

THERMOSWITCH SOCKET



TS20

DESCRIPTION OF CONTROLS



- Fce** = selection of functions
- ☀ C P** = selection of temperatures
- i ←** = confirmation (**ENTER**), information on required temperature (**PO:t**), present time/temperature (**CL:O/tE:P**), sum of operating hours (**SU:MA**), and day (**dE:n**)
- / +** = setting of temperature, time, functions

Utilization examples:

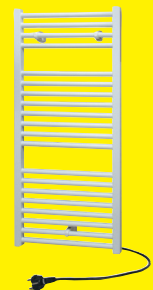
electric
heating
plates



direct
heating
bodies



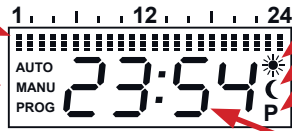
electric
tubular
radiators



DISPLAY DESCRIPTION

indication of set time and temperature program

indication of operating mode



indication of temperatures

comfort
economy
party

indication of time/
temperature

OPERATING INSTRUCTIONS

After connection in 230V-socket is TS20 immediately ready for use. If sign **d0:bl** is flashing on the display, the back-up battery is not fully charged and it is necessary let the TS20 in 230V-socket to charge for minimal 2 days (full charge take about 4 days). After charging it is possible to remove TS20 from socket without losing the actual time and you can provide the programming outside the 230V-socket. (Maximal backup time is 100 hours).

! If we disconnect TS20 from the network 230V, the TS20 comes to stanby mode and only actual time will be shown on display (the colon symbol will not be flashing) and the buttos will be functionless. The activation of the buttons you can make by pressing the button.

If the TS20 is not in 230V-socket the showed temperature is 2 °C lower than real actual temperature.

1. FUNCTIONS OF TS20

After pushing the **Fce** button you can select following functions by pushing / .

1. **AUTO** : thermo-switch socket works according to program as set.
2. **MANU** : serves for manual setting of temperature (the selection by **CP** or by / buttons), the temperature should be constant up to next change of mode.
3. **CLO** : setting of present day and time.
4. **PAr** : setting of parameters (constants).
5. **PROG** : programming mode.
6. **OFF** : in this mode TS20 is permanently switched-off .

Note: If you do not push any button in 2 minutes, TS20 returns into set mode. Longer pushing of / buttons speeds up their functions.

2. PROCEED DURING PROGRAMMING

Before the programming itself, it is necessary to set present day, time and parameters (constants), namely in following way.

Setting of current day and time - " CLO " function

Press the **Fce** button, by pressing $\overline{-}/+$ select **CLO** (CLOCK) function and confirm by \overleftarrow{i} . Indication of hours flashes on the display, use $\overline{-}/+$ buttons to set required data and confirm by \overleftarrow{i} button. Use the same method for minutes and day (**d:1** represents Monday, **d:2** Tuesday and **d:7** Sunday). After the completion of setting, press **Fce** button to return.



CLO:0



13:54



d: 1

Setting of parameters (constants) - " PAr "

PA:r1 Display option

- Press the **Fce** button, by pressing $\overline{-}/+$ select **PA:r** (Parameters) and confirm by \overleftarrow{i} .
- **PA:r1** shows on the display, confirm by \overleftarrow{i} and with using of $\overline{-}/+$ buttons select display options in basic mode:

t information on present temperature

C current time,

Press \overleftarrow{i} button to confirm your selection.



PA:r 1



: t



: C

PA:r2 economic temperature (factory setting 17°C) (

- **PA:r2** shows on the display
- with using of $\overline{-}/+$ buttons set economic temperature and press \overleftarrow{i} button to confirm.



PA:r2 C



17:0°C

PA:r3 comfort temperature (factory setting 23°C) *

- **PA:r3** shows on the display
- with using of $\overline{-}/+$ buttons set comfort temperature and press \overleftarrow{i} button to confirm.



PA:r3*



23:0°*

PA:r4 party temperature (factory setting 25°C) P

- **PA:r4** shows on the display
- with using of $\overline{-}/+$ buttons set party temperature and press \overleftarrow{i} button to confirm.



