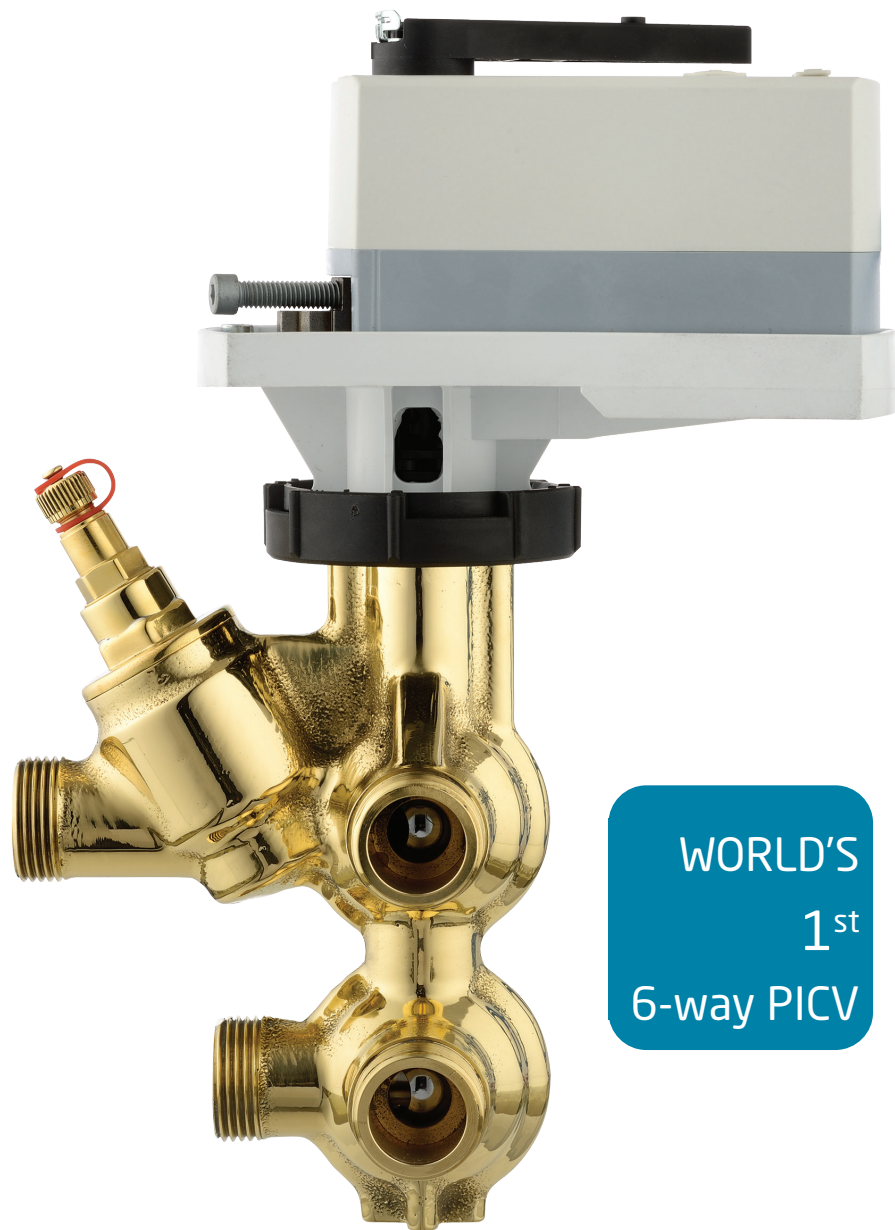


## Frese COMBIFLOW 6-way

Pressure Independent Control Valve  
for 4-pipe heating and cooling systems



### Frese COMBIFLOW 6-way

With the Frese COMBIFLOW 6-way solution, you need only one valve and one actuator to achieve complete pressure independent balancing and control

We have combined our existing 6-way valve technology with our patented PICV technology in one compact, all-in-one solution; Frese COMBIFLOW 6-way.

This solution - which is a world's first - allows our customers to reduce some of the complexity in 4-pipe heating and cooling systems by minimizing the number of required valve components.

By integrating the differential pressure controller in the valve, you have fewer connection points, which minimizes potential leakage problems, and with just one actuator you only need one data point to the building's BMS.

