



PROFACTOR[®]
DER DEUTSCHE QUALITÄTSSTANDARD

EN

TECHNICAL DATA SHEET AND USER MANUAL



PRODUCT CODE

PF RVT 384
PF RVT 626
PF RVT 627
PF RVT 628
PF RVT 629
PF RVT 630

THERMOSTATIC HEADS

1. PURPOSE AND SCOPE

Thermostatic heads with built-in sensors are continuous proportional-type direct-acting temperature controllers. They are designed for automatic regulation of the heat carrier flow through a heating device and for maintaining a constant ambient temperature in an individual room as set by the user.

Thermostatic heads are installed on compatible thermostatic valves and do not require any external power source.

2. TECHNICAL SPECIFICATIONS

Connection thread: M30×1.5

Permissible ambient temperature: 0°C to +60°C

Permissible relative air humidity: 30% to 85%

Temperature setting range: +6°C to +28°C

Maximum heat carrier temperature: 100°C

Maximum heating system pressure: 10 bar

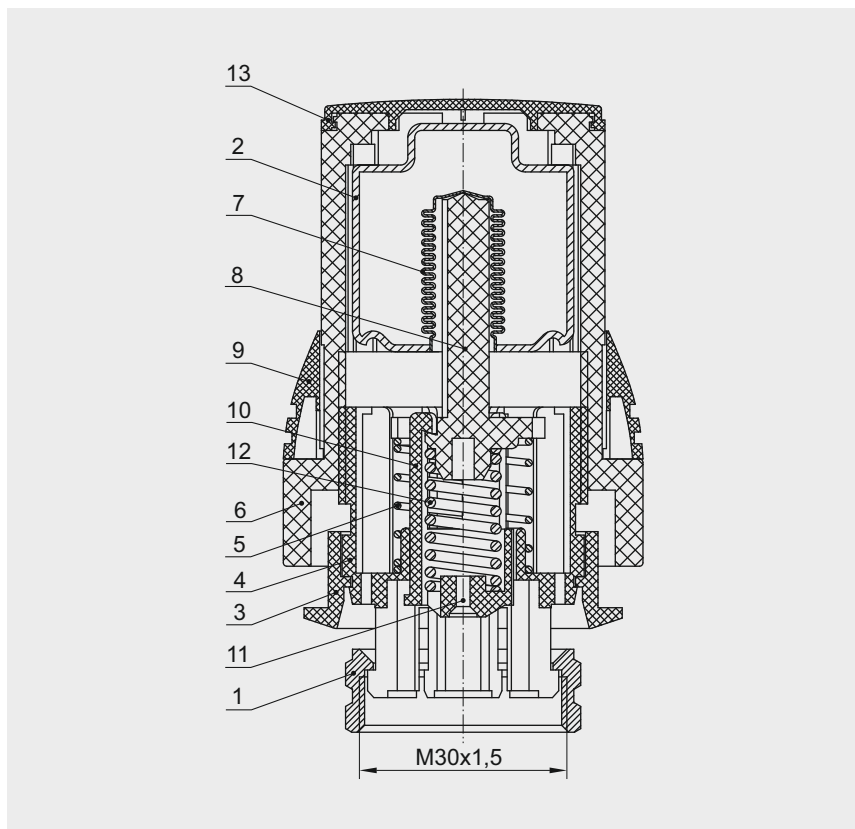
Maximum differential pressure across the valve: 1 bar

3. DESIGN

All PROFACTOR® thermostatic heads are in accordance with DIN V 4701-10-2003. The connection thread is in accordance with DIN ISO 261.

PROFACTOR® thermostatic heads can be installed on all PROFACTOR® thermostatic radiator valves, as well as on any other thermostatic valves manufactured according to DIN EN 215-2007, provided they have a metric connection thread M30×1.5 for the thermostatic head.

