You want to make your applications more productive. You are looking for efficient solutions. We are entering the digital future with you.

→ WE ARE THE ENGINEERS OF PRODUCTIVITY.
Dear customers,

In a world that is changing ever more quickly, it is good to have a reliable partner. What have we done to continue to be a dependable partner for you in the future? We have compiled some of our most notable new products in this issue of Highlights 2020.

Take our core product range, for example. We have redesigned many components, reviewing aspects such as functionality and compactness, quality and pricing. This has resulted in products like the highly functional and very compact mini slide DGST and the standard valves VUVG-S, which combine a high flow rate with small dimensions.

These products can be delivered anywhere in the world in no time, even in large quantities. We have also expanded our production and logistics spaces worldwide, optimised manufacturing processes and provided more points of contact for you. Whether you rely on software tools for design engineering, use the Online Shop or want personal advice, you will always benefit from the in-depth knowledge of all our experts.

Another highlight are our proportional valves with piezo technology. This technology is opening up entirely new applications for proportional valves. They are extremely precise yet extremely quiet, consume very little power and therefore generate very little heat. This makes the valves VEAA and VEAB very interesting for the electronics industry, small parts assembly, laboratory automation and medical technology as well as for the pharmaceutical and chemical industries.

New and unique to our electric automation range is the Simplified Motion Series. The name says it all: it enables software-free commissioning together with the latest communication and control options. It consists of cost-effective components, from the spindle and toothed belt axes ELGS to the rotary drive ERMS, that are ideal for end-to-end movements. It is the electric counterpart to simple pneumatic systems.

We are also systematically expanding our portfolio for the digital world. With the new apps for the Motion Terminal, new versions of our circuit diagram software FluidDraw, the Automation Suite for simplified and reliable commissioning or the maintenance app Smartenance, you will reach your goals more easily and reliably.

From pneumatics to complex handling systems, you will only find this variety of components, systems and range of technologies as well as in-depth knowledge at Festo. Our sales consultants will be happy to advise you on the best technology for you or whether a mix of electric and pneumatic components might be worth considering.

We are ready for your requirements. Put us to the test!

Dr Ansgar Kriwet, Member of the Management Board Sales, Festo SE
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Festo – your partner.
For today and tomorrow

How can we continue to be a dependable partner for you in the future? This question is at the heart of everything we do. Against a background of volatile markets, accelerating digitalisation and globalisation, we have found the answers. That is why we have focused in particular on three areas: standard products, cross-technology solutions and digitalisation.

Our goal is to increase your competitiveness. That is how you can expand your technological lead – and of course we will accompany you on the road to digitalisation.

**Standard products – global, cost-effective, in large quantities**

Our core range offers high quality products at attractive prices that are available worldwide at short notice, even in large quantities. It helps you stay ahead of the game by gaining speed and improving performance for your customers.

We therefore decided to redesign the most important products from the standard range. The criteria were to achieve the best possible functionality, optimum production conditions and extremely competitive pricing. The results are clear to see, for example in the mini slide DGST or the standard valve VUVG-S, which provides a high flow rate with compact dimensions.

**Fast production and delivery thanks to more space worldwide**

To guarantee that you can get even large quantities of products worldwide in the shortest time, we have decentralised our production and made it highly automated. Products are now manufactured ‘local for local’, exactly where they are needed. In Suncun, China, as well as in Mason, Ohio, in the USA and at a number of European sites we have doubled our production and logistics capacity to more than 360,000 square metres. We have also increased the number of machines. This means that deliveries can be adapted flexibly to your requirements or quantities. To ensure that we can offer products at attractive prices, we have also carried out in-depth value stream mapping of our production and logistics processes and organised them in line with the relevant criteria. This has massively reduced throughput times and material consumption. In addition, competencies that are essential for Festo have now been brought in-house. We have increased our supplier base by 50%, so we can deliver even large orders quickly and without problems.

**Our expertise stands for reliable, sound information**

One of our strengths is the different information channels that are available to you; whether it’s software programs from engineering to commissioning, the Online Shop or personal contact with our experts, you will always find an effective and appropriate solution. Our experts know your industry segment and all its standards and regulations inside out. Even worldwide. We’ll be happy to advise you and will always use the right mix of technologies to tailor the automation solution so you get the best result for your application.

Find out more:

→ www.festo.com/ready
8 Digitalisation – the key to increased productivity
Benefit from advice and implementation expertise across all technologies

No other company in the field of automation technology is as versatile as Festo. For the simple reason that, as a company, we have recognised the signs of the times. There will always be pneumatic solutions, but it is only by including electric automation in our portfolio that we can be the best partner for you and always offer the best solution.

Simple pneumatics, servo-pneumatics, digitised pneumatics, the simple electric Simplified Motion Series and servo drive solutions: the list of technologies that Festo masters is huge. This is no surprise, as each technology has its own advantages and disadvantages. That is why Festo decided a long time ago to be actively involved in all fields so that we always have the right offer for you, including expert advice. See for yourself!

Pneumatics: a success story
Pneumatics was the starting point for the success of Festo. This simple and low-cost technology with its strengths in holding, tensioning, clamping and pressing is sturdy and straightforward. That is why it can be found in almost all segments of automation technology. However, what it doesn’t do is enable position control.

Cost-effective positioning of heavy loads with servo-pneumatics
Servo-pneumatics is a very attractively priced technology if you need to position heavy loads ranging from 15 kg to 300 kg. Drive packages based on this technology are characterised by fast switching from position control to force control and gentle travel to any position.

Digitised pneumatics and multifunctionality with Motion Apps
Unique and only from Festo: digitised pneumatics, such as the Motion Terminal VTEM, a digitised multifunctional platform controlled via Motion Apps and based on state-of-the-art piezo technology. Excellent function integration is combined with outstanding monitoring solutions, and amazingly compact multi-pressure and multi-flow control applications are combined with self-learning algorithms such as in the Motion App “Presetting of travel time”.

The simple, low-cost, precise Simplified Motion Series
Only from Festo: a simple, low-cost and precise range for linear or rotary movements between two end positions with high process reliability thanks to defined and reliable speed and force control. In addition, integrated IO-Link® permits diagnostics and an Industry 4.0 connection to the cloud. The series also includes extremely easy commissioning without the need for software, and state-of-the-art communication and control concepts.

Electrical variety with traditional servo drive solutions
You have the choice of millions of combinations for very dynamic, linear or rotary multi-axis movements in flexible configurations, including infinite intermediate positions. At the same time, they move very precisely, quickly and dynamically and with great force. Synchronised movements across multiple axes or combinations with dynamic, flexible Cartesian robots are also possible.

Or a mix?
Sometimes the best solution is a mix of several or all the technologies Festo offers. Thanks to the seamless connectivity of our portfolio, even a mix will work perfectly.
New approaches to increase productivity with digitised automation

How do automation and digitalisation go together? We have been asking ourselves this question for years. And we already have a number of answers: smart products, connectivity, gathering and interpreting data via the cloud are the direction in which things are moving. Data analytics, machine learning and artificial intelligence are being added to the offer.

