUS it's possible to choose to turn on/off the loads depending on the times of sunrise and sunset or the civil twilight. The calculated time correction also applies to the times of twilight. To view the calculated switching on time (sunset) and switching off time (sunrise), from the main page press the key ok (see page 8).

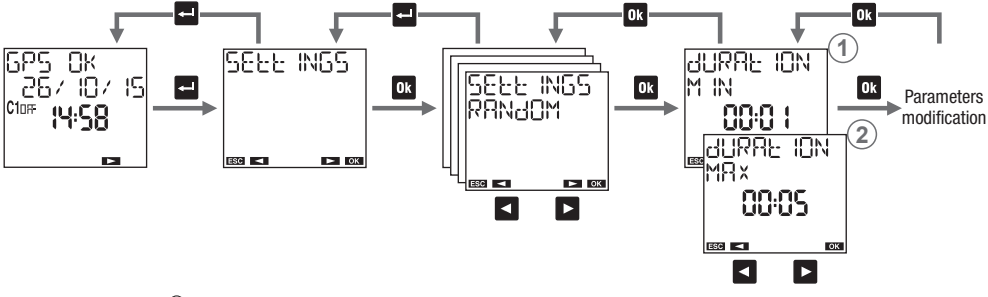


Parameters modification

① Choose the installation location. If it's not present, proceed with steps ② and ③.
② Set the latitude of installation place.
③ Set the longitude of installation location.
④ Set a possible correction of the calculated sunrise time. Positive values to delay, negative values to anticipate.
⑤ Set a possible correction of the calculated sunset time. Positive values to delay, negative values to anticipate.
⑥ Choose as switching times the civil twilight (C IV IL S) in place of sunrise and sunset (C IV IL N) times.

If GEO-1 is connected and active, memo BUS synchronizes date, time and coordinates (longitude, latitude) thanks to the received GPS signal. Synchronization occurs automatically every 30 minutes and is indicated by the flashing symbol ↗ (2 times).
The data received from GPS signal overwrite possible changes made manually.

Random switchings setting menu

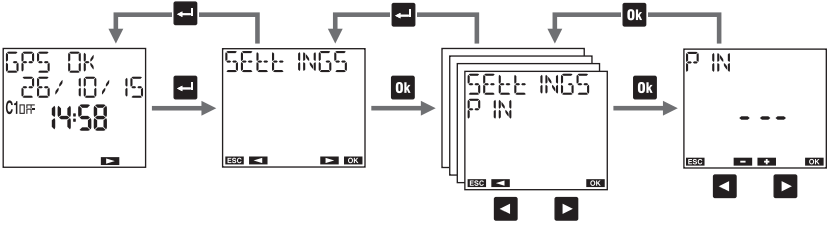


The "random switching ⑦" function (manual menu → random manual) allows you to automatically switch and at random time intervals any channel among the 9 available.
In this menu it's possible to define the minimum and maximum duration of the time interval between two random switchings. Default minimum duration is 1 minute, maximum duration is 5 minutes.

Parameters modification

① Set the minimum duration. It's possible to set values between 1 minute and the *maximum duration.*
② Set the maximum duration. It's possible to set values between the *minimum duration* and 23:59.
Note: setting the minimum duration equal to the maximum, the switchings will occur at fixed time intervals.

Protection PIN setting menu



The protection code (PIN) is used to lock the keyboard and prevent changes by unauthorized persons. With active PIN protection, pressing any key, it's necessary to enter the PIN: if PIN is correct the keyboard unlocks; after 3 minutes without pressing a key, the keyboard will lock automatically.

To activate PIN protection:
- set a value between 000 and 999

To disable PIN protection:
- set "**---**" (located before 000 or after 999)

Note: If you have forgotten your PIN code to unlock memo BUS it's necessary to carry out a hardware reset (see page 60).

MANUAL OPERATION MENU

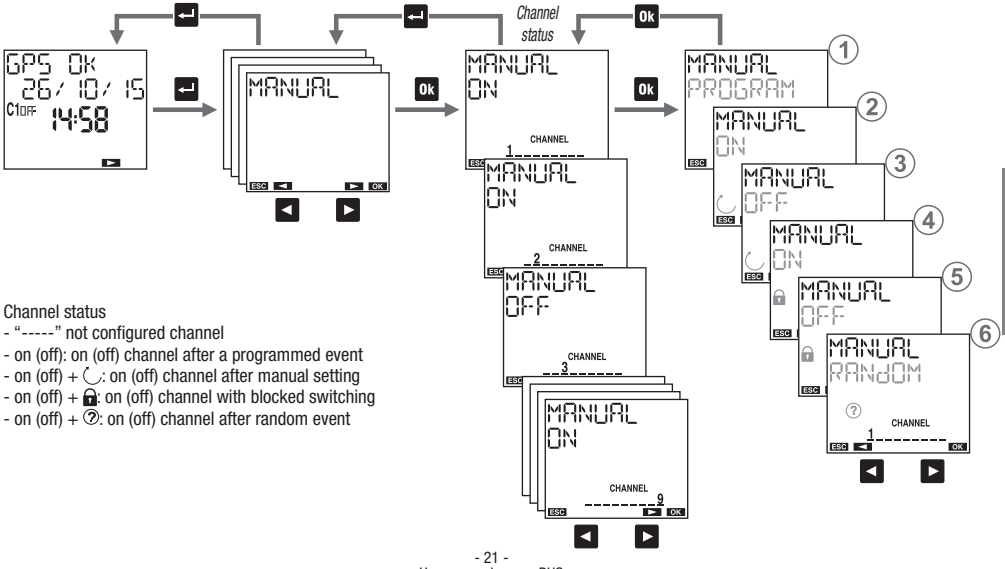
"Manual" menu allows you to manually take action on the channels of memo BUS and to check their status (on, off, or "------" if the channel is not configured).

Possible operations:

① **program:** the selected channel follows the set programming
② **temporary on ◡ :** the selected channel is set on until the next programmed off event
③ **temporary off ◡ :** the selected channel is set off until the next programmed on event
④ **permanent on 🔒 :** the selected channel is locked in on position until the manual unlocking (to unlock, access this menu and set a different operation)
⑤ **permanent off 🔒 :** the selected channel is locked in off position until the manual unlocking (to unlock, access this menu and set a different operation)
⑥ **random ? :** the selected channel is set on and then will take place switching on / off at random intervals (the minimum and maximum interval can be set from "Settings → random" menu)

Shortcut keys (only for channel 1)

For channel aboard the memo BUS (channel 1) it's possible to set the operations described above through a combination of keys:
- temporary on/off: press the key ◄. If on becomes off and vice versa.
- permanent on/off: press for a long time (for 3 seconds at least) the key ◄. The current state is locked until the unlocking (press again for a long time the key ◄).
- random: press contemporary and for a long time (for 3 seconds at least) the keys ◄ and Ok. Press again simultaneously and for a long time the keys ◄ and Ok to disable the function.

