



PROFACTOR®
DER DEUTSCHE QUALITÄTSSTANDARD

EN

TECHNICAL DATA SHEET AND USER MANUAL



**PRODUCT
CODE**

PF TA 633
PF TA 634
PF TA 635
PF TA 636

**THERMOELECTRIC
ACTUATOR**

1. PURPOSE AND SCOPE

The PROFACTOR® thermoelectric actuators are designed for two-position control in heating and cooling systems. They are most commonly used for zonal control in radiator and underfloor heating systems.

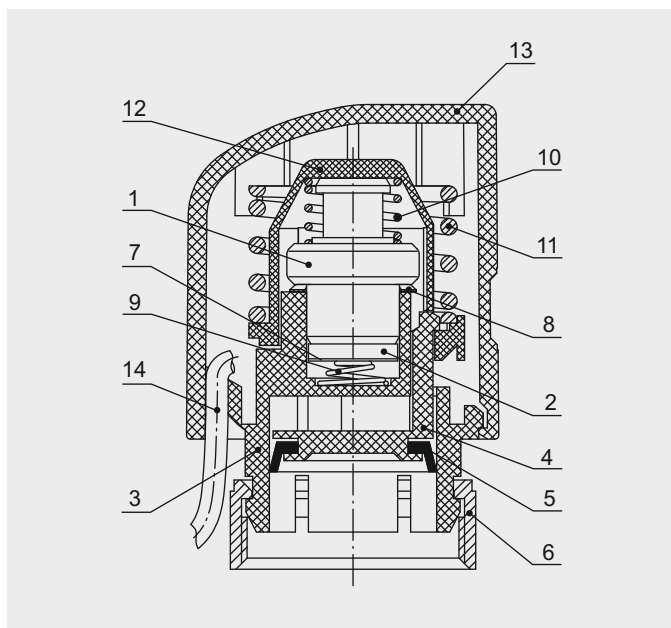
The PROFACTOR® thermoelectric actuators can be installed on shut-off and control valves of manifold assemblies, thermostatic radiator valves, fan coil valves, and zone valves. They are operated by a room thermostat or a dedicated controller.

The PROFACTOR® thermoelectric actuators operate silently and have low power consumption.

2. TECHNICAL SPECIFICATIONS

Product Code	PF TA 633	PF TA 634	PF TA 635	PF TA 636
Actuator Type	Normally Closed (NC)			
Diagnostic Capability	no		yes	
Operating Voltage, V	230 ± 15%			
Maximum Starting Current, mA	200 for a maximum of 2 minutes		150	
Power Consumption, W	2		2,5	
Connection Thread	M30x1.5 (ISO 261)			
Operating Stroke, mm	3		4	
Full Opening/Closing Time, min	~3 – 5			
Actuating Force, N	110		90–125	
Protection Degree (IEC 60529)	IP 54		IP 44	
Cable Length, m	0,9		0,6	
Operating Medium Temperature, °C	to +100°C			
Ambient Temperature, °C	–5°C to +60°C			
Weight, g	108	110	111	

3. DESIGN



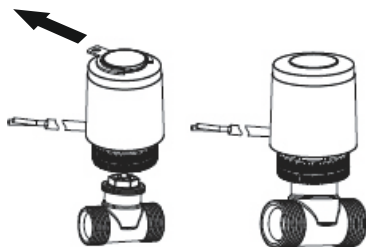
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|-----------------------------------|---------------------|
| 1 – Temperature-sensitive element | 8 – Contact ring |
| 2 – Heating element | 9 – Pressure spring |
| 3 – Cartridge | 10 – Small spring |
| 4 – Movable platform | 11 – Large spring |
| 5 – Seal | 12 – Cap |
| 6 – Union nut | 13 – Body |
| 7 – Contact plate | 14 – Cable |

All PROFACTOR® thermo-electric actuators are in accordance with IEC 60730.

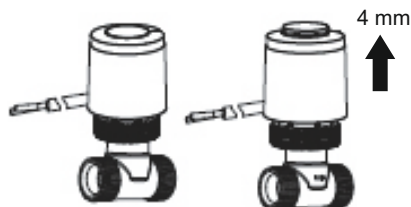
The temperature-sensitive element (1), with a heating element (2) mounted at its end, is installed in the cartridge (3) and operates on the principle of thermal expansion. The voltage supply is provided through the contact plate (7) and the contact ring (8).