PA:r4



25:0°_P

PA:r5 Hysteresis (0,5°C set by default)

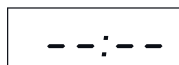
- **PA:r5** shows on the display
- with using of \leftarrow / \rightarrow buttons set the hysteresis from 0,1 to 6 °C and press \leftarrow button to confirm.

The display shows the text "PA:r5" in a digital font.The display shows "0.5°C" in a digital font.

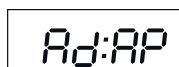
HYSTERESIS = (TEMPERATURE DIFFERENCE BETWEEN SWITCHING ON AND OFF OF THE APPLIANCE)

PA:r6 Adaptive start control (factory setting as inactive --:--)

- **PA:r6** shows on the display
- by adaptive start control the TS20 calculate ideal point for starting the heating to reach the set temperature in required time.
- The TS20 find out the thermal paramters of the room and the heating will be switch-on ahead of time accordingly.
- For activating of this function select with \leftarrow / \rightarrow buttons the **Ad:AP** and for deactivation select **--:--**.

The display shows "--:--" in a digital font.

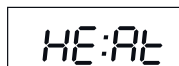
ACTIVATED

The display shows "Ad:AP" in a digital font.

INACTIVATED

PA:r7 Heating / Cooling mode

- **PA:r7** shows on the display
- Use cooling mode if the connected device is air conditioning or fan for cooling.
- with using of \leftarrow / \rightarrow buttons set the required mode and press \leftarrow button to confirm.

The display shows "HE:AL" in a digital font.

heating mode

The display shows "CO:OL" in a digital font.

cooling mode

PA:r8 Open window detection (factory setting as inactive --:--)

- **PA:r8** shows on the display
- this function is from factory set as inactive (--:--). For activation it is necessary to set the temperature drop (0.2°C bis 5°C) with using of \leftarrow / \rightarrow buttons.
- Confirm by pressing \leftarrow button

The display shows "--:--" in a digital font.The display shows "0.2°C" in a digital font.

Function „OPEN WINDOW DETECTION“

when the temperature drops by preset value within 4 minutes, the thermostat switch off the heating to save the energy. It will be alternately displayed sign „OPEn“ and information about required temperature. This mode is terminated when the temperature rise again, or after change of required temperature or after 30 minutes. The next „open window“ mode can occur only after 10 minutes.

Note: Function „open window“ can run after 10 minutes afte first connection to 230V socket.

PA:r9 Firmware version

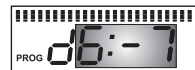
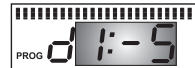
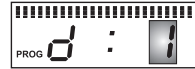
- **PA:r9** shows on the display
- Firmware version for information only
- press **i←** button **Fce** button to return.

Programming- " PROG " function

- Press the **Fce** button, by pressing **- / +** buttons select PROG (PROGRAMMING) function and confirm by **i←**.
- By repeated pressing of **- / +** buttons select one of following options:

d:1 Monday	d:5 Friday	d1:5 Monday to Friday
d:2 Tuesday	d:6 Saturday	d6:7 Saturday to Sunday
d:3 Wednesday	d:7 Sunday	d1:7 all week
d:4 Thursday	Tablet for day selection	

- Confirm by **i←** button. The sign **1:U1** shows on display for setting up of the first time interval.
- by pressing **- / +** buttons set the time of first change (min. step of 10 min.)
- assign comfort, economic or party temperature to the setting time by repeated pressing of ***CP** button
- Confirm by **i←** display automatically shows symbol **1:U2** (the second time interval in the first day).
- Use the same procedure for the setting of further time intervals (max. 6). Leave the programming regime by pressing **Fce** button.
- Select AUTO function, TS20 starts to work according to the program set.

