oventrop

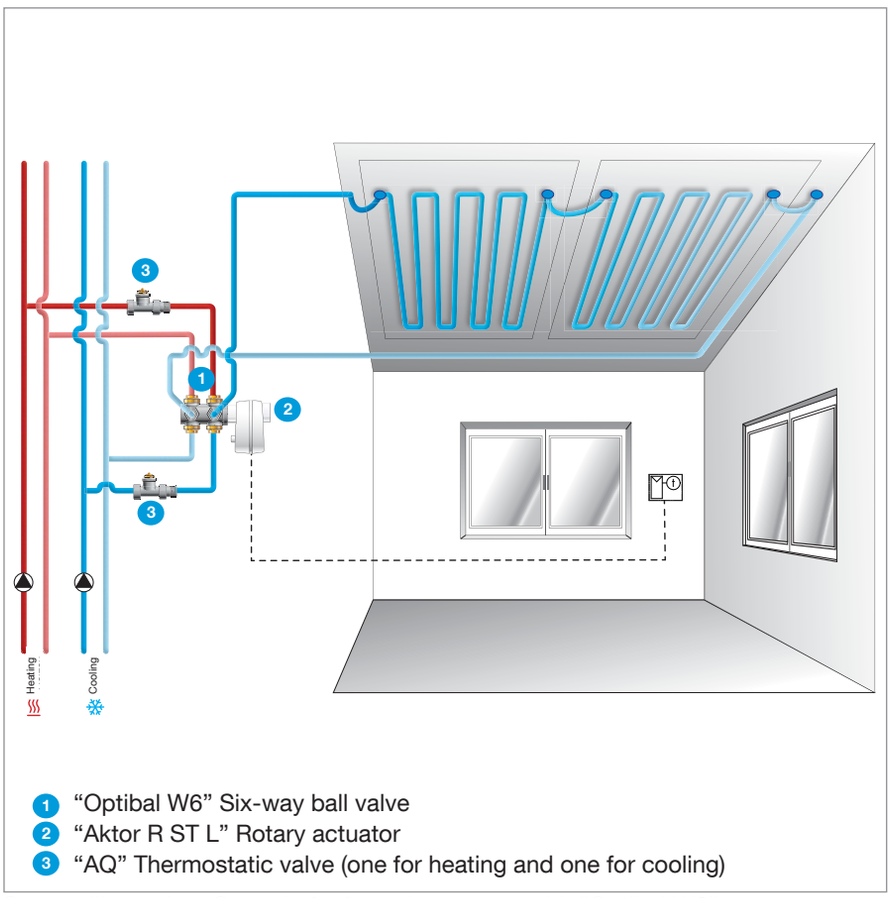
Innovation + Quality

Valves, controls + systems

“Optibal W6” Six-way ball valve for heating/cooling

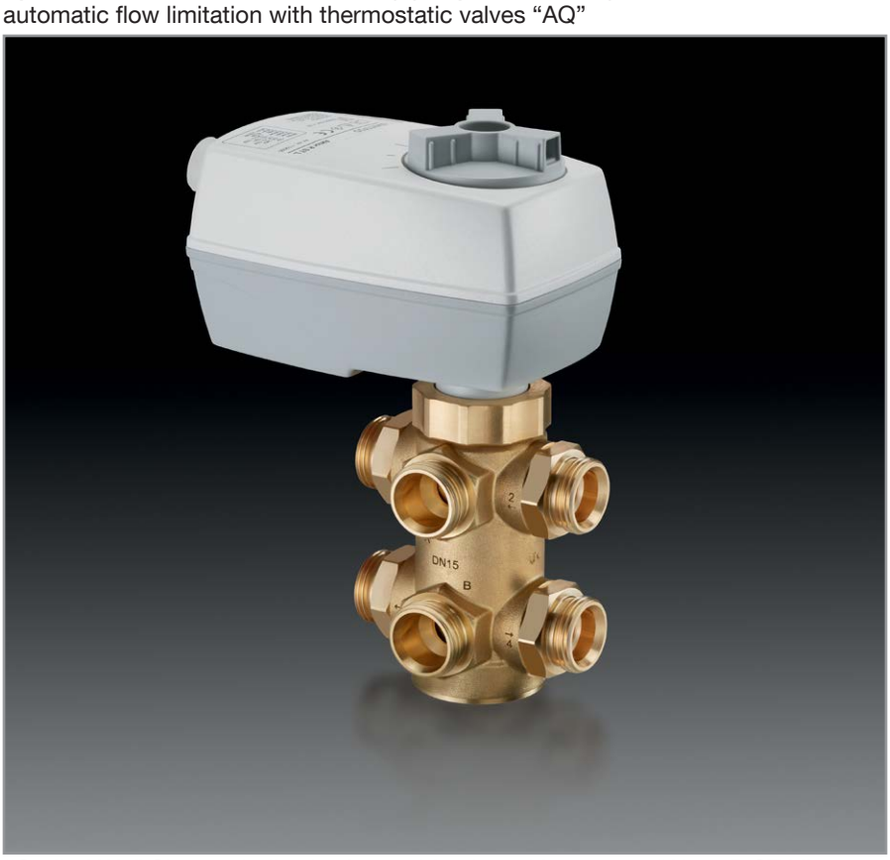
Product range





1 “Optibal W6” Six-way ball valve
2 “Aktor R ST L” Rotary actuator
3 “AQ” Thermostatic valve (one for heating and one for cooling)

System illustration: Control of a four-pipe system with “Optibal W6”, automatic flow limitation with thermostatic valves “AQ”



“Optibal W6” Six-way ball valve in combination with actuator “Aktor R ST L”

The six-way ball valve “Optibal W6” is used for the heating or cooling operation of radiant/ chilled ceilings or fan coils. With its numerous functions, the ball valve allows for a time- and space-saving installation.

