

“ OF:F “ function:

Press **Fce** , by means of **-/+** select **OF:F** function and confirm by pressing **i↵** . In this way, the socket 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.

OF:F

Child lock:

It serves for keyboard blocking, as a protection against unauthorized handling. Press **Fce** button, then simultaneously press **☀/P** and **-** now the keyboard is blocked. Message **LO:C** (LOCK) is shortly displayed on the display. The function can be cancelled, e.g. the keyboard unblocked by simultaneous pressing of **☀/P** and **+** .

LO:C

! RESET - restoring the default settings

Erasing of programs:
- Press the **Fce** button, by pressing **-/+** select function **PA:r** and confirm by **i↵** button.
- By pressing **-/+** buttons select **PA:r9**, confirm by **i↵**
- Simultaneously press **☀/P** and **-** buttons, it will restore the factory settings!
Note: Use only when necessary, all saved changes will be deleted!

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 which 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).

Er:r 1
(ERROR)

Table for registration of your programs

☀ = °C ☾ = °C P = °C

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

The temperature / time set

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 (☀ , ☾ , P)
- ▶ setting the HYSTERESIS in the range from 0.1°C to 6°C
- ▶ easy control and programming
- ▶ possibility to make a short-term change in program temperature
- ▶ permanent switching off of the appliance (OF:F)
- ▶ temperature regulation at steps of 0.5°C
- ▶ well-arranged display
- ▶ back-up battery NiMH 2.4 V, up to 100 operating hours

TECHNICAL PARAMETERS

Power supply	230 V/ 50 Hz
Number of adjustable temp.	3 different temperatures for each day
Hysteresis	0.1 to 6°C with steps of 0.1°C
Minimal programming time	10 minutes
Range of possible temp.	3 to 40°C
Step of temperature setting	step of 0.5°C
Minimal step of indication	0.1°C
Measurement accuracy	± 1°C
Back-up battery	NiMH 2.4 V/ > 100 hours
Output	relay, max. 16 A

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:
examined by:	stamp of shop:



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LEAD FREE
compliance with RoHS

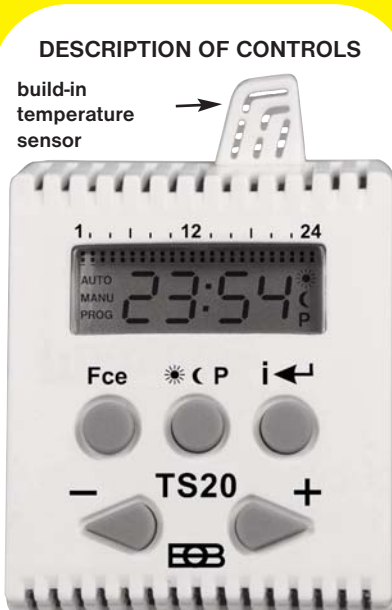
PAP



8 594012 221505

Temperature regulation of appliance

DESCRIPTION OF CONTROLS



build-in temperature sensor →

1 . . . 12 . . . 24

AUTO
MANU
PROG

23:54

Fce ☀/P i↵

- TS20 +

EBO

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

TS20 Thermo-switch socket

Is suitable for:

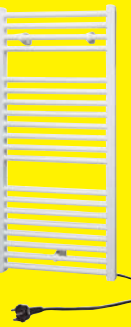
electrical heating plates

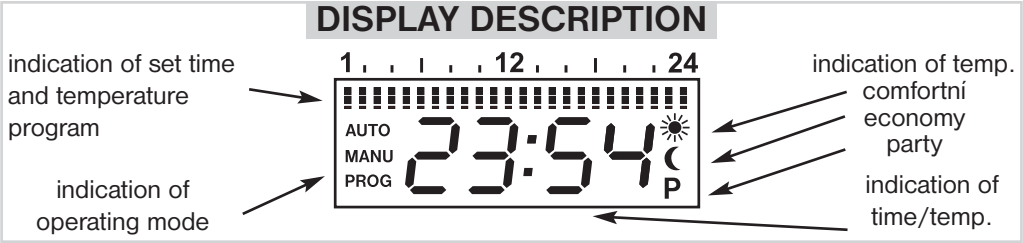


direct-heating bodies




electrical tubular radiators






OPERATING INSTRUCTIONS



After connection in 230V-socket is TS20 immediately ready for use. If sign dO: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).


IMPORTANT! If we disconnect TS20 from the network 230V, the TS20 comes to stand-by mode and only actual time will be shown on display (the colon symbol will not be flashing) and the buttons 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! The device you want to control, we connect through the simple insertion into the TS20 socket.

