



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 disturbances 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 disturbances 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.

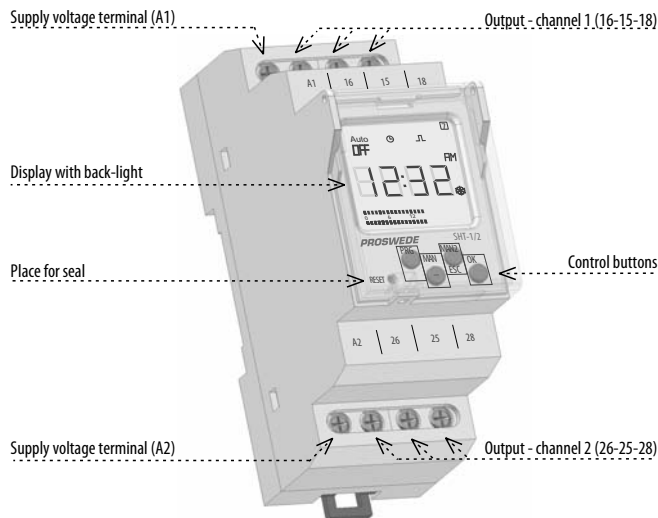
Technical parameters	SHT-1, SHT-3	SHT-1/2, SHT-3/2
Supply terminals:	A1 - A2	
Supply voltage:	AC/DC 12-240 V (AC 50-60 Hz)	
Consumption:	AC 0.5 - 2 VA / DC 0.4 - 2 W	
Supply voltage:	AC 230 V / 50 - 60 Hz	
Consumption:	AC max. 14 VA / 2 W	
Supply voltage tolerance:	-15 %; +10 %	
Real time back-up:	yes	
Summer / winter time:	automatic	
Output		
Number of contacts:	1 x changeover (AgSnO ₂)	2 x changeover (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	
Min. switching capacity DC:	500 mW	
Mechanical life:	> 3x10 ⁷	
Electrical life (AC1):	> 0.7x10 ⁵	
Time circuit		
Real time back-up when de-energi.:	up to 3 years	
Accuracy:	max. ±1s / day at 23 °C	
Minimum interval:	1 min.	
Data stored for:	min. 10 years	
Cyclic output:	1-99s	
Pulse output:	1-99s	
Program circuit		
Number of memory places:	100	
Program (SHT-1; SHT-1/2):	daily, weekly	
Program (SHT-3; SHT-3/2):	daily, weekly, monthly, yearly (up to year 2095)	
Data readout:	LCD display, with back light	
Other information		
Operating temperature:	-20.. +55 °C	
Storage temperature:	-30.. +70 °C	
Electrical strength:	4 kV (supply - output)	
Operating position:	any	
Mounting:	DIN rail EN 60715	
Protection degree:	IP10 clips, IP40 from front panel	
Overvoltage category:	III.	
Pollution degree:	2	
Max. cable size (mm ²):	solid wire max. 2x2.5 or 1x4 with sleeve max. 1x2.5 or 2x1.5	
Dimensions:	90 x 35.6 x 64 mm	
Weight:	(UNI)-130 g, (230)-110 g	(UNI)-143 g, (230)-125 g
Standards:	EN 61812-1, EN 61010-1	

