Data Sheet

Thermostatic Sensors Type RA 2000

Application

| RA 2990 | RA 2992 | RA 2920 | RA 5060 |

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 2990: built-in sensor with frost protection, temperature range 5-26°C, facilities for limiting and locking the temperature set-point. A score on energy efficiency. RA 2990 and 2992 sensors are equipped with a snap-lock mechanism which ensures quick, firm and long lasting mounting of the sensor.
- RA 2992: remote sensor with frost protection, temperature range 5-26°C, facilities for limiting and locking the temperature set-point.
- 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 2992 and 2922 are 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

The snap-lock sensors are easy to mount and requires no use of tools.
The sensor is fitted to the valve by applying a gentle pressure. When the sensor is in place, the snap-on mechanism is activated and the sensor has been correctly mounted.
If mounting and dismounting are carried out again, the mechanism must be tightened manually by turning the tightening ring.

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.

Approved to EN 215

Thermostatic sensors type RA 2000 are manufactured to the highest standards, and are approved to the European standard EN 215.

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Ordering and Specifications

Type	Model	Cap. tube	Temp. range [2]	Code no.
RA 2990	Standard , built-in sensor	-	5-26 °C	**013G2990**
RA 2992	Standard, remote sensor	0-2 m [1]	5-26 °C	**013G2992**
RA 2920	Tamperproof, built-in sensor	-	5-26 °C	**013G2920**
RA 2922	Tamperproof, remote sensor	0-2 m [1]	5-26 °C	**013G2922**
RA 5062	Remote temperature adjuster	2 m	8-28 °C	**013G5062**
RA 5065	Remote temperature adjuster	5 m	8-28 °C	**013G5065**
RA 5068	Remote temperature adjuster	8 m	8-28 °C	**013G5068**

[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 $X_p = 2K$, i.e. the valve is closed at 2 °C higher room temperature.

Thermostatic Efficiency Label

TELL
Thermostatic Efficiency Label

Manufacturer:	**Danfoss**
Model:	**RA2990**
Registration number:	**10557-20141015**

A
B
C
D
E
F

A

Information: www.tell-online.eu

A Label of EUnited Valves
European Valve Manufacturers Association

Accessories

Product	Code no.
Manual setting knob for RA valves, plastic	**013G5002**
Manual setting knob for RA valves, brass	**013G3300**
Limiting pins for RA 2990/92 (30 pcs.)	**013G1215**
Limiting pins for RA 2920/22 (30 pcs.)	**013G1237**
Anti-theft plugs for RA 2990/92 (20 pcs.)	**013G5245**
Scale cover for RA 2920/22 (20 pcs.)	**013G1672**
Toolkit, Allen key & locking pin tool	**013G1236**
Compact adaptor for RA 5062/65/68 to RA 2000 valves	**013G5190**
Adaptor for RA 5062/65/68 to RA 2000 valves	**013G5191**
Adaptor for RA 5062/65/68 to M30x1.5 valves	**013G5194**

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.

RA 2990 /92   RA 2920/22

❄= 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

X_p= 0 K

X_p= 2 K

RA 5062, RA 5065, RA 5068

❄= Frost protection setting

10	14	18	22	26	30°C
❄	1	2 · · · 3 · · · 4		5	
8	12	16	20	24	28°C
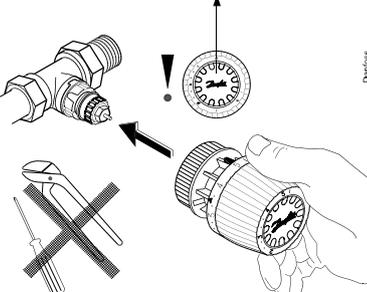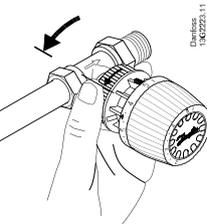
X_p= 0 K

X_p= 2 K

Mounting
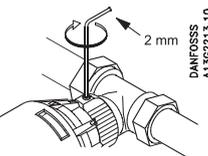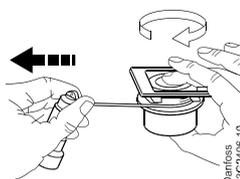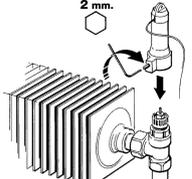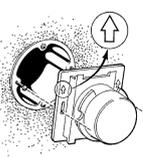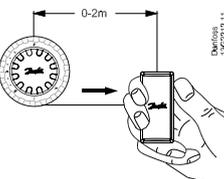
Choose the Right Sensor

