

Thermostatic actuators

RTN51.., RTN71, RTN81



for radiator valves VDN.., VEN.., VUN.., VPD.. and VPE..

- Self-acting, without auxiliary power
- High-quality fluid-filled sensor with fast acquisition of room temperature changes
- Direct mounting with union nut, no tools required
- Robust construction, quiet operation, no maintenance required
- Protection against dismantling (optional)
- RTN51.. available in white (matt or glossy)

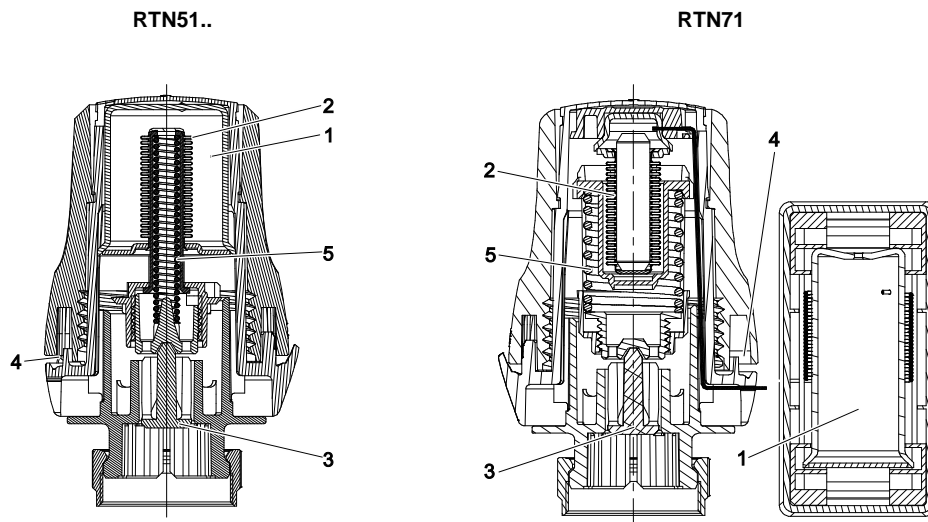
- For use with Siemens radiator valves type VDN.., VEN.. and VUN..
- For use with Siemens pressure independent control valves (PICV) VPD..-135, VPE..-135, VPU...-135
- For radiator valves supplied by Heimeier, Cazzaniga, Oventrop M30 x 1.5, Honeywell-Braukmann, MNG, Junkers, and Beulco new (all without adapter)
- For radiator valves with actuators secured with an M30 x 1.5 union nut, nominal closing dimension 11.6 ± 0.3 mm and nominal stroke 1.5 mm (without adapter)
- The actuators can be used with valves from other manufacturers with the appropriate AV adapters (refer to "Type summary / Accessories")

Technical design / mechanical design

Functioning

The fluid-filled sensor responds to deviations from the room temperature setpoint. The fluid inside the metal capsule expands when the room temperature rises, exerting pressure on the bellows and the stem, which causes the valve to continuously close reducing the radiator's heat output. The bellows expand when the room temperature falls, opening the valve to increase radiator's output.

This design allows the radiator valve to be continuously operated, achieving smooth regulation of the flow of heating water to the radiator, resulting in a constant room temperature in accordance with the room temperature setpoint.



- 1. Fluid-filled sensor
- 2. Bellows
- 3. Stem

- 4. Captive tappets
- 5. Closing spring

The head of the actuators and the remote adjuster have a scale and symbols that correspond to the following room temperature setpoints:

0	*	1	2	3	4	5
Valve fully closed (only with RTN51..)	Frost protection at 8 °C	12 °C	16°C	20°C	24 °C	28°C

A click can be heard after turning the knob past the frost protection symbol (toward 0), indicating that frost protection is no longer guaranteed.