Characteristics

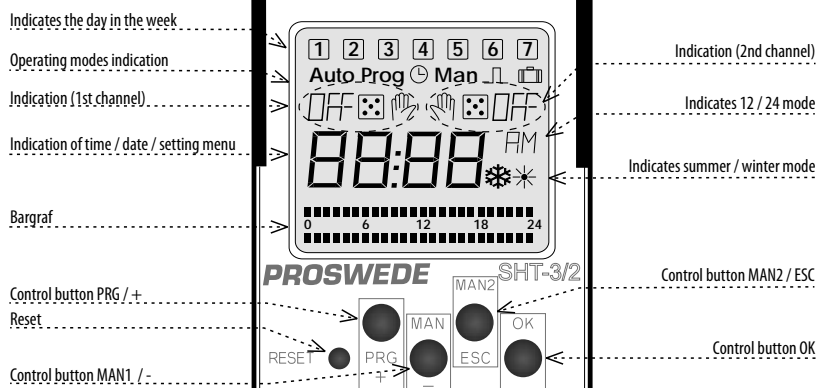
- Serves for controlling of various types of appliances in dependance on real time (automation-switching of heating, pumps, ventilation etc.). Appliances can be operated in concrete periodic time cycles or according a pre-set program (depends on type, see the chart Versions of time switches).
- SHT-1, SHT-3: 1-channel version.
- SHT-1/2, SHT-3/2: 2-channel version (to each channel can be assigned an individual program).
- Possibility to control two independent circuits.
- By SHT-3, SHT-3/2 is not possible to integrate daily and night mode on one channel. By SHT-3/2 is possible to set a different mode on each channel.
- Setting of switching by:
 - program (*PROG*) - switching according programs set in **SET 1**. Possibility to set the repeat every minute or every hour.
 - random (*RUTO*) - random switching in 10-120 min interval.
 - permanently manually.
- Switching modes (*OUT*):
 - *OUT ON* - normal - 2 positions in memory (close / open), shortest time of closing is 1 min.
 - *OUT ON* - cyclic - 2 positions in memory (pulse / delay), range 1-99s.
 - *OUT ON* - pulse - 1 position in memory, range 1-99s.
 - *OUT OFF* - turn off the switching mode.
- Set time of pulse / delay is on one channel the same for all programs (it is not possible to set more pulses with different durations on one channel).
- "Holiday mode" - possibility to choose the period, when the device will be not switching according a standard program and will be blocked for the pre-set time.
- 100 memory positions (by SHT-1/2 and SHT-3/2 are those 100 positions common for both channels).
- Programming of device can be realize even under voltage and also even in back-up mode.
- Output relays operates only under voltage.
- Automatic change - over between summer / winter time (setting is for time zone GTM+1:00).
- Back-lighted LCD display.
- Easy and quick setting by 4 control buttons.
- Sealable transparent cover of the front panel.
- Time switch is back-up with in-built lithium element, which saves data during voltage failure. Back-up time reserve - up to 3 years.
- Supply voltage: AC 230V or AC/DC 12-240V.
- 2-Module, DIN rail mounting, saddle terminals.

- Device is delivered with pre-programmed actual time, which is permanently displayed also in back-up mode.

Description

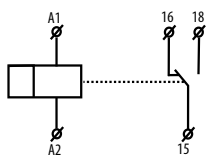
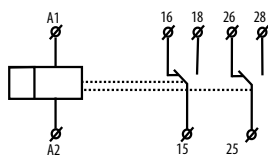
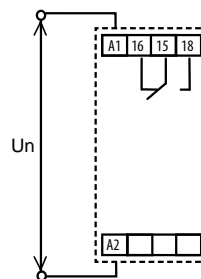
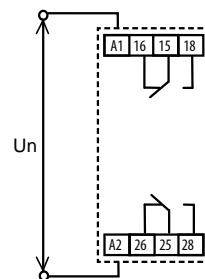


Description



CONTROL OF A DISPLAY WITH BACKLIGHT

Display is illuminated with a back-light for 10s from last button press. Permanent on / off is activated by synchronic press of buttons MAN, ESC, OK. After permanent on/off activation, display will flash shortly.