All PROFACTOR® thermo-electric actuators use temperature-sensitive elements manufactured by Vernet (France).

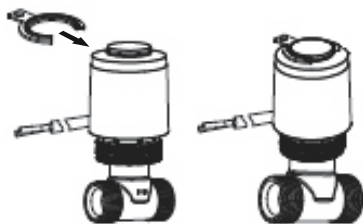
The design of the PF TA 635 and PF TA 636 actuators provides the capability for operation diagnostics.



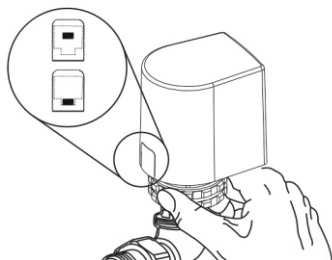
The PF TA 635 thermo-electric actuator is supplied with a plastic locking clip, which is used to facilitate actuator installation on the valve and to keep the actuator in the open position during installation. After mounting the actuator on the valve and before applying voltage, the locking clip must be removed.



The PF TA 635 actuator features a special housing design with a circular opening on the top that allows for operation diagnostics. When voltage is applied, the cap extends upward from the housing by approximately 4 mm.



To keep the PF TA 635 actuator in the open position, insert the locking clip back into the slot of the cap.



The operation diagnostics of the PF TA 636 actuator are performed through a window in the housing, which allows observation of the movable platform rising upward when voltage is applied.

4. MATERIALS

Cartridge (3), Movable platform (4), Cap (12), and Housing (13) — Polyamide (PA), Glass fiber reinforced

Union nut — Brass CW614N (DIN EN 12165)

Springs (9, 10) — Stainless steel AISI 304 (DIN EN 10088)

Spring (11) — Galvanized spring steel 66Mn4 (DIN EN 10132-4)

5. OPERATING PRINCIPLE

All PROFACTOR® thermo-electric actuators are normally closed (closed when no voltage is applied).

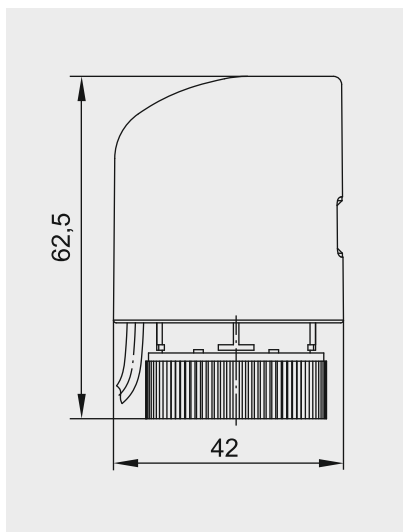
When voltage is applied, the temperature-sensitive element (1) is heated, and after a short delay, it expands, overcoming the resistance of the working spring (11) and thereby providing a smooth opening of the actuator.

When the voltage supply is interrupted, the temperature-sensitive element cools down and, after a short delay, contracts to its original size. The spring (11) then lowers the movable platform, ensuring a smooth closing of the actuator.

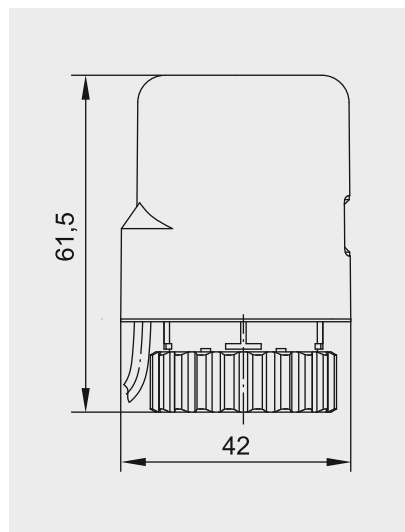


6. NOMENCLATURE AND DIMENSIONS

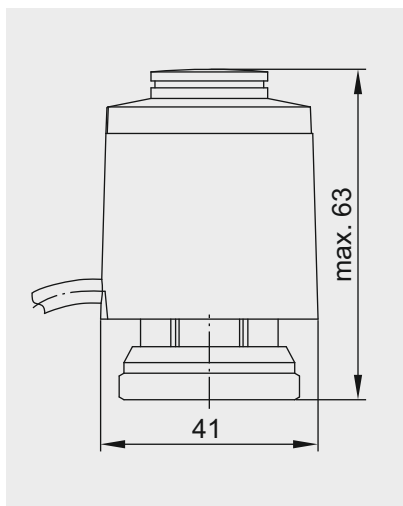
PF TA 633:



