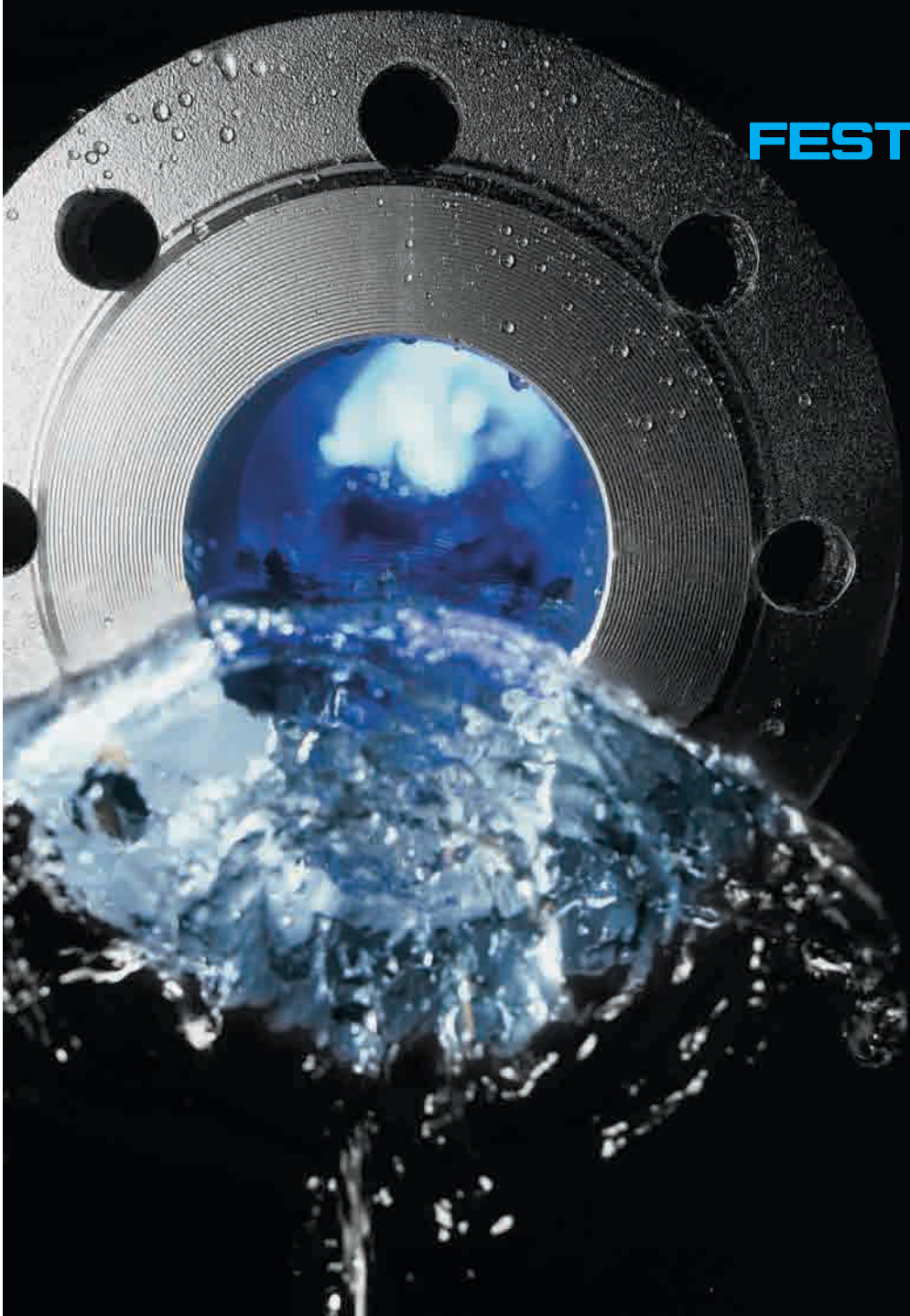
