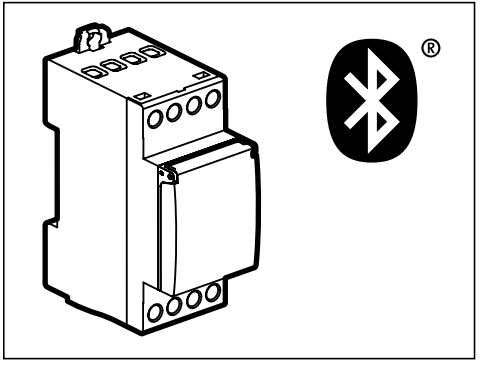
Astronomical time switch
AlphaRex³ D21 astro BLE
4 127 23



⚠ Safety notes

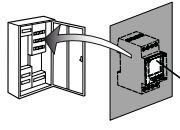
This product should be installed in line with installation rules, preferably by a qualified electrician. Incorrect installation and use can lead to risk of electric shock or fire. Before carrying out the installation read the instructions and take account of the product's specific mounting location. Do not open up, dismantle, alter or modify the device except where specifically required to do so by the instructions. All Legrand products must be opened and repaired exclusively by personnel trained and approved by Legrand. Any unauthorised opening or repair completely cancels all liabilities and the rights to replacement and guarantees. Use only Legrand brand accessories.

The device contains a $LiMnO_2$ primary cell. When the product reaches the end of its life, this cell must be correctly removed and disposed of in accordance with national legislation and the requirements of environmental protection.

290806/00

Technical data

Supply voltage:	230 V 50/60 Hz		
Power consumption:	ca. 1 W		
Relay outputs:	1 changeover contact 16A 250V~μ cos φ = 1		
Accuracy:	~ 0,1 s /day		
	single-strand	multi-strand	
Wire cross-sections:	1,5...4 mm²	1,5...2,5 mm²	max. 1,4 Nm
Programs:	56 programs		
Local coordinates:	Resolution 1°/ 1‘ in EXPERT-Mode		
Control-cable length:	max. 50 m		
Control signal:	230V AC / ca. 2mA		
Control-pulse duration:	100…200 ms		
Delaytime:	0 min … 23 h 59 min 59 s		
Battery reserve:	5 years		
Storage temperature:	- 20 °C to +60 °C		
Operating temperature:	-20 °C to +55 °C		
Transmission frequency:	2400 MHz … 2483,5 MHz		
max. transmission power:	1,58 mW		



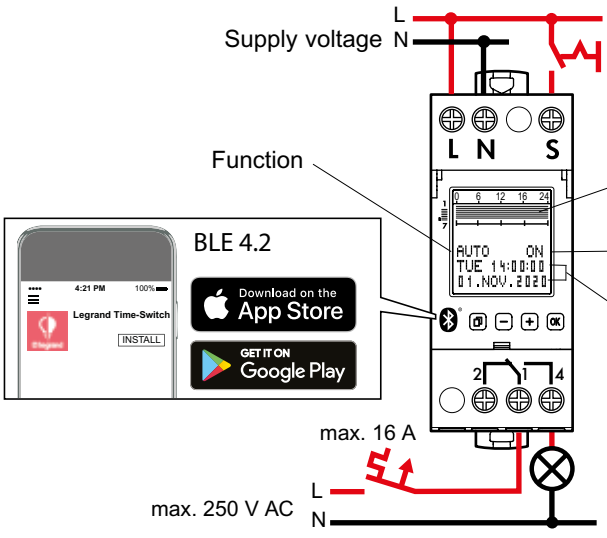
General information

Start-up: after applying the supply voltage, the time switch starts automatically with the last selected function. The relay position is set by the current program.

Select menu, back to main menu,
Hold down > 1s = operating display

Confirm selection or load parameters

Select menu options or set paramete

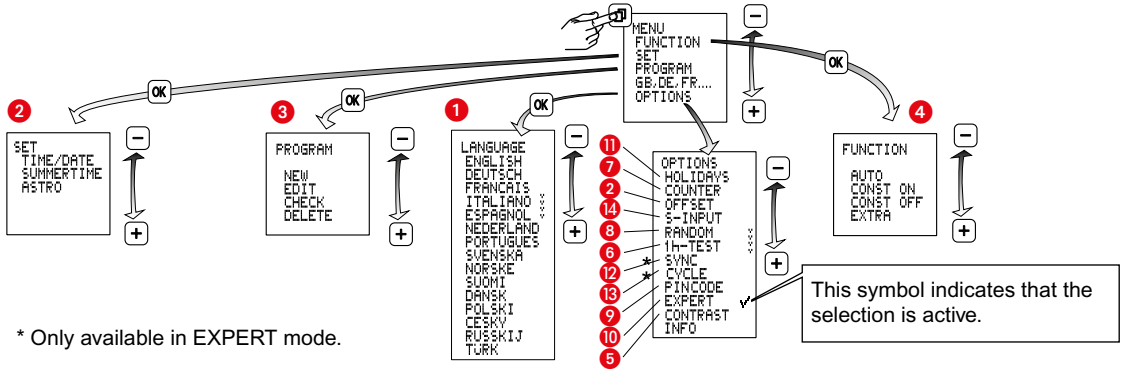


Operating principle: Typ 1.B. S. T.
IEC/EN 60730-1, IEC/EN 60730-2-7
Montage: in distribution panel,
Degree of contamination: 2
Switch output, potential-free
Rated impulse voltage: 4 kV

