



AZ-series actuators assembled with VZ-series valves



VZ-series zone valves



Actuator AZP 1401 with control signal 0-10 Vdc and actuator AZD 1404 with control signal on/off or PWM (Pulse With Modulation).

## Features

### Zone Valves

- 2-way, 3-way and 3-way 4-port valves
- Sizes DN15 and DN20 (1/2 inch and 3/4 inch)
- Kvs values from 0.25 up to 6.0
- Brass valve body
- Operating pressure 16 Bar (PN16)
- Stainless steel stem
- Stroke length 2.5 mm
- Stem tight double OR ring in EPDM
- Seat in technopolymer
- Threaded male collar M30x1.5 for fitting of actuator
- All VZ-valves are Normally Closed (NC), i.e. the action of the valve spring makes the plug move to the upper seat, even with disassembled actuator.

### Actuators

- AZ-series actuators to be used with VZ-series DN15 and DN20 valves with kvs value from 0.25 up to to 6.0
- Actuating force 140 N
- Control Signals  
On/Off , PWM (Pulse With Modulation ) or 0-10 Vdc
- Normally Closed (NC)
- Stroke length 2.5 mm
- Position indicator
- Fast and easy assembling of actuator on valve with a threaded ring nut
- The ring nut M30x1.50 supplied with the actuator  
Threaded ring nut for other valve brands on request
- Compact design
- Supplied with 2 meter cable
- Precise control of valves
- Applied in hot and chilled applications

## Ordering

### Zone valves VZ-series for actuators AZ-series

Type no.	Kvs	Size
<u>2-way zone valves, direct way</u>		
VZ2 025	0.25	1/2" (DN15)
VZ2 040	0.4	1/2" (DN15)
VZ2 060	0.6	1/2" (DN15)
VZ2 100	1	1/2" (DN15)
VZ2 160	1.6	1/2" (DN15)
VZ2 250	2.5	3/4" (DN20)
VZ2 400	4.0	3/4" (DN20)
VZ2 600	6.0	3/4" (DN20)
<u>3-way zone valves, direct/angle way</u>		
VZ3 025	0.25/0.25	1/2" (DN15)
VZ3 040	0.4/0.4	1/2" (DN15)
VZ3 060	0.6/0.6	1/2" (DN15)
VZ3 100	1.0/0.6	1/2" (DN15)
VZ3 160	1.6/1.0	1/2" (DN15)
VZ3 250	2.5/1.6	3/4" (DN20)
VZ3 400	4.0/2.5	3/4" (DN20)
VZ3 600	6.0/4.0	3/4" (DN20)
<u>3-way 4-port zone valves, direct/angle way</u>		
VZ4 025	0.25/0.25	1/2" (DN15)
VZ4 040	0.4/0.4	1/2" (DN15)
VZ4 060	0.6/0.6	1/2" (DN15)
VZ4 100	1.0/0.6	1/2" (DN15)
VZ4 160	1.6/1.0	1/2" (DN15)
VZ4 250	2.5/1.6	3/4" (DN20)
VZ4 400	4.0/2.5	3/4" (DN20)
VZ4 600	6.0/4.0	3/4" (DN20)



VZ-series zone valves with kvs values 0.25, 040, 0.60, 1.0, 1.6 and 2.5



VZ-series zone valves with kvs values 4.0 and 6.0

### Electrothermal actuators AZ-series for zone valves VZ-series

Type no.	Control signal	Power supply	Actuating Force
AZD 1404	on/off or PWM	24 Vac/dc	140N
AZD 1403	on/off	230 Vac	140N
AZP 1401	0-10 Vdc	24 Vac	140N



## Operation

Zone valves VZ-series designed with tight close-off on both direct and angle way.

A soft tight between seat and plug ensures high performances; the action of the spring located on the valve, ensures tight close-off in compliance with the values above, even with disassembled actuator.

All zone valves VZ-series are normally closed.

The actuators AZ-series operation is carried out by a built-in wax thermostatic element. When this component is heated (by a PTC powered from the control signal) a small piston comes out, starting the valve stroke.

The actuator-valve assembly is easily made thanks to its threaded ring nut, which allows a comfortable cable positioning.

All actuators AZ-series are provided with a yellow stroke indicator.

The actuators AZ-series are available with control signal on/off (230 V and 24 V) and modulating control signal 0-10 Vdc (24V). The actuator AZD 1404 can also be used with control signal PWM (Pulse With Modulation).

## Safety Prescriptions

### 230 V products

- 1.. Install on the power supply line a screening device to avoid short circuits (fuse or magneto-thermic) according to the specifications in force.
- 2.. In case of cap removing from skilled staff, be sure that the power supply is disconnected.
- 3.. The products are maintenance free.

## Installation and Mounting

Before mounting, make sure pipes are clean, free from weld slag, perfectly aligned with the valve body and not subjected to vibrations.

The protection degree declared (IP44) is granted if the valve is mounted with the actuator upwards.

The actuator AZ-series is able to operate in any mounting position, but it is advisable not to install it downwards.

Three-way valves VZ-series should be preferably used as mixing valves. In case they are mounted as diverting (i.e. an inlet and two out-lets) the max differential pressure for normal operation must be reduced to one third of the specified value. While mounting, respect the fluid directions indicated by the arrows on the valve body.

## Special Application

Thermal insulation for cool water applications is available on request. Moreover, it is possible to order a kit for fan coil installation, which can be customized according to the various vendors' requirements.

For further information, please contact us.

