

TECHNICAL CATALOGUE

ZONE BALL VALVES WITH UNIDIRECTIONAL ACTUATORS



ITAP SpA, founded in Lumezzane (Brescia) in 1972, is currently one of the leading production companies in Italy of valves, fittings and distribution manifolds for plumbing and heating systems. Thanks to fully automated production processes, with 72 tooling machines and 51 assembly lines, we are able to produce 200,000 pieces per day. Our innate pursuit for innovation and observance of technical regulations is supported by the company certification ISO 9001: 2008. The company has always considered its focus on quality as the main tool to obtain significant business results: today ITAP SpA is proud to offer products bearing the approval of numerous international certifying bodies.

ZONE BALL VALVES WITH UNIDIRECTIONAL ACTUATORS





ZONE BALL VALVES



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The motorised zone valves are used to intercept fluid inside the mechanical systems. These can be for heating/air conditioning systems of a building or for sanitary water (hot and cold) distribution. These valves have the function of closing or deviating the fluid passage inside piping. They are especially useful in the following systems:

- **Heating and air conditioning systems**, in order to interrupt the heat carrier fluid entry in the distribution manifold, once the temperature set on the environment thermostat is reached
- **Sanitary water distribution systems**, in order to stop the flow of water when it is not necessary

The motorised zone valves have an ON/OFF type operation: they cannot be used as mixing valves.

The advantages of the zone ball valves are the following:

- High capacity (they are in fact total passage valves)
- High working pressure (up to 16 bar)
- High differential pressure (up to 10 bar)
- Quick manoeuvre times (25 seconds or 50 seconds)

The unidirectional actuator proposed by ITAP SpA is equipped with relays and can only be combined with 2-way zone ball valves.

980

2-way zone ball valve

Available sizes: 3/4", 1" and 1 1/4"



981

2-way zone ball valve with double union connection

Available sizes: 3/4", 1" and 1 1/4"



989

Electric actuator for 2-way zone ball valves

Available with 230V 90 seconds power supply.



