Data sheet

Thermostatic sensors type RA 2000

027

Keymark certified
according to EN215

| RA 2910 | RA 2912 | RA 2920 | RA 5060 |
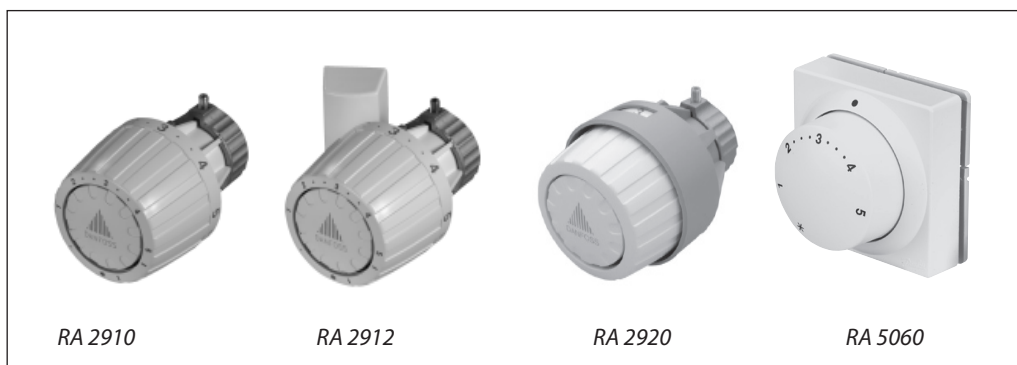
Application

The RA series is a comprehensive programme of radiator thermostats which covers all central and district heating systems.
RA is a self-actuating proportional controller with a small P-band.

The RA sensor range includes:

• RA 2910: built-in sensor with frost protection, temperature range 5-26°C, facilities for limiting and locking the temperature set-point.
RA 2914 is a low temperature range model (5-22°C)

• RA 2912: remote sensor with frost protection, temperature range 5-26°C, facilities for limiting and locking the temperature set-point.
RA 2916 is a low temperature range model (5-22°C)

• RA 2920: Tamperproof model with built-in sensor, frost protection, temperature range 5-26°C, facilities for limiting and locking the temperature set-point.

• RA 2922: Tamperproof model with remote sensor, frost protection, temperature range 5-26°C, facilities for limiting and locking the temperature set-point.

RA 2922 is equipped with 2 m of ultra-thin capillary tube, which is coiled up within the remote sensor housing. After sensor mounting capillary tube is pulled out to the required length.

RA 5060 Series: remote temperature adjuster with frost protection. Temperature range 8-28°C, facilities for limiting and locking the temperature set-point.
 - RA 5062: length of capillary tube 2 m
 - RA 5065: length of capillary tube 5 m
 - RA 5068: length of capillary tube 8 m

A clamping ring and an Allen screw establishes a simple but strong connection between sensor and valve body. Anti-theft protection prevents the sensor from unauthorised removal. (See accessories).

All thermostatic sensors can be combined with all RA 2000 valve bodies.

The technical data for RA valve bodies in combination with RA sensors meet Euronorm EN 215-1.

Ordering and specifications

RA thermostatic sensors

Type	Code no.	Model	Cap. tube	Temp. range [2]
RA 2910	**013G2910**	Standard , built-in sensor	-	5-26 °C
RA 2914	**013G2914**	Standard , built-in sensor, low temperature range	-	5-22 °C
RA 2912	**013G2912**	Standard, remote sensor	0-2 m [1]	5-26 °C
RA 2916	**013G2916**	Standard, remote sensor, low temperature range	0-2 m [1]	5-22 °C
RA 2920	**013G2920**	Tamperproof, built-in sensor	-	5-26 °C
RA 2922	**013G2922**	Tamperproof, remote sensor	0-2 m [1]	5-26 °C
RA 5062	**013G5062**	Remote temperature adjuster	2 m	8-28 °C
RA 5065	**013G5065**	Remote temperature adjuster	5 m	8-28 °C
RA 5068	**013G5068**	Remote temperature adjuster	8 m	8-28 °C

[1] The remote sensor is delivered with all of the capillary tube coiled up within the sensor. When mounting the sensor, only the capillary tube required is uncoiled.
[2] Temperatures stated for Xp = 2K, i.e. the valve is closed at 2 °C higher room temperature.