SHT-1
SHT-3SHT-1/2
SHT-3/2SHT-1
SHT-3SHT-1/2
SHT-3/2

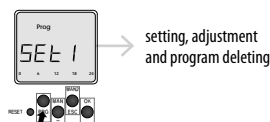
Control

Device differs short and long button press. In the manual marked as:

○ - short button press (< 1s)

● - long button press (> 1s)

①/② - number indicates button press sequence



setting, adjustment
and program deleting

● - entrance into programming menu

○ - browsing in menu
○ - setting of values

○ - quick shifting during setting of values

○ - entrance into required menu
○ - confirmation

○ - entrance into chosen program (EDIT)

○ - one level up

○ - back to the starting menu

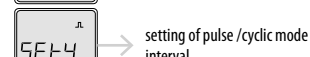
After 30s of inactivity (from the last press of any button) will
device automatically returns into starting menu.



date and time setting



setting of programmed /
random mode



setting of pulse /cyclic mode
interval



holiday mode



exit from menu

Mode precedence

Precedence of controlling modes	display	output mode
highest priority of controlling mode >>>>>	ON / OFF	manual control
>>>>	ON / OFF	holiday mode
>>>	ON / OFF AUTO	random mode for switching
>>	ON / OFF	pulse-cyclic mode
lowest priority of controlling mode >	ON / OFF	normal mode Prog

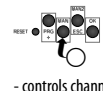
Manual output control

- is superior to other set modes



relay on

relay off



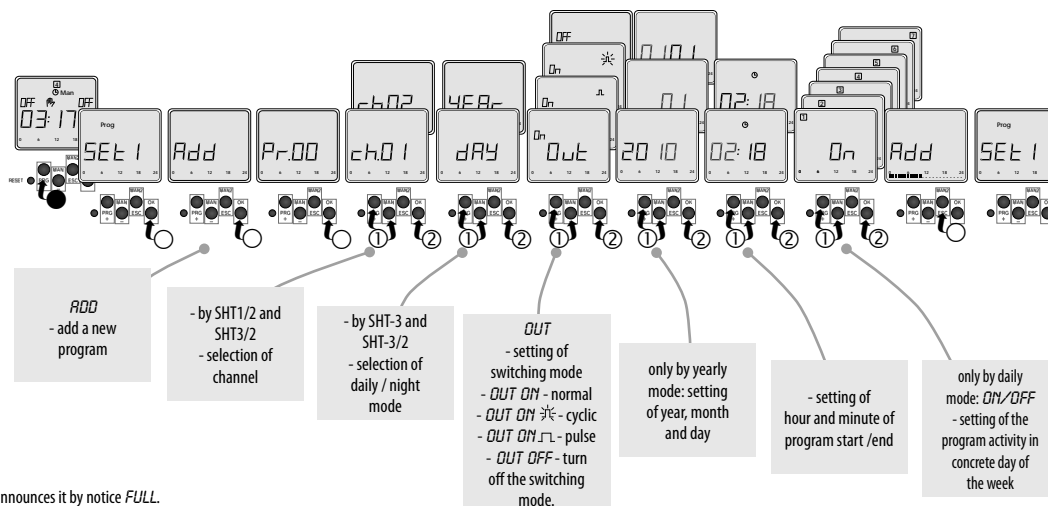
- controls channel 1



- controls channel 2
(by SHT-1/2 and SHT-3/2)

