SIEMENS

ACVATIX™

# Siemens Acvatix Valve Kit, PN25

SAVK..

**For use in rooms, zones and air conditioning systems. This product is used in closed circuits**

- DZR brass body
- Full bore isolation valves with extended handles for supply, return and bypass
- Drain cock with strainer
- Orifice plate for the flow measurement with an accuracy of ± 5%
- Braided flexible hoses with DZR brass connections
- EPP insulation box
- To be assembled with Acvatix VPP46 series PICV valves

## Type summary

This section includes all device types in this document. The type summary also includes technical data required to select the product.

| Version | Product | Stock no. | DN | Orifice plate Flow range [1] [l/h] | PICV Flow range [l/h] | PICV type | Orifice size mm |
|---|---|---|---|---|---|---|---|
| Left-hand version | Acvatix KIT DN15-15, L + IB | SAVK-1-A-3-L + IB | 15 | 52-133 | 30-200 | VPP46.15L0.2Q | 3 |
| | Acvatix KIT DN20-15, L + IB | SAVK-2-B-4.5-L + IB | 20 | 133-327 | 100-575 | VPP46.15L0.6Q | 4.5 |
| | | SAVK-2-B-6-L + IB | 20 | 258-635 | 100-575 | VPP46.15L0.6Q | 6 |
| | Acvatix KIT DN20-20, L + IB | SAVK-2-C-9-L + IB | 20 | 517-1249 | 220-1330 | VPP46.20F1.4Q | 9 |
| | Acvatix KIT DN25-20, L + IB | SAVK-3-C-9-L + IB | 25 | 517-1249 | 220-1330 | VPP46.20F1.4Q | 9 |
| | Acvatix KIT DN25-25, L + IB | SAVK-3-D-12-L + IB | 25 | 840-2130 | 280-1800 | VPP46.25F1.8Q | 12 |
| Right-hand version | Acvatix KIT DN15-15, R + IB | SAVK-1-A-3-R + IB | 15 | 53-127 | 30-200 | VPP46.15L0.2Q | 3 |
| | Acvatix KIT DN20-15, R + IB | SAVK-2-B-4.5-R + IB | 20 | 133-327 | 100-575 | VPP46.15L0.6Q | 4.5 |
| | | SAVK-2-B-6-R + IB | 20 | 237-578 | 100-575 | VPP46.15L0.6Q | 6 |
| | Acvatix KIT DN20-20, R + IB | SAVK-2-C-9-R + IB | 20 | 461-1130 | 220-1330 | VPP46.20F1.4Q | 9 |
| | Acvatix KIT DN25-20, R + IB | SAVK-3-C-9-R + IB | 25 | 461-1130 | 220-1330 | VPP46.20F1.4Q | 9 |
| | Acvatix KIT DN25-25, R + IB | SAVK-3-D-12-R + IB | 25 | 800-1950 | 280-1800 | VPP46.25F1.8Q | 12 |

[1] at a $\Delta$p range from 3kPa to 18kPa

DN = nominal size

$\dot{V}_{100}$ = volumetric flow through fully open valve (H100)

$\dot{V}_{min}$ = smallest presettable volumetric flow through fully open valve (H100)

The flow rates are related to the orifice size and the PICV. The flow rates refer to the section “sizing”

## Delivery

The valve kit is supplied pre-assembled and comes with an insulation box. The flexible hoses have to be ordered separately. For the codes please refer to the section “accessories”.

### Valve Kit

The Siemens Acvatix Valve Kit is a preassembled product for the connection of a terminal unit to the piping network of a building. Due to the special design and the high quality the Acvatix Valve Kit gives the customer many advantages:

- The installation effort to connect valves with terminal units is minimized due to the advanced compact design
- The installation and commissioning process are faster and easier
- A direct flow measurement with an accuracy of ± 5% is possible
- The hydraulic balancing process is significantly simplified by using an Acvatix PICV

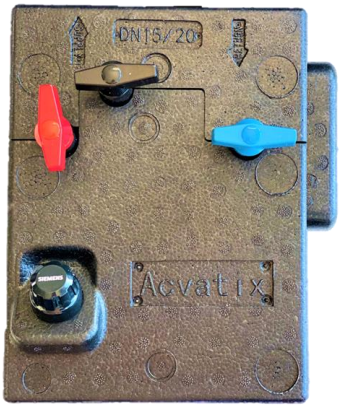
### Flexible hoses

With the flexible hoses there is an easy way to connect the Valve Kit with the terminal unit. These high-quality product gives the customer many advantages:

