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EN

SHT-7

Switch timer clock with NFC programming capability

Characteristics

Digital switch timer clock with day and year program and setting via smartphone supporting NFC transfer is used for the automatic real-time controlling of appliances. The timer operates all year round without the need of continuous maintenance, with minimum operating costs and maximum savings of electrical energy. (For example for turning on heating, pumps, ventilators, public lighting etc.). Appliances can be controlled in regular time cycles or based on a pre-set programme.

The timer does not include any optical sensors or other external equipment. After installation, it requires no special operation or maintenance. In the case of a power supply interruption, the timer retains all set values required for its reliable activation after power is restored.

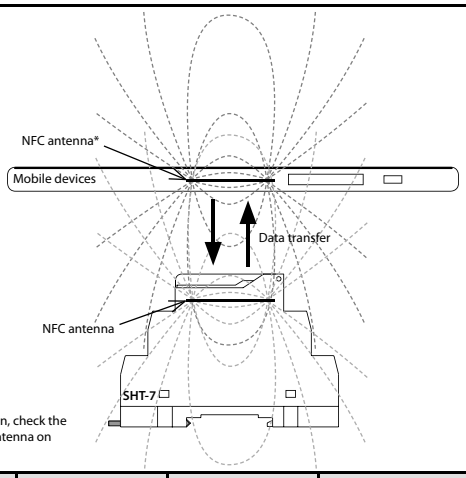
Through simple steps in the application you can set the desired on and off settings based on real time. You can copy this setting to other days, and altogether you can store up to 100 programs. The entire setup project can be saved to your smartphone and transferred to the next timer switch. The smartphone application serves not only to upload settings but also to download. The main benefit is speed and simplicity.

Near Field Communication is the way of wireless communication of two devices within a short distance of a few centimeters.

- The 2-channel design (with the option of assigning separate programmes and modes to each channel) allows controlling two independent circuits.
- Switching modes:
  - *AUTO* – automatic switching mode:
    - *PROGRAMME* ⊙ - switching based on a programme (astro or time).
    - *RANDOM* ⚄ - switches randomly in a 10 - 120 minute interval.
  - *HOLIDAY* ■ - holiday mode - option of setting up a period for which the timer will be blocked, i.e. will not switch based on the set programmes.
  - *MANUAL* ✋ - manual mode - option of controlling the individual output relays manually
- Options of the automatic switching programme:
  - *TIME PROGRAMME* - switching based on a pre-set time programme
- Memory capacity for 100 time programmes (common for both channels).
- Programming can be performed both when power is on or in backup mode.
- Output relays only operate with a supply voltage of AC 230 V.
- Menu display selection - CZ / SK / EN / ES / PL / HU / RU (default factory setting EN).
- Selection of automatic switching between summer / winter timebased on location.
- Backlit LCD display.
- Simple and easy setup using 4 control buttons or NFC.
- OFF line in-app programs.
- Backup / insertion into the phone memory to transfer to the next switching clock.
- Sealable transparent cover on the front panel.
- The timer has a backup battery that preserves data in case of a power supply failure (reserve backup time up to 3 years).
- Supply voltage: AC 230 V.
- 2-module, mounted onto a DIN rail, clamping terminals.

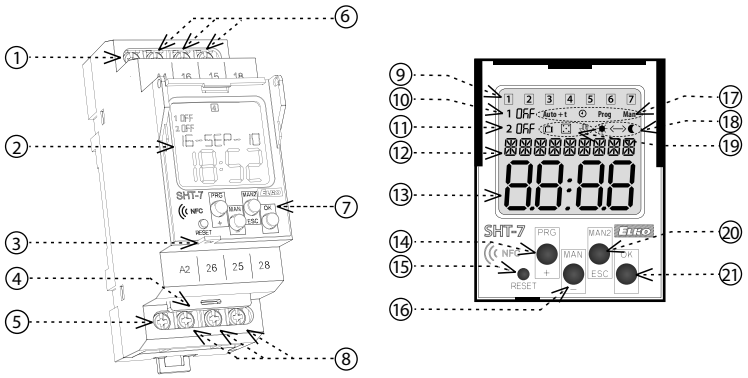
-When you first connect to the network, it is necessary to set the current time and date for correct operation.

