2 MOD DIN

CE

ITALIANO

INTERRUTTORE ORARIO ASTRONOMICO SETTIMANALE

CON CAMBIO ORA ESTATE/INVERNO (LEGALE/SOLARE)
E 2 USCITE RELÈ INDIPENDENTI:
- CH1 gestione astronomica programmabile
- CH2 gestione astronomica

ISTRUZIONI DI INSTALLAZIONE ED USO

ENGLISH

WEEKLY ASTRONOMICAL TIME SWITCH

WITH SUMMER/WINTER TIME CHANGE
AND 2 INDEPENDENT RELAY OUTPUTS:
- CH1 programmable astronomical management
- CH2 astronomical management

INSTALLATION AND OPERATING INSTRUCTIONS

PE - DEIONN044 02/09

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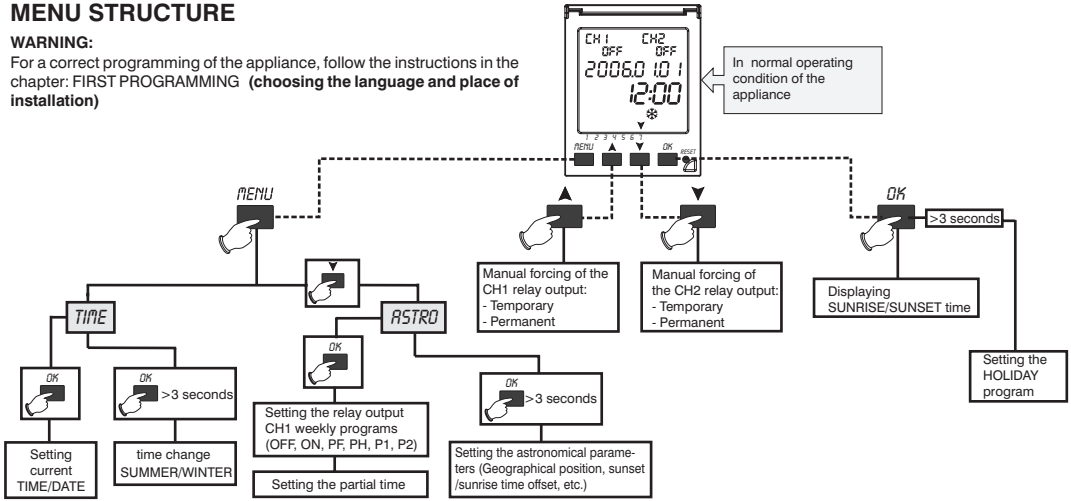
The manufacturer reserves the right to make all technical and manufacturing modifications deemed necessary without prior notice.

SAFETY WARNINGS

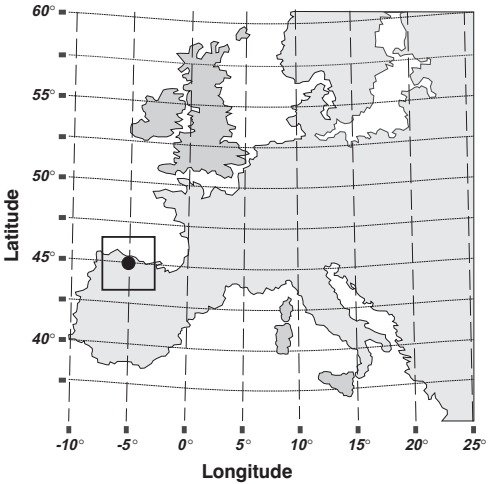
1) Read this manual carefully before installing the appliance
2) The appliance should only be installed by skilled personnel
3) Before exposing the terminals, make sure the wires to e connected to the appliance are not live
4) Make sure the electric panel in which the appliance si to be installed is designed in such a way that no access to the terminals will e possible after installation
5) Do not power or connect the appliance if any part of it is damaged

MENU STRUCTURE

WARNING:
For a correct programming of the appliance, follow the instructions in the chapter: FIRST PROGRAMMING **(choosing the language and place of installation)**



MAP OF EUROPE - LATITUDE / LONGITUDE



***Example = Logitude -5°** West - Latitude 45° North*

For installations abroad **(OTHER COUNTRY)** enter the latitude and longitude degrees of the location. These data can be found through any atlas or GPS system.

