

Product Description**AST20405/80, AST20405/78, AST20405/50, AST20405/39****AST20405/xx small thermoactuator****Application**

Small thermoelectric actuator for opening and closing small valves and valves on heating circuit manifolds of surface heating and cooling systems.

- 230 V AC, control with 2-point signal
- Normally closed version (NC)
- Connection line ready for use
- Only 1 watt power consumption
- Simple plug-in assembly
- 360° installation point



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Änderungen vorbehalten - Contents subject to change - Sous réserve de modifications - Reservado el derecho a modificación - Wijzigingen voorbehouden - Con riserva di modifiche - Innehåll som skall ändras - Zmeny vyhradené - Změny vyhradeny - Zmiany zastrzeżone - Возможны изменения - A változtatások jogát fenntartjuk - 保留未经通知而改动的权力

Important Information Regarding Product Safety

Safety Instructions

This data sheet contains information on installing and commissioning the product "AST20405/80, AST20405/78, AST20405/50, AST20405/39". Each person who carries out work on this product must have read and understood this data sheet. If you have any questions that are not resolved by this data sheet, you can obtain further information from the supplier or manufacturer.

If the product is not used in accordance with this data sheet, the protection provided will be impaired.

Applicable regulations must be observed when installing and using the device. Within the EU, these include regulations regarding occupational safety and accident prevention as well as those from the VDE (Association for Electrical, Electronic & Information Technologies). If the device is used in other countries, it is the responsibility of the system installer or operator to comply with local regulations.

Mounting, installation and commissioning work on the devices may only be carried out by qualified technicians. Qualified technicians are persons who are familiar with the described product and who can assess given tasks and recognize possible dangers due to technical training, knowledge and experience as well as knowledge of the appropriate regulations.

Legend



WARNING

Indicates a hazard of medium risk which can result in death or severe bodily injury if it is not avoided.



CAUTION

Indicates a hazard of low risk which can result in minor or medium bodily injury if it is not avoided.



CAUTION

Indicates a hazard of medium risk which can result in material damage or malfunctions if it is not avoided.



NOTE

Indicates additional information that can simplify the work with the product for you.

Notes on Disposal

For disposal, the product is considered waste from electrical and electronic equipment (electronic waste) and must not be disposed of as household waste. Special treatment for specific components may be legally binding or ecologically sensible. The local and currently applicable legislation must be observed.

Product Description**AST20405/80, AST20405/78, AST20405/50, AST20405/39****Item**

| | |
|-------------|--|
| AST20405/xx | Small thermoactuator AC 230 V control with 2-point signal; normally closed |
| AST20405/80 | Adapted for: Oventrop, Heimeier, Tour&Anderson and valves R10..20D/ E, R10..20DV/ EV and RW15L/ R Thread: M30x1.5 |
| AST20405/78 | Adapted for: Danfoss RA Flange diameter: 23 mm |
| AST20405/50 | Adapted for: MNG, Landis&Gyr, Siemens VDN215, Cazzaniga; Thread: M30x1.5 |
| AST20405/39 | Adapted for: Oventrop (pre 1997) Thread: M30x1.0 |

Technical Data

| | |
|------------------------|--|
| Nominal voltage | AC 230 V ; -10 %..+10 %; 50 / 60 Hz |
| Switch-on current | <550 mA for max. 100 ms |
| Operating output | 1.0 W |
| Control signal | 2 point (open/close) |
| Function | Normally closed |
| Travel time | Approx. 4.0 min |
| Travel range | 4.0 mm |
| Positioning force | 100 N \pm 5 % |
| Position indication | Indicator plunger on upper side of actuator |
| Medium temperature | 0..100 °C |
| Ambient temperature | 0..60 °C |
| Overvoltage protection | at least 2.5 kV; in accordance with EN 60730-1 |
| Protection class | II |
| Degree of protection | IP54 (in all installation positions, with connection line attached) |
| Housing | Polyamide, white |
| Connection | Connection line 2 x 0.75 mm ² ; PVC, pale gray (RAL 7035); length 1 m |
| Maintenance | Maintenance-free |
| Weight | 100 g without adapter or connection line |

**NOTE**

The way the small thermoactuator operates changes depending on the electricity supply (power supply).