Making engineering, commissioning and operation easier for you with software tools
Our tools support you throughout the entire product lifecycle, right from the initial phase of your project, with simple and fast engineering as well as purposeful and speedy commissioning, for example using the Festo Automation Suite. This ensures seamless connectivity from the field level to the controller.

Smart products as the prerequisite for digitised automation
More and more Festo components are equipped for digitalisation, whether smart, communication-enabled products like the Motion Terminal VTEM, the energy efficiency module MSE6, the servo drive CMMT or the modular electrical terminal CPX. Whether on edge directly on site, on premises within the company or via CPX-IOT to the cloud, you obtain data that you can evaluate historically or in real time with the help of the Festo dashboards.

Collecting, aggregating, evaluating and using data: the Internet of Things
The evaluated data can then be used to make improvements. You can take advantage of this right now by increasing both the process reliability in terms of the overall equipment effectiveness (OEE), and the energy efficiency. This approach is also interesting for the design of new machines.

Standardisation is an indispensable prerequisite
A key consideration for Industry 4.0 is optimal interoperability in all areas. This can be achieved with Festo products through the creation of an administration shell that allows an individual digital twin of the product to be called up at any time. This digital twin stays with the product throughout its lifecycle; it facilitates a risk-free design and enables training on a digital product as well as simplified and correct spare parts procurement.

Rapid learning by doing thanks to artificial intelligence
The use of artificial intelligence considerably shortens learning times. Intelligent systems optimise processes and open up new perspectives. Festo is driving three areas here: system optimisation, process automation and predictive maintenance. This enables processes to be automated and accelerated. An example is the body-in-white construction in the automotive industry where a large number of pneumatic clamps are controlled via a valve terminal. By monitoring the process, anomalies from the normal state can be detected at an early stage. Timely replacement means that production can be continued without losing any time.
Festo App World – for greater flexibility and productivity

Apps for products
Are you looking for apps for your Festo products? Discover the possibilities and purchase Motion Apps for the Festo Motion Terminal VTEM, software libraries for the handling system YXMx or add-ons for the servo press kit YJKP.

Apps by functions
Not sure exactly what you are looking for? You can browse our apps by function: motion, condition monitoring, design tools or maintenance management. This is where you will find Smartenance, the digital maintenance management, where you can create electric and pneumatic circuit diagrams on your PC using the FluidDraw app, get preconfigured dashboards for the Festo CPX, CMMT and other Festo products or the Schematic Solution for complete creation of EPLAN projects at the push of a button.

It couldn’t be easier!
Log in with your Festo account, select the digital product you want and add it to your basket.

If you aren’t authorised to make purchases, just forward the basket to the right colleagues.
Purchase apps or view your order history in the Festo App World. It is the perfect place to discover apps, cloud products and software libraries for your PC, mobile devices and Festo products. Purchase, download and get started right away!

Find out more:  
www.festo.com/appworld
The perfect control cabinet for water technology in just a few minutes.

The Cabinet Guide Online revolutionises the engineering process for individual control cabinet solutions in water technology; from now on, configuring and ordering will be smart and intuitive. It guides you through the configuration process step by step by asking simple questions about the application, so you don’t even need in-depth knowledge of automation technology. It suggests a solution straight away along with the price and delivery time. The control cabinet is delivered fully assembled and tested, with CAD data and EPLAN circuit diagram, saving time and costs in areas other than just engineering. Everything fits perfectly!

- For actuating 4 ... 20 process valves
- Up to 80 digital and 16 analogue I/Os
- Right housing size, material and equipment for the application and installation location
- Various fieldbus protocols
- With/without filter regulator
- Optional with manual operation

Pneumatic and electric circuit diagrams made easy – a perfect fit!

FluidDraw is the perfect engineering tool for quickly drawing and documenting electric and pneumatic circuit diagrams for complete systems. You have direct access to the catalogue and online baskets you saved at Festo. You can import additional databases and use the standardised symbol library to DIN ISO 1219 and EN 60617 for even greater convenience. You benefit from evaluation functions and ready prepared assembly drawings.

Especially interesting is FluidDraw 365, a software subscription that means you always have the latest version. You get all the upgrades, for example to version P7 or higher, and all the updates for the current version.

The benefits of the FluidDraw 365 annual subscription
- Flexible: maximum period of 12 months
- Economical: low investment costs – simple annual cost calculation
- Current: all updates and upgrades are included

A real time saver! Create EPLAN projects at the push of a button.

This circuit diagram service is unique to Festo. Schematic Solution for EPLAN projects provides complete documentation for your configured solutions in next to no time. Simply enter the order code and receive the complete plan in just a few minutes – error-free and trouble-free. Instead of tedious searches, downloading and piecing together individual components, all the hard work is done for you, cutting the amount of time required from several hours to just a few minutes. This service is available in our App World at www.festo.com/appworld. Under Apps, select the Engineering Tools option.

- Intuitive, fast and reliable, error-free documentation at the push of a button
- Full mechatronic layout of configured products like CPX, VTSA and MPA
- Reliably automated in accordance with the standards IEC 61355, IEC 81346, ISO 1219

→ www.festo.com/cabinets-water
→ www.festo.com/fluiddraw
→ www.festo.com/eplan
The right handling system in just 20 minutes.

The online engineering tool helps you to select, configure and order your handling system and guides you to the right solution in record time. You will find everything in the Handling Guide Online, from 1D to 3D handling systems to highly dynamic and compact systems. In addition to the documentation, you also get commissioning files with your order. To reduce the workload of your staff you can book our commissioning service at the same time.

- Minimum engineering effort, no need for detailed product knowledge
- Immediate net price for reliable cost calculations
- Extended product selection for demanding requirements on dynamic response and installation space
- Commissioning files can be downloaded or professional commissioning service can be ordered
- Access to device information directly from the software

Everything included: parameterisation, programming and maintenance!

With the Festo Automation Suite you can commission the entire drive package, from the mechanical system to the controller. It’s perfect as a simple, efficient and seamless approach to automation design. The basic functionalities of all Festo components are already integrated into the software. You can customise the software precisely to meet your needs using plug-ins and extensions that you can install directly from the program. The Festo Automation Suite demonstrates its strengths in particular with the servo drive CMMT-AS and the automation platform CPX-E.

- Only five steps to get a drive system up and running
- Greatly simplified integration into the control program
- Customisable through device-specific plug-ins
- Optional CODESYS add-on for motion control up to robotic functions
- Access to device information directly from the software

The simple, effective way to find the right electric drive solution!

PositioningDrives speeds up your project engineering and prevents design errors. By choosing the right components, energy efficiency is also improved. Designing drive mechanisms, gear units and motors separately can increase the safety factors and result in oversized electric drive systems. After entering just a few application parameters, you receive several suggestions from which you can choose the right solution.

You then simply save the results list containing detailed information such as the motion profile, dynamic load data and product characteristics right up to the bill of materials.

