



www.frese.eu/marine



Frese Product Guide

Valves for Marine & Industrial Applications



Durable flow and pressure control for the most demanding environments

The combination of extensive material, product and application knowledge built up over 70 years enables Frese to offer a range of durable valves for applications in some of the world's most demanding environments.

Manufactured in materials including stainless steel, low carbon steel and nickel-aluminium bronze, Frese can offer customers a range of products that are suitable for the most arduous environments including applications such as ballast water treatment, seawater district cooling, desalination and offshore.

Working together

At Frese, we aim to work in close cooperation with our suppliers, partners and customers to provide innovative fluid control and component solutions for our target markets around the world.

With the head office and main manufacturing facilities located in Denmark, the Frese group is a combination of a highly experienced foundry and a leading manufacturer of high quality valves, controls and fittings for the global HVAC, plumbing, marine and industrial market segments.

The Frese business has been built up over 70 years and now holds a prominent position as one of the world's leading providers of innovative fluid control and component solutions.



Heating



Cooling

KNOWLEDGE

QUALITY

INNOVATION

MANUFACTURING
EXCELLENCE

CUSTOMER FOCUS

Product Overview

HCR (High Corrosion Resistant) Dynamic Valves



HCR Flow Limiting Valves
for marine and industrial applications

Page 4



HCR Flow Limiting Valves
for industrial applications

Page 6

Standard Dynamic Valves (Non-corrosive Medias)



Pressure Independent Control Valves
for heating and cooling applications

Page 8



Dynamic Flow Limiting Valves
for heating and cooling applications

Page 10



Measurement and Diagnostics
for Frese products

Page 14



Approvals

Page 16



Industries

Page 18

HCR FLOW LIMITING VALVES



High Corrosion Resistant (HCR)
Dynamic Flow and Pressure Control



Frese ALPHA HCR

Dynamic Flow Limiting Valve - Cartridge Solution

Technical Data

Size range:	DN50 to DN450
Flow range:	4,000 l/h to 1584,000 l/h
Maximum DP:	600 kPa
Pressure rating:	PN16/PN25
Material:	Nickel Aluminum Bronze EN1982 CC333G-GC, ASTM B505 C95800
Temperature range:	-20°C to 32°C



Frese ALPHA HCR Grooved End

Dynamic Flow Limiting Valve - Cartridge Solution

Technical Data

Size range:	DN100 to DN150
Flow range:	4,000 l/h to 192,000 l/h
Maximum DP:	600 kPa
Pressure rating:	PN16/PN25
Material:	Nickel Aluminum Bronze EN1982 CC333G-GC, ASTM B505 C95800
Temperature range:	-20°C to 32°C



Frese ALPHA HCR Cartridge

Cartridge Solution

Technical Data

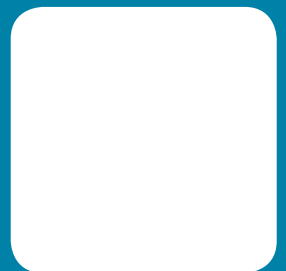
Type 20:	EN 1.4410 (Super Duplex)
Type 60:	EN 1.4301 (AISI304)
Type 60 HCR:	PPS 40% glass-reinforced



HCR FLOW LIMITING VALVES



High Corrosion Resistant (HCR)
Dynamic Flow and Pressure Control



Frese ALPHA HCR

Dynamic Flow Limiting Valve - Cartridge Solution

Technical Data

Size range:	DN25 and DN40
Flow range:	1020 l/h to 2448 l/h
Maximum DP:	600 kPa
Pressure rating:	PN25
Material:	EN 1.4404 (SS316L) EN 1.4410 (Super Duplex)
Temperature range:	-20°C to 120°C



Size range:	DN50 to DN125
Flow range:	4,000 l/h to 144,000 l/h
Maximum DP:	600 kPa
Pressure rating:	PN25
Material:	EN 1.4404 (SS316L) EN 1.4410 (Super Duplex)
Temperature range:	0°C to 80°C



Other alloys on request

Frese ALPHA Sub

(Heavy Duty Flow Limiting Valve)

