

/ Function

The zone valves are aimed at automatically controlling and diverting the fluids in heating, air conditioning and sanitary water systems.

They are controlled by a servo-control, connected to a room thermostat provided with automatic return function, regulating the ambient temperature. All servomotors are equipped with an auxiliary micro-switch to control the pump.

This product, easy to install, shows high hydraulic performance in reduced sizes, this makes it specially suitable for zone heating installations.



/ Advantages of the zone ball valves:

- Excellent seal
- Quick opening/closing time
- Low pressure drop rates
- Operation under high differential pressures

/ Advantages of the ICMA zone valves:

- Soft seat ball movement, valve opening torque < 6Nm
- Quick connection system
- The motor can be used manually as a release device in the event of power failure by removing the lower stop fork and rotating the motor until the valve is open.
- Highly reliable motor
- High-precision gears made of plastic and metal.
- Noise < 40dB
- Quick and repeatable motor lock/unlock, without damaging the motor or the valve.

/ Materials

VALVE BODY

Body:	Brass CW617N UNI 12165
Control stem:	Brass CW617N UNI EN 12164
Ball:	Brass CW617N UNI 12164 Chromium plated
Ball sealing gasket:	PTFE
O-Ring:	EPDM PEROX - (high resistance)

SERVOCONTROL

Upper protection shell:	Clear ABS
Lower protection shell:	PA66 Black

/ Performance

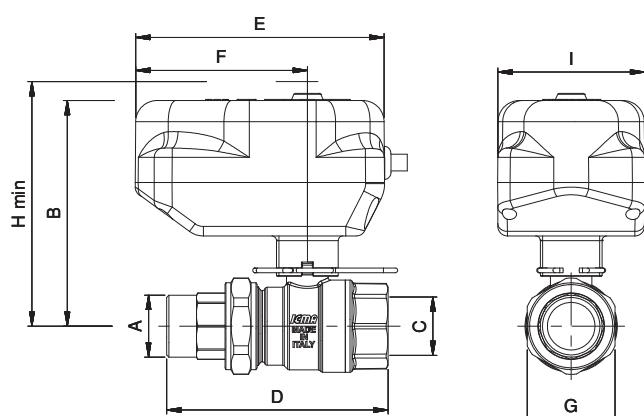
VALVE BODY

Working fluids:	water, glycol-based solutions Max 50%
Max. operating pressure:	10 bar
Max. fluid temperature	110°C
Max. differential pressure:	10 bar

SERVOCONTROL

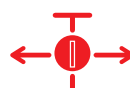
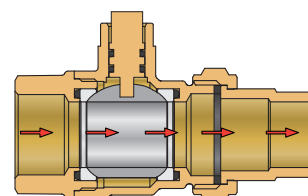
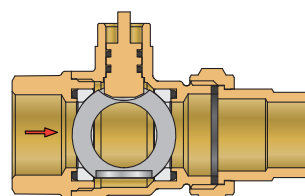
Synchronous motor:	230V ($\pm 10\%$) 50÷60 Hz
Power absorbed:	9.8VA
Min./Max. ambient temperature:	-5°/+55°C
Capacity of the auxiliary micro-switch contacts:	Max 5A
Protection degree:	IP54 (resistant to dust and solid objects, 5, and water splashes 4)
Protection class:	II (double insulation, insulating enclosure)
Pollution degree:	PD2 (Non-conductive pollution that does not affect the operation of the device, unless temporary conductivity occurs due to condensation)
Max. ambient relative humidity:	90%
Rotation angle:	90°
Movement time:	45 s
Max. torque:	12 Nm
Cable type:	H5VV-F
Cable section:	5x1 mm
Cable length:	1 m
Material Group (PTI):	IIIb (PTI 4) insulating material with the ability to withstand surface discharges. Comparative Tracking Index $100 \leq CTI < 175$ (IEC 60112).

/ Dimensions

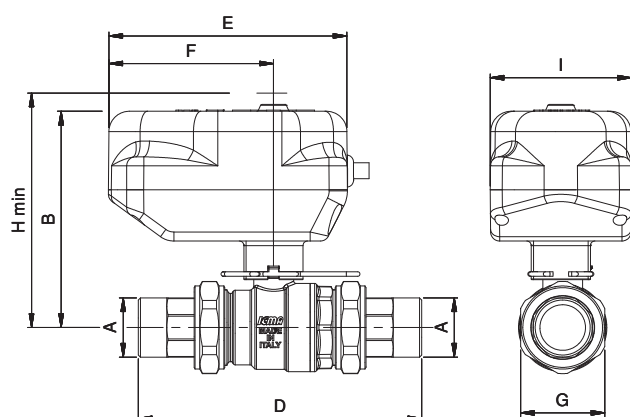


CLOSED ACTUATOR

OPEN ACTUATOR

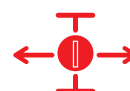
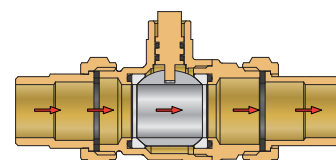
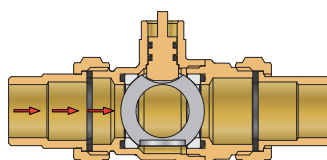


