

# MANUAL

## DOMOTESTA RDO100A

### Operation instructions

#### Electronic heating controller:

The regulator is suitable for the automatic adaption of water temperature in the heating system according to climatic conditions, also for heating needs and on time with the program.

Heating is stopped automatically as soon as the external temperature allows it. Heating comes back automatically as soon as the temperature goes down.

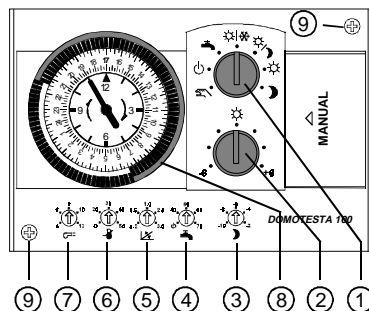
#### Apparatus data:

Power supply: 230VAC  
+10-15%; 50Hz

Consumption: 5VA  
Relais contact: 4(4)A 250V~  
per clamp max. 6(6)A 250V~  
Approval: EN60730  
manner of operation Typ 1C  
protection class II  
protection degree IP40 (Front)  
pollution degree Normal  
Ambient temperature 0...50°C  
Ambient humidity Classe F according DIN40040

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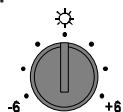
Specifications are subject to change



#### Control elements (knobs)

- 1 Program switch
- 2 Set value room temp. "normal"
- 3 Set value room temp. "reduced"
- 4 Set value domest hot water (d.h.s)
- 5 Adjustment heating curve (slope)
- 6 Adjustment minimum boiler temp.
- 7 Adjustment differential of burner
- (Only RDO131A: If a boiler heating circuit, and a mixing valve heating circuit are used -> slope of the boiler circuit)
- 8 Clock
- 9 fixing screw

#### Room temperature "normal" (2)



This knob is used to set room temperature "normal" (day) at 20°C ±6°C. With a remote control (RFB41x): The correction of the room temperature on the remote control changes the value for the heating controller.

#### Room temperature "reduced" (3)



This knob is used to set room temperature "reduced" (night) -2...-10°C. This temperature is referenced to the actual value of the room temperature "normal".

#### Program switch (1)



Hand command and chimney sweep function: burner and pump are in continuous function. The mixing valve is not regulated. Domestic hot water-loading is on (emergency function).

Standby: heating circuit and domestic hot water circuit off (frost protection is on).

Summer: heating circuit off (frost protection is on). Domestic hot water circuit is permanently on\*.

Heating according to clock program (temperature "normal"/ "frost protection"). Domestic hot water circuit is permanently on\*. In case of risk of frost, chose the function .

Heating according to clock program (temperature "normal"/ "reduced"). Domestic hot water circuit is permanently on\*.

Normal heating permanently on (temperature "normal"). Clock program off. Domestic hot water circuit is permanently on\*.

Night heating permanently on (temperature "reduced"). Clock program off. Domestic hot water circuit is permanently on\*.

\* If equipped with (4) and domestic hot water is not switched off.

#### Domestic hot water temperature (4)



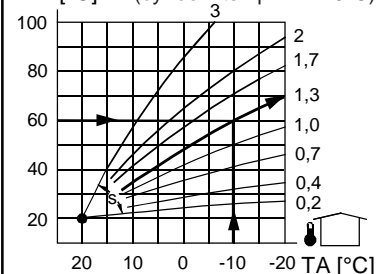
This knob is used to set domestic hot water temperature (In case a heat sensor is used).

Position "♠": Domestic hot water off, frost protection is on.

**Watch out:** No frost protection if a hot water thermostat is used. (Not possible with RDO131A!)

#### Adjustment of the heating curve

TV [°C] (by room temp. TR=20°C)



With the diagram "heating curves" the resulting flow temperature can be defined at a decided outside temperature. (The heating curves are drawn without influence of the room temperature). If the slope (S) of the heating curve is adjusted correct, the room temperature is regulated constant over the whole heating periode.

Without mixing valve:  
The flow temperature (TV) of the heating curve is equal to the boiler temperature (TK).

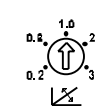
#### Example of basic set up for slope (S)

If the lowest temperature recorded locally is approximately -10°C and the maximum flow temperature is 60°C, the heating slope (curve) to choose is 1,3 as shown on the diagram.