Setting point range

2 easily adjustable captive tappets set the required setpoint range:

	<ul style="list-style-type: none"> Turn tappet to stop (at the setpoint indicator) 	<ul style="list-style-type: none"> Push on tappet 	<ul style="list-style-type: none"> Turn head to the required stop Release tappet
Setting maximum limitation	 2111Z20	 2111Z29	 2111Z30
Setting minimum limitation	 2111Z31	 2111Z32	 2111Z33

Type summary

Type	Description
RTN51	RAL 9016, matt
RTN51G	RAL 9016, glossy traffic white
RTN71	Equipped with remote sensor
RTN81	Equipped with remote sensor

Accessories

Adapter type	For valve versions	Adapter type	For valve versions
AV52 ¹⁾	Comap	AV57	Herz
AV53	Danfoss RA-N (RA 2000)	AV58	Oventrop < 2002
AV54	Danfoss RAVL	AV59 ¹⁾	Vaillant
AV55	Danfoss RAV	AV60	TA < 2002
AV56	Giacomini	AV61	MMA Markaryd

¹⁾ While stocks last

Type	Description
ATN2	Fitting to prevent dismantling actuators

Ordering

Example

Type	Stock number	Designation	Number of pieces
RTN51	RTN51	Thermostatic actuators	6
AV57	AV57	Adapter	1

Delivery

Actuators, valves and accessories are packed separately.

Rev. NO.



For overview, see Revision numbers [[► 12](#)].

Equipment combinations

Valve type	Valve type	k_{vs} [m ³ /h]	\dot{V} [l/h]	PN class	Data sheet
VDN.., VEN.., VUN..	Radiator valves	0.09...1.4	-	PN10	2105, 2106
VPD..-135, VPE..-135, VPU..-135	PICV radiator valves	-	18...135		A6V13089932
For radiation valves by other manufacturers with AV.. Adapters, see "Type summary / Accessories"					
Radiator valves (M30 x 1.5) by other manufacturers, without adapter:					
<ul style="list-style-type: none"> • Heimeier 			<ul style="list-style-type: none"> • Honeywell-Braukmann 		
<ul style="list-style-type: none"> • Cazzaniga 			<ul style="list-style-type: none"> • MNG 		
<ul style="list-style-type: none"> • Junkers 			<ul style="list-style-type: none"> • Beulco new 		
<ul style="list-style-type: none"> • Oventrop M30 x 1.5 (since 2001) 					

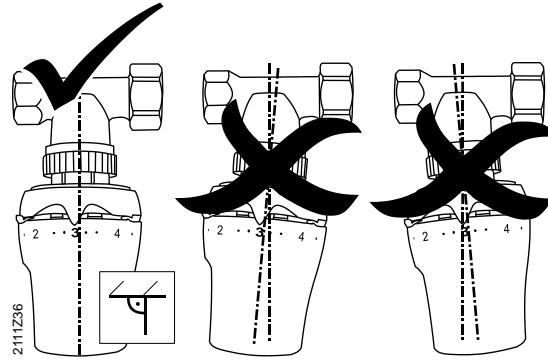
Notes

Safety

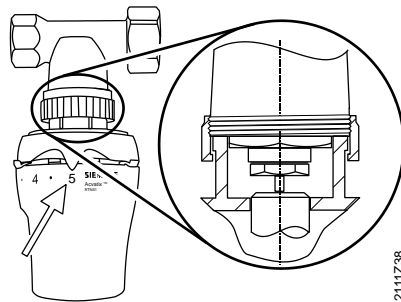
 CAUTION	
	<p>National safety regulations</p> <p>Failure to comply with national safety regulations may result in personal injury and property damage.</p> <ul style="list-style-type: none"> • Observe national provisions and comply with the appropriate safety regulations.

Mounting and installation notes

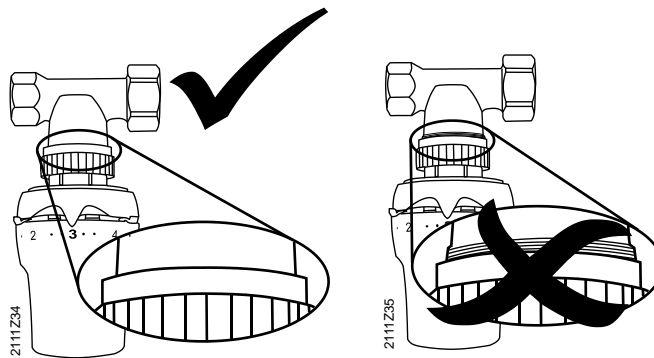
Important:



Screw on the actuator at a right angle to the valve.



Turn the valve to 5 and ensure the actuator is flush on the valve.