Code	DN	A	B	C	D	E	F	G	H	I	TYPE
82331AD05	15	1/2" M	-	1/2" F	80	-	-	Ø33	-	-	VALVE ONLY
82331AE05	20	3/4" M	-	3/4" F	92	-	-	Ø40	-	-	VALVE ONLY
82331AF05	25	1" M	-	1" F	105	-	-	Ø48	-	-	VALVE ONLY
82331AG05	32	1"1/4 M	-	1"1/4 F	118	-	-	Ø58	-	-	VALVE ONLY
82341AD0553	15	1/2" M	95	1/2" F	80	105	73	Ø33	115	62	VALVE+ ACT
82341AE0553	20	3/4" M	95	3/4" F	92	105	73	Ø40	115	62	VALVE+ ACT
82341AF0553	25	1" M	100	1" F	105	105	73	Ø48	120	62	VALVE+ ACT
82341AG0553	32	1"1/4 M	105	1"1/4 F	118	105	73	Ø58	115	62	VALVE+ ACT



CLOSED ACTUATOR

OPEN ACTUATOR



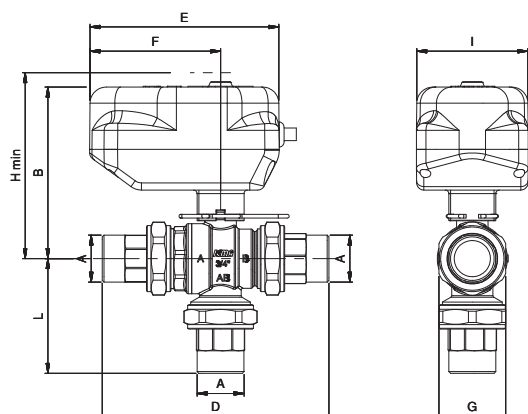
Code	DN	A	B	D	E	F	G	H	I	TYPE
82332AD05	15	1/2" M	-	105	-	-	Ø33	-	-	VALVE ONLY
82332AE05	20	3/4" M	-	123	-	-	Ø40	-	-	VALVE ONLY
82332AF05	25	1" M	-	140	-	-	Ø48	-	-	VALVE ONLY
82332AG05	32	1"1/4 M	-	153	-	-	Ø58	-	-	VALVE ONLY
82342AD0553	15	1/2" M	95	105	105	73	Ø33	115	62	VALVE+ ACT
82342AE0553	20	3/4" M	95	123	105	73	Ø40	115	62	VALVE+ ACT
82342AF0553	25	1" M	100	140	105	73	Ø48	120	62	VALVE+ ACT
82342AG0553	32	1"1/4 M	105	153	105	73	Ø58	125	62	VALVE+ ACT

Motor driven zone ball valve

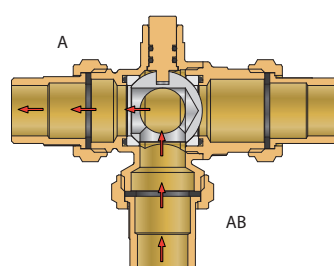
331-341-332-342-333-343-334-344-336-346



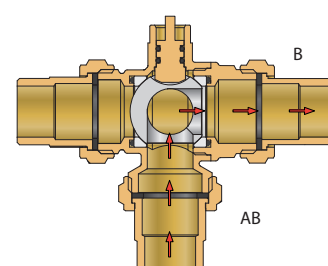
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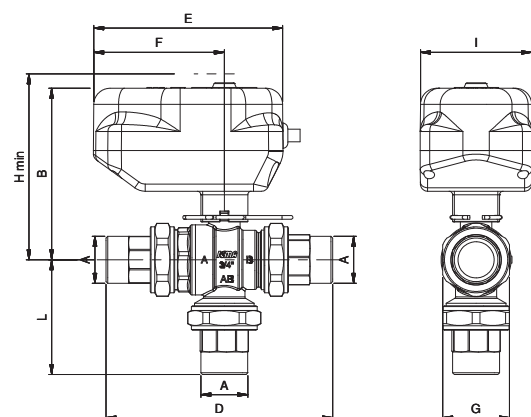
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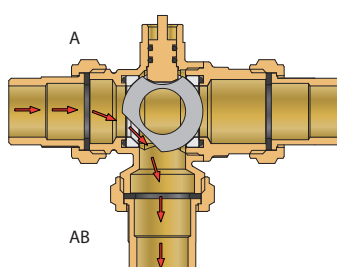
OPEN ACTUATOR