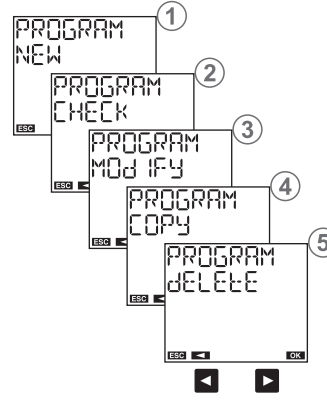


Channel status
- "-----" not configured channel
- on (off): on (off) channel after a programmed event
- on (off) + ◡: on (off) channel after manual setting
- on (off) + 🔒: on (off) channel with blocked switching
- on (off) + ⍰: on (off) channel after random event

English

PROGRAM MENU

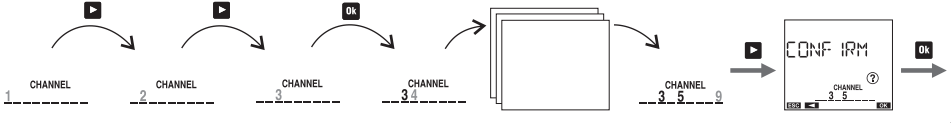
The menu “program” allows you to:
① create a new program
② check created programs
③ change or delete a created program
④ copy all created programs on a channel in another channel
⑤ delete all programs of a channel



Channels selection

scroll through the channels from 1 to 9:

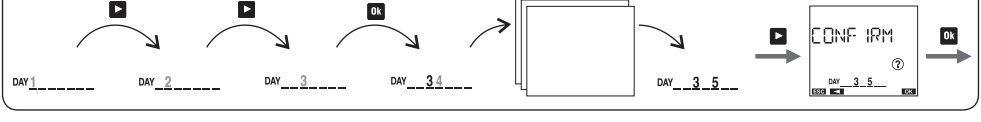
- by pressing the key ▶ to move to the next channel without selecting the current channel
- by pressing the key Ok to select/deselect the current channel and move to the next



Select days

scroll through the days of the week from 1 to 7:

- by pressing the key ▶ to move to the next day without selecting the current day
- by pressing the key Ok to select/deselect the current day and move to the next



English

Programs types

- Program ON/OFF: it is composed of a switching of the ON relay and of a subsequent switching of the OFF relay. It can have a daily period (everyday with the same modes), weekly (every week with the same modes), annual (every year with the same modes)*.
- PULSE ON Program: is an ON relay switching for a maximum duration of 59 seconds. It can have a daily period (everyday with the same modes), weekly (every week with the same modes), annual (every year with the same modes)*.
- PULSE OFF program: is a relay switching OFF for a maximum duration of 59 seconds. It can have daily period (everyday with the same modes), weekly (every week with the same modes), annual (every year with the same modes)*.
- HOLIDAY program: is a period of time defined by a start time and an end time within which all programmed switchings (of that channel) are disabled. The relay is in OFF position (OFF holiday) or in ON position (ON holiday).

* In the annual program, it's possible to specify the month. In this case, the period is monthly (every month with the same modes). It's also possible to specify a definite date (the program carried out only once).

Channel types

- TIME channel: carries out programs of time type: ON / OFF, ON pulse, OFF pulse, holiday
- ASTRO channel: carries out programs of astronomical type, i.e. in the interval delimited by sunrise and sunset**: ON/OFF, ON pulse, OFF pulse, holiday, night programs (see pages 36-37). ON switchings set before sunset are carried out at sunset, OFF switchings set after sunrise are carried out at sunrise (except for some night programs that can have switching on or switching off during the day. See on page 36).

** times of sunrise and sunset are automatically calculated by memo BUS according to geographic coordinates set during installation. In place of sunrise and sunset times it's possible to use the times of civil twilight (see page 16).

⚠ **Important:** on the same channel can't coexist ON pulses and OFF pulses (if an ON pulse is already present, it's not possible to save a holiday OFF program and vice versa).

⚠ **Important:** on the same channel can't coexist holiday ON programs and holiday OFF programs (if a holiday ON program is already present, it's not possible to save a holiday OFF program and vice versa).

⚠ **Important:** a channel may be either of clockwise or of astronomical type, but it can't be of both types simultaneously. It's not possible to save programs of astronomical type on a channel where are stored programs of time type (and vice versa). Messages of ERROR 011 (astro program on channel astro) and ERROR 012 (time program on astro channel).
In this case to proceed it's necessary to delete the saved programs on that channel (see page 49).

Programs priority

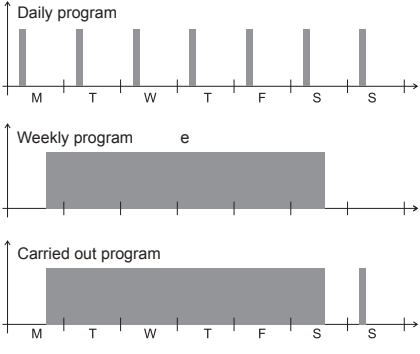
The priority programs defines how memo BUS manages the case in which programs with different period are running at the same time (1 indicates higher priority).

Program	Date*	Annual	Monthly	Weekly	Daily
Holiday	1				
Night	2				
Pulse	3				
On/Off	4	5	6	7	8

* Date: select day, month, year (program carried "only once in the life of the product"). If the month is not specified, the program is carried out all days *xx* of all months of the specified year.

Priority list on/off

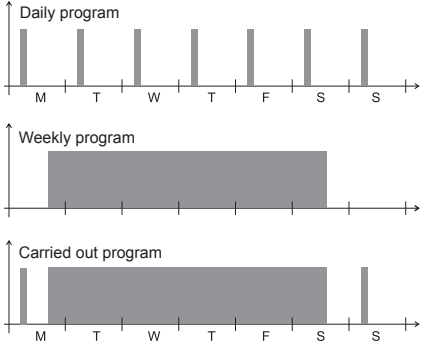
In case in which, on the same channel, on/off programs are provided with different period (daily, weekly, ...) to carry out in the same day, only the program with the highest priority is executed.



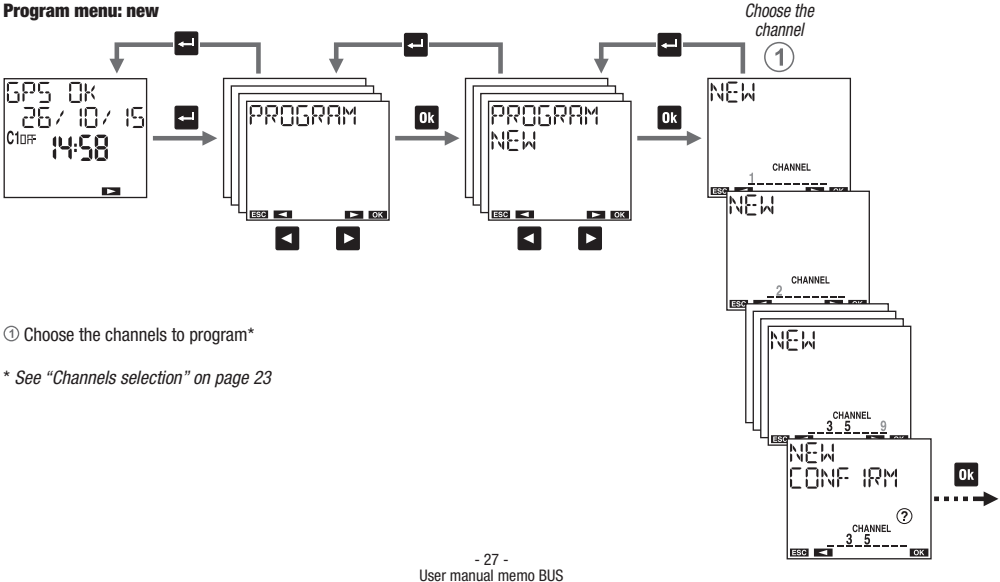
From this example it's possible to see that the daily event on Monday is not carried out because in the same day it is provided the beginning of the week program (even if the daily program of Monday begins and ends before the beginning of the weekly program). Instead, the daily program of Sunday is carried out because it's the only one running for that day.

Holiday program

The holiday program just begins and ends exactly at the specified times.