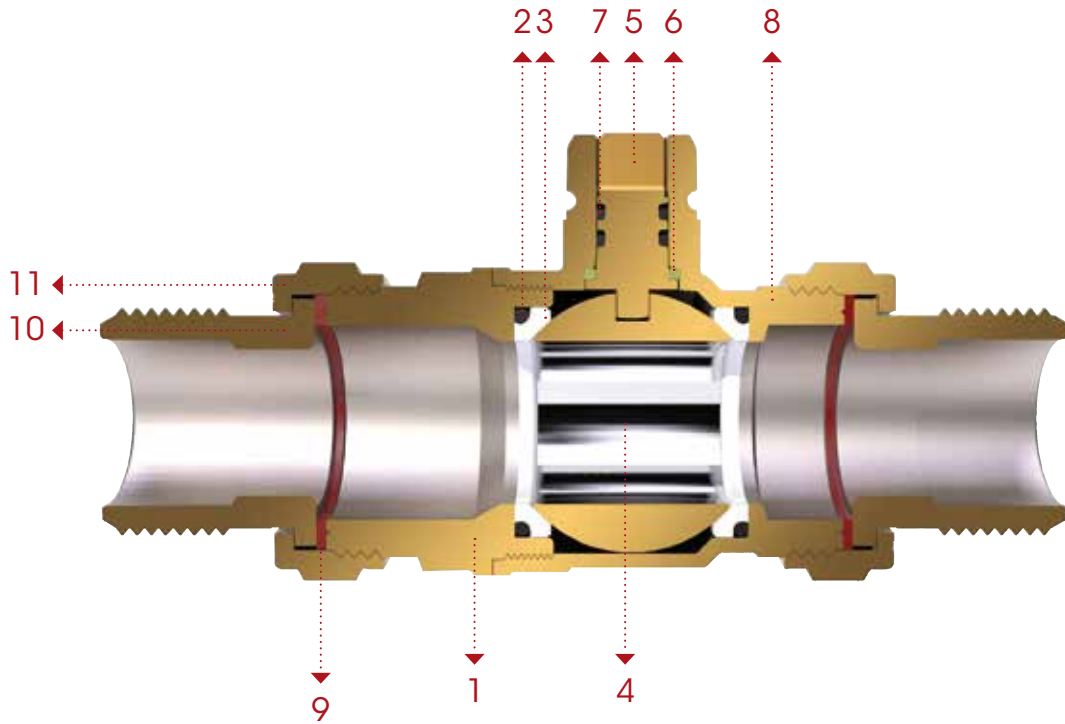
ZONE BALL VALVES

- Nickel-plated brass body
- Chrome-plated brass ball, full flow
- PTFE ball seat
- EPDM O-ring
- Maximum working pressure: 16 bar
- Maximum differential pressure: 10 bar
- Minimum and maximum working temperature: -10°C (with antifreeze solution), 100°C
- Threaded connections ISO 228 (equivalent to DIN EN ISO 228 and BS EN ISO 228)
- Fluid of use: water (maximum glycol percentage: 50%)

ACTUATOR

- Unidirectional synchronous motor
- Rotation angle: 90°
- Power supply: 230V
- Absorbed power: 4 VA
- Inrush current: 21 mA
- Protection degree: IP 44
- Operating temperature: -5°C, 50°C
- Rotation time: 90 seconds
- Starting torque: 10 Nm

COMPONENTS

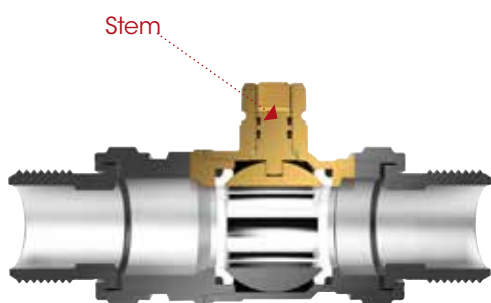


1	End adapter	Nickel-plated brass CW617N
2	O-ring	EPDM
3	Seal	PTFE
4	Ball	Chrome-plated brass CW617N
5	Stem	Brass
6	Ring	PTFE
7	O-ring	EPDM
8	Body	Nickel-plated brass CW617N
9	Washer	FIBRE
10	Union	Nickel-plated brass CW617N
11	Nut	Nickel-plated brass CW617N



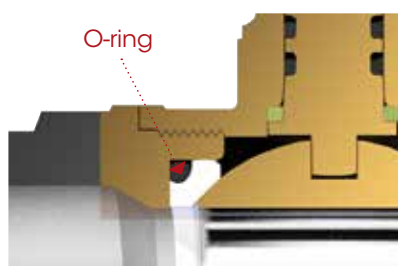
TECHNICAL BENEFITS

The ITAP SpA zone ball valves are characterised by some technical benefits. The following are special constructive details of these valves.



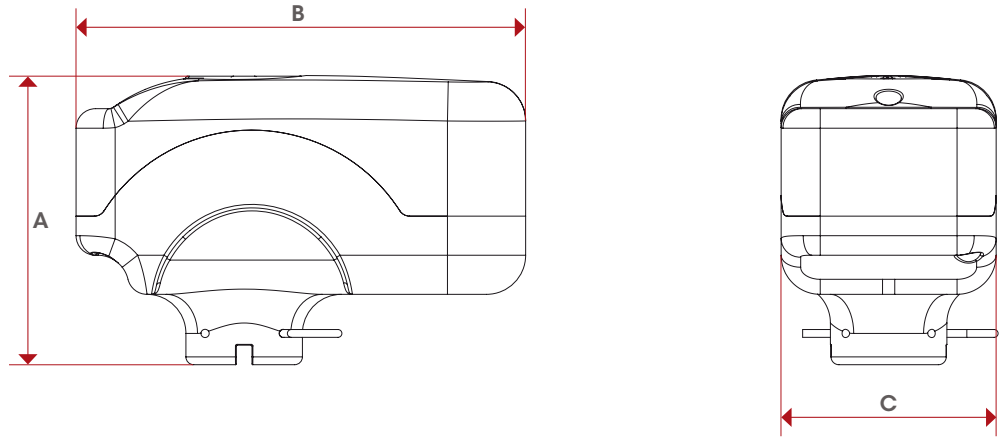
The manoeuvre stem is mounted from the inside, according to the “blow-out proof stem” technique. This is to avoid that, in case of high working pressure, the stem is expelled from its seat, resulting in water leaking out. This practice is commonly applied in assembling the ball valves intended for use with combustible gas, where maximum safety of used components is needed.