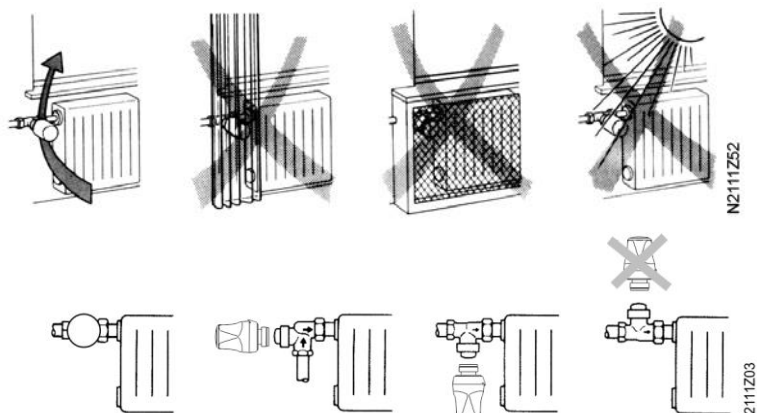
Tighten the actuator correctly.

RTN51.

with built-in sensing element

Do not cover the thermostatic actuator, for example by radiator covers, furniture and drapes and keep out of direct sunlight or cold air / drafts.

Do not attach the actuator in the upright position to prevent rising air from the hot water pipe from affecting temperature measurements.

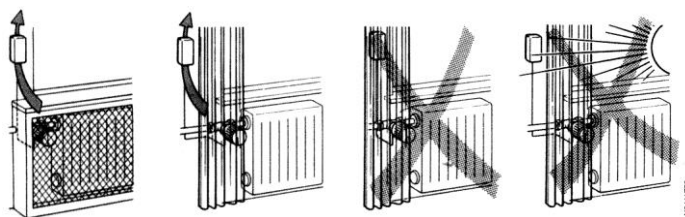


Mounting installations are printed on packaging.

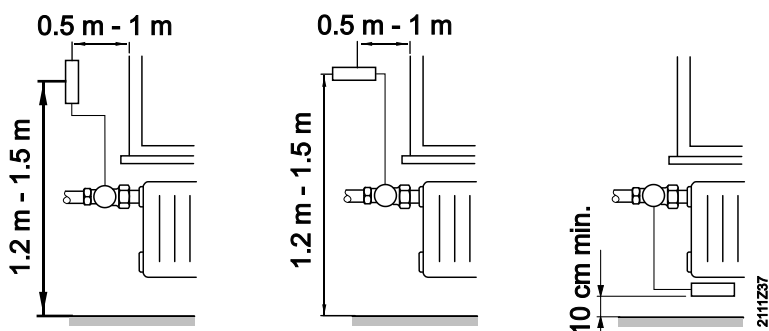
RTN71

with remote sensing element and capillary tube

This type of actuator is used on applications where the criteria of the RTN51.. versions are not satisfied. The actuator can be mounted in any position. Do not cover the sensing element and keep it away from direct solar radiation or cold air/drafts.



We recommend using this version where conditions are unknown (particularly in new construction). For comfort reasons, install the sensing element as depicted in the following illustration:



Where outer walls are poorly insulated, install a layer of insulation between the wall and actuator.

Mounting installations are printed on packaging.

RTN81

Remote sensing element and remote adjuster element

For applications where the radiator or convector valve is not accessible or not easily accessible. The actuator component can be mounted in any position. The same criteria apply to the sensing element as for the RTN71 (location of the remote adjuster is to be considered).

Mounting instructions (74 319 0466 0) are included with the packaging.

Maintenance

Thermostatic actuators are maintenance-free.

Repair

Actuators, sensing elements, and remote adjusters cannot be repaired. The complete unit must be replaced.

Disposal



This symbol or any other national label indicate that the product, its packaging, and, where applicable, any batteries may not be disposed of as domestic waste. Delete all personal data and dispose of the item(s) at separate collection and recycling facilities in accordance with local and national legislation.

For additional details, refer to [Siemens information on disposal](#).

Warranty service

The application-specific technical data is guaranteed only in combination with the Siemens products listed in the 'Device combinations' section. If third-party products are used, any guarantee provided by Siemens will be invalidated.

The user must ensure proper functionality when using RTN.. actuators with valves from other manufacturers.

