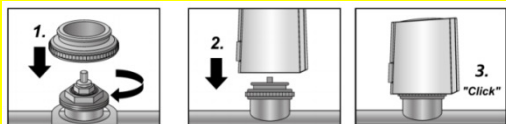




Adaptor to be used between actuator and valve.



Adaptors available to more than 50 valve brands on the market.

For examples:

Honeywell, Siemens (Landis & Staefa), Danfoss, Johnson Controls, Sauter, Tour & Anderson, MMA (Markaryd), Cazzaniga, Herz, Oventrop, Heimeier and many more.

Valve adaptors can be used on new and existing valves

Features

- **Control Signals**
On/Off or
Pulse Width Modulation (PWM)
- **Power supply** 24 Vac/dc or 230 Vac
- **Actuating force** 100 N
- **Available in**
Normally Closed (NC) or
Normally Open (NO)
- **Stroke variants** 4.0 mm / 5.0 mm
(other stroke variants on demand)
- **All around function indicator**
- **Adaptation check on valve**
- **Valve adaptors available to motorize**
most valve brands on the market
- **Simple snap-on installation**
- **Power consumption** 1 watt
- **360° installation position**
- **Patented 100% protection against leaky valves.**
- **First-Open Function**
- **Alignment aid on the valve**
- **Compact size, small dimensions**
- **Noiseless and maintenance-free**
- **High functional safety and long expected service life**
- **Certified by TÜV and CE**

Description

The A-series actuator is a thermoelectric actuator for opening and closing valves on heating circuit distributors of concealed floor heating and cooling systems.

The main field of application is the energy-efficient individual room temperature control in the range of building management systems and home automation.

The A-series actuator is controlled by room thermostat with two point output or pulse-width modulation.

Ordering.

Type number	Voltage	Stroke	Actuating Force	De-energised state	Closing and opening time	First-Open Function
A 40405-00N	24 Vac/dc	4.0 mm	100 N	NC	3.5 min.	yes
A 40405-10N	24 Vac/dc	4.0 mm	100 N	NC	3.5 min.	no
A 41405-10N	24 Vac/dc	4.0 mm	100 N	NO	3.5 min.	no
A 40505-00N	24 Vac/dc	5.0 mm	100 N	NC	4 min.	yes
A 40505-10N	24 Vac/dc	5.0 mm	100 N	NC	4 min.	no
A 41505-10N	24 Vac/dc	5.0 mm	100 N	NO	4 min.	no
A 20405-00N	230 Vac	4.0 mm	100 N	NC	3.5 min.	yes
A 20405-10N	230 Vac	4.0 mm	100 N	NC	3.5 min.	no
A 21405-10N	230 Vac	4.0 mm	100 N	NO	3.5 min.	no
A 20505-00N	230 Vac	5.0 mm	100 N	NC	4 min.	yes
A 20505-10N	230 Vac	5.0 mm	100 N	NC	4 min.	no
A 21505-10N	230 Vac	5.0 mm	100 N	NO	4 min.	no

**On next page:
Different adaptors to be used between actuator and valve**

Adaptor to be used between actuator and valve

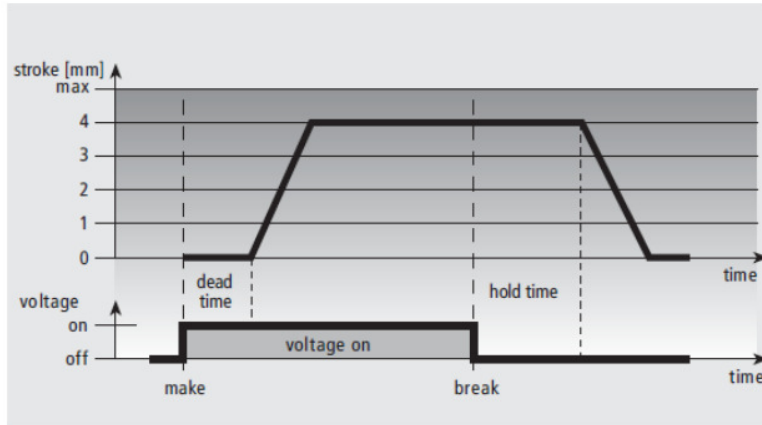
Adaptor Type	Collar/ Thread	Valve
VA 02	M30 x 1.50	Oponor, LK
VA 10	M30x1.5	Siemens (Landis & Satefa), Tour & Andersson TBV-CM, TBV-CMP, Sauter VUT015 F210
VA 16	M28x1.5	Herz
VA 17	M28x1.5	MMA (Markaryd)
VA 18	M30x1.5	Honeywell
VA 26	Clamping ring	Giacomini
VA 32	M28x1.5	Tour & Andersson before 1999
VA 39	M30x1.0	Oventrop
VA 50	M30x1.5	Landis & Gyr, Siemens VDN 215, Watts/Cazzaniga, Sauter VXL F220, BUT015 F410, BUT010 F400, BUT015 F210, Herz
VA 54	M28x1.5	Tour & Andersson RVT-K around 1992, MMA (Markaryd)
VA 59	Clamping ring	Danfoss RAV/L
VA 72	Grub screw	Danfoss RAV
VA 78	Grub screw	Danfoss RA (RA N, RA UN) high flange
VA 80	M30x1.5	VCP valve VZH-series, Heimeier, Tour & Andersson as of 1999, Honeywell V9050, Johnson Controls V5210KC, V5510KC, Sauter VXL F200 & 210, BXL F200 & 210, BUT 010 F410