Accessories

Product	Code no.
Manual setting knob for RA valves, plastic	**013G5002**
Limiting pins for tamperproof sensors (30 pcs.)	**013G1215**
Limiting pins for built-in, remote and service sensors (30 pcs.)	**013G1237**
Anti-theft plugs (20 pcs.)	**013G1232**
Scale cover for RA 2920/22 (20 pcs.)	**013G1672**
Toolkit, Allen key & locking pin tool	**013G1236**
Adaptor for RA 5062/65/68 to RAVL valves	**013G5192**
Adaptor for RA 5062/65/68 to RAV valves	**013G5193**
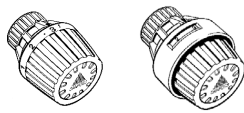
Setting the temperature

The required room temperature is set by turning the setting dial. The temperature scales show the correlation between scale values and the room temperature. The temperature values stated are for guidance only as the obtained room temperature will often be influenced by installation conditions.

The temperature scales are stated according to European standards at $X_p = 2°C$. This means that the radiator thermostats close at a sensor temperature which is 2°C higher than stated on the temperature scales.

Locking and limitation of the temperature set-point of RA sensors are carried out using the limiter pins placed at the back of the sensor.

Locking and max/min limitation of the remote temperature adjuster type RA 5060 are carried out by the limiter tabs. The limiter tabs will be covered by the setting dial.
The procedure is described in the instruction.

* = Frost protection setting

7	9,5	14	17	20	23	26	28°C

I * 1 2 • • 3 • • 4 5 I

5	7,5	13	15	18	21	24	26°C

RA 2910/12   RA 2920/22

✻ = Frost protection setting

7	9,5	14	17	20	22°C

I ✻ 1 2 • • 3 •

5	7,5	13	15	18	20°C

RA 2914/16

10	14	18	22	26	30°C

✻ 1 2 • • • 3 • • • 4 5

8	12	16	20	24	28°C

✻ = Frost protection setting

RA 5062, RA 5065, RA 5068

Mounting

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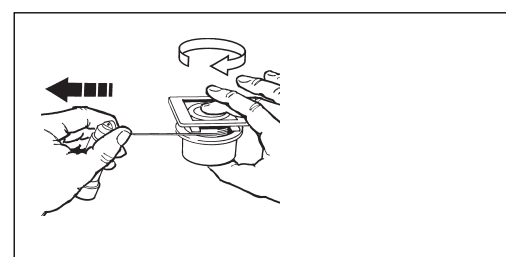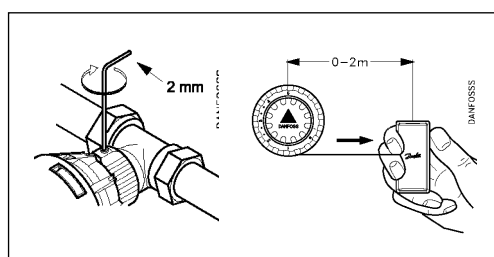
Choose the right sensor

The thermostatic sensor should be selected on the basis of the following criteria:

The sensor must always be able to register the temperature of the ambient air.

Radiator thermostats with built-in sensors These should always be fitted horizontally so that the ambient air can pass freely over the sensor. Danfoss does not recommend the fitting of a built-in sensor in vertical position because heat effect from the valve body and possibly surface pipes will cause incorrect operation of the thermostat.