Technical Data

Size range:	DN50
Flow range:	4,000 l/h to 4,800 l/h

Contact Frese for further information



PRESSURE INDEPENDENT CONTROL VALVES



Flow, Pressure and
Temperature Control



Frese OPTIMA Compact

Pressure Independent Control Valve

Technical Data

Size range:	DN10 to DN32
Flow range:	30 l/h to 4,001 l/h
Maximum DP:	800 kPa
Pressure rating:	PN25
Material:	DZR Brass
Temperature range:	0°C to 120°C
Actuator options:	Motoric (0...10V modulating, on/off and 3 position) Thermic (0...10V modulating and on/off)



Size range:	DN40 to DN50
Flow range:	1,370 l/h to 11,500 l/h
Maximum DP:	800 kPa
Pressure rating:	PN25
Material:	Ductile Iron
Temperature range:	0°C to 120°C
Actuator options:	Motoric (0...10V modulating, 3 position and spring return)



Size range:	DN50 to DN300
Flow range:	2,480 l/h to 600,000 l/h
Maximum DP:	800 kPa
Pressure rating:	PN16/PN25
Material:	Cast/Ductile Iron
Temperature range:	0°C to 120°C (DN50 to DN125) 0°C to 120°C (DN150 PN16) 0°C to 110°C (DN150 to DN300)
Actuator options:	Motoric (0...10V modulating, 3 position and spring return)



DYNAMIC FLOW LIMITING VALVES



Accurate and Effective
Flow Limitation

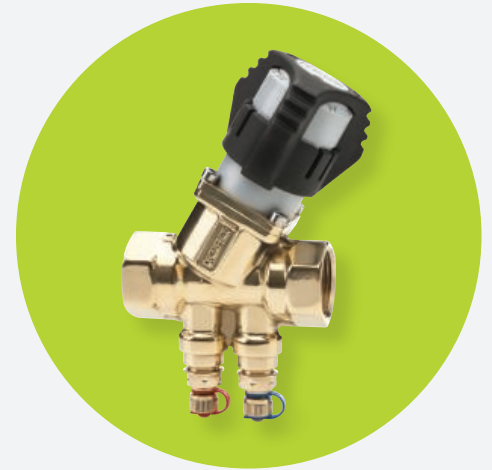


Frese SIGMA Compact

Dynamic Flow Limiting Valve - Externally Adjustable

Technical Data

Size range:	DN15 to DN32
Flow range:	40 l/h to 5,000 l/h
Maximum DP:	400 kPa
Pressure rating:	PN25
Material:	DZR Brass
Temperature range:	-10°C to 120°C



Size range:	DN40 to DN50
Flow range:	719 l/h to 10,350 l/h
Maximum DP:	400 kPa
Pressure rating:	PN25
Material:	Ductile Iron
Temperature range:	-10°C to 120°C



Size range:	DN50 to DN300
Flow range:	2,480 l/h to 600,000 l/h
Maximum DP:	800 kPa
Pressure rating:	PN16/PN25
Material:	Cast/Ductile Iron
Temperature range:	0°C to 120°C (DN50 to DN125) 0°C to 110°C (DN150 to DN300)



DYNAMIC FLOW LIMITING VALVES



Accurate and Effective
Flow Limitation



Frese ALPHA

Dynamic Flow Limiting Valve - Cartridge Solution

Technical Data

Size range:	DN15 to DN50
Flow range:	Dependent on ALPHA flow cartridge
Maximum DP:	600 kPa
Pressure rating:	PN25
Material:	DZR Brass
Temperature range:	-20°C to 120°C

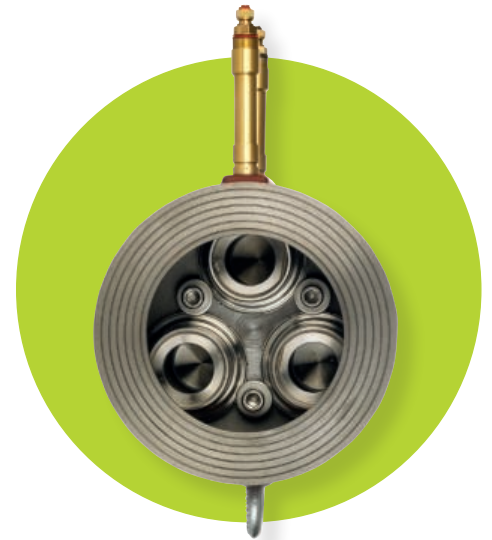


Frese ALPHA Wafer

Dynamic Flow Limiting Valve - Cartridge Solution

Technical Data

Size range:	DN50 to DN800
Flow range:	Dependent on ALPHA flow cartridge
Maximum DP:	600 kPa
Pressure rating:	PN16/PN25
Material:	Ductile Iron
Temperature range:	-20°C to 110°C