Frese COMBIFLOW 6-way is designed to cover a wide flow range. This simplifies the selection process, since a limited product range can cover a wide variety of needs. In addition, an extremely high flow capability has made it possible to downsize the valve dimension, further contributing to the valve's compact design.

The energy saving capabilities of our patented Frese OPTIMA Compact will also be found in the new 6-way solution. Additionally, the COMBIFLOW 6-way has shown the lowest pressure loss known in the market, resulting in significant pump energy savings.

4-pipe systems include:

- Heating and cooling ceilings
- Decentralized ventilation units
- Fan coil systems
- Convection heating and cooling units

## Pressure Independent Balancing and Control

Pressure independent balancing and control is an innovative, energy saving alternative to traditional hydronic balancing and control methods that use separate static balancing valves, differential pressure control valves and two port control valves.

A system with pressure independent balancing and control valves provides efficient and accurate flow limitation, differential pressure control and temperature control. This ensures that the design flow conditions are realised irrespective of pressure fluctuations in the system. Also at part load conditions the required flows are available in all terminal units.

A hydronic system designed and fitted with pressure independent balancing and control valves offers many advantages over traditionally designed, static systems.

These advantages include a simplified system design, ease of selection, system flexibility and a minimised commissioning process. The major benefit is the significant energy saving benefits that can be achieved through maximising Delta T and eliminating overflows in the system.

# We create **VALUE** for our customers with this **STATE OF THE ART** design focusing on:

## **SIMPLICITY**

Simple selection; only design flow and minimum pressure required  
One valve -> Fewer connection points -> Minimizes potential leakage problems  
One size covers a wide flow range  
Only one datapoint/cable to BMS  
Flushing -> Simple to remove the DP Controller to flush the system  
Modbus -> Remote flow setting via BMS

## **COMPACT DESIGN**

Compact -> Significant space savings  
High flow capability -> Allows for downsizing the valve dimension  
compared to major competitors

## **ENERGY SAVINGS**

1st 6-way PICV in the world (Patent pending)  
Patented 6-way PICV technology  
Integrated DP controller in the 6-way valve - Capable of switching between cooling and heating  
-> No need for a 2nd valve  
Lowest pressure loss known in the market -> Pump energy savings

## **DURABILITY**

Stable system as pressure fluctuations are compensated  
by the integrated DP controller -> Longer Actuator Lifetime  
Built-in pressure relief feature  
-> Ensures that the terminal unit does not break when the valve is in closed position

## Technical Data



### Frese COMBIFLOW 6-way

<b>Valve housing</b>	DZR Brass, CW602N
<b>Balls</b>	DZR Brass, nickel plated
<b>- Gasket</b>	PTFE, Glass and carbon fiber reinforced
<b>DP controller</b>	PPS 40% glass
<b>- Spring</b>	Stainless steel
<b>- Diaphragm</b>	HNBR
<b>O-rings</b>	EPDM
<b>Mounting plate for actuator</b>	PPS GF40
<b>Rotator for DP-pressure</b>	PPO
<b>Pressure class</b>	PN25
<b>Max. differential pressure</b>	400 kPa
<b>Medium temperature range</b>	0°C to 90°C

## Technical Data



### Frese COMBIFLOW Modbus Rotary Actuator

<b>Characteristics</b>	Motoric actuator
<b>Protection class</b>	IP 54 to EN 60529
<b>Supply</b>	24V AC
<b>Frequency</b>	50/60 Hz
<b>Control signal</b>	MODBUS (RTU285)
<b>Actuating moment</b>	10Nm
<b>Running time</b>	150 s @ 90°
<b>Ambient operating conditions</b>	-20°C to 50°C
<b>Cable length</b>	0.9 m
<b>Weight</b>	0.75 kg

## Technical Data



### Frese COMBIFLOW Modbus Programming Tool

The Frese COMBIFLOW Modbus Programming Tool is used with the Frese COMBIFLOW Modbus Rotary Actuator for:

- Cooling and Heating flows setting  
*Note: The actuator and thus the valve closing position must be programmed from the BMS.*
- Single actuator configuration
- Mass actuators configuration
- Actuator's diagnostics