Cold actuator (long period without power)

approx. 4 min until max. value opening is achieved(Heimeier)

approx. 6 min until max. opening stroke of the small actuator is achieved

Actuator at operating temperature:

approx. 2 min until max. value opening is achieved(Heimeier)

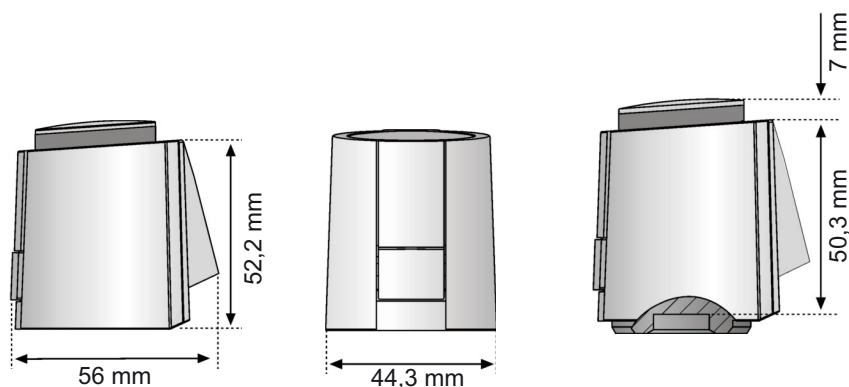
approx. 4 min until max. opening stroke of the small actuator is achieved

Accessories (not included in delivery)

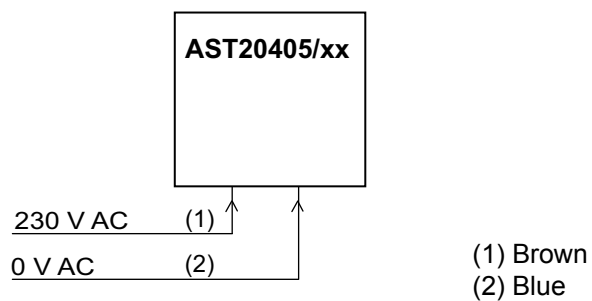
| | |
|----------|--|
| SK/AA/04 | Protective cap |
| Z29 | Socket key for R10..20DV/EV valves |
| VA80 | Valve adapter for Oventrop, Tour&Anderson |
| VA78 | Valve adapter for Danfoss RA |
| VA50 | Valve adapter for MNG, Landis&Gyr, Siemens VDN215, Cazzaniga |
| VA39 | Valve adapter for Oventrop (before 1997) |

- Further adaptations for other valve types available on request

Dimensions



Connection



Mounting



CAUTION

Mounting/demounting may only be carried out by qualified technicians when the power is switched off.

