



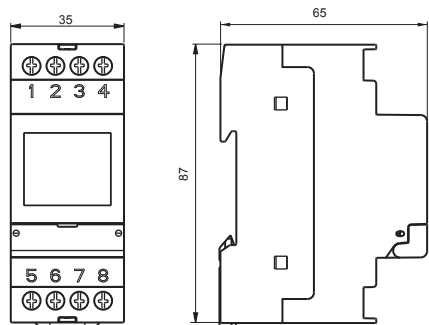
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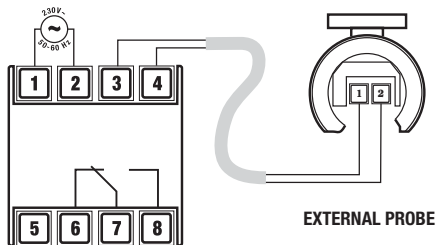
Mod. memo LUX



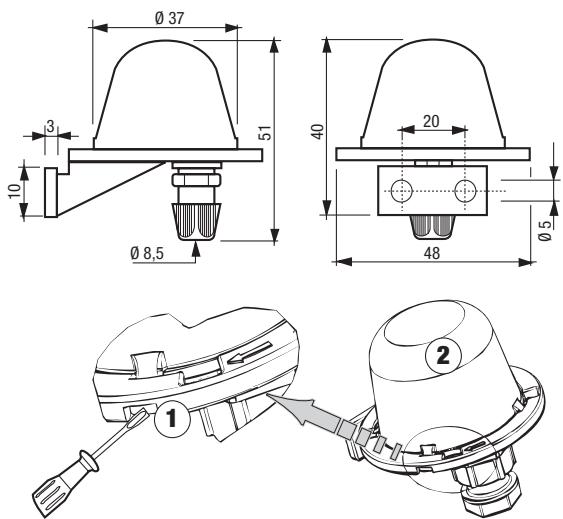
DIMENSIONS



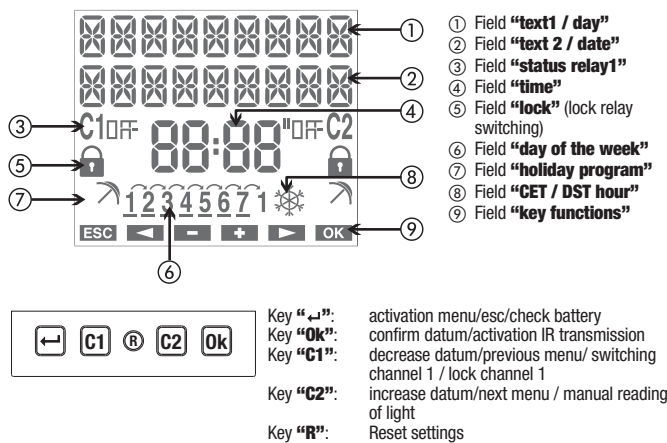
CONNECTION DIAGRAMS



EXTERNAL PROBE



DISPLAY AND KEYPAD DESCRIPTION



User Manual

DIGITAL PROGRAMMABLE TWILIGHT SWITCHES



Read carefully all instructions

- **Memo Lux** is a digital twilight switch for daily or weekly programming settings with crepuscular function integrated. The external probe (IP65) supplied with the item switches on the relay according to the program, the detected light intensity and the preset delay. The cover on the back of the instrument makes possible to replace the battery when it is run down.

SAFETY WARNINGS

- 1) **The instrument must be installed and started up 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) **Before supplying power to the instrument, connect the probe and make sure this is correctly closed and positioned.**
- 5) **The instrument must be installed and activated in compliance with current electric systems standards.**
- 6) **Do not connect or feed the instrument if any part of it is damaged.**
- 7) **Do not use the instrument for anything other than the indicated purpose.**

Code	Model	Description
VE437000	memo LUX	Digital programmable twilight switch with external probe