## Technical Data Valves and Actuators

### Valves

Max. fluid speed	3m/s
Allowed fluids	Water, water+glycol (30% max.)
Temperature	+5 to +95°C
Leakage	0 (tight close-off on direct and angle way)

### Actuators

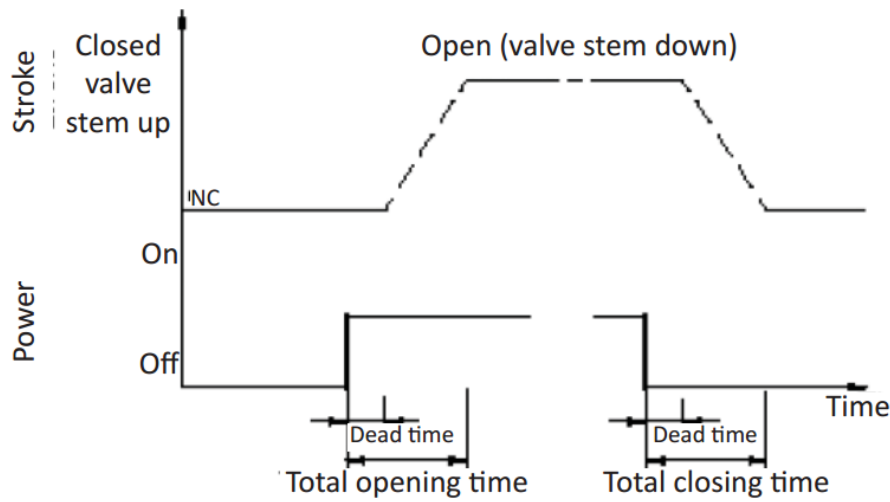
Supply voltage	See ordering
Control signal	See ordering
Frequency	50/60Hz
Power cable	2m bipolar (0.35mm <sup>2</sup> ) AZD 1404 and AZD 1403 2m triple-pole (0.35mm <sup>2</sup> ) AZP 1401
Protection degree	IP44 (vertical mounting)
Temperature	
Operation	+2 to +50°C
Storage	-10 to +60°C
Housing	Technopolymer fire-resistant case, class V0
Consumption	
AZD 1404	Starting 4VA, Operation 1.8VA
AZD 1403	Starting 50VA, Operation 1.8VA
AZP 1401	Starting 5VA, Operation 1.8VA

Product conforms, for CE marking, to the following directives:

EMC 2004/108/CE	according to the EN 61326-1 standard.
LVD 2006/95/CE	according to the EN 61010-1 standard for the products powered 110-230 V

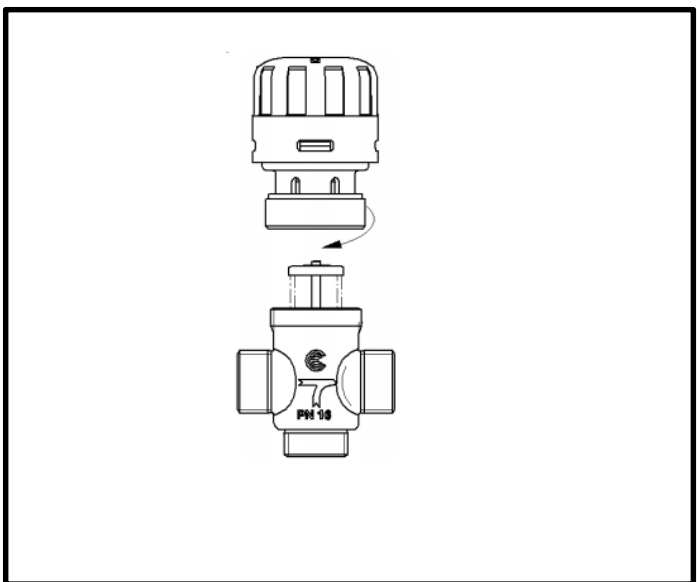
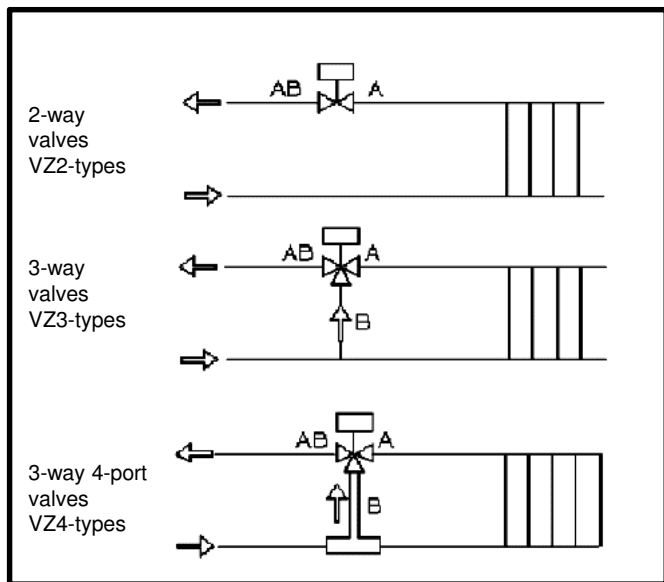
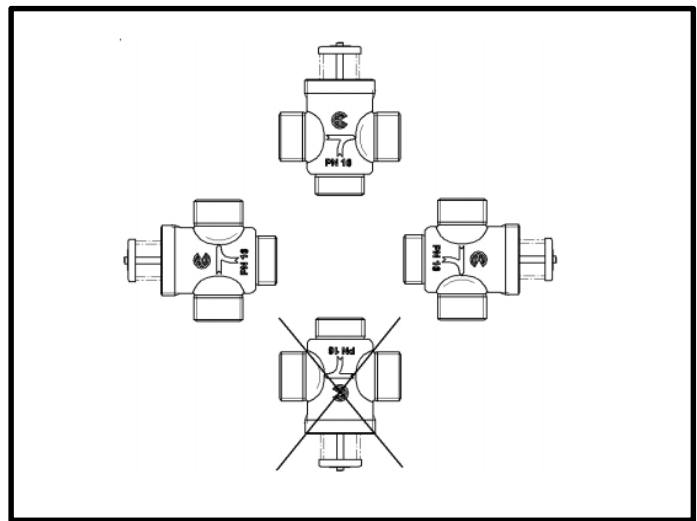
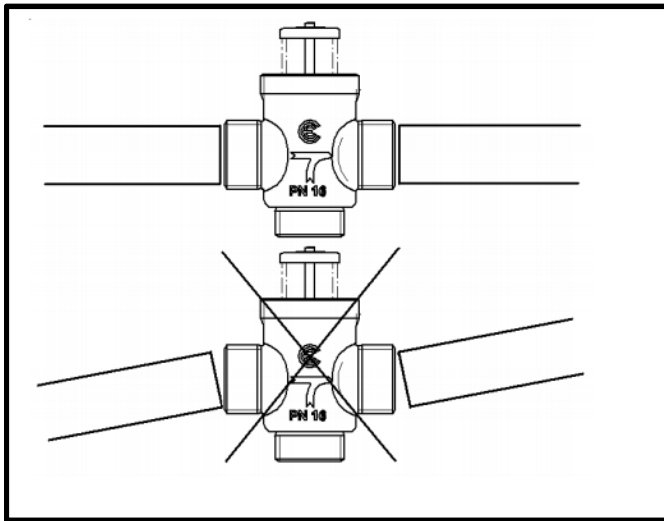
More technical data on page 1 under Features

