

Oil & gas, petrochemicals and chemicals

FESTO





**You are looking for a partner who understands your objectives.
You require more efficient production facilities.
We are your solution for process automation.**

→ WE ARE THE ENGINEERS OF PRODUCTIVITY.

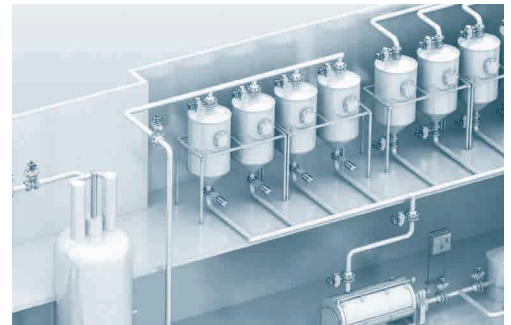
Your aim: production plants with the greatest productivity and reliability

Our solution: smart automation systems for maximum safety and availability

Increase the productivity and reliability of your production systems by involving us early on in your engineering project. Together we will develop a suitable automation solution that will meet your specific requirements, so that you can benefit from significantly increased safety and availability. In addition, with Festo as your reliable partner, you also improve energy efficiency and reduce the total cost of ownership (TCO). Whether for complete system solutions, sophisticated automation concepts, or individual components, we will be happy to show you the distinct advantages of working with Festo.

For more information:
www.festo.com/chemie

Safety and reliability – our solution for your requirements



Controlling process valves



High-end solenoid valve VOFC/VOFD

Up to SIL 3, NAMUR flange pattern or threaded connection. High corrosion resistance thanks to ematal coating. Stainless steel variant. Down to -50 °C. Solenoids in degrees of protection: Ex ia, Ex em and Ex d with terminal box for Ex zone 1/21, Class I, II, III Div 1, 2.



Modular electrical terminal in intrinsically safe design CPX-P/MPA

For use in zone 2/22 with NAMUR inputs. DI direct from Ex zone 0/20 and AI from Ex zone 1/21.



Modular electrical terminal CPX-E

Automation system in IP20 with high component density, as remote I/O with bus module, or as a control system with a control unit. Ex zone 2/22.



Positioner CMSX

For quarter turn and linear actuators. Energy-efficient operation, high process reliability thanks to analogue and digital feedback signals, as well as definable safety positions.



Standard NAMUR valve VSNC

With changeable seal for 3/2- or 5/2-way function, 5/2-way double solenoid and 5/3-way design. Solenoids in degrees of protection: Ex m, Ex ia for Zone 1/21; Ex nA for Ex zone 2/22; Class I Div 1.



Modular electrical terminal combined with modular valve terminal CPX/MPA

Maximum function integration, many electrical connection options: PROFIBUS DP, multi-pin plug, Festo I-Port, fieldbus, HART, IP65. Extensive diagnostic options. Redundant communication interface, e.g. PROFIBUS DP in combination with a modular valve terminal.



Valve terminal in intrinsically safe design CPV-Ex

Can be installed directly in Ex zone 1/21 and Class I Div 2. Pneumatic multiple connector plate with wall through-feed for installation in a control cabinet with IP65.



Valve terminal VTUG

Optimised for control cabinet installation (horizontal/vertical). IP67, in the control cabinet IP69K/NEMA 4X. Hot-swap function. Fieldbus connection for all common fieldbuses and IO-Link. Can be used in Ex zone 2.



Actuating process valves



Single-acting or double-acting quarter turn actuator DFPD

With rack and pinion principle for constant torque characteristics. End-position adjustment at both sides. Swivel angle up to 90°. Connection pattern to NAMUR VDI/VDE 3845. Suitable for ATEX zone 1/21.



Heavy-duty quarter turn actuator DFPD-HD

Scotch-yoke mechanism up to 32,000 Nm. Interfaces to NAMUR VDI/VDE 3845 and ISO 5211. Single-acting or double-acting, configurable spring forces, a choice between right or left direction of rotation and mechanical or hydraulic actuation. ATEX zone 1/21.



Closed-loop controlled linear actuator with built-in displacement encoder DFPI

Design to ISO 15552. Swivel motion made possible by an optimised piston rod guide. Wide range of accessories. Suitable for installation in ATEX zone 2/22.



Double-acting linear actuator DLP

Version for process valves to DIN 3358. Port pattern to NAMUR for solenoid valves to VDI/VDE 3845. End-position adjustment at both sides. ATEX zone 1/21.