Room heating and cooling are combined in more and more buildings. A four-pipe system for room temperature control which allows for zone-wise switching between heating and cooling operation is installed in these buildings.

In conventional four-pipe systems, many individual control components are required for switching between heating and cooling operation and for room temperature control.

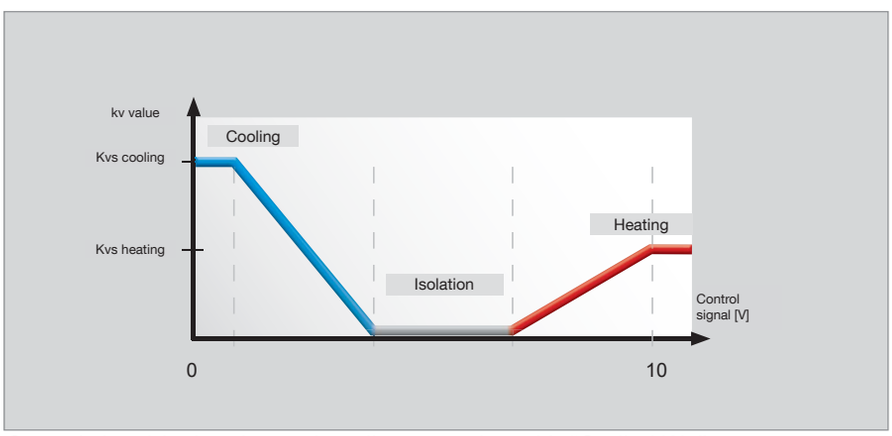
Oventrop offers the ideal solution: The “Optibal W6” - one ball valve for different applications which allows for a time- and space saving installation.



