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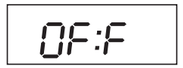
“ OFF “ function:

Press the “ **Fce** “button, by pressing " **+/-** " button select **OF:F** 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.



Child lock:

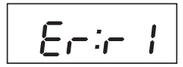
It serves for keyboard blocking, as a protection against unauthorized handling. By simultaneous pressing of ” **Fce** ”,” ☀ ☾ **P** ” and “ **-** ” buttons the keyboard is locked*(buttons are inactive)*. Message LOC*(LOCK)* is shortly displayed.
The function can be cancelled, e.g. the keyboard unblocked, by simultaneous pressing of ” **Fce** ”,” ☀ ☾ **P** ” and “ **+** ” buttons *(the buttons are again functioning from now).*

Installation:

1, Connect TS20 in 230V/50 Hz socket and let it charge for approx. 12 hours.
2, Program it according to instructions (register respective data in the table)
3, Connect the heating body you want to regulate.
4, To be installed in rooms with relative humidity lower than approx. 95%

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)

Table for registration of your programs

☀ = °C ☾ = °C P = °C

day \ progr.	1	2	3	4	5	6
Mon						
Tue						
Wed						
Thu						
Fri						
Sat						
Sun						

The temperature and time set

THERMO-SWITCH SOCKET TS 20

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 (☀ , ☾ , P)
- setting the HYSTERESIS in the range from 0,1°C to 2°C
- simple control and programming
- possibility to make a short-term change in program temperature
- permanent switching off of the appliance (OFF)
- temperature regulation at steps of 0,5°C
- well-arranged display
- back-up battery NiCd 2,4 V, for more than 100 operating hours

Specification of TS 20:

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

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

CERTIFICATE OF GUARANTEE
(guarantee period for the product amounts to 2 years)

product No.:	date of sale:
	stamp of shop:
examined by:	

ELEKTROBOCK CZ
MADE IN CZECH REPUBLIC
ELEKTROBOCK CZ s.r.o.
Blanenská 1763
Kuřim 664 34
Tel./fax: +420 541 230 216
http:// www.elbock.cz

Temperature regulation of connected appliance

DESCRIPTION OF CONTROLS

Fce = selection of functions

☀ ☾ **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

ELEKTROBOCK CZ
MADE IN CZECH REPUBLIC

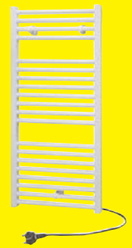
THERMO-SWITCH SOCKET TS 20

Utilization examples:

electric heating plates

direct heating bodies

electric tubular radiators



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THERMO - SWITCH SOCKET TS 20

Czech product TS20 represents a novelty in the field of heating technology. It offers a comfort solution for the control of ELECTRICAL heating system. By means of automatic temperature regulation of connected appliance you can save up to 30% of energy for heating in your household, office etc. Setting the HYSTERESIS (in the range from 0.1°C to 2°C) represents a great advantage. Thanks to rich programming features (6 time intervals and 3 temperatures for each day), you can define program suiting to your needs.

DISPLAY DESCRIPTION

OPERATING INSTRUCTIONS

! IMPORTANT NOTICE !

If the display shows no data, it is necessary to connect TS20 to 230V/50 Hz socket and let it charge for approximately 12 hours. As soon as the back-up battery is charged, the display becomes active and you can program! If the TS20 is not connected to the socket, it shows temperature that is by 1.5°C lower than real temperature!

Functions of TS 20

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 " ☀ , ☾ , **P** " 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 .

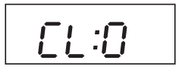
Note: If you do not push any button in 2 minutes, TS20 returns into set mode. Longer pushing of "**+/-** " buttons speeds up their functions.

How to 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

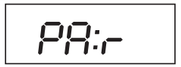
Press the " **Fce** " button, by pressing " **+/-** " select **CLO** *(CLOCK)* function and confirm by" ↵ ". Indication of hours blinks on the display, use "**+/-**" buttons to set required data and confirm by " ↵ " button. Use the same method for minutes and day (**d:1** represents Monday, **d:2** Tuesday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

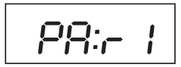


Setting of parameters (constants) - " PAr " function

Press the " **Fce** " button, by pressing "**+/-**" buttons select **PAr** *(PARAMETERS)* function and confirm by" ↵ "button. **PA:r1** shows on the display, confirm by " ↵ " and with using of " **+/-** " buttons select display options in **AUTO/MANU** modes. If you select item " **t** " information on present temperature will be displayed. If you select item " **C** " current time will be displayed.

After setting, press " ↵ " button and proceed with setting the PAr:2 parameter.





PA:r2,with using of " **+/-** " " buttons set economic temperature symbol " ☾ " is showed on the display. Press " ↵ " button to confirm and set Par:3.

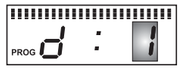
PA:r3,with using of " **+/-** " buttons set comfort temperature, symbol " ☀ " is showed on the display. Press " ↵ " button and set Par:4.

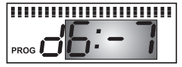
PA:r4,with using of " **+/-** " buttons set temperature for party, symbol " **P** " is showed on the display. Press " ↵ " button and set Par:5.

PA:r5,with using of " **+/-** " buttons set the **HYSTEREZI** *(temperature difference between switching on and off of the appliance)*. When the hysteresis is set, press "↵" button. Return by pressing "**Fce**" button.

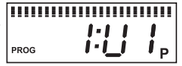
Programming - " PROG " function

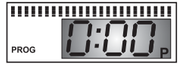
Press the " **Fce** " button, by pressing " **+/-** " buttons select **PROG***(PROGRAMMING)* function and confirm by " ↵ ". The day to be programmed is showed on the display. By repeated pressing of "**+/-**" buttons select one of following options - **d:1= Monday, d:2= Tuesday up to d:7= Sunday. Also it is possible to program simultaneously for Monday to Friday, e.g. d1:-5, Saturday and Sunday, e.g. d6:-7 and whole week d1:-7**.





Confirm by " ↵ ", button. Now it is possible to program for the first time interval in selected day,symbol **1:U1** displays for a short time. Afterwards, set the time by pressing "**+/-**" buttons (min. step of 10 min) and select comfort, economic or party temperature by repeated pressing of "☀ ☾ **P** " button.





Confirm by " ↵ ", display automatically shows symbol 1:U2 (the second time interval in the first day).

It is possible to set 6 time intervals for one day at maximum.

Use the same procedure for the setting of further time intervals and days.

Example of displayed values:

1:U3 = the first day (Monday) and the third time interval

4:U6 = the fourth day (Thursday) and the sixth time interval

15:U2 = simultaneous programming Mon to Fri, the second time interval

67:U4 = simultaneous programming Sat to Sun, the fourth time interval

Course of the program for given day is showed in graphic form in upper part of the display

– indicates required temperature"moon"

= indicates required temperature "sun" ☾

= indicates required temperature "party" ☀

Leave the programming regime by pressing" **Fce**" button.

After selection of **AUTO** function, TS20 starts to work according to the program set.

When the output is switched on, AUTO/MAN is showed on the display, otherwise the symbol blinks.

Short-term change of temperature in AUTO mode:

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