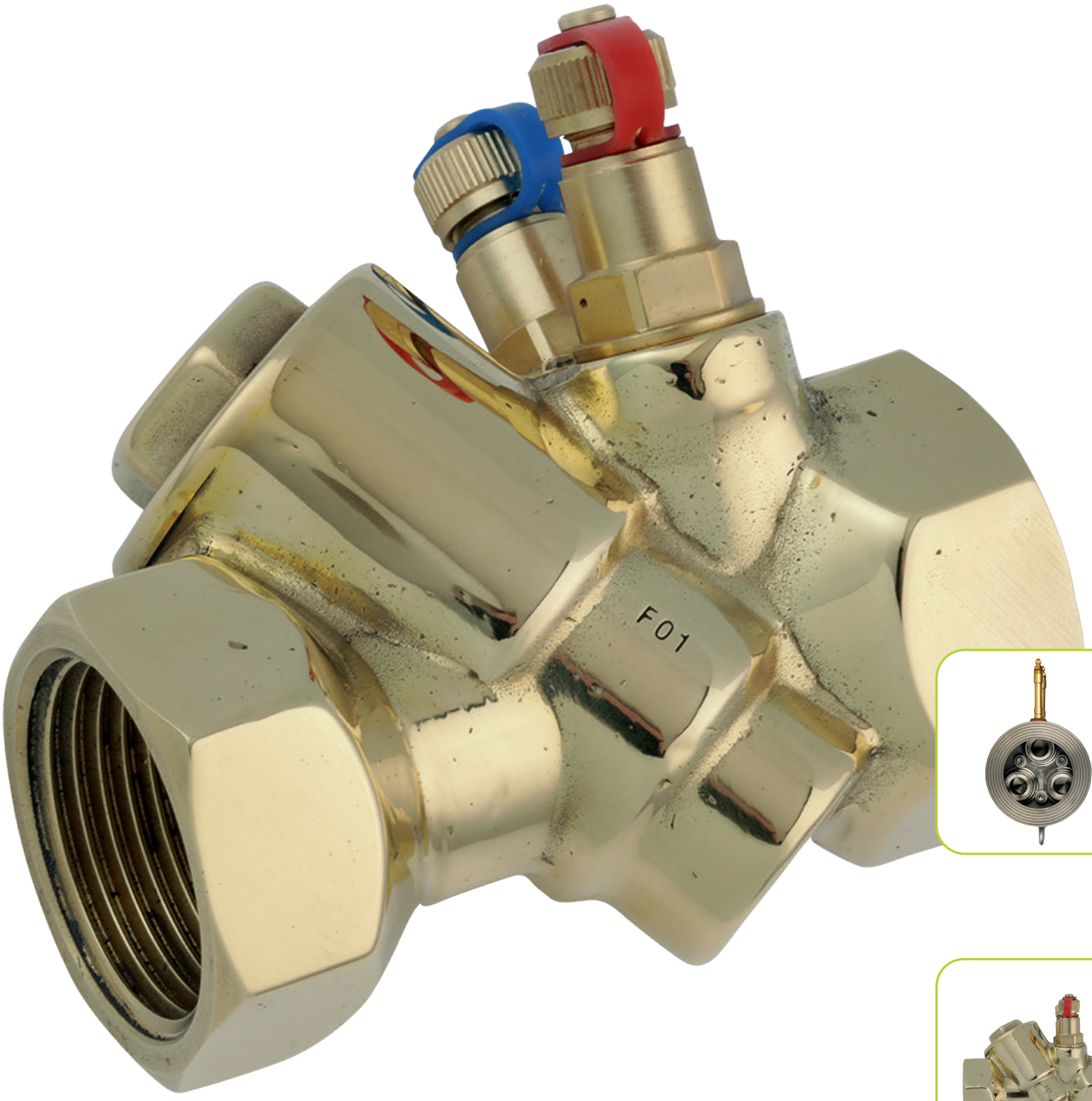


ALPHA · DN15-DN1000

Dynamic Balancing Valve












ALPHA for HVAC Applications

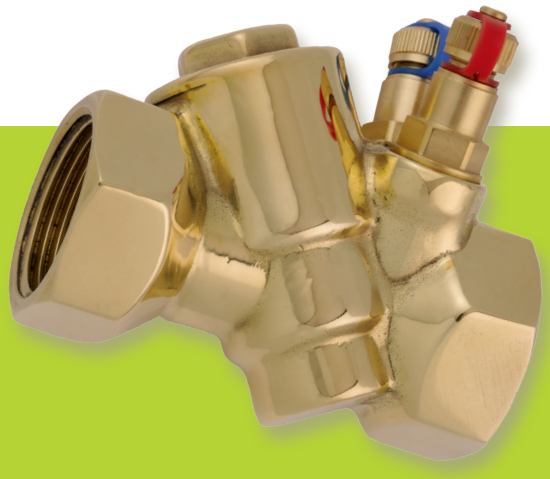
For over 25 years, Frese has specialised in the design and manufacture of dynamic, pressure independent flow solutions for heating and cooling applications in a wide variety of market sectors including commercial office developments, hotels, educational establishments, sports complexes and residential buildings.

