

148, 148A, 148SD Series

Thermostatic actuators

Technical Data Sheet



Description

148, 148A, 148SD and 148CD Series thermostatic actuators are automatic room temperature control devices, which act directly on the heat emitter in radiator heating systems. The actuators are designed for installation on thermostat-adaptable valves for heat emitters and automate the movement of the valve disc by means of a sensing element inside the knob, which detects changes in room temperature. WATTS thermostatic actuators have low thermal inertia with a response time of less than 30 minutes.



148

Thermostatic actuator with liquid-filled sensing element. Temperature limiting and locking device. ABS handwheel. Graduated scale from 0 to 5. Adjustment range: 0÷28°C. Anti-freeze position: 8°C (indicated with). Maximum differential pressure: 1.5 bar.

UNI EN 215 certified. In conjunction with valve see table

Type	Part No.	Weight (g)
148	148	150



148A

Thermostatic actuator with liquid-filled sensing element. Temperature limiting and locking device. ABS handwheel. Graduated scale from 0 to 5. Adjustment range: 0÷28°C. Anti-freeze position: 8°C (indicated with). Maximum differential pressure: 1.5 bar.

UNI EN 215 certified. In conjunction with valve see table

Type	Part No.	Weight (g)
148A	148A	150



148SD

Thermostatic actuator with remote sensor. Capillary length 2m. Other features as for 148 Series.

Type	Part No.	Weight (g)
148SD	148SD	250



EN 215 certified thermostatic valve

In conjunction with 148 and 148A Series thermostatic head.

Type	DN	*q _{mN} (l/h)
square valves + actuator	3/8"	220
square valves + actuator	1/2"	220
square valves + actuator	3/4"	240

*q_{mN} refers to the excluded valve pre-regulation condition



EN 215 certified thermostatic valve

In conjunction with 148 and 148A Series thermostatic head.

Type	DN	*q _{mN} (l/h)
right valves + actuator	3/8"	205
right valves + actuator	1/2"	225
right valves + actuator	3/4"	240

*q_{mN} refers to the excluded valve pre-regulation condition

148GA

Tamper-proof cover for 148 Series thermostatic actuators. Provision for limiting and locking temperature range on rivetable closing position. Complete with standard fixing screws and break-stem rivets.



Type	Part No.	Weight (g)
148GA	148GA	30

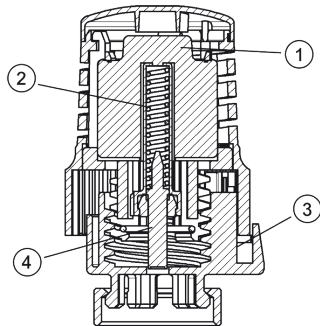
Technical features in conjunction with valve 130

Adjustment range	8÷28°C
Hysteresis "C"	0.4K
Control accuracy "CA"	0.6K
Proportional band*	2K
Response time "Z"	27 min
Effect of fluid temperature "W"	0.92K
Max. effect of differential pressure "D"	0.32K
Capillary length Serie 148SD	2 m

* Proportional band with which the flow and Kv values are calculated

Design features

Sensing element	liquid-filled
Springs	stainless steel
Handwheel	ABS



Features

- 1) Liquid-filled sensing element
- 2) Compensation mechanism
- 3) Adjustment range locking/limiting system
- 4) Disc stem

Application

When used in conjunction with thermostat-adaptable valves, these devices (the use of which is required by Italian Law 10/91) adapt the heat output of heat emitters to the desired temperature, and ensure a high level of comfort with considerable energy savings, by using the naturally occurring heat sources in the room.

Operation

Operation is controlled by a liquid-filled sensing element inside the knob. When the element expands or contracts, it moves the valve disc stem in proportion to the deviation between the setpoint temperature and the actual room temperature. If the room temperature exceeds the setpoint, the sensing element gradually closes the disc, thus reducing the flow of hot water to the radiator. Conversely, if the room temperature falls below the setpoint, the element opens the disc, thus increasing the flow of hot water to the radiator. This keeps the temperature constant at the level set for each individual room.

Adjustment

To set the room temperature, turn the handwheel until the indicator lines up with the desired setting: the numbers and symbols marked on the handwheel correspond to the temperatures shown in the table.

①	❄️	1	2	③	4	5
Closed*	8°C Anti-freeze	12°C	16°C	20°C	24°C	28°C

The antifreeze position ensures that the temperature does not fall below 8°C, thus protecting the system against freezing.

* **Actuator 148 and 148A Series is not an interception organ, use the valve for this work.**

Setting locks

To help set the ideal temperature for each room and find it again quickly, the actuator is equipped with graduated setting locks, which enable you to:

- limit the temperature adjustment range;
- select a fixed setting;
- limit the closing setpoint.

