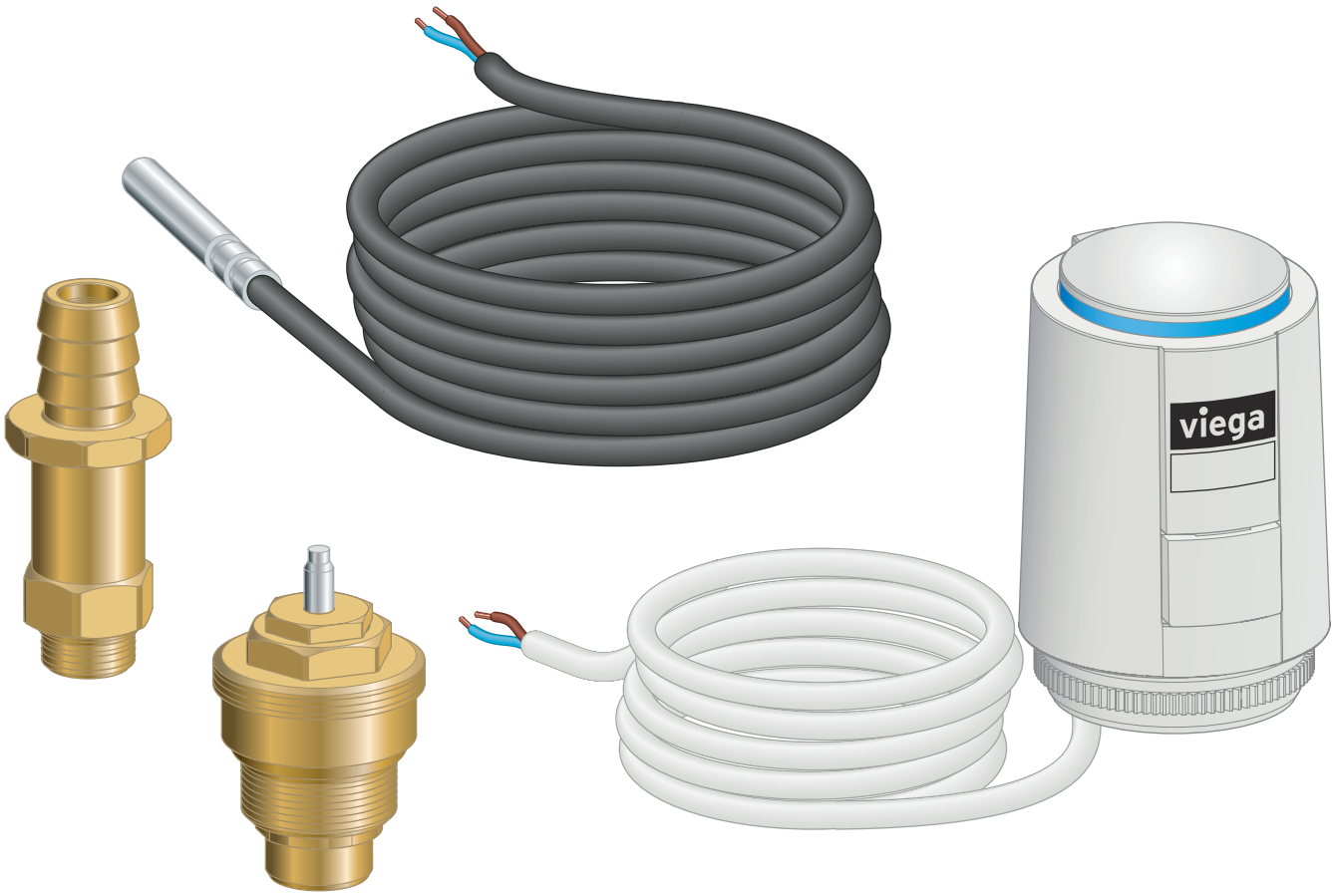
INT

Instructions for Use

Actuator set



for Easytop circulation regulation valve S/E model 2281.15, 2281.3, 2281.5, 2281.7

Model	Year built (from)
1013.8	07/2019

viega

Table of contents

1 About these instructions for use

1.1 Target groups

The information in this manual is directed at heating and sanitary professionals and trained personnel.