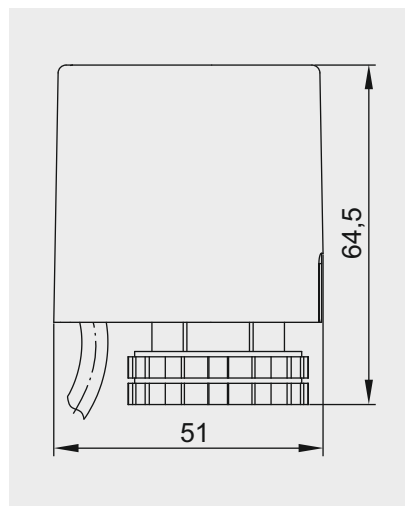
PF TA 634:



PF TA 635:



PF TA 636:

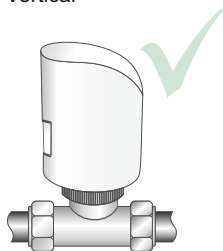


7. INSTALLATION INSTRUCTIONS

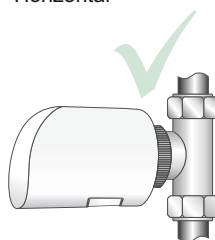
Before installing the actuator onto the valve, remove the protective cap or manual adjustment knob from the valve. Installation must be carried out manually with the actuator switched off. Place the actuator onto the open valve stem and press it against the valve from the front. Then, tighten the union nut of the actuator onto the valve by hand only, without using additional tools — otherwise, the valve or the actuator may be damaged.

The actuator may be installed in a vertical position (actuator above the valve) or in a horizontal position. Upside-down installation is not allowed, as it may reduce the service life of the product, for example, due to contamination from water containing solid particles.

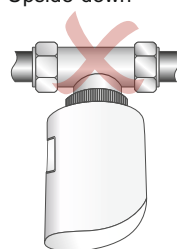
Vertical



Horizontal

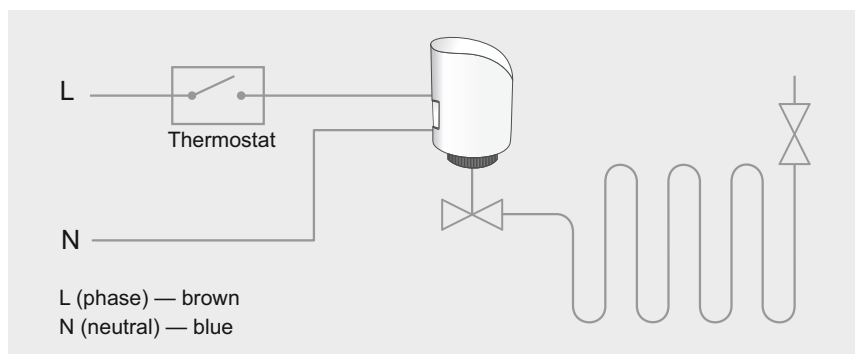


Upside-down



PROFACTOR® PF TA 633, 634, 635, and 636 thermo-electric actuators are designed for connection to fixed wiring in closed and dry indoor environments. Electrical connection must be carried out only by qualified personnel in accordance with the provided wiring diagram.

It is recommended to ground the electrical circuit. The connecting cable must not come into contact with heating pipes, as this may accelerate cable wear.



8. OPERATING AND MAINTENANCE

All PROFACTOR® thermo-electric actuators must be operated only within the specified technical parameters (p. 2).

During transportation, storage, and operation, the device must be protected from moisture, contamination, and mechanical damage.

If the actuator becomes dirty during operation, it should be cleaned with a dry cloth. If this is insufficient, the cloth may be slightly moistened with a mild soap solution. The use of aggressive cleaning agents or solvents is strictly prohibited.

9. STORAGE AND TRANSPORT CONDITIONS

The products must be stored in the manufacturer's original packaging. During storage and transportation, the devices must be protected from excessive humidity and ambient temperatures below -25°C . The products must also be protected from high vibration loads. Mechanical damage incurred during unpacking or installation renders the manufacturer's warranty void.

10. 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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