To set an adjustment range of 16÷20°C, proceed as follows:

Fig. 1 - Turn the actuator knob until the indicator lines up with the maximum desired value. Pos.3=20°C;

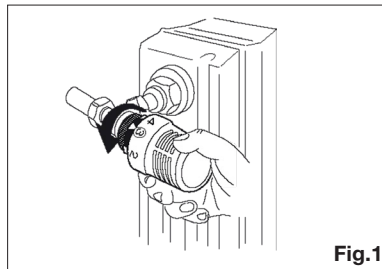


Fig. 2 - Pull out the first lock on the right and position it immediately next to the indicator. This sets the **upper** limit of the adjustment range (Pos.3);

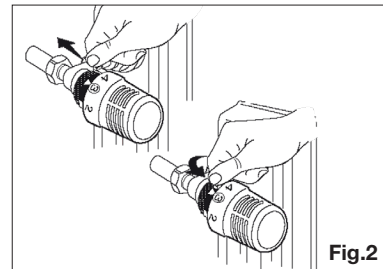


Fig. 3 - Turn the actuator knob until the indicator lines up with the minimum desired value. Pos.2=16°C;

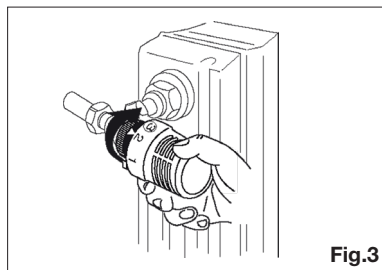
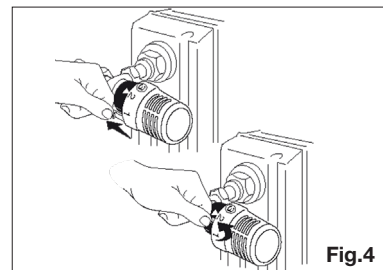


Fig. 4 - Pull out the lock on the left and position it immediately next to the indicator. This sets the lower limit of the adjustment range (Pos.2).



This "memory" system makes it easy to restore settings to meet changing needs.

Table of valves

DIN Series	3/8"	1/2"	3/4"
Square	-	13012	13034
Right	-	13112	13134

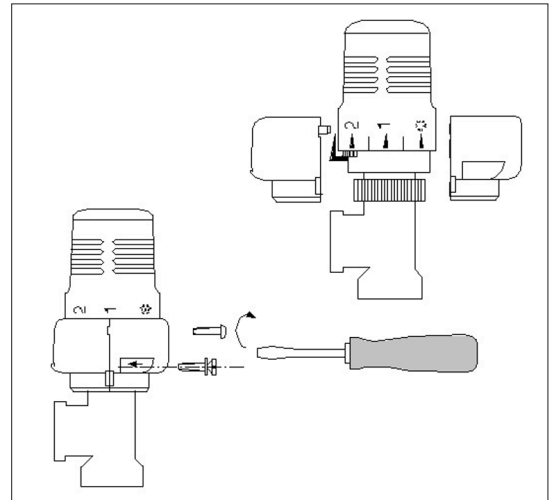
F Special Series	3/8"	1/2"	3/4"
Square	130SN38	130SN12	130SN34
	130UMSN38	130UMSN12	130UMSN34
	188UMSN38	188UMSN12	188UMSN34
	178SN38	178SN12	178SN34
	178UMSN38	178UMSN12	178UMSN34
Right	131SN38	131SN12	131SN34
	131UMSN38	131UMSN12	131UMSN34
	189UMSN38	189UMSN12	189UMSN34
	179SN38	179SN12	179SN34
	179UMSN38	179UMSN12	179UMSN34

Installation

Make sure the actuator is not subject to factors that could distort the room temperature reading (e.g. if located behind curtains, in direct sunlight, in recesses etc.), and make sure the adjustment handwheel is accessible (not confined within radiator enclosures).

If this is not possible, you are advised to use the version with remote sensor **Fig.10 (148SD Series)**. These models are different because the sensor is separated from the transducer by a liquid-filled capillary, and can be positioned in the most suitable point of the room to sense the correct temperature.

To protect the actuator against tampering, accidental knocks and/or vandalism in public buildings (schools, hospitals, etc.), you are advised to fit a **148GA Series** cover, the installation of which is shown in **Figure 5**.



The cover can be installed **with the system running**, as follows:

- 1) Remove the cap or handwheel from the valve body (**Fig.6**).
- 2) Pre-set the device, if necessary, by following the relevant instructions or selecting the position from the flow curves (**Fig.7**).
- 3) Open the actuator fully (**Pos.5**) and bring it into contact with the valve body, with the reference indicator clearly visible (**Fig.8**).
- 4) Tighten the nickel-plated ring-nut by hand as far as it will go (**Fig.9**).

