

www.frese.eu/marine

Frese Product Guide

Valves for Marine & Industrial Applications



Flow and pressure control valves for the most demanding environments

Frese's ability to adapt our technology to meet the demands of the marine and industry sectors, where it must perform flawlessly in the most arduous environments, stems from our extensive knowledge of materials, products and applications, which we have built up over more than 75 years.

Since the company started in 1944 as a small foundry in a local basement, we have grown and developed into a prominent position as one of the world's leading providers of innovative fluid control and component solutions.

Our core business today is dynamic valve technology, but we remain true to our history and our values: Knowledge, quality, innovation, manufacturing excellence and customer focus.

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.

KNOWLEDGE

QUALITY

INNOVATION

MANUFACTURING EXCELLENCE

CUSTOMER FOCUS

Product Overview

Flow Limiting Valves



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Pressure Independent Control Valves



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HCR FLOW LIMITING VALVES



High Corrosion Resistant (HCR)

Dynamic Flow and Pressure Control

ALPHA Wafer HCR

Dynamic Flow Limiting Valve - Cartridge Solution

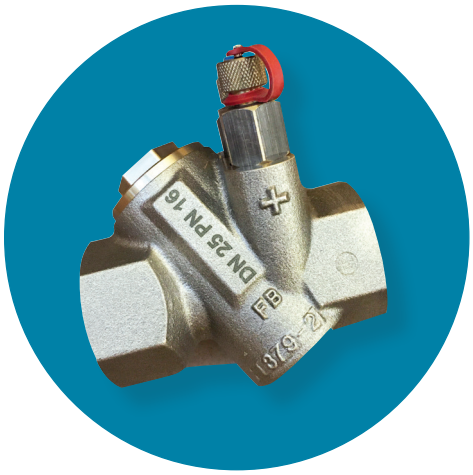


Technical Data

Size range:	**DN50 to DN450**
Flow range:	4,000 l/h to 1,584,000 l/h
Maximum DP:	600 kPa
Pressure rating:	PN16/PN25
Material:	Nickel Aluminium Bronze EN1982 CC333G-GC, ASTM B505 C95800
Temperature range:	-20°C to 32°C

ALPHA HCR

Dynamic Flow Limiting Valve - Cartridge Solution



Technical Data

Size range:	**DN15 to DN40**
Flow range:	56 l/h to 3,000 l/h
Maximum DP:	600 kPa
Pressure rating:	PN16/PN25
Material:	Nickel Aluminium Bronze EN1982 CC333G-GC, ASTM B505 C95800
Temperature range:	-20°C to 120°C

ALPHA HCR Cartridge

Dynamic Flow Cartridges



Technical Data

Type 20:	EN 1.4410 (Super Duplex) & EN1.4408 (AISI 316)
Type 50 & 60:	EN 1.4408 (AISI316)
Type 60 HCR:	PPS 40% glass-reinforced

HCR FLOW LIMITING VALVES



High Corrosion Resistant (HCR)

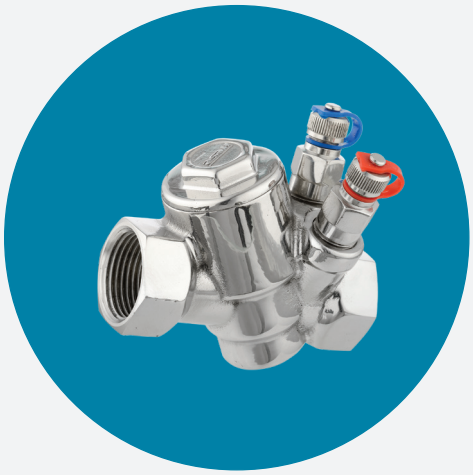
Dynamic Flow and Pressure Control

Frese ALPHA HCR

Dynamic Flow Limiting Valve - Cartridge Solution

Technical Data

Size range:	**DN15 to DN40**
Flow range:	Dependent on ALPHA flow cartridge
Maximum DP:	600 kPa
Pressure rating:	PN16/PN25
Material:	EN 1982 CC491K (RG5) EN 1.4408 (AISI316) EN 1982 CC333G-GC (NiALBr)
Temperature range:	-20°C to 120°C