Valve Installation

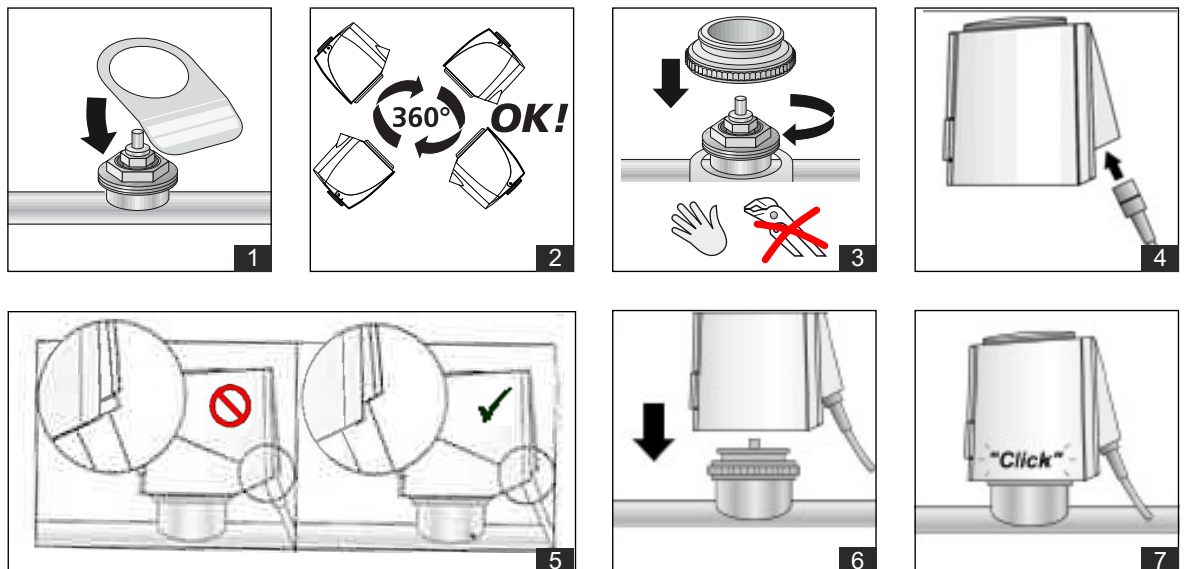
In addition to the general mounting guidelines, the following points are to be observed:

- The pipeline system and the valve interior must be free of foreign objects.
- There must be no tension between the valve and pipeline connection.
- It is preferable to mount the valve so the small thermoactuator can be mounted above the fixture facing upwards or facing the side. Include free space for mounting the actuator, approx. 70 mm above the screwed on valve adapter.

If the SK/AA/04 protection cap is used, additional clearance of approx. 90 mm must be taken into account.

- Max. pressure difference Δp and flow direction must be observed.

Mounting the actuator



The small thermoactuator is mounted without tools. Also observe the installation instructions in the actuator packaging.

- Only screw the valve adapter onto the valve by hand (figure 3)
- Connect the connection line to the actuator (figure 4) The plug must be fitted securely in the housing (figure 5)
- Push the small thermoactuator onto the valve adapter until it locks into position (figure 7).
- The small thermoactuator is locked in a half-open position when delivered (“first-open” function). This makes mounting easier and the pipeline system can be flushed and tested under pressure while the actuator is mounted (before being connected to the mains power supply).

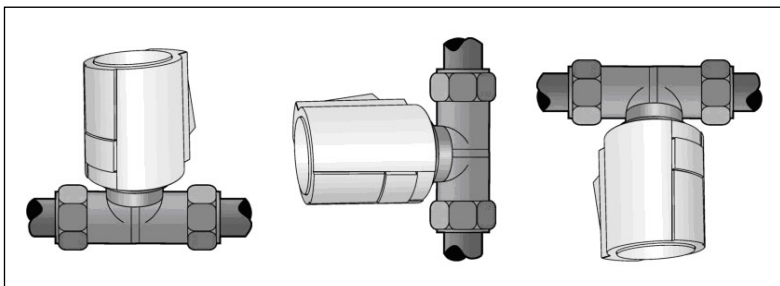


CAUTION

The small thermoactuator is only operational after the nominal voltage has been applied for more than 4 minutes. The “first-open” function is then automatically unlocked.