- Combines mechanical and electrical systems in various sorting options
- Visual representation of axis, motor/gear unit and controller
- Degrees of utilisation as a bar chart
- Prevents design errors
- Improves energy efficiency
- Complete project documentation in the chosen language
Always be well informed throughout the entire lifecycle of the product.

The cloud solution from Festo supports you throughout the lifecycle of your system – now also with dashboards for the CPX-MPA. You can see everything at a glance: asset data, data for preventive maintenance, diagnostic functions, error displays in clear text, simplified process data analysis and fault finding. This enables you to detect anomalies early on and take the right measures before a failure occurs.

- Preconfigured and ready to install
- Specific widgets and graphs for the top three applications:
  - Energy monitoring
  - (Preventive) maintenance
  - Process KPIs and OEE
- Access to historical data going back one year
- No additional software or programming required
- Support for over 60 modules

Saving energy is easier than ever before – at the push of a button.

MSE6-E2M automates saving energy in compressed air systems. The intelligent module fully automatically monitors and regulates the compressed air supply in both new and existing systems. The preconfigured, ready-to-install dashboard with specific widgets and graphs for energy monitoring shows you immediately what the energy status is and how you can achieve CO₂ savings.

- Preconfigured and ready to install
- Simplifies certifications
- Access to historical data going back one year
- New cloud technology with web interface
- No additional software and no programming required
- Cloud-based database for fast and efficient analysis of long-term measured values

Preventive maintenance with cloud-based condition monitoring!

The Festo dashboard for the servo drives CMMT-AS and CMMT-ST shows you relevant status information and process data so you can continuously and conveniently monitor motor temperature, current, torque and more. The continual recording of the energy consumption supports consistent energy monitoring.

The preconfigured dashboards make it possible to track live data from the Festo component via a browser. The error status and errors are logged. Access to the historical values enables you to identify trends.

Benefits for OEMs:
- Overview of whether the machine utilisation over time was in line with the specifications
- Time line to indicate over- or undersizing of the components

Benefits for end users:
- Precise root cause analysis in case of fluctuating product quality
- Predicting necessary maintenance
- Diagnostics for shorter reaction times and therefore greater availability

Dashboards for the valve terminal CPX-MPA
Dashboards for the energy efficiency module MSE6-E2M
Dashboards for the servo drives CMMT-AS/CMMT-ST

Greater overview than ever before – with the
digital logbook for your machine.

Fully integrated: Smartenance Advanced is
the perfect addition to the Smartenance
digital maintenance manager. With the
familiar interface and intuitive user guidance,
you will find all the relevant information
about your machines and systems in one
tool. The maintenance and service data
for system operators and maintenance staff
is optimally visualised. The digital logbook
is fully integrated and manufacturer-
independent.

You can finally say goodbye to unclear repair
messages and paper documentation, since
your repair documentation is centralised in
one place. You can thus record all the repair
work on a machine. As well as making it
easier to search for specific repairs, you can
also create fault messages extremely quickly.

• Optimised shift handover thanks to clear
documentation
• Internal knowledge store
• Overview of fault messages
• Better preparation for maintenance staff
• Increases accessibility and efficiency
throughout the company

Paperless, transparent and efficient for
production managers and system operators!

Smartenance offers paperless digital
maintenance management with centrally
managed data in the cloud and fast updates.
You schedule your system maintenance and
then evaluate it. You can create maintenance
tasks and schedules easily and flexibly, and
view them directly in Production via the
mobile app. The intelligent user management
for fast collaboration within the team
increases the efficiency of your maintenance
management. Smartenance is quick and easy
to install, self-explanatory and a simple and
cost-effective introduction to digitalisation.

• Digital maintenance management directly
on the shop floor
• For auditors: detailed proof at a click
• Cloud-based: mobile access from anywhere
• Feedback function: quick and easy
   collaboration in the maintenance team

The digital life cycle and collaboration
platform for your components.

Centrally manage all your machine and
system components as well as their lifecycles
for the full service life of the product! Festo
Projects quickly provides you with correct,
high-quality and configuration-specific
product data. You can specify the data based
on the relationships between the control
system, fieldbus and components. You are
always up to date, even when products
change or are updated. In addition, you can
exchange the projects internally or send them
to us via e-mail.

• Permanent, paperless documentation
  of your projects
• Central project archive with functions
  for uploading files and for sharing with
  colleagues
• Easily linked with all customer tools from
  Festo
• Your step towards a digital twin for
  Industry 4.0
• Lifecycle management with data that is
  always up to date

www.festo.com/smartenance

www.festo.com/smartenance

www.festo.com/projects
The future of maintenance management: made easy with Smartenance

Always available, up to date and ready for use, Smartenance brings maintenance management into the digital age. In the Rohrbach plant in Germany, the mobile digital maintenance manager is used to maintain a system with 17 robots. The “digital logbook” transforms Smartenance into a knowledge and communication platform for your maintenance team.

Unlike paper maintenance schedules, the Smartenance maintenance manager from Festo doesn’t “forget” upcoming deadlines. The mobile app for smartphone or tablet sends automatic reminders to production managers and system operators, provides information about the duration and explains step by step what needs to be done. Since it is a cloud-based system, any missing information can be easily added later by the human maintenance manager on a PC and is then permanently available.

**Safety in maintenance is now finally a matter of course**

Smartenance doesn’t need to be installed and can be used directly in a browser and as a mobile app. It also provides photos and step-by-step instructions to make maintenance tasks easier and safer to perform. On-site users can see exactly what needs to be done and where, even without a paper maintenance schedule. Smartenance is manufacturer-neutral: regardless of the system and manufacturer, the app will manage the servicing and maintenance.

**New system for manufacturing different variants**

One of the biggest and most complex systems that is maintained using Smartenance in the Rohrbach plant is for manufacturing different variants. Since November 2019, it has manufactured several thousand different cylinder variants in many sizes and with different strokes, from the round cylinder DSNU and the compact cylinder ADN to the standards-based cylinders DSBC, DSBF and DNC. The average manufacturing time per cylinder is 25 seconds.

**Reliable and efficient thanks to digitised maintenance**

The 17 robots used in the system are regularly serviced by six employees who are responsible for a total of 120 maintenance tasks. The effort involved in documenting this mammoth undertaking is huge. The team relies on Smartenance for maximum reliability and efficiency in its maintenance tasks. Volker Neumüller, an employee in the Maintenance Processes division, recognised the benefits of digitised maintenance and was the driving force behind its use in the plant. Production managers can now define the tasks more easily and quickly, and use illustrations, videos or specific data sheets to prepare them so they are easier for employees to understand.

**Positive feedback and further use**

Volker Neumüller reports: “To ensure that Smartenance was tested on a broad basis, we defined a range of pilot systems, from a simple assembly workstation to complex production systems and assembly lines. The signs were good right from the beginning. Now, 106 users maintain and service 160 systems in Rohrbach and Wiebelskirchen. We continuously provide feedback so that the digital tool can be further improved.” Employees are regularly trained in order to enable them to maintain additional systems as quickly as possible using Smartenance.
A total of 17 robots are used. Several thousand different cylinder variants are manufactured on the system.