- No need of a dielectric union due to the DZR brass connection instead of SS connection
- High flexibility due to the use of braided hoses instead of corrugated ones
- Avoidance of turbulent flow and absorbs vibrations

### Insulation box

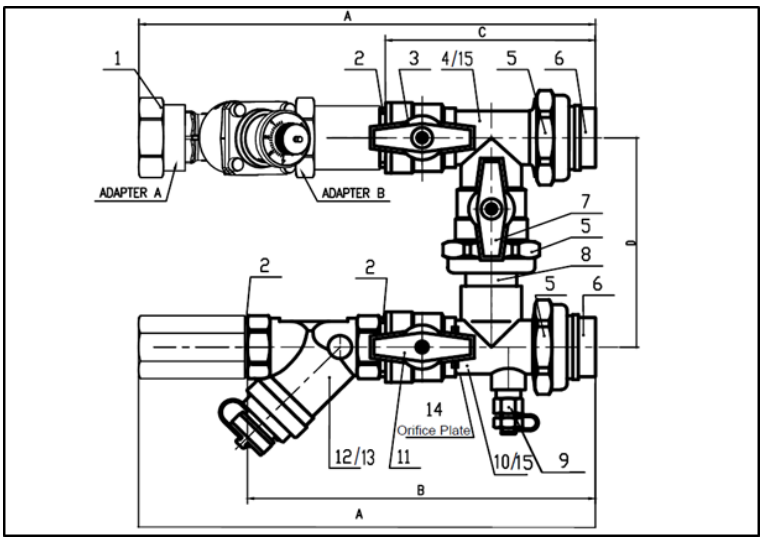
The Valve Kit is perfectly insulated by the included insulation box made from EPP. The insulation box prevents heat loss and condensation. Due to special design there is an easy access to the valves, strainer, PICV and tests ports without removing the complete insulation box.




## Use

Acvatix Valve Kit is a preassembled unit which combines all the valves that are needed to control, operate and maintain a terminal unit. It can be used in new buildings, retrofit and plant extensions. the installation effort to connect valves with terminal units is minimized due to the special design and the high-quality components Siemens Acvatix PICV makes the hydraulic balancing process more efficient compared to the traditional control valves.

## Technical design




The references of the drawing above are explained in the following table

| Component of the Valve Kit | Material | Reference in the drawing |
|---|---|---|
| Adapter | DZR brass | 1 |
| Gasket | PTFE | 2 |
| Handle | Aluminium | 3 |
| Ball valve | DZR brass | 4, 10 |
| Union nut | DZR brass | 5 |
| Union nipple | DZR brass | 6 |
| Handles | Aluminium | 7, 11 |
| Connection piece | DZR brass | 8 |
| Test ports | DZR brass | 9 |
| Strainer | DZR brass | 12 |
| Strainer mesh | SS304 | 13 |
| Orifice Plate | DZR brass | 14 |
| Insert of the ball valve (ball) | DZR brass | 15 |

### Components

The references of the following text can be found in the table above. The Acvatix Valve Kit includes an Acvatix pressure-independent control valve (PICV) to maintain the designed flow rates. The assembly comes also with three isolation valves for the supply pipe (10), return pipe (4) and the bypass. Additionally, there is a strainer with a drain cock (12/13). By using isolation valves, different modes of flushing & operation can be achieved.  (see section functional principle). The flow measurement works by measuring the differential pressure via orifice plate (14), measuring ports (9) on the Valve Kit are available for this function. In addition, the differential pressure over the built-in Acvatix PICV can be measured via the P/T ports at the valve.

### Normal operation

During the normal operation the medium entering the Acvatix Valve Kit first passes through the open isolation valve at the supply line. The medium runs through the strainer to the fan coil unit and on the return line through the PICV. The actuator (not shown here) opens and accurately positions the PICV. The isolation valve in the return line is open and in the bypass the isolation valve is closed. For the operation of the PICV refer to the data sheet of the VPP46 (document no. CE1N4855).

### Flow/Δp measurement with the pressure test points

The left-hand version the Acvatix Valve Kit is equipped with two pressure test points (P+, P-) for measuring and monitoring the differential pressure and the flow across the orifice plate. For that purpose, the electronic manometer ALE10 can be used. In addition, the differential pressure over the built-in Acvatix PICV can be measured via the P/T ports at the valve.