MAP OF ITALY - CAPITAL OF REGION

TABLE ITALY - CODE / PROVINCIAL CAPITAL

Code	Abbrev.	Name
0	[AG]	Agrigento
1	[AL]	Alessandria
2	[AN]	Ancona
3	[AO]	Aosta
4	[AR]	Arezzo
5	[AP]	Ascoli Piceno
6	[AT]	Asti
7	[AV]	Avellino
8	[BA]	Bari
9	[BL]	Belluno
10	[BN]	Benevento
11	[BG]	Bergamo
12	[BI]	Biella
13	[BO]	Bologna
14	[BZ]	Bolzano
15	[BS]	Brescia
16	[BR]	Brindisi
17	[CA]	Cagliari
18	[CL]	Caltanissetta
19	[CB]	Campobasso
20	[CE]	Caserta
21	[CT]	Catania
22	[CZ]	Catanzaro
23	[CH]	Chieti
24	[CO]	Como
25	[CS]	Cosenza
26	[CR]	Cremona
27	[KR]	Crotone
28	[CN]	Cuneo
29	[EN]	Enna
30	[FE]	Ferrara
31	[FI]	Firenze
32	[FG]	Foggia
33	[FO]	Forlì
34	[FR]	Frosinone
35	[GE]	Genova
36	[GO]	Gorizia
37	[GR]	Grosseto
38	[IM]	Imperia
39	[IS]	Isernia
40	[SP]	La Spezia
41	[AQ]	L'Aquila
42	[LT]	Latina
43	[LE]	Lecce
44	[LC]	Lecco
45	[LI]	Livorno
46	[LO]	Lodi
47	[LU]	Lucca
48	[MC]	Macerata
49	[MN]	Mantova
50	[MS]	Massa
51	[MT]	Matera

TABLE ITALY - CODE / PROVINCIAL CAPITAL

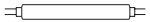
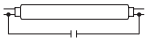
Code	Abbrev.	Name
52	[ME]	Messina
53	[MI]	Milano
54	[MO]	Modena
55	[NA]	Napoli
56	[NO]	Novara
57	[NU]	Nuoro
58	[OR]	Oristano
59	[PD]	Padova
60	[PA]	Palermo
61	[PR]	Parma
62	[PV]	Pavia
63	[PG]	Perugia
64	[PS]	Pesaro
65	[PE]	Pescara
66	[PC]	Piacenza
67	[PI]	Pisa
68	[PT]	Pistoia
69	[PN]	Pordenone
70	[PZ]	Potenza
71	[PO]	Prato
72	[RG]	Ragusa
73	[RA]	Ravenna
74	[RC]	Reggio Calabria
75	[RE]	Reggio Emilia
76	[RI]	Rieti
77	[RN]	Rimini
78	ROMA	Roma
79	[RO]	Rovigo
80	[SA]	Salerno
81	RSM	San Marino
82	[SS]	Sassari
83	[SV]	Savona
84	[SI]	Siena
85	[SR]	Siracusa
86	[SO]	Sondrio
87	[TA]	Taranto
88	[TE]	Teramo
89	[TR]	Terni
90	[TO]	Torino
91	[TP]	Trapani
92	[TN]	Trento
93	[TV]	Treviso
94	[TS]	Trieste
95	[UD]	Udine
96	[VA]	Varese
97	[VE]	Venezia
98	[VB]	Verbania
99	[VC]	Vercelli
100	[VR]	Verona
101	[VV]	Vibo Valentia
102	[VI]	Vicenza
103	[VT]	Viterbo

DESCRIPTION

This astronomical time switch is for the management of electric utilities according to the sunrise and sunset time in the set geographic area, without the use of external sensors.

TECHNICAL SPECIFICATIONS

Supply voltage:	230 V~ 50-60 Hz +/-10%
Absorption:	5.4 VA max. (Normal operation)
Type of action and appliance:	1 B U S / Electronic
Type of output:	2 potential-free relays with changeover contact NA/COM/NC 16(2) A/250 V~
Example of maximum operating power:	3500 W / 230V~ cosφ=1

			
2300 W	1000 W	500 W (total capacity 70 μF)	600 W

Nominal impulse voltage:	4 kV
Software:	class A
Section of cables to terminals:	min. 1,5 mm^2 max. 2,5 mm^2
Insulation:	class II ⧈
Protection degree:	IP 20 IP 30 (wall mounted with caps) IP 40 (back panel mounting)
Pollution level:	Normal
Weight:	Approx. 160 g.
Operating temperature limits:	0 °C ÷ 50 °C
Storing temperature limits:	-10 °C ÷ 65 °C
Reference standard for CE mark:	LVD EN60730-2-7 EMC EN60730-2-7

FEATURES

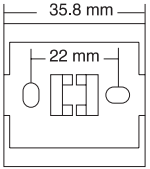
- Annual clock with calendar up to 31/12/2172.
  - Clock precision: ± 1 s per day.
  - Sunrise/sunset calculation precision: ± 1 min.
  - Sunrise/sunset time offset: minimum 1 min.
  - Programming resolution 1 min.
  - Reserve charge with lithium battery (not replaceable): approx. 8 years (if not powered)..
- Non-volatile programme memory (EEPROM).
- Automatic change of summer/winter time settable change mode.
- WEEKLY events programming.
- Simplified bilingual program:

- ITALIAN (default): setting the provincial capital.
- ENGLISH: setting the latitude, longitude, time zone.

- Daily sunrise/sunset data update.
- Output CH1: astronomical handing relay output pre-set programming (programmes: ON, OFF, PF, PH, P1, P2).
- Output CH2: astronomical handing relay output (ON from sunset to sunrise).
- Temporary and permanent manual forcing of relay outputs CH1 and CH2.
- Relay outputs operation counter: max. 99999h (for 11 years approx.) each.
- Public holiday management up to 99 days.