NFC data transfer



* For best communication, check the location of the NFC antenna on your mobile device.

Description



1. Supply voltage terminal (A1)
2. Display with back-light
3. Place for seal
4. Plug-in module
5. Supply voltage terminal (A2)
6. Output - channel 1 (16-15-18)
7. Control buttons
8. Output - channel 2 (26-25-28)
9. Indicates the day in the week
10. Indication (1st channel)
11. Indication (2nd channel)
12. Indication of date / setting menu
13. Time display
14. Control button PRG / +
15. Reset
16. Control button MAN1 / -
17. Operating modes indication
18. 12/24 hours format / sunset - sunrise
19. Indication of the switch program
20. Control button MAN2 / ESC
21. Control button OK

CONTROL OF A DISPLAY WITH BACKLIGHT

Power on: Display is illuminated with a backlight for 10 seconds from the last button press. The display continuously shows the settings - date, time, day of the week, contact state and programme. Permanent on / off is activated by simultaneous presses of the MAN, ESC, OK buttons.

After activating the permanent on/off, the display will flash briefly.

Backup mode: After 2 minutes, the display switches to the sleep mode, i.e. shows no information. The display can be activated by pressing any button.

SHT-7 Setting

SHT-7 can be set up in two ways:

1. Using iHC NFC. You can create the desired settings on your mobile phone. Then, by attaching your phone to the SHT-7 you can save your settings to the SHT-7. The application also allows you to save settings from the SHT-7. You can edit these settings in the same way.
   Find the application at:
   https://play.google.com/store/apps/details?id=cz.elkoep.ihcnfcsetter

2. Manual - directly in the SHT-7.

iHC NFC

Type of load	cos φ ≥ 0.95 AC1	AC2	AC3	AC5a uncompensated	AC5a compensated	HAL.230V AC5b	AC6a	AC7b	AC12
Mat. contacts $AgSnO_2$, contact 16A	250V / 16A	250V / 5A	250V / 3A	230V / 3A (690VA)	230V / 3A (690VA) to max. input C=14uF	1000W	x	250V / 3A	x
Type of load	AC13	AC14	AC15	DC1	DC3	DC5	DC12	DC13	DC14
Mat. contacts $AgSnO_2$, contact 16A	x	250V / 6A	250V / 6A	24V / 10A	24V / 3A	24V / 2A	24V / 6A	24V / 2A	x

Technical parameters

SHT-7	
Supply terminals:	A1 - A2
Supply voltage:	AC 230 V / 50 - 60 Hz
Consumption:	AC max. 14 VA / 2 W
Supply voltage tolerance:	-15 %; +10 %
Real time back-up:	yes
Summer / winter time:	automatic

Output

Number of contacts:	2x changeover / SPDT ($AgSnO_2$)
Rated current:	16 A / AC1*
Switching capacity:	4000 VA / AC1, 384 W / DC
Peak current:	30 A / < 3 s
Switching voltage:	250 V AC1 / 24 V DC
Mechanical life:	> $3x10^7$
Electrical life (AC1):	> $0.7x10^5$

Time circuit

Real time back-up:	up to 3 years
Accuracy:	max. ±1 s per day, at 23 °C (73 °F)
Minimum interval:	1 min
Data stored for:	10 years at minimum

Program circuit

Number of memory places:	100
Program:	daily, yearly (until 2099)
Interface NFC:	daily, yearly (until 2099)
Data readout:	LCD display, with backlight