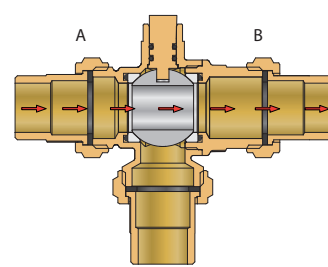
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82333AF05	20	3/4" M	-	92	-	-	Ø40	-	-	63	VALVE ONLY
82333AG05	25	1" M	-	105	-	-	Ø48	-	-	72	VALVE ONLY
82332AG05	32	1"1/4 M	-	118	-	-	Ø58	-	-	70	VALVE ONLY
82342AE0553	20	3/4" M	95	92	105	73	Ø40	115	62	63	VALVE+ ACT
82342AF0553	25	1" M	100	105	105	73	Ø48	120	62	72	VALVE+ ACT
82342AG0553	32	1"1/4 M	105	118	105	73	Ø58	125	62	80	VALVE+ ACT



CLOSED ACTUATOR



OPEN ACTUATOR



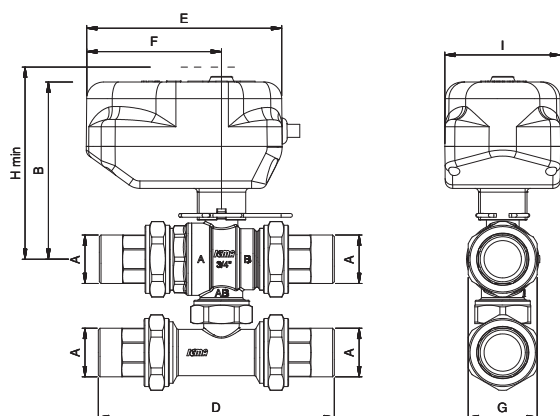
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82334AE05	20	3/4" M	-	123	-	-	Ø40	-	-	63	VALVE ONLY
82334AF05	25	1" M	-	140	-	-	Ø48	-	-	72	VALVE ONLY
82334AG05	32	1"1/4 M	-	153	-	-	Ø58	-	-	70	VALVE ONLY
82344AE0553	20	3/4" M	95	123	105	73	Ø40	115	62	63	VALVE+ ACT
82344AF0553	25	1" M	100	140	105	73	Ø48	120	62	72	VALVE+ ACT
82344AG0553	32	1"1/4 M	105	153	105	73	Ø58	125	62	80	VALVE+ ACT

Motor driven zone ball valve

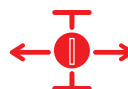
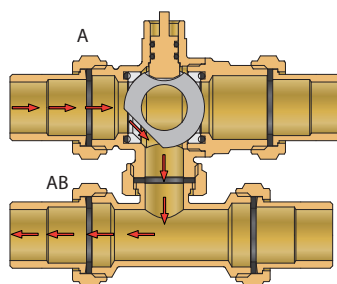
331-341-332-342-333-343-334-344-336-346



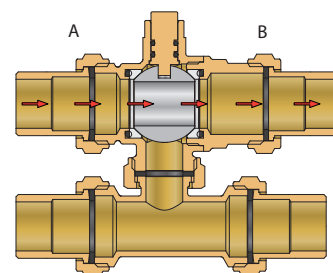
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CLOSED ACTUATOR



OPEN ACTUATOR



Code	DN	A	B	D	E	F	G	H	I	L	TYPE
82336AE05	20	3/4" M	-	123	-	-	Ø40	115	-	63	VALVE ONLY
82336AF05	25	1" M	-	140	-	-	Ø48	120	-	72	VALVE ONLY
82336AG05	32	1"1/4 M	-	153	-	-	Ø58	125	-	80	VALVE ONLY
82346AE0553	20	3/4" M	95	123	105	73	Ø40	115	62	63	VALVE+ ACT
82346AF0553	25	1" M	100	140	105	73	Ø48	120	62	72	VALVE+ ACT
82346AG0553	32	1"1/4 M	105	153	105	73	Ø58	125	62	80	VALVE+ ACT