4000 W	2000 VA	600 W 70µF	2000 W

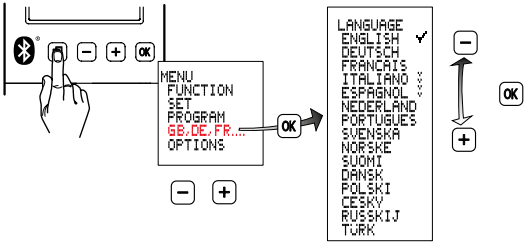
2000 W	2000 W	2000 W	1000 W	1000 W

Overview



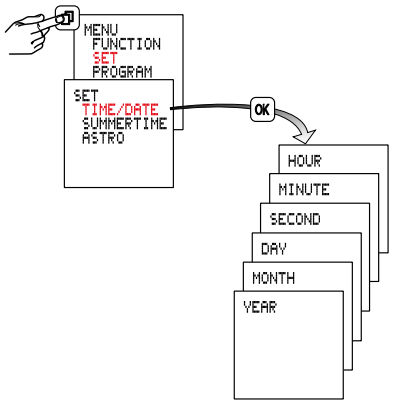
* Only available in EXPERT mode.

1 Set language



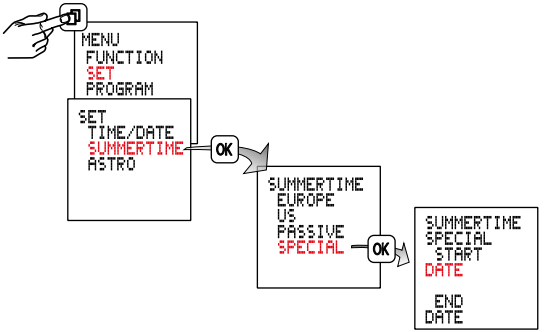
2 Set

Ⓐ Set time/date

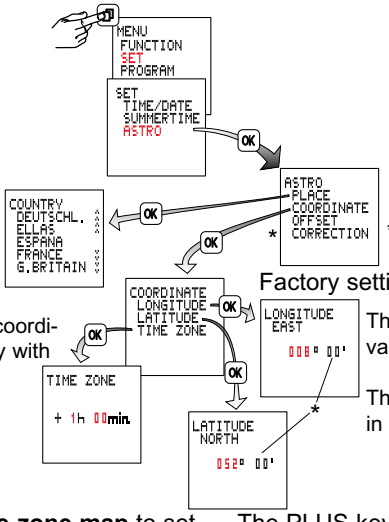


Ⓑ Summertime

Summertime: ± 1 hour
Europe: Factory set
SPECIAL: The switchover to/from summertime can be freely programmed by entering a start date and end date and is then executed each year on the same day of the week, e.g. Sunday



Ⓒ Astro



Select country.
Select the city closest to the planned location for use.

You can adjust the coordinates more precisely with LONGITUDE and LATITUDE.

* Only available in EXPERT mode

Factory setting: 8°E 52°N

The MINUS key is used to adjust the westward longitude value in the range from 000° **EAST/WEST** to 180° **WEST**.

The PLUS key is used to adjust the eastward longitude value in the range from 000° **EAST/WEST** to 180° **EAST**.

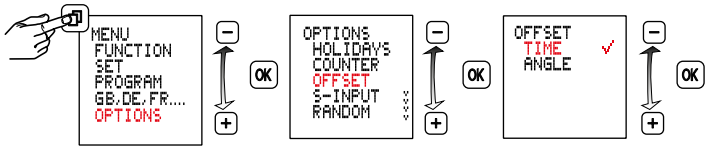
Use the enclosed **time-zone map** to set the correct time zone.
From this map, determine the difference between local time and UTC (**U**niversal **T**ime **C**oordinated) and set this value.

The PLUS key is used to adjust the northward latitude value in the range from
00° **NORTH/SOUTH** to 90° **NORTH**.

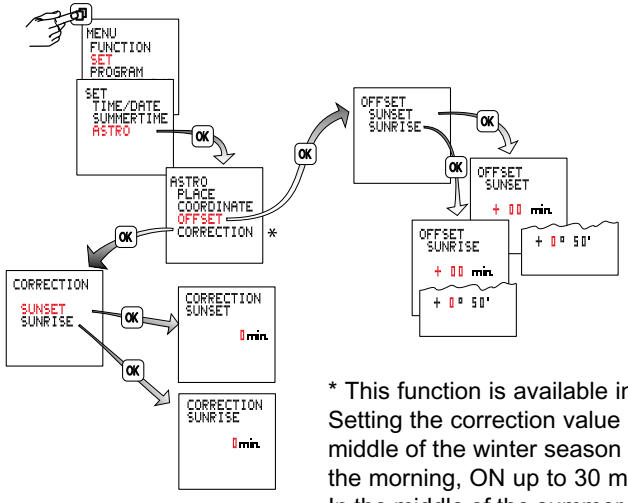
The MINUS key is used to adjust the southward latitude value in the range from 00° **NORTH/SOUTH** to 90° **SOUTH**.