Program menu: new

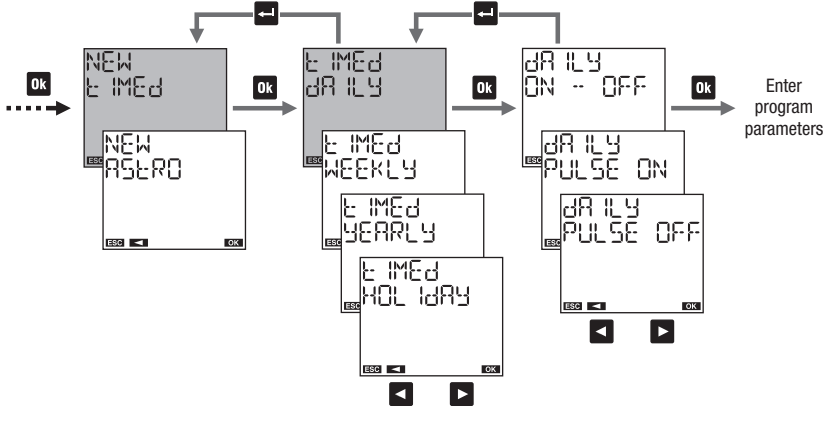


① Choose the channels to program*

** See "Channels selection" on page 23*

English

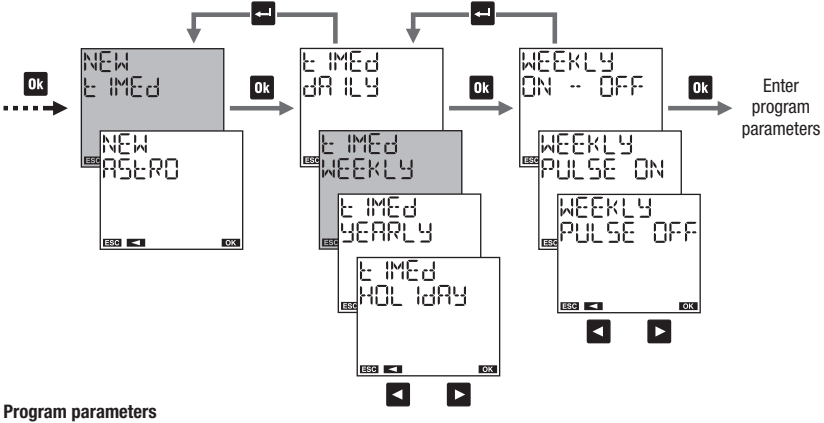
Program menu: new daily timed



Program parameters

- on/off: on time and off time
- on pulse: time and pulse duration (max 59 seconds)
- off pulse: time and pulse duration (max 59 seconds)

Program menu: new weekly timed

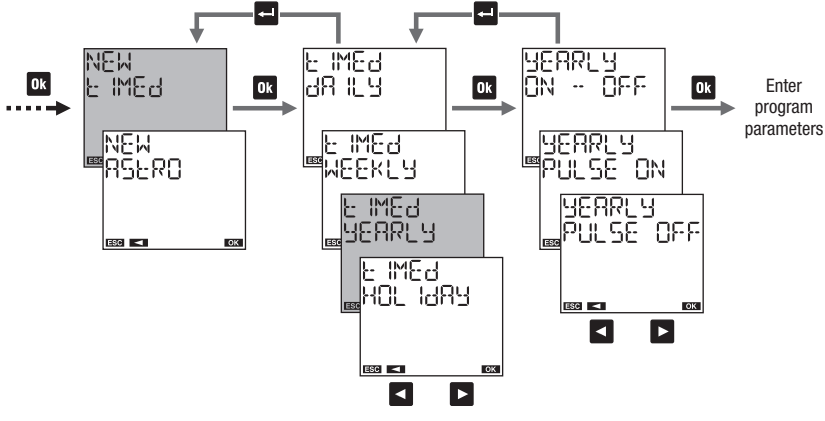


Program parameters

- on/off: day (or days)* and on time, day (or days) and off time
- on pulse: day (or days)* and pulse time, pulse duration (max 59 seconds)
- off pulse: day (or days)* and pulse time, pulse duration (max 59 seconds)

* *See "Days selection" on page 23*

Program menu: new yearly timed (or monthly)



Program parameters

- on/off: day (or days) and on time, day (or days) and off time
- on pulse: day (or days) and pulse time, pulse duration (max 59 seconds)
- off pulse: day (or days) and pulse time, pulse duration (max 59 seconds)

English

How to choose the day (or days) in an annual program (or monthly)

(1) to set the program:

in the first, second, third, fourth or last week of the month
in / the day/s (Monday, ...) of the week just specified
the specified month (MM for all months)
the given year (YY for all years)

Note: the on event must correspond to the off in the same day. For example, if the program includes two events on Monday and on Wednesday, then there will be two off events on Monday and on Wednesday. Otherwise ERROR 010 is signaled.

(2) to set the program on the last day:

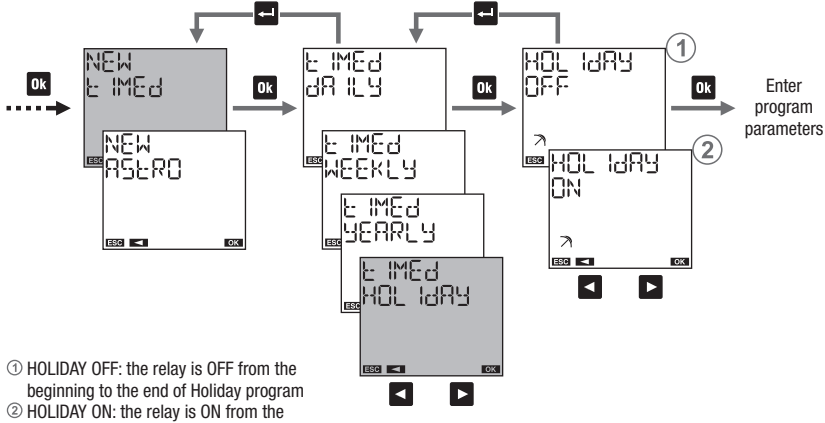
---/MM/YY of all months of all years
---/VV/YY of the specified VV month of all years
---/MM/ZZ of all months of the specified ZZ year
---/VV/ZZ of the specified VV month of the specified ZZ year

(3) to set the program on the day XX (1,2,3...):

XX/MM/YY of all months of all years
XX/VV/YY of the specified VV month of all years
XX/MM/ZZ of all months of the specified ZZ year
XX/VV/ZZ of the specified VV month of the specified ZZ year

English

Program menu: new holiday timed



① HOLIDAY OFF: the relay is OFF from the beginning to the end of Holiday program
② HOLIDAY ON: the relay is ON from the beginning to the end of Holiday program

Program parameters

- beginning of the program
- end of the program

How to choose the day (or days) in a holiday program

(1) to set the program:

in the first, second, third, fourth or last week of the month
in / the day/s (Monday, ...) of the week just specified
the specified month (MM for all months)
the given year (YY for all years)

Nota: in this case, the holiday program must begin and end in the same day. Otherwise ERROR 010 is signaled.