INSTALLATION

Warning: the installation and electrical connections must be carried out by qualified personnel, in compliance with the laws in force.
The manufacturer cannot be held responsible regarding the use of products that must comply with certain environmental standards and/or installation.
Note to the installer: in case of surface mounting (e.g.: wall mounting), provide for an adequate cabling conduit (in particular for mains voltage) in compliance with the standard in force.
Installation of the appliance, independent-fixed
Remove the terminal cover caps and install the appliance:
on a DIN bar (according to DIN EN 50 022) in the small distribution panels;
on the wall fix the supplied plastic element to the wall (figure on the side) and hook up the time switch via the special terminal cover caps;
on the back panel with the kit upon request.

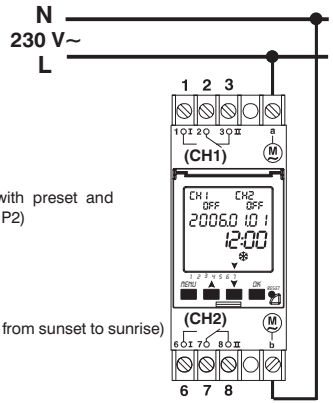


ELECTRICAL CONNECTIONS

Make sure that the load on the relay does not exceed the value indicated in the technical specifications

⚠ The electrical connections must be carried out only upon disconnecting the 230V~ mains voltage

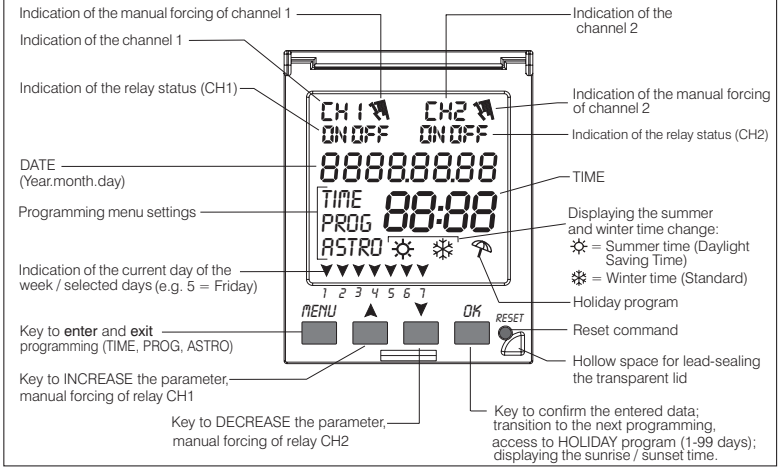
230V~ mains voltage:
Terminal **a** = **Line**
Terminal **b** = **Neutral**



CH1 utility: astronomical management relay output with preset and changeable programming (programs: ON, OFF, PF, PH, P1, P2)
Terminal **1** = normally open contact
Terminal **2** = common
Terminal **3** = normally closed contact

CH2 utility: astronomical management relay output (ON from sunset to sunrise)
Terminal **6** = normally open contact
Terminal **7** = common
Terminal **8** = normally closed contact

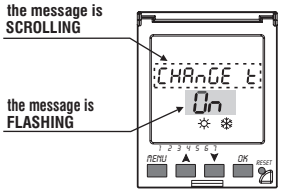
DISPLAY LEGEND AND KEY FUNCTIONS



GRAPHIC CONVENTIONS

The field with hatched edges indicates that the message is **SCROLLING** on the display

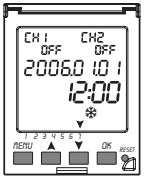
The field with gray background indicates that the digit or the message shown on the display is **FLASHING**



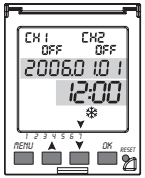
Display in: "NORMAL OPERATING MODE"

When in normal operating mode are displayed:

date and time, relay status (ON, OFF, ✋), symbol ☼ or ❄ for summer/winter time (if inable).
Plus the symbol " ☂ " if you are using the HOLIDAY programming.



In case there is no mains voltage, the appliance stores the programmed data in its memory and disables the relays. The date and time display will start flashing and after approx. 2 minutes the display will switch off (stand-by mode).



This time switch is supplied in idle state (SLEEP-MODE) to avoid unnecessary battery consumption.

