World of Automation
Competency from single components to control systems.
Valve terminals with comprehensive function integration are our current USP. A large CPX/MPA terminal is an excellent example of this Festo advantage.

- Valve terminals from Festo are automation solutions for the field: they control factory and process automation and combine fluid and motion control.
- They can be seamlessly embedded in any host environment, e.g. for Industry 4.0 via decentralised CODESYS control systems with OPC UA communication interfaces.
- In addition to a large terminal, there are 3 options for integrating small subordinate I/O systems: the serial CPI system, I-Port or IO-Link as a point-to-point connection.

It highlights our competency in electric automation technology. In addition to electric components such as servo controllers, motors and decentralised control units, Festo also has extensive know-how in the area of mechanical components (axes) – and thus offers perfectly coordinated, model-based control data for servo controllers like the CMMP range. Conveniently select the required components in FCT*, easily control them with FHPP*, and you’re done!

* see last page

This type of installation concept is suitable for virtually any application, e.g. for general machine building or in industry segments such as biotech/pharmaceuticals, water/wastewater treatment, end line packaging and many more.
Products and solutions for Industry 4.0
All valve terminals with CPX remote I/O can be extended to include an integrated CODESYS controller. This means that OPC UA is an available option for Industry 4.0 HOST environments in all factory automation and process automation applications. The following products have OPC UA:
- CPX terminal, valve terminals CPX/MPA and CPX/V TSA (OPC UA server)
- Compact controller CECC (OPC UA server)
- Display and operating unit CDPX (OPC UA client)

Other customer-specific solutions from Festo:
- Energy efficiency module MSE6-E2M (OPC UA on request)
- Servo press kit YJKP
- Modular positioning platform YXCM
- Delta kinematics (parallel kinematic system CPX/EMCA) without a control cabinet
- Multi-Carrier-System

Additional features: vision systems for detecting intelligent workpieces such as code readers SBSI-B and compact vision systems SBOx-Q. All products in the field with IO-Link or fieldbus act as “intelligent feeders” within a particular subsystem.

Another USP is our valve terminals that have special characteristics and are suitable for the conditions found in sectors and applications involving electronics, semiconductors and food processing.
- VTOC: pilot valves with interlock for use in the semiconductor industry
- MPA-C: clean design in IP69K for the food industry
- VTUB: polymer valves for price-sensitive and weight-optimised applications
- VTUG: compact universal valves, including options for control cabinet installation
- CPX: the proven series in a cubic design
- Festo offers various proprietary control concepts for small and medium-sized applications and on-site decentralised automation solutions: CDPX, CPX-CEC, CECC, CECX, CMXR

I-Port and IO-Link are new, cost-effective installation concepts that also open up new opportunities in control cabinets.

Complete control cabinet construction – a Festo service

CPX extension for optimal control cabinet installation with CPX
- The robotics controller CMXR is ideal for highly dynamic applications such as the parallel kinematic system tripod. Motor controllers like the dynamic servo controllers CMMP-AS with motors and axis mechanisms demonstrate Festo’s comprehensive know-how in this area.

Complete solutions from Festo cover everything from the control level to mechanical systems, from standard designs for factory and process automation to clean design with stainless steel cylinders.
The Industry 4.0 vision – standardisation and cooperation

As we move towards Industry 4.0, communication and engineering standards are absolutely critical. As the market leader in intelligent field automation, Festo works with all the major associations involved in Industry 4.0 and is also an advisor to the German Federal Government.

One source of inspiration in this field, particularly when it comes to human/machine interaction, is our Bionic Learning Network. Festo Didactic is also making a contribution with its extensive offer of basic and further training for Industry 4.0.

Complete function integration is also a USP for the MS series service units and the valve terminal combination CPX/VTSA.

- Comprehensive safety concepts, ranging from individual components like the MS6-SV to PROFIsafe and pneumatic solutions integrated in the VTSA such as VOFA, slow start-up pressurisation, and much more.
- Across-the-board support for energy efficiency with new concepts for air preparation and reducing air consumption via the E2M module, integrated condition monitoring, an ideal design for VTSA with 5 different valve sizes, or decentralised vacuum generation for VTSA.
- Our software tools make designing, sizing and ordering components an easy and reliable process.

- The VTSA platform also includes integrated special applications such as welding guns and installation plates HIP/RIP used in the automotive industry to supply both cooling water and compressed air.
- Pneumatic and electric drive technologies are seamlessly combined. Motor controllers like the powerful servo controllers CMMP-AS with the safety module MOV, as well as motors and sturdy axis mechanisms such as the EGC and EGC-HD, can be integrated into a complete mechatronic concept.
- Additional components include camera/vision systems and HMIs like the CDPX or CPX handheld for on-site operation.