To improve manoeuvring in time, a PTFE ring is placed between the stem and the valve body, to reduce to a minimum static and dynamic friction between the stem and the seat.



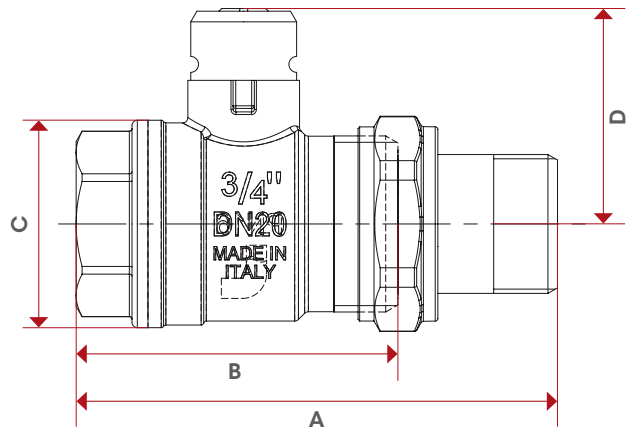
The use of an O-ring coupled with the PTFE seats avoids the possibility that after a long idle time of the valve, the ball could remain blocked, even when the actuator receives consent for a manoeuvre.

989



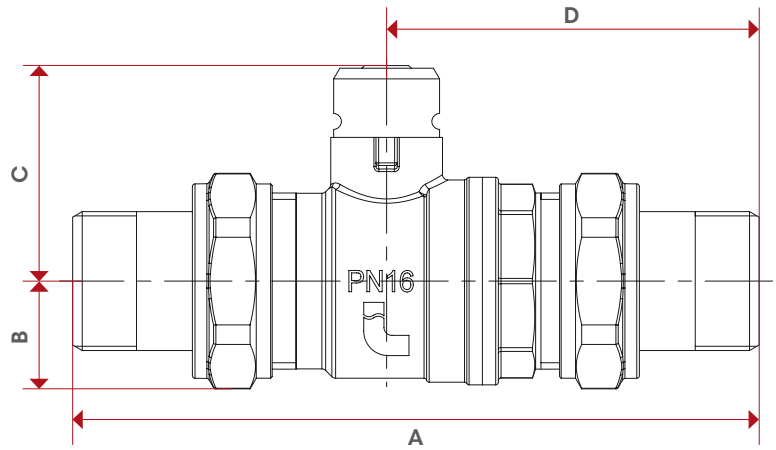
	/
A	74
B	115
C	55

980



	3/4"	1"	1 1/4"
DN	20	25	32
A	90,5	103	116,5
B	60,5	68,5	78
C	40,5	44,5	49,5
D	39	47,5	58
Kg/cm ² bar	16	16	16
LBS - psi	232	232	232

981



	3/4"	1"	1 1/4"
DN	20	25	32
A	129	148,5	163
B	20,25	24,5	27,5
C	40,5	44,5	49,5
D	70	81,5	87,5
Kg/cm ² bar	16	16	16
LBS - psi	232	232	232

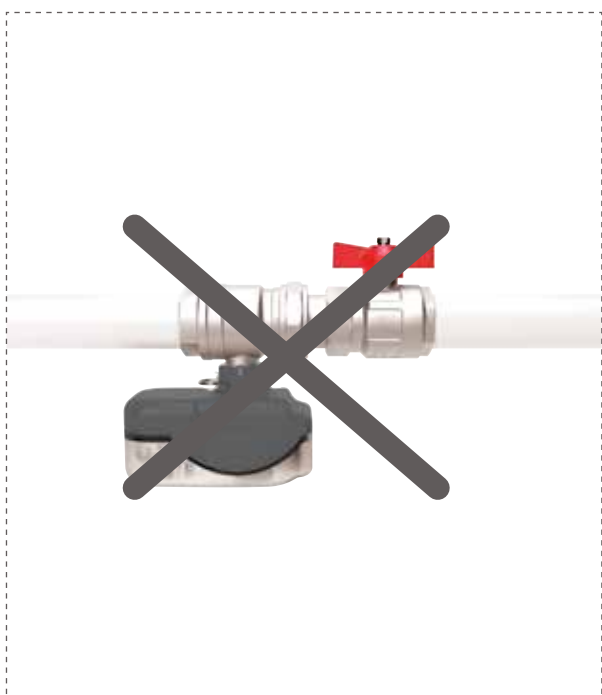


Installation



The zone ball valves are particularly useful in the context of radiator and radiant floor heating systems. In order to control the temperature of one zone, the electric actuator must be connected to an environment thermostat: once the set temperature is reached, the valve will close automatically, activated by its own actuator.