Ⓓ Offset

❶

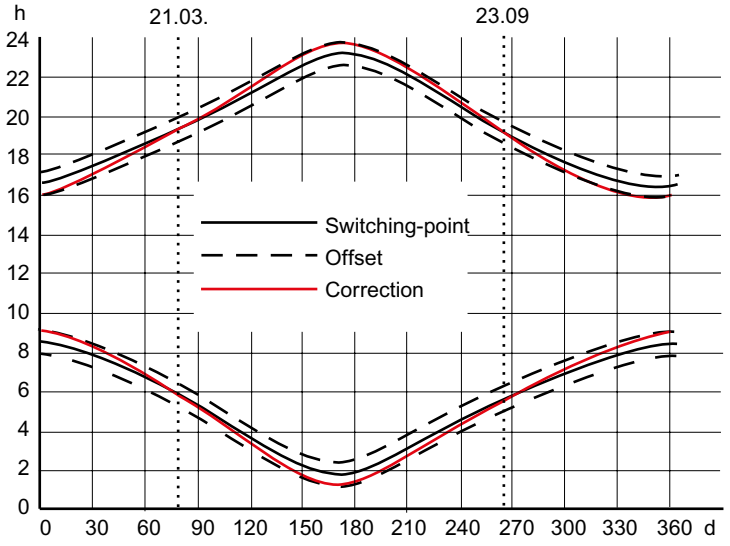

MENU
FUNCTION
SET
PROGRAM
GB.DE.FR....
OPTIONS
OK
OPTIONS
HOLIDAYS
COUNTER
OFFSET
S-INPUT
RANDOM
OK
OFFSET
TIME
ANGLE
OK

❷ Offset

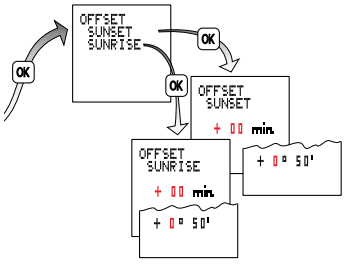


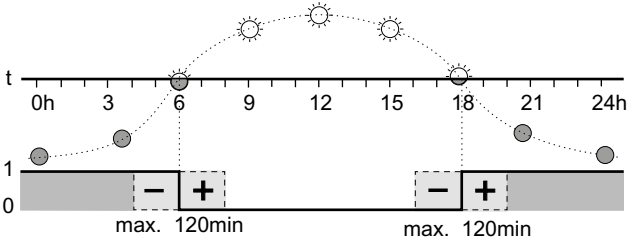
* This function is available in Expert mode.
Setting the correction value (1...30 min.) extends the daily ON period in the middle of the winter season by up to 60 minutes (OFF up to 30 min. later in the morning, ON up to 30 min. earlier in the evening).
In the middle of the summer season, the correction setting reduces the daily ON period by up to 60 minutes (OFF up to 30 min. earlier in the morning, ON up to 30 min. later in the evening).

❷ Offset


h
21.03.
23.09
24
22
20
18
16
14
12
10
8
6
4
2
0
Switching-point
Offset
Correction
0
30
60
90
120
150
180
210
240
270
300
330
360
d

❷ Offset



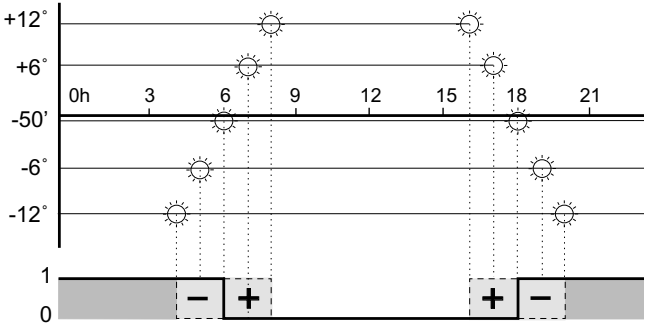


The time switch switches on at the calculated sunset time and off at the calculated sunrise time.

By setting an offset, you can shift the switching times by up to ±120 minutes with respect to the calculated sunrise and sunset times.

Example: If you set the offset to +30 minutes, the time switch will switch 30 minutes after sunrise and 30 minutes after sunset. If you set the offset to -30 minutes, the time switch will switch 30 minutes before sunrise and 30 minutes before sunset.

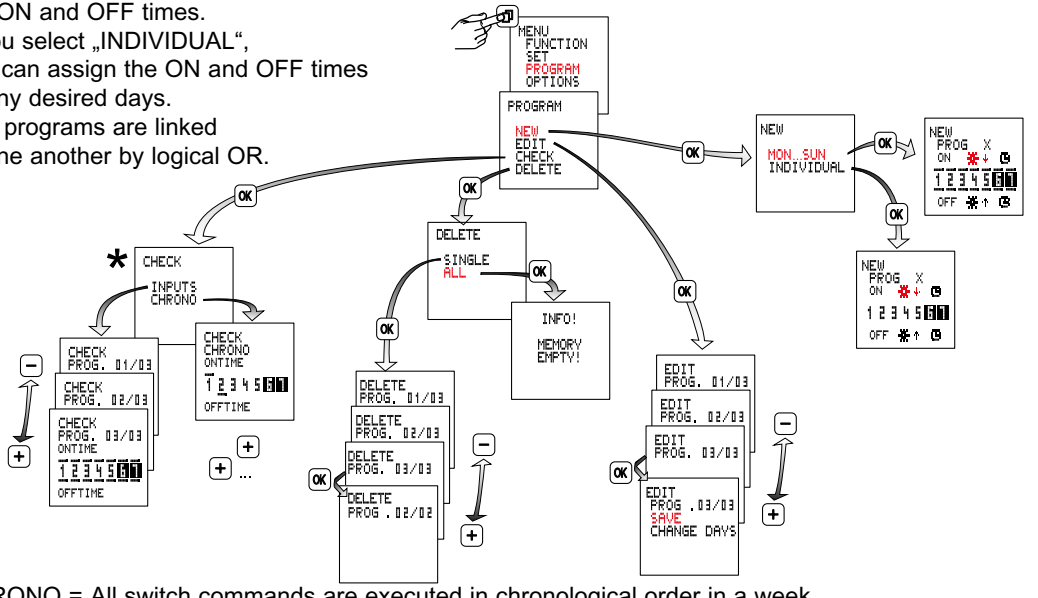
❷ Offset



If the offset setting is in degrees the time switch switches on and off at times of equal brightness, despite the differences in twilight time lengths over the course of the year.
Sunrise and sunset correspond to -50‘ for the centre of the sun (the edge of the sun is visible on the horizon).