All maintenance tasks can be conveniently viewed on the tablet using the Smartenance app.
Gentle, fast, reliable: wafer handling with the Motion Terminal

**Gentle and reliable wafer handling**
The handling system with Z- and X-axis uses a compact cylinder AEN and a linear drive DGC. They transport wafers gently and reliably. It also includes the Motion Terminal. The VTEM is controlled by two Motion Apps: “Positioning” and “Proportional pressure regulation”.

**Two apps for gentle and precise movement**
The “Proportional pressure regulation” app controls the advance movement of the drive and regulates the vacuum used to grip the wafers. The “Positioning” app moves the axis quickly and with minimal vibration to the next belt using full stroke measurement – intermediate positions are possible. The “Soft Stop” Motion App with partial stroke measurement is ideal if the focus is on fast retraction with low end-position force.

**A new movement offered by the VTEM: regulating vacuum**
In the past, extremely precise vacuum regulation was only possible with very complex, indirect regulation. The “Positioning” app now also simplifies the combination of transporting fragile items and fast cycle times. By defining specific limits, the travel times can be reduced. It is also possible to realise intermediate positions. The integrated system approach greatly reduces the amount of installation space required.

1. “Positioning” Motion App
2. “Proportional pressure regulation” Motion App
3. Single-acting compact cylinder AEN
4. Linear drive DGC
Digitised pneumatics like the VTEM is making pneumatics more flexible than ever before. The reason for this is that the apps define the function, while the hardware remains the same. This means that you can execute different tasks with just one valve and operate 16 pressure regulation channels with eight valves. This significantly reduces the amount of work required.

**Three variants for lots of applications**
Digitised pneumatics opens up previously unimagined options, not least because you can call up numerous functions in parallel.

**New: VTEM 2-way variant**
Whenever extremely small dimensions need to be combined with full functionality. Lightweight, small, ideal e.g. for robot arms.

**The professional 8-way variant**
The 8-way variant is ideal if you want to execute a large number of complex functions in parallel and/or sequentially. With multi-pressure regulation you can regulate up to 16 pressure channels individually and combine movement with pressure regulation functions. Ideal for permanent installation.

**New: “Positioning” app**
Position freely over the entire working stroke and control the cylinder movement using limit values for the speed, acceleration and jerk parameters. For selected diameters up to strokes of 300 mm. Available on request.

**“Proportional pressure regulation” app**
Save space and cut hardware costs by combining the functions of two individual and independent proportional pressure regulators in just one valve – including with vacuum!

**Find out more:**
→ www.festo.com/motionterminal
Lift assist 4.0: maximum flexibility with the Motion Terminal

Dotec, based in the Dutch town of Joure, manufactures lift assists. They provide support when lifting, moving and positioning heavy and bulky objects. The complex systems require a lot of control and pneumatics to be able to respond quickly and feel intuitive. System control is now implemented for the first time with the VTEM.

Dotec wanted to take a major step forward with its new generation of lift assists. It was looking for solutions that would add intelligence to the lift assists and integrate a large number of functionalities in one piece of hardware. In addition, it wanted the lifting and setting down motions to be gentle and smooth, without any stiction or jerking, while operation for the users had to be intuitive. A final requirement was that Dotec technicians would be able to maintain the system remotely instead of carrying out costly on-site commissioning and maintenance. Their research led Dotec to the Motion Terminal VTEM.

Lift assists for Industry 4.0
The first pilot model was a drum handler with clamping and tilting function and an air balancer for vertical movements. “In this setup we make optimum use of the Motion Terminal for analogue and digital signals,” says Albert Smit, Development Manager at Dotec. The Motion Terminal is the first valve terminal in the world to be controlled using apps. “The Motion Terminal lets us realise completely different functions. This significantly reduces our costs for customer-specific solutions. The Motion Apps are easy to integrate and can be activated and deactivated as required. The Motion Terminal is therefore the heart and brains of our lifting systems,” says Smit. One of the first customers is using the drum handler to transport differently shaped metal sheets by means of vacuum.

Apps for greater ease of use
During the upwards movement, the focus is on tilting and clamping as well as adjusting the centre of gravity for safety. Once the targeted point has been reached, the pneumatic pressure is decreased again and the load is lowered at the required spot. Several apps are used for this motion: the “Proportional pressure regulation” app ensures that the entire lifting sequence is quieter and gentler than in any other previous solution. Soft Stop, the second app, enables the load to be set down quickly yet gently.

Flexible solution
For Albert Smit, the biggest benefit of the Motion Terminal is its enormous flexibility. “With our highly customised solutions, we never quite know in advance how something will develop in practice at the customer’s site. That often made commissioning problematic in the past. The Motion Terminal gives us great flexibility and lets us monitor the systems remotely or activate new functionalities.”
The app-controlled motion terminal ensures maximum flexibility in all movements, from clamping and tilting to vertical movement. Everything, including setting down, is gentle and smooth.
Protect and save: reduce compressed air consumption in the system by 25%

Protecting the climate and at the same time saving costs
Sustainable action, legal climate protection requirements and the goal of CO₂-neutral production are factors forcing us to use energy even more efficiently. The more efficiently energy is used, the better it is for the environment and the budget. You also want to curb high energy costs. But how and where can energy best be saved?

Our PreAudit shows you the way!
In the Quick Check, the energy efficiency experts from Festo use spot checks to analyse every part of your compressed air system.

1. Assessing compressed air preparation, compressor utilisation and compressed air preparation
2. Analysing compressed air quality
3. Measuring the pressure drop in the network
4. Example of an air consumption analysis
5. Example of leakage detection on a selected system
6. Auditing a machine for the energy-efficient use of its pneumatic components

You then receive a detailed report with full documentation of the results, including reported CO₂ emission values, and recommended actions in order of priority. You can immediately identify the weak points and possible savings and know exactly which measures are most likely to bring results in your compressed air system.

Quick wins through quick checks
Reducing the pressure level, eliminating leakages or shortening tubing: it is often the small measures that have a big impact.

The PreAudit forms part of the comprehensive “Festo Energy Saving Services” portfolio, which is certified to DIN EN ISO 11011.

Valuable data for your energy management
For an extensive analysis, we recommend the Compressed Air Energy Efficiency Audit, adapted to your individual needs. In contrast to the spot checks of the PreAudit, the entire plant is checked for leakages and all machines are analysed. You can transfer the generated data directly to your energy management system in accordance with ISO 50001, or use it in your sustainability report in line with GRI or GHG.
The compressed air energy efficiency PreAudit is the first step on the road to saving energy, and ultimately you also benefit from reduced CO₂ emissions. It allows you to combine long-term climate protection with reduced costs.

Greater energy efficiency thanks to an integrated approach
You achieve maximum efficiency when you adopt a comprehensive approach. We can support you in the following four relevant areas of application:
- Engineering
- Products and solutions
- Services
- Technical education

Find out more:
- www.festo.com/energysaving
- www.festo.com/energyefficiency
Simply part of the solution.
The Festo ★ core product range

Even better: the upgrades to the core product range
Benefit from our upgrades to the core product range, whether to profile cylinders, round cylinders, slide units or twin cylinders. And perform simple movements with ease using the components from the core product range, exactly as needed in your application.