Individuals without the abovementioned training or qualification are not permitted to mount, install and, if required, maintain this product. This restriction does not extend to possible operating instructions.

The installation of Viega products must take place in accordance with the general rules of engineering and the Viega instructions for use.

1.2 Labelling of notes

Warning and advisory texts are set aside from the remainder of the text and are labelled with the relevant pictographs.

DANGER!
This symbol warns of possible life-threatening injury.

WARNING!
This symbol warns of possible serious injury.

CAUTION!
This symbol warns of possible injury.

NOTICE!
This symbol warns of possible damage to property.

This symbol gives additional information and hints.

1.3 About this translated version

This instruction for use contains important information about the choice of product or system, assembly and commissioning as well as intended use and, if required, maintenance measures. The information about the products, their properties and application technology are based on the current standards in Europe (e.g. EN) and/or in Germany (e.g. DIN/DVGW).

Some passages in the text may refer to technical codes in Europe/ Germany. These should serve as recommendations in the absence of corresponding national regulations. The relevant national laws, standards, regulations, directives and other technical provisions take priority over the German/European directives specified in this manual: The information herein is not binding for other countries and regions; as said above, they should be understood as a recommendation.

2 Product information

2.1 Standards and regulations

The following standards and regulations apply to Germany / Europe and are provided as a support feature.

Regulations from section: Application areas

Scope / Notice	Regulations applicable in Germany
Planning, execution, operation and maintenance of potable water installations	DIN EN 806, part 1
Planning, execution, operation and maintenance of potable water installations	DIN EN 806, part 2
Planning, execution, operation and maintenance of potable water installations	DIN EN 806, part 3
Planning, execution, operation and maintenance of potable water installations	DIN EN 806, part 4
Planning, execution, operation and maintenance of potable water installations	DIN EN 806, part 5
Planning, execution, operation and maintenance of potable water installations	DIN EN 1717
Planning, execution, operation and maintenance of potable water installations	DIN 1988
Planning, execution, operation and maintenance of potable water installations	VDI/DVGW 6023

Regulations from section: Media

Scope / Notice	Regulations applicable in Germany
Suitability for potable water	Trinkwasserverordnung (TrinkwV)

Regulations from section: Corrosion

Scope / Notice	Regulations applicable in Germany
External corrosion protection	DIN EN 806-2
External corrosion protection	DIN 1988-200
External corrosion protection	DKI-Informationsdruck i. 160

Regulations from section: Installation position and settings

Scope / Notice	Regulations applicable in Germany
Dimensioning of circulation systems	DVGW-Arbeitsblatt W 553

Regulations from section: Connection to building automation

Scope / Notice	Regulations applicable in Germany
Use of a safety isolating transformer	EN 60335

Regulations from section: Leakage test

Scope / Notice	Regulations applicable in Germany
Leakage test for potable water installations	DIN EN 806, part 4
Leakage test for potable water installations	ZVSHK-Merkblatt „Dichtheitsprüfungen von Trinkwasserinstallationen mit Druckluft, Inertgas oder Wasser“

Regulations from section: Maintenance

Scope / Notice	Regulations applicable in Germany
Operation and maintenance of potable water installations	DIN EN 806-5

2.2 Intended use

The actuator is intended for controlling thermostatic circulation regulation valves in hot water installations.

Agree the use of the model for areas of application and media other than those described with Viega.

2.2.1 Areas of application

Use is possible with the following models:

- 2281.15
- 2281.3
- 2281.5
- 2281.7

The general rules of engineering and the applicable regulations must be observed for planning, execution, operation and maintenance of potable water installations, see *'Regulations from section: Application areas' on page 5*.