Other information

Operating temperature:	-20.. +55 °C (-4 °F to 131 °F)**
Storage temperature:	-30.. +70 °C (-22 °F to 158 °F)
Electrical strength:	4 kV (power supply - output)
Operating position:	any
Mounting:	DIN rail EN 60715
Protection degree:	IP10 terminals, IP40 from front panel
Overvoltage category:	III.
Pollution degree:	2
Max. cable size (mm^2):	solid wire max. 2x 2.5, max. 1x 4 / with sleeve max. 1x 2.5, max. 2x 1.5
Dimensions:	90 x 35.6 x 64 mm (3.5˝x1.4˝ x 2.5˝)
Weight:	129 g (4.55 oz.) - without battery
Standards:	EN 61812-1, EN 61010-1

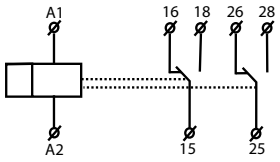
* When is, switched ON constantly with maximal load 16 A / AC1 and ambient temperature 55 °C (131 °F) it is highly reccomended by manufacturer to use conductors with tepmerature resistive isolation (min) from 105 °C (221 °F) range.

** With temperatures nearing -20 °C (-4 °F), the display quality may be compromised, which does not hamper the timer's function.

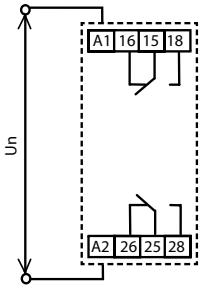
Warning

Device is constructed for connection in 1-phase main alternating current voltage and must be installed according to norms valid in the state of application. Connection according to the details in this direction. Installation, connection, setting and servicing should be installed by qualified electrician staff only, who has learnt these instruction and functions of the device. This device contains protection against overvoltage peaks and disturbancies in supply. For correct function of the protection of this device there must be suitable protections of higher degree (A, B, C) installed in front of them. According to standards elimination of disturbancies must be ensured. Before installation the main switch must be in position "OFF" and the device should be de-energized. Don´t install the device to sources of excessive electro-magnetic interference. By correct installation ensure ideal air circulation so in case of permanent operation and higher ambient temperature the maximal operating temperature of the device is not exceeded. For installation and setting use screw-driver cca 2 mm. The device is fully-electronic - installation should be carried out according to this fact. Non-problematic function depends also on the way of transportation, storing and handling. In case of any signs of destruction, deformation, non-function or missing part, don´t install and claim at your seller it is possible to dismount the device after its lifetime, recycle, or store in protective dump.

Symbol



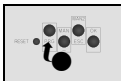
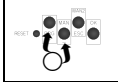
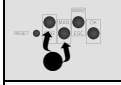
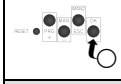
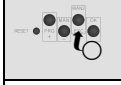
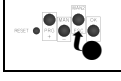
Connection



Mode precendence

Mode precedence	Display	Output mode
mode with the highest priority ➤➤➤	ON / OFF	manual control
➤➤	ON / OFF	holiday mode
➤	ON / OFF	time program Prog

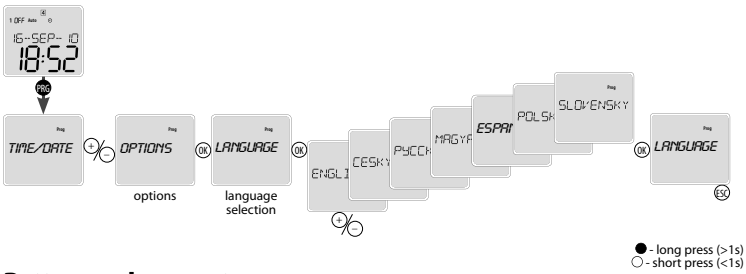
Control description

	PRG	entrance into programming menu
	+/-	browsing in menu
		setting of values
	+/-	quick shifting during setting of values
	OK	entrance into required menu
		confirmation
	ESC	one level up
		a step back
	ESC	back to the starting menu