The ALPHA dynamic balancing valve is the perfect solution for accurate and efficient distribution of flow in both heating and cooling systems. Typical applications include fan coil units, underfloor heating circuits, air handling units and plant equipment.

Manufactured from DZR and Ductile Iron, the ALPHA range is available in sizes DN15 to DN1000 suitable for flow rates up to 6,120 m3/h.

The ALPHA dynamic balancing valve works independently therefore it can be installed in either single or multiple parallel distribution lines.

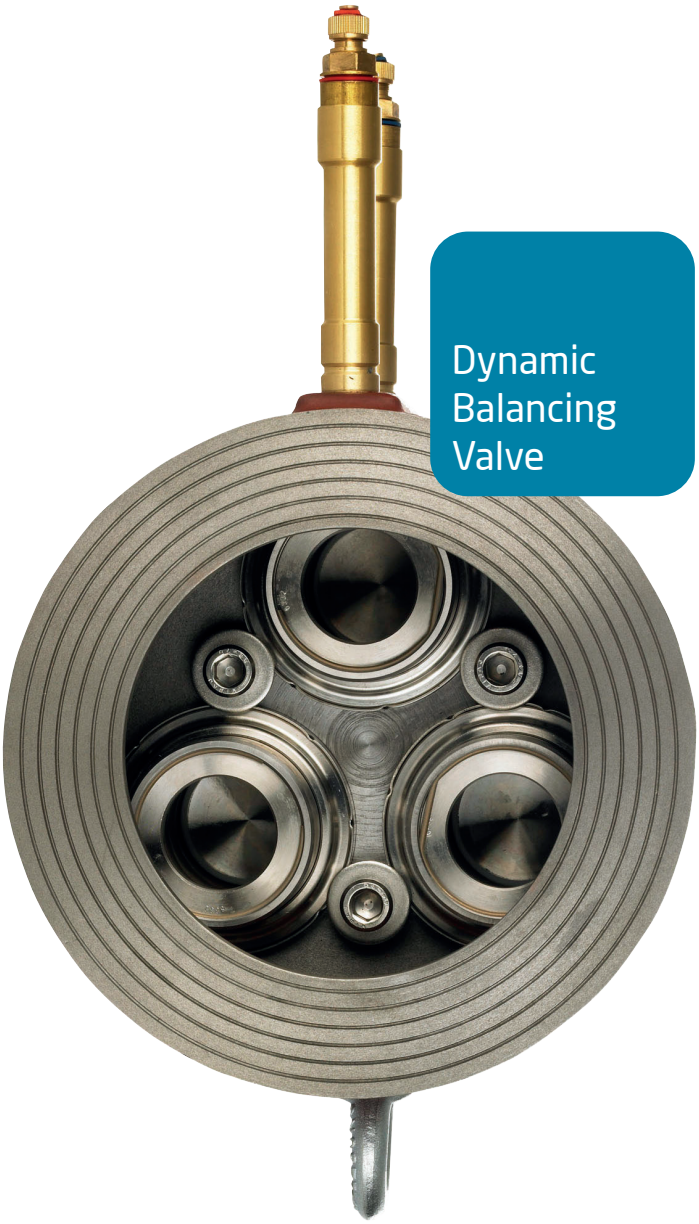
Furthermore, the independent nature of the valve provides total system flexibility with no re-commissioning required should the system be extended. In addition, it is also possible to use back flush processes with the ALPHA dynamic balancing valve if necessary.



Applications

Typical applications for the ALPHA dynamic balancing valve include:

- Fan Coil Units
- Underfloor Heating Systems
- Air Handling Units
- Plant Equipment



Frese

Innovative solutions from Frese balance global HVAC systems accurately and efficiently. From cooling systems in the Middle East to heating systems in Scandinavia, our products transform state of the art technology into everyday solutions.

Over 25 years' experience producing dynamic balancing solutions, has positioned Frese as the leading manufacturer of energy saving valves and through our commitment to innovation, we continue to be at the forefront of technological advancements in our areas of expertise.