3 Programming

A program consists of an ON time, an OFF time and the associated ON and OFF days.
If you select „MON TO SUN“ (Monday to Sunday), the days are already assigned and you only need to set the ON and OFF times.
If you select „INDIVIDUAL“, you can assign the ON and OFF times to any desired days.
The programs are linked to one another by logical OR.



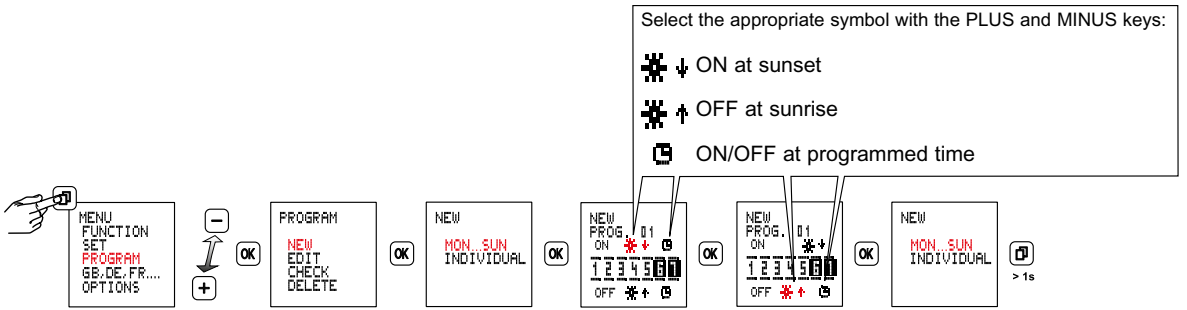
*

CHRONO = All switch commands are executed in chronological order in a week
INPUT = Programs are executed in the order in which they are entered

3 Programming

Programming examples

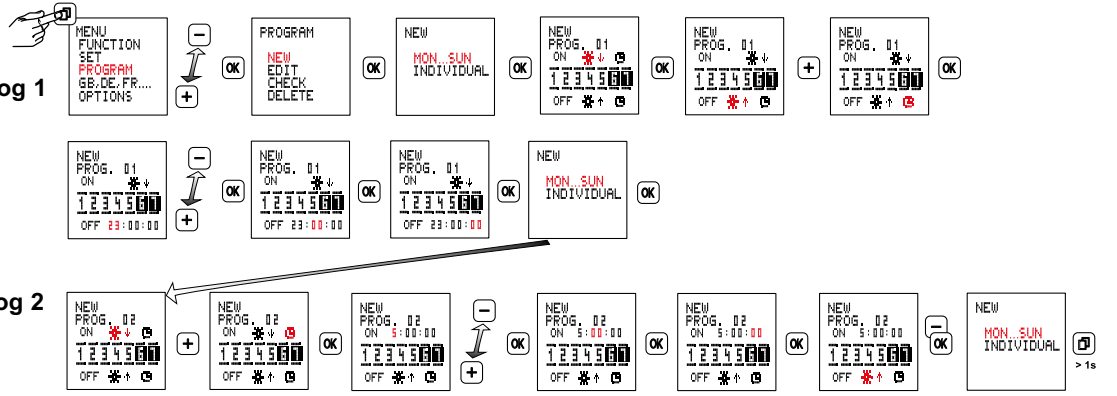
① The timer is to switch on at sunset on each day of the week and switch off at sunrise.



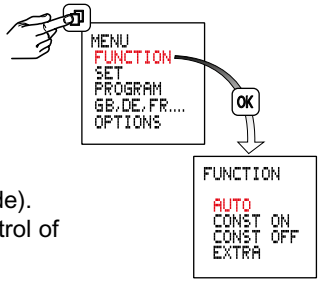
3 Programming

Programming examples

② The timer is to switch on at sunset on each day of the week and switch off at sunrise. In addition, it is to be switched off each night between 23:00h and 5:00h. This requires the use of two programs.
Program 1: ON at sunset and OFF at 23:00h
Program 2: ON at 5:00h and OFF at sunrise.



4 Modes

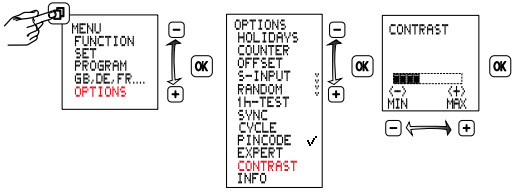


- **Auto** - Automatic operation
- **Constant ON**
- **Constant OFF**

  Note: The output is switched on if a control input signal is present.
- **Extra**

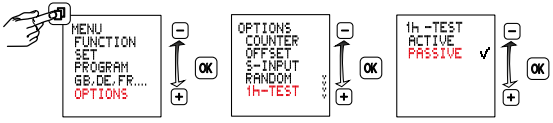
  The switch status imposed by the program is inverted (manual override). With the next effective switch command, the time switch resumes control of on/off switching.