TECHNICAL CHARACTERISTICS

- Power supply: 230Vac \pm 10% 50/60Hz
- Absorption: 8VA (2W)
- Replaceable battery
- Output:
 - 1 monostable change-over contacts relay 16(10)A / 250Vac
- Type of action: 1B
- Memorisable programs: 30 events (ON,OFF) + 4 holiday periods + 20 holiday days
- Programming resolution: 1 minute
- Manual forcing of the temporary and permanent output (LOCK)
- Automatic change of Summer/Winter time with settable change mode
- Simplified programming in Italian, English and German
- Operating timer: max 99999h (can be zeroed)
- Threshold regulation (sensitivity): 5 \div 500 lux
- Hysteresis regulation: 1 \div 50% of the threshold
- Delay regulation: 1 \div 59 minutes
- Backlit LCD display
- Software class: A
- Container: 2 DIN modules
- Mounting: DIN rail to backplane
- Sealable cover
- Operating temperature: 0 \div +50°C
- Storage temperature -10°C \div +70°C
- Pollution level: 2
- Rated impulse voltage: 4kV
- Terminal Protection Degree: IP20
- **External probe**
 - Protection degree: IP65
 - Operating temperature: -20°C \div +50°C
 - Maximum distance between probe and device: 50 m.

INSTALLATION

CONNECTING THE PROBE (box "EXTERNAL PROBE")

- 1) Insert a screwdriver in the slot and raise the attachment flap (1)
 - 2) Turn the probe cover in an anticlockwise direction until it stops and remove it (2)
 - 3) Remove the cable clamp from the lower part
 - 4) Place the bi-polar cable in the cable clamp and then in the cable passage of the probe
 - 5) Connect the two conductors to the terminals
- IMPORTANT: use a dual insulation cable**
IMPORTANT: don't connect the terminals to accessible metal parts

BATTERY REPLACEMENT

The battery charge level can be controlled:
- automatically by the device once a week
- manually, from the main page pressing the key "↩" for three seconds
In case of battery level under a determined threshold on the first line of the display appears the words **LOW SUPPLY**. In this case replace the battery as soon as possible.

- To replace the battery:
- disconnect the mains
 - remove the battery slot cover, turning it anti-clockwise
 - replace the battery and remount the cover, turning it clockwise
 - connect the power supply

In order not to lose programming and the performed settings it is necessary to make sure that no more than 60 seconds pass between extracting the flat battery and inserting the new one.



Only use CR-2032 type batteries.
Dispose of the used batteries observing the laws in force in relation to the disposal of hazardous waste.

- 6) Tighten the cable clamp and return the cover of the probe by turning it in the clockwise direction
- 7) Connect the cable to terminals "3" and "4" of the device (see "CONNECTION DIAGRAMS")

CONNECTING THE DIGITAL SWITCH

- Extract the battery from its packing and insert it into the housing **as shown in the section "BATTERY REPLACEMENT"**. Then secure the closure cover.
- Connect the load and the power supply as illustrated in section "Connection diagrams".
- Using a pointed object press key "R" to perform a reset: the segments of the display will light for few seconds and then the instrument will enter IR receipt mode (in case of powerfail, IR receipt is not activated).
- Press key "↩" to exit the IR receipt mode.
- At this point it is possible to insert the necessary parameters to the properly work of the instrument: language, date- format, date, time.

Setting the language

It is possible to choose from 3 languages:
Italian, English and German.

- Use keys "C1" and "C2" to choose the language.
- Press "Ok" to confirm.

Setting date format

It is possible to choose from two date formats:
DD-MM-YY or YY-MM-DD.

- Use keys "C1" and "C2" to choose the desired format.
- Press "Ok" to confirm.

Setting the date

The parameter (year, month, day)
to be changed flashes.

- Use keys "C1" and "C2" to choose the desired value.
- Press "Ok" to confirm and go on to the next parameter

The sequence of parameters to be entered is
year \rightarrow month \rightarrow day.
At the moment of the insertion of the day on the displays appears also the bar with the corresponding day of the week (1 \rightarrow Monday, 7 \rightarrow Sunday).

Setting the time

- The parameter (hours, minutes) to be changed flashes.
- Use keys "C1" and "C2" to choose the desired value.
- Press "Ok" to confirm and go on to the next parameter

The sequence of the parameters to be inserted is
hours \rightarrow minutes.