In case the flow temperature (at the outside temperature of -10°C) is not known, the value shown below should be used:

Heating by radiators: slope 1,3  
Floor-heating: slope 0,7

#### Slope of the heating curve (5)



The heating controller use the value of the slope for the calculation of the (boiler) departure temperature. Each adjustment of the set up should be made only 1-2 days after the last intervention (in order to allow stabilisation of heating system).

**Example:** Changing of the heating curve by the same room temperature.

Outside temperature		correction of heating slope (S)
+5°C	-10°C	
Room-temperature correct	Room-temperature to high	value ca. -10% reduced
Room-temperature correct	Room-temperature to low	value ca. +10% increased

#### Set up values (6), (7) for technicians only

##### Switching differential burner (7)



Adjustment of the differential for fuel burner or gas burner. (The numbers of the start up periods can be influenced / optimized)

Only RDO131A:

If a boiler heating circuit and a mixing valve heating circuit are used: this knob adjusts the slope of the boiler heating circuit. (Switching differential fixed 8K)

The same scale is used as by knob "5".  
4 ≙ 0.2    8 ≙ 1.0    12 ≙ 3.0  
6 ≙ 0.6    10 ≙ 2.0

The slope of the boiler heating circuit (S0) has to be greater than the slope of the mixing valve heating circuit (S).

### Limit of minimum temperature ⑥

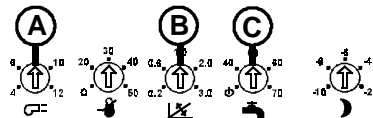


Setting range:  
20..50°C or  
20..65°C

This boiler protection function is activated by adjustment of the low limit temperature of the boiler (boiler temperature or boiler return temperature).

Position "O": boiler start up protection and hot water discharge protection off.

### Only if lamps are installed



### Indication of operation signals

Lamp (LED) is shining, if:

- A Burner on
- B Heating circuit pump on
- C Domestic hot water pump on

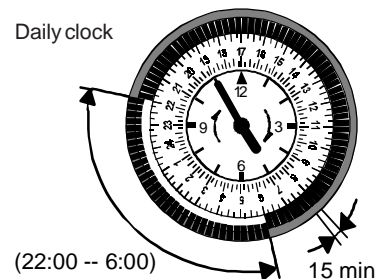
### Indication of disturbance signals

The following sensor disturbances can be indicated by a flashing lamp (LED):

- A Boiler sensor defect or Return sensor defect
- B Outside sensor defect or Room sensor defect or Flow sensor defect
- C Only RDO131A: Hot water sensor defect (no domestic hot water thermostat can be used.)

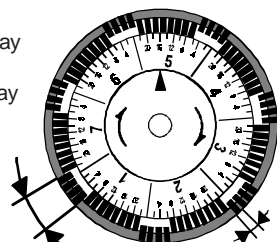
### Analog clock (8)

Daily clock



### Weekly clock

1=Monday  
7=Sunday



(22:00 -- 6:00)

### Time setting

#### Daily clock

Turn the minute hand **only** in the clockwise direction, until the correct day-time is set.

**Watch out:** 0-12h or 12-24h

#### Weekly clock

Turn the dial **only** in the clockwise direction, until the correct week-day and the correct time is set.  
(1=monday; 7=sunday)

### Time-table adjustment:

Black segments pulled outside:

- Room temperature "reduced" or room temperature "frost protection" is active.  
(Night; heating off)

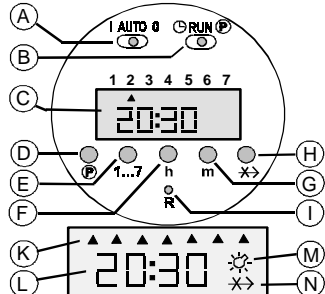
Black segments pushed inside:

- Room temperature "normal" is active.  
(Day; heating on)

Daily clock: 1 segment=15min

Weekly clock: 1 segment=2h

### Digital clock (8)



- A Mode switch, clock
- B Programming switch
- C Display (field)
- D Switching point key
- E Weekday key
- F Hours key
- G Minutes key
- H Switch-over key ON/OFF
- I Reset key
- K Display weekday
- L Display time
- M Display switch clock ON
- N Display program overlays

### A : Mode switch for switch clock

(initial operation=AUTO)

- ☑ I : Switch clock always ON
- ☑ AUTO: Fully automatic operation as per set switching times
- ☑ 0 : Switch clock always OFF

### B : Programming switch

(initial operation=RUN)

- ☑ ☑ : Setting time and weekday
- ☑ RUN: Switch clock operation as per mode switch for clock
- ☑ ☑ : Setting the switch clock

### H : Switch-over of switching point ON/OFF

The switch-over key permits to invert the effect of the switching point (switch clock ☑ON->OFF/OFF->☑ON). This switch-over is effective until the following switching point.