Other adaptors available.

Functions

The actuator mechanism of the A-series actuator uses a PTC resistor-heated wax element and a compression spring. The wax element is heated by applying the operating voltage and moves the integrated ram. The force generated by the movement is transferred on the valve lifter and thus opens and closes the valve

Normally Closed (valve closed)



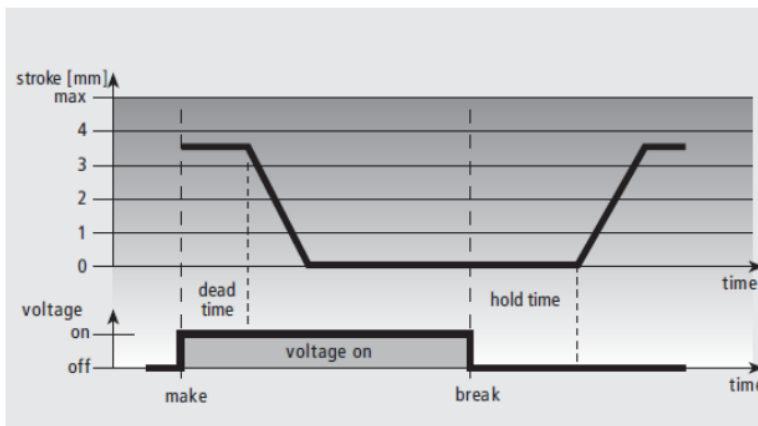
In case of the normally closed version, the valve is opened steadily by the ram motion upon switching on the operating voltage and after expiry of the dead time.

After the operating voltage is cut and after expiry of the hold time, the valve is closed evenly by the closing force of the compression spring.

The closing force of the compression spring is matched to the closing force of commercially available valves and keeps the valve normally closed.

Fig.: Example for 4 mm stroke. Characteristic line for stroke 5 mm results analogous.

Normally Open (valve opened)



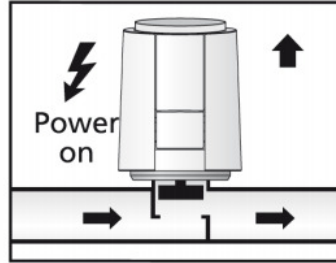
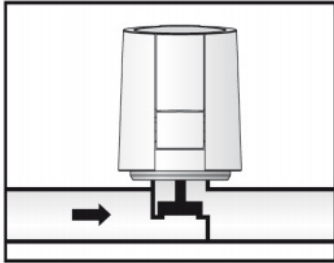
In case of the normally open version, the valve is closed evenly by the ram motion upon switching on the operating voltage and after expiry of the dead time.

After the operating voltage is cut and after expiry of the hold time, the valve is opened evenly by the closing force of the compression spring.

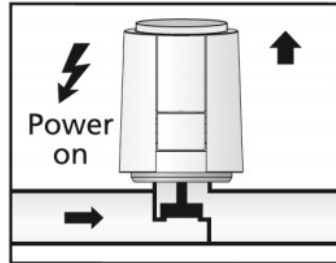
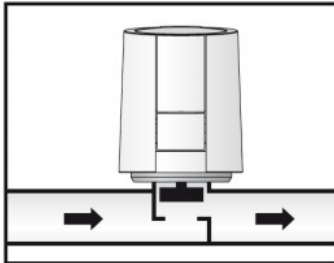
Fig.: Example for 4 mm stroke. Characteristic line for stroke 5 mm results analogous.

Function Display

The function display of the A-series actuator (all-around display) allows identifying the operating condition (valve open or closed) at a glance.



- In case of the **NC version**, an extended function display shows opening of the valve.



- In case of the **NO version**, an extended function display shows that the valve is closed.