Automation solutions for greater productivity from raw material extraction to the finished product

1 Oil & gas

2 Refinery

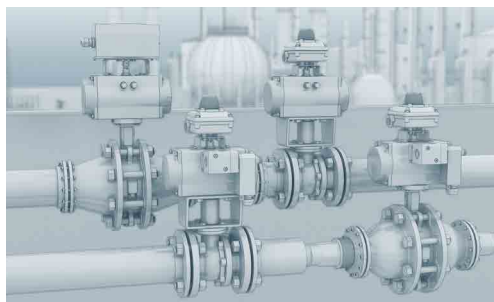
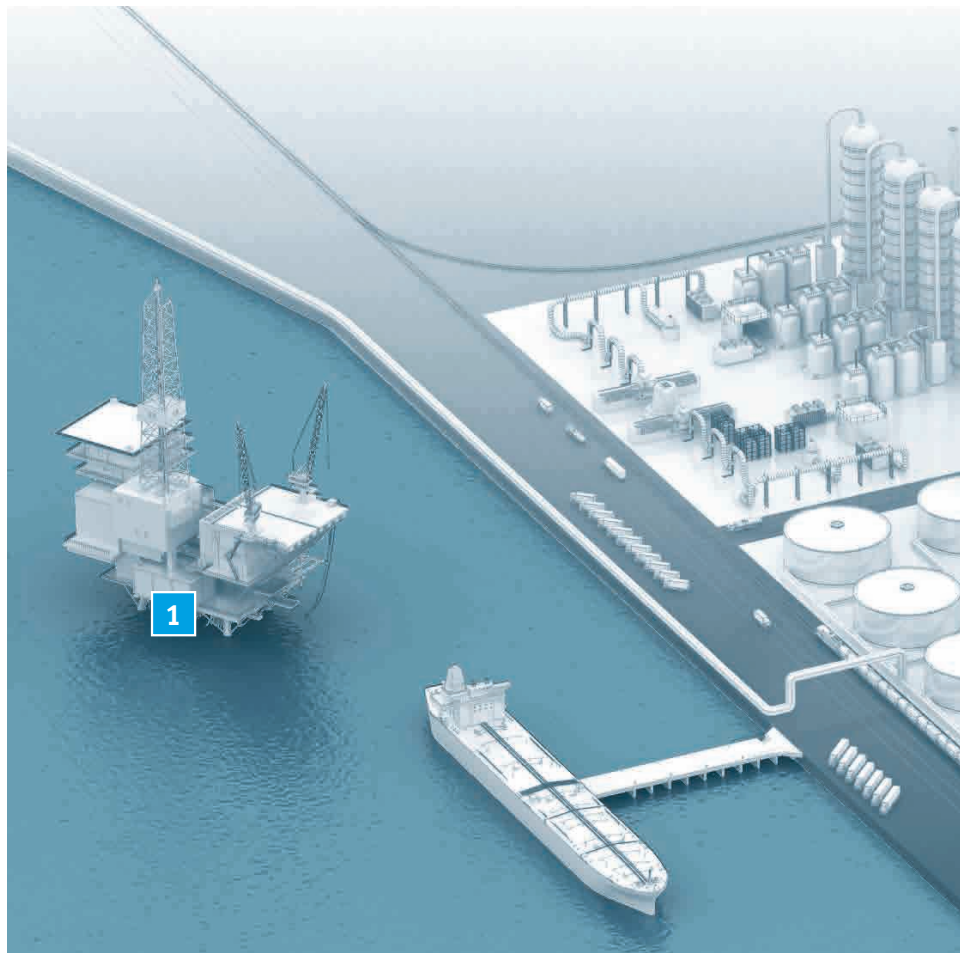
3 Petrochemical industry