The hallmarks
- Very compact design
- Precise movements
- Easy to operate
- Convenient to adjust
- Top quality at an attractive price

Quick delivery
Always in stock worldwide
Attractively priced
In our core product range, you will find components from the entire control pyramid, from the controller to the actuator, for performing simple movements reliably and precisely. This includes very compact drives, standards-based drives and streamlined drives. High quality, in stock worldwide, delivered promptly and attractively priced.

Install and get started
Some of the components have self-adjusting functions; this means no more time is wasted making tedious adjustments.

Durable and well designed
The durable, well-thought-out and visually appealing products in the core product range reliably help you to prepare your production department for future application requirements.

Fast delivery – even in large quantities
You can conveniently place your order in our Online Shop. The products from the core product range are marked with a star so you can find them quickly. Select the products, place them in the basket, confirm the order and you will receive them before long.

Find out more:
www.festo.com/corerange
What makes this round cylinder so invaluable are the many small details.

The small DSNU-S saves space. The self-adjusting cushioning PPS makes for very fast installation, since time-consuming adjustment of the cushioning is no longer required. This saves you time and ensures the DSNU is gently cushioned when retracted. The result is dynamic, faster cycles and a long service life. The DSNU does its job reliably.

- Space-optimised
- Self-adjusting cushioning
- Long service life
- Good mix of materials

Compact, more compact, ADN-S: the smallest of the compact cylinders.

The compact cylinder series ADN-S is optimised in terms of installation space. Its strong point is its design, which is ideal for simple pressing and holding functions in relatively clean environments. In particular the small diameters of 6 and 10 mm are perfect for the electronics industry and small parts assembly, where they simulate micro movements for testing control buttons, keyboards or similar.

- Extremely space-saving
- Easy to assemble
- Very lightweight

The smallest of its kind on the market, but big in performance and precision.

A real space-saver: the compact and short slide unit features integrated cushioning components and sensor mounts. The mini slide delivers maximum precision across the entire stroke thanks to the combination of yoke and slide in one part and the hard-wearing recirculating ball bearing guide underneath it. The large range of cushioning options together with the use of position transmitters opens up numerous applications. The DGST can also be operated without additional cushioning to save costs.

- The most compact slide drive on the market
- Powerful
- Highly precise
The shortest of its kind – ideal for tight installation conditions!

The flat and extremely short twin cylinder DGTZ is equipped with mounting holes, sensor mounts and supply ports for maximum variation in a range of applications. And since it is the shortest of its kind, you have unlimited options to use this power pack in your applications, including for battery production.

- Extremely short
- Copper-free
- Mounting options on three/four sides
- Stroke adjustment over 10 mm possible

Small but with a big gripping force of up to 970 N!

The parallel gripper DHPS in sizes 6 ... 35 mm is a new addition to the core product range. It combines high gripping force and compact dimensions with an opening stroke of up to 25 mm. The stroke per gripping finger is 2 ... 12.5 mm. The T-slot guide of the gripping jaws is durable and precise. It is also flexible in application: it can be used as a double-acting or single-acting gripper, as a compression spring to boost or back up gripping forces, or as an external and internal gripper up to an operating frequency of 2 to 4 Hz.

- Gripper jaw centring options
- Max. repetition accuracy ≤0.02 mm
- Gripping force backup
- Internal fixed flow control
- Wide range of options for mounting on drives

Maximum safety for braking and holding!

The holding brake DACS stops movements safely and reliably, if necessary even at full speed. And then reliably holds the movement. The unique holding mechanism of this friction brake with pressure control and boosted by spring force is validated by the TÜV type test and a declaration of conformity. The brake is available in combination with standards-based cylinders to ISO 15552 with the type code DFLC or DFLG.

- Outstanding holding force
- Compact design
- Switching status monitoring
- Maintenance-free
- Tested and documented in accordance with EC Machinery Directive 2006/42 EC
Moving heavy weights extremely easily with the balancer kit YHBP

A solution for handling doors, wheels and batteries that is highly flexible, safe and easy to use. These were the requirements for a new generation of balancer systems set out by Kia Motors Slovakia for the designers at MK-Tech s.r.o. The balancer kit YHBP from Festo was the perfect fit.

Highly mobile door manipulator
The manipulator for installing doors is based on a column structure that is mounted on a suspension device and rotates on its own axis with two degrees of freedom. The vertical movement is provided by a pneumatic cylinder with a working stroke of 400 mm. Loads of up to 100 kg are moved by precise adjustments on the intelligent handle.

The requirement: one solution for many scenarios
“Flexible solutions that can be easily adapted to different requirements will be in ever greater demand in the future,” explains Lukáš Michalík. “We weren’t aware of any other system on the market that offered us such a wide range of options.”

Anton Gérer, ATP Journal Slovakia
(abridged version of the article)
A standard balancer system for highly customised applications in the automotive industry here shown being used to install doors.
A simple concept. With great results.
The Simplified Motion Series

Simplified Motion Series combines the simplicity of pneumatics with the advantages of electric automation. Are you looking for electric solutions for very simple motion and positioning tasks, but that are as easy to commission and parameterise as pneumatics? Without the complex commissioning required by classic electric systems? Then the integrated drive solutions from the Simplified Motion Series are the perfect solution for you!

The simplified functionality makes the drives ideal for simple movements between two mechanical end positions without having to sacrifice optimised motion characteristics, gently cushioned advancing and retracting into the end positions or simplified press-fitting and clamping functions.

Operation without any software in accordance with the plug and work principle via digital I/O (DIO) includes the basic functionalities of adjusting speed and force for press-fitting/clamping and selecting the reference end position and cushioning path. Extended functions are possible via IO-Link®.

- Simplified functionality for simple movements
- Integrated products eliminate the need for a control cabinet
- Quick and easy commissioning without software
- No special expertise required for commissioning
Our experts aim to bring simplicity to electric drive technology by making it easy to connect and operate the integrated drive and the ability to commission it without the use of software. Yet without compromising on state-of-the-art technology. And with digital I/O (DIO) and IO-Link® integrated as standard.

**Extended functions via IO-Link®**
All motion parameters can be set remotely, copied to other drives and saved as a backup. Process parameters such as distance covered and number of movements can be read out and transferred to the cloud, or used for preventive maintenance.

In addition, the movement can be stopped at a freely definable position between the end positions without the need for external stops.

IO-Link® is ideal for your communication needs and makes the products from the Simplified Motion Series even more flexible.

**Basic functions/parameters**
- Speed for “out” and “in” movement
- Drive force in the “out” position
- Setting the reference end position
- Setting the position “Start force-controlled movement”
- "Demo" manual start (similar to manual override)

**Demo mode directly on the drive**
Testing of all movements and functions. This means that commissioning is possible even before the software engineer has connected their laptop.

**Simplified Motion Series Solution Finder**
Adjusting, selecting and ordering is made easy with the Solution Finder, since you can configure the correct product for every simple motion.