Opening/closing times

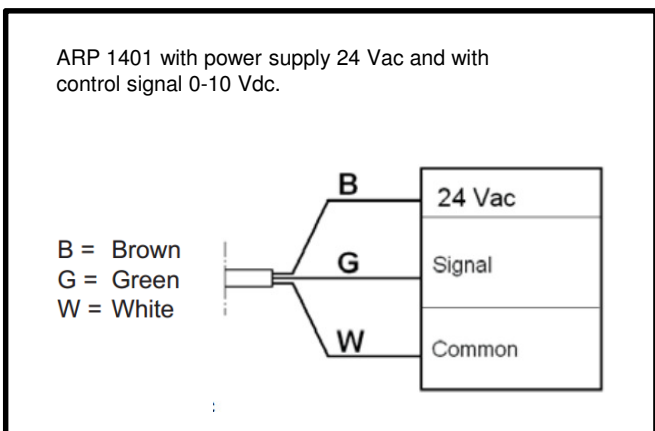
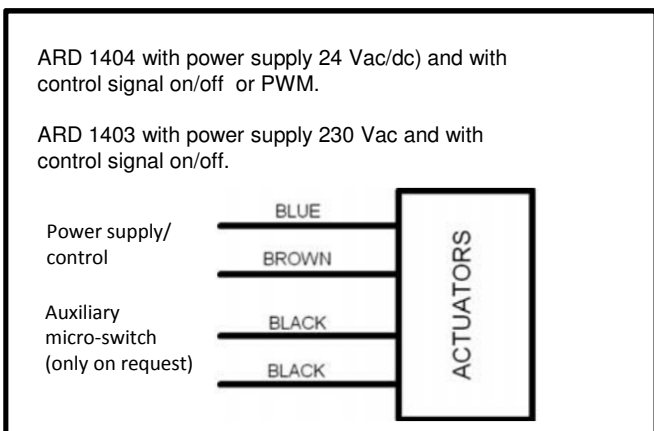


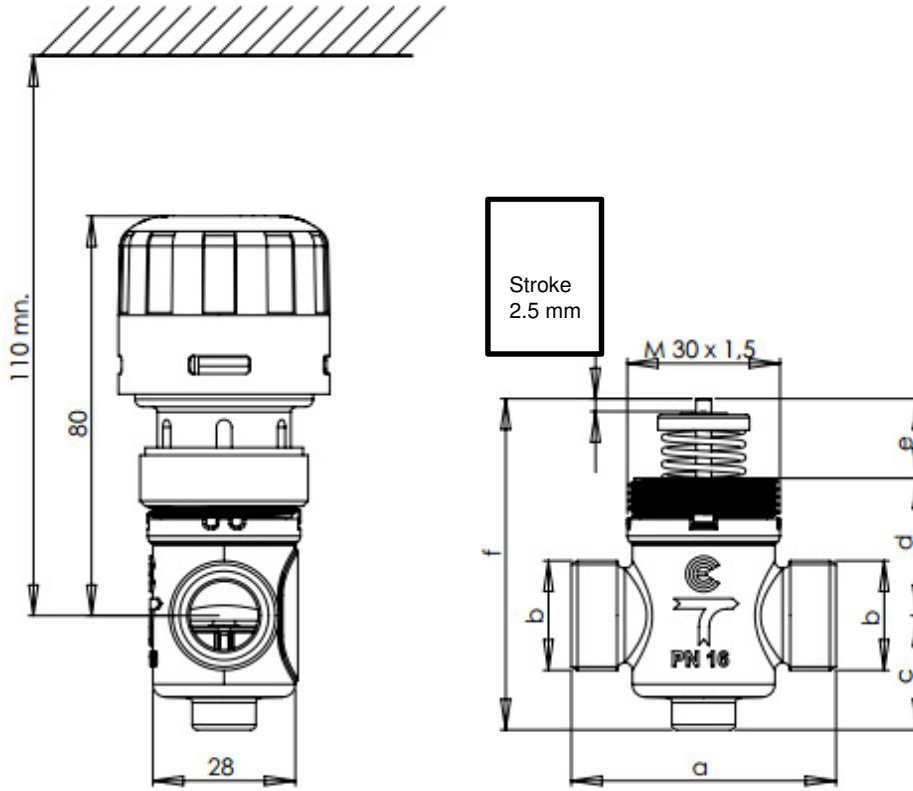
Actuator timing details (approx.) in seconds							
Actuator	Voltage	Valve opening		Valve closing (after 5' power on)		Valve closing (after 30' power on)	
		Dead time	Total time	Dead time	Total time	Dead time	Total time
AZD 1403	230V	80	230	180	380	150	400
AZD 1404 AZP 1401	24V	150	350	140	390	150	400