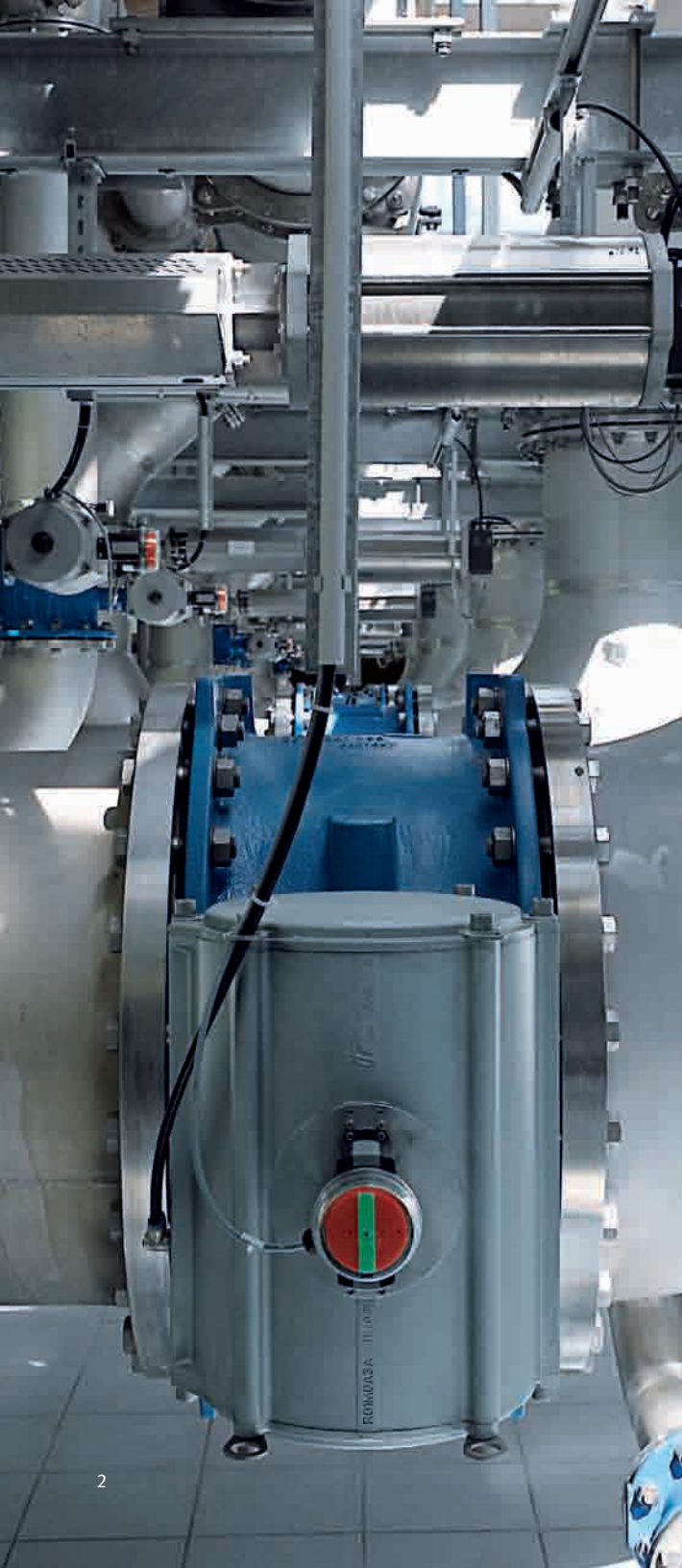