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.
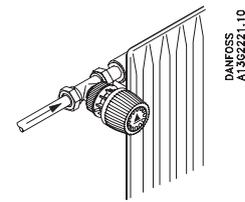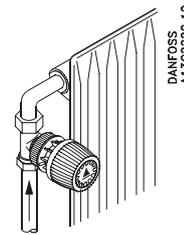
Radiator thermostats with remote sensor
These should be used when:

- 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.
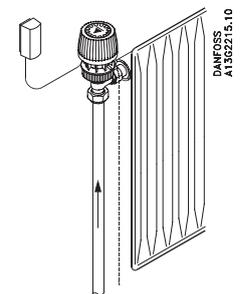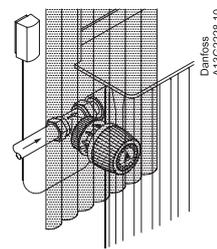
Radiator valves with remote adjustment
The remote temperature adjuster is used on radiators or convectors which are hidden in a cabinet or in other ways inaccessible to the user. In addition, the room temperature adjuster is used in integral sockets and installation ducts. The sensor and the setting 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.
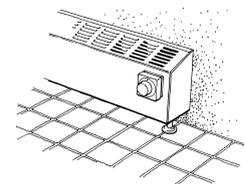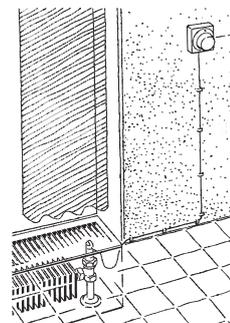
Sensor Operation Principle
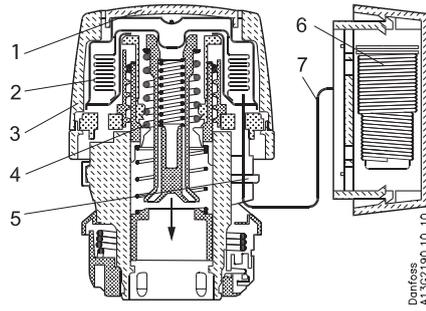
1. Actuator
2. Bellows
3. Setting dial
4. Setting spring
5. Spindle
6. Remote sensor
7. Capillary tube
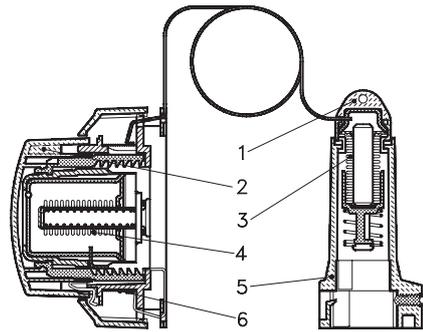
1. Actuator
2. Setting part
3. Setting bellows
4. Operation bellows
5. Valve adaptor
6. Capillary tube, rolled up

Max. ambient sensor temperature: 60°C.

Dimensions
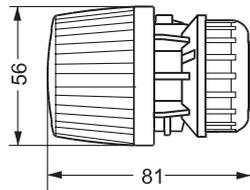
Standard model RA 2990
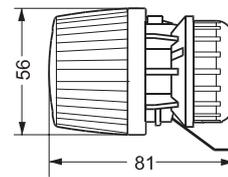
Tamperproof model RA 2920

Model with remote sensor RA 2992
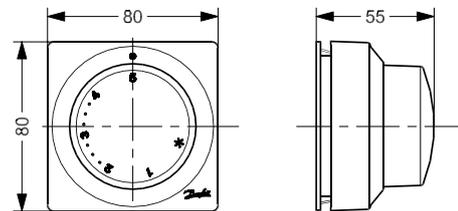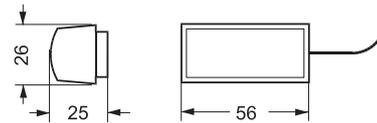
Remote temperature adjuster RA 5060