The design of the thermostatic head is illustrated using the PF RVT 630 as an example:



- | | |
|------------------------------------|------------------------------|
| 1 – Union nut | 8 – Rod |
| 2 – Thermostat chamber | 9 – Limiter |
| 3 – Limiting flange with indicator | 10 – Damping chamber housing |
| 4 – Cartridge | 11 – Thrust insert |
| 5 – Working spring | 12 – Damping spring |
| 6 – Knob (adjusting wheel) | 13 – Cover |
| 7 – Bellows | |

The thermostatic element of the head is the thermostat chamber (2) with an internal bellows (7). The thermostat chamber is filled with a liquid that has a high coefficient of thermal expansion.

4. MATERIALS

Union nut (1) — Brass CW614N (DIN EN 12165), surface nickel-plated

Thermostat chamber (2) — Galvanized steel

Parts (3, 4, 6, 9, 13) — ABS plastic

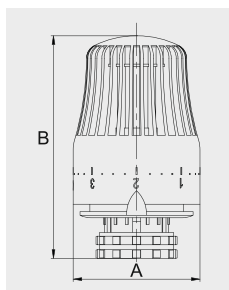
Springs (5, 12) — Structural steel 66Mn4 (DIN EN 10132-4)

Bellows (7) — Brass

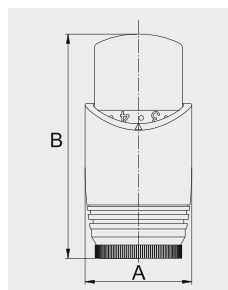
Parts (8, 10) — Glass fiber reinforced nylon

Thrust insert (11) — Steel

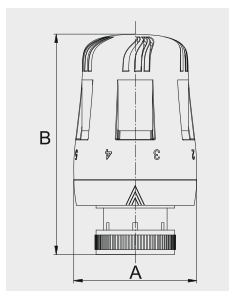
5. NOMENCLATURE AND DIMENSIONS



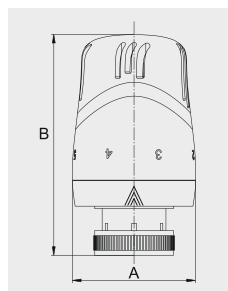
PF RVT 384
Dimensions:
A: 51 mm
B: max. 91 mm
Color: white



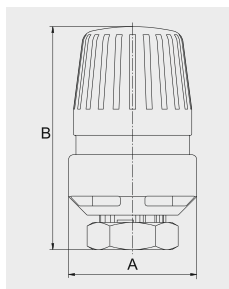
PF RVT 626
Dimensions:
A: 41 mm
B: max. 86 mm
Color: chrome



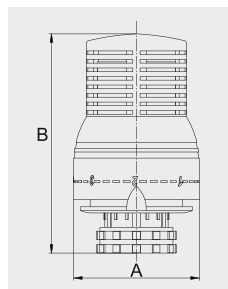
PF RVT 627
Dimensions:
A: 50.5 mm
B: 89.5 mm
Color: white