Partner for water technology

FESTO





Automation solutions for complex processes

Blocking, opening, closing, regulating: complex processes require an intelligent brain and reliable fittings. Festo offers the largest available range of complete pneumatic solutions and intelligent valve terminals with communications interfaces from a single source. The PLC systems integrated into the valve terminals allow for complete control and data processing within system segments. In other words, systematic process automation – from Festo, your partner for the water and wastewater industry.

Everything under control

The range is not only comprehensive, but also meets a number of other important criteria as well:

- For unrestricted use in such areas as explosive atmospheres
- For outdoor use or
- In extremely corrosive atmospheres
- Sizes tailored to specific processes
- Peripheral components
- Customised functionality

Festo's pneumatic components give you total reliability as they are overload-proof, easy to clean, durable, and meet your corrosion resistance requirements.

Systematically regulated

The system concept for individualised solutions: with highly economical standard components, accessory parts, complete assemblies or subsystems and flexible connecting elements, the world of processing automation is at your feet – in all established standard sizes.



**Quarter-turn actuator
Type DAPS**



The first choice for valves with high breakaway torques: DAPS, the cost-effective scotch yoke actuator for butterfly and ball valves.

- Scotch yoke principle
- Torques of 8 to 8,000 Nm at 6 bar
- Double- and single-acting
- Interfaces to ISO 5211 and VDI/VDE 3845 (NAMUR)
- Stainless steel shaft, with octagon at the bottom

**Quarter-turn actuator
Type DFPB**



For maximum economy and optimum harmonisation with process valves – infinitely flexible and sturdy. Always single-acting and double-acting, clockwise and anticlockwise. Available in many variants.

- Forces of 7 ... 1,050 Nm at 5.6 bar
- Operating pressure 1 ... 8 bar
- Limit switch attachment to VDI/VDE 3845

- Horizontal Namur valve assembly possible
- No tilting of quarter-turn actuator
- Pressure-backed lip seal as working seal
- Pressure relief slot
- Easy reversal of direction of rotation (closes to right/closes to left)
- Maintenance-free

**Quarter-turn actuator
Type DRD/DRE**



If in doubt, rely on pneumatics: rotary operated process valves, robust, maintenance-free, with explosion protection included. DRD/DRE for butterfly and ball valves.

- Rack & pinion principle
- Torques of 8 to 8,800 Nm at 6 bar
- Double- and single-acting
- Interfaces to ISO 5211 and VDI/VDE 3845 (NAMUR)
- Highly corrosion resistant
- Rotation angle 90°

**Regulated linear actuator
Type DFPI**



One regulated drive for all linear process valves. Its all-in-one design and technology make it ideal for controlling knife gate valves and penstock valves with regulated strokes: integrated displacement encoder, valve manifold, positioner and an extremely robust connection.

- Force of 2,888 ... 47,500 N at 6 bar
- Diameter 100 ... 320 mm
- X-strokes up to 1,000 mm; special designs on request.
- ISO 5211 and VDI/VDE 3845 (NAMUR)
- High corrosion resistance (CRC 3)
- Safety position open or closed
- Protection class IP65/68
- Ambient temperature -20 °C to 60 °C

**Linear actuator
Type DLP**



If in doubt, rely on pneumatics: process valves with linear pneumatic operation, with explosion protection included. DLP for gate valves and weirs.

- Force 2,888... 47,500 N at 6 bar
- 80 and 320 mm piston diameters
- Stroke length 40 ... 2,000 mm
- Namur interface
- Internal air supply
- Direct sensor mounting

Sensor boxes
Type DAPZ, QH-DR-E



Systematic reliability in the process industry: secure, overload-proof and durable position sensing for valve control – for explosive atmospheres as well with DAPZ.

- Inductive, pneumatic or electrical (micro switches)

- Large visual indicators
- Flexible installation on quarter-turn actuators
- AS-interface variant available
- Can also be used for 3-way ball valves
- ATEX II 2 GD

Ball valve drive units
Type VZPR/VAPB



Festo ball valves for process automation are available in sizes Rp 1/4 to Rp 2 1/2. Made from brass or in

corrosion resistant versions from stainless steel with diameters of up to Rp 4.

Ball valve
Type VAPB/VZBA



Systematically more reliable: compact and robust, with low torque and extended service life.

- Brass and stainless steel designs
- For 2-way ball valve VAPB, diameter 1/4" to 4" in stainless steel, 1/4" to 2 1/2" in brass

- For 3-way ball valve VZBA, diameter 1/4" to 2" in stainless steel with L and T fittings
- Mounting flange to ISO 5211/DIN 3337 and connecting threads to DIN 2999
- Temperature -20 to 150 °C (depending on pipe pressure)

On-site control
Type DLP-VSE



For the control of electrical and pneumatic actuators: monitoring and controlling process valves locally.

- Direct or decentralised installation
- AS-interface or Profibus DP compatible
- IP65
- Maximum reliability thanks to lockable functionality
- LED for position display

NAMUR standard valves
Type NVF3



In accordance with the Namur port pattern as defined by VDI/VDE 3845. Ideal for use in process automation. With ATEX-compliant explosion protection included.

- Flow rate 900 l/min
- Can be changed from 5/2 to 3/2-way function
- Corrosion-resistant
- Types of protection: EExm and EExia
- 12, 24, 42, 48 V DC
- 24, 42, 48, 110, 230, 240 V AC

Standard valves NAMUR
Type VSNB



Pure Namur. For minimum costs and maximum functionality. Reduced to the bare essentials, but expandable – without being dependent a single supplier.