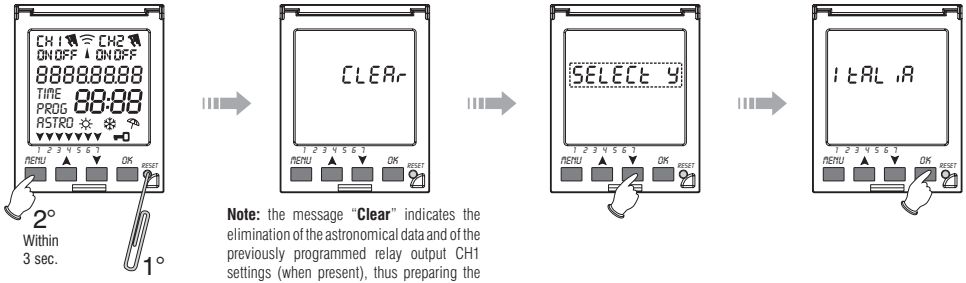
IMPORTANT: all the settings must be confirmed by pressing "OK". If not, after 30 seconds the time switch will return to Normal Operation and the modifications will not be saved.

Note: press ▲ or ▼ momentarily for single increment, press and hold for fast scroll.

FIRST PROGRAMMING (choosing the language and place of installation)

First of all you must choose whether the installation is to be carried out in Italy or in a different country.
This choice will determine the geographical data and language programming mode.
Once the appliance has been powered, **the first programming** is carried out first by pressing **"RESET"** with the help of a pointed tool and then (within 3 seconds) by pressing **"MENU"**. After a series of screen messages, the scrolling message **"Select your country"** will appear.
Choose between **ITALY** and **OTHER COUNTRY** using the "▲" e "▼" keys. Press "**OK**" to confirm your selection and to automatically proceed to the astronomical parameters menu.

• According to your selection, the programming menu for Italy or for abroad will appear.



Note: the message "**Clear**" indicates the elimination of the astronomical data and of the previously programmed relay output CH1 settings (when present), thus preparing the appliance for a new programming (the present data are those by default).

NOTE: for correct operation, it is essential to enter certain items of information (ASTRONOMIC PARAMETERS) to enable the instrument to identify the geographical area in which it is to be installed.

SETTING THE ASTRONOMICAL PARAMETERS FOR ITALY (messages shown on the display in Italian)

• If installation in Italy was selected in the previous point, the message **"SELEZIONARE CAPOLUOGO ITALIANO"** (SELECT ITALIAN PROVINCIAL CAPITAL) will move across the screen. To select the code for the provincial capital, see the table ITALY - **"CODE/PROVINCIAL CAPITAL"**.
- Press **"▲"** to increase the provincial capital field
- Press **"▼"** to decrease the provincial capital field
  (The values that can be set range from 0 to 103).
- Press **"OK"** to confirm the information and go to the next stage in the programming

• The message **"CORREZIONE ORARIO TRAMONTO"** (SUNSET TIME OFFSET) will move across the screen
Due to the characteristics of the location (altitude, surrounding mountains and other geographical features), the sunrise and sunset times may differ from those calculated, and this parameter provides a correction in minutes with respect to the sunset time
- Press **"▲"** to increase the field
- Press **"▼"** to decrease the field
(The value of this parameter may range from +120 min to -120 min)
- Press **"OK"** to confirm the information and go to the next stage in the programming

• The message **"CORREZIONE ORARIO ALBA"** (SUNRISE TIME OFFSET) will move across the screen
(This parameter provides a correction in minutes with respect to the sunrise time).
- Press **"▲"** to increase the field
- Press **"▼"** to decrease the field
  (the value of this parameter may range from +120 min to -120 min)
- Press **"OK"** to confirm the information and go to the next stage in the programming

• The message **"FUNZIONAMENTO USCITE ALTERNATO"** (ALTERNATE OUT ENABLE) will move across the screen
If this parameter is ON, the operation will be exchanged between CH1 and CH2 every day, to balance the loads connected at the outputs
- Press **"▲"** to increase the field
- Press **"▼"** to decrease the field
  (The values that can be set are ON/OFF) **Note: if the output exchange is enabled, this will take place each day at 12 noon**
- Press **"OK"** to confirm the information and go to the next stage in the programming

• The message **"TEMPO MINIMO USCITE ON"** (TURN ON LEAST TIME) will move across the screen
This parameter determines the minimum duration of an ON switching for each output close to sunrise and sunset, it is used in the programs PF, PH, P1 and P2 to prevent the lamps form coming on for a period of time lower than the minimum set.
- Press **"▲"** to increase the field
- Press **"▼"** to decrease the field
  (the parameter range is 0 ÷ 30 minutes)
- Press **"OK"** to confirm the information and go to the next stage in the programming

• From here, we go to
— DISPLAY / ZEROING OF THE RELAY OUTPUT TIMER CH1
The number of hours for which the relay CH1 will be on is displayed (the parameter range is 0-99999 h)
The timer can be zeroed by pressing the **“MENU”** key for at least 3 seconds
- Press **“OK”** to confirm the information and go to the next stage in the programming

• From here, we go to
— DISPLAY / ZEROING OF THE RELAY OUTPUT TIMER CH2
The number of hours for which the relay CH2 will be on is displayed (the parameter range is 0-99999 h)
The timer can be zeroed by pressing the **“MENU”** key for at least 3 seconds
- Press **“OK”** to confirm the information and go to **“Normal operation”**

Note: the timer does not move forward if the instrument is not connected to the power supply

For any subsequent modification, you can enter the ASTRONOMICAL PARAMETERS SETTINGS menu at any time with the following procedure:
from normal operating mode, press “MENU” and select the (flashing) word ASTRO using the ▲ or ▼ keys. Then press “OK” for 3 seconds.