First-Open Function (for NC only)

In its delivery condition, the A-series actuator is kept open when de-energised due to the First-Open function.

This enables heating operation during the carcass construction phase even when the electric wiring is not yet complete.

During the later electrical start-up, the First-Open function is unlocked by applying the operating voltage for more than 6 minutes.

The A-series actuator will then be completely operable.

Technical data

24 V versions

Operating voltage	24 V AC/DC, +20%...-10%
Max. inrush current	< 300 mA during 2 min. max.

230 V versions

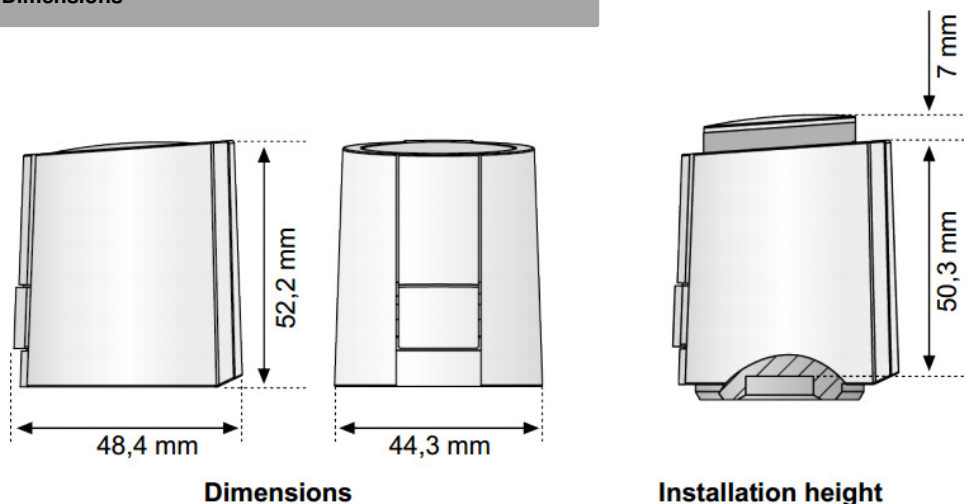
Operating voltage	230 V AC, +10%...-10%, 50/60 Hz
Max. inrush current	< 550 mA during 100 ms max.

24 V and 230 V versions

Operating power	1 W ¹⁾
Stroke (actuator travel)	4.0 / 5.0 mm
Actuating force	100 N ±5%
Fluid temperature	0 to +100°C ²⁾
Storage temperature	-25°C to +60°C
Ambient temperature	0 to +60°C
Type of protection	IP 54 ³⁾ / II
CE conformity according to	EN 60730
Housing material/housing colour	Polyamide / light grey (RAL 7035)
Connecting cable/colour	2 x 0.75 mm ² PVC / light grey (RAL 7035)
Cable length	1 m
Weight with connecting cable (1 meter)	100 g
Surge protection according to EN 60730-1	min. 2.5 kV

- 1) measured with precision reference instrument LMG95
- 2) in dependence of the adapter even higher
- 3) in all installation positions

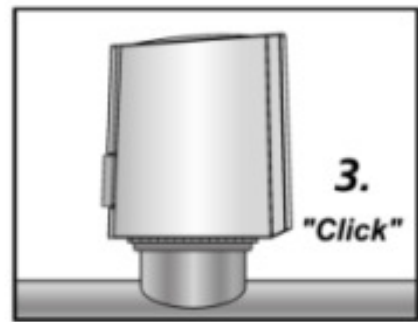
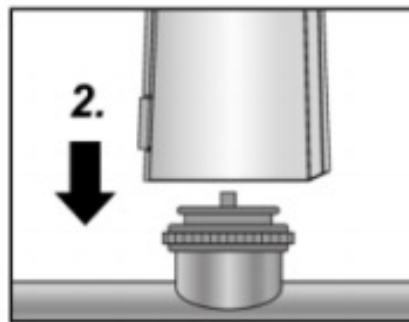
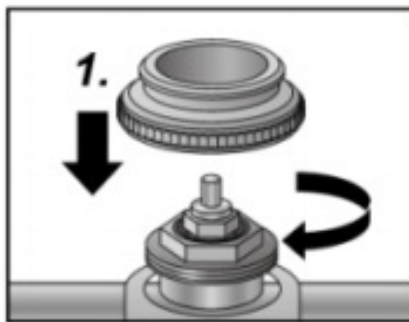
Dimensions