Program setting

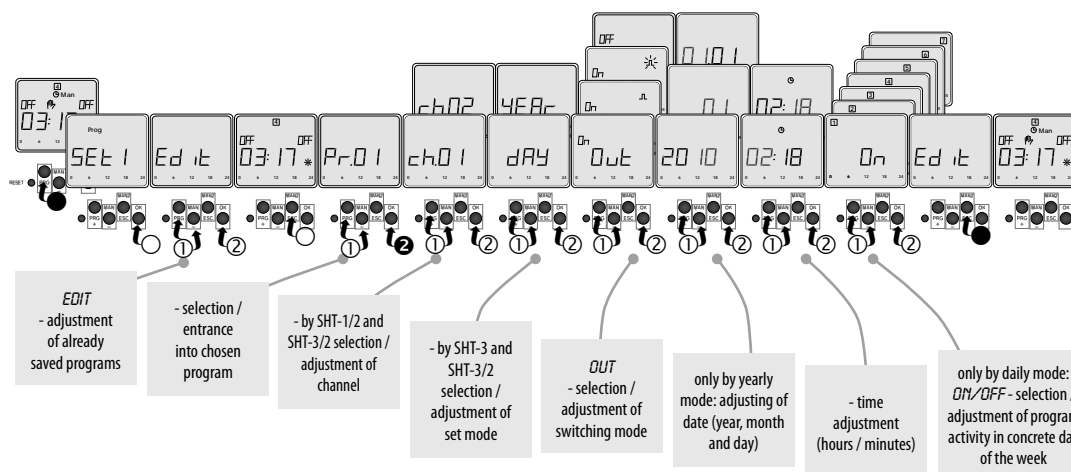
SET 1



If the program memory is full, display announces it by notice FULL.

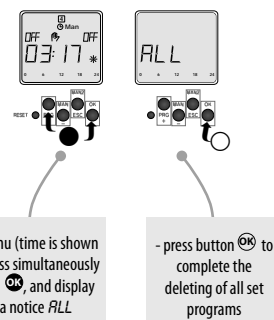
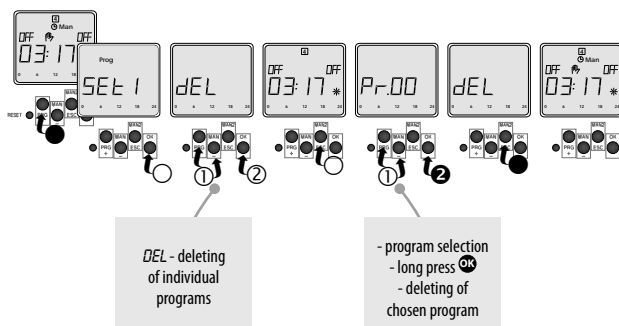
Program adjustment

SET 1



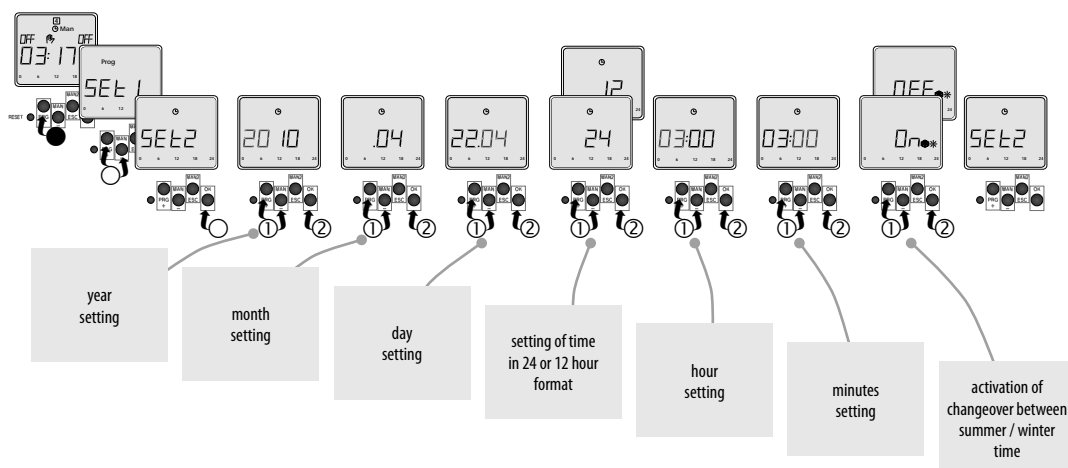
● - long press (> 1s)
○ - short press (< 1s)
①/② - press sequence