Construction Notes

Servo-control

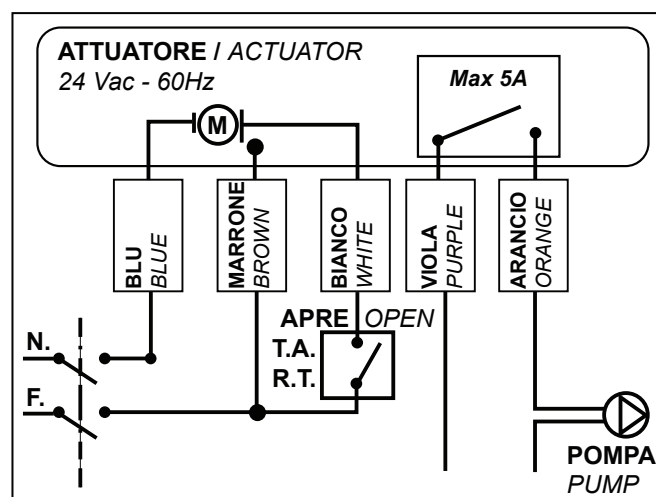
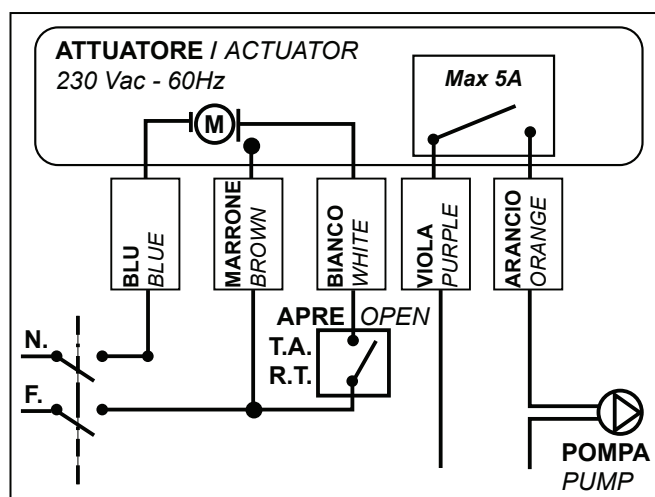
The electric diagram shows a two-point servo-control, with relay.

The valve opens when the voltage is sent on the white wire, the closure occurs when the voltage is cut off.

Actuator normally closed

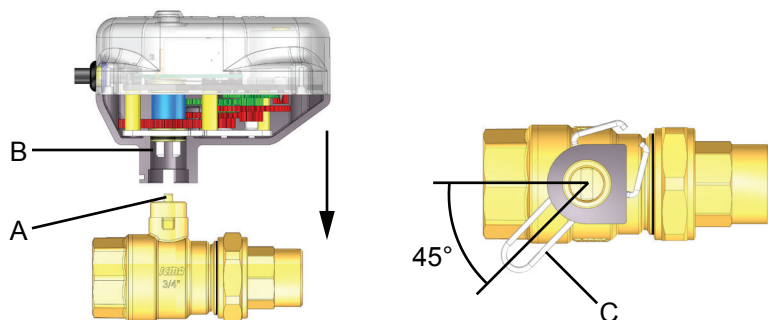
The actuator is provided with an auxiliary micro-switch, that is activated when the valve reaches the open position, and enables the pump starting. (Max contact capacity 5 A).

The actuator is provided with a two-way motor, allowing opening and closing the valve (90° movement angle), both clockwise and counter clockwise.

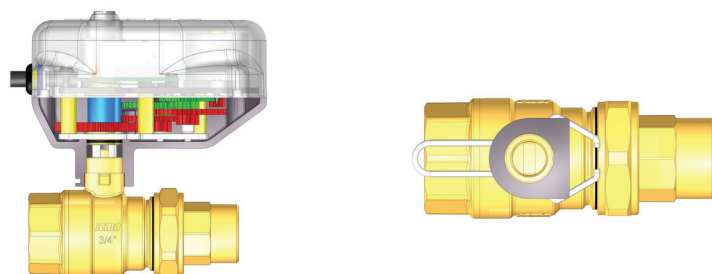


/ Servo-control / Valve coupling

The actuator is locked to the valve body by the control stem A and the geared motor shaft B.
Coupling is performed by the spring C.

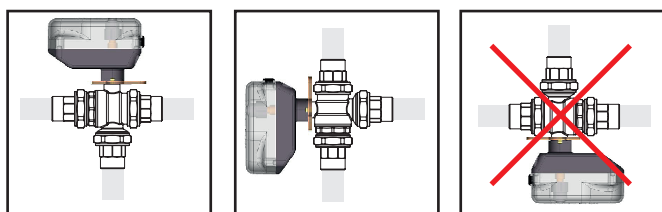


To insert the actuator into the valve body position the fork at 45°



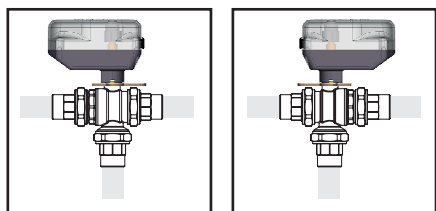
Insert the actuator into the seat and position the fork parallel to the valve body, to assure coupling.

/ Installation



It is allowed to install the actuator in horizontal and vertical positions, never in upside down position.

In the case of refrigeration systems, due to condensation, only install the actuator in a horizontal position.



The actuator can be installed on the valve body in the two positions shown.