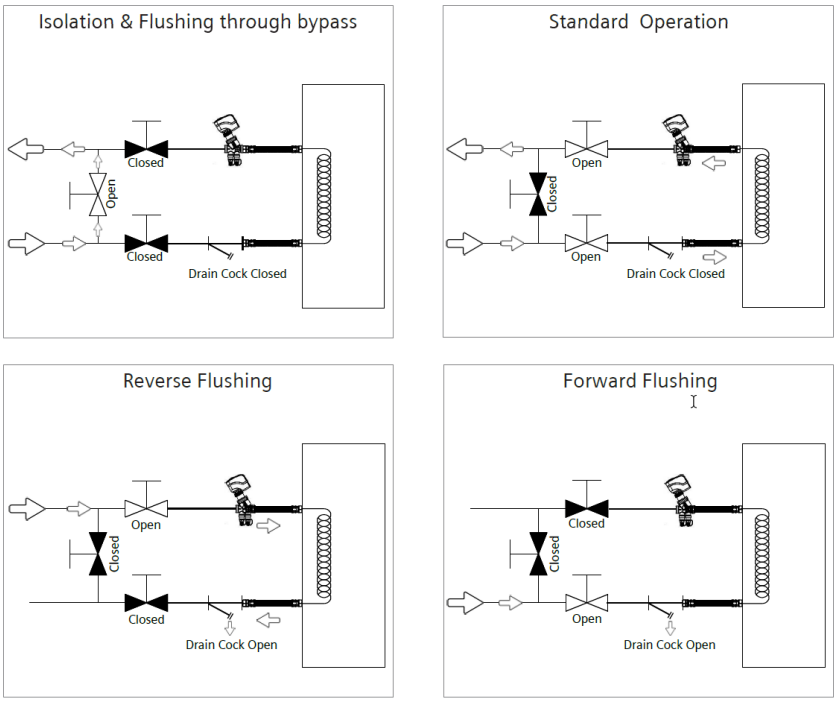
In the right-hand version one P/T port of the PICV and one pressure test point on the Acvatix Valve Kit is used for measuring the flow and the differential pressure over the orifice plate. For that purpose, the electronic manometer ALE10 can be used. In addition, the differential pressure over the built-in Acvatix PICV can be measured via the P/T ports at the valve.

### Manual control

Manual control of the PICV is only possible with a dismounted actuator. The isolation valves can be controlled manually.

### Further modes of operation

For commissioning and maintenance, the valve kit can be operated in various modes. In the picture below these modes of operation are visualized:




Isolation & flushing through bypass: The medium enters the supply line & exit to return line via bypass valve. Behind the bypass, no medium is entering the system.

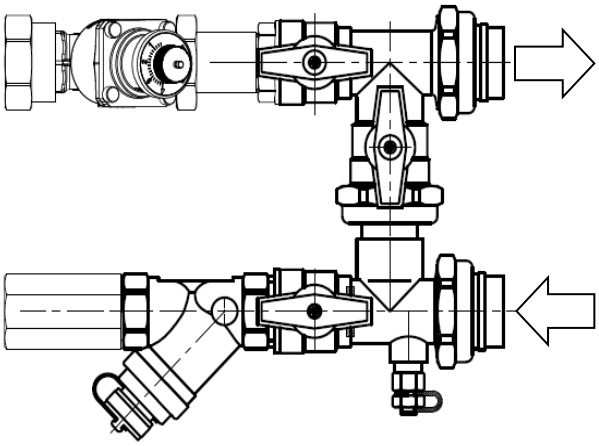
Forward flushing: The medium enters the supply line & exit through the drain cock. The medium does not enter the PICV or the terminal unit.

Reverse flushing: The medium enters the return line, pass through the PICV, terminal unit and exit through drain valve on the supply line.

The Acvatix Valve Kit is available in a left-hand and a right-hand version.

### Left-hand version

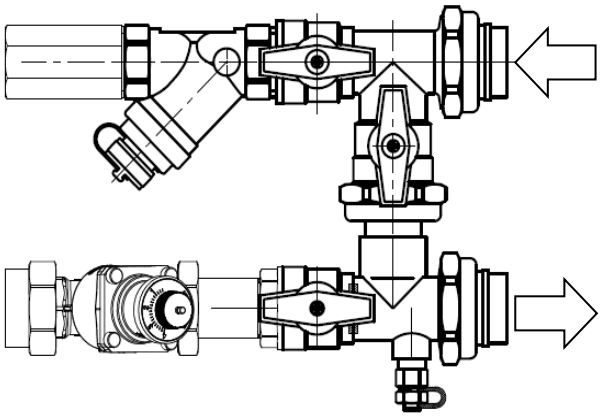
Viewed from the terminal unit, the supply line is on the left-hand side and the PICV is on the right-hand side at the return line. The strainer with drain cock is on the left-hand side at the supply line. The flow is measured via the two P/T ports on the supply line. The flow measurement works by an orifice plate, which is available in different sizes (see section “Sizing Valve Kit”).