Find out more:
→ www.festo.com/sms
An extremely compact and cost-effective complete solution.

The spindle and toothed belt axes ELGS-BS/-TB with internal, protected recirculating ball bearing guide are ideal for precise XY movements, for example in assembly systems, small parts handling and test and inspection systems. The unique “one-size down” assembly system ensures an optimum ratio of installation space to working space. This transforms the ELGS into a handling system with the most efficient use of space.

Spindle axis ELGS-BS
- High-performance spindle with ball screw
- Three sizes 32/45/60, max. 800 mm stroke

Toothed belt axis ELGS-TB
- Resilient toothed belt with long service life
- Two sizes 45/60, max. 2000 mm stroke

Common features
- Stainless steel cover strip protects the guide and spindle or toothed belt
- The clean look makes it easy to clean and less prone to contamination

Mini slide EGSS
Low price, high performance whenever you need precise Z movements.

The powerful and resilient mini slide with the smooth-running spindle is an extremely cost-effective complete solution for vertical Z movements or guided linear individual movements. Regardless of the mounting position, whether in assembly systems, small parts handling or test and inspection systems. Its unique “one-size down” assembly system ensures an optimum ratio of installation space to working space, ideally in combination with spindle and toothed belt axes ELGS. The resilient and precise internal linear guide of the yoke slide easily absorbs lateral forces and offers the best resistance to torsion at high torques.

- Three sizes 32/45/60, max. 200 mm stroke
- Durable and wear-resistant internal ball screw
- Standardised interface for the electric rotary drive ERMS
- Direct mounting without the need for adapters
- High dynamic response and short cycle times thanks to a reduction in the weight of the Z-axis

Toothed belt axis ELGE
Very economical solution for simple tasks with low requirements.

The toothed belt axis with recirculating ball bearing guide offers very good running performance at medium torque load. As an attractively priced complete solution with a cost-optimised mechanical design, it is ideal as an economical system for simple tasks with strokes of up to 800 mm and comparatively low requirements for mechanical load, dynamic response and precision.

- Reliable thanks to optional end-position sensing with proximity sensors PNP/NPN
- Running performance of 5000 km
Electric cylinder EPCS

Extremely cost-effective, yet powerful and flexible: the electric cylinder EPCS.

The EPCS excels at quick and precise positioning tasks over distances of up to 500 mm thanks to the smooth-running ball screw. It is perfect for linear individual movements in any mounting position and especially for vertical Z movements in handling systems. Its compact dimensions are ideal if you need to make the best use of the installation space, whether in assembly systems, small parts handling, the electronics industry or test and inspection systems. The unique “one-size down” assembly system ensures space-saving mounting of the electric cylinder on the linear axis ELGS without the need for additional adapters.

- Three sizes 32/45/60, max. 500 mm stroke
- Safe movement through flexible position sensing
- Pressure supply port with screwed-in sintered plate as standard
- No emissions and no immissions, reliable operation thanks to ducted pressure compensation connection

Rotary drive ERMS

ERMS makes it easy to swivel and position parts and workpieces.

The rotary drive ERMS is the cost-effective solution package for swivel tasks involving higher loads and for simple rotary indexing table applications such as at manual workstations. The sturdy bearing of the rotary table is impressive, particularly when higher forces and torques have to be absorbed. With the standardised mounting interface it can be connected directly to the electric mini slides EGSL, EGSC and EGSS. This is what simple, yet highly economical solutions for swivelling and positioning parts and workpieces in industrial applications look like today!

- Two sizes 25 and 32
- Swivel angle 90° and 180°
- Sealed hollow shaft for the integrated through-feed of cables or tubing

Electric standard gripper EHPS with IO-Link®

Powerful for simple tasks!

The EHPS with IO-Link® communication is ideal for use in single-energy, electric systems or in applications where air is not permitted and a clean environment is required.

The IO-Link® communication interface enables the gripper to offer extensive additional functions. The benefits of the EHPS with IO-Link® are as follows:

- Diagnostic functions and predictive maintenance
- Variable gripping modes for optimising the cycle times
- Integrated and virtual (teachable) proximity sensors
- Data storage, replacement of grippers during operation without manual parameterisation
- Intuitive configuration of the IO-Link® device via the IODD
- Standardised communication interface
The latest generation of servo drive systems with optimised prices and sizes.

The CMMT-AS is an integral part of the Festo automation platform. The compact servo drive for point-to-point and interpolating motion is suitable for different Ethernet-based bus systems and can be seamlessly and directly integrated in the system environments of various manufacturers. Commissioning takes just a few minutes with the Festo Automation Suite. The well-thought-out design ensures free and convenient access to the connections as all connections and the control unit CDSB are at the front and on top of the drive. Its compact design and optimised connection technology enables easy and space-saving installation in the control cabinet with much shorter connection times.

- Optimally with servo motor EMMT-AS
- One of the most compact servo drives on the market
- Configure standard safety functions without software
- Auto tuning supports easy commissioning and automatically optimises the control response of rotary and linear motions

Very efficient for tasks with low power requirements.

The CMMT-ST is the little brother of the CMMT-AS and ideal for positioning tasks as well as point-to-point and interpolating motion solutions with low power requirements of up to 300 W. It is suitable for Ethernet-based bus systems and can be seamlessly and directly integrated in the system environments of many manufacturers. Commissioning the CMMT-ST takes just a few minutes with the Festo Automation Suite. Though more compact and much lower cost than the new CMMT-AS, the connection and communication concept, functional modules and standard safety features remain unchanged. The consistent control concept means that the CMMT-AS and CMMT-ST can be perfectly combined as a drive for both large and small axes.

- Optimised for use with stepper motors like the tried-and-tested EMMS-ST
- Power up to 0.3 kW and technology with 24 ... 48 V
- 50% more compact than the smallest CMMT-AS

For challenging tasks: EMMT-AS. Extremely economical: EMMB-AS.

The AC synchronous servo motor EMMT-AS for demanding and dynamic applications enables very good control and path accuracy for positioning tasks thanks to its extremely low cogging torque. The ‘electronic rating plate’ contains all the important motor data, and this enables automatic parameterisation of the servo motor.

- OCP (One Cable Plug) one-cable solution for easy, reduced installation and greater clarity
- Single-turn or multi-turn absolute encoder

The compact and particularly economical synchronous servo motor EMMB-AS for simple positioning tasks in the electronics industry and small parts assembly. Perfectly tailored to the modular system of the axes ELGC and mini slide EGSC.

- Digital single-turn absolute encoder system as standard
- Optimised connection with motor and encoder cables of up to 10 m
Cost-effective, powerful and very flexible:
the EPCC for simple positioning tasks.

The ball screw enables the four sizes of this
electric cylinder to position precisely and
quickly over a distance of up to 500 mm. Its
compact dimensions are ideal if you need to
make the best use of the installation space,
for example in assembly systems, test and
inspection systems, desktop applications,
small parts handling and the electronics
industry. The compact ball screw with
integrated coupling and double bearing
ensures quiet spindle operation and precise
positioning combined with reduced
installation space. The unique “one-size
down” assembly system ensures space-
saving mounting of the electric cylinder on
the linear axis ELGC without the need for
additional adapters.