These concepts are suitable for heavy machine building, body work in the automotive industry, raw materials and many more.
Software support – product configuration
Our product configurators allow you to quickly and easily configure the desired product in just a few clicks.

Software support – product key
Locate and manage spare parts and complete documentation for configured products by simply entering or scanning the product key. Job done!

Selecting and sizing

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<td>The Product Finder in the product catalogue: select the features you need to find the right products and matching accessories in much less time and with less hassle.</td>
<td>With PositioningDrives, you can enter your application details to quickly and easily find the ideal solution from our range of electric axes, motors, gear units and controllers.</td>
<td>Support for sizing and selecting suitable quarter turn actuators when you need to automate butterfly and ball valves.</td>
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Designing electric multi-axis systems
With the Handling Guide Online, you can design multi-axis systems, obtain a net price, order at the click of a button and, optionally have everything delivered pre-assembled.

Save time on mechanical design thanks to:
- The right CAD formats for direct and prompt installation, and geometry imports with links to all components (e.g. Festo PARTdataManager or Festo Design Tool 3D)
- CAD plug-in for your CAD system allows visual product selection and use of in-house templates.

Save time on electrical design with:
- Functional and 2D graphics macros for EPLAN for faster and easier creation of circuit diagrams
- FluidDraw for easy creation of electrical and pneumatic circuit diagrams

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Reduce process costs further:
software and online offers from the expert who understands your processes. See for yourself!
**Fast programming with standard modules and designations thanks to an optimised data profile**

Festo has developed an optimised data profile tailored to handling and positioning applications. In the Festo Handling and Positioning Profile FHPP, the command structure and commands themselves are standardised, which saves a significant amount of time during programming. With FHPP, Festo motor controllers can be actuated using a fieldbus interface via standardised control and status bytes. This means that the module always has the same appearance for the programmer, regardless of which control system/PLC and which Festo controllers and motors are used.

**Festo Configuration Tool FCT – parameterise and commission axis systems efficiently and safely**

Whether you’re working offline at your desk or online at the machine, FCT helps you with convenient configuration and offers maximum safety.

- All system drives can be managed and archived in a joint project
- Project and data management for all supported device types
- Easy to use thanks to step-by-step, graphically supported parameter entry
- Consistent configuration method

This means that with the software you’re always on the safe side during commissioning.

**A safe standard**

- Select a motor, controller and axis with just a few clicks.
- For the components selected, FCT sets standard values for end position, homing, and for maximum acceleration and speed.

**CODESYS – flexible and open for all types of control tasks**

For the first time, full CODESYS version V3 functionality is available in an IP65-rated valve terminal with remote I/O.

- Enables a full range of motion control functions in on-site pneumatic and electric systems, e.g. with the new integrated 3D-CNC editor to DIN 66025 (G code).
- Motion is part of the PLC environment as specified in PLCopen, Part 1 and Part 2

Customer-specific solutions can be implemented quickly and cost-effectively with ready-made basic software and libraries.

- Faster and easier programming and commissioning thanks to pre-configured basic modules, e.g. for SoftMotion
- 3D motion control, CNC libraries, diagnostics libraries
- OPC UA as an option for Industry 4.0 HOST environments

**Festo Maintenance Tool**

Retrieving and displaying dynamic data for parameterisation or diagnostics often takes up to 30% of system programming work and requires the involvement of specialists. The Festo Maintenance Tool for the automation platform CPX makes this data instantly visible and usable – even for users without programming skills.

- Simple fault evaluation and analysis
- Error history allows traceability
- Direct connection to the PC via USB adapter or Ethernet for remote maintenance
- Software is a free alternative to the MMI operator unit

**Festo Field Device Tool**

The Festo Field Device Tool contains a variety of services for all Ethernet-based field devices from Festo. It also supports firmware file uploads to selected Festo devices.

- One tool for all services
- Quick and easy updates, e.g. through parallel firmware updates
- Reliable updates thanks to compatibility testing, traceability and documentation creation for each update process

**Online Support Portal**

The Support Portal provides a wide range of information, user documentation, software and expert knowledge for each product. It can even be accessed from your smartphone.

**Reliable, safe, efficient: the product key**

Enter it manually or scan it – and the product key gives you access to all available information for the product. This increases process reliability and safety while also boosting efficiency, speed and profitability.