Avoid fitting the actuator vertically.

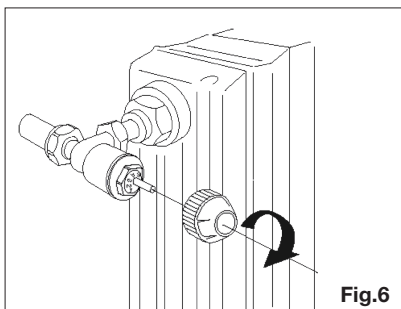


Fig.6

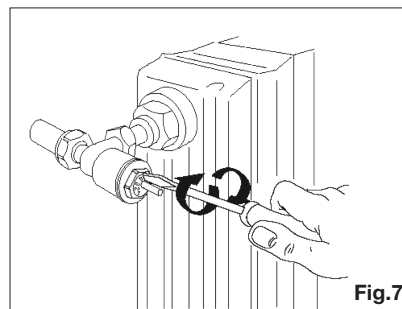


Fig.7

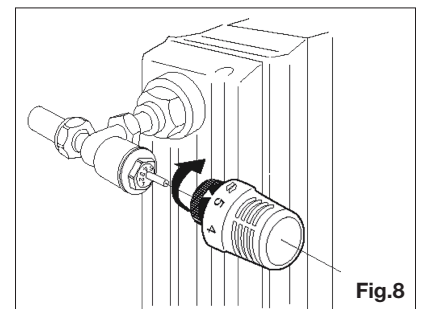


Fig.8

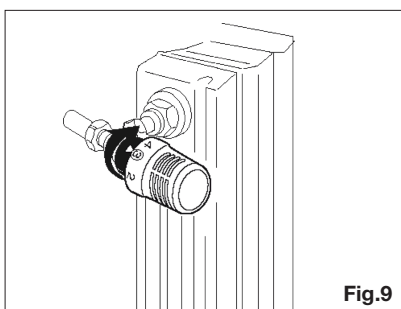


Fig.9

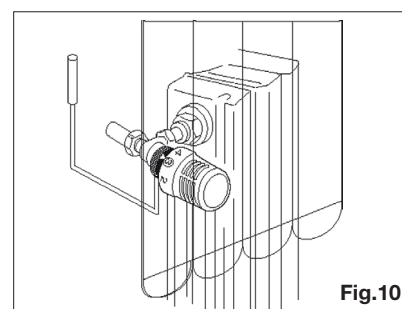


Fig.10

Radial slots
High sensitivity in room temperature measurement

5 temperature levels
Quick and easy setting of the required temperature

Adjustment riders

Threaded ring-nut
Quick and easy to install



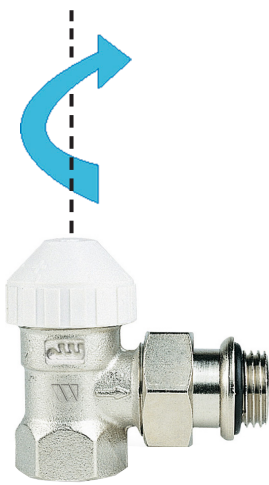
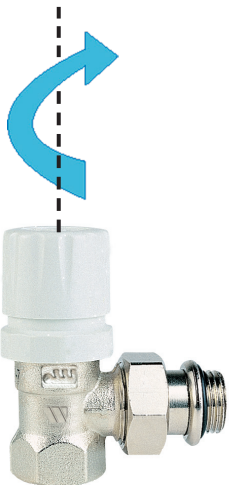
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In combination with valves
(see table)