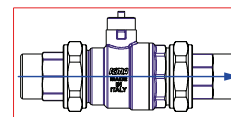
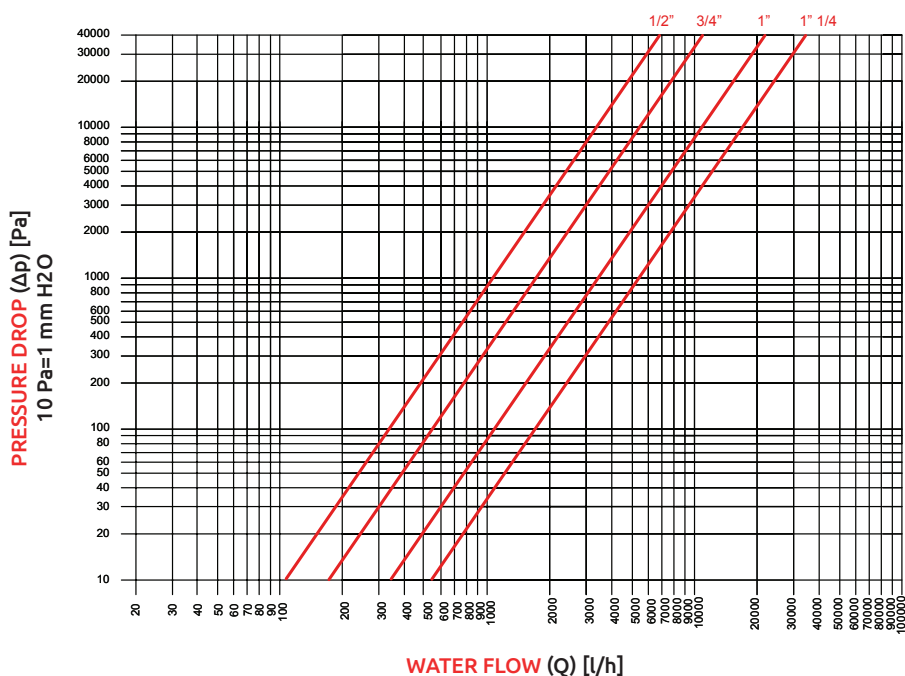
Motor driven zone ball valve

331-341-332-342-333-343-334-344-336-346

/ Hydraulic characteristics

Art.331-332-341-342 - 2 way zone ball valves

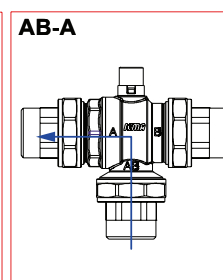
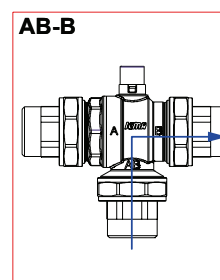
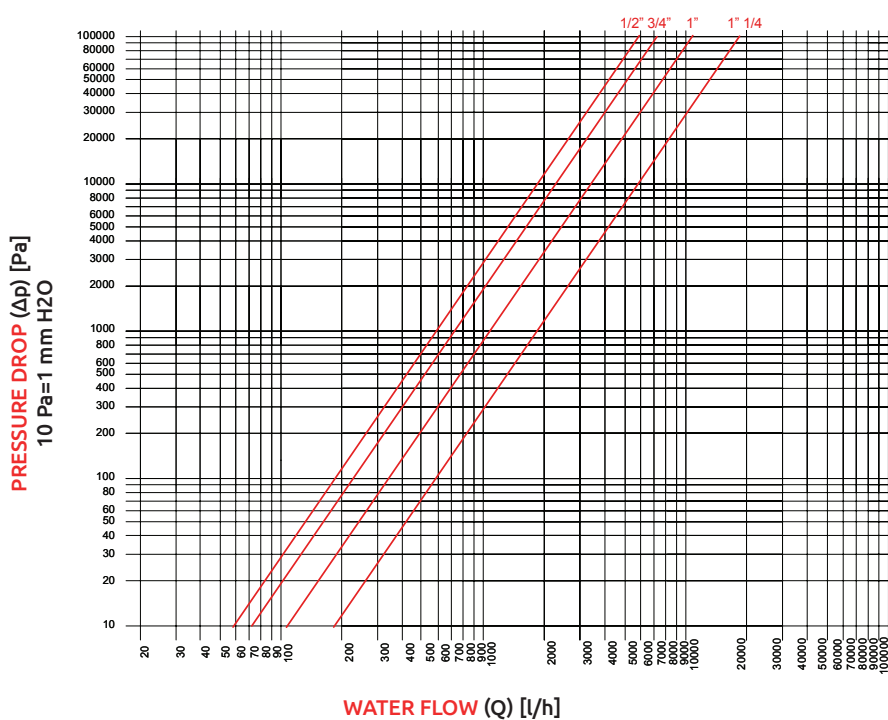
PRESSURE DROP DIAGRAM



Size	Kv [m ³ /h]
1/2"	10,82
3/4"	16,9
1"	33,9
1" 1/4	52,36

Art. 333-343 - 3 way zone ball valves "DIVERTING"

