

3-point control

## Electronic temperature control

RAKE713...  
RAME743...

in protective housing, for mounting on immersion tubes or pipes



Registered under DM/066 622

**Electronic temperature control with 3-point output with adjustable proportional range, neutral zone and mixing valve operating time**

### Application

Electronic temperature control for applications in boilers and on heating-, ventilation- and air conditioning equipment. The device is mounted on an immersion tube or on pipes.

### Features

- Status indication by LED for power supply and control status
- The nominal value is not sensitive to temperature changes on the housing (max.  $\pm 1$  K).
- Two, on the contact side reciprocally locked, relays
- Time factor for the sensing element acc. EN 14597

### Type summary

| Type          | Order-no. | Range , adjustable[°C]    | Immersion length   |
|---------------|-----------|---------------------------|--------------------|
| RAKE713.0110M | 011-6501  | 0 ... 60°C / 60 ... 120°C | 100mm              |
| RAKE713.0111M | 011-6502  | 0 ... 60°C / 60 ... 120°C | 150mm              |
| RAKE713.0112M | 011-6503  | 0 ... 60°C / 60 ... 120°C | 200mm              |
| RAKE713.0113M | 011-6504  | 0 ... 60°C / 60 ... 120°C | 280mm              |
| RAKE713.0114M | 011-6505  | 0 ... 60°C / 60 ... 120°C | 450mm              |
| RAKE713.0115M | 011-6506  | 0 ... 60°C / 60 ... 120°C | 600mm              |
| RAME743.011M  | 011-6510  | 0 ... 60°C / 60 ... 120°C | with clamping band |

### Technical data

|                 |  |  |
|-----------------|--|--|
| Power supply    | Voltage<br>Power consumption<br>Low voltage part   | 230 V~ -15...+10 %, 50 Hz<br>approx. 3 VA<br>Protection isolated   |
| Switching power | Nominal voltage range<br><br>Nominal current range $I (I_M)$<br>Service life at nominal load   | 24...250 V~<br>20...300 VDC<br>0.05...4(4) A $\cos \varphi \geq 0,6$<br>min. 100'000 operations  |
| Settings        | Setting range set temperature<br>DIP switch set temperature<br>proportional range Xp<br>neutral zone Nz<br>mixing valve operating time | Double scale 0...60 °C / 60...120 °C<br>DIP1 Off: 0...60 °C / DIP1 On: 60...120 °C<br>DIP2 Off: $\pm 20$ K / DIP2 On: $\pm 10$ K<br>DIP3 Off: $\pm 3$ K / DIP3 On: $\pm 1.5$ K<br>DIP4 Off: $\geq 30$ s / DIP4 On: $\geq 60$ s |
| Sensor          | Sensor type<br>Measuring range   | Pt1000 class B (EN 60751)<br>-20...+140 °C   |

|                    |  |   |
|--------------------|--|---|
| Calibration        | Calibration tolerance<br>Time factor in water / in oil   | $\pm 1 \text{ K}$<br><45 s / <60 s  |
| Ambient conditions | Ambient temperature on housing<br>Max. sensing element temperature<br>Ambient temperature for storage and transport  | 0 ... 50 °C (T50)<br>200 °C<br>-20...+60 °C   |
| Standards          | CE-conformity<br>EMC noise emission<br>EMC noise immunity<br>Product standard<br>Operation mode<br>Protection class  | Guide line 89/336/EWG, 93/68/EWG<br>EN 50081-1 / EN 55022B<br>EN 50082-2 / EN 60730<br>EN 60730-1/-2/-9<br>Type 1C (EN 60730-1/-2/-9)<br>II acc. EN 60730   |
| Specification      | Protection mode of housing<br>Housing socket<br><br>Housing cover<br><br>Length R of immersion tube<br>Electrical connection<br>Cable bushing<br>Weight without packaging and immersion tube | IP66 acc. EN 60529<br>Polyamide reinforced (PA),<br>temperature stability up to 120 °C<br>Polycarbonate (PC),<br>temperature stability up to 120 °C<br>100, 150, 200, 280, 450 or 600 mm<br>Screw terminals<br>M20 and M16<br>approx. 255 gr. |

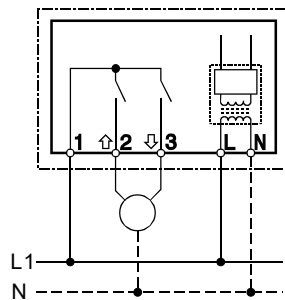
### Fitting notes

See the mounting instructions inside the packaging.

The required immersion tube material depends on the installation (medium, tank material etc.) and must be specified by the user.

To comply with the time factor requirements acc. EN 14597, immersion tubes must be conform to drawing H 1 7111 3459 (see also data sheet "Immersion tubes 1130").

### Wiring diagram / status indicators



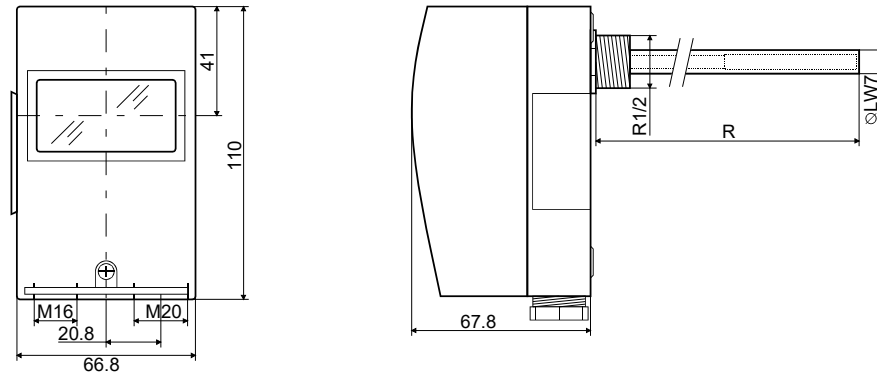
Supply status

yellow LED

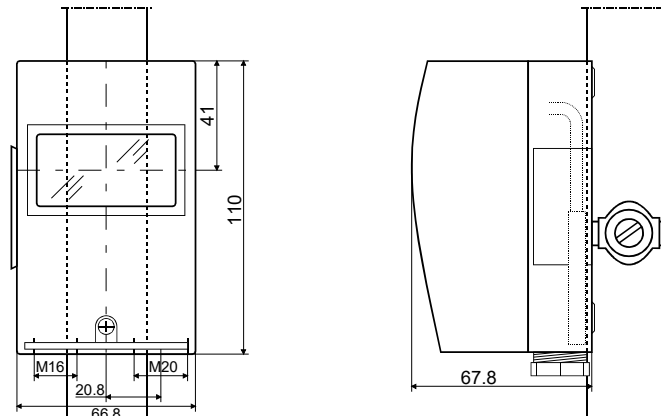
Relays status double-LED

heating red LED  
cooling green LED

### Dimension drawing RAKE



### Dimension drawing RAME



Socket 005-1054  
Cover 005-0551.3