**Mounting Instructions**

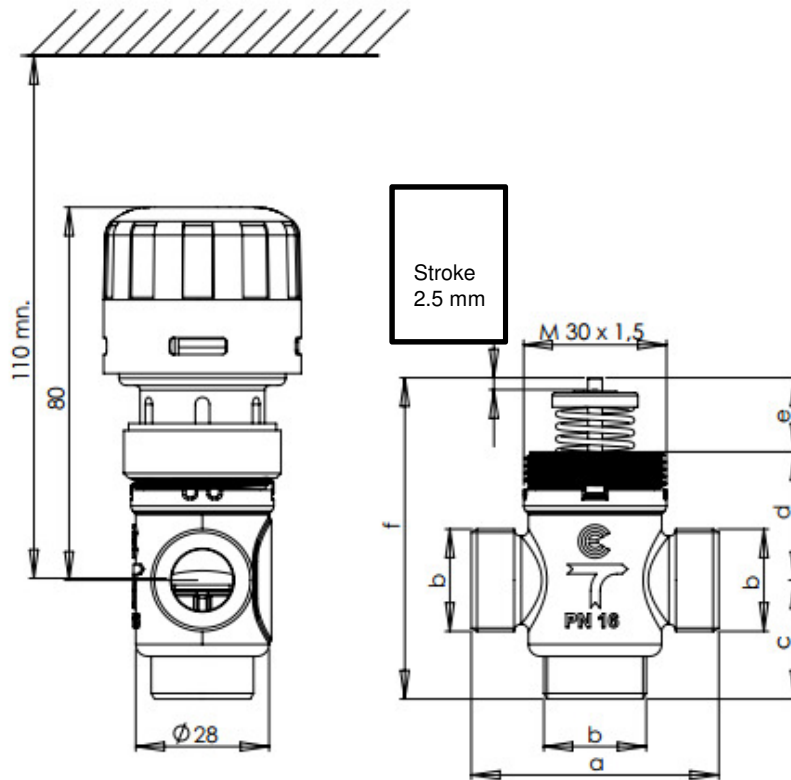


**Wiring**



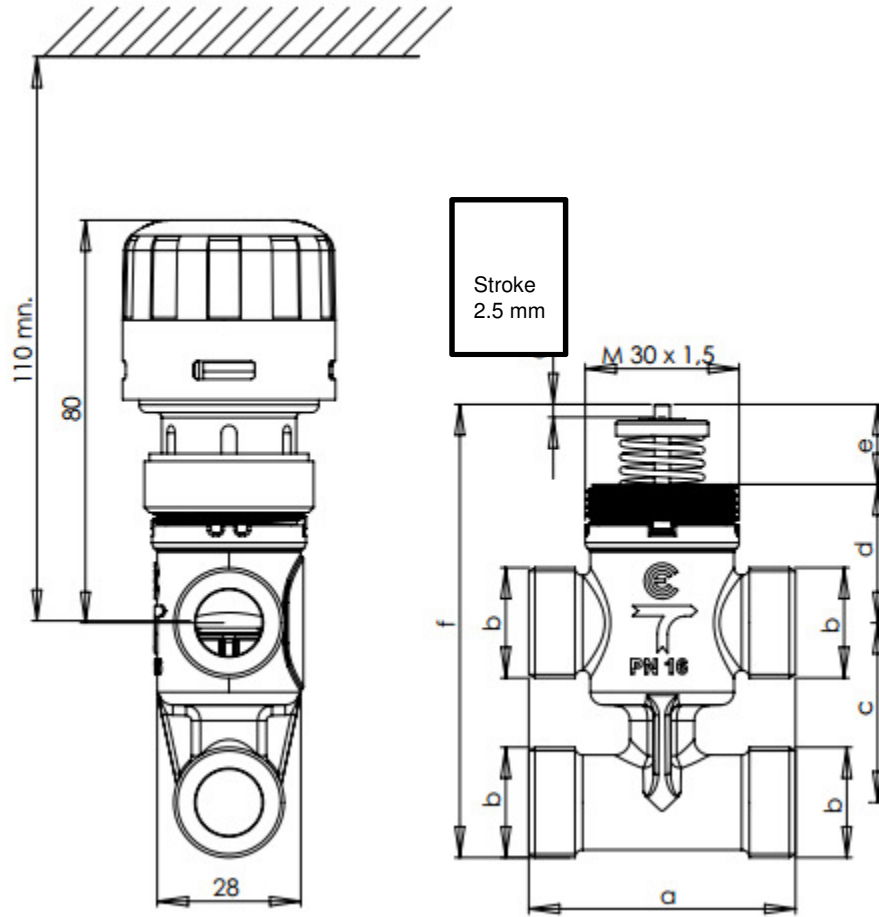


Valve	Actuator	a	b	c	d	e	f
VZ2 025 – VZ2 040 VZ2 060 – VZ2 100 VZ2 160	AZD 1404 AZD 1403	52	G1/2"A	22,5	27	15,6	65
VZ2 250		56	G3/4"A	23,6	25,8		

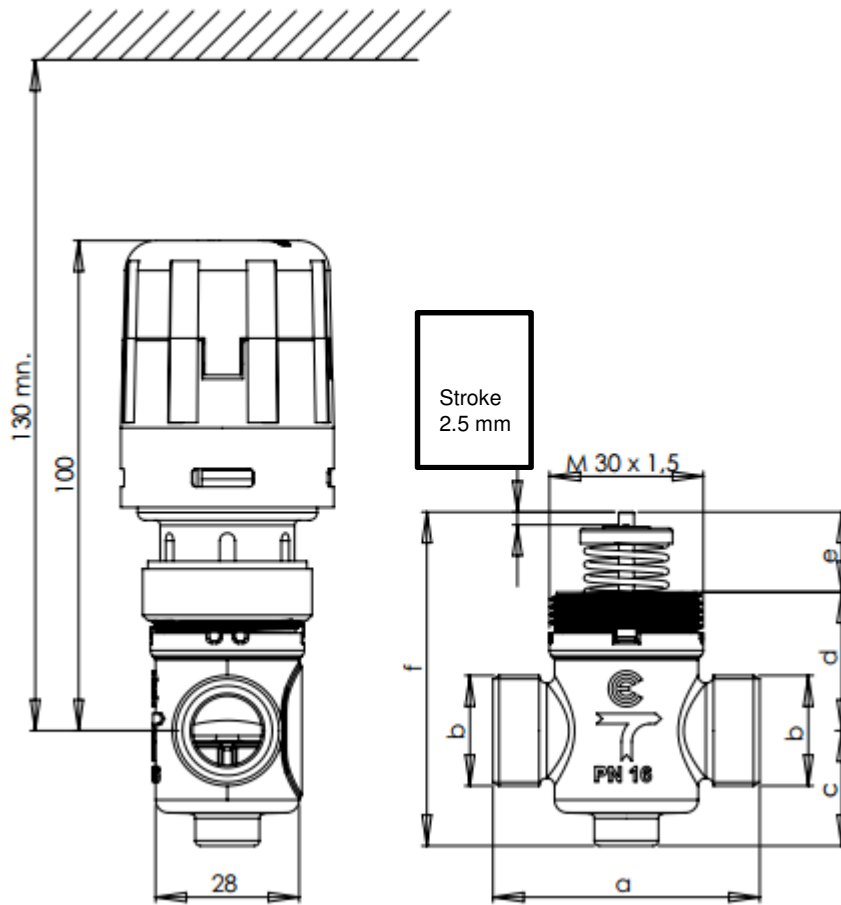


Valve	Actuator	a	b	c	d	e	f
VZ3 025 – VZ3 040 VZ3 060 – VZ3 100 VZ3 160	AZD 1404 AZD 1403	52	G1/2"A	25	27	15,6	67,6
VZ3 250		56	G3/4"A	34	25,8		75,4

