



OPTIMA Compact · DN50-300

Pressure Independent Control Valve



OPTIMA Compact

With OPTIMA Compact you get a dynamic flow and temperature control valve for heating and cooling systems

OPTIMA Compact combines the functions of an externally adjustable automatic balancing valve with an integrated differential pressure controller and a full authority modulating control valve in one single, compact valve housing.

The OPTIMA Compact provides modulating control with full authority regardless of variations in the differential pressure of the system making it possible to achieve 100% control of the water flow in the building.

In addition, the correct application of the OPTIMA Compact can significantly reduce pump energy consumption and improve the efficiency of other hydronic system components. It also provides optimal comfort for end users due to high precision temperature control.

The valve operates by adjusting automatically to the pre-set flow under fluctuating pressure conditions whilst also providing full modulating control. To achieve the design flow rate, the simple pre-setting scale on top of the valve is rotated to the required set point, which can be determined by using the Frese flow tables or the Frese Valves app.

OPTIMA Compact is also available in a Veriflow-series. This has an additional P/T plug which allows for both flow measurement and verification of minimum differential pressure across the valve. This is the first pressure independent control valve (PICV) on the market to integrate both functionalities in the original valve housing without add-ons and additional space requirements.

Save Time, Energy and Costs with our Patented Valve Technology

Frese's patented pressure independent technology is an innovative, energy-saving alternative to traditional hydronic balancing and control methods. It provides efficient and accurate flow and temperature control.

The PICVs ensure that the design flow conditions are achieved at all times, irrespective of pressure fluctuations in the system.

They also eliminate overflows – resulting in significant pump energy savings.

Dynamic valves hold several other advantages over traditional, static

balancing valves. They contribute to simplified system designs by eliminating the need for additional balancing valves in the distribution pipework. They are also highly flexible if your system needs to be modified or expanded at a later date.

Because pressure independent control valves automatically adapt to any changes in the rest of the system, they are much easier to commission since they require no proportional balancing.

Technical Data



OPTIMA Compact

Standard-series and Ultra-series DN50 - DN80

Max. Differential Pressure:	800 kPa
Valve Housing:	GJS2-50/GJS-400
Pressure Class:	PN16/25
Temperature Range:	-10°C to 120°C
Flow Range:	1.4 m ³ /h to 43 m ³ /h

Technical Data



OPTIMA Compact

Standard-series DN100- DN150 and Ultra-series DN100- DN125

Max. Differential Pressure:	800 kPa
Valve Housing:	GJS-250/GJS-400
Pressure Class:	PN16/25
Temperature Range:	-10°C to 120°C (see details in technote)
Flow Range - Standard-series:	12.1 m ³ /h to 195 m ³ /h
Flow Range - Ultra-series:	5.3 m ³ /h to 90.0 m ³ /h

Technical Data



OPTIMA Compact

Standard-series DN200 - DN300

Max. Differential Pressure:	800 kPa
Valve Housing:	GJS-400
Pressure Class:	PN16/25
Temperature Range:	-10°C to 120°C (see details in technote)
Flow Range:	95 m ³ /h to 600 m ³ /h

OPTIMA Compact Actuator Programme DN50-DN300

Frese offers a wide selection of different actuator types ranging from basic 0-10 V control to the latest intelligent LOGICA Digital, Energy-series. This gives us the flexibility to help you find the solution that perfectly suits your specific project.

The actuator programme includes:

- LOGICA Digital, Energy-series (BACnet or Modbus) for DN50 Ultra-series only
- Motoric actuator; modulating 0-10 V and 3-pos,
- Motoric actuator; spring return