Installation position

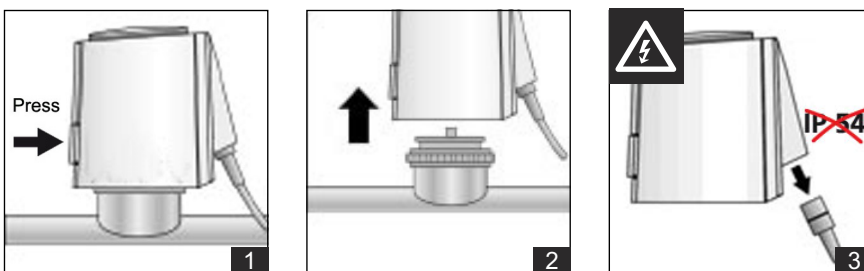
All installation positions are allowed, for example, vertically above the valve, horizontally and upside down.



NOTE

When installed upside down, dirt residue (e.g. from wastewater) may mechanically jam the actuator.

Removal



- To dismantle the actuator, press at the position shown and remove the actuating mechanism.

Product Description

AST20405/80, AST20405/78, AST20405/50, AST20405/39

R10..20D/ E, R10..20DV/ EV and RW15L/ R
Two-Way/Three-Way Valve for AST20405/80 small actuator

Types

PN10 gunmetal two-way valve for water up to 120 °C

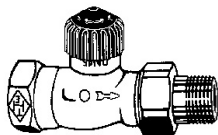
| | Type | DN | PN | Kvs | R |
|---|-------|----|----|------|------|
| Straight-through flow | R10D | 10 | 10 | 1.25 | 3/8" |
| | R15D | 15 | 10 | 1.35 | 1/2" |
| | R20D | 20 | 10 | 2.5 | 3/4" |
| Flow through 90° | R10E | 10 | 10 | 1.25 | 3/8" |
| | R15E | 15 | 10 | 1.35 | 1/2" |
| | R20E | 20 | 10 | 2.5 | 3/4" |
| Straight-through flow with Kvs setting | R10DV | 10 | 10 | 0.86 | 3/8" |
| | R15DV | 15 | 10 | 0.86 | 1/2" |
| | R20DV | 20 | 10 | 0.86 | 3/4" |
| Flow through 90° with Kvs setting | R10EV | 10 | 10 | 0.86 | 3/8" |
| | R15EV | 15 | 10 | 0.86 | 1/2" |
| | R20EV | 20 | 10 | 0.86 | 3/4" |

PN10 gunmetal three-way valve for water up to 120 °C

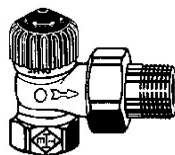
| | Type | DN | PN | Kvs | R |
|------------------|-------|----|----|------|------|
| Connection left | RW15L | 10 | 10 | 1.45 | 1/2" |
| Connection right | RW15R | 15 | 10 | 1.45 | 1/2" |

Technical data - valves R10..20D/ E, R10..20DV/ EV and RW15L/ R

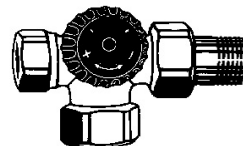
| | |
|-----------------------|---|
| Nominal diameter | DN10 - 20 |
| Pressure rating | PN10 |
| Connection | Pipe screw connections in accordance with DIN EN 2115 |
| Actuating stroke | 2 mm |
| Temperature of medium | Water up to 120 °C |
| Housing | Gunmetal; nickel-plated |
| Cone | EPDM |
| Valve spindle | Stainless steel |
| Spindle seal | EPDM |
| Maintenance | Maintenance-free |