(2) to set the program on the last day:

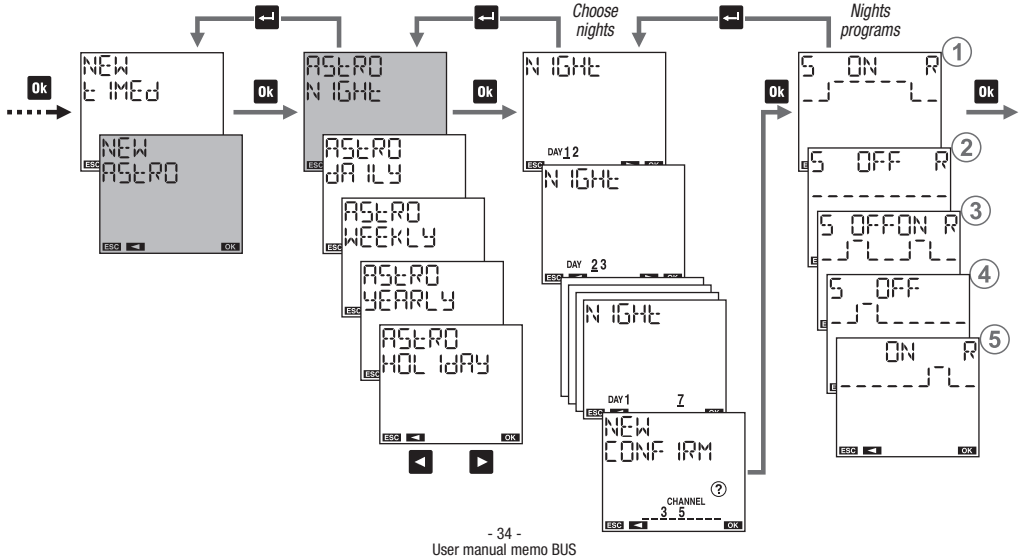
---/MM/YY of all months of all years
---/VV/YY of the specified VV month of all years
---/MM/ZZ of all months of the specified ZZ year
---/VV/ZZ of the specified VV month of the specified ZZ year

(3) to set the program on the day XX (1,2,3...):

xx/MM/YY of all months of all years
xx/VV/YY of the specified VV month of all years
xx/MM/ZZ of all months of the specified ZZ year
xx/VV/ZZ of the specified VV month of the specified ZZ year

English

Program menu: new astro night



English

How to select nights

scroll through the nights of the week from the first (1-2) to the last (7-1):

- by pressing the key ▶ key to move to the next night without selecting the current night
- by pressing the key OK to select/deselect the current night and move to the next

How to interpret the selection

If the night between the days of A and B is selected, the day A is on and underlined while B is on (not underlined).
Examples of selection:

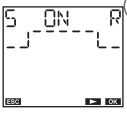
DAY 1 2 3 4 5 Selected nights: between day 1 and 2, between day 2 and 3, between day 3 and 4, between day 4 and 5

DAY 1 2 3 4 5 Selected nights: between day 1 and 2, between day 2 and 3, between day 4 and 5

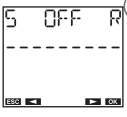
DAY 1 2 3 4 7 Selected nights: between day 1 and 2, between day 3 and 4, between day 7 and 1

English

Night programs



1 Turning on at sunset, turning off at sunrise.
No parameter required.



2 Off from sunset to sunrise.
No parameter required.

3 Turning on at sunset, turning off during the night. Turning on during the night, turning off at sunrise.
Choose one of the three following cases:

Ok

Turning on at sunset, turning off at a settable time.
Turning on at a settable time, turning off at sunrise. (*)

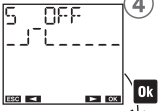
Turning on at sunset, turning off after a settable time interval.
Turning on before sunrise of a settable time interval, turning off at sunrise.

Turning on at sunset for a settable short duration (pulse, max 59 seconds).
Turning on at sunrise for a short settable duration (pulse, max 59 seconds).

* If off time is before sunset switching is not carried out. If on time is after sunrise switching is not carried out.

** Switching on continues for the entire set time interval (also if off time is after sunrise).

*** Switching on occurs before sunrise of the entire set time interval (also if on time is before sunset).



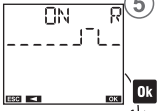
4 Turning on at sunset, turning off during the night.
Choose one of the three following cases:

Ok

Turning on at sunset, turning off at a settable time. (*)(**)

Turning on at sunset, turning off after a settable time interval. (**)

Turning on at sunset for a settable short duration (pulse, max 59 seconds).

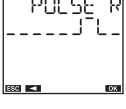


5 Turning on during the night, turning off at sunrise.
Choose one of the three following cases:

Ok

Turning on at a settable time, turning off at sunrise. (*)(***)

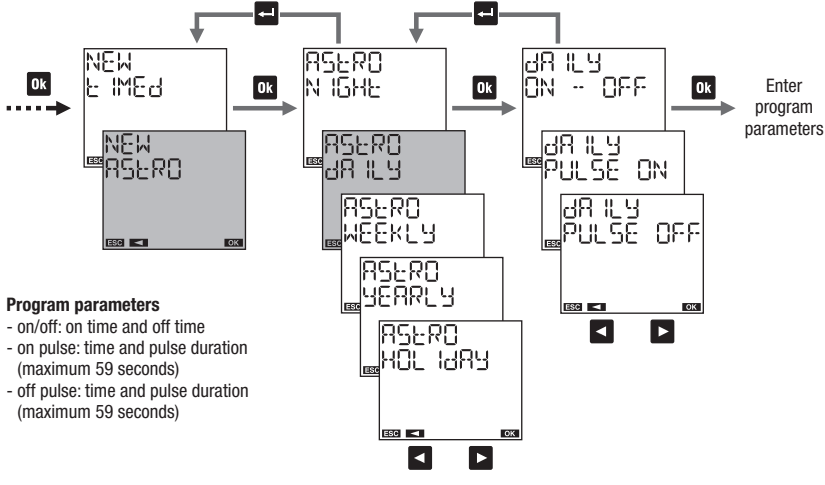
Turning on before sunrise of a settable time interval, turning off at sunrise. (***)



Turning on at sunrise for a settable short duration (pulse, max 59 seconds).

English

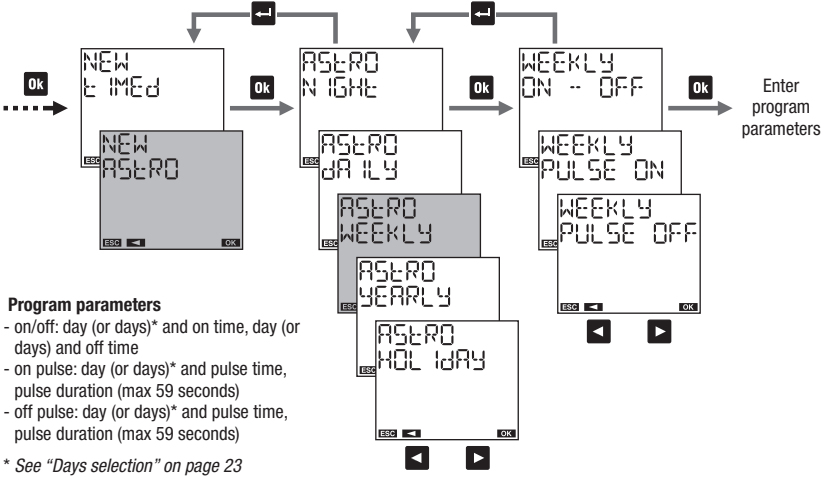
Program menu: new astro daily



Program parameters

- on/off: on time and off time
- on pulse: time and pulse duration (maximum 59 seconds)
- off pulse: time and pulse duration (maximum 59 seconds)