- ☑ ✂ : Switch the switch clock ON/OFF until the next switching point
- ✂ : Display ✂ lit->switch clock function inverted
- ☑ : Display switch clock ON

### B ☑ : Setting the time and day

Clock time and day of the week must be set correctly!

- ☑ ☑ : Position of programming switch
- ☑ 1..7 : Setting the weekday  
1234567: 1=Monday; 7=Sunday
- ▲ : Triangle moves
- ☑ h : Hours setting, increasing  
!-> Press long -> rapid motion
- ☑ m : Minutes setting, increasing
- ☑ RUN: Position of programming switch
- :flashes : Clock runs; time is displayed

### B ☑ : Setting the switch clock

8 pairs of switching points (1-2;...;15-16) are fully settable. For each pair (e.g. 1=switch-on time, 2=switch-off time) the weekday (or block=several days) must be set identical!

- ☑ ☑ : Programming the switch clock
- ☑ ☑ : Select the switching point  
1,3,5,...,15: Switch-on times  
2,4,6,...,16: switch-off times
- ☑ 1-7 : Select weekday/block  
1234567: 1=Monday; 7=Sunday

- ▲ : Individual days 1 to 7
- ▲▲▲▲ : Block 1-5 (MO-FR)
- ▲▲ : Block 6-7 (SA-SU)
- ▲▲▲▲▲ : Block 1-6 (MO-SA)
- ▲▲▲▲▲▲ : Block 1-7 (whole week)
- ☑ h : Setting the hours
- ☑ m : Setting the minutes

### Altering the time:

- 07:00 1 : ☑ : From 7:00 switch clock ON
- 23:00 2 : ☑ : Select the switching point
- 23:00 2 : ☑ : From 23:00 switch clock OFF
- ☑ h/m : Set the desired time

13.30 2 : From 13:30 switch clock OFF

### Adding switching points:

- ☑ ☑ : Select a free switching point
- 00:00 5 : Time flashes
- ☑ 1-7 : Select weekday/block
- ▲▲▲▲ : Block 1-5 (MO-FR)
- ☑ h/m : Set the desired time
- 16:00 5 : ☑ : From 16.00 switch clock ON
- ☑ ☑ : Select next switching point
- ☑ 1-7 : Block 1-5 (same as sw. point 5)
- ☑ h/m : Set the desired time
- 22:30 6 : From 22:30 switch clock OFF

### Making switching points ineffective:

Set the time of the pair or switching points you don't need to 00:00.

### Delivery state of the switch clock:

1-7 (whole week)  
6:00 1☑ - 22:00 2

### I : Clearing all settings

Time, weekday and switch clock are cleared (set to 0).  
☑ R : Press reset key with tip of ball-point pen.

### Intervention in case of break down

Examine the following points before calling your technician.

#### Check:

- Is the controller program switch (1) in the correct position ?
- Is the time (and the week-day) correct set on the clock ?
- Are the positions of the control knobs correct (see basic values of the heating system)
- Is the remote control RFB41x (if present) in normal working position ?
- Is the disturbance signal on the burner (boiler) shining? (-> Press the reset knob on the burner)
- Are all service switches on?
- Is the circulation pump working? (Following the conditions of temperature, the pump can be stopped by the automatic day heating limit)
- Are all electrical fuses on heating system in good condition? (main switch?)

If you do not succeed in tracing and eliminating the cause of the disturbance, **inform your heating expert!**

Emergency operation if necessary:

If the heating generator and pump are still working, place the program switch (1) on position "☑". Adapt the boiler (-thermostat) to the required flow temperature. Open the mixing valve as far as necessary by hand (with mixer).

### Basic values of the heating system

- Minimum outside temperature TA \_\_\_\_ °C
- Flow temperature TV \_\_\_\_ °C
- Slope heating curve flow (S) ☑ \_\_\_\_
- Room temperature "normal" ☑ \_\_\_\_ °C
- Room temperature "reduced" ☑ \_\_\_\_ °C
- Switching differential (SD1) ☑ \_\_\_\_
- By RDO131A perhaps:  
slope heating curve boiler (S0) ☑ \_\_\_\_
- Minimum boiler temperature ☑ \_\_\_\_ °C
- Domestic hot water temp. ☑ \_\_\_\_ °C