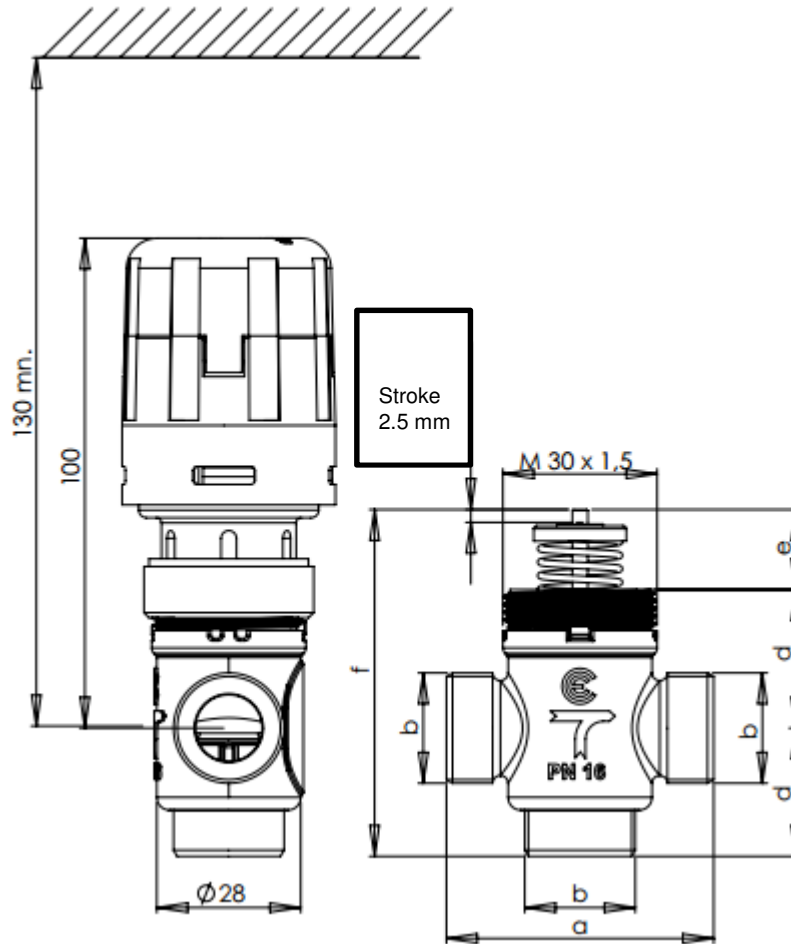




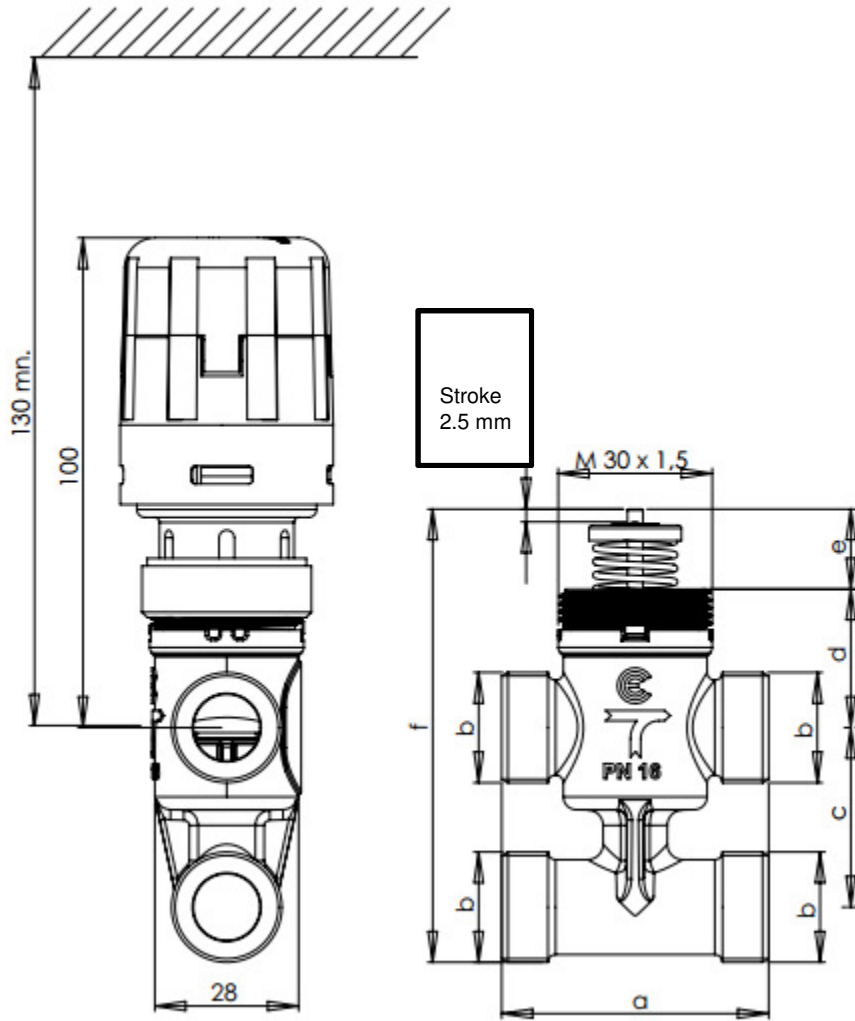
Valve	Actuator	a	b	c	d	e	f
VZ4 025 – VZ4 040 VZ4 060 – VZ4 100 VZ4 160	AZD 1404 AZD 1403	52	G1/2"A	35	27	15,6	88,4
VZ4 250		56	G3/4"A	50	25,8		98,4