Program menu: new astro weekly

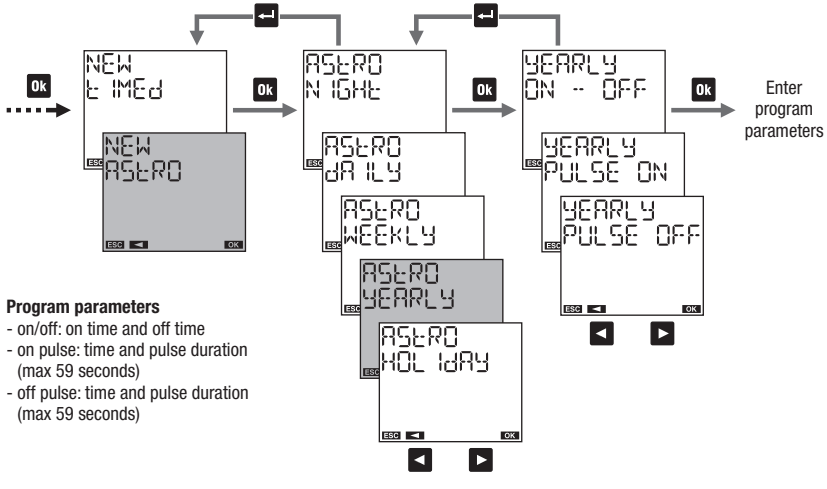


Program parameters

- on/off: day (or days)* and on time, day (or days) and off time
- on pulse: day (or days)* and pulse time, pulse duration (max 59 seconds)
- off pulse: day (or days)* and pulse time, pulse duration (max 59 seconds)

* *See "Days selection" on page 23*

Program menu: new astro yearly (or monthly)



Program parameters

- on/off: on time and off time
- on pulse: time and pulse duration (max 59 seconds)
- off pulse: time and pulse duration (max 59 seconds)

How to choose the day (or days) in an astro annual program (or monthly)

(1) to set the program:

in the first, second, third, fourth or last week of the month
in / the day/s (Monday, ...) of the week just specified
the specified month (MM for all months)
the given year (YY for all years)

Note: the on event must correspond to the off in the same day. For example, if the program includes two events on Monday and on Wednesday, then there will be two off events on Monday and on Wednesday. Otherwise ERROR 010 is signaled.

(2) to set the program on the last day:

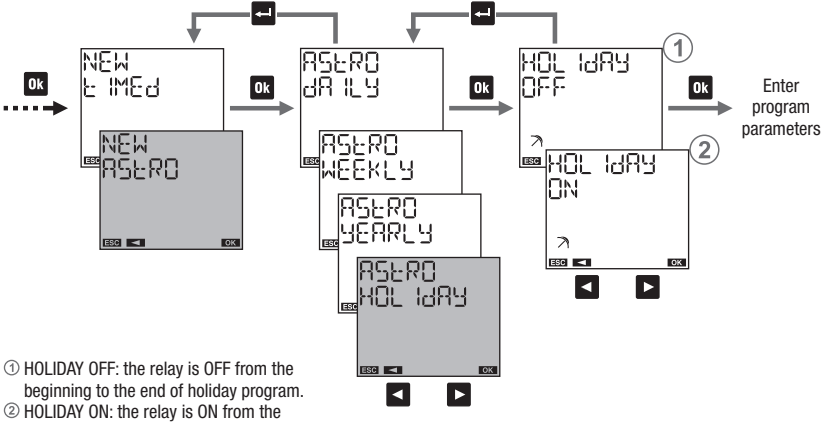
---/MM/YY of all months of all years
---/VV/YY of the specified VV month of all years
---/MM/ZZ of all months of the specified ZZ year
---/VV/ZZ of the specified VV month of the specified ZZ year

(3) to set the program on the day XX (1,2,3...):

XX/MM/YY of all months of all years
XX/VV/YY of the specified VV month of all years
XX/MM/ZZ of all months of the specified ZZ year
XX/VV/ZZ of the specified VV month of the specified ZZ year

English

Program menu: new astro holiday



① HOLIDAY OFF: the relay is OFF from the beginning to the end of holiday program.
② HOLIDAY ON: the relay is ON from the beginning to the end of holiday program.

Program parameters

- beginning of the program
- end of the program

How to choose the day (or days) in a holiday astro program

(1) to set the program:

in the first, second, third, fourth or last week of the month
in / the day/s (Monday, ...) of the week just specified
the specified month (MM for all months)
the given year (YY for all years)

Note: in this case, the holiday program must begin and end in the same day. Otherwise ERROR 0 10 is signaled.

(2) to set the program on the last day:

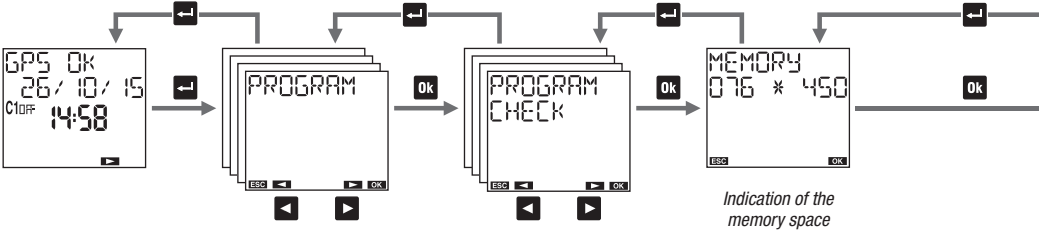
---/MM/YY of all months of all years
---/WW/YY of the specified WW month of all years
---/MM/ZZ of all months of the specified ZZ year
---/WW/ZZ of the specified WW month of the specified ZZ year

(3) to set the program on the day XX (1,2,3...):

xx/MM/YY of all months of all years
xx/WW/YY of the specified WW month of all years
xx/MM/ZZ of all months of the specified ZZ year
xx/WW/ZZ of the specified WW month of the specified ZZ year

English

Program menu: check

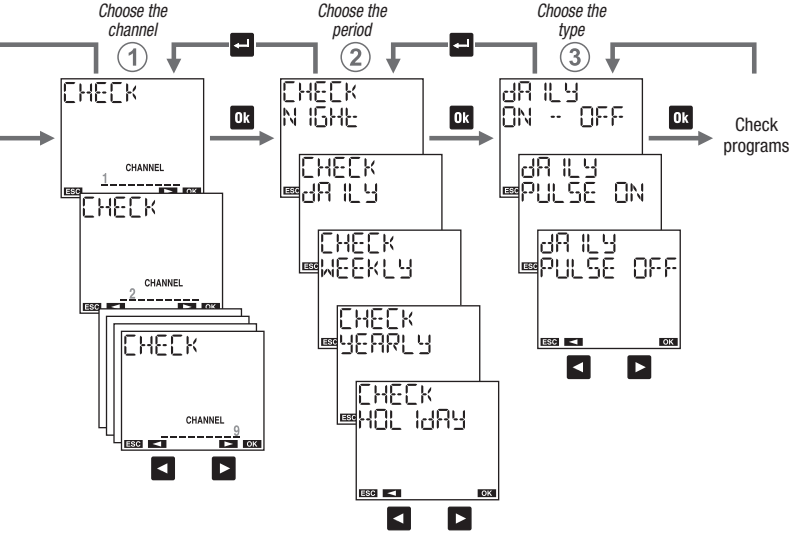


Indication of the memory space (76 of 450)

How to check a program

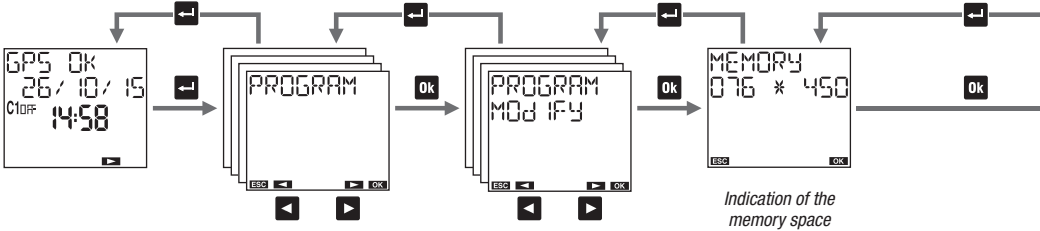
① choose the channel: 1 ... 9
② choose the period: daily, weekly, annual, holiday or night (when it is a channel of astronomical type)
③ choose the type: on/off, on pulse, off pulse or a night program (only if it is a channel of astronomical type)