### Right-hand version

Looking from the terminal unit, the supply line is on the right-hand side and PICV is on the left-hand side at the return line. The strainer with drain cock is on the right-hand side at the supply line. The flow is measured via one P/T port on the PICV and one on the return pipe. The flow measurement works by an orifice plate, which is available in different sizes (see section “Sizing Valve Kit”).

.



## Orifice plate

In the following tables the flow rates and KV values of the different orifice sizes are shown. The flow range of the orifice plate is given at a differential pressure range from 3kPa to 18kPa. For a differential pressure below or above this range, the measuring accuracy cannot be guaranteed.

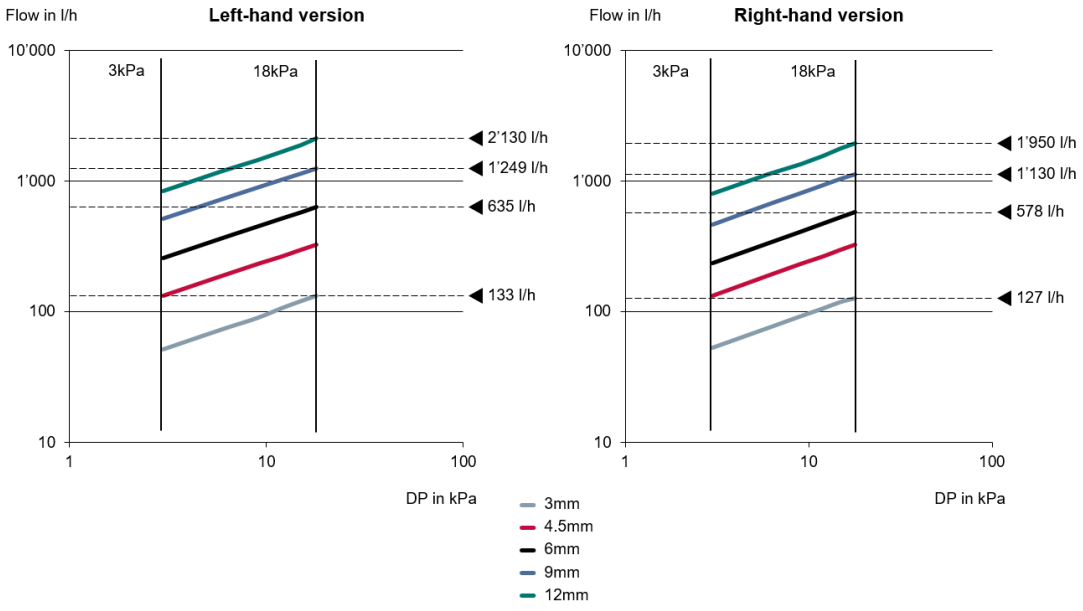
| Left-hand version | | | |
|---|---|---|---|
| **Flow range orifice plate in l/h** | **Orifice size in mm** | **Kit size** | **KV value** |
| 52 - 133 | 3 | DN 15 | 0.31 |
| 133 - 327 | 4.5 | DN 20 | 0.77 |
| 258 – 635 | 6 | DN 20 | 1.49 |
| 517 - 1249 | 9 | DN 20 / 25 | 2.96 |
| 840 - 2130 | 12 | DN 25 | 4.87 |

| Right-hand version | | | |
|---|---|---|---|
| **Flow range orifice plate in l/h** | **Orifice size in mm** | **Kit size** | **KV value** |
| 53-127 | 3 | DN 15 | 0.31 |
| 133-327 | 4.5 | DN 20 | 0.77 |
| 237-578 | 6 | DN 20 | 1.36 |
| 461-1130 | 9 | DN 20 / 25 | 2.68 |
| 800-1950 | 12 | DN 25 | 4.56 |

With the KV value over the orifice plate the flow can be calculated with the following formula:

**$KV=Q\times\sqrt{(1\ bar/\Delta p)}$**

The KV value is given with an accuracy of **± 5%.** Below the ratio between the differential pressure and the flow rate is visualized:




The sizing of the orifice plate and the PICV should be based on the required flow range of the Valve Kit. An orifice plate that is too large results in a lower measuring accuracy. An orifice plate that is too small causes a high pressure drops and leads to increased energy consumption.