To support our products, the knowledge, experience and dedication of our employees and partners ensure our solutions are applied correctly to maximise savings and position Frese as the authoritative voice for pressure independent and dynamic solutions.

Dynamic Balancing

Dynamic balancing is an innovative alternative to traditional hydronic balancing methods using static balancing valves. A system with dynamic balancing valves provides efficient and accurate flow and differential pressure control ensuring the design flow conditions are achieved at all times irrespective of pressure fluctuations in the system at part load conditions.

Dynamic balancing valves offer many advantages over traditional, static balancing valves including simplified system design, ease of selection, system flexibility and a minimised commissioning process. In addition, dynamic balancing offers significant energy saving benefits as a result of the elimination of overflows in the system.

The ALPHA Range

The ALPHA range of flow limiting dynamic balancing valves has been developed for use in a wide range of applications for the accurate and efficient distribution of flow in heating and cooling systems.

The second generation ALPHA flow cartridge is the key component of the ALPHA range, limiting the flow and main-taining a constant differential pressure. The ALPHA flow cartridge is installed within the valve housing, ensuring the design flow rate is achieved irrespective of fluctuating pressure conditions.

The patented design of the ALPHA flow cartridge offers a high degree of flexibility with an interchangeable orifice and the rolling, resistant diaphragm eliminates friction, noise and impact from water hammer.

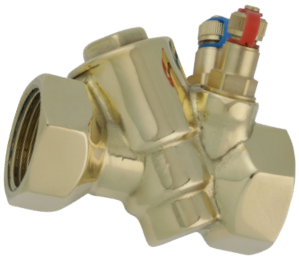
The ALPHA cartridge can also be removed for ease of maintenance and system flushing whilst the innovative design of the cartridge enables a self-cleaning function ensuring that any dirt present in the system does not compromise the accuracy and operation.

Benefits

- Quick and easy selection as only flow data are required
- Design flow rate achieved but not exceeded – always in balance
- Easy to install
- Simplified commissioning process – no proportional balancing
- High comfort for the end-users
- No main circuit or branch balancing valves needed in the system
- No requirement for additional balancing valves in the distribution pipework, risers and branches
- No straight pipe requirements upstream and downstream
- Energy saving due to the elimination of overflows
- High level of comfort for the end users

Technical Data

ALPHA



Size Range:	DN15 – DN50
Max. Differential Pressure:	350 kPa / 600 kPa
Valve Housing:	DZR Brass, CW602N
Pressure Class:	PN25
Temperature Range:	-20°C to 120°C
Flow Range:	26 l/h to 11,355 l/h

Technical Data

ALPHA Wafer

Size Range:	DN50 – DN1000
Max. Differential Pressure:	600 kPa
Valve Housing:	Ductile Iron
Pressure Class:	PN16/PN25 (Flanged DN50 – DN800 Wafer)
Medium Temperature Range:	-20°C to 110°C
Flow Range:	3.82 to 6,120 m3/h