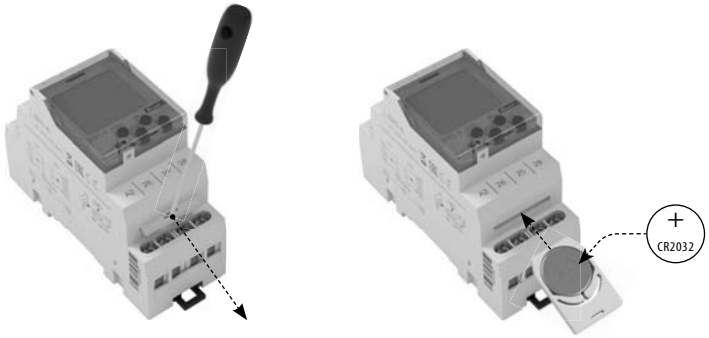
Device differs short and long button press.
In the manual marked as:
○ - short button press (< 1s)
● - long button press (> 1s)

After 30s of inactivity (from the last press of any button) will device automatically returns into starting menu.

Language settings



Battery replacement



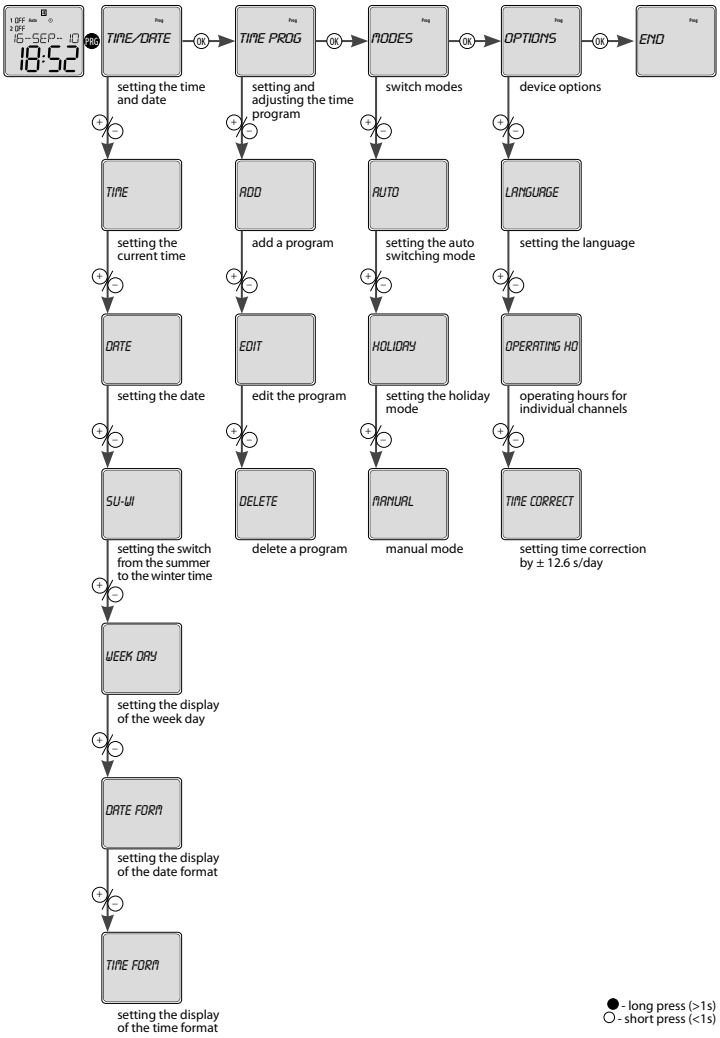
You can change the battery without disassembling the device.