Note: a program requires more screens to be displayed:
- press the key Ok to move from the first to the second part of the same program
- press the keys ◄ and ► to switch from one program to another


Choose the channel
1
Choose the period
2
Choose the type
3
CHECK
CHANNEL
1
CHECK
CHANNEL
2
CHECK
CHANNEL
9
Ok
CHECK
NIGHt
CHECK
dAILY
CHECK
WEEKLY
CHECK
YEARLY
CHECK
HOLIdAY
dAILY
ON - OFF
dAILY
PULSE ON
dAILY
PULSE OFF
Check programs
ESC
OK

English

Program menu: modify



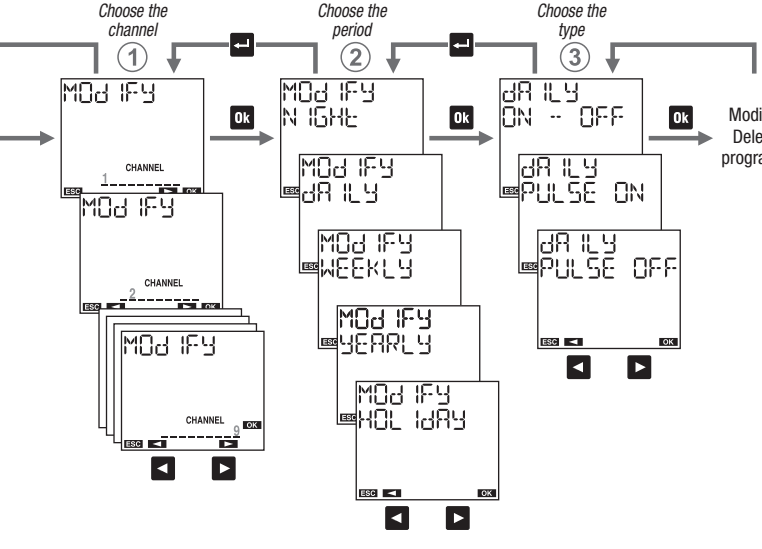
Indication of the memory space (76 of 450)

How to modify or to delete a program

① choose the channel: 1 ... 9
② choose the period: daily, weekly, annual, holiday or night (only if it's an astronomical channel)
③ choose the type: on/off, on pulse, off pulse or a night program (only if it's an astronomical channel)

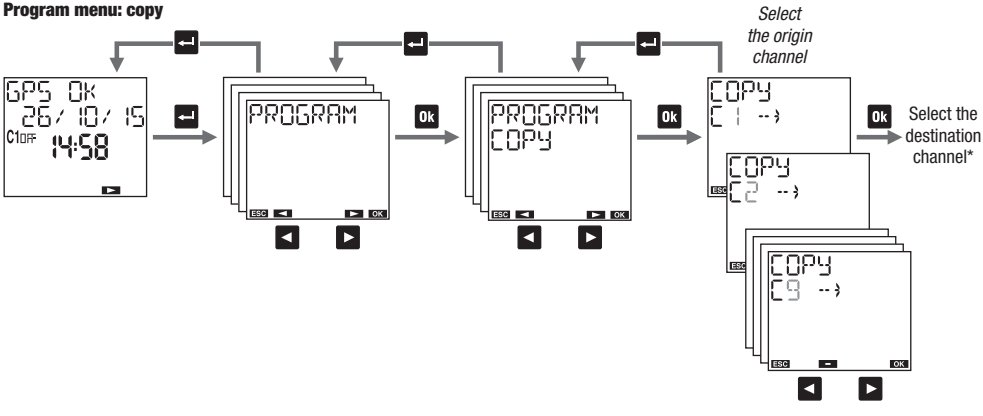
Note: a program requires more screens to be displayed:
- press the key Ok to move from the first to the second part of the same program
- press the keys ◄ and ► key to switch from one program to another

To modify: press for a long time (at least 3 seconds) the key Ok
To delete: press for a long time and simultaneously the keys Ok and ↵


Choose the channel
1
Choose the period
2
Choose the type
3
MOd IFY
CHANNEL
1
2
9
ESC
OK
Ok
MOd IFY
NIGHt
MOd IFY
dA ILY
MOd IFY
WEEKLY
MOd IFY
YEARLY
MOd IFY
HOL IdAY
dA ILY
ON - OFF
dA ILY
PULSE ON
dA ILY
PULSE OFF
Modify/
Delete
programs

English

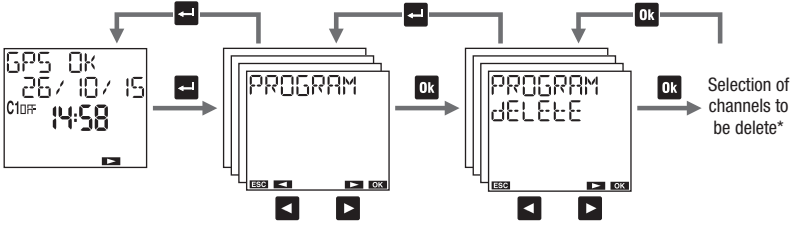
Program menu: copy



"Copy" menu allows copying the programs of a channel (origin channel) on one or more channels (channels destination).
Note: the programs previously stored on the destination channels will be deleted.

** See "Channels selection" on page 23*

Program menu: delete



"Delete" menu is used to delete all stored programs on one or more channels.
Note: to delete one single program to see "modify" mode (see page 46).

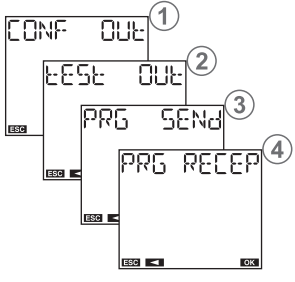
** See "Channels selection" on page 23*

BUS VEMER MENU

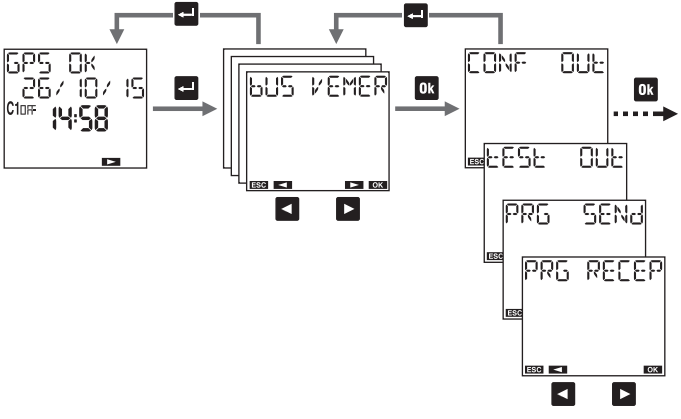
Memo BUS enables you to control 9 independent channels but It has one relay (for channel 1). With additional RX4-8A modules It's possible to add some relays and associate these relays to the channels of memo BUS.
The remote actuators and memo BUS all together are named "network".

"Bus Vemer" menu allows you to configure or to test the connection between memo BUS and the actuators ①② or share programs among several memo BUS connected to the network ③④.