PF RVT 628
Dimensions:
A: 51.5 mm
B: 83.5 mm
Color: white



PF RVT 629
Dimensions:
A: 55 mm
B: max. 94 mm
Color: white



PF RVT 630
Dimensions:
A: 52 mm
B: max. 93 mm
Color: white

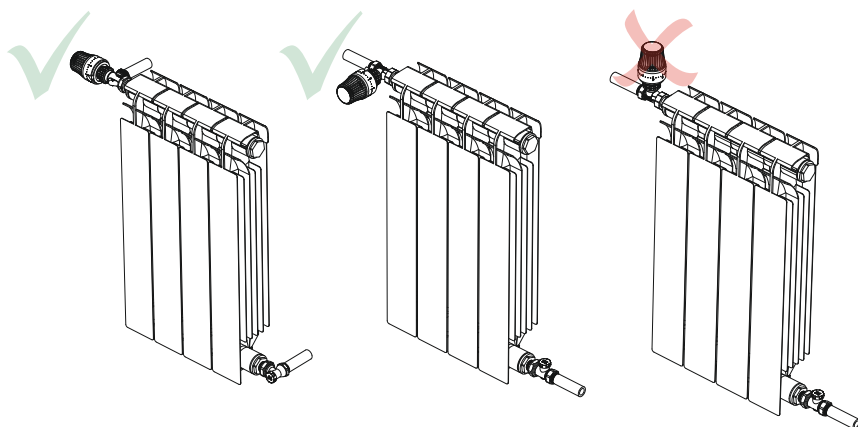
6. OPERATING PRINCIPLE

The main component of the thermostatic element is the bellows, which provides proportional control. The thermostatic chamber responds to changes in the ambient temperature. When the air temperature around the thermostatic chamber increases, the liquid inside expands, causing an increase in internal pressure, which acts on the bellows, compressing it. As it compresses, the bellows pushes the rod (8) and the damping chamber downward, overcoming the resistance of the working spring (5) and the spring of the thermostatic valve on which the thermostatic head is installed, thereby reducing the flow of the heating medium into the heating device. The adjusting knob (6) allows for pre-setting the desired temperature.

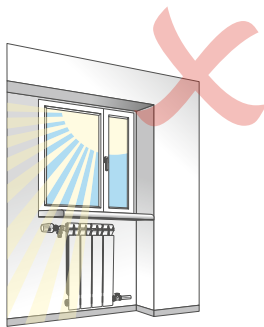
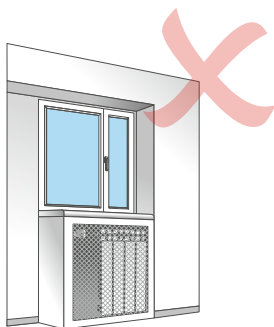
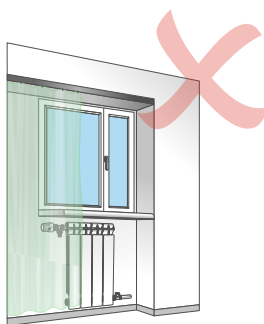
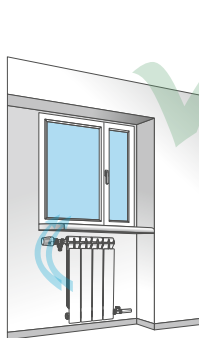
7. INSTALLATION INSTRUCTIONS

Before installing the thermostatic heads on the valves, the heating system can be manually adjusted using the protective plastic caps supplied with the thermostatic radiator valves. Before installation, remove the protective cap from the valve, and on the thermostatic head set the maximum temperature value (position "5") by turning the adjusting knob counterclockwise until it stops.

Then install the thermostatic head onto the valve so that the indicator on the limiting flange is clearly visible. While holding the head in this position, tighten the union nut (1) securely with a rubber-jawed wrench with a torque of approximately 4 Nm. The thermostatic head must be installed horizontally, facing into the room or away from the radiator (see illustration). Do not install the thermostatic head facing upward.



Make sure there is enough space for installation, maintenance, and air circulation. For proper operation, the thermostatic element of the head must be located at a sufficient distance from heat sources (such as hot pipes, warm air flows, etc.). Avoid direct sunlight exposure on the thermostatic element. It is forbidden to cover the thermostatic head with curtains, clothing, paper, or plastic film, or to block it with furniture. If there are obstacles that trap heat (such as shelves, screens, curtains, or furniture), if vertical installation of the thermostat is required, or if it is installed in a drafty area, it is necessary to use thermostatic heads with remote temperature sensors.



To prevent unauthorized removal or tampering with the thermostatic head, a protective anti-vandal ring PF RVT 664RL (compatible with thermostatic heads PF RVT 384, 627, 628, 629) can be installed. To do this, place both halves of the anti-vandal ring onto the union nut of the thermostatic head and press them together until they click into place.

8. OPERATING AND ADJUSTMENT

The desired temperature setting is adjusted by turning the knob (6) until the indicator on the limiting flange (3) aligns with the desired value on the knob scale. When the knob is turned counterclockwise, the temperature increases; when turned clockwise, the temperature decreases.

The scale on the knob shows the relationship between its markings and the regulated temperature. The temperature values corresponding to the scale markings are approximate, since the actual room temperature may differ from the temperature around the thermostatic element, depending on the installation conditions.