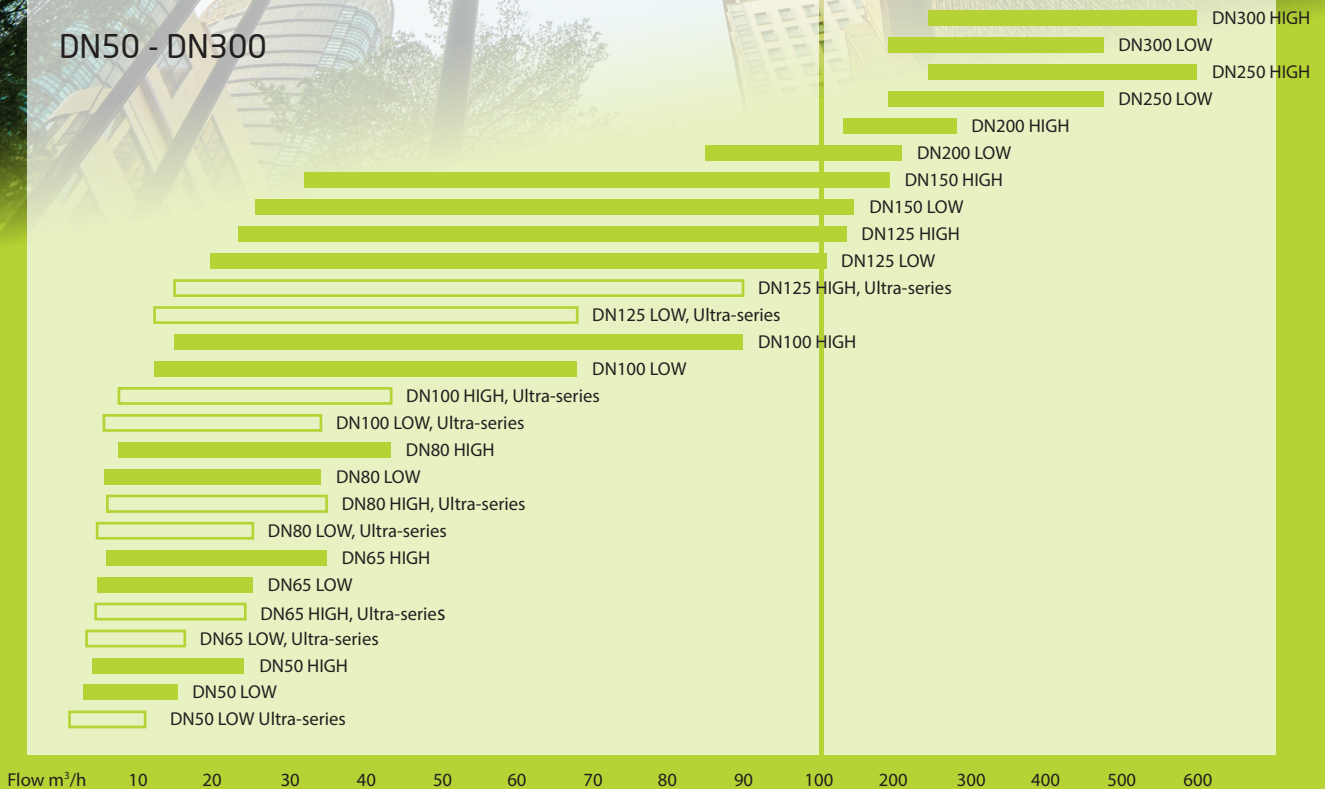
The Frese MODBUS Converter can be used for the application of our standard actuators in a Modbus system.



Easy Valve Selection

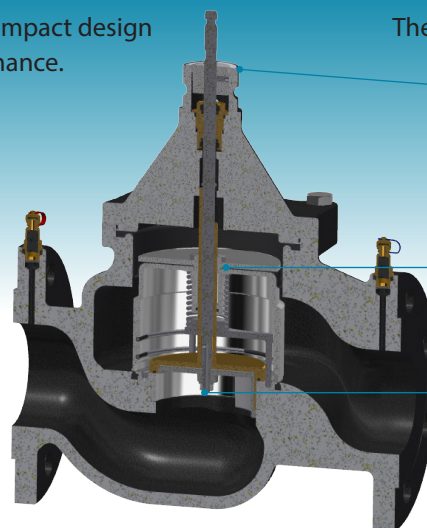
Frese makes valve selection easy. Simply determine the flow rate of the coil, or load of the system, select the pipe size, and make the selection. Our charts make calculating minimum differential pressure a breeze, and we offer precise verification of both this and the flow. Regardless of fluctuations in the differential pressure the design of the OPTIMA Compact will ensure the most accurate flow control at the selected set point.