Radiator thermostats with remote sensor
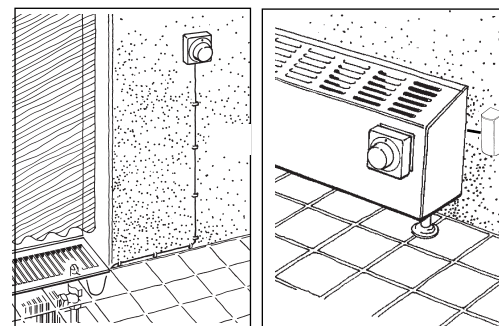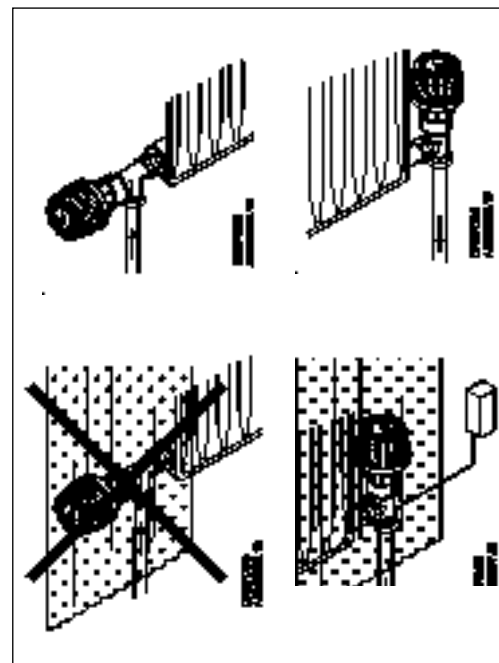These should be used when:
- Curtains cover the sensor
- Sensor is affected by surface pipes
- Sensor is affected by draught
- It is necessary to mount the sensor in vertical position if there are adjacent obstructions.
The remote sensor must be mounted on the wall, away from curtains, or on the skirting board beneath the radiator if free of surface pipes. All remote sensors are now supplied with ultra-thin capillary tube. Simply pull out the length required (2 m maximum) and fix
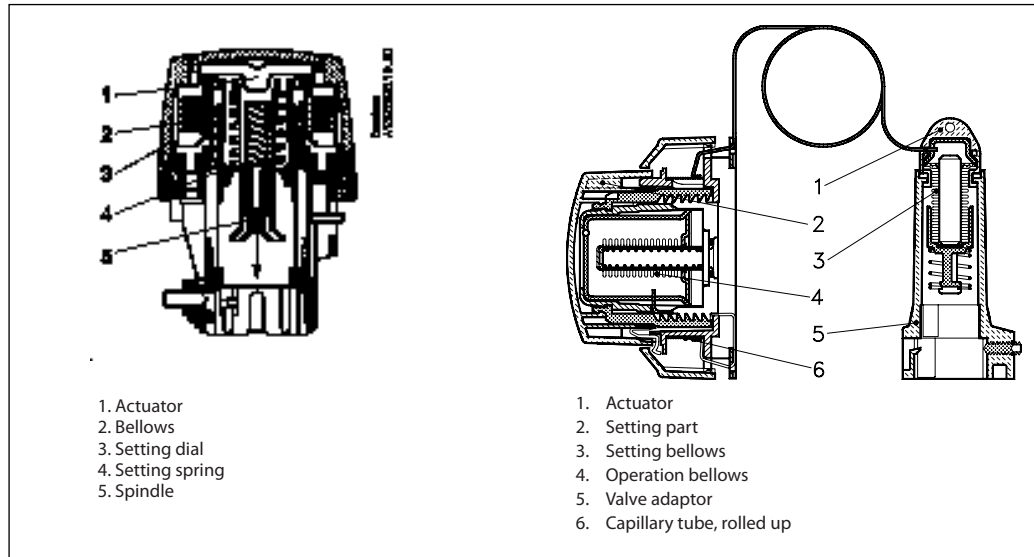using clips provided or special tacker gun.