It is recommended to use the "3" setting, which corresponds to the standard heating mode, maintaining a room temperature of approximately 20°C. Settings of "4" or higher should be avoided if a lower setting provides adequate comfort, as increasing the room temperature by 1°C results in an approximate 6% increase in energy consumption.

The temperature scales, in accordance with European standards, are based on $X_p=2^\circ\text{C}$. This means that the thermostatic valve will close completely when the temperature measured by the sensor exceeds the set temperature by 2°C .

Setting scale of the PF RVT 630 thermostatic head:



"★" — frost protection symbol

On the PF RVT 630 thermostatic head, the limiter (9) can be used either to lock the temperature setting fixing it at the desired value or to restrict the upper or lower limit of the adjustment range.

To lock the setting:

- lift the limiter;
- set the desired temperature, ensuring that the tip of the indicator is not opposite a slot on the knob, but between two adjacent slots;
- rotate the limiter (9) to align the indicator with the "→|←" mark on the limiter;
- lower the limiter fully down.

To limit the upper adjustment range:

- lift the limiter;
- align the “->|” mark on the limiter with the desired upper limit of the adjustment range;
- turn the knob clockwise to the stop;
- lower the limiter.

To limit the lower adjustment range:

- lift the limiter;
- rotate it so that the side pin (to the left when viewing the head with the union nut facing downward) aligns with the desired lower limit of the adjustment range;
- turn the knob counterclockwise to the stop;
- lower the limiter.

A different type of limiter is also installed on the PF RVT 384 thermostatic head. Two plastic pins are used to restrict or lock the knob's position relative to the limiter flange with an indicator over the full scale range.

To lock the knob:

- remove both plastic pins;
- set the desired temperature, ensuring that the tip of the indicator is between two adjacent slots, not directly opposite one;
- insert the pins into the slots on both sides of the indicator, thereby locking it in one position.

To limit the upper and lower temperature ranges:

- remove both plastic pins;
- rotate the knob so that the indicator tip is within the desired temperature range;
- insert the pins into the slots opposite the selected temperature marks.

Other thermostatic heads do not allow limitation of the adjustable temperature range within the graduated scale.

After the heating season (during summer), the thermostatic valve should be fully opened by setting the thermostatic head to the “5” position.

9. WARRANTY OBLIGATIONS

The warranty period is 12 months from the date of sale to the end consumer. Throughout the entire warranty period, the manufacturer guarantees the proper functioning of the product and its compliance with safety requirements, provided that the consumer follows the rules for storage, transportation, installation, operation, and maintenance of the product. The warranty covers all defects arising through the manufacturer's fault.

The warranty does not cover defects resulting from:

- Violation of storage, transportation, installation, operation, or maintenance conditions;
- Exposure to substances aggressive to the materials of the product;
- Signs of mechanical damage;
- Damage caused by fire, natural disasters, or other force majeure circumstances;
- Damage caused by improper actions of the user;
- Evidence of unauthorized interference with the product design.

The product described in this technical manual is a technically complex device that must be installed by a qualified specialist with appropriate experience working with this type of equipment.

Installation and commissioning must be carried out by an authorized and certified company.

Profactor Armaturen GmbH reserves the right to make changes to the product design that do not affect its technical characteristics or functional features.



INTERNATIONAL WARRANTY CARD

NAME OF THE PRODUCT

PRODUCT CODE, SIZE

QUANTITY

SELLER NAME AND ADDRESS

DATE OF PURCHASE

SELLER STAMP

SELLER SIGNATURE

For the warranty term refer to the Warranty obligation clause in the technical manual

FOLD LINE

FOLD LINE

In case of any claims to the product quality the following documents should be submitted:

1. Application with customer and product details:

- Name of the customer, actual address and phone number
- Article of the product
- Reason for the claim and photo
- Plumbing system where installed (name, address, phone number)

2. Invoice copy and receipt

3. Warranty card

RETURN/EXCHANGE COMMENTS

DATE

SIGNATURE



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