5 Contrast adjustment



6 1 h-Test

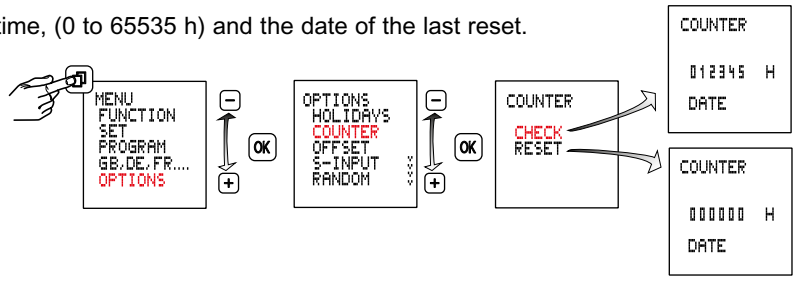
When this function is activated, the output is switched on for one hour.



After one hour, the time switch returns automatically to the programmed mode.

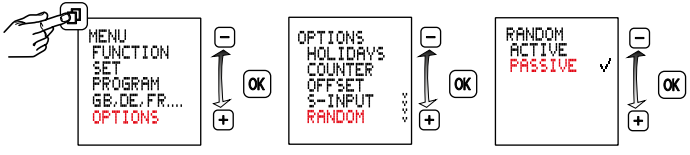
7 Hour counter

Displays the total relay ON time, (0 to 65535 h) and the date of the last reset.



8 Random function

Function to simulate presence.
Function active: the programmed switching cycles are shifted at random within the range of ± 15 minutes.

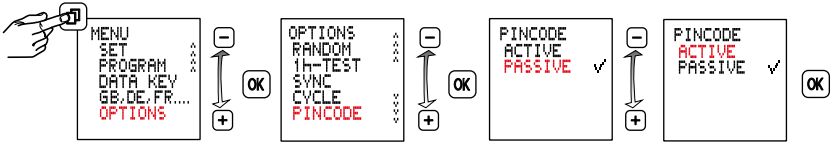


9 Pincode

The factory setting for pin code entry is PASSIVE.
If the pin code is set to ACTIVE, the access code is preset to 123123.
This is unless the pin code was changed in the Legrand Time-Switch app.

- The Legrand Time-Switch app can be used to change the access code.
- A maximum of 8 smartphones/tablets can be simultaneously paired with a timer.
  If more smartphones/tablets need to be paired, the oldest pairing will be deleted.
- The standard time switch name (AlphaRex) can be changed using the Legrand Time-Switch app.

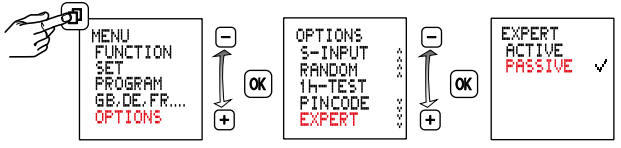
If PASSIVE is selected, or after a reset, the access lock is removed.
The access code set remains unchanged.



10 Expert mode

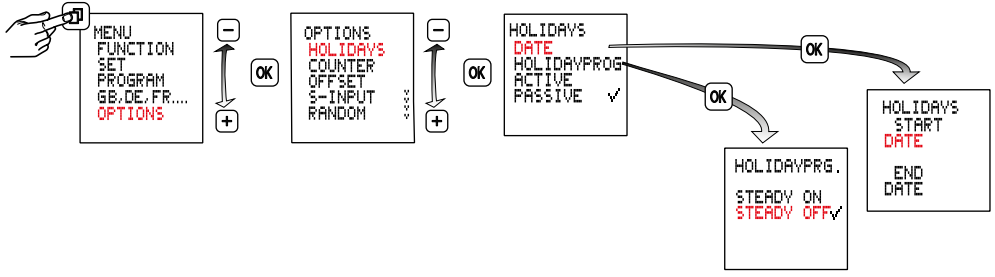
Some additional functions are available in Expert mode:
- Power grid synchronisation to improve the accuracy
- Cycle function
- Automatic channel switching

Note: Upon switching from ACTIVE to PASSIVE the additional menu items are hidden again and all the Expert mode settings are cancelled. After re-activating, Expert mode will operate again with the basic settings.



11 Holiday

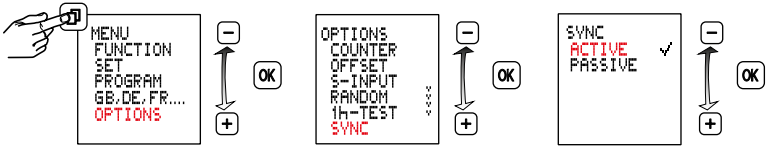
After activation the holiday program is executed between 0:00h on the start date and 24:00h on the end date (Constant ON/OFF). After the holiday program has run once, it must be reactivated.



12 Activating and deactivating grid synchronisation

Only available in EXPERT mode.

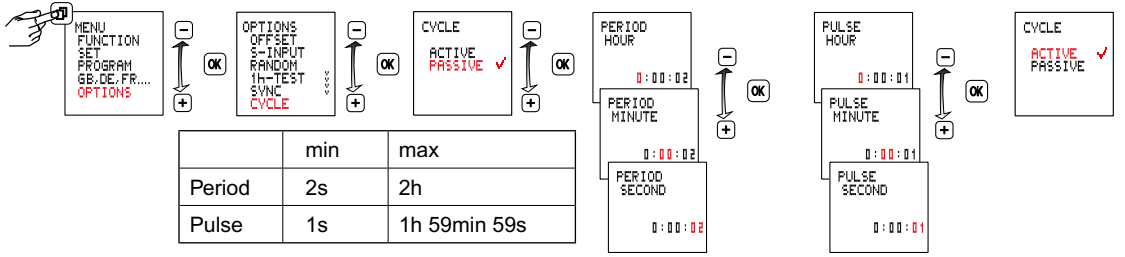
The default setting is PASSIVE. In order to improve the long-term accuracy, it is advisable to activate synchronisation if the time switch is supplied from a on 50/60 Hz grid with frequency adjustment.