### Bypass

To calculate the necessary pump pressure for the flushing operation, the KV value of the bypass is needed. The KV value is the average value between a differential pressure of 5kPa to 20 kPa.

| Bypass | | |
|---|---|---|
| **Flow range l/h** | **KV value** | **Kit size** |
| 810 - 1660 | 3.77 | DN 15 |
| 1880 - 3700 | 8.25 | DN 20 |
| 3080 - 5960 | 13.25 | DN 25 |

### Valve Kit without PICV

To calculate the necessary pump pressure during the operation at a certain flow rate the KV value of the Valve Kit is needed. The required pump pressure includes the differential pressure across the kit and the required minimum differential pressure across the PICV. These KV values are shown in the tables below. The KV value is the average value between a differential pressure of 5kPa to 20 kPa.

| Valve Kit | | | |
|---|---|---|---|
| **Flow range l/h** | **KV value** | **Kit size** | **Orifice size in mm** |
| 65-133 l/h | 0.29 | DN 15 | 3mm |
| 133-327 l/h | 0.77 | DN 20 | 4.5mm |
| 301-594 l/h | 1.34 | DN 20 | 6mm |
| 520-1010 l/h | 2.29 | DN 20/25 | 9mm |

| Valve Kit | | | |
|---|---|---|---|
| **Flow range l/h** | **KV value** | **Kit size** | **Orifice size in mm** |
| 520-1010 l/h | 2.29 | DN 25 | 9mm |
| 780-1580 l/h | 3.53 | DN 25 | 12mm |

### Sizing example

Flow rate of 500 l/h in a DN20 piping network.

Orifice plate:
For a flow rate of 500 l/h there is an orifice size of 6 mm required. For orifice sizes above 6 mm the measuring accuracy becomes lower. For orifice sizes below 6 mm the energy consumption becomes worse, due to the higher pressure drop across the orifice plate.

The orifice size of 6 mm can be selected in the DN 20 Valve Kit SAVK-2-B-6-L + IB or SAVK-2-B-6-R + IB (refer to the section type summary). The SAVK-2-B-6-L + IB and SAVK-2-B-6-R + IB come together with a VPP46.15L0.6Q PICV.

Required pump head:

The SAVK-2-B-6-L/R + IB Valve Kit has a KV value of 1.34. At a flow of 500 l/h this results in a pressure drop of 14kPa over the Valve Kit without the PICV. The VPP46.15.0.6Q has a minimum differential pressure of 18.3kPa at a flow of 500 l/h (refer to sizing PICV). This results in a required pump head of 32.3kPa for the Valve Kit including the PICV.

## Sizing PICV

Tables to determine the dial setting for a desired volumetric flow. ∆p min [kPa] based on volumetric flow; interpolate missing values.

- Presetting range linear to VDI/VDE 2173
- Presetting range linear
- Presetting range not permitted

**VPP46.15L0.2** **200 l/h nominal**

| V̇ [l/h] | | | | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dial** | Min. | 0.2 | 0.4 | 0.5 | 0.6 | 0.8 | 1 | 1.2 | 1.4 | 1.6 | 1.8 | 2 | 2.2 | 2.4 | 2.6 | 2.8 | 3 | 3.2 | 3.4 | 3.6 | 3.8 | Max. |
| **Δpmin [kPa]** | | | | 14.3 | 14.3 | 14.3 | 14.5 | 14.6 | 14.6 | 14.7 | 14.8 | 14.9 | 15 | 15.1 | 15.2 | 15.3 | 15.4 | 15.5 | 15.5 | 15.6 | 15.7 | 15.8 |

**VPP46.15L0.6Q** **600 l/h nominal**

| V̇ [l/h] | | | | 100 | 115 | 130 | 160 | 180 | 210 | 240 | 270 | 300 | 320 | 350 | 380 | 410 | 440 | 460 | 490 | 520 | 550 | 575 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dial** | Min. | 0,2 | 0,4 | 0,5 | 0.6 | 0.8 | 1 | 1.2 | 1.4 | 1.6 | 1.8 | 2 | 2.2 | 2.4 | 2.6 | 2.8 | 3 | 3.2 | 3.4 | 3.6 | 3.8 | Max. |
| **Δpmin [kPa]** | | | | 14.9 | 15.2 | 15.5 | 15.6 | 15.9 | 16.1 | 16.4 | 16.6 | 16.8 | 17 | 17.2 | 17.5 | 17.6 | 17.8 | 18 | 18.2 | 18.4 | 18.6 | 18.9 |