Technical design

Design	RTN51..	RTN71	RTN81
Conformity	CEN standard EN 215-1		
Drive principle	liquid expansion		
Remove sensing element	no	yes	yes
Remote adjuster	no	no	yes
Capillary tube	no	2 m (stainless steel 18/8)	

Functional data	RTN51..	RTN71	RTN81
Setpoint range	8...28 °C		
Setting scale	0, *, 1...5	*, 1...5	
Frost protection position	yes		
Minimum / maximum limitation	Captive tappets		
Perm. medium temperature	120 °C		
Perm. Sensor temperature	40 °C		
Influence of water temperature	≤ 1.5 K	≤ 0.75 K	
Influence of differential pressure	≤ 1 K		
Hysteresis	≤ 1 K		
Transmission ratio	0.22 mm/K		0.24 mm/K

Dimensions / weight	RTN51..	RTN71	RTN81
Dimensions	Refer to Dimensions [▶ 11]		
Attachment to the valve	Union nut M30 x 1.5		
Weight	0.157 kg	0.202 kg	0.227 kg

Housing colors	RTN51..	RTN71	RTN81
Actuator	RAL 9016, matt (RTN51)	RAL 9016, matt	
	RAL 9016, glossy (RTN51G)		
Sensor	RAL 9016, matt	RAL 9016, matt	
Remote adjuster	RAL 9016, matt	RAL 9016, matt	

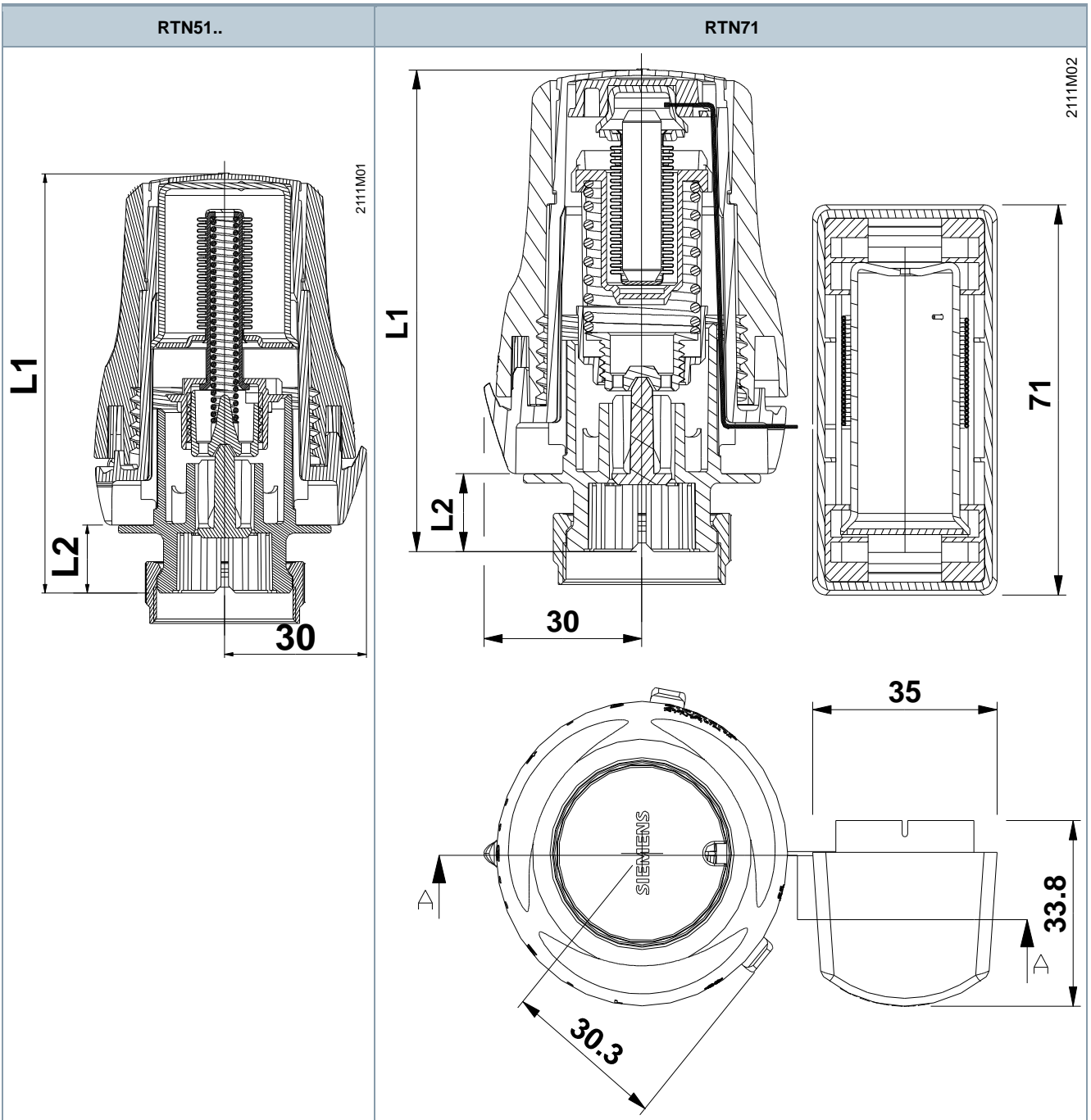
Standards	
Environmental compatibility	ISO 14001 (Environment) ISO 9001 (Quality) SN 36350 (Environmentally compatible products). RL 2002/95/EC (RoHS)