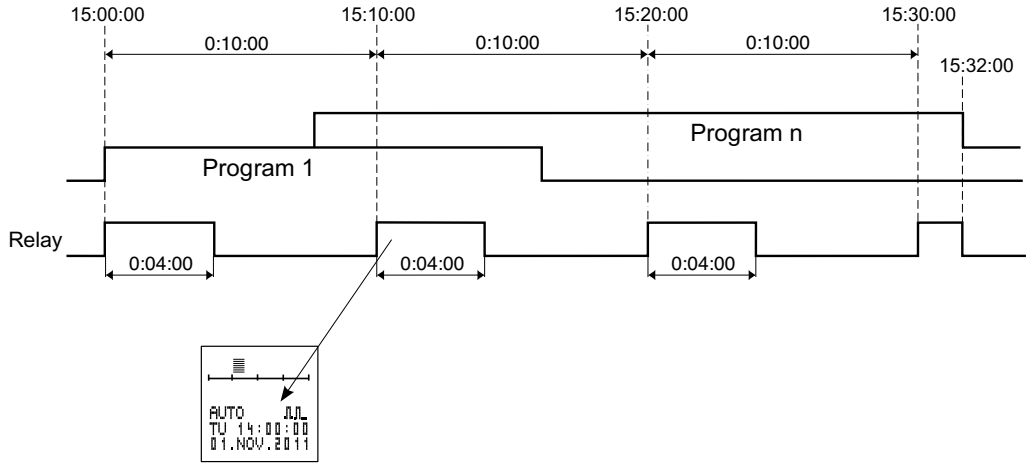
13 Cycle function

Only available in EXPERT mode

For cyclical switch commands the switching on time is set by logical “OR“ of programs of all types. A fixed cycle of ON and OFF time then operates within those limits. The cycle always starts with the ON time. The cycle duration and the ON time within the cycle are the same length for all switching times. The cycle duration and the ON time can be set independently in one-second increments. If the switching time is shorter than the cycle duration, the cycle will be shortened accordingly. The ON time will remain unchanged. If the switching time is actually shorter than the ON time, the ON time will be shortened accordingly.

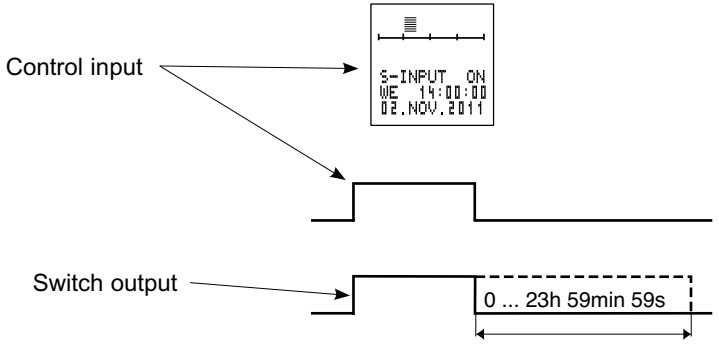


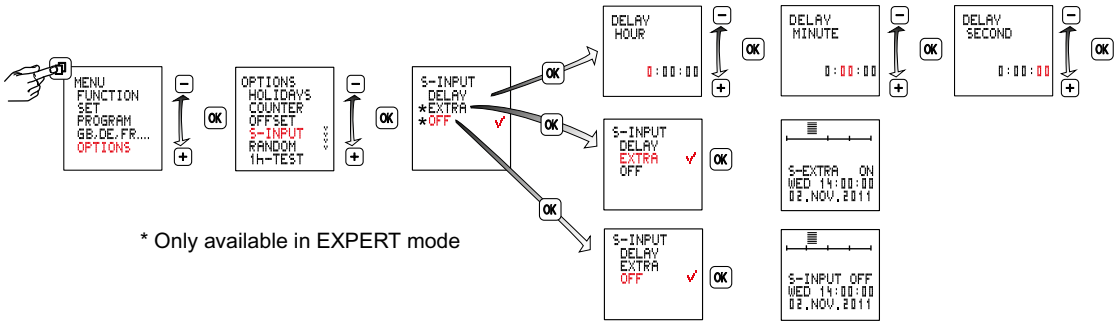
	min	max
Period	2s	2h
Pulse	1s	1h 59min 59s


15:00:00
15:10:00
15:20:00
15:30:00
0:10:00
0:10:00
0:10:00
15:32:00
Program n
Program 1
Relay
0:04:00
0:04:00
0:04:00
AUTO
TU 14:00:00
01.NOV.2011

14 Control input with delay time

A control signal is superimposed on all program commands (OR circuit). While this control signal is applied, the output is switched ON.
When the control signal is switched off, the output is switched OFF after a delay time, unless an ON command is applied by a program.





* Only available in EXPERT mode

DELAY

The output switches on when the control input is activated and remains switched on for the duration of the set delay time after the control input has been deactivated. Delay time setting range 0h 00min 00s … 23h 59min 59s. The control input can be subsequently triggered within the delay time.

EXTRA

The control input signal inverts the switching state specified by the program.
At the next valid switching command the time switch resumes switching On and Off.

OFF

The control input signal sets the switching state to OFF if the program specifies ON.