① configure the outputs, to associate the channels of memo BUS to the channels (relays) of the remote actuators
② to test the connection, to verify the correct association among the channels of memo BUS and the channels (relays) of the actuators
③ to send programs to the other memo BUS connected to the network
④ to receive the programs from another memo BUS connected to the network

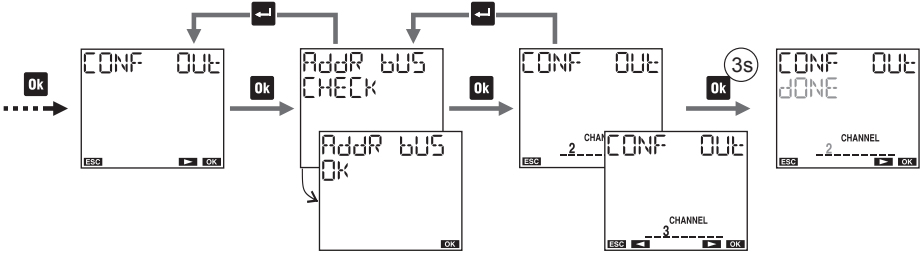


Note: during the configuration or channels test and during the reception of programs on the bus the switchings of all channels are disabled.


GPS OK
26/ 10/ 15
C1OFF 14:58
bUS MEMER
ESC
OK
Ok
CONF OUt
Ok
ESC
tESt OUt
ESC
PRG SENd
ESC
PRG RECEP
ESC
OK

Simple network configuration (one memo BUS, one or more remote actuators)

1. On the remote actuator: activate “Channel configuration” mode (see the documentation supplied with the actuator)
2. On the memo BUS:
   2.1 Select CONF OUT and confirm with Ok. Memo BUS verifies the uniqueness of its address and when the test is successful it displays AddR bUS Ok
   2.2 Press Ok to continue. Choose with the keys ◄ and ► and the channel to configure of memo BUS
   2.3 Press the key Ok for at least 3 seconds. After configuration, the channel flashes (2 times) and the message dONE appears.

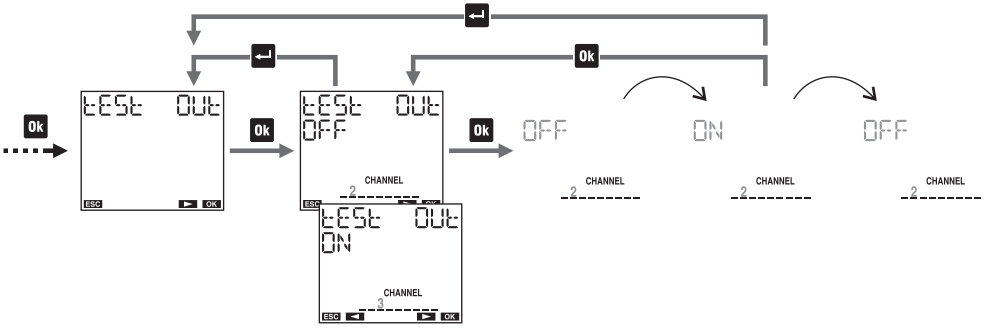


To delete the configuration of a channel, select the channel (steps 2.1 and 2.2) and press simultaneously for 3 seconds the keys ↵ and Ok.

Complex network configuration (several memo BUS, one or more remote actuators)

About the configuration of the network in the case of several connected memo BUS, contact Vemer Technical Support (tel. +39.0439.879885).

Connection test

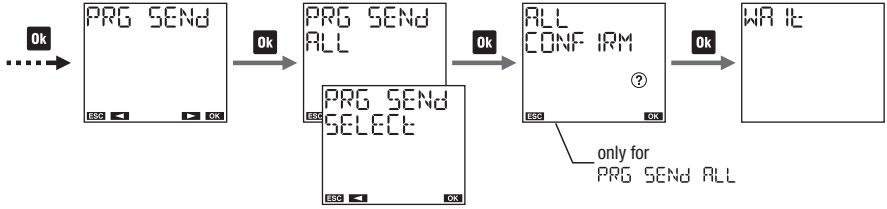


The test is used to verify proper communication between memo BUS and the remote actuator. It's possible to test multiple channels simultaneously*.
During the test a series of on-off commands are sent every 5 seconds to the relay in test. It's possible to exit the test:
- by pressing the key Ok to exit the test and test another channel
- by pressing the key ↵ to exit the test and return to the main page

** See "Channels selection" on page 23*

Programs copy on the bus

This function allows you to transfer programs from a memo BUS to other memo BUS connected to the same network. It's possible:
- to force the transfer to all other memo BUS connected to the network (PRG SENd ALL)
- to transfer programs only to memos BUS on which the reception mode* has been activated (PRG SENd SELECt)

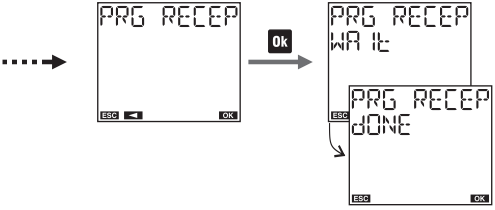


It's not possible to select the programs to copy, the entire memory area is copied. The programs previously stored on memo BUS destination will be deleted.

⚠ **Warning**. The function PRG SENd ALL overwrites the programs of all memo BUS connected to the network: use with caution.

*** Reception programs on the bus**

Activate reception mode (PRG RECEP) to receive the programs from another connected memo BUS (that transmits programs via the function PRG SEND SELECt). The memo BUS remains in reception for 1 minute and this condition is signaled from the flashing WAIt.



In the case where the reception is not successful the message PRG RECEP ERROR is displayed.
Reception programs can take place at any time (even if the reception mode is not activated). This happens if another memo BUS connected to the network transmits by using the function PRG SEND ALL.

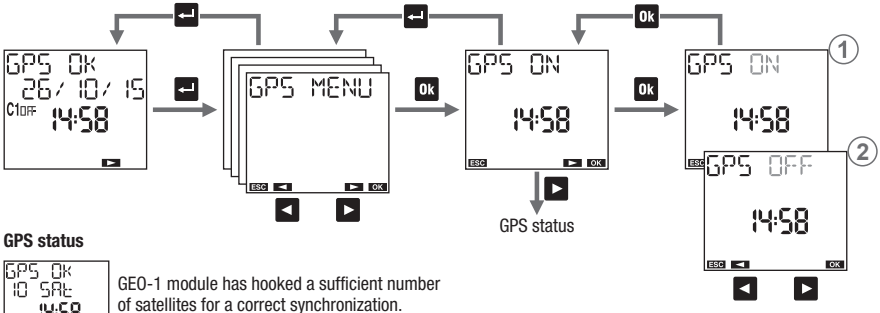
GPS MENU

GPS menu allows you to enable or disable the presence of the additional GEO-1 module.
GEO-1 is a GPS module that allows you to capture the information of date, time and location from satellites and then to transfer them to memo BUS.
With GEO-1 connected and enabled, memo BUS synchronizes date, time and location (latitude, longitude) every 30 minutes, signaling synchronization with a flashing symbol ↗ (2 times).
In this way the time of memo BUS is always synchronized and are canceled the drifts due to the tolerance of the oscillator which marks the time base.

To enable the presence of GEO-1:
① set GPS ON
It's also possible to display the status of the connection to GEO-1 (ok, waiting, error).
From the status page, while by pressing the key **Ok** for at least 3 seconds it's possible to force data sending from GEO-1 to memo BUS (the display shows WAIT COMMUNICA).

To disable the presence of GEO-1:
② set GPS OFF
If GPS module is not connected, it's advisable to set GPS OFF to avoid displaying unnecessary information message GPS ERR on the start page of memo BUS (see page 8).

Note: the internal oscillator which marks the time base allows memo BUS to maintain the updated time even without the presence of GEO-1.
In this case clock accuracy is ± 0.5 seconds per day.



GPS status

GEO-1 module has hooked a sufficient number of satellites for a correct synchronization.
Displays the number of hooked satellites (10 in this case).

GEO-1 module is not properly connected to memo BUS.
Check the wiring diagrams in this manual.

