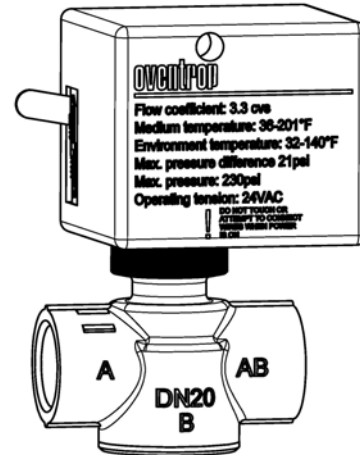


Before initial operation, please examine condition and function of system components, control, emergency tripping and safety devices and check them for damages! Operating instructions are to be read!

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Oventrop Corp.
P.O. Box 789
29 Kripes Road
East Granby, CT 06026
Phone (860) 4 13 91 73
Telefax (860) 4 13 94 36
E-Mail: usa@oventrop.com
Internet: http://www.oventrop-na.com



1. General information

1.1. Information regarding operating instructions

These operating instructions help the user to install, put into operation and service the two-way valve with actuator.

Before starting work, the operation instructions and especially the chapter „Safety“ are to be read in their entirety! The operating instructions and especially the safety notes as well as the regulations for prevention of accidents must be observed.

1.2. Symbol explanation

Guidelines for the safety of persons and the installation itself are displayed by symbols. These guidelines must be observed in order to avoid accidents and damage property.



DANGER!
Imminent danger to life and limb!



Attention!
Possible danger to product and environment!



Note!

Useful Information and notes.

1.3. Copyright

The operating instructions as well as the included texts, drawings, images and other illustrations are copyrighted. Duplication of any kind – even in extracts – as well as the exploit and/or passing-on of the content are not permitted without the written declaration of consent of the manufacturer. Damages will be claimed for in case of contraventions. Subject to further claims.

Subject to technical modifications without notice.

2. Safety

2.1. Correct use

Safety in operation is only guaranteed if the the two-way valve with actuator is used correctly.

The the two-way valve installed in air-conditioning or heating systems is used for the room temperature control.

Any use of the two-way valve and its actuator beyond that and/or elsewhere is forbidden and is considered as non-compliance.

Claims of any kind against the manufacturer and/or his authorised representatives due to damages caused by incorrect use cannot be accepted. Solely the user is liable.

The observance of the operating and maintenance instructions are part of the compliance terms.

2.2. Possible dangers at the installation



DANGER! Electrical Current

The current supply must be switched off before work commences!

The two-way valve with actuator must only be installed in dry and self-contained rooms.

The cables must be secured to not touch the valve or other hot surfaces.

Suitable cables with minimum wire cross section are to used for installation.

Installation has to be carried out by a qualified trades person!



DANGER! Hot Medium and Hot Surface

The surface of the valve can be hot – protect your hands with gloves!



DANGER! Valve is under pressure

Don't open the valve !

3. Transport, packaging und storage

3.1. Transport inspection

Upon receipt, check delivery for possible damages during transit.

Any damage must be reported immediately upon receipt.

3.2. Storage

The two-way valve with actuator must only be stored under the following conditions:

- Do not store in the open air, but dry and free from dust.
- Do not expose to aggressive fluids or heat sources.
- Protect the thermostat from direct sunlight and mechanical agitation.
- Storage temperature: 32°F up to 140°F
Max. relative humidity of air: 100%