SET 1



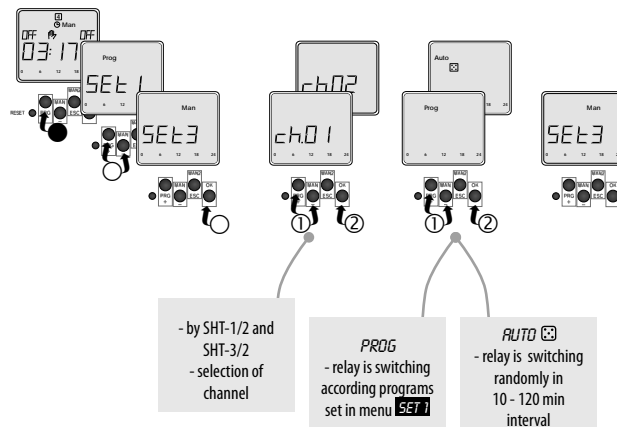
Date and time setting

SET 2



Setting of programmed / Random mode

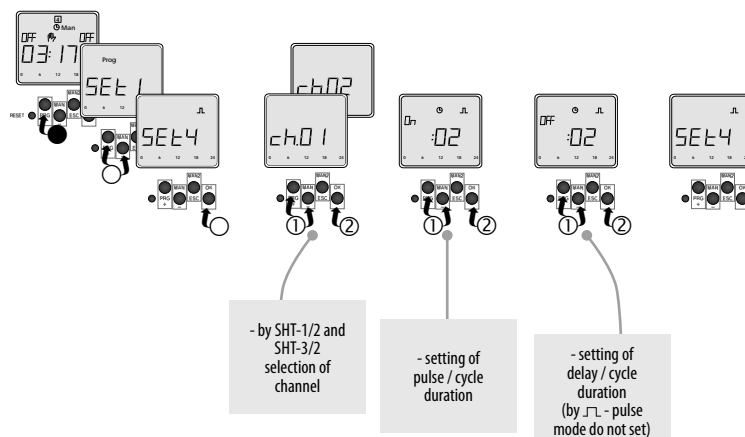
SET 3



In starting mode by chosen channel flashes symbol **Prog** or on display. (Automatically preset switching according *PROG*).

Setting of pulse / Cyclic mode interval

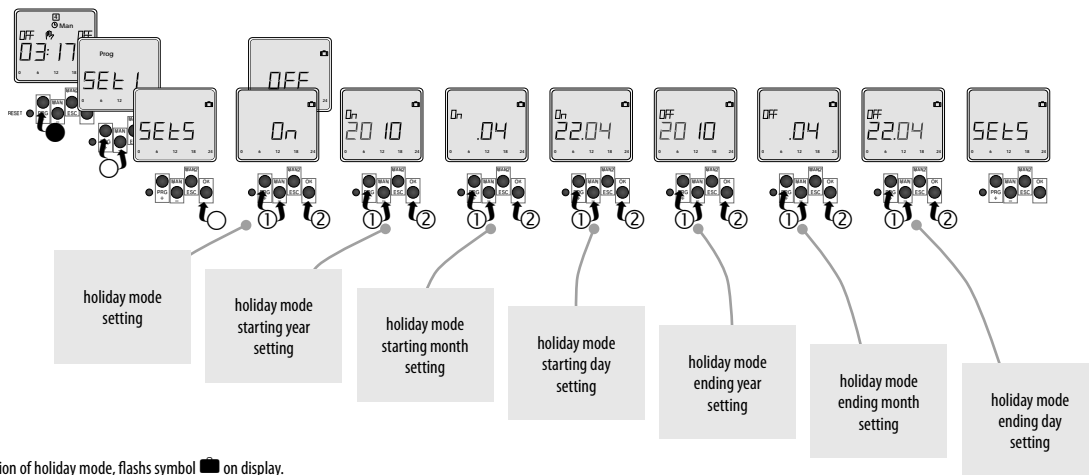
SET 4



Setting of time of pulse / cyclic mode switching is realized by **SET 1**.