“Optibal W6” Six-way ball valve



“Aktor R ST L” Rotary actuator



Control signal for heating and cooling operation with “Optibal W6”



Kvs orifices

Six-way ball valve and accessories	Item no.
„Optibal W6“ DN 15, G ¾ with inner taper	1132004
“Optibal W6” DN 20, G 1 with inner taper	1132006
“Aktor R ST L”, 24 V Proportional rotary actuator, 0-10 V or two point control	1132030
Kvs orifice set	1132020

The six-way ball valve “Optibal W6” is used for heating and cooling operation in a four-pipe system with radiant/chilled ceilings or fan coils. The construction of the valve allows for a space-saving installation. As the ball valve “Optibal W6” takes over the functions of four straight pattern valves, it not only saves space but also allows for a time- and cost-saving installation.

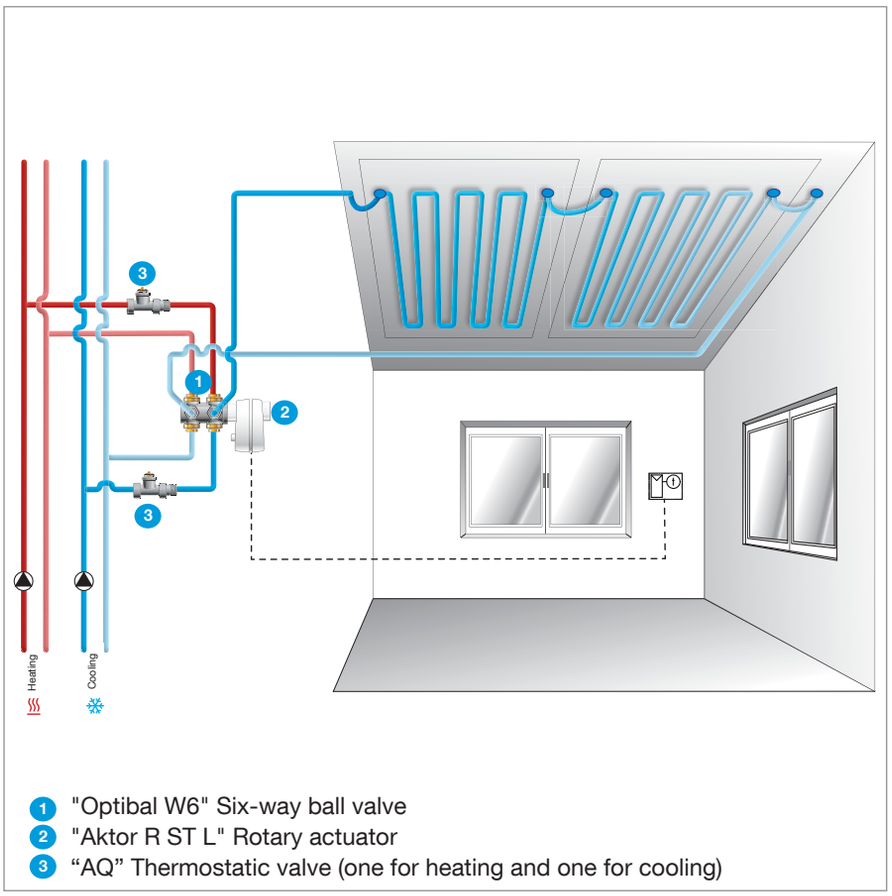
The six-way ball valve is made of dezincification resistant brass and consists of two three-way ball valves which are connected via one rotary axis.

To guarantee a precise control, the six-way ball valve “Optibal W6” is used in combination with the rotary actuator “Aktor R ST L”.

Manual hydronic balancing
Hydronic balancing during heating and cooling operation is carried out by limiting the volume flow with the help of Kvs orifices which are installed in the supply pipes. They allow for a volume flow limitation and a linear opening characteristic line of the six-way ball valve.

Automatic hydronic balancing
The volume flow control for hydronic balancing during heating and cooling operation at full and partial loads can be carried out by combining the six-way ball valve and the Oventrop thermostatic valves with “Q-Tech”.