4. Technical data

4.1. Performance data

Operating tension: 24V AC, 50/60Hz

Power: <6W

Opening time: 11s

Colsing time: 5s

Protection: IP 20

Flow coefficient : 3.3 cvs

Medium: water

Medium temperature: 36-201°F

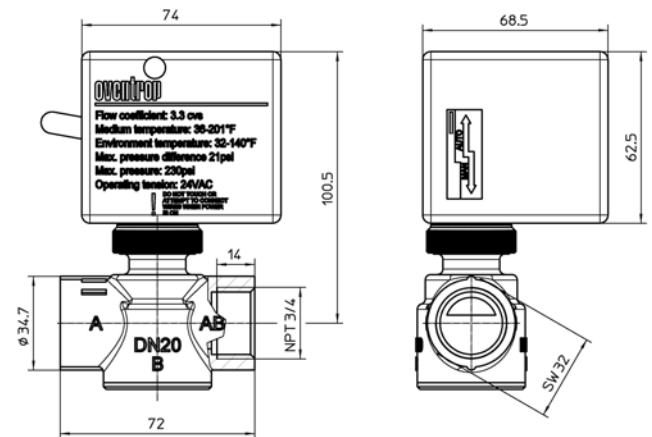
Environment temperature: 32-140°F

Max. pressure difference 21psi

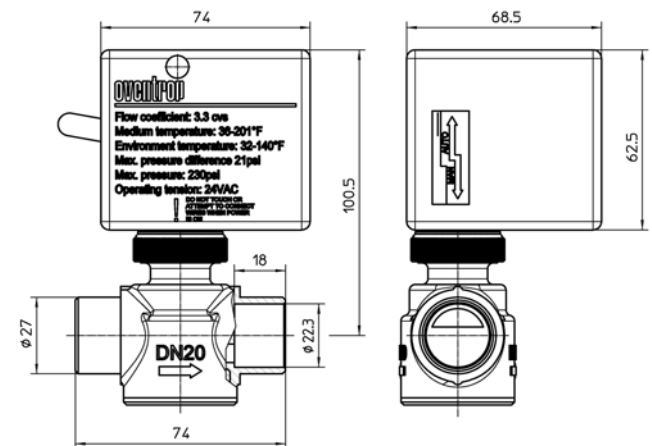
Max. pressure 230psi

4.2. Dimensions

Item-no.	Type
168 07 06	NPT-Thread
168 07 52	soldering type



Illustr.4.1 Dimensions of two-way valve (NPT-thread) with actuator



Illustr.4.2 Dimensions of two-way valve (soldering type) with actuator

5. Construction and function

5.1. Functional description

The two-way valve with actuator is used temperature control in air-conditioning and heating systems.

The actuator is driven by an unilateral motor with spring return. The valve is closed with current “off”. If the thermostat provides a current of 24 VAC the actuator will open the valve. Now the flow of cool/hot water will cool/heat the room. When the set-point of the room thermostat is reached the current will switch off and the valve will be closed by the return spring. By this the room temperature will be kept with the setting range.

The actuator has an lever for manual operation. If the actuator is in manual mode the valve will be opened.

6. Installation and assembly

6.1. Installation of the two-way valve with actuator

Switch off current supply. The two-way valve can be installed horizontally or vertically. In case of horizontal installations the actuator must be positioned in an angle less than 85° (see illustr. 6.1a) to protect the actuator from water drops. In vertical installations the actuator must be protected from water drops as well.

6.1.1 Installation of the two-way valve (NPT-thread version)

! The connection A is the water supply, connection B leads to the air-conditioning/ heating system. (see illustr. 6.1b).

Use correct tools to fasten the valve within the tube. Don't use a serrated pipe wrench to hold the valve.

6.1.2 Installation of the two-way valve (soldering type)

! Connect the valve according to the flow mark on the body from water supply to air-conditioning/ heating system. Avoid heating up the whole valve during the soldering process, just heat up the two soldering connections.



DANGER! Hot solder

Protect yourself with protection clothes and security glasses.



Use copper tubes of specification ASTM B88 : 99 Type K, L or M. Tube size: 3/4 inches (outside diameter 7/8 inches).

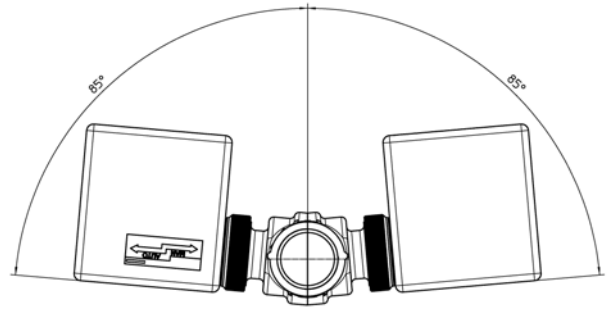
Use correct tools to fasten the valve within the tube. Don't use a serrated pipe wrench to hold the valve.

6.1.3 Electrical installation

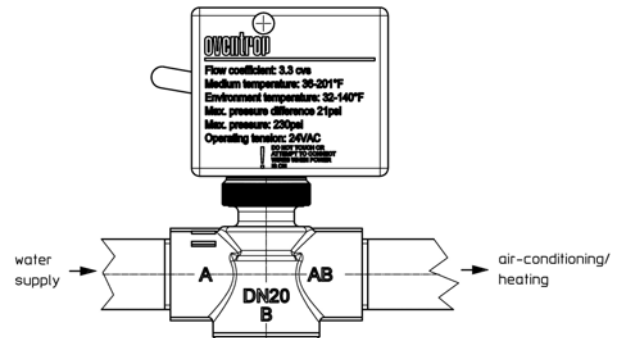
Finally carry out wiring. Use a biscuit connector to connect the installation cable. Ensure that the wire cannot touch any hot surface.

! Observe the valid local guidelines for electrical installations!

Only use UL-approved Class 2 power packs.



Illustr. 6.1a Installation in horizontal pipes



Illustr. 6.1b Connections for installation

6.2. Removing the actuator for installation

If needed the actuator can be screwed off the valve. For assembling the actuator again no tools should be used – just fingertight fastened.

6.3. Leakage test

After installation a leakage test must proof the correct connection between tube and valve.

7. Operation

7.1. Automatic Mode

In automatic mode the valve is closed with current “off”. If 24VAC are supplied the valves will open.

7.2. Manual Mode

To switch from automatic to manual mode push the lever slowly and put it into the retaining notch.



Watch your fingers! Don't squeeze them!

Now the valve will remain be opened until the actuator gets a 24VAC current. Then the mode is switched automatically from manual to automatic.