Size range:	**DN25 and DN40**
Flow range:	1,020 l/h to 2,448 l/h
Maximum DP:	600 kPa
Pressure rating:	PN25
Material:	EN 1.4404 (AISI316L) Other alloys on request
Temperature range:	-20°C to 110°C

Other alloys on request



Size range:	**DN50 to DN450**
Flow range:	4,000 l/h to 1,584,000 l/h
Maximum DP:	600 kPa
Pressure rating:	PN16/PN25
Material:	EN 1.4404 (AISI316L)/ EN1.4408 (AISI 316)
Temperature range:	-20°C to 110°C

Other alloys on request



FLOW LIMITING VALVES



Accurate and Effective Flow Limitation

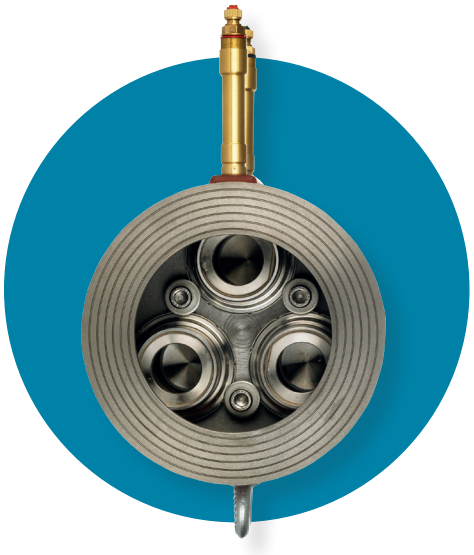
ALPHA
Flow Limiting Valve - Cartridge Solution



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

ALPHA Wafer
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

ALPHA & ALPHA Cool Cartridges
Dynamic Flow Cartridges



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 DN1000 (wafer)	
Maximum DP:	600 kPa	
Material	Frese ALPHA:	DZR Brass (Type 10/11/20/30/40) AISI 304 (Type 50/60)
	Frese ALPHA Cool:	PPS glass-reinforced
Temperature range:	Frese ALPHA:	-20°C to 120°C
	Frese ALPHA Cool:	-20°C to 80°C

FLOW LIMITING VALVES

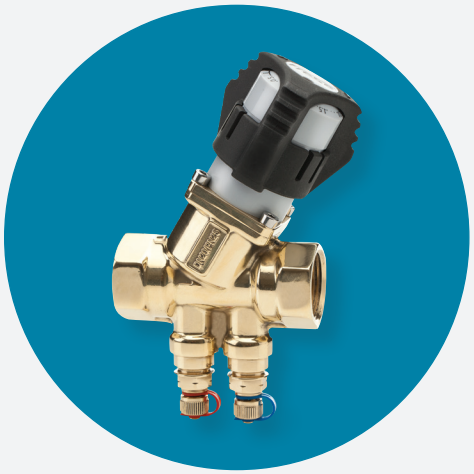


Accurate and Effective Flow Limitation

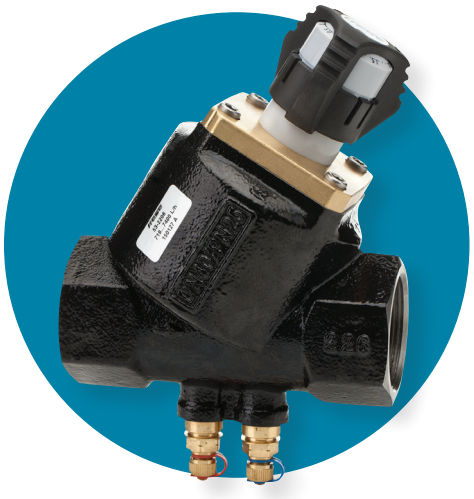
SIGMA Compact
Flow Limiting Valve - Externally Adjustable

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 kPa½
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:	DN50-DN125: 0°C to 120°C DN150-DN300: 0°C to 120°C



HCR - PRESSURE INDEPENDENT CONTROL VALVES



Control, High Stability
Energy-savings

OPTIMA Compact HCR
Pressure Independent Control Valve

Technical Data

OPTIMA Compact HCR
Pressure Independent Control Valve

Size range:	**DN15 to DN40**
Valve housing:	AISI 316L
O-rings:	EPDM
Pressure class:	PN16/25/40
Maximum DP:	600 kPa
Medium temperature:	-20°C to 120°C