CAUTION

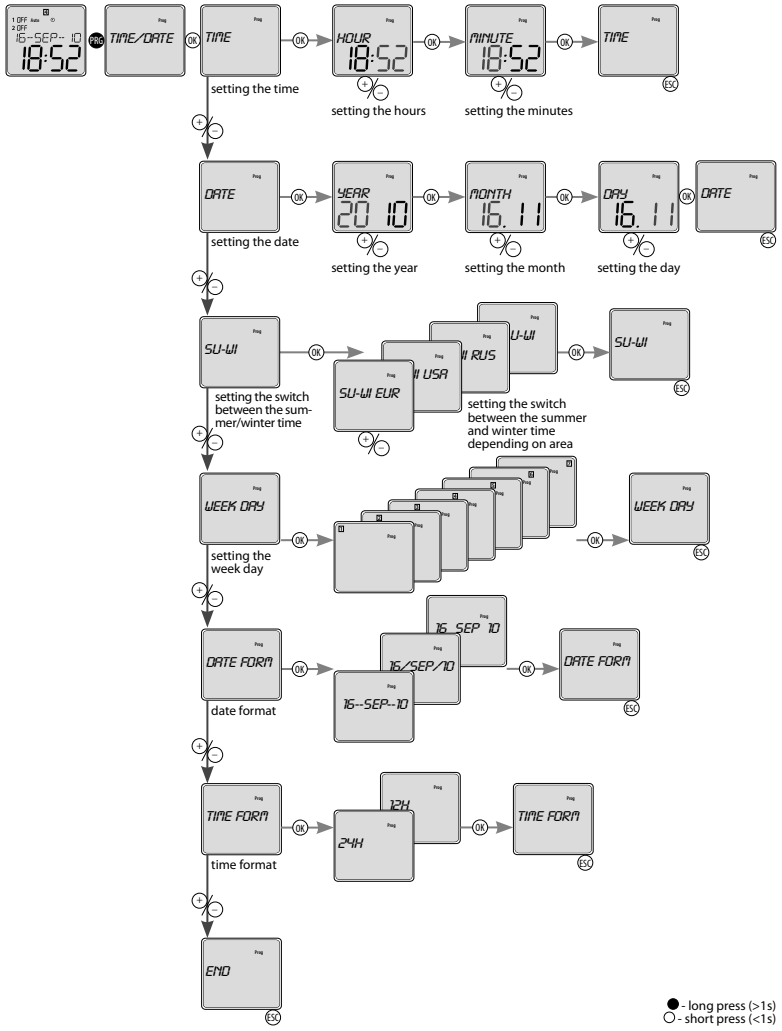
- only change the battery when the device is disconnected from power supply!!!
- the date and time must be reset after changing the battery!!!

- remove the plug-in module with the battery
- replace the original battery
- enter a new battery so that its upper edge (+) lines up with the plug-in module
- slide the plug-in module in the device and pay attention to polarity (+ up) - for roughly 1 s, the display will show the name and the software version
- you can connect the device to power supply