Technical Data

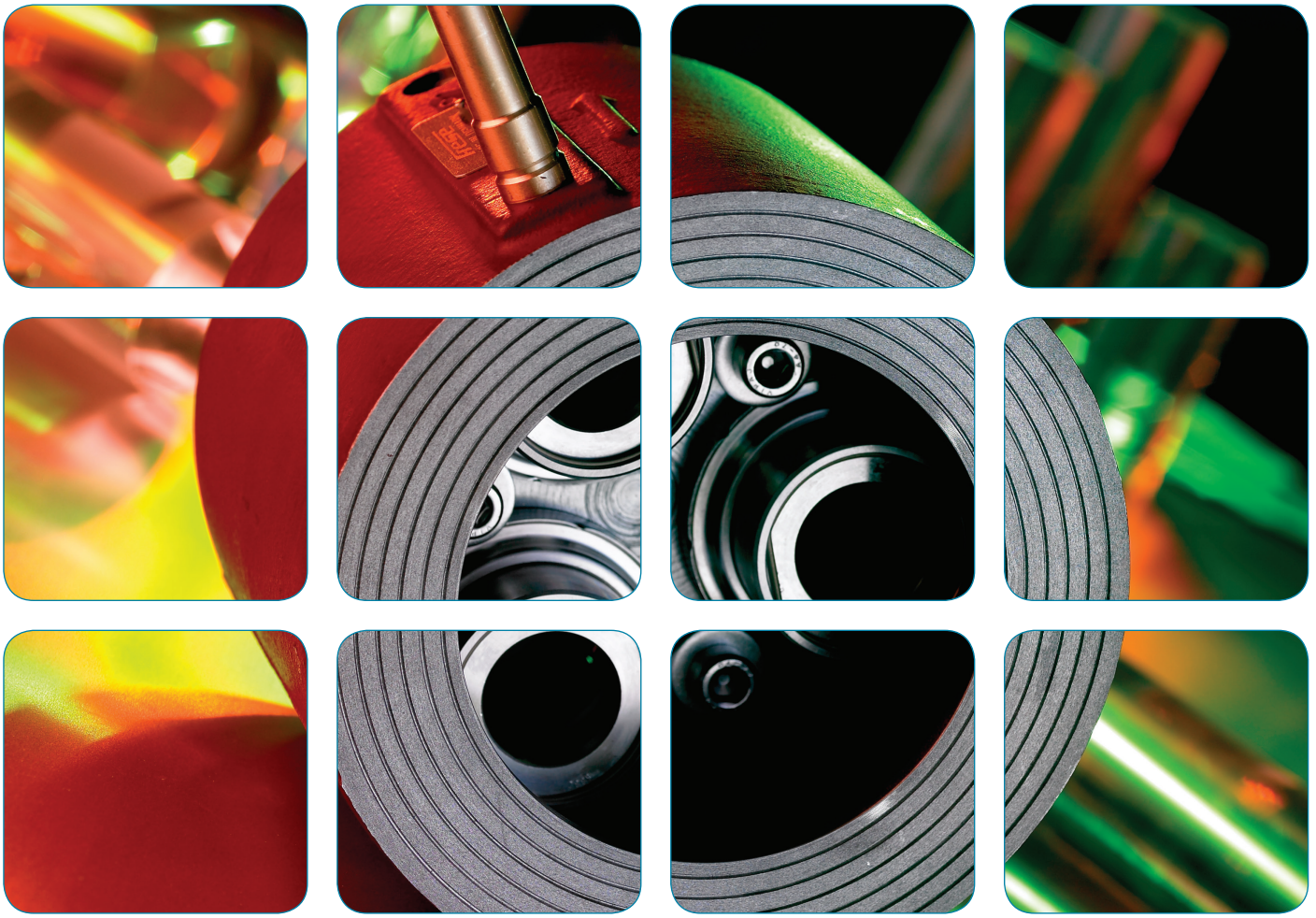
ALPHA Cartridges

Cartridge Material:	DZR Brass CW602N AISI 304 (Wafer cartridges)
Spring:	Stainless Steel 1.4310 (LP & HP cartridges) AISI 316 (Wafer cartridges)
Diaphragm:	HNBR (LP cartridges) HNBR reinforced (HP cartridges)
Medium Temperature:	-20 to +120^{0}C

Technical Data

ALPHA Cool Cartridges

Cartridge Material:	PPS glass-reinforced
Spring:	Stainless Steel 1.4310
Diaphragm:	HNBR reinforced
Medium Temperature:	-20 to +80^{0}C

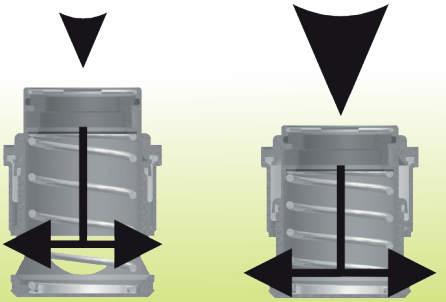


ALPHA Cartridge

Operation

When the pressure increases, the spring will be compressed and the piston will respond and reduce the outlet area and vice versa.

The result is a constant flow rate through the valve, independent of pressure fluctuations.

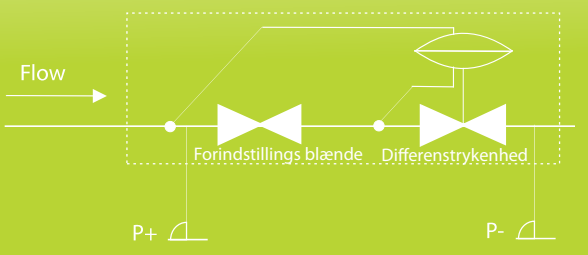


Function

The following applies to all flow control valves:

$$Q = Kv * \sqrt{\Delta p}$$

Q = Flow (m3/h)
Kv = Opening area
Δp = Differential pressure (Bar)



The ALPHA cartridge reacts to pressure fluctuations in the system ensuring that the differential pressure across the pre-adjustment unit is kept constant.

This ensures that the maximum flow limit is achieved in accordance with the design.

www.frese.eu/buildings

info@frese.dk

+45 58 56 00 00