SETTING THE ASTRONOMICAL PARAMETERS FOR FOREIGN INSTALLATION

(messages shown on the display in English)

- Consists in entering the latitude and longitude degrees of the location. These data can be found through any atlas or GPS system or in the map shown in this manual.
  Note: the map refers to Europe only. However, you can program any location in the world.

- If you have selected **"OTHER COUNTRY"** from the **"place of installation/language"** settings, the message **"LATITUDE NORTH = PLUS SIGN"** will move across the screen

(To select the values to e set, see the map **"Latitude/Longitude"**)
- Press **"▲"** to increase the field
- Press **"▼"** to decrease the field

(the parameter range is - 60° ÷ + 64°)

Note: the degrees latitude for the eastern direction are preceded by the plus sign
- Press **"OK"** to confirm the information and go to the next stage in the programming

- The message **"LONGITUDE EAST = PLUS SIGN"** will move across the screen

- Press **"▲"** to increase the field
- Press **"▼"** to decrease the field

(the parameter range is ±180°) **Note: the degrees latitude for the eastern direction are preceded by the plus sign**
- Press **"OK"** to confirm the information and go to the next stage in the programming

- The message **"TIME ZONE EAST = PLUS SIGN"** will move across the screen

This parameter stands for the hours of difference from Greenwich meridian zero.
The value proposed for this field is based on the previous latitude and longitude selection.
If necessary, this can be modified in the following way:
- Press **"▲"** to increase the field
- Press **"▼"** to decrease the field

(the parameter range is ±14 h in steps of 30 minutes)

Note: the plus sign corresponds to eastern longitudes
- Press **"OK"** to confirm the information and go to the next stage in the programming.

For the other parameters (correction of sunset/sunrise time, alternate output operation, minimum output ON time, display/zeroing of timer output CH1 or CH2), see the instructions for the "SETTING THE ASTRONOMICAL PARAMETER FOR ITALY" menu.

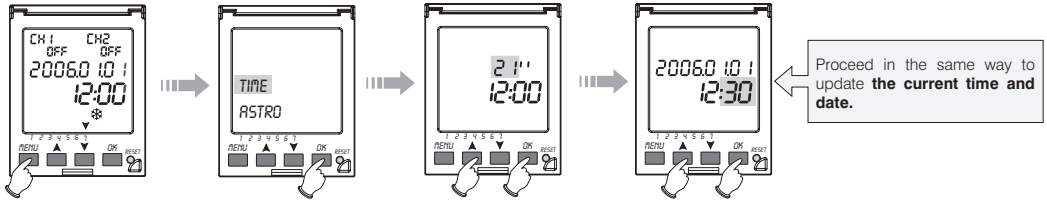
For any subsequent modification, you can enter the ASTRONOMICAL PARAMETERS SETTINGS menu at any time with the following procedure:
from normal operating mode, press "MENU" and select the (flashing) word ASTRO using the ▲ or ▼ keys. Then press "OK" for 3 seconds.

SETTING CURRENT TIME /DATE

Note: every time you reset, it is necessary to set the current time and date once again.
Press **"MENU"** to visualise the (flashing) word **TIME** and confirm by pressing **"OK"**. You will enter the seconds synchronisation.
The seconds (in the month field) + the symbol " starts flashing and the day of the week disappears.
- The **"▲"** key synchronises to the successive minute.
- The **"▼"** key synchronises to the current minute.

• By pressing **"OK"** the seconds adjustment procedure is completed and you pass to the modification of the minutes (the seconds disappear and **YYYY.MM.DD** and the minutes will appear flashing).
- The **"▲"** to increase the minutes
- The **"▼"** to decrease the minutes

• By pressing **"OK"** the minutes adjustment procedure is completed and you pass to the modification of the hours.
• Proceed in the same way to sequentially adjust: hours, year, month and day.
Upon completing the settings, press **"MENU"** to return to Normal operating mode with an automatic update of the day of the week and of the symbol ("☼" o "❄") of the summer or winter time and of the relay status. You can also return to the Normal operating mode by not pressing any key for 30 sec.



Proceed in the same way to update **the current time and date.**

RELAY OUTPUT OPERATION MODE

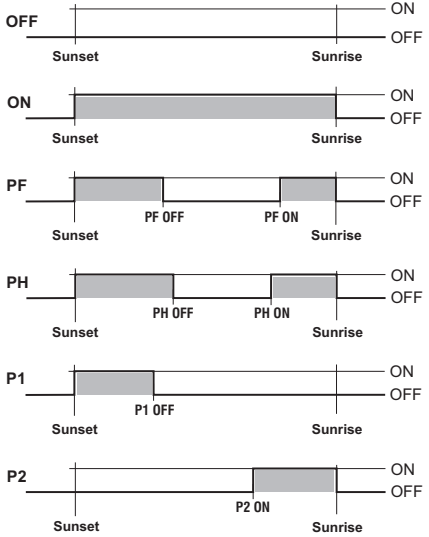
This astronomical time switch has 2 relay outputs: CH1 and CH2. The appliance undergoes weekly programming.