4 Polymers

5 Basic inorganic chemicals

6 Speciality chemicals

7 Consumer chemicals



Media supply

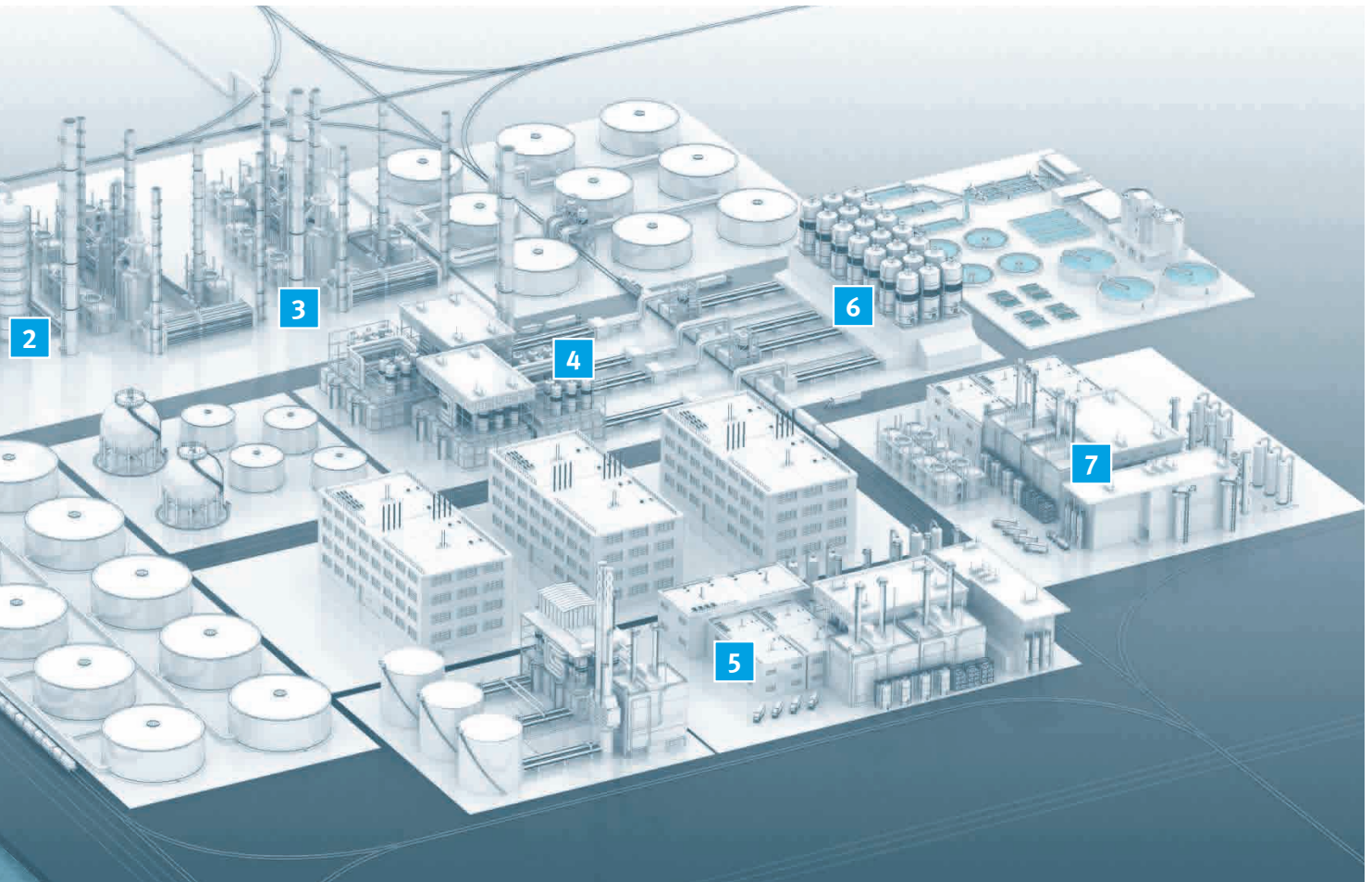
Control and regulation of the supply of raw and auxiliary materials.



Continuous processes

Automation of systems in continuous processes, for example columns.

shed end product



Batch processes

Automation of systems for discontinuous processes, for example mixers and reactors.



Filling/packaging

Automation of filling and packaging processes, for example filling of big bags or palletising.

Automated process valve units



Ball valve VZBF

Made of stainless steel with flange connection or female thread for trouble-free control of aggressive media or gases.



Knife gate valve VZKA

Function: open/closed. Optionally with actuator that has integrated positioner and displacement encoder.

Butterfly valve unit VZKA

Suitable for safety-orientated applications. Temperature range $-20 \dots +200 \text{ }^{\circ}\text{C}$. Optional stainless steel variant. Other versions with discs in Hastelloy, Titan, Uranus, etc.



Ready-to-install solutions



Industry-specific control cabinet solutions

Completely pre-assembled and tested according to your requirements: control cabinets for zone 1/21 or 2/22; design in IP65.



Redundant control blocks

1oo2, 2oo2 and 2oo3 solutions in a compact design and the tried-and-tested technology of individual valves VOFC/VOFD. Suitable for use in safety-related circuits up to SIL 3.



Pneumatic operator panels

Fail-safe solutions for safe switching on and off and/or achieving a predefined system state in the event of a fault. Pneumatic systems combined with electronics. ATEX rated.



Sensor boxes, compressed air preparation and accessories



Sensor boxes SRBC, SRBE, SRBG

Position indicator for quarter turn actuators with interface to NAMUR VDI/VDE 3845. For use in Ex zone 1/21 and Class I Div 1. With degree of protection Ex ia, Ex d, Ex t.



Service units MS series

Service unit component for compressed air preparation. High flow rates with individual configuration, integrated sensors and safety functions. Can be used in Ex zone 1/21. Optional low-temperature design down to $-40 \text{ }^{\circ}\text{C}$.



Connection technology and tubing

Push-in fittings and couplings made of stainless steel.



Tubing for corrosive media and aggressive ambient conditions. UV resistant. PTFE design for particularly demanding requirements.