Radiator valves with remote adjustment
The remote temperature adjuster is used on radiators or convectors which are hidden in a cabinet or in other ways inaccessible to the user. In addition, the room temperature adjuster is used in integral sockets and installation ducts.
The sensor and the setting part of a remote setting unit are integrated.
The remote temperature adjuster is placed in an easily accessible place where the ambient air can at the same time pass freely over the sensor. This is ideal where the valve is inaccessible to the user.
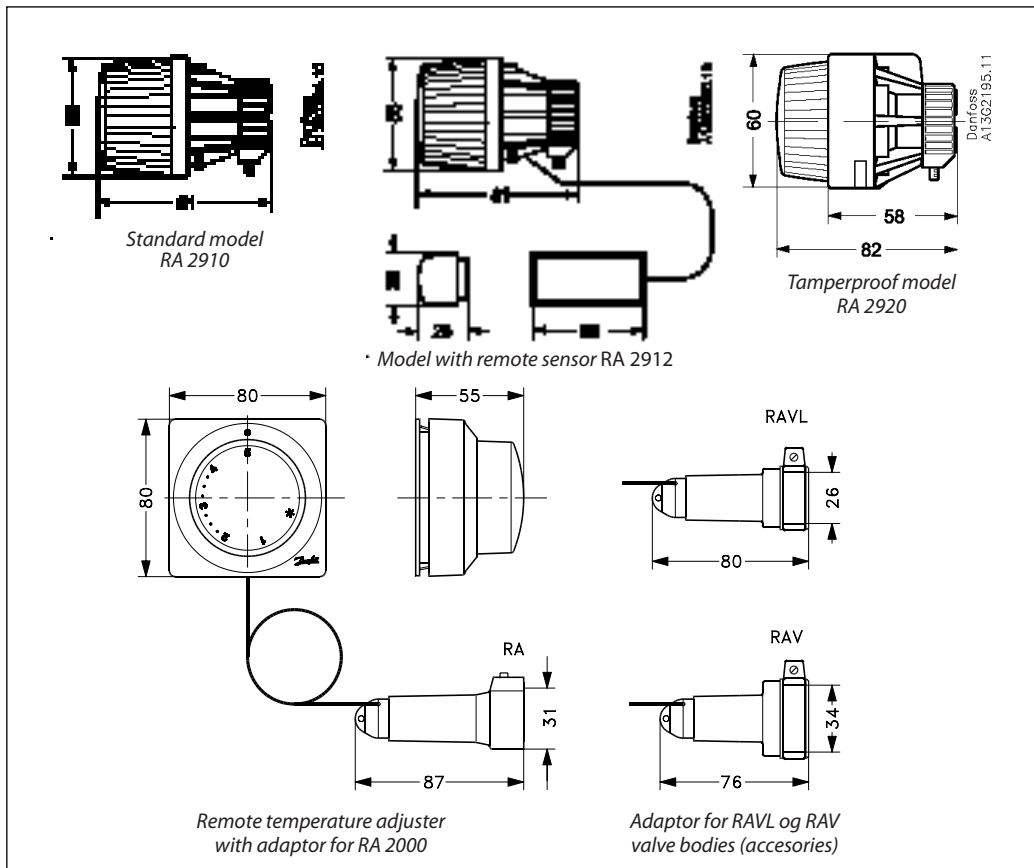The temperature adjuster should be mounted between 1.2 and 1.6 m above the floor.

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Sensor operation principle

1. Actuator
2. Bellows
3. Setting dial
4. Setting spring
5. Spindle

1. Actuator
2. Setting part
3. Setting bellows
4. Operation bellows
5. Valve adaptor
6. Capillary tube, rolled up

Max. ambient sensor temperature: 60°C.

Dimensions

Standard model
RA 2910

Model with remote sensor RA 2912

Tamperproof model
RA 2920

RAVL

RA

RAV

Remote temperature adjuster
with adaptor for RA 2000

Adaptor for RAVL og RAV
valve bodies (accesories)

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