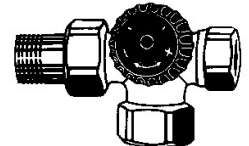
R10..20D, R10..20DV



R10..20E, R10..20EV

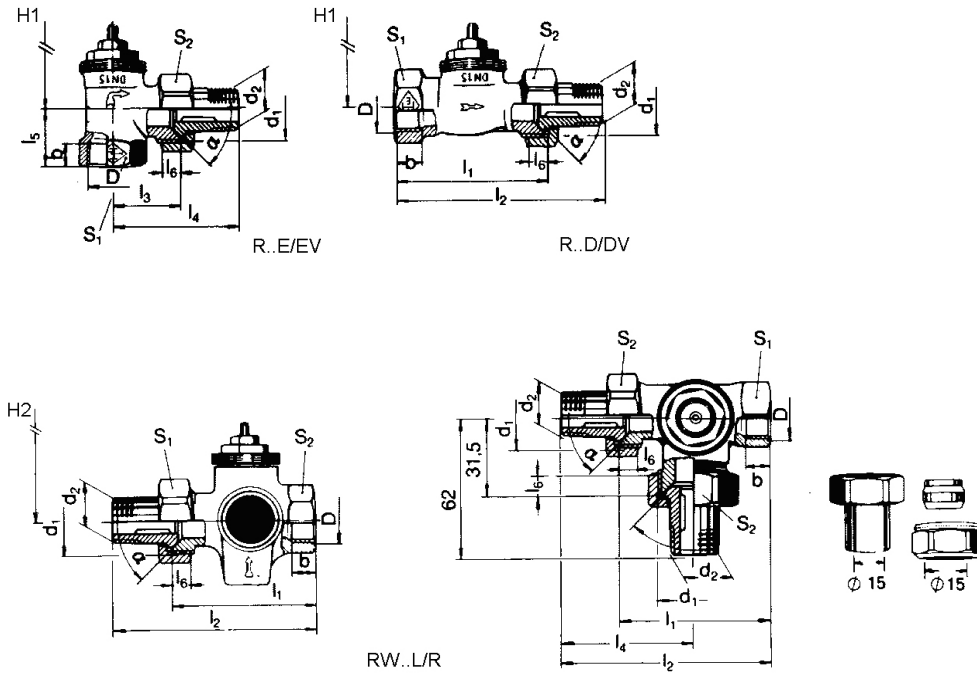


RW15L



RW15R

Dimensions



| DN | D | b | d1 | d2 | l1 | l2 | l3 | l4 | l5 | l6 | S1 | S2 | H1 | H2 |
|----|--------|------|-------|-------|----|-----|----|------|------|-----|----|----|----|----|
| | | min | | | ±1 | ±2 | ±1 | ±1,5 | ±1,5 | min | | | ±2 | ±2 |
| 10 | Rp 3/8 | 10,1 | G 5/8 | R 3/8 | 59 | 85 | 26 | 52 | 22 | 6 | 22 | 27 | 69 | 74 |
| 15 | Rp 1/2 | 13,2 | G 1/2 | R 1/2 | 66 | 95 | 29 | 58 | 26 | 7 | 27 | 30 | 69 | 74 |
| 20 | Rp 3/4 | 14,5 | G 1 | R 3/4 | 74 | 106 | 34 | 66 | 29 | 8 | 32 | 39 | 69 | 74 |

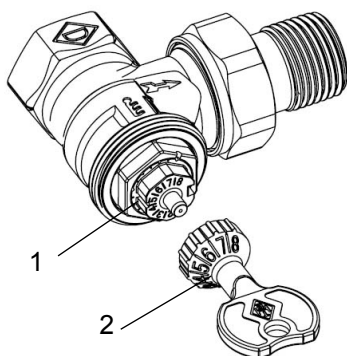
Kvs default setting for R10 - 20DV/EV valves

To adjust to the heat requirement, the R10 - 20DV/EV valves have 8 flow settings for the radiator mass flow rate.

The maximum flow rate, Kvs value (m³/h) can be selected by using the settings 1, 2, 3, 4, 5, 6, 7 or 8 (delivery setting = 8, corresponds to a Kvs value = 0.86).

The setting can be made using a Z29 socket key (accessory). The setting between 1 and 8 can be read from the valve, and will be implemented by the installed small actuator.

| Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|
| Kvs value | 0,049 | 0,102 | 0,185 | 0,313 | 0,420 | 0,565 | 0,740 | 0,860 |



- (1) Setting marks
- (2) Z29 socket key (accessory)