OPTIMA Compact

Pressure Independent Balancing & Control Valve

Pressure Independent Balancing & Control

OPTIMA Compact

With OPTIMA Compact you get an automatic flow, pressure and temperature control valve for heating and cooling systems

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

The OPTIMA Compact provides modulating control with full authority regardless of any fluctuations 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 also significantly reduce pump energy consumption and improve the efficiency of other hydronic system components as well as providing high levels of 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 valve is set using the simple pre-setting scale on top of the valve to the required set point, which can be determined using the official Frese flow graphs or the Frese APP.

Benefits

- Easy to size and select as only the flow rate is required
- Simplifies system design
- Compact housing for ease of installation
- Simplified commissioning process as no proportional balancing is required
- Full stroke modulation with total authority at all times, regardless of the pre-set flow
- Provides system flexibility
- Improves the energy efficiency of heating and cooling systems

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.

OPTIMA Compact for HVAC Applications

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.

The OPTIMA Compact pressure independent balancing and control valve is the perfect solution for accurate and efficient control of primary and secondary terminal units in variable volume heating and cooling systems.

Typical applications include fan coil units, chilled beams, plate heat exchangers and air handling units.

Manufactured from DZR, Cast Iron and Ductile Iron, the OPTIMA Compact is available in sizes DN10 to DN300, controlling flow rates from 0.008 l/s (30 l/h) to 166.67 l/s (600,000 l/h), with a range of actuators suitable for both modulating (incl. spring return) and on/off control (DN10-DN32 only).

Applications

Typical applications for the OPTIMA Compact pressure independent balancing and control valve include:

- Fan Coil Units
- Chilled Beams (active and passive)
- Radiant Panels
- Underfloor Heating
- Plate Heat Exchangers
- Air Handling Units

Technical Data

OPTIMA Compact DN10 - DN32

Size Range:	DN10 – DN32
Max. Differential Pressure:	800 kPa
Valve Housing:	DZR Brass
Pressure Class:	PN25
Temperature Range:	0°C to 120°C
Flow Range:	30 l/h to 4,001 l/h
Leakage Rate:	EN1349 Class IV
Actuator Options:	Thermic on/off and modulating Motoric modulating 0-10V DC or 3-pos Motoric failsafe

Technical Data

OPTIMA Compact DN40 - DN50

Size Range:	DN40 – DN50
Max. Differential Pressure:	800 kPa
Valve Housing:	Ductile Iron
Pressure Class:	PN25
Temperature Range:	0°C to 120°C
Flow Range:	1,370 l/h to 11,500 l/h
Leakage Rate:	EN1349 Class IV
Actuator Options:	Motoric modulating 0-10V DC and 3-pos Motoric Spring Return

Technical Data

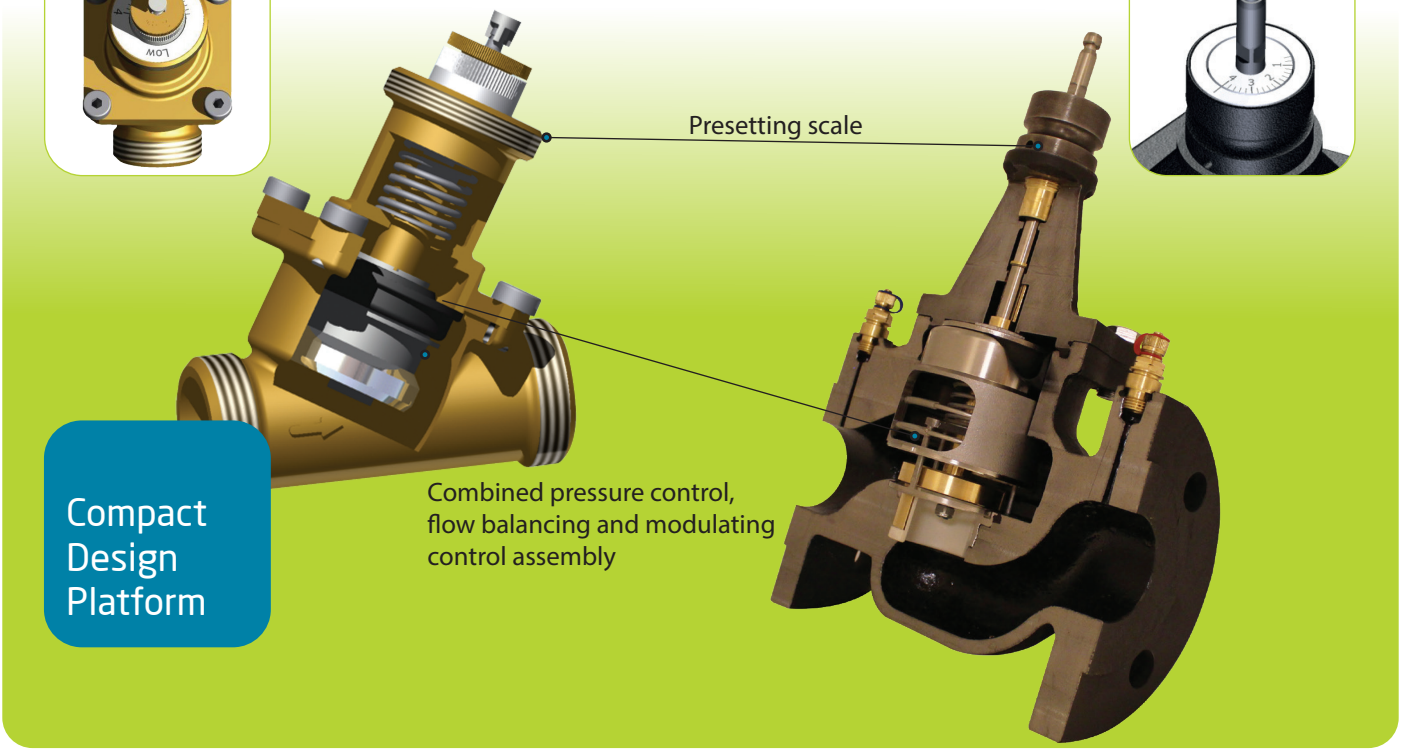
OPTIMA Compact DN50 - DN300

Size Range:	DN50 – DN300
Max. Differential Pressure:	800 kPa
Valve Housing:	GJL-250 / GJS-400
Pressure Class:	PN16 / PN25
Temperature Range:	Please refer to product datasheet
Flow Range:	2,480 l/h to 600,000 l/h
Leakage Rate:	EN1349 Class IV
Actuator Options:	Motoric modulating 0-10V DC and 3-pos Motoric Spring Return

Valve design

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

The main components of the valve are:



See how it works

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

KNOWLEDGE

QUALITY

INNOVATION

MANUFACTURING EXCELLENCE

CUSTOMER FOCUS

www.frese.eu

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

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

United Kingdom
Frese Ltd
Tel: +44 (0)1704 896012

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

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

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

Australia, NZ & South Africa
Frese Asia Pacific
Tel: +61 (0)431 794 414

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