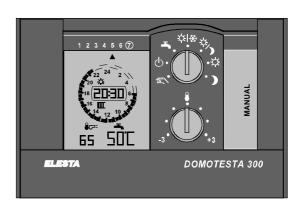
## Heating controller RDO3x3A



#### Installation

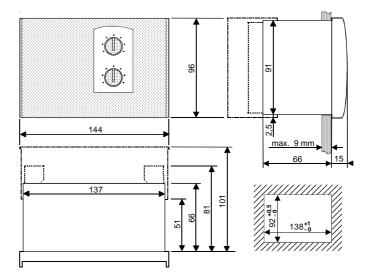
RDO3x3A000



#### **Applications**

This controller ist for the controlling of boiler, boiler cascade and district heating. Energizing of the 1, 2 stage modular burner (3-point, 0..10V) as well as the 2 integrate mixing circuits (1 in RDO353) and the domestic hot water are integrated in the controller.

#### **Dimensions**



## Mounting

- Flush mounting

- Wall mounting

- Rail mounting for DIN46277

Base plate and extension of terminal compartment

Switch panel cut-out 138x92mm for category 144x96mm,

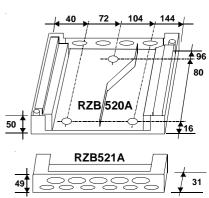
Mounting depth with connectors: 81mm Mounting depth with base plate: 101mm. Slide device into panel cut-out and secure it with fastening bolts. Wire with connectors for AMP male connectors RZB500A, screw able connectors RZB510A (or base plate RZB520A).

Mount base plate RZB520A and wire it. Plug device on and fix it.

Screw rail clamps RZB106A for DIN rail 35mm onto base plate RZB520A. Snap base plate onto DIN rail and wire it. Plug device on and fix it.

**RZB520A:** Base plate with 2 side walls (for glands 4xPG9) with screw able connectors RZB510A in position.

**RZB521A:** Extension kit for terminal compartment. Fits to top or bottom of base plate RZB520A, for glands 6xPG9 and 5xPG11, with slide covers.



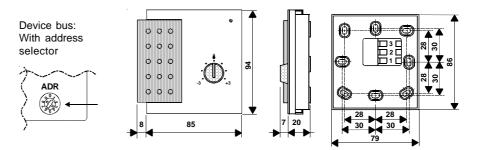
## **DOMOTESTA**

## Heating controller RDO3x3A



Remote control unit and room temperature sensors

For residential area only. Not to be exposed to sun or other heat sources (chimney, radiators, draughts, TV-set, lamps); not behind furniture or curtains; appr. 1.2-1.5m height; seal installation conduit. Use breakthroughs in housing base for drilling the fixing points.



The remote control units are connected to the device bus. The address of the remote control unit must be set indentical to the address of the corresponding mix-heating circuit (factory setting: adress=1).

Total length of the devices bus max. 200m.

Cable 2x1mm² (flex type for max. length), unshielded, separated from mains lines. Minimize use of conduitor connector-boxes.

Remote control unit RFB510A:

Remote control unit (active, connected to device bus) with temperature sensor: Program selection by sliding switch, temperature setpoint adjustment, status display (LED)

Remote control unit RFB520A:

Remote control unit (active, connected to device bus) with temperature sensor: Program selection by single key, temperature setpoint adjustment, status desplay (LED)

Comfort remote control RFB540A:

Remote control unit (active, connected to device bus) with temperature sensor: Program selection, LCD-indication

Room temperature sensor RFT510A:

Active room temperature sensor without control elements

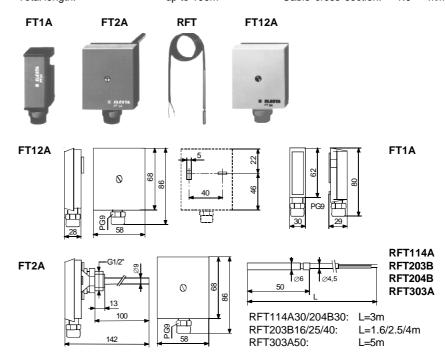
Room temperature sensor RFT410A:

Passive room temperature sensor (NTC 10kΩ; at 25°C) without control elements

## Temperature sensors

Use flex cable 2x1mm², unshielded, separated from mains lines. Max. length for passive sensors 100 m. Minimize use of conduit- or connector boxes.

Total length: up to 25m Cable cross section: 0.25 mm²
Total length: up to 50m Cable cross section: 0.5 mm²
Total length: up to 100m Cable cross section: 1.0 mm²





### **DOMOTESTA**

## Heating controller RDO3x3A



Outdoor sensor FT12A: Mount at 2/3 of building height, not above window or unterneath roof protrusions, (NTC 10kΩ; by 25°C)

preferably on north or north-west side. Protect from direct sun (use sun protection

RZB139A). Measuring range: -30..40°C

Clamp-on sensor FT1A: Mount in the flow immediately behind the pump or, if pump in return, approximately 1.5m (PTC 1k $\Omega$ ; by 25°C)

behind the mixing valve. Mount with clamping band ZB126A on blank pipe, no thermal

conductive paste necessary. Measuring range: -30..120°C

Immersion sensor FT2A: Mount in the flow immediately behind the pump or, if pump in return, approximately. 1.5m

behind the mixing valve. Mount in a pipe bend pointed towards the flow.