• **Output CH1**: astronomical management with preset or selectable programming from one of the following:
- **OFF:** load off throughout the night
- **ON:** load connected from sunset to sunrise
- **PF:** load partially connected from sunset to sunrise and partially off during the night
- **PH:** as program PF but with different timings (for holidays)
- **P1:** load connected from sunset and switched off at a pre-set time
- **P2:** load connected from a pre-set time (after sunset) and switched off at sunrise

• **Output CH2**: astronomical management with preset (non-modifiable) programming: **ON:** load connected from sunset to sunrise

Note: the programming starts with the sunset of the day selected and terminates with sunrise on the next day. Outputs CH1 and CH2 are always in the OFF position from sunrise to sunset.

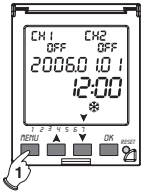
Note: in the table below, the gray fill indicates the relay output ON (contact closed between terminals 1 and 2; 6 and 7)



Output CH1 programming sequence

From normal operating mode, press **"MENU",** select the word **ASTRO** using the ▼ key and confirm by pressing **"OK".**
The day of the week **"1" (Monday)** is displayed, the word **"PROG"** lights on and the field with the current program is flashing:
press "▲" to go to the next program
press "▼" to go to the previous program
the programs codes are as follows:

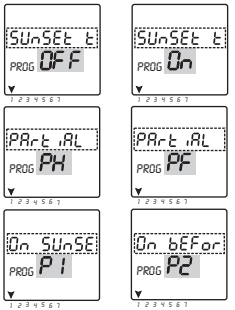
- **OFF:** load off all night.
- **ON:** load connected from sunset to sunrise.
- **PF:** load connected from sunset to sunrise and partially off during the night.
- **PH:** as program PF but with different timings (holidays).
- **P1:** load connected from sunset and switched off at a pre-set time.
- **P2:** load connected from a pre-set time and switched off at sunrise.



Note: during the programming operation, a "help" line containing the following message moves across the screen:

FOREIGN PROGRAMMING	
OFF	Sunset to sunrise
ON	Sunset to sunrise
PH	Partial ON-OFF in the night
PF	Partial ON-OFF in the night
P1	ON Sunset partial OFF
P2	ON Before sunrise OFF at sunrise

PROGRAMMING FOR ITALY	
OFF	Dal tramonto all'alba
ON	Dal tramonto all'alba
PH	ON-OFF parziale notturno
PF	ON-OFF parziale notturno
P1	ON al tramonto OFF parziale
P2	ON prima dell'alba OFF all'alba

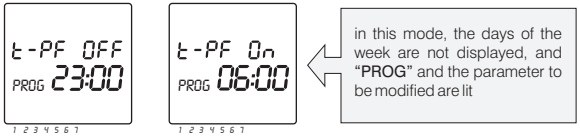


• Press **"OK"** to confirm the programming for the day and go to the programming for the next day.
Repeat the above operation for every day of the week.

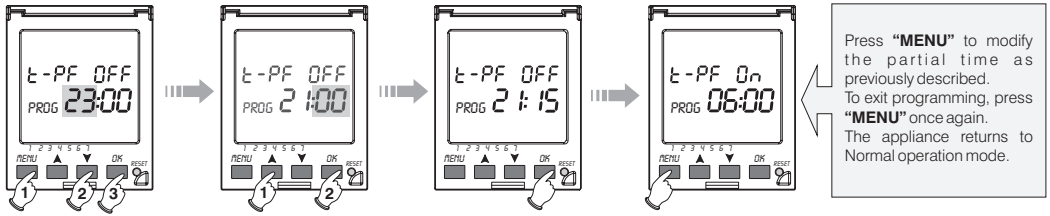
Note: press "**MENU**" at any time to leave the programming.

• After programming the days of the week **"1 … 7"**, set the partial on/off time by scrolling through the following parameters with the **"OK"** key:

- **"t-PF OFF"**: timing with partial off during the night **PF**
- **"t-PF ON"**: timing with partial on during the night **PF**
- **"t-PH OFF"**: timing with partial off during the night **PH**
- **"t-PH ON"**: timing with partial on during the night **PH**
- **"t-P1 OFF"**: timing with partial off during the night **P1**
- **"t-P2 ON"**: timing with partial on during the night **P2**



press **"MENU"** to modify the parameter (the hour field will start to flash)
- press **"▲"** to increase the hour field
- press **"▼"** to decrease the hour field
- press **"OK"** to confirm the information and go to the minute programming
- press **"▲"** to increase the minute field
- press **"▼"** to decrease the minute field
- press **"OK"** to confirm the information and return to the parameter display



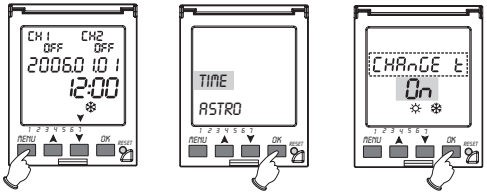
PROGRAMMING THE CHANGE BETWEEN SUMMER AND WINTER TIME

This is used to enable and disable the automatic change between summer and winter time. It also defines the time change method.