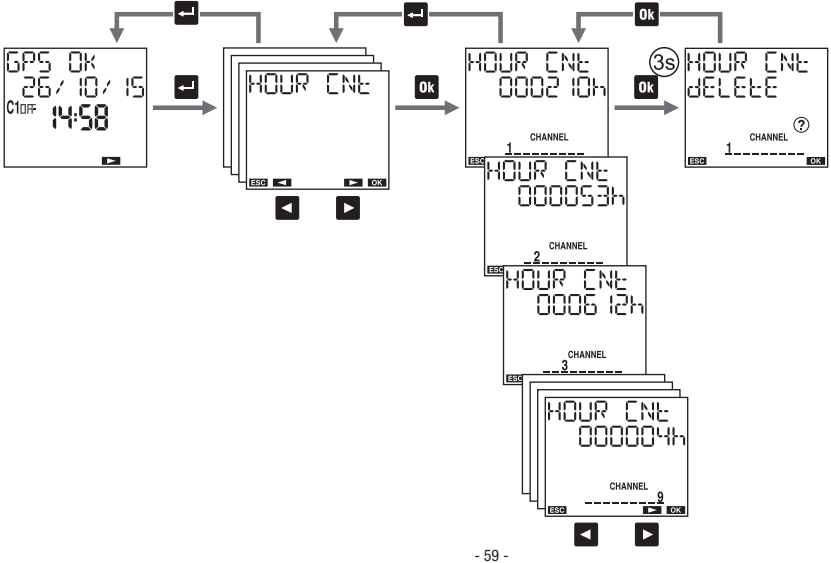
GEO-1 module has not hooked a sufficient number of satellites for a correct synchronization.
If this condition persists for more than a few hours, it's advisable to move GEO-1 module in a better position to receive (outside the building).

HOUR COUNTER MENU

"Hour counter" menu allows you to display the hours of use (relay on) of connected loads. The device has 9 counters, one for each channel. The maximum value of the counters is 99999 hours (about 11 years); reached the maximum limit, the counter resets automatically.

To reset a counter:
1. select the desired channel
2. press the key Ok for 3 seconds until the display shows "HOUR CNT dELEtE ⑦"
3. confirm by pressing Ok (press ↵ to exit without zeroing)

Note: it's possible to reset all counters contemporary from the "Reset" menu (see page 60).


GPS OK
26/ 10/ 15
C1OFF 14:58
HOUR CNT
Ok
HOUR CNT
0002 10h
CHANNEL
1
Ok
3s
HOUR CNT
dELEtE
CHANNEL
1
HOUR CNT
000053h
CHANNEL
2
HOUR CNT
0006 12h
CHANNEL
3
HOUR CNT
000004h
CHANNEL
9
ESC
OK

RESET MENU

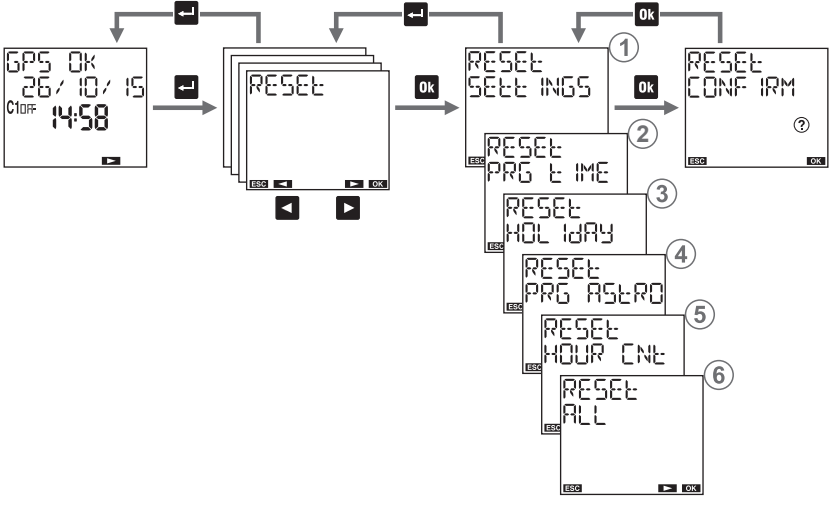
"Reset" menu allows you to restore the initial state of the device.

Available resets:
① Settings reset: deletes all the carried out settings (except the language, PIN and the channel settings on the BUS)
② Time programs reset: deletes all saved time programs
③ Holiday programs reset: deletes all saved holiday programs
④ Astro programs reset: deletes all saved astronomical programs
⑤ Counter reset: resets the counters of all channels
⑥ All reset: carries out all the above described resets and deletes the language, PIN protection and the channels settings on the bus

There is also another reset, of hardware type, which allows you to reset the device in case it responds to the pressing of the keys so unexpectedly, without losing the carried out settings/programs (only the date and the time are lost).

To carry out a hardware reset:
1. press the key "R" with a sharp object

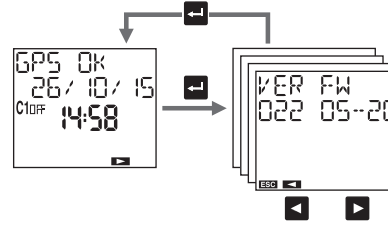
The hardware reset is also useful when you forget PIN protection. Reset, in fact, unlocks the keyboard for 3 minutes, the necessary time to access the appropriate menu and check/disable PIN.


GPS OK
26/ 10/ 15
C1OFF 14:58
RESEt
Ok
RESEt
SEtt INGS
1
Ok
RESEt
CONF IRM
?
ESC
OK
2
RESEt
PRG t IME
3
RESEt
HOL IdAY
4
RESEt
PRG ASTRO
5
RESEt
HOUR CNt
6
RESEt
ALL

English

FIRMWARE MENU

This menu shows the firmware installed in the device, where:
022 is the revision index
05 is the month
20 is the day



ERROR SIGNALS

When setting up programs, in case of a discrepancy, the following error messages can occur:

- ERROR 001 On and off events with different frequency (each on event must have an off event)
- ERROR 002 On and off concomitant events of the same program
- ERROR 003 Two or more consecutive on events of the same program / Two or more consecutive off events of the same program
- ERROR 004 Invalid date
- ERROR 005 Insufficient memory
- ERROR 006 Attempt to set an on pulse on a channel where is already stored an off pulse (see page 25)
- ERROR 007 Attempt to set an off pulse on a channel where is already stored an on impulse (see page 25)
- ERROR 008 Attempt to set an on holiday program on a channel where is already stored an off holiday program (see page 25)
- ERROR 009 Attempt to set a holiday off program on a channel where a holiday on program is already stored (see page 25)
- ERROR 010 Attempt to set an annual program of on and off events on different days
- ERROR 011 Attempt to set an astro program on a channel of time (see page 25)
- ERROR 012 Attempt to set a time program on a channel of time type (see page 25)
- ERROR 030 Error accessing memory *

* In this case, carry out a hardware reset (see page 60). If the error persists, contact Vemer technical support (tel.+ 39.0439.879885).

English

BATTERY MANAGEMENT

When the battery is close to empty, on the first line of the display appears bAtt.Ery. In this case, the battery must be replaced as soon as possible.

To replace the battery:
- remove the cover of battery compartment
- replace the battery with one of 3V CR14250 type and put the cover

In order not to lose the programming steps and carried out settings, it is necessary to ensure that the time for the battery replacement doesn't exceed 60 seconds (in absence of power by means).

Dispose of the used batteries observing the laws in force in relation to the disposal of hazardous waste.

REFERENCE STANDARDS

Compliance with EU directives
2006/95/EC (Low Voltage)
2004/108/EC (E.M.C.)
It is declared with reference to the following standards:
- EN 60730-2-7.

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