15 Connecting smartphones and AlphaRex³ BLE

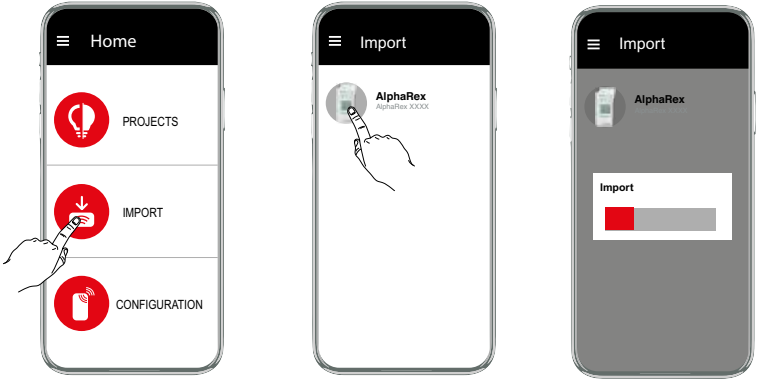
Below are the basic instructions for pairing a smartphone with an AlphaRex³ BLE timer.

1. First install the Legrand Time-Switch app.
2. Go to the Bluetooth section of your smartphone; this is usually under Settings.
   Make sure Bluetooth is switched on.
3. Location services on the smartphone must be enabled; GPS does not have to be activated.
4. The AlphaRex³ BLE timer must be supplied with mains voltage.
5. Devices are now displayed within the Legrand Time-Switch app, both when uploading and when importing.
6. Select the AlphaRex³ BLE timer from the list of devices.
7. The access code is 123123.
8. Enter the access code.
9. The AlphaRex³ BLE is now paired.

16 Importing projects

⚠ Note!
At the start of and during Bluetooth communication, the relay outputs are put into an idle state.

1. Select the AlphaRex³ model from which the project is to be imported.
2. The transfer will start automatically

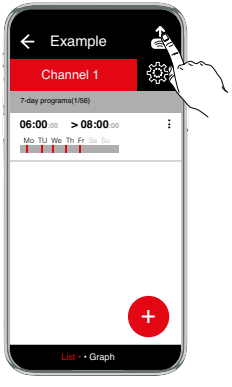


17 Uploading projects

⚠ Note!

At the start of and during Bluetooth communication, the relay outputs are put into an idle state.

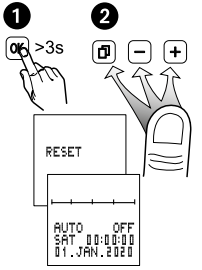
1. Make sure your smartphone has Bluetooth and positioning turned on.
2. Select a project.
3. Press the key
4. Select the AlphaRex type to which the project is to be transferred.
5. The transfer starts automatically.



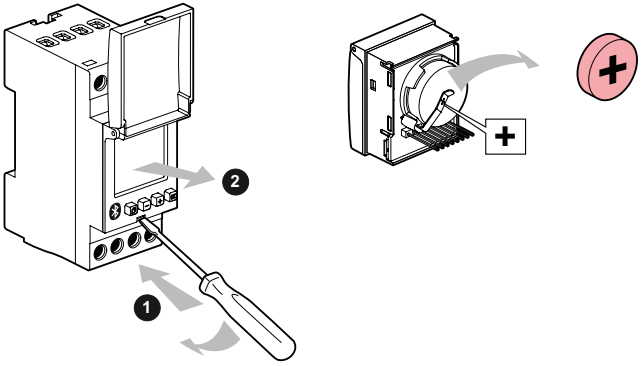
Reset

Warning!
The memory is deleted and all saved data is lost. Pin code entry is set to PASSIVE. The access code set remains unchanged.