- The time change is enable in Italian mode by default:

	In Italy	in GB	in North America
winter **summer**	last Sunday in March	last Sunday in March	1st Sunday in April
summer **winter**	last Sunday in October	4th Sunday in October	last Sunday in October

From normal operating mode, press **"MENU"** to visualise the (flashing) word **TIME**, then press **"OK"** for at least 3 seconds until the scrolling message **"TIME CHANGE"** and the symbols i **"☼" o "❄",** are displayed.

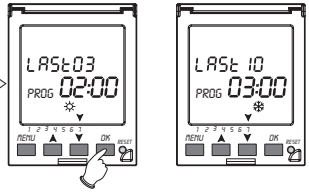


Keep pressed for 3 seconds

Select **ON** or **OFF** using the **"▲"** and **"▼"** keys.

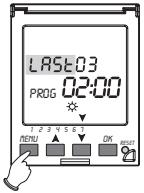
Press **"OK"** to confirm the information and go to the next stage in the programming:

- If the previous parameter is **ON**, the time change modes will be displayed



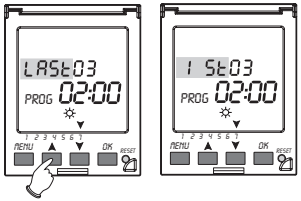
- If the previous parameter is **OFF** (disable the automatic change time), the programming ends and the appliance will return to normal operating mode.

SUMMER / WINTER time modification



To modify the **time change** modes press **"MENU"**.
The following choices are possible:
1) in a pre-determined month and day (every year)
2) on the same day of the last week of a pre-determined month
3) on the same day of week 1°, 2°, 3° or 4° in a pre-determined month

- After setting the winter time change mode, the symbol "❄" stays on.
  During the time change setting for summertime, the symbol "☼" stays on.
- Press "▲" and "▼" to select the time change mode (**LAST**, **1st**, **2nd**, **3rd**, **4th**, **DATE**):



— The display shows:

LAST	If the time change takes place on a determined day of the last week of a pre-determined month
1st	If the time change takes place on a determined day of the first week of a pre-determined month
2nd	If the time change takes place on a determined day of the second week of a pre-determined month
3rd	If the time change takes place on a determined day of the third week of a pre-determined month
4th	If the time change takes place on a determined day of the fourth week of a pre-determined month
DATE	If the time change takes place on a precise date (month and day)

Press **"OK"** to confirm the selection.
– For **LAST**, **1st**, **2nd**, **3rd** and **4th** modes, the month, day, hour and minutes have to ve set (during modification, the parameter flashes in the relevant field) press **"▲"** and **"▼"** to select and **"OK"** to confirm.
– For **DATE** mode, the month, number of the day, hour and minutes have to e set (during modification, the parameter flashes, in the relevant field) press **"▲"** and **"▼"** to select and **"OK"** to confirm.
Press **"OK"** consecutively to go to winter time setting.

Example of programming switching to summer time on the last Sunday in March at 02:00.

Example of programming switching to winter time on the last Sunday in October at 03:00.

OTHER OPERATING MODES

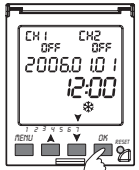
As well as the operating mode described above, there are other modes that can e used in holiday periods or for manual output forcing operations.

HOLIDAY PROGRAM

- This operating mode allocates the program **"PH"** for a **maximum of 99 days** from the current date.
- From normal operating mode you can activate this program by pressing **"OK"** for at least 3 seconds, until the screen message on the side is displayed with the day field flashing (**00d**): use **"▲"** and **"▼"** to change the number of days and press **"OK"** to confirm and return to "Normal operation".

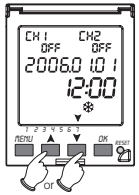
Activation of the HOLIDAY program is signaled on the display by the symbol "⛱"
Note: you can however exit the program early by bringing the days back to 00d as described above.

Important: the HOLIDAY program does not affect output CH2 which operates with normal programming from sunset to sunrise.



Keep pressed for 3 seconds

E.g.: **Temporary manual forcing**



E.g.: **Permanent manual forcing**

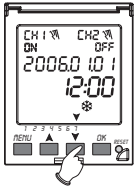
MANUAL OUTPUT FORCING

From **normal operating mode**, it is possible to modify the status of outputs CH1 and CH2 using the " ▲ " keys for CH1 and "▼" for CH2.