**VPP46.20F1.4 Q with STA..** **1200 l/h nominal**

| V̇ [ l/h] | | | | | 200 | 260 | 310 | 380 | 430 | 490 | 550 | 610 | 660 | 730 | 780 | 840 | 900 | 960 | 1010 | 1070 | 1130 | 1190 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dial** | Min. | 0.2 | 0.4 | 0.5 | 0.6 | 0.8 | 1 | 1.2 | 1.4 | 1.6 | 1.8 | 2 | 2.2 | 2.4 | 2.6 | 2.8 | 3 | 3.2 | 3.4 | 3.6 | 3.8 | Max. |
| **Δpmin [kPa]** | | | | | 16 | 16.5 | 17 | 17.5 | 17.9 | 18.4 | 18.8 | 19.2 | 19.5 | 19.9 | 20.2 | 20.4 | 20.7 | 20.9 | 21.1 | 21.3 | 21.4 | 21.6 |

**VPP46.20F1.4Q** **1400 l/h nominal**

| V̇ [ l/h] | | | | | 220 | 290 | 350 | 420 | 480 | 550 | 610 | 680 | 740 | 810 | 870 | 940 | 1000 | 1070 | 1130 | 1200 | 1260 | 1330 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dial** | Min. | 0.2 | 0.4 | 0.5 | 0.6 | 0.8 | 1 | 1.2 | 1.4 | 1.6 | 1.8 | 2 | 2.2 | 2.4 | 2.6 | 2.8 | 3 | 3.2 | 3.4 | 3.6 | 3.8 | Max. |
| **Δpmin [kPa]** | | | | | 16 | 16.5 | 17 | 17.5 | 17.9 | 18.4 | 18.8 | 19.2 | 19.5 | 19.9 | 20.2 | 20.4 | 20.7 | 20.9 | 21.1 | 21.3 | 21.4 | 21.6 |

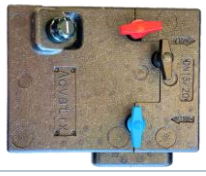
**VPP46.25F1.8Q with STA..** **1530 l/h nominal**

| V̇ [ l/h] | | | | | 238 | 303 | 366 | 427 | 488 | 550 | 614 | 680 | 749 | 822 | 898 | 978 | 1063 | 1150 | 1241 | 1335 | 1432 | 1530 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dial** | Min. | 0.2 | 0.4 | 0.5 | 0.6 | 0.8 | 1 | 1.2 | 1.4 | 1.6 | 1.8 | 2 | 2.2 | 2.4 | 2.6 | 2.8 | 3 | 3.2 | 3.4 | 3.6 | 3.8 | Max. |
| **Δpmin [kPa]** | | | | | 15.3 | 15.8 | 16.1 | 16.4 | 16.7 | 17 | 17.5 | 18 | 18.7 | 19.7 | 20.9 | 22.3 | 24.2 | 26.4 | 28.9 | 32.0 | 35.4 | 39.4 |

**VPP46.25F1.8Q** **1800 l/h nominal**

| V̇ [ l/h] | | | | | 280 | 356 | 430 | 502 | 574 | 647 | 722 | 800 | 881 | 967 | 1057 | 1151 | 1250 | 1353 | 1460 | 1571 | 1685 | 1800 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dial** | Min. | 0.2 | 0.4 | 0.5 | 0.6 | 0.8 | 1 | 1.2 | 1.4 | 1.6 | 1.8 | 2 | 2.2 | 2.4 | 2.6 | 2.8 | 3 | 3.2 | 3.4 | 3.6 | 3.8 | Max. |
| **Δpmin [kPa]** | | | | | 15.3 | 15.8 | 16.1 | 16.4 | 16.7 | 17 | 17.5 | 18 | 18.7 | 19.7 | 20.9 | 22.3 | 24.2 | 26.4 | 28.9 | 32.0 | 35.4 | 39.4 |

## Accessories

| Product no. / Stock no. | Picture | Discription |
|---|---|---|
| ALE10 / ALE10 |  | Electronic manometer **excluding** measuring lines and measuring tips. Measuring range 0 .. 700 kPa. A differential pressure of more than 1000 kPa will destroy the pressure sensor.<br>For measuring the differential pressure between P+ and P- of the PICVs<br>Functions of the manometer:<br>• Start/stop<br>• Automatic zero position<br>• Backlit display<br>• Display: Out → outside the measuring range<br>• Holding function |
| ALE11 / ALE 11 |  | Measuring lines and straight measuring tips for use with Acvatix PICV.<br>Equipped with G ⅛" connection with 2 x 40 mm needles. |
| SAFH15-200 (DN 15, 200mm)<br>SAFH20-200 (DN 20, 200mm)<br>SAFH25-200 (DN 25, 200mm)<br>SAFH15-300 (DN 15, 300mm)<br>SAFH20-300 (DN 20, 300mm)<br>SAFH25-300 (DN 25, 300mm)<br>SAFH15-400 (DN 15, 400mm)<br>SAFH20-400 (DN 20, 400mm)<br>SAFH25-400 (DN 25, 400mm) |  | The flexible hoses have a standard size of 300mm. The flexible hoses in the length of 200mm or 400mm can be ordered optionally. |
| SAVK.. + IB |  | Special designed insulation box for Acvatix PICV valves made from EPP |

## Equipment combinations

For the PICV-Actuator combinations please refer to the data sheet (CE1N4855).