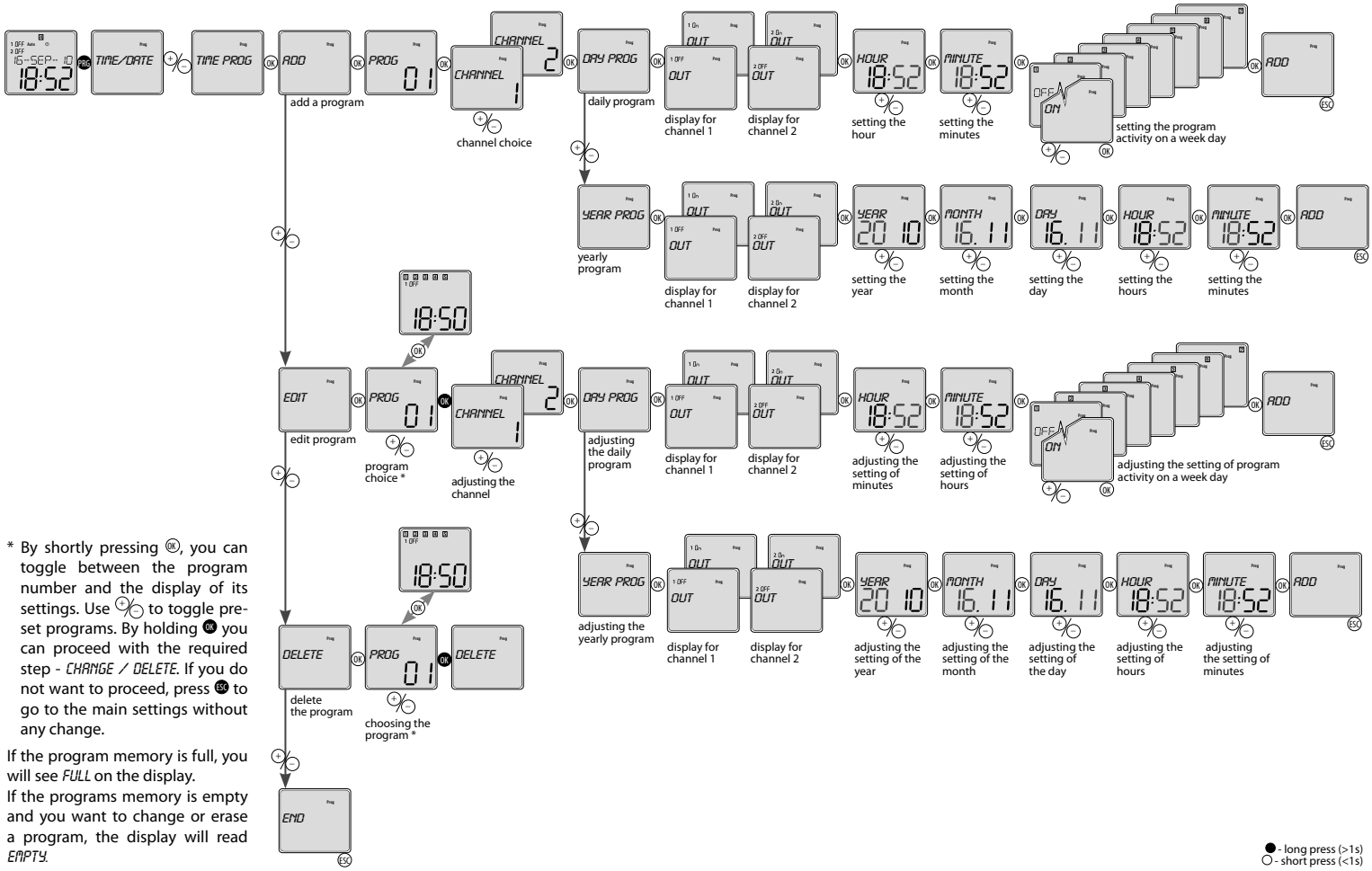
Menu overview



Time and date setting



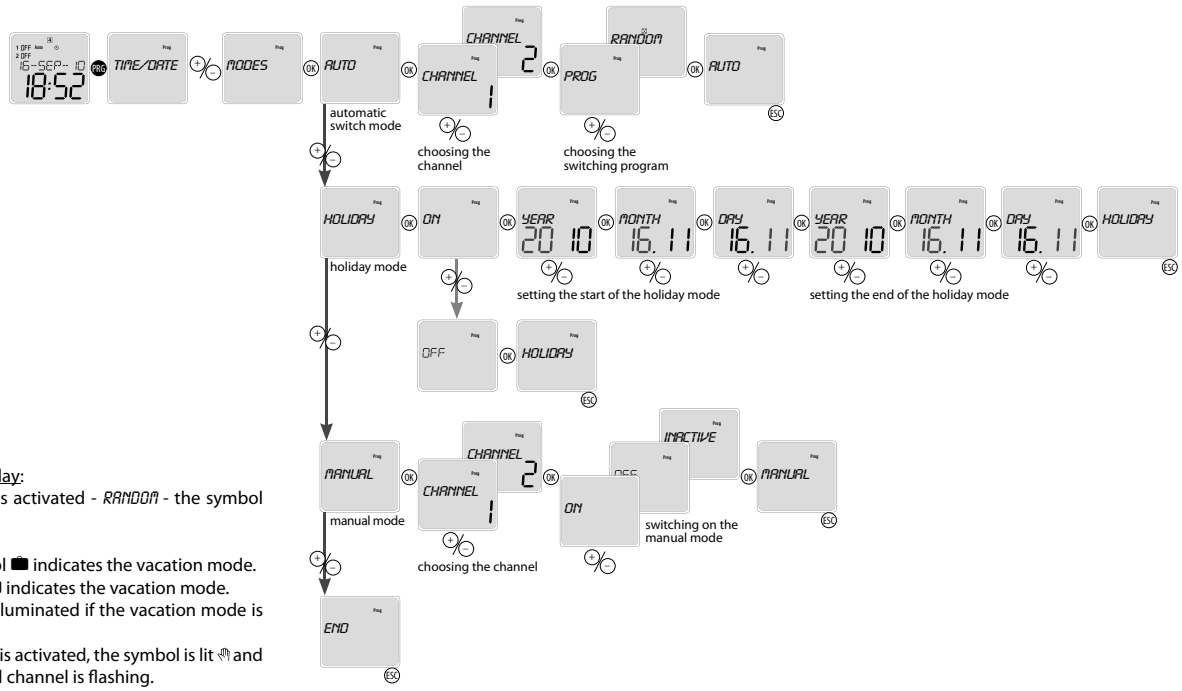
Time program



* By shortly pressing OK, you can toggle between the program number and the display of its settings. Use + / - to toggle preset programs. By holding OK you can proceed with the required step - *CHANGE / DELETE*. If you do not want to proceed, press ESC to go to the main settings without any change.

If the program memory is full, you will see *FULL* on the display.
If the programs memory is empty and you want to change or erase a program, the display will read *EMPTY*.