At this point the instrument will switch to the normal operating status (main page). The display will show the date, time, relay status, day of the week (in letters on the top row, in numbers at the bottom) and the CET / DST symbol.

Note: if the instrument is not powered by the mains, instead of the day the following message **NO SUPPLY** will appear on the top row. In this condition backlighting is not active and the relays will remain off.

MANUAL OPERATION

Switching on/off manually

Press briefly the "C1" key to switch the output relay. The reached status will be maintained until the next program event.

Switch lock (Lock)

Activating the lock function all switches are ignored. The relay remains in the status in which it was found when the lock was set.

- Press and hold "C1" for 3 seconds to activate/deactivate this function on the relay

If the function is active will appear the following symbol

Manual reading of the light intensity level

It is possible to force the reading of the probe and consequently the updating of the status (night and day) of the device.

- Press the key "C2" for 3 seconds to active the instantaneous reading of the probe

If the detected light intensity is higher than the set threshold and the hysteresis value, on the display appears for a short time the written "DAY" and the relay is switched to "OFF" status

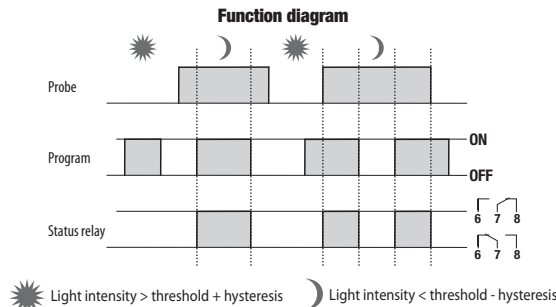


If the detected light intensity is lower than the set threshold and the hysteresis value, on the display appear for a short time the written "NIGHT" and a permanent asterisk on the left of the date. If the program is set to switch on the relay it will be set in ON status.



AUTOMATIC OPERATION

During normal operation the instrument performs the effected programs and enable/disable the relay in relation with the detected light intensity (see "program menu" and "twilight settings menu").



It is possible to set holiday days (or periods) when the switching of the relay is blocked (in OFF status). In the following paragraph is explained how to set holiday programs and events.

PROGRAM MENU

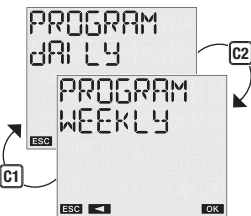
Through this program it is possible to create, display, modify or delete events ON/OFF.

1. To create a new program ON / OFF

- Press the key "↩" to enter menu, choose PROGRAM through keys "C1" and "C2" and press "Ok" to confirm.
- Choose NEW through keys "C1" and "C2" and press "Ok" to confirm.



- Choose through keys "C1" and "C2" the frequency of the event between DAILY or WEEKLY and press "Ok" to confirm.



- Choose among events ON or OFF and press "Ok" to confirm

- Insert the day of the week through keys "C1" and "C2" (it is not requested for daily events). For weekly events it is possible to set more than a day for week. Pressing the key "Ok" it is possible select/not select the mentioned day, through key "C2" proceed with the days until Sunday. Pressing once again the key "C2" appears: CONF! RM: Press "Ok" to confirm.



- Insert hour and minutes of switching through keys "C1" and "C2" and press "Ok" to confirm.



The confirmation of the successful programming is displayed by the words: **SAVE**

Note: recursive function for event ON/OFF

At this point the instrument activates the recursive function which allows several on-off-on events to be programmed in succession on the same day. Thereby once an activation (deactivation) event has been programmed, it is possible to enter the time of a deactivation (activation) event for the same day. To insert the hour of OFF (ON) press the key "↩" to stop the programming. There is no control of the correlation between on/off events programmed using the recursive function: such function is therefore to be intended as facilitated programming.

2. Checking a program

Through this menu it is possible to display, amend or delete a program saved in the instrument.

2.1 Displaying a program

Press key "↩" to enter the menu, and using keys "C1" and "C2" choose the PROGRAM option.



Press **“Ok”** to confirm.

Using keys **“C1”** and **“C2”** choose CHECK.