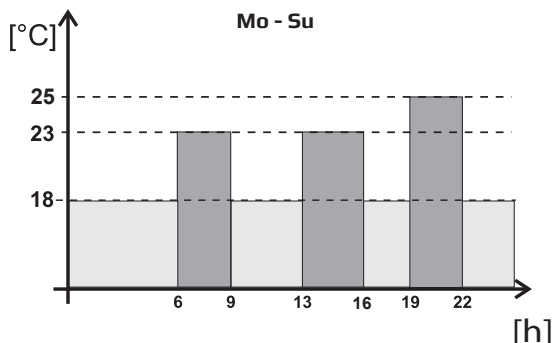


Status indication of TS20:

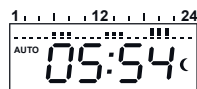
AUTO (or MANU) is shown = output is switched on
AUTO (or MANU) blinks = output is switched off

EXAMPLE of Programm setting

1. Set C on 18°C (PA:r2)
2. Set $*$ on 23°C ein (PA:r3)
3. Set P on 25°C ein (PA:r4)
4. Choose programmig of whole week **d1:7**(Prog)
5. **17:U1** assig time 6:00 and temperature $*$
6. **17:U2** assig time 9:00 and temperature C
7. **17:U3** assig time 13:00 and temperature $*$
8. **17:U4** assig time 16:00 and temperature C
9. **17:U5** assig time 19:00 and temperature **P**
10. **17:U6** assig time 22:00 and temperature C
11. Leave the programming regime by pressing **Fce** button and select **AUTO** mode.



programm process on LCD



Short-term change of temperature in AUTO mode:

By simple pressing of + / - buttons in AUTO mode, it is possible to make a shortterm change of required temperature. TS20 will maintain this temperature up to next temperature change as defined in the program.

Antifreeze protection

If the room temperature drops under 3 °C, TS20 switch on automatic the connected device. As soon as the temperature rise over 3 °C the TS20 comes back to the preset mode.

“ OFF ” function:

Press the **Fce** button, by pressing **- / +** button select **OFF** function and confirm by **↵** button.

In this way, TS20 is permanently switched off.

In this mode, symbol OF:F and data on current temperature/time are showed alternatively on the display. To cancel this function press **Fce** button and select different mode with using of **- / +** buttons.

Note: in OFF mode is maintained the antifreeze temperature 3°C!

Child lock:

It serves for keyboard blocking, as a protection against unauthorized handling. Press **Fce** button, after that press ***CP** and **-** together and buttons the keyboard is locked (buttons are inactive). Message LOC (LOCK) is shortly displayed. The function can be cancelled, e.g. the keyboard unblocked, by simultaneously pressing ***CP** and **+** buttons (the buttons are again functioning from now).

Installation:

1. Connect TS20 in 230V/50 Hz socket.
2. Program it according to instructions
3. Connect the heating body you want to regulate.

Error messages:

If following error message is shown on the display, contact immediately the manufacturer (it is dealing with a failure of temperature sensor).

(ERROR)

! RESET - restoring the default settings

- Press the **Fce** button, by pressing **- / +** select function **PA:r** and confirm by **↵** button.
- By pressing **- / +** buttons select **PA:r9** confirm by **↵**.
- Simultaneously press ***CP** and **-** buttons, it will restore the factory settings!

Note: Use only when necessary, all saved changes will be deleted!

THERMO-SWITCH SOCKET TS20

TS20 is a digitally switched socket for automatic regulation of electrical heating systems (direct heating bodies, towel driers, fires) in family houses, flats, offices. Up to six time intervals with three temperature levels can be set for each day.

Further advantages:

- different temperature program for each day
- the possibility to set three temperature levels (☀, C, P)
- setting the HYSTERESIS in the range from 0,1°C to 6°C
- possibility to make a short-term change in program temperature
- permanent switching off of the appliance (OFF)
- open window detection
- adaptive start control
- back-up battery NiMH 2,4 V, for more than 100 operating hours

Specification of TS20	
Power	230 V / 50 Hz
Number of adjustable temp.	3 different temperatures for each day
Hysteresis	0,1 to 6°C in steps of 0,1°C
Minimal programming time	10 minute
Range of possible temp.	3°C to 40°C
Step of temperature setting	by 0,5°C
Minimal step of indication	0,1°C
Measurement accuracy	± 1 °C
Protection	IP20
Back-up battery	NiMH 2,4 V/ > 100 hours
Output	relay, max. 16 A
Working temperature	0 to 40 °C

Send the socket for guarantee and after guarantee service to manufacturer's address.



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