Measuring range: -30..120°C Protective tube: 100mm for PN10

Cable sensor RFT203B: For storage and hot water temperature

(PTC 1kΩ; by 25°C)

(PTC 1k $\Omega$ ; by 25°C) Mounting: With insertion pod (mounting depth min. 51mm). Measuring range: -30..105°C

-RFT203B16 : L=1.6m -RFT203B25 : L=2.5m

- RFT203B40 : L=4m

Cable sensor RFT303A: For solar temperature in collector.

(PT 1000 $\Omega$ ; by 0°C) Mounting: With insertion pod (mounting depth min. 51mm).

Measuring range: -30..240°C

- RFT303A20 : L=2m - RFT303A50 : L=5m

Accessories Modules and accessories to device on D-bus

Note: (terminals 21 and 22)

Only 1 master (RDO3xxA) and max. 15 slaves may be connected to the D-Bus

The connections to the D-Bus are pole-reversible.

Heating circuit module RZM510A004: Heating circuit module; max. 6 RZM510 (7 zones in all)

DHW module RZM515A000: For additional DHW module; max. 3 RZM515 (4 DHW zones in all)

Boiler cascade module RZM530A000: Boiler cascade module; max. 3 RZM530 (4 boiler circuits in all)

Radio clock module RZM550A000: Radio clock module, connected via device bus

Relay module external (RM) RY211012: Relay RY211012 for potential-free connection with clip RY16046 and socket RY78626

Optocoupler module (OM) RZB001A: For galvanic separation:

230VAC-connectors: low voltage connections: 1 red 3 grey (5V) (L) 2 black (N) 4 black (GND)

Connection of up to four digital input signals (230VAC) to one analog input for (PTC or NTC) I/O-module (disturbance module) RZB540A:

at the RDO. Offers one additional relay output controlled by a PWM output of RDO.

Interface converter cable RZB008A: Interface converter cable, connecting controller to a PC.

Bus interface RZB565A: RS232 connection to PC (master) via serial link cable (zero modem) max. 15m. (Software

(plugs into back of controller RDO3xxA) RDO-com for setup and monitoring of connected controllers.) Terminal switch at both ends

set to position (RSC). No data transfer between the controllers.

Bus Interface RZB568A: Connection of max. 63 controllers (RDO3xxA) to REN-Bus or Modbus via cable.

(plugs into back of controller RDO3xxA) Setup and monitoring of connected controllers via communication software. No data transfer

between the controllers.

Conditions of environs -20..+60 °C Temperature: storage

0..50 °C operation

Humidity class F after DIN40040

More informations please find in the manual and the data sheets.



# **DOMOTESTA**





#### Occupation of the terminal

Terminal number	Symbols designat	Description ion	Pre-occupation depending on function
A: 1 2, 5, 12, 13 3 4 6	N L Bh1 Bh2 St. 2 on	Inputs and outputs  Neutral Phase Counter of operating hours; dig. input (configurable) Counter of operating hours; dig. input (configurable) Relay contact (NO)	
7 8 9 10 11 14	St. 2 off  ○ KK  ○ MK1  □ MK1  □ MK1  ■ UMK1  St. 1 on  ○ WW	Relay contact (NO) Relay contact (NC) Relay contact (NC) Relay contact (NO)	Mix-circuit pump 1 Mixing valve 1 OPEN Mixing valve 1 CLOSE Energy producer stage 1 ON Hot water charging pump/valve
RDO383A oni 43, 45 44 42 41	y L Q3 Q2 Q1	Phase Relay contact (NC) Relay contact (NO) Relay contact (NO)	Mix-circuit pump 2 Mixing valve 2 OPEN Mixing valve 2 CLOSE
B: 21 22 23 24 25 26 27 28 29 30 31 32	Measuring D-Bus D-Bus PWM2 PWM1 GND Ba Br Bk Bv Brü Bres B w w	pand control inputs  Device bus for remote control unit, additional devices,  Device bus for remote control unit, additional devices,  Output for ext. relay  Output for ext. relay or speed controlled actuator  Common ground  Temperature sensor NTC  Temperature sensor NTC; multiple switch Ext.9.19.4  Temperature sensor PTC/PT1000; I/O-module (RZB540A)  Temperature sensor PTC/PT1000  Temperature sensor PTC/PT1000  Temperature sensor PTC/PT1000  Temperature sensor PTC/PT1000	Hot water temperature sensor (fix)
32 33 34 35	B w w Bag Ext.2 Ext.1	Temperature sensor PTC/PT1000 Temperature sensor PTC/PT1000; dig. input (config.) Temperature sensor PTC/PT1000; dig. input (config.); I/O-module Temperature sensor PTC/PT1000; dig. input (config.)	Hot water temperature sensor (fix) (RZB540A)

Wire according to application diagram or wiring diagram. Observe local regulations regarding authorised personal.

**Terminals 1 to 15** are for **mains voltage 230V**. The prints and relay contacts are not short-circuit-proofed. Operation tests of external loads must be carried out with unplugged controller. In case of high inductive loads, consumers (contactors, solenoid valves, etc.) need parallel RC modules (e.g. RIFA RC module 250VAC, 0.1uF (X2), 470hm).

Connection diagram according to the applications

#### Terminals 21 to 35 are for low voltage circuits.

For external inputs on terminals 26..35 use gold-plated, potential-free contacts only.

# Example of connection controller RDO383A