Filter regulator LFR- ... -EX4

For harsh ambient conditions. UV-resistant. Ambient temperature $-40 \dots +80 \text{ }^{\circ}\text{C}$. Suitable for Ex zone 1/21.

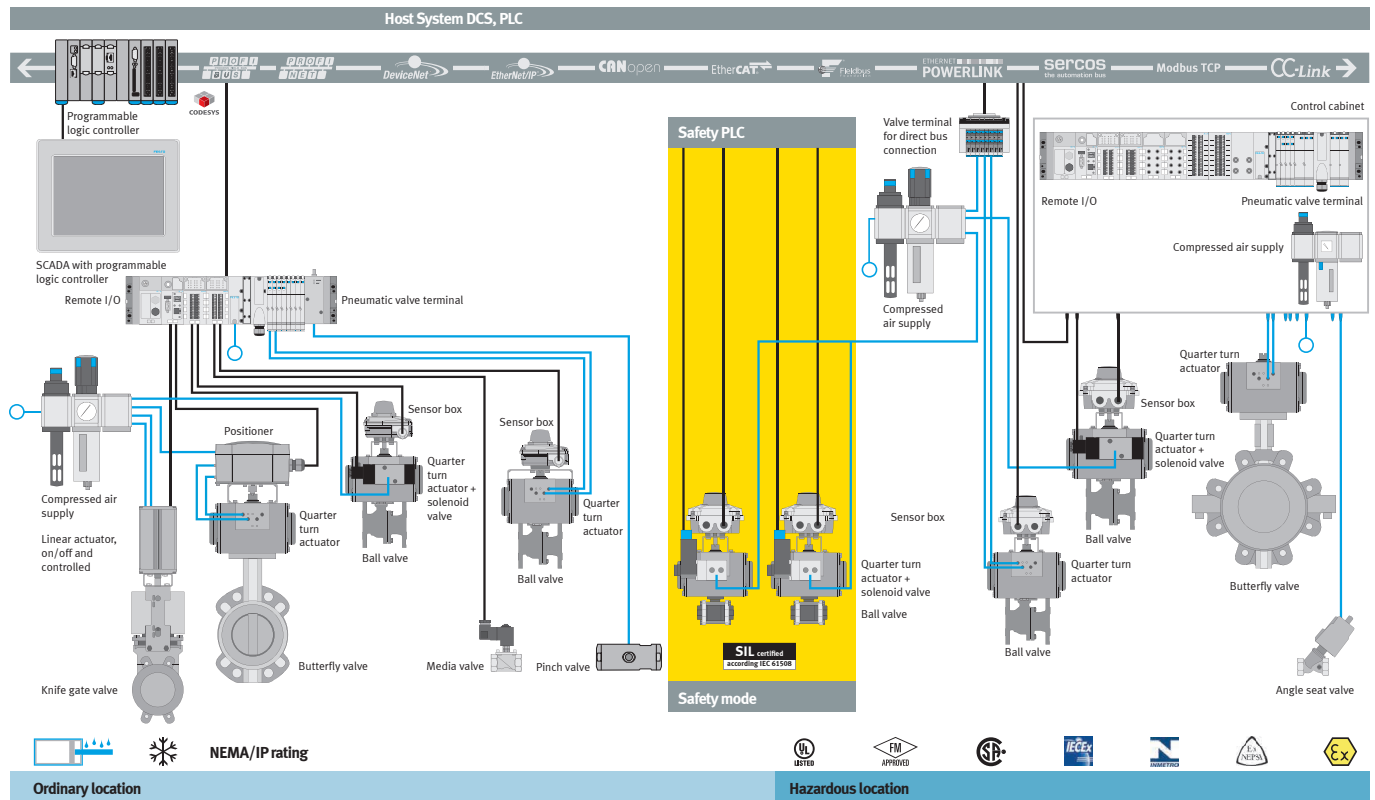


Stainless steel filter regulator PCRPF

For extremely corrosive environments. Ambient temperature $-60 \dots +80 \text{ }^{\circ}\text{C}$. Suitable for Ex zone 1/21.



Giving you a head start: complete automation systems from a single source ...



... and innovation through synergies



End line packaging



Oil & gas, petrochemicals and chemicals



Water technology



Biotech/pharma and cosmetics

For years, Festo has been developing factory and process automation solutions for a wide range of industry sectors. By transferring our experience and innovations from one industry to another, we take advantage of valuable synergies and create economies of scale. You, too, can benefit from our worldwide network of knowledge, because it enables us to develop and implement customised concepts for your plant quickly and economically.

Maximum productivity is a question of ambition.

Do you share this attitude? We will be glad to help you achieve this goal – through our four outstanding qualities:

- Security • Efficiency • Simplicity • Competency

We are the engineers of productivity.

Discover new dimensions for your company:

→ www.festo.com/whysto