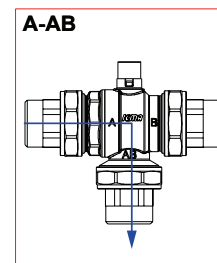
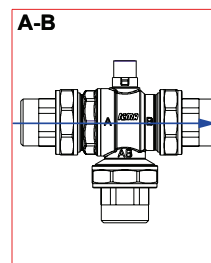
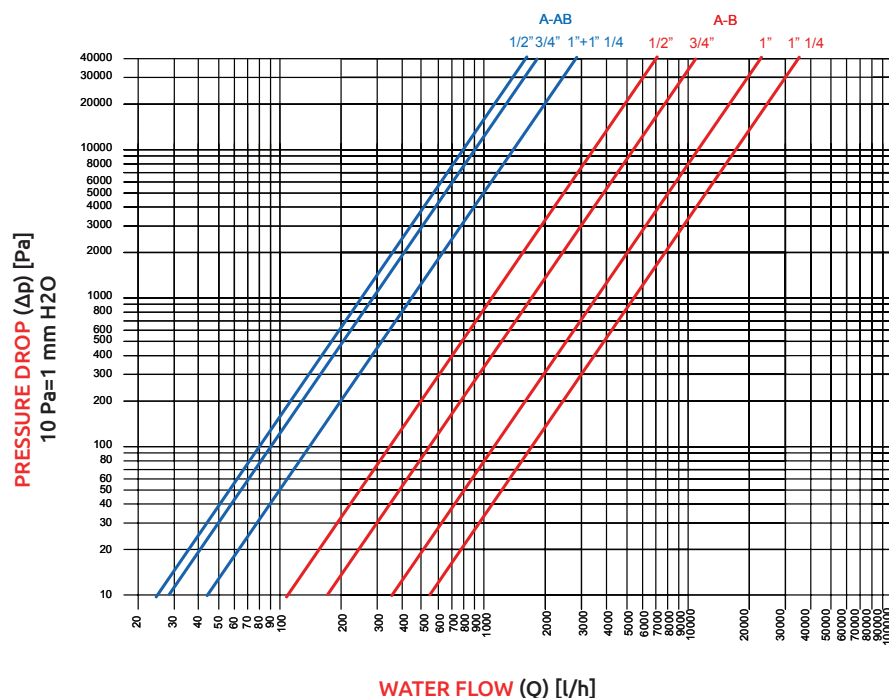
PRESSURE DROP DIAGRAM



Size	Kv [m ³ /h]
1/2"	5,94
3/4"	7,10
1"	11,98
1" 1/4	18,56

Art. 334-344 - 3 way zone ball valves "BY-PASS"

PRESSURE DROP DIAGRAM

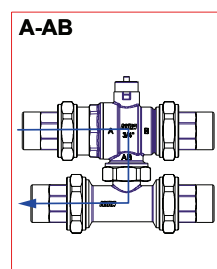
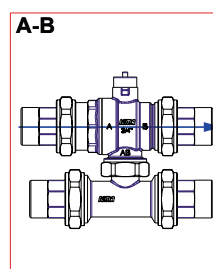
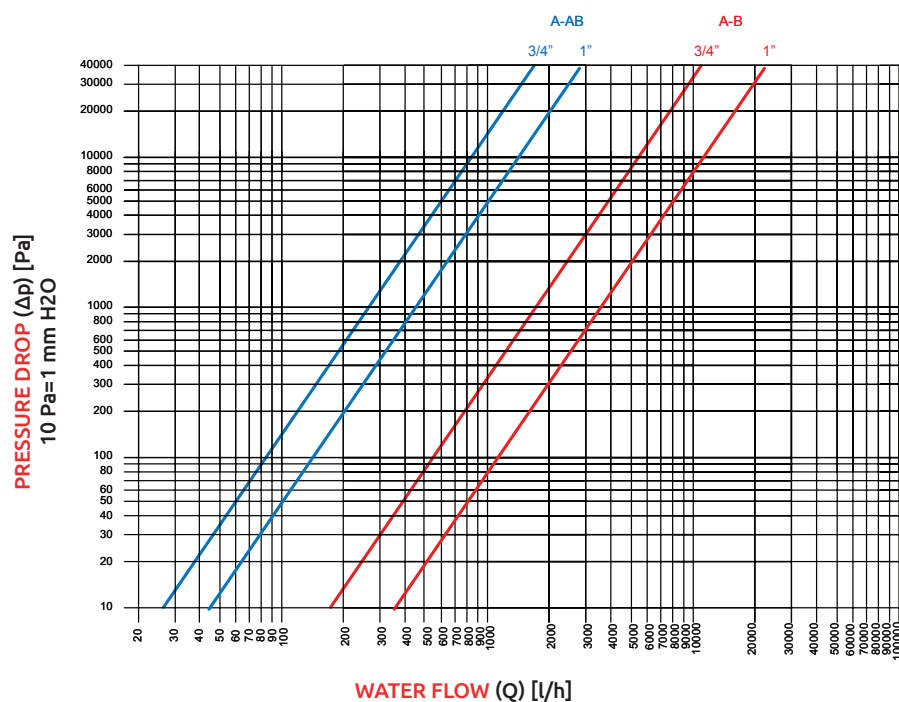