Press **“Ok”** to confirm.

Choose the frequency and type of event you wish to check using **“C1”** and **“C2”**.

At this point the first program pertaining to the specified type is displayed. If is present more than one programme it is possible to scroll forwards and backwards through them by using keys **“C1”** and **“C2”**. If no program of that particular type is present, on the display appear the words EMPTY.

2.2 Modifying a program

From menu “PROGRAM CHECK” it is possible to modify one or more programs.

Press key **“Ok”**

Choose the type of program to modify (daily or weekly) using keys **“C1”** and **“C2”** and press **“Ok”** to confirm

Choose the event to modify using keys **“C1”** and **“C2”** and press **“Ok”** to confirm

The words MODIFY appears. Press **“Ok”** to confirm

At this point it is possible to insert the new program parameters. The parameter under modification flashes. Use keys **“C1”** and **“C2”** to set the values and **“Ok”** to confirm or the key **“↵”** to exit without modifications.

At the end of the modification the word SAVE is displayed and the instrument once again returns to the normal operational status.

2.3 Deleting a program

From menu “PROGRAM CHECK” it is possible to delete one or more programs.

Press key **“Ok”**

Choose the type of program to delete (daily or weekly) using keys **“C1”** and **“C2”** and press **“Ok”** to confirm.

Choose the event to delete using keys **“C1”** and **“C2”** and press **“Ok”** to confirm.

The word DELETE appears. Press key **“C2”** to select the function **“DELETE”** and press **“Ok”** to confirm or the key **“↵”** to exit menu without modifications.

On the display appears the word DELETED is displayed and the instrument once again returns to the normal operational status.

3. Reset programs

To delete all the programs saved on the instrument:

Press key **“↵”** to enter the menu, choose the PROGRAM option using keys **“C1”** and **“C2”** and press **“Ok”** to confirm.

Choose option RESET PROGRAM using keys **“C1”** and **“C2”** and press **“Ok”** to confirm.

Choose CONFIRM and press **“Ok”**. All the programs will be cancelled.

Alternatively it is possible to reset programs by accessing the reset menu (see Reset menu)

HOLIDAY MENU

This menu allows to create, visualize, modify or delete holiday – events.

1 To create a HOLIDAY event ↗

From the normal operating status:

- Press **“↵”**
- Select HOLIDAY with **“C1”** and **“C2”** and confirm with **“Ok”**
- Select HOLIDAY NEW and confirm with **“Ok”**
- Select between HOLIDAY ONE DAY (single day) or HOLIDAY PERIOD (multiple contiguous days) with **“C1”** and **“C2”**

- Enter the date (holiday day) or the holiday day interval (holiday period).
Note: the first and last date are to be considered included in the holiday period
- Press **“Ok”** to confirm.

Once the programming is confirmed, the following message SAVE will appear on the display. During normal operation the possible execution

of a holiday program is signalled by the symbol ↗ in field (7) on the display.

Note: recursive function

At this point the instrument activates the recursive function that makes possible to program multiple holiday-days in series (or holiday periods). If you do not want to enter another holiday-day (or period) press **“↵”** to end programming. The correlation of the programmed holiday-events is not controlled by the recursive function: the function must therefore be considered as facilitated programming.

2 Checking a HOLIDAY program

This menu can be used to display, modify or delete a holiday program saved in the instrument.

2.1 Displaying a HOLIDAY program

From the normal operating status:

- Press **“↵”** to access the menu and select HOLIDAY with **“C1”** and **“C2”**
- Confirm with **“Ok”**
- Select HOLIDAY CHECK and press **“Ok”** to confirm
- Select between HOLIDAY ONE DAY and HOLIDAY PERIOD and press **“Ok”** to confirm.

In case of HOLIDAY ONE DAY it is possible scroll the programs using **“C1”** and **“C2”** keys. In case of HOLIDAY PERIOD the instrument shows the start day of the first holiday period; press **“C2”** to visualize the end of the period. At this point pressing **“Ok”** you can access to options to modify, delete or visualize the next holiday period.

2.2 Changing a HOLIDAY program

A program can be changed from the program display status.