• Weight-optimised design ideal for handling
  systems
• Reliable because of flexible position
  sensing
• No emissions, no immissions thanks to
  optionally ducted pressure compensation
  connection, screwed-in sintered plate as
  standard

Electric rotation, hybrid gripping?
The choice is yours!

Infinite electric rotation – and electric or
pneumatic gripping. Ideal for small objects in
laboratory automation or in the electronics
industry. The assembly module with Z comp-
ensation automatically adjusts to the thread
pitch of the caps without moving the Z-axis.
When powered by motor controller CMMO-ST,
it allows workpieces of an unknown size to be
gripped and rotated with variable levels of
force.

Rotation: electric
• Infinite, with encoder for absolute
  positioning
• Max. torque: 0.3 Nm
• Speed: up to 120 rpm at full torque

Gripping:
• Electric with 2x 5 mm or 2x 15 mm stroke or
  pneumatic with 2x 5 mm stroke
• Opening/closing time: <0.4 s for 2x 2 mm
  stroke
• Electric: with encoder and gripping force
  retention

Module:
• For a payload of up to 250 g
• Compact: 48 x 63 x 172/145 mm
40,000 genetic tests a day – highly productive seed improvement

The Dutch company Synchron Lab Automation has achieved a breakthrough in the extraction of plant DNA for seed improvement. Its new system can run up to 40,000 genetic tests in 24 hours, up from 3,000. Festo provided extensive support for the project with engineering expertise and hardware.

For Synchron Lab Automation, a provider of laboratory automation solutions, developing and manufacturing an automated DNA extraction system was the first time it worked closely with Festo. “Up until then, we had focused exclusively on the concept for a solution,” explains Derk Wilten, owner and Managing Director. “The DNA-Cruiser is our first proprietary product, realised with engineering expertise and components from Festo.”

Identifying, transporting and extracting in record time
The system extracts DNA from shredded plant material. The process begins with a microwell plate magazine which accommodates up to 400 plates, 200 for input and 200 for output. First, a bar code reader scans all the microwell plates. Electric axes EGC, in combination with semi-rotary drives DRRD and grippers DHPS, pick up the microwell plates and place them on carriers, which move them through the various stations. The DNA is separated from other materials by adding so-called magnetic beads (coded metallic microspheres) and attaches itself to the microspheres, while the rest of the material floats in the microwell plates. The microwell plates pass through several washing stations, until all that remains is clean DNA. The pipetting head is lowered by an electric slide EGSC. The final step is DNA extraction. Electric axes EGC and electric slides EGSL are tasked with handling the pipetting head. Each plate has 96 samples. The extraction process takes 20 minutes. A new plate is started every 2.5 minutes. The high-productivity DNA extraction system is used, for example, by the Dutch company VHL Genetics for seed improvement.

Platform technology: open to other applications
The modular controller CPX-E and valve terminals VTUG with IO-Link® are used to control the system. CPX-E as a remote I/O system or PLC with EtherCAT master controller and motion controller are used for the easy combination of the control unit and electric drives. The machine has a serial and modular structure, and operates almost entirely without any switching delays. The open platform technology means that the system can be customised to also clean human and animal cells.

Niels Kruize, responsible for business development, is pleased that his confidence in the partnership has been confirmed. “It provides us with tremendous added value and is a truly cooperative partnership. But we also discuss using new technologies with Festo – and get lots of new inspiration.”

“The cooperation with Festo offers us enormous added value.”

Niels Kruize, Business Development
Synchron Lab Automation
An electric slide EGSC lowers the pipetting head to add liquid to the microwell plates at several washing stations.
Silent and dynamic regulation – with the proportional pressure regulator VPPI

Preset or custom? Both!
The VPPI lets you regulate pressure dynamically and precisely by specifying a setpoint. Three preset values are possible: for small or large volumes or continuous flow. A customer-specific preset value enables you to achieve a suitable, independent control behaviour. This preset value also speeds up the adjustment of the setpoint value, since the regulator adapts to the application.

Highlights
• Silent
• Flexible
• Highly dynamic up to 30 Hz
• Precise and stable
• Many pressure ranges: −1 ... 12 bar

Full graphic TFT display
All the necessary settings can be carried out via the built-in display.

Optimised performance thanks to many pressure ranges
The VPPI can be used for vacuum applications as well as tasks up a pressure range of 12 bar.

Highly flexible and automated
When the VPPI detects a PWM signal, the internal control electronics automatically adapt.
The precise and highly dynamic proportional pressure regulator VPPI is directly actuated in all nominal widths, with no need for preliminary stages or pilot valves. The reason for the dynamic response is the powerful, low-friction moving coil actuator. Thanks to the pressure compensation, even the larger nominal widths provide dynamic and precise regulation.

Ideal for many industry sectors
The VPPI is mainly used in these industries:
• Electronics industry and assembly technology
• Automotive
• Food and packaging
• Machine tools

Is your application on the list?
The VPPI is best suited for the following applications:
• Regulating pressure
• Testing
• Dispensing
• Pressing
• Press-fitting

Even greater flexibility is in the planning
The next features are already in the planning stage: an IO-Link® interface and a fieldbus connection to control the valves via CTEU.

Find out more:
→ www.festo.com/vppi
Suitable for oxygen – small and quiet with high flow rate!

The VEAEP regulates gas flows, whether oxygen, air, nitrogen or inert gases, safely and precisely. Since the piezo ceramics also maintain their current status in case of power failure, the valves offer outstanding process reliability. The high flow rate of up to 100 l/min at 6 bar makes the VEAEP ideal for portable or stationary ventilator breathing devices. The compact valve is also ideally suited for regulating the flow of the air that controls the revolutions per minute of compressed air drills used in dentistry and surgery. And it is not just perfect for use in medical technology, but also in applications in light assembly, the electronics and semiconductor industry, or the biotechnology/pharmaceutical industry.

- Piezo proportional valve with high flow rate and for high pressure ranges
- Power consumption ≤10 mW
- No self-heating
- Compatible with oxygen
- Small and lightweight

Extremely compact – and with high flow rate!

The proportional solenoid valve is a lightweight and compact 15 mm cartridge valve with a high flow rate. The VPWS regulates gas flows safely and precisely, whether oxygen, carbon dioxide, air, nitrous oxide or inert gases. This makes the VPWS perfect for use in ventilator breathing and anaesthetic systems, for example where respiratory gases need to be mixed with oxygen. It is also suitable for the electronics and semiconductor industry as well as for dispensing and filling protective gases in food production.

- Extremely small cartridge valve: 15 mm diameter, 30 mm long
- High flow rate of up to 210 l/min at 2 bar
- Full proportional characteristics
- Made of stainless steel, free from grease and oil
- Ideal for applications with minimal installation space or high cleanliness requirements

Maximum performance density and precision in the smallest of spaces!