- Flow rate 900 l/min
- Voltages 24 DC, 110 AC, 230 AC

- 3/2-way and 5/2-way
- Selector seal variant
- Exhaust air feedback with 3/2-way valve
- Venting air feedback
- CNOMO interface
- ATEX certification

Air valve
Type MN1H



This diaphragm valve in brass allows easy control of air in automated processes with Open and Close functions.

- 2/2-way
- Flow rate 2,000 to 30,500 l/min
- Optionally with adjustable closing cushioning
- Pneumatic connection G 1/4 to G 1 1/2

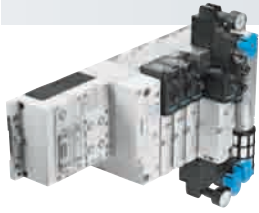
Air/water valve
Type VZWM



Ideal and highly economical for control of media.

- Flow rate 1,400 ... 31,000 l/min
- 2/2-way valve function
- Sizes: 1/4", 3/8", 1/2", 3/4", 1"
- Housing: brass or stainless steel
- Diaphragm: NBR, pipe connection with G thread or NPT thread.
- Minimum pressure differential for operation [bar] 1/4" ... 1" = 0.5

Valve terminals



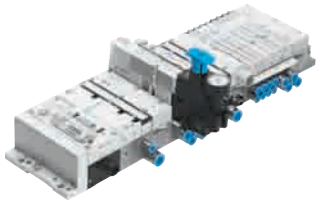
Valve terminal type VTSA to ISO 15407-2 (plug-in) and ISO 5599-2

The new VTSA valve terminal can be extended to form complete installation solutions.

- Modular sub-base concept with standard sizing
- Flow rate 500 to 1,500 l/min

- 2 x 3/2-, 5/2-, 5/2-way double solenoid, 5/3-way
- 32 valve positions
- Integrated diagnostics: via LED, handheld control device CPX-MMI and fieldbus feedback

Modular valve terminal Type MPA1/MPA2



Field bus terminal, multi-pin terminal or individual valve in IP65 – solid-metal valve body and manifold block.

- Diagnostic messaging via fieldbus
- Variable pressure zones and additional power supply
- Up to 64 valve positions or 128 solenoid coils

- Pressure range -0.9 to 10 bar
- Flow rate 360 to 700 l/min
- Electrical I/O and fieldbus connections by modular electrical terminal type CPX
- Built-in pressure sensors and proportional pressure regulators VPPM

Compact Performance valve terminal Type CPV

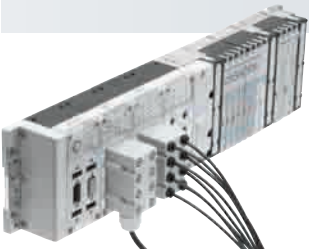


Maximum performance in the smallest space. Direct integration of all standard bus interfaces. Compact with fixed grid.

- Widths: 10, 14, 18 mm

- Flow rate 400, 800 and 1600 l/min
- 8 valve positions (16 coils)
- Wide range of valve and additional functions
- Ideally suited for control cabinet installation

Modular electrical terminal Type CPX



Compatible with all common fieldbus standards and all electrical installation standards.

- Profibus DP, Interbus, CANopen, DeviceNet, CC Link, Ethernet
- Variable connection technology

- Stand-alone as remote I/O up to 512 I/O's
- Integrated diagnostics
- Protection class: IP20/IP65/IP67 depending on connection technology used
- Optionally with front-end controller CPX-FEC and webserver

Air Supply



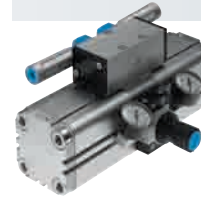
Service units Type D series, metal

Highly robust, comprehensive and standardised, always with the right flow characteristics.

- High flow rates of up to 12,500 l/min.

- A wide range of fully assembled filter-regulator service units
- Four sizes: MICRO, MINI, MIDI, MAXI, for instance as filter-regulators, on-off valves, fine and micro filters

Pressure booster Type DPA



Greater pressure in less space: the pressure booster allows you to double your input pressure in the compressed air network.