Advantages
- simple switching to either heating or cooling
- automatic hydronic balancing in combination with “AQ” or “Cocon QTZ” valves
- the rotary actuator “Aktor R ST L” allows for the integration into a centralised building control system
- flexibility by setting different Kvs values
- space-saving installation
- time-saving installation and less mistakes during installation
- ball valve with defined 90° stop



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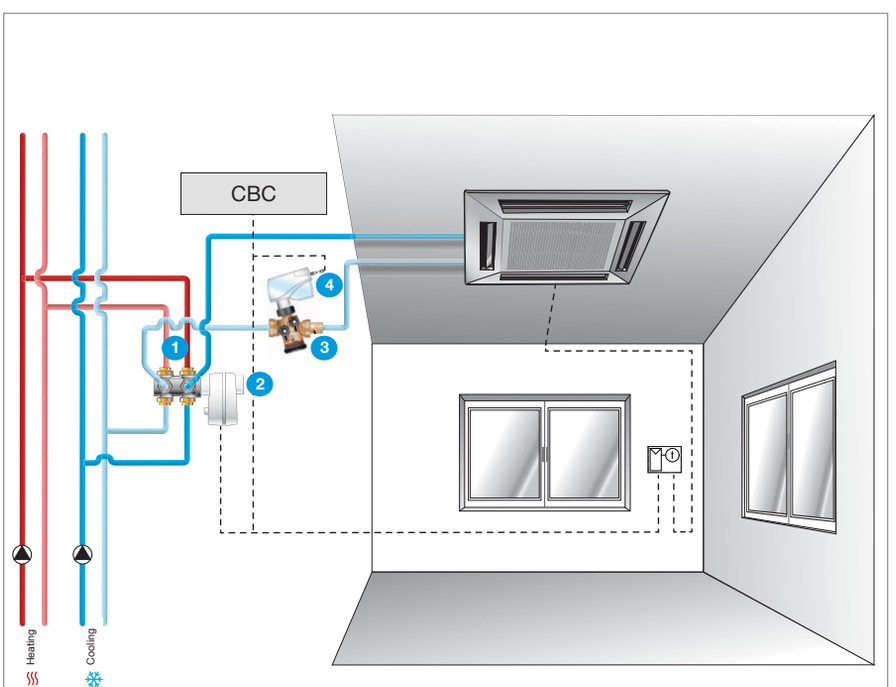
System illustration: Control of a four-pipe system with “Optibal W6”, automatic flow limitation with thermostatic valves “AQ”



1 "Optibal W6" Six-way ball valve
2 "Aktor R ST L" Rotary actuator
3 "Cocon QTZ" Pressure independent control valve
4 "Aktor M ST L" Stroke actuator

System illustration: Four-pipe system with "Optibal W6" and pressure independent control valve "Cocon QTZ"

When combined with thermostatic valves "AQ" or pressure independent control valves "Cocon QTZ", the six-way ball valve allows for automatic hydronic balancing.

System illustration with thermostatic valves "AQ"

The thermostatic valve "AQ" features a combined control and regulating function. Automatic hydronic balancing is carried out by the "AQ" valves in any position of the six-way ball valve during heating and cooling operation. This means that the volume flow in the terminal unit is kept at a constant level irrespective of differential pressure variations. Owing to the presetting at the "AQ" valves which are installed in the supply of the heating and cooling circuit, the volume flow can bet set and regulated to a maximum value.

System illustration with "Cocon QTZ" valves

In case of larger volume flows, the pressure independent control valves "Cocon QTZ" can be used instead of the thermostatic valves "AQ". The "Cocon QTZ" is installed in the return of the terminal unit. In this application, room temperature control is carried out by the actuator which is mounted onto the "Cocon QTZ" valve. The actuator which is fitted to the "Optibal W6", then only works as change-over valve and the Kvs orifices are not required. Presetting of the maximum permissible volume for cooling operation is carried out at the "Cocon QTZ". The maximum volume flow for heating operation can be realised with the help of a stroke limitation of the actuator via a corresponding control signal from a centralised building control signal.

Subject to technical modifications without notice.

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