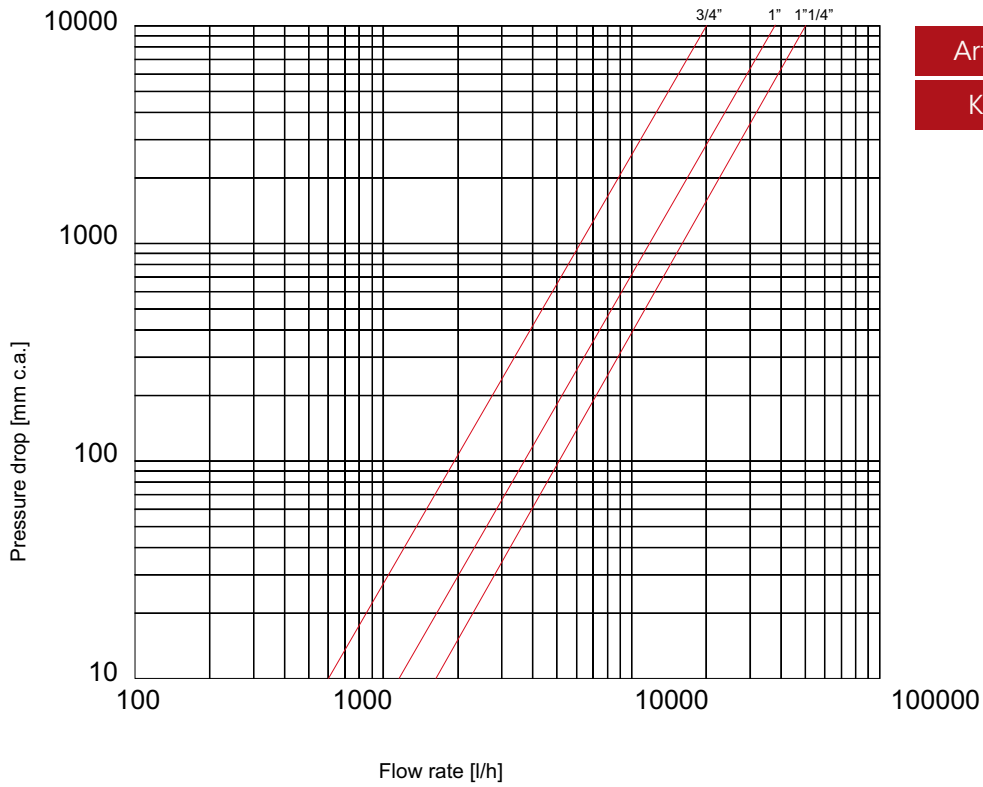
To avoid any technical problem in case of use in plants with the detected presence of condensate, it is advised not to install the electric actuator upside down.



**ATTENTION:
OPENING THE COVER COMPROMISE
THE PRODUCT GUARANTEE.**

PRESSURE DROP CHART

The pressure drop chart relative to the following items are reported as follows:
980 - 981 - 3/4", 1" and 1"1/4"