UNSCREW

PULL OUT

TIGHTEN THE THERMOSTATIC ACTUATOR RING NUT



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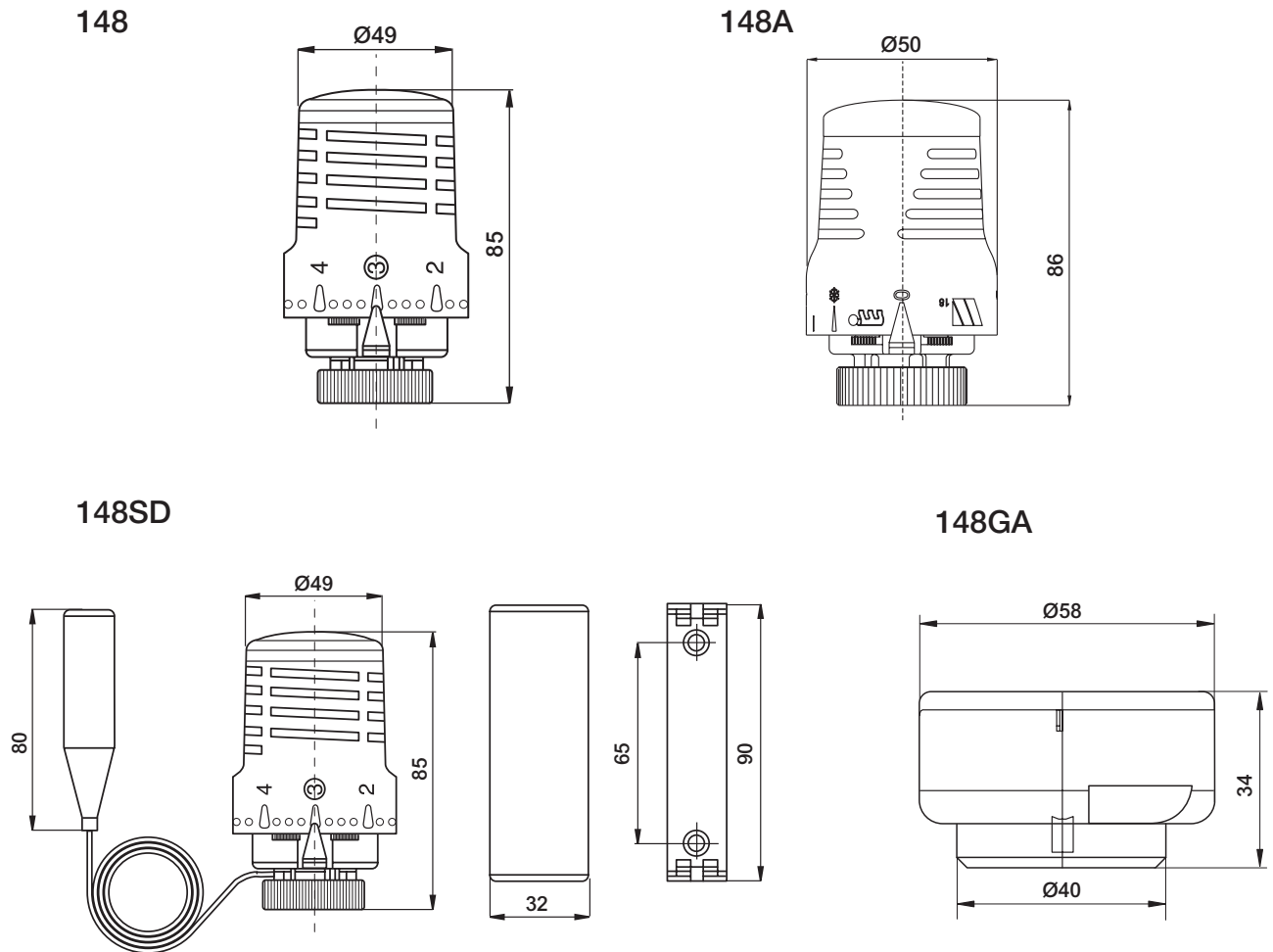


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Overall dimensions (mm)



Specification text

148 Series

Thermostatic actuator with liquid-filled sensing element **148 Series**, WATTS brand, with temperature locking and limiting device. ABS cap with radial slots. M30x1.5 threaded ring-nut for coupling with thermostat-adaptable valves. Compatible with **148GA Series tamper-proof cover**. Graduated scale from 0 to 5. Adjustment range: 0÷28°C. Anti-freeze position: 8°C. Maximum differential pressure: 1.5 bar. Max. hysteresis 0.4K. Time constant: 27min. UNI EN 215 certified.

148A Series

Thermostatic actuator with liquid-filled sensing element **148A Series**, WATTS brand, with temperature locking and limiting device. Ergonomic plastic cap with radial slots. M30x1.5 threaded ring-nut for coupling with thermostat-adaptable valves. Compatible with **148GA Series tamper-proof cover**. Graduated scale from 0 to 5. Adjustment range: 0÷28°C. Anti-freeze position: 8°C. Maximum differential pressure: 1.5 bar. Max. hysteresis 0.4K. Time constant: 27 min. UNI EN 215 certified.

148SD Series

Thermostatic actuator with remote sensor **148SD Series**, WATTS brand. Liquid-filled sensing element. With temperature limiting and locking device. ABS cap with radial slots. M30x1.5 threaded ring-nut for coupling with thermostat-adaptable valves. Compatible with **148GA Series tamper-proof cover**. Graduated scale from 0 to 5. Adjustment range: 0÷28°C. Anti-freeze position: 8°C. Capillary length: 2m. Maximum differential pressure: 1.5 bar. Max. hysteresis 0.4K. Time constant: 27 min.

148GA Series

Tamper-proof cover **148GA Series**, WATTS brand. Compatible with **148, 148A and 148SD Series** thermostatic actuators. Limiting and locking temperature range on rivettable closing position. Complete with standard fixing screws and break-stem rivets.



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