● - long press (> 1s)
○ - short press (< 1s)
①/② - press sequence

SET 5

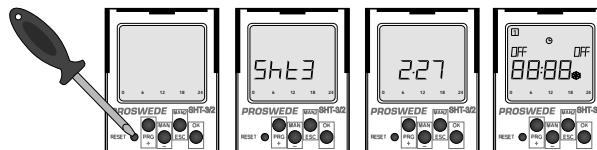
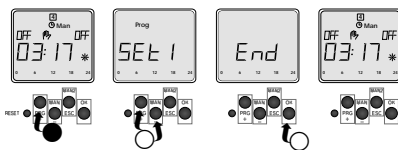


In the starting mode during the activation of holiday mode, flashes symbol on display.

Exit from menu

END

- return to the starting mode



Activated by, covered RESET button, short press with blunt spike (with max. 2 mm diameter).

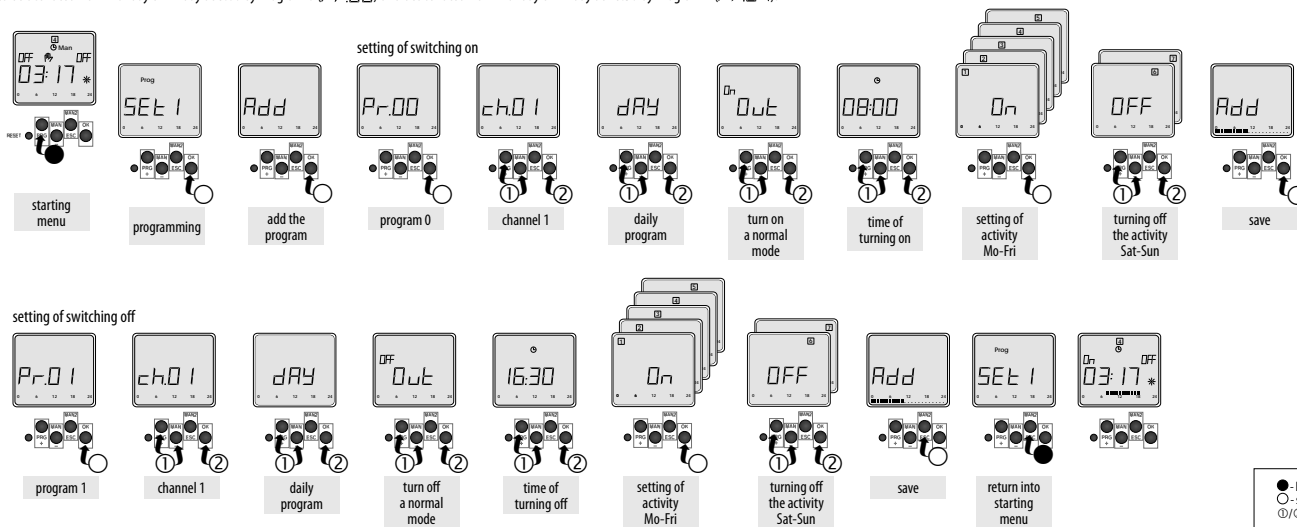
After press, information about type of device and firmware version will displayed for 3 s and then device performs in starting mode.

Reset will delete an actual time, set time of pulse / cyclic mode and all temporary functions (manual or random switch output).

Reset will save all set programs.

Example of programming

Setting of SHT-3/2 to be activated from Monday till Friday at 8:00 by Program 0 (Pr.00) and deactivated from Monday till Friday at 16:30 by Program 1 (Pr.01).



● - long press (> 1s)
○ - short press (< 1s)
①/② - press sequence

Versions of time switches

Type of product	output		time program			
	1 channel	2 channels	day	week	month	year
SHT-1	•		•	•		
SHT-1/2		•	•	•		
SHT-3	•		•	•	•	•
SHT-3/2		•	•	•	•	•

Load

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