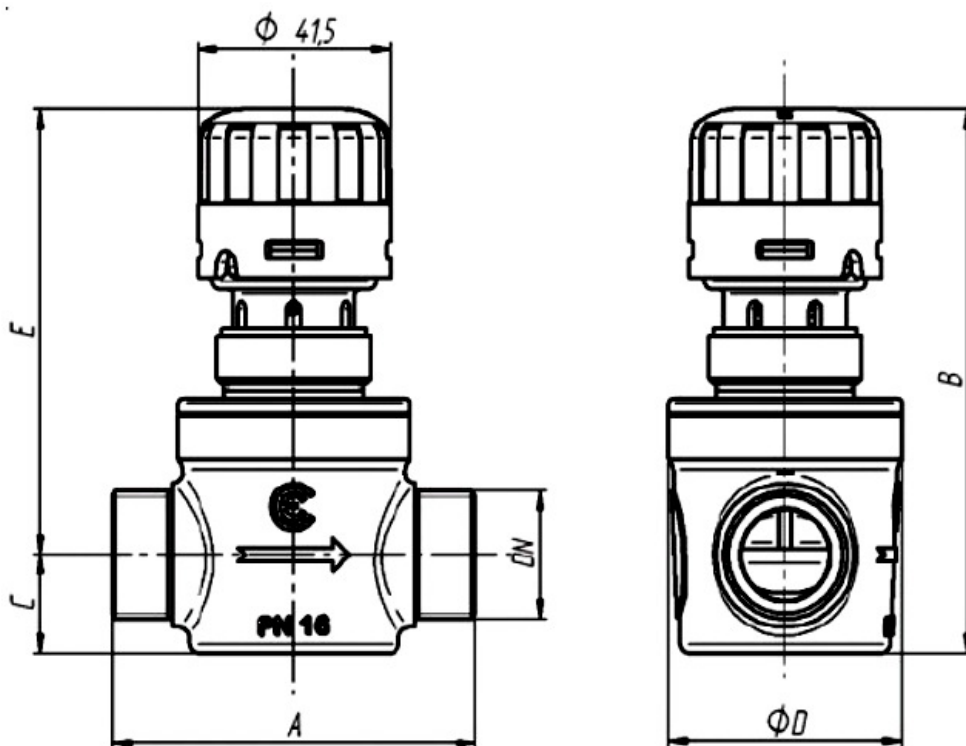
Valve	Actuator	a	b	c	d	e	f
VZ2 025 – VZ2 040 VZ2 060 – VZ2 100 VZ2 160	AZP 1401	52	G1/2"A	22,5	27	15,6	65
VZ2 250		56	G3/4"A	23,6	25,8		



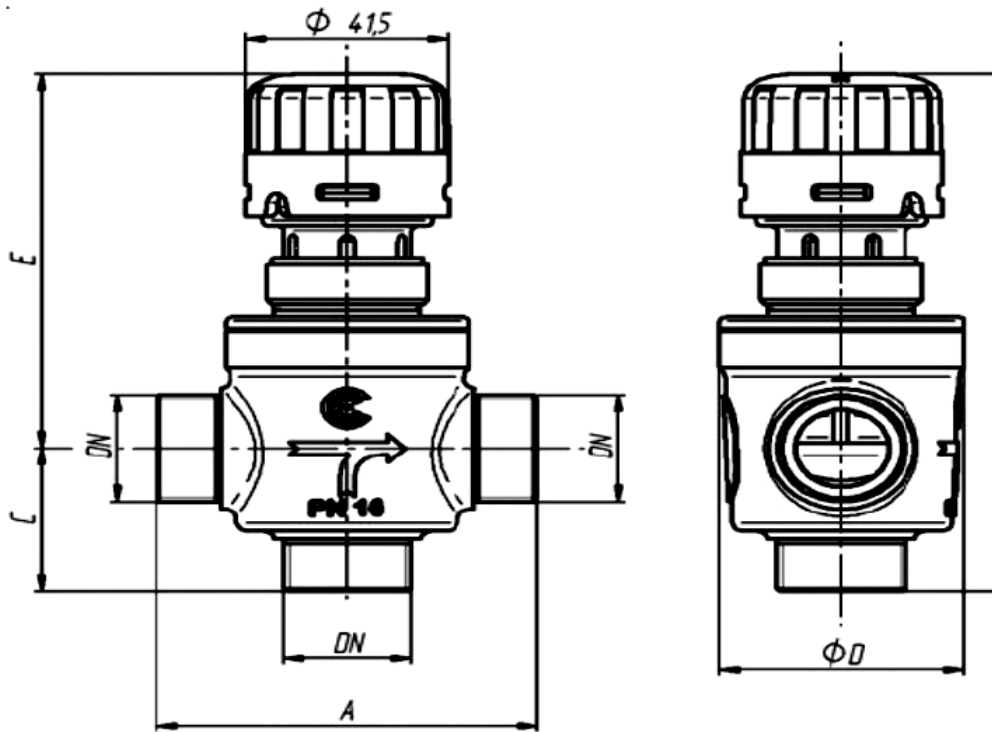
Valve	Actuator	a	b	c	d	e	f
VZ3 025 – VZ3 040 VZ3 060 – VZ3 100 VZ3 160	AZP 1401	52	G1/2"A	25	27	15,6	67,6
VZ3 250		56	G3/4"A	34	25,8		75,4