Size	Kv [m³/h]
1/2"	10,82
3/4"	16,9
1"	33,9
1"1/4	55,36

Size	Kv [m³/h]
1/2"	2,52
3/4"	2,86
1"	4,52
1"1/4	4,52

Art. 336-346 - 4 way zone ball valves

PRESSURE DROP DIAGRAM

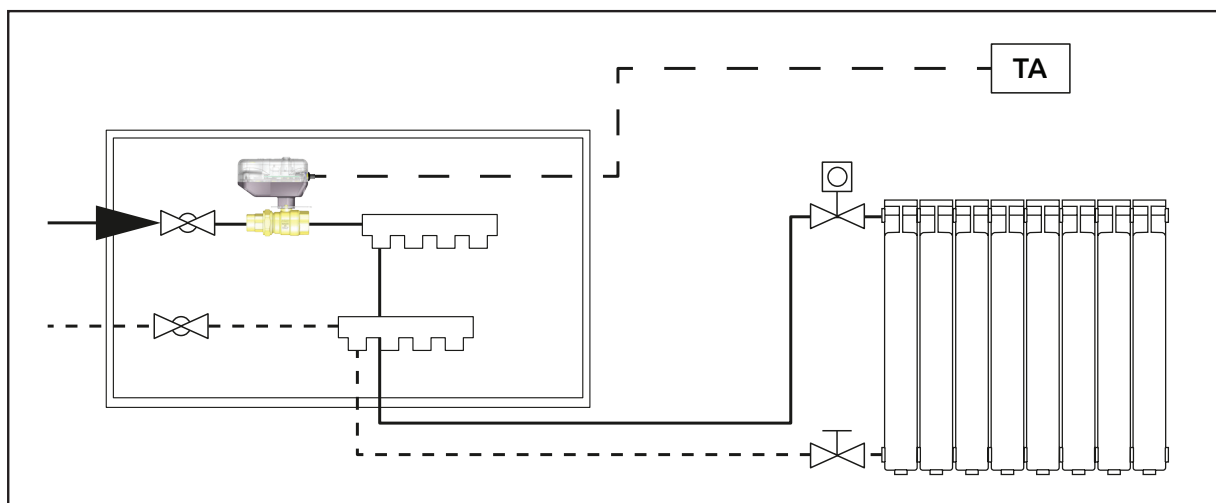


Size	Kv [m³/h]
3/4"	16,9
1"	33,9

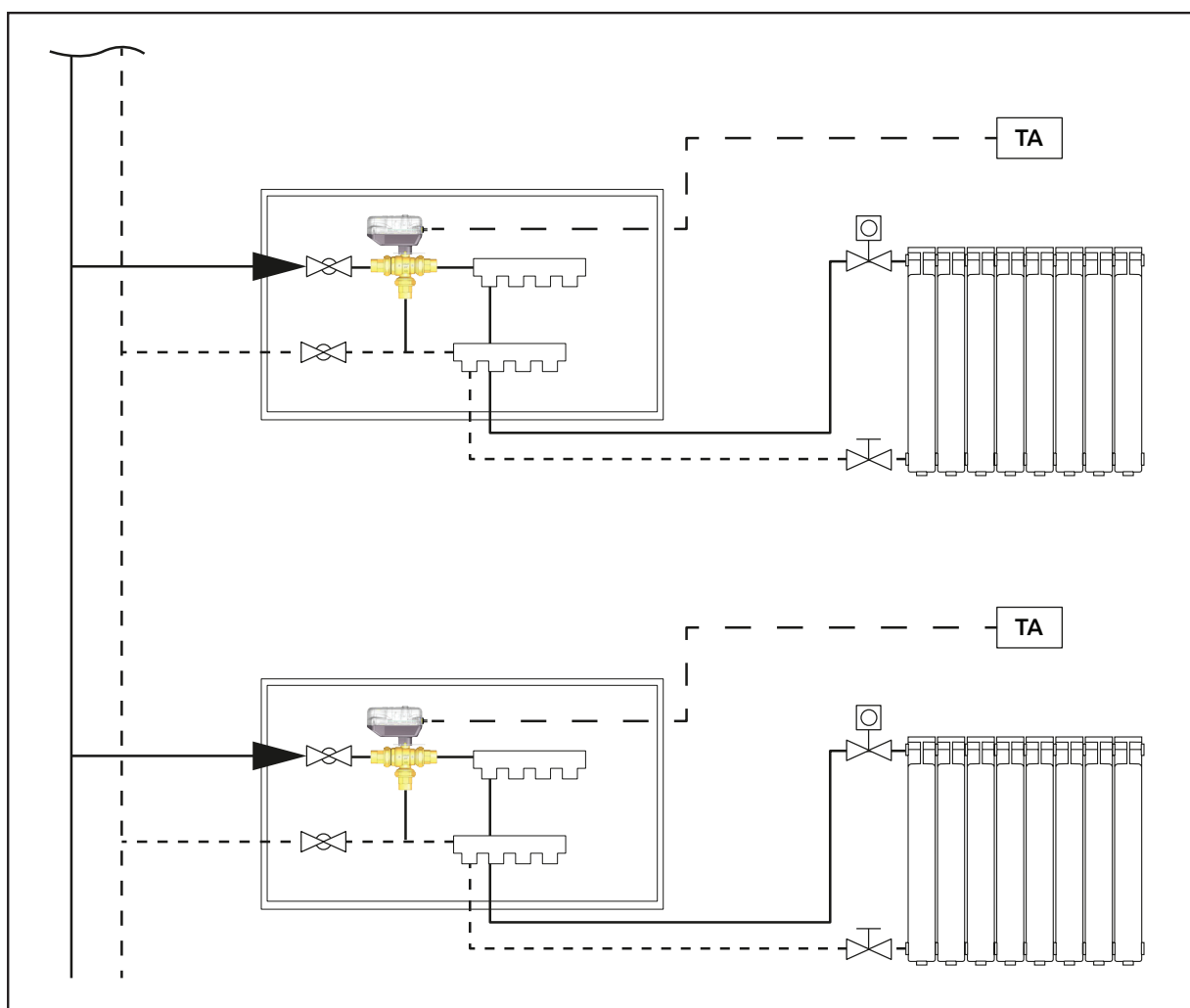