2.2.2 Media

The model is also suitable for the following media, amongst others:

- Potable water without limitations acc. to the applicable directives, see *'Regulations from section: Media' on page 5*
- Maximum chloride concentration 250 mg/l pursuant to applicable regulations, see *'Regulations from section: Media' on page 5*

2.3 Product description

2.3.1 Overview

The model is equipped as follows:

- 24 V actuator with valve adapter
- Easytop drainage valve
- Temperature sensor (Pt1000)
- Valve insert

2.3.2 Threaded connection

G-threads are sealed by pressing the sealing surfaces together. For this reason, no additional sealants (hemp, sealing paste / thread etc.) may be used.

2.3.3 Markings on components

The model is marked as follows:

- Position indicator for operating mode
- Voltage and power rating
- CE marking

2.3.4 Compatible components

The actuator set is compatible with the circulation regulation valves 2281.15 and 2281.5.

Please contact the Viega Service Center for questions on this subject.

2.3.5 Operating mode

General

The adjusting mechanism of the actuator works with a PTC-heated flexible material element and a pressure spring.
The expansion material element is heated by activating the operating voltage and the integrated spindle is moved. The power created by the movement is transferred to the valve spindle and opens or closes the valve.

When the operating voltage is applied, the valve remains closed for a short while (dead time), then the valve opens evenly due to the spindle movement against the pressure of the pressure spring.
The valve is closed evenly by the closing force of the pressure spring, after the waiting time, by switching off the operating voltage.
The closing force of the pressure spring is matched to the closing force of conventional valves and holds the valve closed in a currentless state.

First open function

The actuator is supplied with "first-open function", that means: Initially, it is minimally currentless open. This allows operation in the building phase, even when the electrical wiring is not yet completed. The first-open function is automatically deactivated as soon as the operating voltage has been applied for longer than 6 minutes.

2.3.6 Technical data

Observe the following operating conditions for the installation of the actuator set:

Actuator

Version	Closed in de-energised state (NC)
Voltage	24 V AC / DC + 20 % to - 10 % 0 to 60 Hz
Switch-on current max.	250 mA for max. 2 Min.
Operating current	75 mA
Operating capacity	2 W
Closing and opening times	Approx. 3 minutes.
Displacement	4 mm
Pulling load	100 N +/- 5 %
Media temperature	0 up to 100 °C [1]
Storage temperature	-25°C up to +65 °C
Ambient temperature	0°C up to +65 °C
Degree of protection / Protection class	IP 54 [2]
CE conformity in acc. with	EN 60730
Casing / Casing colour	Polyamide / grey
Weight	100 g incl. 1 m connection cable
Connection pipeline / line length	2 x 0.75 mm^2 PVC, grey / 11 m
Overvoltage resistance according to EN 60730-1	—

[1] depending on the adapter also higher

[2] in all mounting positions

Temperature sensor

Resistance	3.85 Ω / °C
Connection cable	TF 45
Measuring range	- 20 up to + 105 °C
Measuring element	1 x Pt1000 /2 conductor / Cl. B
Protective pipe material	1.4571
Protective pipe diameter	6.0 mm
Protective pipe length	50 mm
Connection pipeline / line length	2 x 0.34 mm^2 PVC, grey / 2.5 m
Degree of protection	min. IP 54