OPTIMA Compact HCR
Pressure Independent Control Valve

Size range:	**DN50 to DN80**
Valve housing:	AISI 316 (CF8M)
O-rings:	EPDM
Pressure class:	PN16/25
Flange connections:	ISO 7005-2 / EN 1092-2
Maximum DP:	1200 kPa
Medium temperature:	-20°C to 150°C



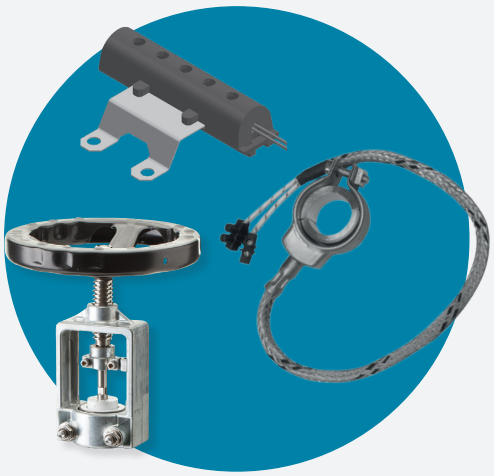
Accessories

Stem heater

When used at temperatures below 0°C, a stem heater must be used, to prevent ice on the spindle.

Handwheel

Material :	HCR, aluminium



PRESSURE INDEPENDENT CONTROL VALVES



Flow, Pressure and Temperature Control

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:	Extensive actuator portfolio



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 -10°C to 120°C with stemheater mounted
Actuator options:	Extensive actuator portfolio



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:	DN50-DN125: 0°C to 120°C DN50-DN125: -10°C to 120°C with stemheater mounted DN150-DN300: 0°C to 120°C DN150-DN200: -10°C to 120°C with stemheater mounted
Actuator options:	Extensive actuator portfolio



PRESSURE INDEPENDENT CONTROL VALVES

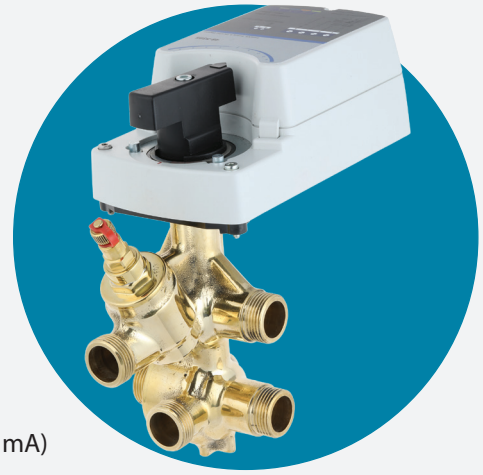


Flow, Pressure and Temperature Control

COMBIFLOW 6-way
Pressure Independent Control Valve

Technical Data

Size range:	**DN15 to DN20 (DN25 with unions)**
Flow range:	35 l/h to 4,250 l/h
Max. DP:	400 kPa
Pressure class:	PN25
Material:	DZR Brass
Medium temp. range:	0°C to 90°C
Actuators:	Analog Rotary Actuator (0-10 V)
	Modbus Rotary Actuator (Modbus - RTU (RS485))
	Multi Rotary Actuator (BACnet MS/TP (RS485), Modbus – RTU (RS485), 0-10 V & 4-20 mA)



ACTUATORS FOR PRESSURE INDEPENDENT CONTROL VALVES



Control, High Stability
Energy-savings

OPTIMA Compact Actuators

Technical Data

Size range:	**DN10 to DN32**
Supply voltage:	AC/DC 24V +20/- 10%
Protection class:	IP 54 acc. EN60529
Frequency:	50/60 Hz
Control signal:	4-20 mA DC
Input impedance:	500 Ohm
Force:	125N (-20% / +40%)
Weight:	155 g (excl. cable & connector)



Size range:	**DN40 to DN200**
Characteristics:	Motoric, modulating
Protection class:	IP 54 to EN60529
Control signal:	4-20 mA or 0-10 V
Feedback Signal:	0-10V DC (max 1 mA) Not for 3-position control
Manual operation:	Manual handle
Cable:	Not included
Weight:	1.90 kg



Size range:	**DN15 to DN300**
Characteristics:	Motoric, modulating
Protection class:	IP 54 to EN60529 (IP65 as accessory)
Control signal:	0(2)-10 V & 0(4)-20 mA 3-point
Manual operation:	Manual handle
Cable:	Not included