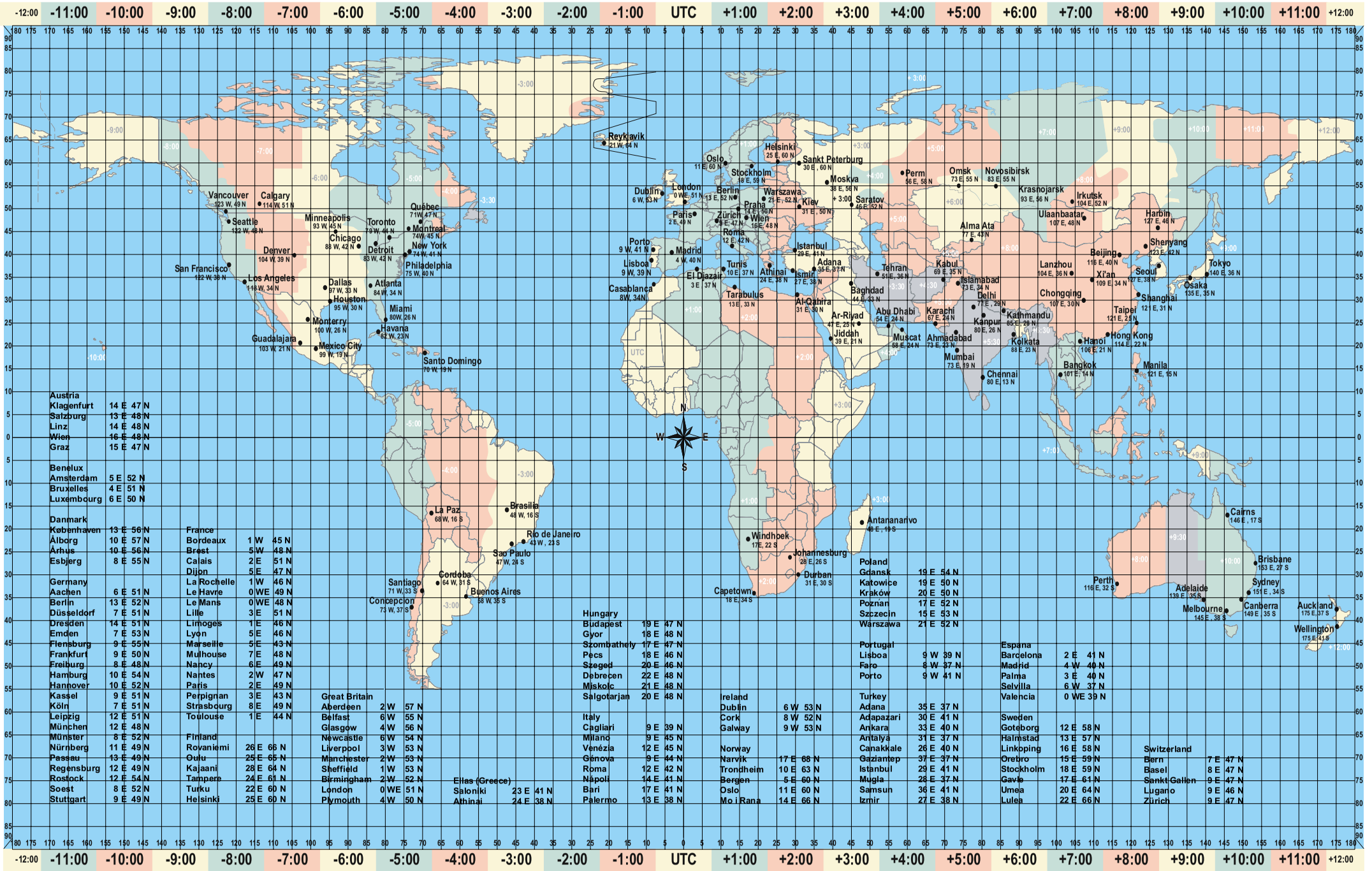
Hold down OK for more than 3 seconds and at the same time press and release ⧉ − +.
The language, time, date, summertime/ wintertime and switching times will have to be reentered.



Warning: Elektrical shock - Disconnect all power from the device before dismantling the module and replacing the battery.
Always use a Li cell type battery ($LiMnO_2$) CR2477, 3V high temperature type min +85 °C



- Zeitzonenkarte
- Carte des fuseaux horaires
- Time-of-day map
- Tijdszone kaart
- Carta dei fusi allegata
- Carta de husos horarios
- Time-of-day oversigt
- Aikavyöhykekarttaa
- Tidssonenkortet
- Tidzons kartan
- Carta de fusos horários
- ήώτα υώιαΏυμ ατώήξτυμ
- Ajavööndite kaart
- Laika zonu karte
- Laiko juostų žemėlapis
- Mapa stref czasowych
- Mapa ss časovými pásmami
- Karta časovnih pasov
- Mapa časových pásem
- Időzóna térkép
- Zaman dilimleri kartı
- 时区图
- خريطة مناطق التوقيت



EU-Konformitätserklärung Nr.:
2019+AlphaRex³BLE
EU Declaration of Conformity

Wir **Legrand GmbH**
We **Am Silberg 14, D-59494 Soest**

erklären in alleiniger Verantwortung, daß unser(e) Produkt(e): **Schaltuhr**
declare under our sole responsibility that the product(s): **Time-switch**

Typenbezeichnung: **AlphaRex³ BLE**
Type description:

See list of reference numbers on page 2/2

mit den grundlegenden Anforderungen folgender Europäischen Richtlinien übereinstimmen
satisfy the provisions of Council Directives

"Funkanlagen-Richtlinie"/"Radio Equipment Directive (RED)" 2014/53/EU

"EMV-Richtlinie"/*"EMC-Directive*" 2014/30/EU

und/*and*

„RoHS2-Richtlinie"/"RoHS2-Directive" 2011/65/EU

sofern sie bestimmungsgemäß und normgerecht nach den Herstellerempfehlungen installiert und benutzt werden.

on condition that they are used in the manner intended and in accordance with the current installation standards and with the manufacturer's recommandations.

Die Übereinstimmung des bezeichneten Produktes mit den wesentlichen Schutzforderungen der gültigen Richtlinien wird nachgewiesen durch die Einhaltung folgender Normen:

These provisions are ensured for the valid Directives by conformity to the following standards:

EN 60730-1 :2016
EN 60730-2-7 :2010

EN 300 220-2 V3.2.1 :2018 in conjunction with EN 300 220-1 V3.1.1 : 2017
EN 301 489-1 V2.1.1 :2017
EN 301 489-3 V2.1.1 :2019
EN 301 489-17 V3.1.1 :2017
EN 300 328 V2.2.2 : 2019

Legrand Antibes

16.12.2019
Datum/*date*:

Marcello Re
- Product Development & Technologies Director -

Referenz / Reference: **Typ/*Type:***	
412721 AlphaRex³ D21s BLE	*230 V / 50-60 Hz*
412722 AlphaRex³ D22 BLE	*230 V / 50-60 Hz*
412723 AlphaRex³ D21 astro BLE	*230 V / 50-60 Hz*
412724 AlphaRex³ D22 astro BLE	*230 V / 50-60 Hz*
412725 AlphaRex³ DY21 BLE	*230 V / 50-60 Hz*
412726 AlphaRex³ DY22 BLE	*230 V / 50-60 Hz*