Delay time	min. 20 s
Permitted drop height	with and without packaging 1 m

Switching behaviour / head line

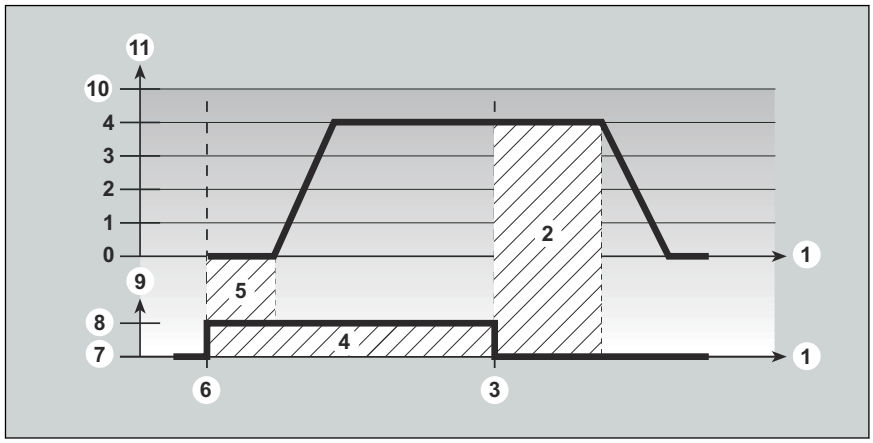


Fig. 1: 1013.9 switching behaviour / characteristic line of actuator

1 - Time
2 - Holding time
3 - Turn-off time
4 - Voltage switched on
5 - Dead time
6 - Turn-on instant
7 - Off
8 - On
9 - Voltage
10 - Maximum
11 - Stroke [mm]

2.4 Information for use

2.4.1 Corrosion

Overground pipelines and fittings in rooms do not normally require external corrosion protection.

There are exceptions in the following cases:

- Contact with aggressive building materials such as nitrite or materials containing ammonium
- in aggressive surroundings

If external corrosion protection is required, observe the pertinent guidelines, see *'Regulations from section: Corrosion' on page 6*.

3 Handling

3.1 Assembly information

3.1.1 Mounting instructions

Checking system components

Do not remove the model from the packaging until immediately before use.

System components may, in some cases, become damaged through transportation and storage.

- Check all parts.
- Replace damaged components.
- Do not repair damaged components.
- Contaminated components may not be installed.

Observe the following when mounting:

- Use suitable tools

NOTICE!
Mount the actuator so that it is aligned horizontally or facing up.

If you align the actuator facing down, its service life may be shorter due to contamination.

3.1.2 Connection to the building automation

Wiring / connection overview

The regulating electronics/building automation must be supplied on site.

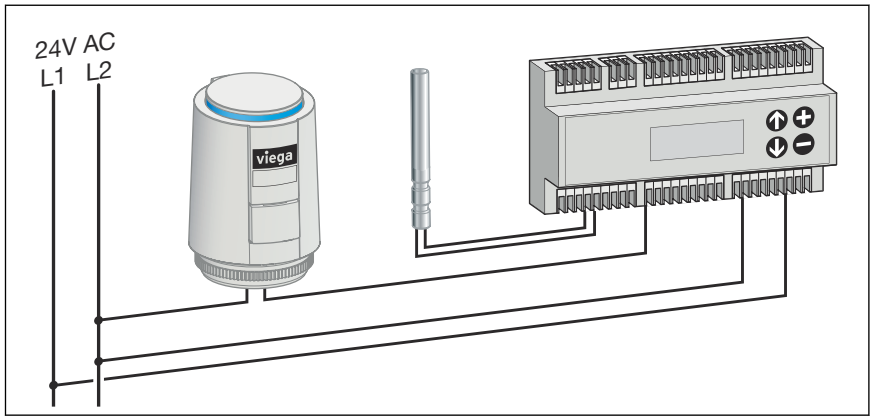


Fig. 2: Wiring

Pipes

We recommend the following cables for installation:

Type of cable	Name	Cross section
Bell wire	Y(R)	0.8 mm^2
Light plastic-sheathed cable	NYM	1.5 mm^2

The following formula is used to calculate the maximum cable length (copper cable) at a nominal voltage of 24 V:

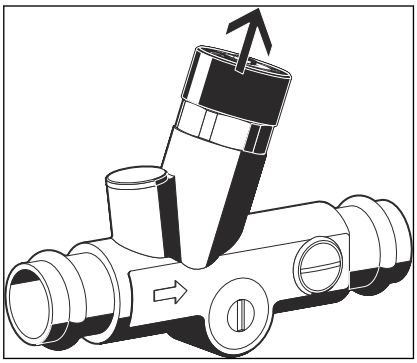
L = C x A/n

- L = Length in m
- C = Constant (269 m/mm^2)
- A = Cross section of the cable in mm^2
- n = Number of actuators