1. BASIC FUNCTIONS

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





- 1. AUTO** (*AUTOMAT*) : thermo-switch socket works according to program as set.
- 2. MANU** (*MANUAL*) : manual mode, set temperature by  or  buttons, the temperature should be constant up to next change of mode.
- 3. CL:O** (*CLOCK*) : setting of present day and time.
- 4. PA:r** (*PARAMETERS*) : setting of parameters (constants).
- 5. PROG** (*PROGRAMMIING*) : programming mode.
- 6. OF:F** (*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 - " CL:O " function

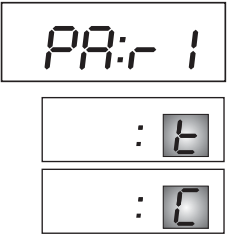
Press the **Fce** button, by pressing  select **CL:O** (CLOCK) function and confirm by . Indication of hours blinks on the display, use  buttons to set required data and confirm by  button. Use the same method for minutes and day (**d:1** represents Monday, **d:2** Tuesday etc. and **d:7** Sunday). After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






Setting of parameters (constants) - " PA:r "

PA:r1 display option

- Press the **Fce** button, by pressing  select **PA:r** (*PARAMETERS*) and confirm by .
- PA:r1** shows on the display, confirm by  and with using of  buttons select display options in basic mode:
 - t** information on present temperature
 - C** current time
- the selection is again confirmed by pressing .






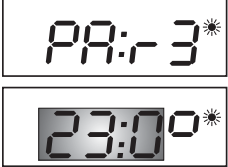
PA:r2 economic temperature (factory setting 17°C)

- PA:r2** is showed on the display
- confirm by  and by pressing  buttons set economy temperature, again confirm by pressing .






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

- PA:r3** is showed on the display
- confirm by  and by pressing  buttons set comfort temperature, again confirm by pressing .




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

- PA:r4** is showed on the display
- confirm by  and by pressing  buttons set party temperature, again confirm by pressing .






PA:r5 HYSTERESIS (factory setting 0,5°C)

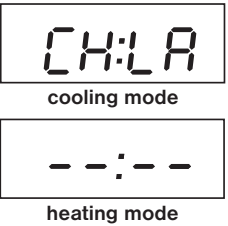
- PA:r5** is showed on the display
- confirm by  and by pressing  buttons set hysteresis in the range from 0.1°C to 6°C, again confirm by .




HYSTERESIS = temperature difference for switching on/off the appliance.

PA:r6 summer mode = switching on/off the air-conditioner (COOLING)




- PA:r6** is showed on the display, press .
- can be selected in summer, when we need to switch connected air-conditioner on at defined temperature. In this mode, the hysteresis will act in inverse way than in the mode for heating (if PA:r5=0.5 and required temperature is 23°C, the socket switches on at the temperature of 23.5°C)
- by pressing  select mode, then press  button.








PA:r9 number of firmware version/ reset of factory settings (see page 5)

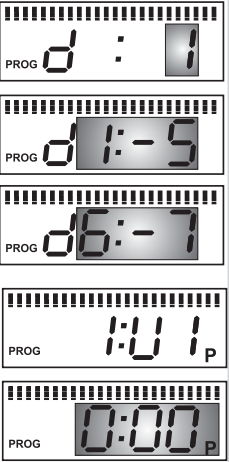
- PA:r9** is showed on the display
- this parameter is only of informative character a shows the number of firmware version
- press  or **Fce** to return to function selection.

PROG function program defining

- press **Fce** and by  buttons select **PROG** function and confirm by pressing .
- by pressing  select the day, which should be programmed according to following table

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 whole week
d:4 Thursday	TABLE: SELECTION OF DAY TO BE PROGRAMMED	








- when the day is selected, press  and symbol **1:U1** is displayed, so that you can set the first time interval
- by pressing  set the time of the first change (min. step: 10min.)
- by repeated pressing of   assign required temperature to this time
- again confirm by pressing  and the display automatically shows symbol **1:U2** for the second time interval in the first day.
- this procedure should be repeated until all time intervals (max.6) are set and afterwards leave the programming mode by pressing **Fce**.
- select **AUTO** function and the socket starts to function according to defined program.

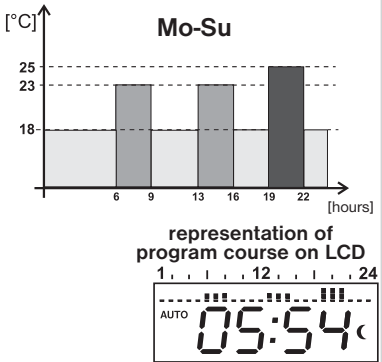


Indication of socket condition:


symbol AUTO(or MANU) on the display IS ALIGHT = connected appliance is SWITCHED ON
symbol AUTO(or MANU) on the display FLASHES = connected appliance is SWITCHED OFF

EXAMPLE definition of weekly program

- Set  for 18°C (PA:r2)
- Set  for 23°C (PA:r3)
- Set **P** for 25°C (PA:r4)
- Select programming of whole week **d1:7** (Prog)
- Assign the time of 6:00 and  temperature to **17:U1**
- Assign the time of 9:00 and  temperature to **17:U2**
- Assign the time of 13:00 and  temperature to **17:U3**
- Assign the time of 16:00 and  temperature to **17:U4**
- Assign the time of 19:00 and **P** temperature to **17:U5**
- Assign the time of 22:00 and  temperature to **17:U6**
- Leave the programming mode by pressing **Fce** and select **AUTO** func.



Short-term change of temperature in AUTO mode

By simple pressing of  in **AUTO** mode it is possible to make a short-term change of required temperature. The socket will maintain this temperature up to next temperature change as defined in the program.