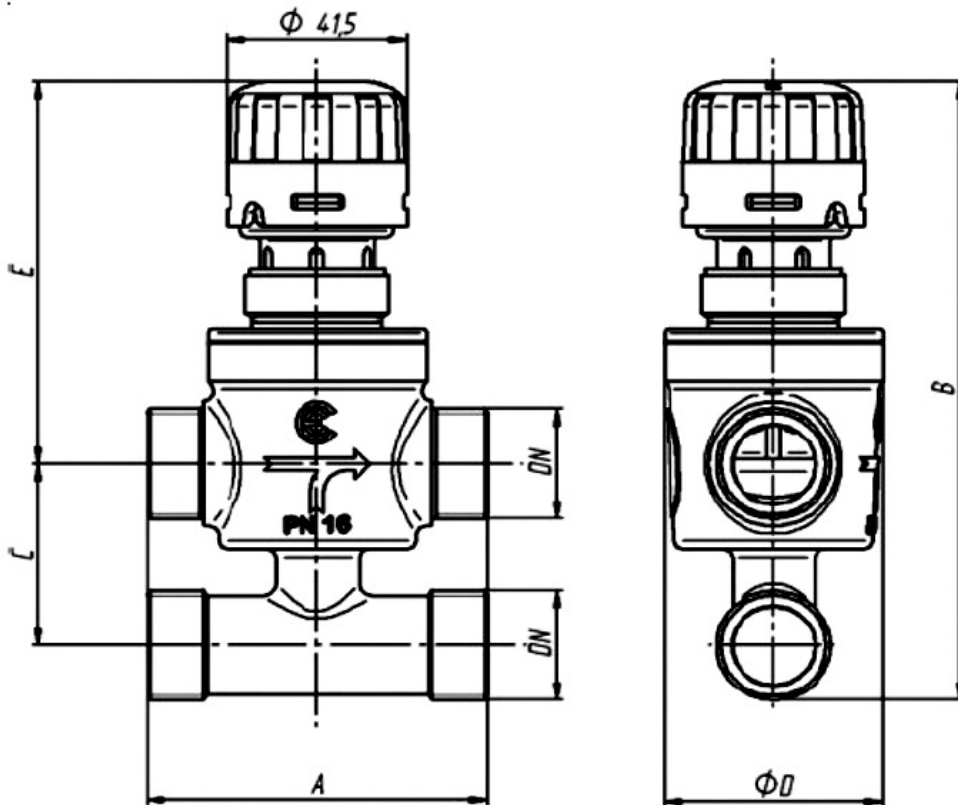
Valve	Actuator	a	b	c	d	e	f
VZ4 025 – VZ4 040 VZ4 060 – VZ4 100 VZ4 160	AZP 1401	52	G1/2"A	35	27	15,6	88,4
		56	G1/2"A	40			93,4
VZ4 250		56	G3/4"A	50	25,8		98,4



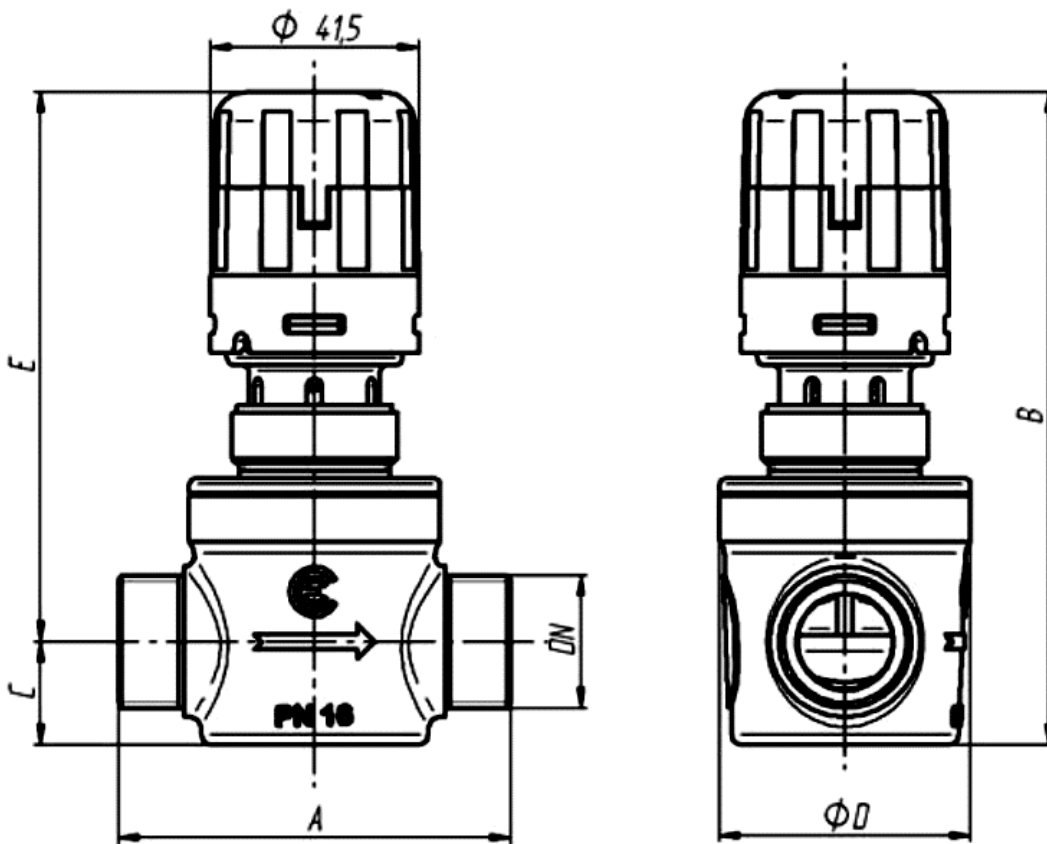
Valve type + actuator	DN	A	B	C	D	E
VZ2 400 + AZD 1403/ AZD 1404	3/4"	78	113	20.5	50	92.5
VZ2 600 + AZD 1403/ AZD 1404	3/4"	78	113	20.5	50	92.5



Valve type + actuator	DN	A	B	C	D	E
VZ3 400 + AZD 1403/ AZD 1404	3/4"	78	128	35.5	50	92.5
VZ3 600 + AZD 1403/ AZD 1404	3/4"	78	128	35.5	50	92.5