- The output can be **temporary** forced by briefly pressing the arrow key (▲ ▼) corresponding to the desired output. Temporary forcing remains until the subsequent programmed event (the correct status is also restored after the following midnight or the following programming parameter modification), after which the outputs return to the status provided for by the programming on the display.
- Temporary forcing is shown on the display by the word CH1 and CH2, the relevant symbol regarding the current status of the relays (ON or OFF) and by the flashing symbol ✋.
- You can exit temporary forcing early by pressing ▲ and/or ▼.

- The output may be **permanently** forced if keys "▲" and "▼" are held down for 3 seconds approx.
- In this way, the programming has no influence on the status of the outputs.
- Permanent forcing is shown on the display by the word CH1 and CH2, the relevant symbol regarding the current status of the relays (ON or OFF) and by the fixed symbol ✋ .
- By pressing pulse the arrow keys corresponding to the desired output, you can modify the status ON/OFF of the relay.
- You can exit permanent forcing early by pressing ▲ and/or ▼ for at least 3 seconds.

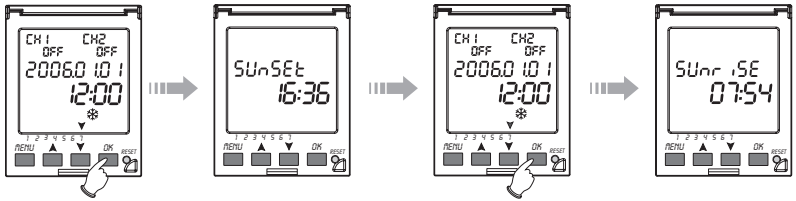
Keep pressed for 3 seconds.



SUNRISE-SUNSET TIME DISPLAY

- The sunrise and sunset times for the current date can be displayed alternately by pressing **"OK"**.
- The message remains on the display for approximately 2 seconds, then the instrument returns to normal operation.

Note: the time displayed takes the sunrise and sunset correction parameters into account



NOTES

Calculation

- The calculation of the sunrise and sunset times is particularly demanding on the CPU, and may take seconds.
  During this calculation, the **"PROG"** symbol flashes on the display and the instrument does not respond to pressure on the keys. To reduce the wait time, connect the instrument to the mains power supply.

Sunrise and sunset

- The sunrise and sunset times are calculated taking into account the sun at 0.833° below the horizon, to make allowances for phenomena caused by terrestrial refraction. Correspondence with the effective sunrise and sunset times in a specific location also depends on:
  - atmospheric variations
  - altitude and mountain ranges in the location this means that it is normally necessary to correct the values calculated with the following parameters:
  - sunset time correction
  - sunrise time correction

OTHER TIME SWITCH ACTIVATION MODES

This time switch is supplied in idle state (SLEEP-MODE).

A - Activation with no mains connection: press RESET with the help of a pointed tool. After a brief Lamp-Test, the time 12:00 on the display will start flashing, to indicate the lack of mains voltage. After approx. 2 minutes from the last pressure of a key, the appliance will enter stand-by mode.

B - Activation with mains connection: power the time switch and press RESET. After a brief Lamp-Test the display will show the time 12:00 (not flashing) to indicate the connection to the mains voltage.

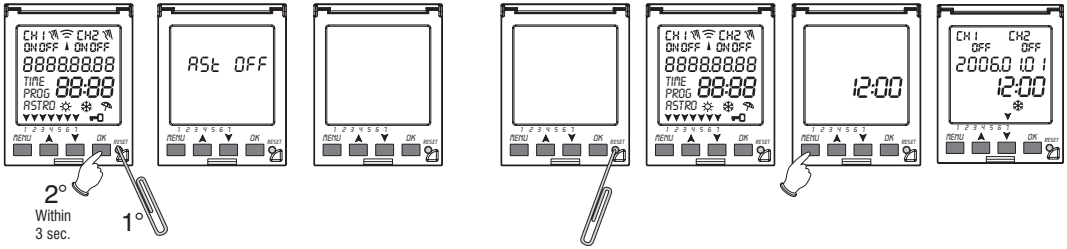
- the reset procedure described above does not remove the preset or previously entered data:
astronomical data, output CH1 setting, summer and winter time change, relay hour counter.
- by pressing "**MENU**" in condition A or B, the appliance will enter "normal operating" mode.

WARNING: for a correct programming of the appliance, follow carefully the instructions in the chapter: **FIRST PROGRAMMING (choosing the language and place of installation)** at page 28.

SWITCHING THE TIME SWITCH ON AND OFF

This mode is used to avoid discharging the battery during long periods of non-use.

- By pressing **"RESET"** followed by **"OK"**, the word **"AST OFF"** will appear on the display, after which the appliance is turned off completely by deactivating the relay.
- To switch it on press **"RESET"**. After a brief lamp-test the display will show the time (12:00). Press "**MENU**" to enter normal operating mode and set the current time and date.



Note: the reset procedure described above does not remove the preset or previously entered data: astronomical data, output CH1 setting, summer and winter time change, relay hour counter.