## Notes

The subsections include important information that is either decisive for the sale or is essential for engineering.

## Security

| | |
|---|---|
| | ⚠ **CAUTION** |
| | **National safety regulations**<br>Failure to comply with national safety regulations may result in personal injury and property damage.<br>● Observe national provisions and comply with the appropriate safety regulations. |

## Engineering

For the engineering notes of the PICV VPP46 please refer to the data sheet (CE1N4855).

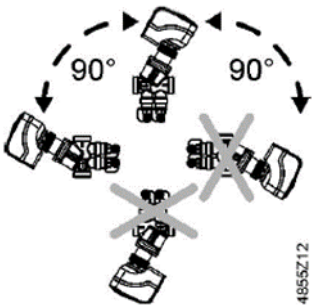
## Mounting

The Valve kit can be installed at a 90-degree angle of inclination. Neither special tools nor adjustments, besides the presetting, are required.

The PICV and the actuator can be straightforwardly assembled on site. Prior to mounting the actuator on the PICV, the required volumetric flow must be set.

The optional flexible hoses must not be bent by more than 90°. The operation of the shut off valves, the measurement of the flow and adjustment of the presetting at the PICV can be done without removing the insulation box. The insulation box can be disassembled without being damaged.

The Acvatix valve kit is supplied with mounting instructions.




Thermal actuators STA.., STP. , may be installed in any position.

Actuators SSA.., SUE.. must be installed horizontally up to 90° and not hanging.

## Maintenance

The maintenance of the Valve Kit focuses mainly on cleaning the strainer.

For maintenance operations on the Valve Kit, the PICV or the actuator, the following steps should be considered:

Switch off the pump and disconnect power supply. ⚠

Close the shut-off valves in the piping network.

Fully reduce pressure in the piping network and allow the pipes to cool down completely.

Remove the electrical connections only if necessary.

## Disposal

**⚠ WARNING**

**Tensioned return spring**

Opening the valve housing can release the highly tensioned return spring, which can cause flying parts and injuries.

- Do not open the valve housing.

The valve should not be disposed of as domestic garbage.

- Special treatment for individual components may be required by law or make ecological sense.
- Comply with all local and currently applicable laws and regulations.

## Warranty

Technical data on specific applications are valid only together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

## Technical data

### Valve Kit

| Functional data | |
|---|---|
| PN class | PN 25 as per EN 1333 |
| Permissible operating pressure | 2500 kPa (25 bar) as per ISO 7628 / EN 1333 |
| Permissible media | Low temperature hot water, medium temperature hot water, chilled water, water with antifreeze<br>Recommendation: Water treatment to VDI 2035 |
| Medium temperature | 0...100 °C |

| Materials | |
|---|---|
| Valve kit body | DZR brass |
| Handles | Aluminum |
| Strain mesh | SS304 |
| Seals | EPDM |

| Dimension / weight | |
|---|---|
| Dimensions | Refer to dimensions on page 10 |
| Thread connections | ISO 228 |
| Pressure test points (P/T-ports) | G ¼ inch (connection) |
| | 2 mm x 40 mm (measuring tips) |

### Insulation box

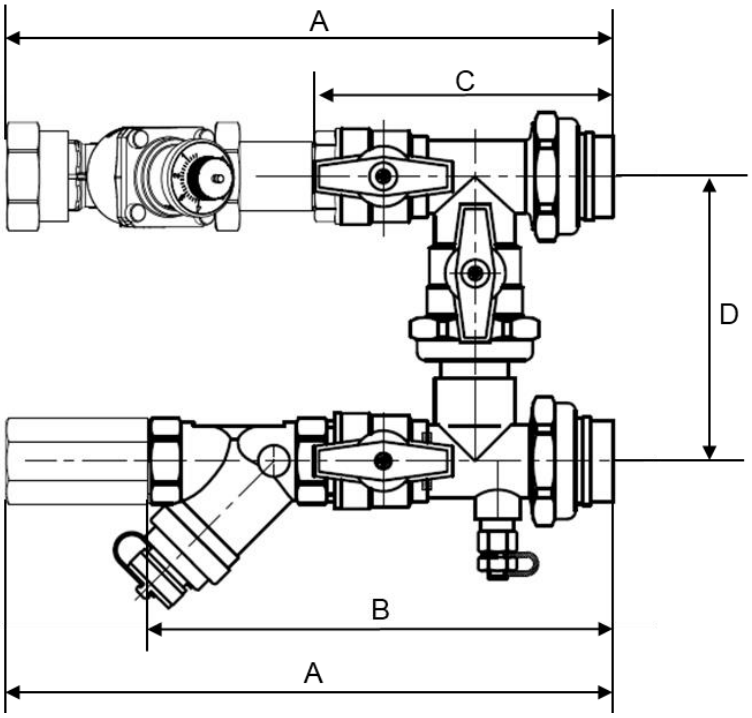
| General data | |
|---|---|
| Material | EPP |
| Thermal conductivity | 0.037 W/mk |
| Density | 35 kg/m3 |
| Temperature range | - 25 C - 80 C |
| Fire Resistance Property | Class D/HF-1 |
| | EN13501-1 |
| | UL94 |