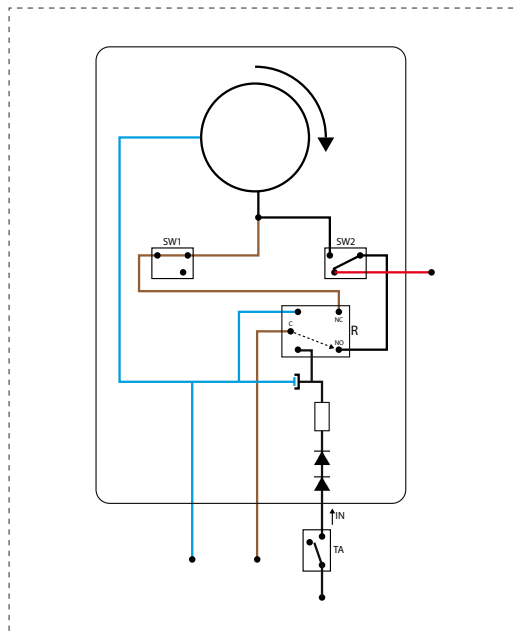


Art. 980 - 981	3/4"	1"	1"1/4"
Kv [m3/h]	20,2	37,3	51,5

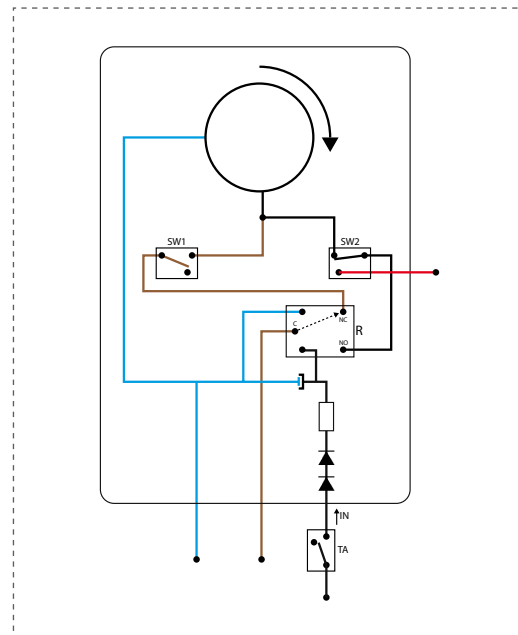
INTERNAL DIAGRAM

- R relay
- SW1 closing limit microswitch
- SW2 opening limit microswitch
- 1) Brown wire always connected to phase
- 2) Blue wire always connected to neutral
- 3) Black wire for command connection
- 4) Red wire open valve phase output

Valve opening

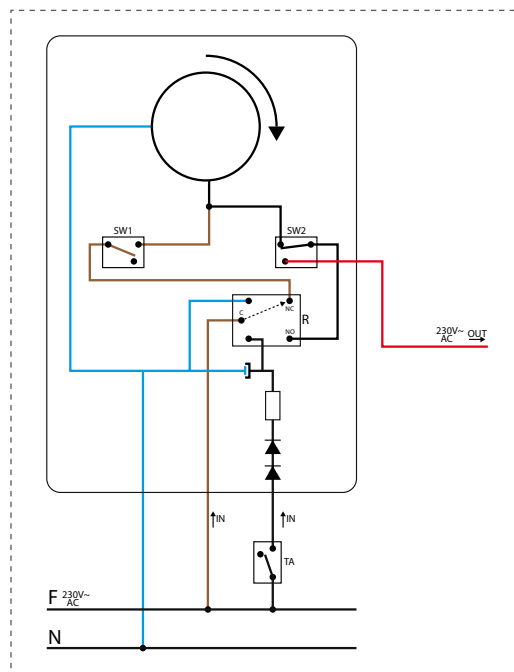


Valve closing



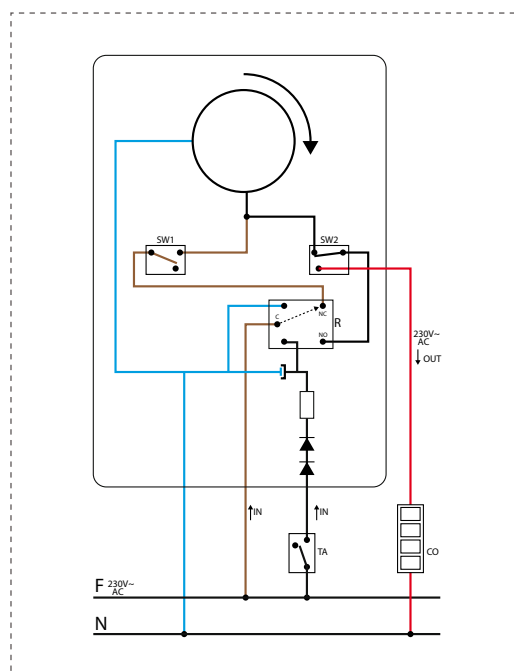
ENVIRONMENT THERMOSTAT (TA - ET) CONNECTION AND ELECTRICAL POWER SUPPLY DIAGRAM

The thermostat works by means of the zone valve, which opens or closes the distribution circuit of the interested zone based on environment needs. The Figure illustrates the electrical connection of the actuator with the environment thermostat.