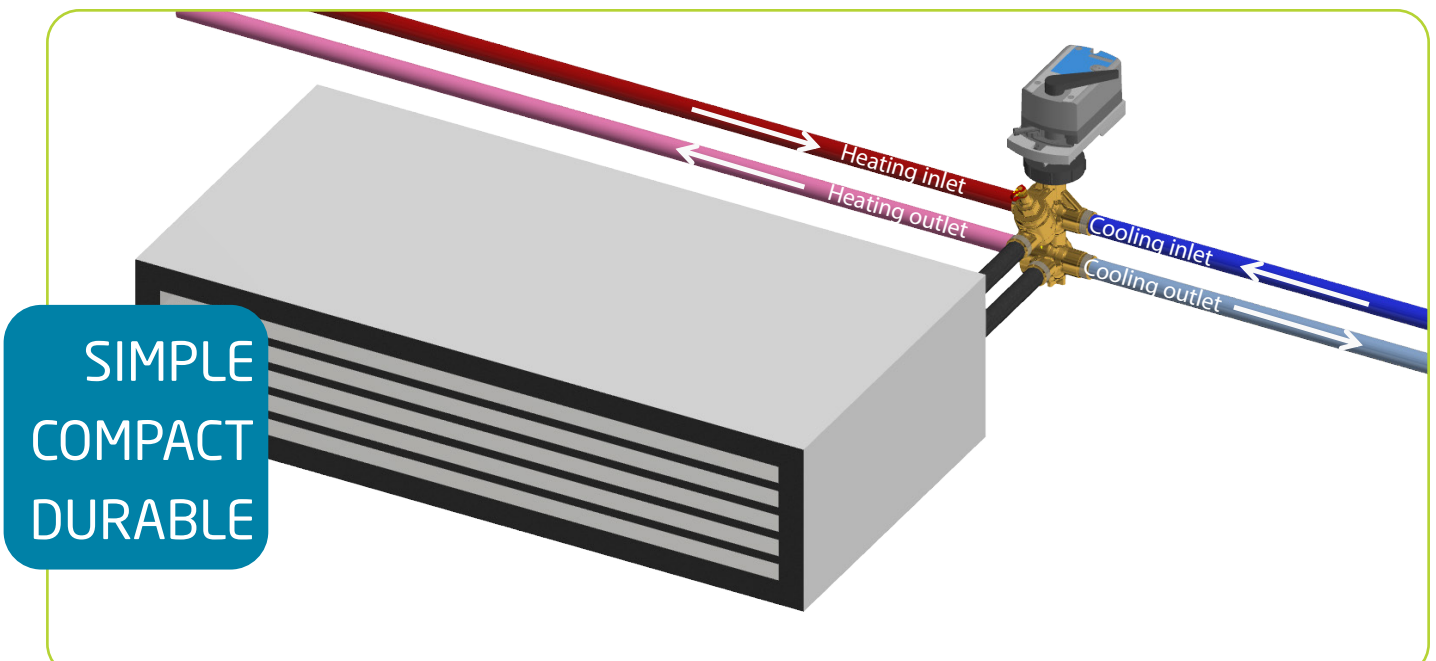


## Function

The Frese COMBIFLOW 6-way PICV controls both heating and cooling with only one single data point from the BMS system, through a MODBUS signal.

Full modulation is provided at all times even with different design flows for heating and cooling.

The design flow rate for the cooling and heating system is set using the MODBUS or mechanical setting on the actuator.



*Patented 6-way PICV technology with integrated DP controller in the 6-way valve which is capable of switching between cooling and heating and with no need for a 2nd valve for pressure independent modulation*



KNOWLEDGE

QUALITY

INNOVATION

MANUFACTURING  
EXCELLENCE

CUSTOMER  
FOCUS



[www.frese.eu/en/combiflow](http://www.frese.eu/en/combiflow)

**Denmark - Main Office**  
Frese A/S  
Tel: +45 58 56 00 00

**United Kingdom**  
Frese Ltd  
Tel: +44 (0) 1704 896 012

**Middle East & India**  
Frese Middle East & India  
Tel: +44 (0)7983 634 720

**Australia, NZ & South Africa**  
Frese Asia Pacific  
Tel: +61431 794 414

**Germany**  
Frese Armaturen GmbH  
Tel: +49 (0)241 475 82 333

**Turkey**  
Frese Eurasia DIS TIC. LTD. STI.  
Tel: +90 216 580 93 60

**Saudi Arabia**  
Frese Saudi Arabia  
Tel: +966 5410 25 405

**China**  
Frese Valves (Ningbo) Co., Ltd.  
Tel: +86 (0)121 50809251