- Input pressure from 2 to 8 bar, output pressure from 2.5 to 16 bar

- Can be mounted in any alignment and at any position in the compressed air network
- Purely mechanical in function
- Maintenance-free

Air reservoirs Type CRVZS or VZS



Forget pressure fluctuations: with air reservoirs in stainless steel or steel, always in accordance with EC standards and EC directives.

- Capacity from 0.1 to 20 l
- Medium: air or nitrogen
- Additional reservoir for flow control or for greater time delay

Push-in fittings Type CQ



Putting the pressure on, quickly and easily: this sturdy range of push-in connectors connects compressed air systems to the ring circuit reliably and cost-effectively.

- For tube and pipe O.D. 12, 15, 18, 22 and 28 mm
- High delivery rates with reduced flow resistance

- Up to 7,000 l/min delivery rate
- Wide temperature ranges (-20 °C up to max. 15 bar; +70 °C up to max. 7 bar)
- Zero leakage, corrosion resistant
- Approved for use in the food industry
- No tapping work required

Fittings Type QS

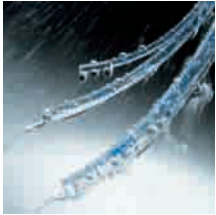


Always the right fitting: classic, fast and secure.

- Push-in/threaded fittings: for tube outside diameters 3 to 16 mm

- Over 1,000 variants
- Corrosion and acid resistant
- Version in stainless steel as QS-F

**Compressed air tubing
Type PUN-H**



Always the right tubing: compressed air distribution made easy. With a built-in umbrella – PUN-H.

- Polyurethane – highly flexible and kink-resistant
- Resistant to hydrolysis and microbes
- Food industry approval to FDA and 90/128/EEC

**Compressed air tubing
Type PLN**



Always the right tubing: compressed air distribution made easy. The specialist for the food industry – PLN.

- High resistance to chemicals and cleaning agents
- High resistance to UV radiation
- Food industry approval to 90/128/EEC

**Compressed air tubing
Type PFAN**



Always the right tubing: compressed air distribution made easy. Tolerates the most aggressive media and resists heat to 150 °C – PFAN.

- Maximum resistance to chemicals
- High resistance to UV radiation
- Suitable for use at high temperatures
- Flame retardant to UL 94 V0
- Food industry approval to FDA and 90/128/EEC

**One-way flow control valves
Type GRLA/GRLZ**



The regulator: flow control made easy. Optional supply/exhaust air flow control, even directly on the cylinder.

- Flow rate 0 ... 2000 l/min
- Threaded connection M3 ... G 3/4
- Connections: QS3 ... QS8/ PK3 ... PK6

**Electronic controller
Type FEC® Compact**



The low-cost PLC with high-tech inside: small, Ethernet-capable, optimised for control cabinets. The compact control system for machine-oriented tasks.

- 20 digital inputs/outputs
- 2 serial ports
- Ethernet port
- 24 V DC
- 220/230 V AC

**Electronic controller
Type FEC® Standard**



The rugged mini control system with an IPC at its heart. The simple connection option, also for Ethernet. Can be mounted directly on the system.

- 48 digital inputs/outputs
- 3 analogue inputs, 1 analogue output
- Ethernet port
- 2 serial ports
- 24 V DC

**Solenoid valve cabinet
Type DIPAC**



Saves time and costs – designed, manufactured and delivered ready for installation at the customer's request: DIPAC – Decentralised Intelligent Pneumatic Actuator Controller. Control processes with Festo plug and work®.

- Stainless steel cabinet with lockable door
- Tubing connected with bulkhead fittings
- Can be combined with all valve terminals
- Central air supply port and filter-regulator service unit
- Fieldbus nodes to match the control setup
- Wall or rack mounting

**Festo – everything from
a single source**

One partner for all of the tasks currently required for automation with pneumatics and electrics, with all the advantages this brings.

Innovative: 2,800 patents, 80 new products per annum, 1 goal – your benefit.

Systematic: Systematically open for individual solutions from a single source.

Presence: Worldwide, in person and online. 57 companies in 176 countries around the globe.

Productive: With installation, logistics and services. Long service life as standard for 30,000 products.

See for yourself at www.festo.com

Festo AG & Co. KG

P.O. Box
73726 Esslingen
Ruiter Strasse 82
73734 Esslingen
Germany
Phone +49711 347-0
Fax +49711 347-2144
service_international@festo.com
www.festo.com