MODBUS SYSTEM



Complete Package Solution for Modbus enabled Dynamic Valves

Frese MODBUS System

Technical Data

MODBUS Converter

Function:	MODBUS Slave/Node
Box material:	Polyamide Halogenfree
Operation voltage:	24V AC/DC -10% / +20% via bus cable
Control connection:	MODBUS RTU RS485
Actuator control signal:	0-10V DC, bidirectional modulating
Temperature sensors:	4-20mA active transmitters or passive sensors
Ambient temperature:	0°C to 50°C during operation
Weight:	100 g



MODBUS System Actuators

DN10-DN32

- Halogen free cable, incl. M8 connector, 1 m or 3 m
- Extension cables available

DN40-DN50

- Pre-fabricated cables available for installation
- Protection class IP54

DN50-DN200

- Pre-fabricated cables available for installation
- Protection class IP54



Temperature Sensor

for Frese MODBUS System

Characteristics:	PT1000 EN60751/B
Protection class:	IP 54 to EN60529
Ambient temperature:	0°C to 60°C
Measuring range:	0°C to 100°C
Cable:	3.0 m halogen free incl. connector



3-WAY ROTARY CONTROL VALVES



Compact, Energy-saving and Comprehensive Solution

OMEGA Compact
3-way Rotary Control Valve



Technical Data

Size range:	**DN65-800**
Valve housing:	Nodular Cast Iron
Pressure Class:	PN10/PN16/PN25
Leakage rate:	Class IV acc. to EN1349

Frese Rotary Actuators
for OMEGA Compact and Frese Butterfly Valves



Technical Data

ROL-series

- Electric Rotary Actuator for accurate valve control with feedback information to local or central control system.
- Robust design with protection class IP67.
- Optional items: Explosion proof, IP68, additional limit switches and modbus RTU communication.

ROP-series

- Pneumatic Rotary Actuator for accurate control with complementary positioner and filter regulator.

Accessories



Positioner & Filter Regulator

To be used together with Frese Rotary Actuators ROP-series

ELCO-100 - Electric Local Controller

Local PID Controller for controlling of supply temperature with complementary temperature sensor.

Temperature Sensor

To be used together with ELCO-100

SYSTEM VALVES



EFFECTIVE ISOLATION AND LONG LIFE-TIME

Frese Butterfly Valve

Isolation Valve



Technical Data

Size range:	**DN50-600**	
Material:	Valve body:	Ductile Iron EN GJS-450/10
	Disc:	Stainless steel AISI316
	Seat:	EPDM
Medium temperature	DN50-DN200:	-20°C to +120°C
	DN250-DN600:	-20°C to +110°C
Pressure class:	PN16	
Close off pressure:	Max 16 Bar	
Leakage class:	ISO 5208 Rate A (zero leakage)	

Frese Ball Valve

Isolation Valve

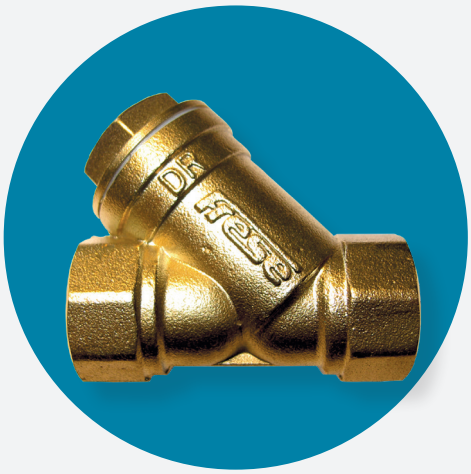


Technical Data

Size range:	**DN15-50**
Valve housing:	DZR Brass
Gasket:	PTFE
Pressure rating:	PN16
Connections:	ISO 228

Frese Strainer

Maximum protection of the pipeline
equipment against particles and other impurities



Technical Data

Size range:	**DN15-50**
Valve housing:	DZR Brass
Gasket:	PTFE
Pressure rating:	PN20
Connections:	Female/Female
Accessories:	Spindle extension available

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

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 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.

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.

KNOWLEDGE

QUALITY

INNOVATION

MANUFACTURING EXCELLENCE

CUSTOMER FOCUS

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