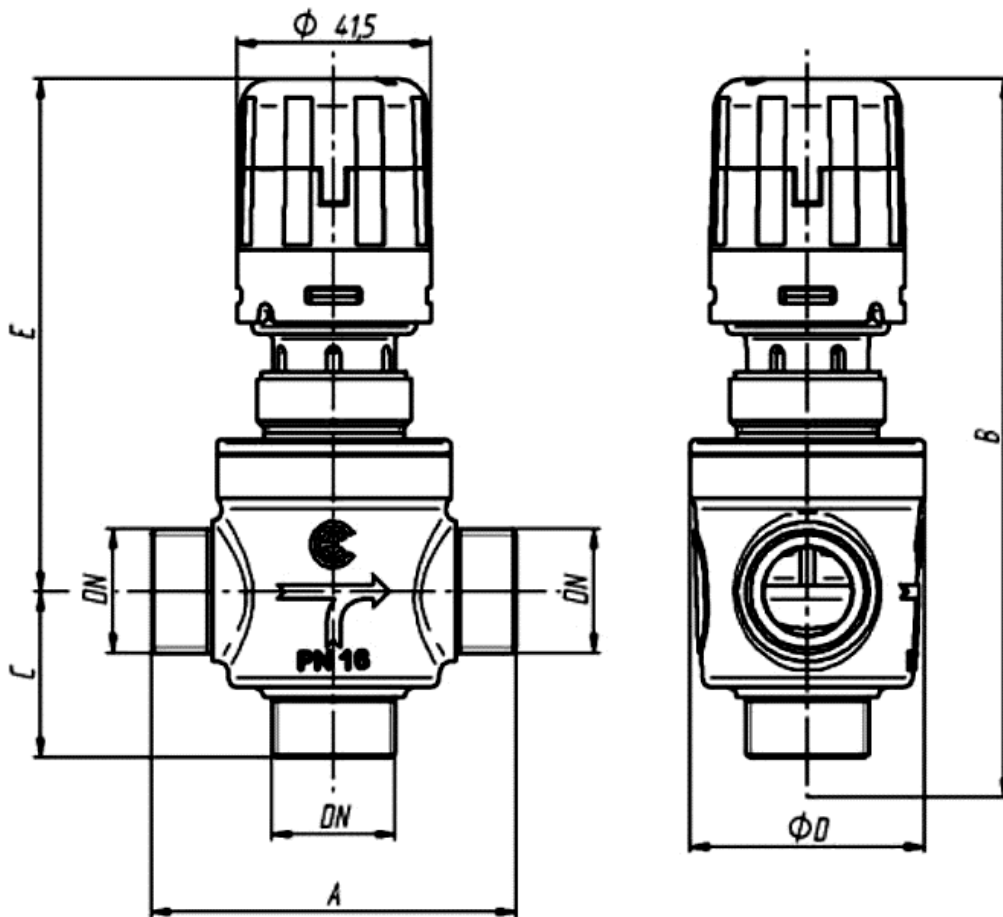


Valve type + actuator	DN	A	B	C	D	E
VZ4 400 + AZD 1403/ AZD 1404	3/4"	78	150	44	50	92.5
VZ4 600 + AZD 1403/ AZD 1404	3/4"	78	150	44	50	92.5

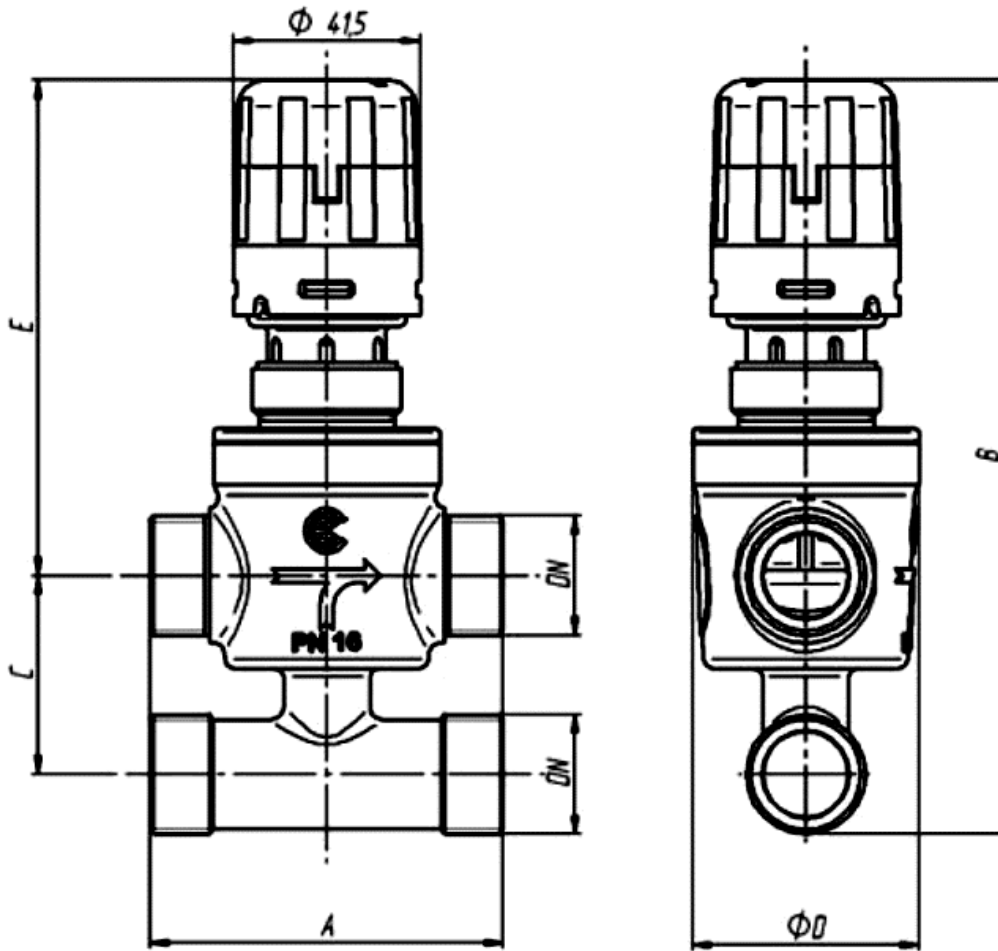


Valve type + actuator	DN	A	B	C	D	E
VZ2 400 + AZP 1401	3/4"	78	113	20.5	50	95.5
VZ2 600 + AZP 1401	3/4"	78	113	20.5	50	95.5





Valve type + actuator	DN	A	B	C	D	E
VZ3 400 + AZP 1401	3/4"	78	128	35.5	50	95.5
VZ3 600 + AZP 1401	3/4"	78	128	35.5	50	95.5



Valve type + actuator	DN	A	B	C	D	E
VZ4 400 + AZP 1401	3/4"	78	150	44	50	95.5
VZ4 600 + AZP 1401	3/4"	78	150	44	50	95.5

We reserve the right to make changes in our products without any notice which may affect the accuracy of the information contained in this leaflet.