DN50 - DN300



The OPTIMA Compact has a very compact design that provides high levels of performance.

The main components of the valve are:



• Presetting scale

• Combined pressure control, flow balancing and modulating control assembly

• Veriflow-series: Additional P/T plug allows for both flow verification and verification of minimum DP across the valve

Compact Design Platform

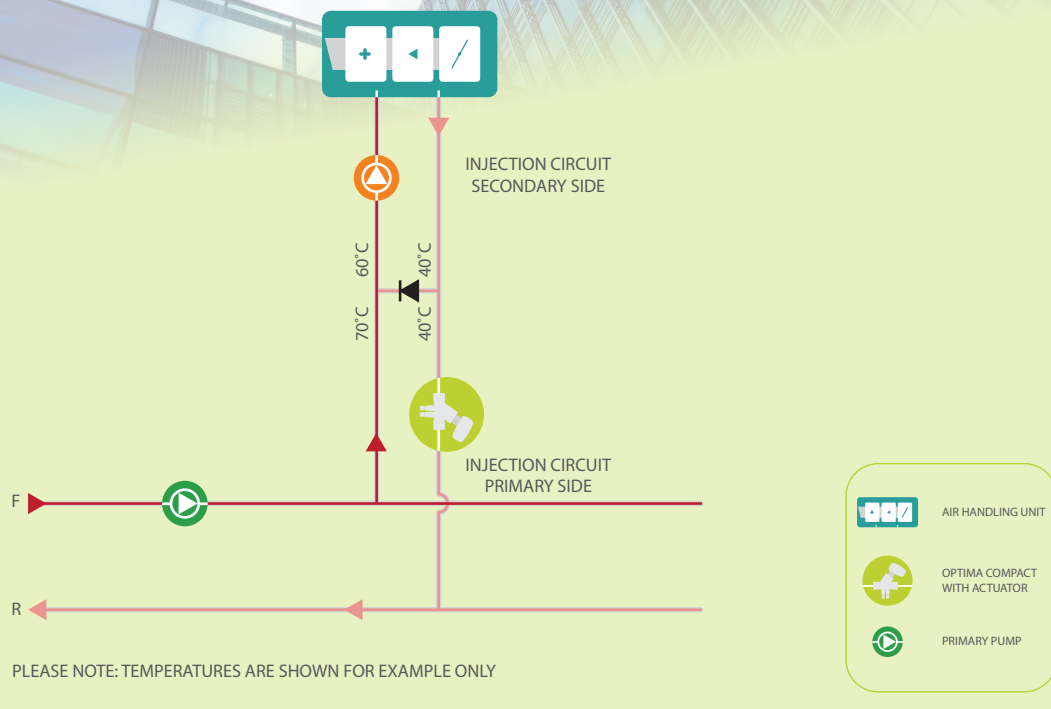
See how it works

Visit www.frese.eu/optimacompact and try the interactive animation

AHU Application Example

By installing the OPTIMA Compact on an air handling unit the PICV ensures balancing of the primary flow and eliminates the use of both static balancing valves and differential pressure control valves.

AHUs with a large coil area will have a uniform temperature in all parts of the coil, providing precise temperature control and direct relation between coil temperature and power output.



The OPTIMA Compact, Veriflow-series offers an additional P/T plug on flanged valves. This allows for both flow and minimum differential pressure measurements across the valve. This is the first PICV on the market to integrate both functionalities in the original valve housing without add-ons and additional space requirements.

Field test · Canary Wharf London

For over 30 years, Frese has specialised in the design and manufacture of dynamic, pressure independent flow solutions for heating and cooling applications in a wide variety of market sectors including commercial office developments, hotels, educational establishments, sports complexes and residential buildings.

Pump Energy Savings

Field tests at Canary Wharf, London, proved a significant reduction in pump energy costs through the installation of the OPTIMA Compact PICV. A saving of **35%** was achieved from a higher ΔT in the system as a result of increased system stability due to the patented pressure independent design of the valve.

In addition to this saving, a further **50%** can be achieved through a simplified design of the system and optimal pump control.





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