Installation Notes

Installation with valve adaptor

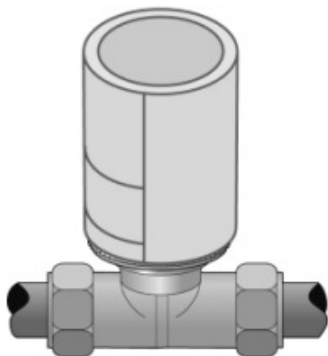
- The wide selection of valve adapters guarantees a perfect match of the A-series actuator to almost any valve bottom or heating circuit distributor available on the market.
- Simply snap-on the A-series actuator to the manually pre-installed valve adapter
- First the valve adapter is screwed on the valve manually
- The A-series actuator is placed vertically on the valve adapter.
- The A-series actuator snaps onto the valve adapter with a "click" when pressed down vertically by hand



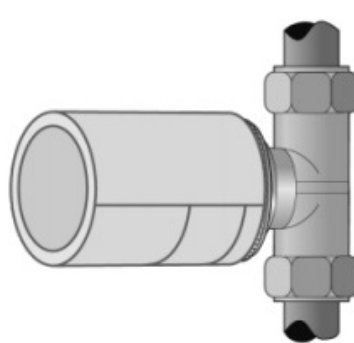
Installation positions

Preferred installation position of the A-series actuator is vertical or horizontal.

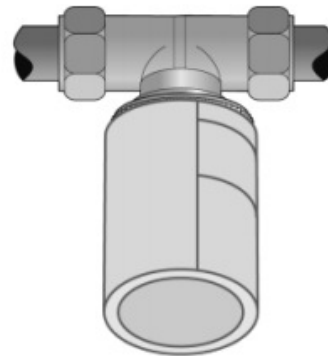
An upside down position may reduce product life through special circumstances (e.g. contaminated water).



Vertical



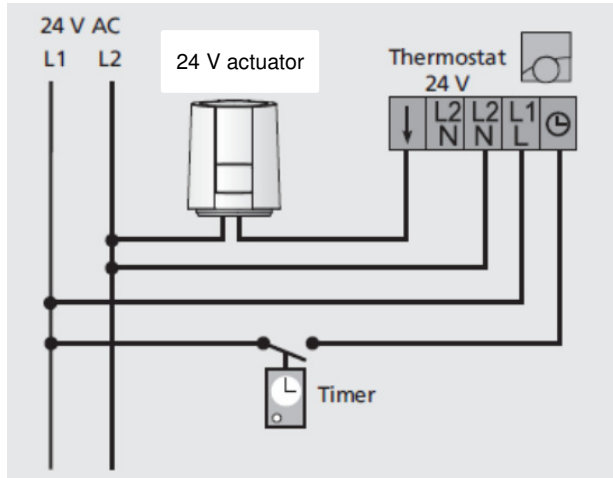
Horizontal



Upside Down

Electrical installations

24 V versions



Calculation of maximum cable length (copper cable) for 24 V rated voltage

- $L = K \times A / n$
 L Cable length in m
 A Conductor cross-section in mm²
 K Constant (269 m/mm²)
 N Number of Actuators

We recommend the following cables for installing a 24 V system:

Telephone wire	J-Y(ST)Y	0.8 mm ²
Light plastic-sheathed cable	NYM	1.5 mm ²
Flat webbed building wire	NYIF	1.5 mm ²

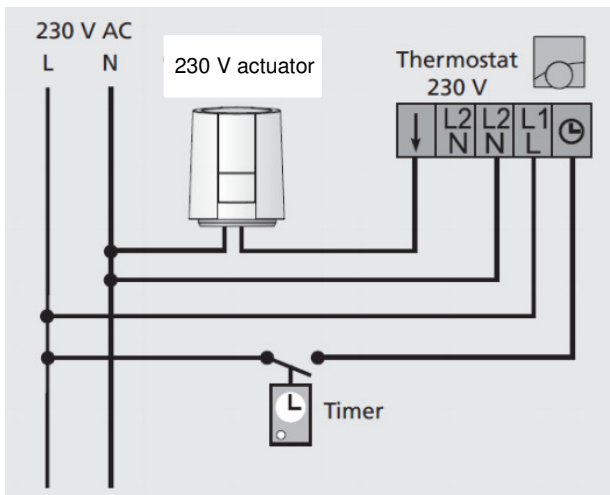
Transformer:

A safety isolating transformer according to EN 61558-2-6 (Europe) must always be used.

Transformer dimensioning results from the making capacity of the A-series actuator.

Rule-of-thumb formula: $P_{Trafo} = 6 W \times n$
 n = number of A-series actuator

230 V versions



We recommend usage of the following lines for installing a 230 V system:

Light plastic-sheathed cable	NYM	1.5 mm ²
Flat webbed building wire	NYIF	1.5 mm ²