Frese ALPHA Flow Cartridge

Dynamic Flow Cartridge for use with the Frese ALPHA & Frese EVA ranges

Technical Data

Types:	Type 10/11/20 suitable for DN15 to DN25 Type 30/40 suitable for DN25L to DN50 Type 50/60 suitable for DN50 to DN800 (wafer)
Maximum DP:	600 kPa
Material:	DZR Brass (Type 10/11/20/30/40) AISI 304 (Type 50/60)
Temperature range:	-20°C to 120°C



MEASUREMENT AND DIAGNOSTICS



Accurate Measurement
and Verification



Frese SMART Balance

Simple differential pressure measurement and flow verification

Technical Data

Measurement range

Pressure class:	PN25
Differential pressure:	1000 kPa (10 Bar)
Static pressure:	1000 kPa (10 Bar)
System temperature (water):	-20°C to 120°C
Ambient temperature:	-10°C to 40°C

Measurement deviation

Differential pressure:	< 0.1% of full scale
Flow:	< 0.1% of full scale plus the valve deviation
Temperature:	<0.2°C

Environmental specification

Measurement sensor:	IP65, Max 90%RH
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Frese DP Manometer

For the measurement of differential pressure

Technical Data

Operating temperature:	From 10°C to 50°C (ambient temperature)
Operating range:	7 bar
Overrange:	10 bar
Environmental specification:	IP67
Auto switch-off time:	12 minutes





Approvals

Manufacturing Approvals

The Frese range of HCR products for marine and industrial applications are produced at the Frese Foundry. The Frese Foundry has been approved by Lloyds register (LR), DET NORSKE VERITAS – GL (DNV-GL) and Bureau Veritas (BV) as a Manufacturer of Materials for use in the construction or repair of ships, other marine structures and associated machinery, which are classed or certified.

These approvals focus on the processes, equipment, workers and practices to ensure that products are supplied to the highest standards of quality.



Industry Approvals

Frese are an approved supplier under Achilles JQS approval scheme. Achilles JQS identifies, evaluates and pre-qualifies suppliers on behalf of the oil & gas industry in Denmark and Norway. Achilles JQS manages risk and ensures that suppliers meet the industry requirements, whilst also providing up-to-date and validated supplier information.



Quality Approvals

Frese conforms to the Quality Management System DS/EN ISO 9001:2008.

ISO 9001 is the internationally recognised standard for Quality Management Systems (QMS) and it is the most widely used QMS standard in the world.

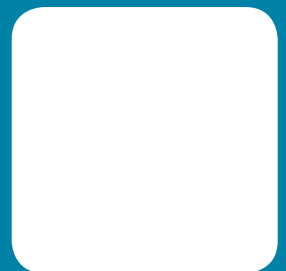




For over 25 years, Frese has specialised in the design and manufacture of dynamic, pressure independent flow solutions for global heating and cooling applications.

As a valve manufacturer, Frese has been involved with the industrial industry for a number of years, delivering dynamic balancing valves for various heating and cooling applications.

The introduction of the ALPHA HCR Wafer and flow cartridge enables Frese to offer the benefits of dynamic balancing to a variety of new, exciting industrial applications including oil & gas installations, petrochemical plants, pharma installations and other industries where there is a need for high corrosive resistant balancing valves.



Industries



Pharma



Auto & tyre

Marine



Dynamic in all environments



Oil & gas

Pulp & paper

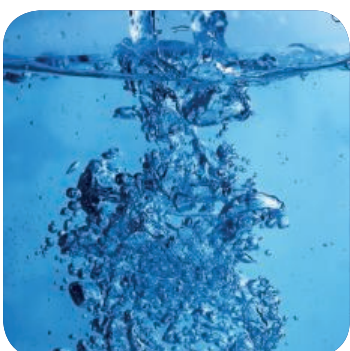


CPG
(Consumer Product Goods)



Mining

Food & beverage



Power

Please visit www.frese.eu/
MARINE
for more details

Water & waste water



KNOWLEDGE

QUALITY

INNOVATION

MANUFACTURING
EXCELLENCE

CUSTOMER FOCUS

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