- Select the holiday program to change and press **“Ok”**
- Select MODIFY with **“C1”** and **“C2”** and press **“Ok”** to confirm
- At this point new program parameters can be entered. The parameter being changed will flash. Use the keys **“C1”** and **“C2”** to set the values and press **“Ok”** to confirm or **“↵”** to exit without changes.

When done with the change, the message SAVE is displayed and the instrument will return to normal operation.

2.3 Deleting a HOLIDAY program

A HOLIDAY program can be deleted from the HOLIDAY program display status.

- Select the HOLIDAY program to delete and press **“Ok”**
- Select DELETE with **“C1”** and **“C2”** and press **“Ok”** to confirm or **“↵”** to exit without deleting.

The message DELETED will appear on the display and the instrument will return to normal operation.

3. HOLIDAY reset

HOLIDAY reset makes it possible to delete all stored holiday events.

From the normal operating status:

- Press **“↵”**
- Select HOLIDAY with **“C1”** and **“C2”** and confirm with **“Ok”**
- Select HOLIDAY RESET with **“C1”** and **“C2”** and press **“Ok”** to confirm

- Confirm with **“Ok”** or press **“↵”** to exit without resetting

Note: the program reset function can also be accessed from the Reset menu (see “Reset menu”) chapter.

Once the maximum capacity is reached an attempt to store an additional program will cause the following message to be displayed MEMORY FULL. In this case a program stored in the memory must be deleted before entering a new one.

The message ERROR overlaps with a period that was already entered, or if the last holiday date is before the start date.

SETTING MENU

This menu is used to display and change the instrument's general configuration parameters. These are: language, date, time, automatic CET / DST, twilight parameters, pin and reset.

From the normal operating status:

- press **“↵”**
- select SETTINGS with **“C1”** and **“C2”**
- confirm with **“Ok”** .

LANGUAGE menu

The options are:
Italian, English, German.

- select SETTINGS LANGUAGE with **“C1”** and **“C2”**
- confirm with **“Ok”**. The currently set language will be displayed.
- press **“Ok”** twice to access the change mode or **“↵”** to exit without changing
- select the language with **“C1”** and **“C2”**
- confirm with **“Ok”**
- The following message SAVE will appear on the display.

DATE menu

- Select SETTINGS DATE with **“C1”** and **“C2”**
- confirm with **“Ok”**. The current date is displayed.
- Press **“Ok”** twice to access the change mode or **“↵”** to exit without changing
- select the format with **“C1”** and **“C2”** (dd-mm-yy or yy-mm-dd)
- confirm with **“Ok”**
- enter the year, month, day with **“C1”** and **“C2”** and press **“Ok”** to confirm
- The following message SAVE will appear on the display.

TIME menu

- Select SETTINGS TIME with **“C1”** and **“C2”**
- confirm with **“Ok”**. The current time is displayed
- Press **“Ok”** twice to access the change mode or **“↵”** to exit without changing
- enter the time, minutes with **“C1”** and **“C2”** and press **“Ok”** to confirm
- The following message SAVE will appear on the display.

CET / DST CHANGE menu

The instrument makes it possible to automatically manage the CET/DST change and vice versa.

To activate/deactivate the function:

- select SETTINGS DST with **“C1”** and **“C2”**
- confirm with **“Ok”**. The current status will appear on the display (or AUTO OFF)
- press **“Ok”** twice to access the change mode
- select SET AUTO ON or SET AUTO OFF with **“C1”** and **“C2”**
- press **“Ok”** to confirm

If the function is deactivated (AUTO OFF) then the following message SAVE will appear on the display and the instrument will return to the main page; if the function is active (AUTO ON), press **“C2”** to view/change the DST → CET change.

- Press **“Ok”** twice to change the parameters or **“C2”** again to display the parameters relative to the DST → CET change

The following parameters must be entered (for both changes):

- week of the change (1ST first, 2ND second, 3RD third, 4TH fourth, LAST last of the month)
- month of the change
- day of the week (Monday, Tuesday,...)
- time of the change

When all parameters are set, press **“↵”** to exit.