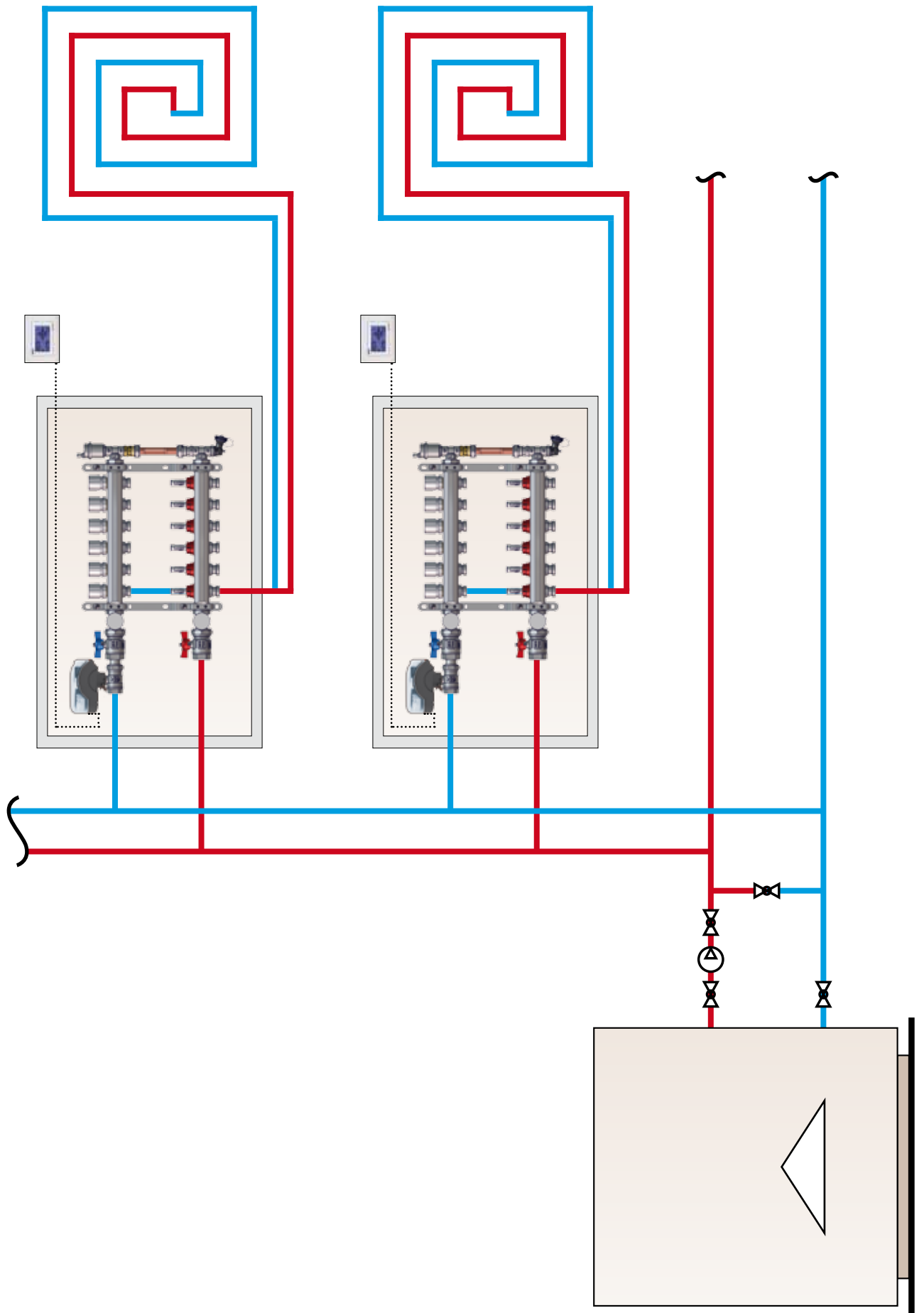


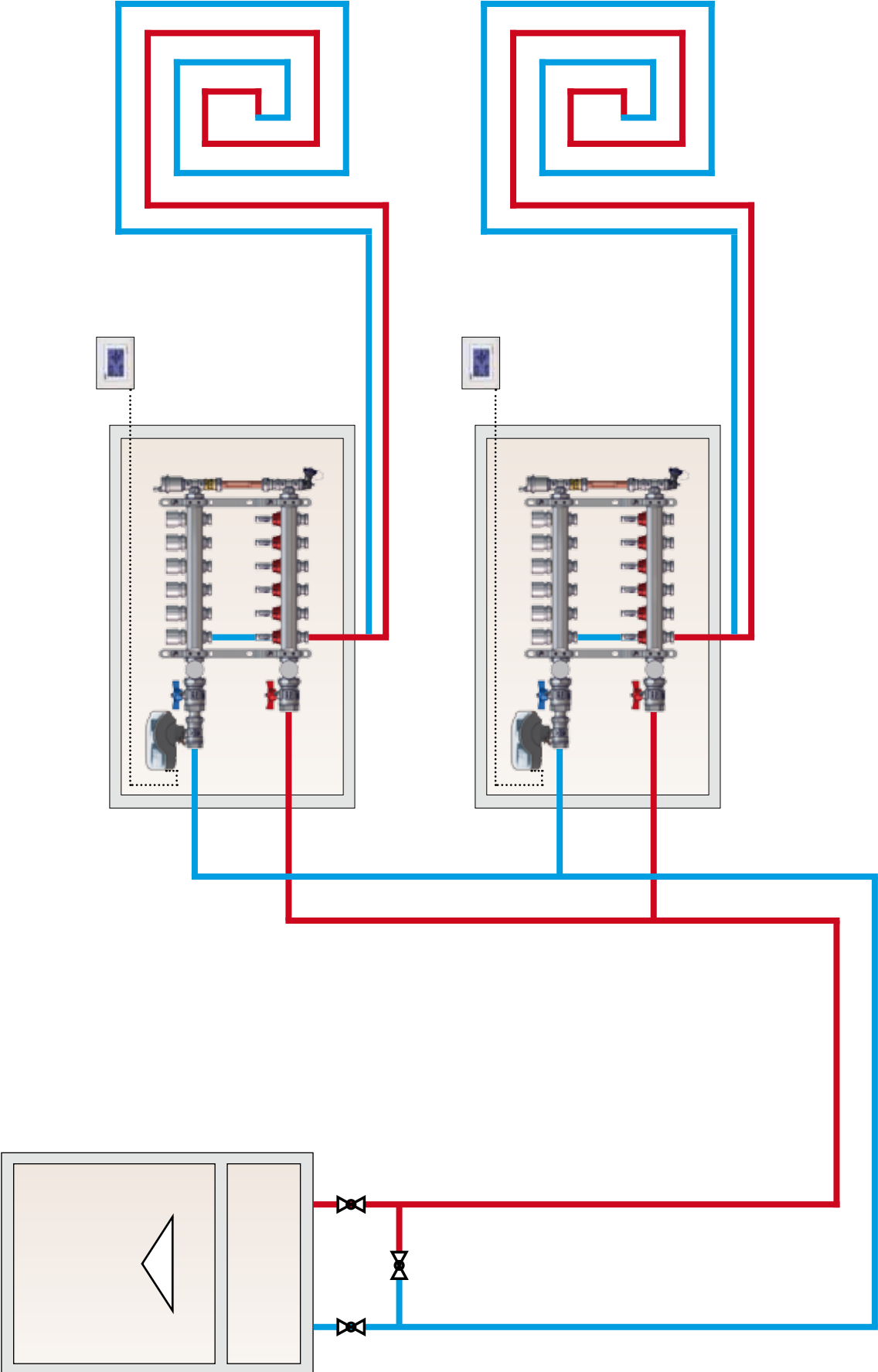
HOUR COUNTER (CO - HC) ENVIRONMENT THERMOSTAT (TA - ET) AND ELECTRICAL POWER CONNECTION DIAGRAM

The count is carried out by means of an hour counter, totalling the valve opening times. The Figure illustrates the electrical connection of the actuator with the hour counter.