### Flexible hoses

| General data | |
|---|---|
| Pressure rating | PN25 |
| Hose material | EPDM |
| Body material | SS304, DZR Brass |
| Connections | MPT & Swivel FPT, DZR Brass |
| Length | 200 - 400 mm |

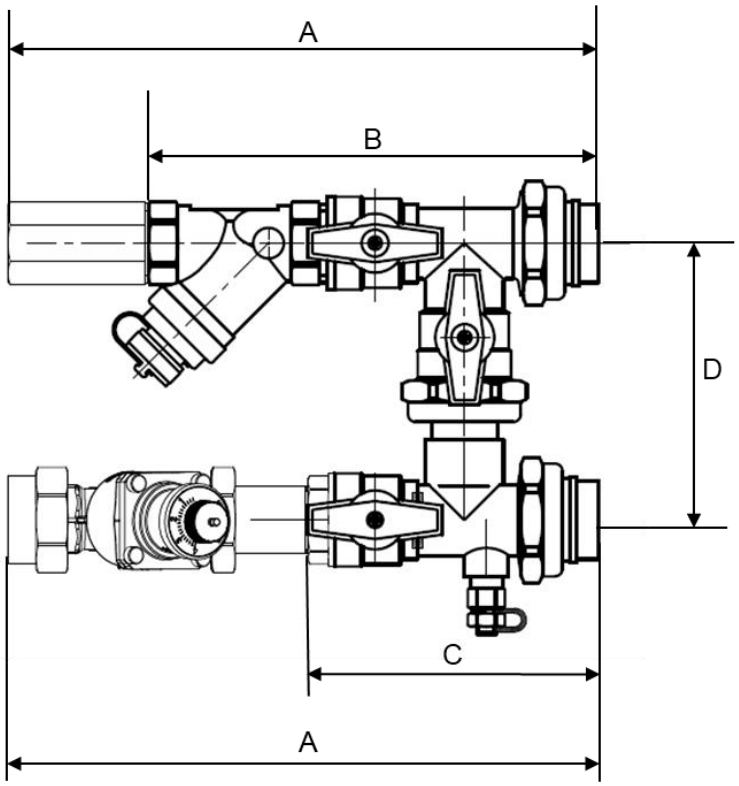
## Dimensions

### Left-hand version




| Model | A | B | C | D | Insulation height | Weight |
|---|---|---|---|---|---|---|
| DN 15-15 | 262 | 172 | 110 | 130 | 140 | 1,97 kg |
| DN 20-15 | 272 | 185 | 120 | 130 | 140 | 2,76 kg |
| DN 20-20 | 272 | 185 | 120 | 130 | 140 | 2,83 kg |
| DN 25-20 | 282 | 208 | 138 | 130 | 145 | 3,72 kg |
| DN 25-25 | 282 | 208 | 138 | 130 | 145 | 3,84 kg |

## Right-hand version




| Model | A | B | C | D | Insulation height | Weight |
|---|---|---|---|---|---|---|
| DN 15-15 | 262 | 172 | 110 | 130 | 140 | 1,97 kg |
| DN 20-15 | 272 | 185 | 120 | 130 | 140 | 2,76 kg |
| DN 20-20 | 272 | 185 | 120 | 130 | 140 | 2,83 kg |
| DN 25-20 | 282 | 208 | 138 | 130 | 145 | 3,72 kg |
| DN 25-25 | 282 | 208 | 138 | 130 | 145 | 3,84 kg |

## Documentation form

| Installed location | Valve type | Actuator Type | Valve Size | Planned Presetting | Required ∆pmin (kPa) | Verified ∆p (kPa) | Flow (l/h) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |




Edition 2019-12-10