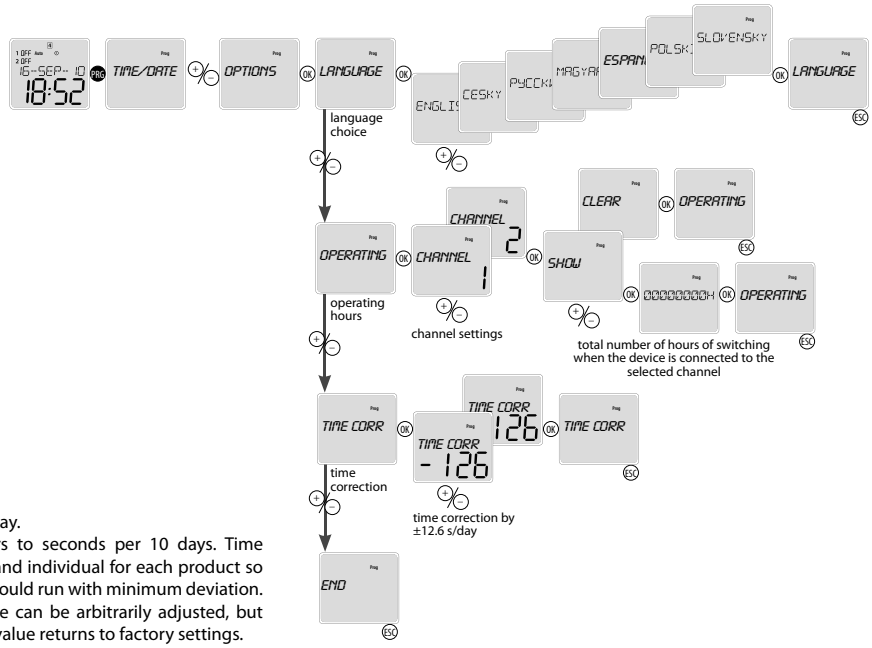
Setting the switching modes



What you see on the display:
- when a random mode is activated - *RANDOM* - the symbol is lit ⚄.
- vacation mode *HOLIDAY*:
  - the illuminated symbol 🧳 indicates the vacation mode.
  - the flashing symbol 🧳 indicates the vacation mode.
  - the symbol 🧳 is not illuminated if the vacation mode is not set or has.
- when the manual mode is activated, the symbol is lit ✋ and the manually controlled channel is flashing.

● - long press (>1s)
○ - short press (<1s)

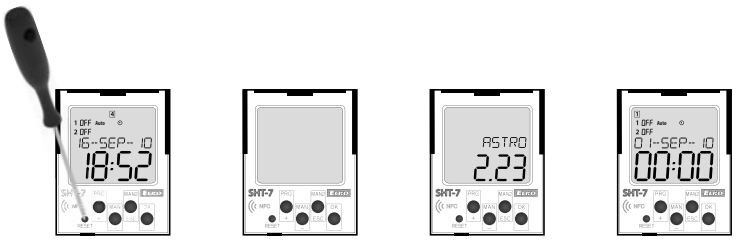
Setting options



Time correction:
The shift unit is 0.1s per day.
The numeric value refers to seconds per 10 days. Time correction is factory-set and individual for each product so that the real-time clock would run with minimum deviation. The time correction value can be arbitrarily adjusted, but after product RESET, the value returns to factory settings.

● - long press (>1s)
○ - short press (<1s)

Reset

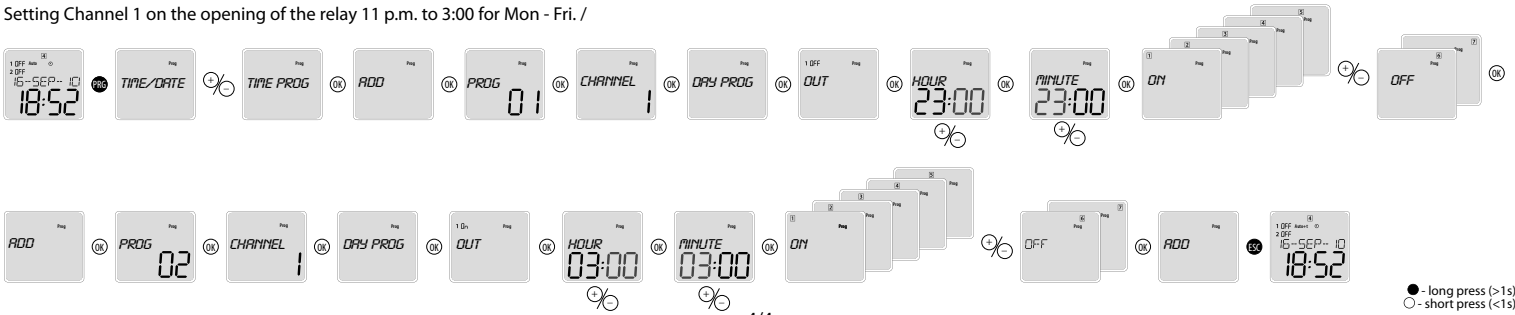


Performed by shortly pressing the hidden RESET button with a blunt-pointed object (e.g. a pencil or screw-driver with a diameter of at most 2 mm).

The type of device and software version will be displayed for 1 second, then the device will enter default mode. This means that the language is set to EN, all data is zeroed (thermostat function, time / date, user programs, device options function).

An example of SHT-7 programming

Setting Channel 1 on the opening of the relay 11 p.m. to 3:00 for Mon - Fri. /



● - long press (>1s)
○ - short press (<1s)