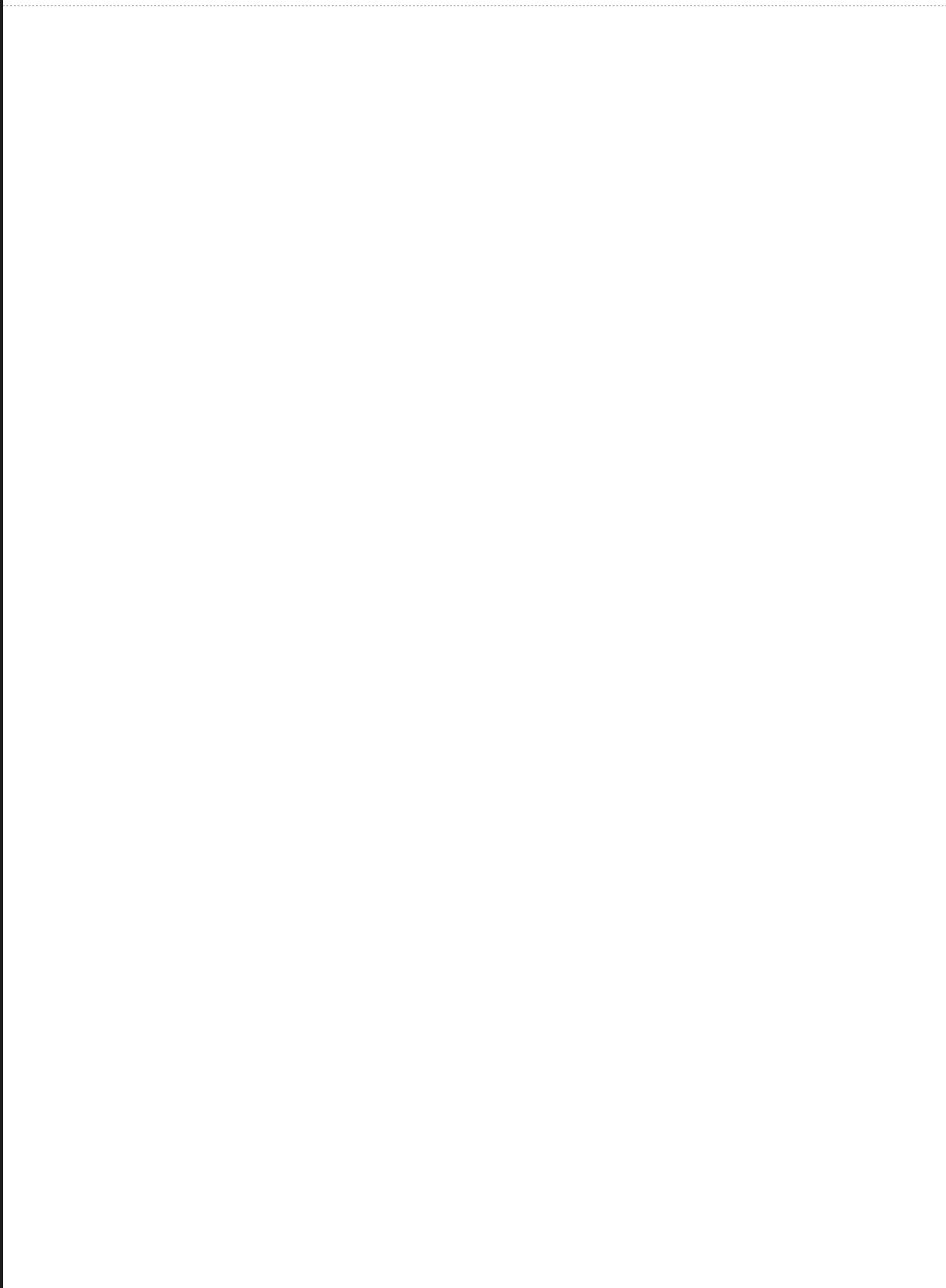
OPERATION DIAGRAMS







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NOTES

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