Size	Kv [m³/h]
3/4"	2,64
1"	4,30

/ Application diagrams

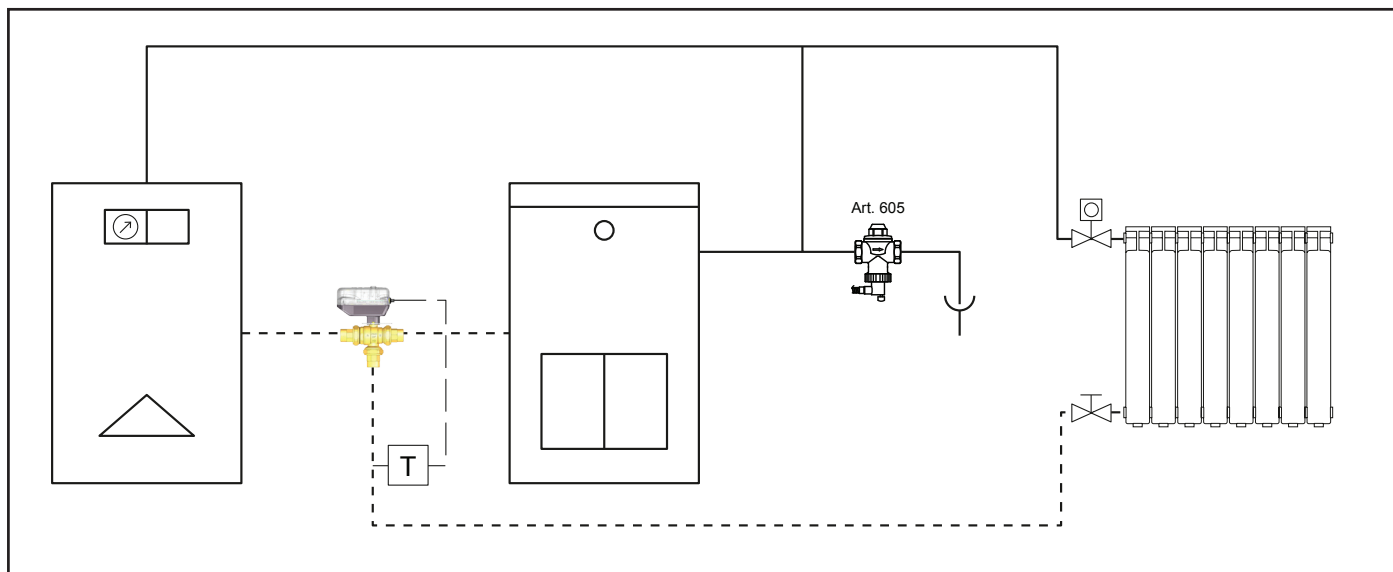
Installation with two-way zone valve



Installation with three-way zone valve, BY-PASS version



Installation with three-way valve, DIVERTING version



Installation with four-way zone valve