Materials	
Manual knob	ABS
Stem	PBT, 30% glass
Union nut	brass, nickel plated.

Environmental conditions		
Operation		EN 60721-3-3
	Climatic conditions	Class 3K3
	Temperature	+1...+40 °C
	Humidity	5...85% r.h.
Transportation		EN 60721-3-2
	Climatic conditions	Class 2K3
	Temperature	-25...+70 °C
	Humidity	< 95 % r.h.
Storage		EN 60721-3-1
	Climatic conditions	Class 1K3
	Temperature	-5...+50 °C
	Humidity	5...95 % r.h.

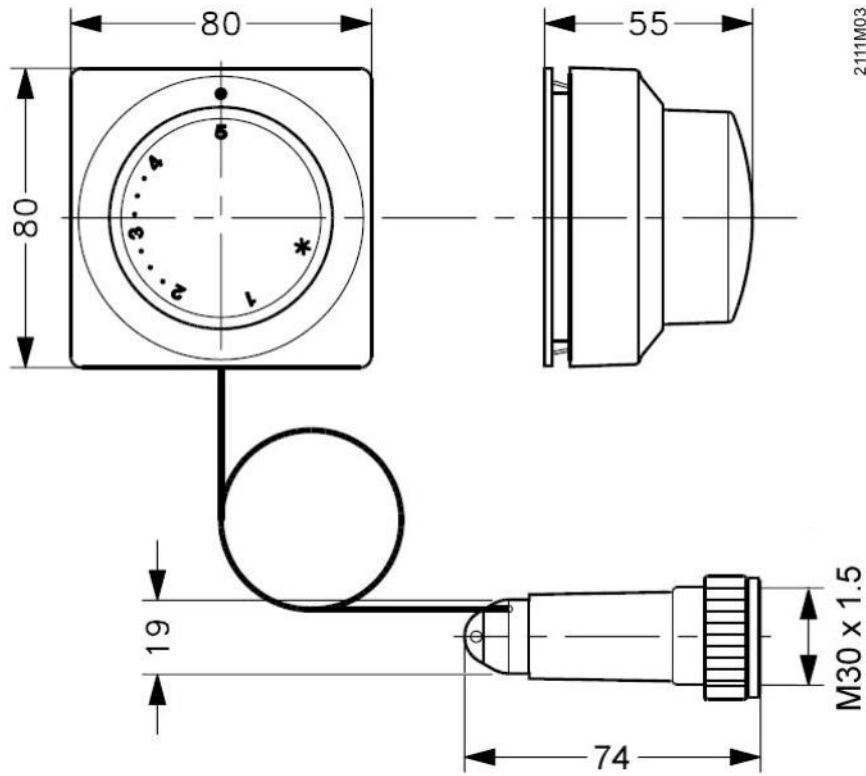
Dimensions

Dimensions in mm



Position	L1	L2
*	84.8	11.5
3	87.6	14.2
5	89.5	16.1

RTN81



Revision numbers

Type	Valid from rev. no.	Type	Valid from rev. no.
RTN51	..A	RTN71	..A
RTN51G	..A	RTN81	..A

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