The default values for the time change are:

- winter → summer change: last Sunday in March, 2:00 am
- summer → winter change: last Sunday in October 3:00 am

During normal operation, the symbol ☀ will appear on the display during the CET period (winter) and the symbol ☀ will appear during the DST period (summer).

TWILIGHT Settings Menu

This menu is used to modify the twilight settings of the probe (threshold, hysteresis and delay).

To modify a parameter:

- Choose SETTINGS TWILIGHT through **“C1”** and **“C2”** and press **“Ok”** to confirm

- Choose through **“C1”** and **“C2”** the parameter to be modified through threshold, hysteresis or delay and press **“Ok”** to confirm:

- On the display appears the value of the chosen parameter: press twice **“Ok”** to modify or **“↵”** to exit without modification

- Set the new value through **“C1”** and **“C2”** and press **“Ok”** to confirm

- On the display appear the words SAVE.

PIN menu

A protection code can be set to prevent anyone from using the instrument. The PIN code is a 4 digit number that has values between 1 and 4.

To set the pin code:

- select SETTINGS PIN with the keys **“C1”** and **“C2”**
- confirm with **“Ok”**
- the four digits that make up the current PIN code are displayed (0000 corresponds to pin inactive)
- confirm with **“Ok”**
 - select CHANGE and press **“Ok”** to enter the new PIN code. Use the keys **“C1”** and **“C2”** to enter the numbers one by one that make up the code and press **“Ok”** to confirm them
 - select RESET to deactivate the PIN code request
- press **“Ok”** to confirm
- the following message SAVE appears on the display (DELETE in the case of reset).

If the PIN code request is active, the keypad will be locked approx. 3 minutes after the keypad was last pressed. At this point, when pressed again, a request to enter the PIN code will appear.

To unlock the instrument, enter the PIN code, according to this rule:

- key **“↵”**: 1 - key **“C1”**: 2 - key **“C2”**: 3 - key **“Ok”**: 4

RESET PROGRAM menu

This menu is used to reset all the programs saved on the instrument and to restore default settings:

Language	Italian
Formato date	dd--mm--yy
Change CET / DST	automatic
- change Summer time	last Sunday of March at 02:00
- change Winter time	last Sunday of October at 03:00
Twilight settings	Threshold 10 LUX Hysteresis 10% Delay 5 minutes
PIN request	0000 - disabled

To reset the all the programs:

- Choose option RESET PROGRAM using keys **“C1”** and **“C2”**
- press **“Ok”** to confirm
- press **“Ok”** again
- On the display appear the words DELETED.

HOURLMETER MENU

The hourmeter function indicates the total time in which the output was in ON status.

The range is between 0 and 99999 hours; when is reached the maximum value the hourmeter is zeroed. To display the value of the hourmeter:

- On the main page press **“↵”**
- Choose HOURLMETER through keys **“C1”** and **“C2”** and confirm with **“Ok”**. The total value of the use is displayed.
- Pressing again **“Ok”** it is possible to reset the hourmeter. Press **“Ok”** again to confirm or **“↵”** to exit without reset.
- On the display appears the written DELETED C 1 that shows the successful change.

RESET menu

The instrument's default status can be reset with the reset function. There are 5 different resets available:

- reset settings: to delete all settings that were made
- reset programs: to delete all saved programs
- holiday: to delete all the saved holiday days and periods
- reset hour meter: to reset the hour meter of operating time
- reset all: to reset settings + reset programs + holiday+ reset hour meter.

To reset:

- press **“↵”** to enter menù
- choose RESET with keys **“C1”** and **“C2”** and press **“Ok”**
- choose RESET with keys **“C1”** and **“C2”** one of the above mentioned resets and press **“Ok”**
- press **“Ok”** to confirm.

To perform a complete instrument reset, restoring the instrument to factory conditions, you need to use a pointed object to press key **“R”**. In this way all the settings carried out are cancelled and the initial conditions restored.

REFERENCE STANDARDS

Compliance with Community Directives
2006/95/EC (Low Voltage)
2004/108/EC (E.M.C.)
is declared in reference to the harmonized standard:
• **EN 60730-2-7**