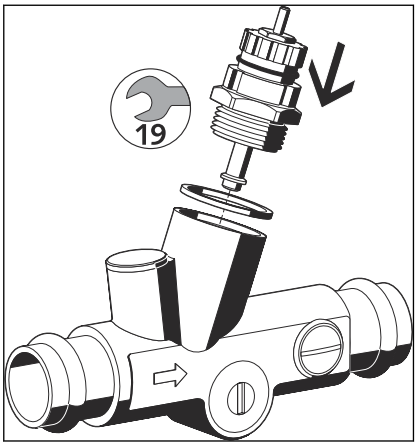
3.2 Assembly

3.2.1 Mounting the actuator set

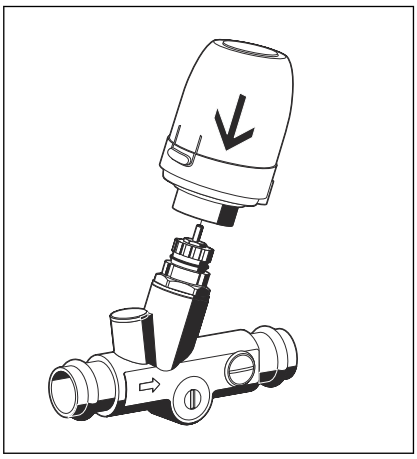
Mounting is demonstrated with the example model 2281.5.



➥ Remove the regulating unit.

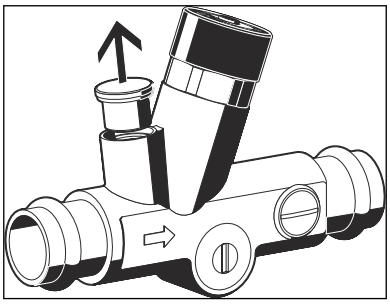


- Screw in the valve insert and tighten with a fork spanner (size 19). Sealing is achieved using an O-Ring.

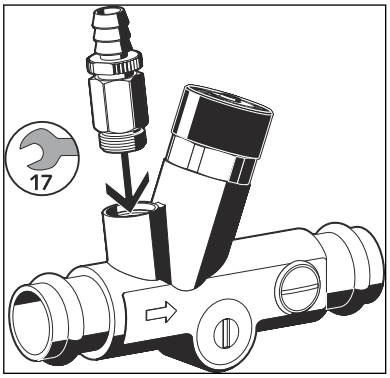


- Screw on the valve adapter and mount the actuator.
- Check for proper function.

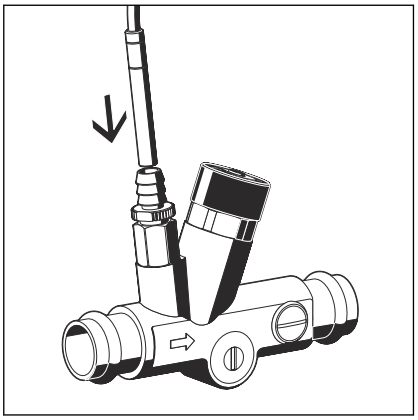
3.2.2 Mounting the drainage valve and temperature sensor



- Unscrew the drain plugs with an Allen key (size 5).



- Insert Easytop drainage valve and tighten using a fork spanner (size 17). Sealing is achieved using an O-Ring.



- Insert the temperature sensor into the closed Easytop drainage valve.

3.2.3 Leakage test

The installer must perform a leakage test before commissioning.

Carry out this test on a system that is finished but not covered yet.

Comply with the general rules of engineering and the applicable directives, see *'Regulations from section: Leakage test' on page 6*.

Document the result.

3.3 Maintenance

NOTICE!
Inform your customer or the operator of the potable water installation that the system has to be maintained on a regular basis.

Observe the applicable regulations for the operation and maintenance of potable water installations, see *'Regulations from section: Maintenance' on page 6*.

3.4 Disposal

Separate the product and packaging materials (e. g. paper, metal, plastic or non-ferrous metals) and dispose of in accordance with valid national legal requirements.

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