With a width of just 7 mm, the VYKA doses extremely small amounts of liquid very precisely. The separating diaphragm made from high-performance polymers also makes it suitable for aggressive media. The low internal volume, which is easy to clean, and the FDA-listed materials mean the VYKA is excellent for use with very sensitive applications. The current control ensures maximum reproducibility of the switching behaviour. And the holding current reduction of the plug-in electronics prevents sensitive media from heating up. The related VYKB offers further variants in terms of sizes and materials.

- FDA-listed materials
- Developed to ISO 13485
- Also for aggressive media: reliable media separation
- Low power consumption with E-box with 3.53 W (pick-up phase) and 0.23 W (holding current phase)
- Extremely flexible thanks to 3/2-way, 2/2-way and 12 ... 26 V DC actuation
- For dosing and continuous flow applications in the smallest of spaces
Valve control module VAEM

Ergonomic and functional, durable and sturdy!

Whether finger lever valve, selector valve, hand lever valve or toggle lever valve, whatever kind of manual override you need, the valve series VHEF provides the right handles that are ergonomically shaped and made from materials that are comfortable pleasant to touch. Sturdy and durable – and easily replaced just in case.

- Precise mechanical system
- Sturdy metal housing
- Ergonomic and safe operation
- Low actuating forces
- Modern design

Manually actuated valves

VHEF

VTSA – ideal for maximum pneumatic and electrical function integration!

Valve terminals have always benefitted from function integration and the new modules, such as the new soft-start valve or the integrated vacuum generator, are no exception. The modularity of the grid design is now being further extended with voltage zones, including three with safe shut off. The extended bus system now permits up to 96 valve addresses. All in all, the VTSA enables you to adapt it fully to suit your requirements.

- Integrated PROFIsafe module
- Three external safe voltage zones
- Different variants of serial communication

Standards-based valve terminal VTSA

Controlling solenoid valves easily, precisely and quickly with holding current reduction.

With the VAEM, the pick-up and holding currents as well as the respective time constants can be defined independently for each channel. Since the VAEM is current controlled, the switching behaviour of the valves is extremely precise.

The module is ideal for high-precision dispensing applications. The resolution of the control signal of just 0.2 ms means that different dispensing volumes can be set very precisely in pressure-driven dispensing operations. The valves can be controlled via an external trigger signal, a GUI or the communication interface. Its compact form makes it an excellent choice not just for bench-top devices in laboratory automation, but also wherever solenoid valves are used.

- Reduces energy consumption and self-heating
- Independent and easy parameterisation of 1 to 8 solenoid valves
- Highly precise control of solenoid valves, thanks to current control unaffected by the temperature of the solenoid coil
- Interface for controlling and programming the parameters and for reading out the values or errors
Maximum precision at an attractive price
There are several reasons why we chose the VEAB,” recounts Ralf Roth, Managing Director and Project Manager for the test system. “It’s very reasonably priced in comparison with other proportional solutions, and also very compact. But we were also impressed by the piezo technology, which allows incredibly accurate control. It’s also durable and uses very little energy.” Another argument in favour of the VEABs was the extremely quiet control behaviour, which is clearly noticeable when the 24 regulators installed on a mounting plate all operate at the same time.

Small and easy to assemble
The one-cable installation with standard connectors and cables makes for easy installation of the proportional valves. On the test bench they are installed on a mounting plate. Thanks to their very compact size, they can be placed close to the application or in a small control cabinet. Since the low energy consumption means there is almost no heat build-up, the valves can be packed together very closely.

Next project is in the planning
Ralf Roth was impressed by the solution with piezo valves. “We’re already planning another test bench, also with 24 proportional pressure regulators VEAB.” The technical features of the piezo valve, especially its precision and its quiet, low-energy operation, are unrivalled.

The tested and approved proportional pressure regulators VEAB
In addition to automation products, inotec AP GmbH based in Wettenberg, Germany, specialises in inspection systems. Its so-called SMARTTESTER® is a modular and flexible carrier for many different test setups, in this case one for electric toothbrushes. Proportional pressure regulators VEAB help with the testing.

One line concentrates on the SMARTTESTER®, which is used as a modular and flexible carrier for many different test setups. The SMARTTESTER® system is a comprehensive, highly flexible modular system made up of hardware and software modules for testing technology. The individual modules can be combined as required. One system offers countless options for adapting both the mechanical setup and the test sequence at any time.

The second division focuses on product-specific special test bench solutions. The VEABs are now being used for the first time in the product-specific test bench for electric toothbrushes.

Tests to simulate cleaning teeth
The latest variant of the system tests the cleaning quality and durability of electric toothbrushes on a set of artificial test teeth. This involves automatically guiding the toothbrush to the set of test teeth.

To simulate people’s behaviour when using the toothbrush as faithfully as possible, 24 proportional pressure regulators VEAB control the contact pressure in a constant and gradual process. The toothbrush approaches the artificial teeth and finally cleans them. The precise regulation of the contact pressure and the high repetition accuracy are factors that allow the test products to be reliably compared.
Brushing teeth made easy with electric toothbrushes. To make this happen, proportional pressure regulators VEAB regulate the contact pressure on a set of artificial test teeth during the tests.

The technical features of the piezo valve, especially its precision and its quiet, low-energy operation, are unrivalled.
Powerful, lightweight, inexpensive: the new MS-Basic service unit series

**Technical details**
Very high flow rate (up to 5800 l/min). Integrated pressure gauge or 1/8” connection for e.g. round pressure gauge. Further details:
• Pressure max. 10 bar
• Round pressure gauge
• Grade of filtration 5 or 40 µm
• Rotary knob can be locked when using manual on/off valve

**Product Key for fast information**
If required, you can use the Product Key to quickly find information online, including the operating instructions. Simply scan the data matrix code on the product.

**Details for greater process reliability**
Now even better protection again contamination: the completely redesigned condensate drain in manual or fully automatic version. The integrated QS6 connection makes it easy to connect and release the tubing.
The MS-Basic in a polymer housing provides low-cost, basic components focused on the most important technical functions such as pressure regulation, filter regulation and manual or electric switch-on. And it is fully compatible with the metal MS series. This means that you can create the best possible mix of low-cost basic and high-end functions.

Low-cost standard combination that is easy to expand
On/off, regulation, filtering: these are the most important functions for every service unit. The new EMFR is precisely the compact and attractively priced basic combination, consisting of a simple manual on/off valve and filter regulator, that you require. And if you need additional functions, simply expand as required.

Find out more:
→ www.festo.com/ms-basic
Extremely lightweight and very compact, but with high flow rates: the MS2.

Advanced polymer materials make the compressed air and filter regulators MS2 up to 50% lighter than competitive products, but extremely sturdy at the same time. The optimised design provides a very high flow rate performance of up to 350 l/min, while the stable control behaviour ensures smooth processes. These strong, cost-efficient and lightweight components are ideal for use directly in the application and in the electronics industry.

- High flow rate
- Compact: fitting space reduced by up to 40%
- Stable control behaviour
- Extremely lightweight

Regulating, switching, measuring: complete control of the compressed air supply!

The intelligent MSE6-C2M fully automatically regulates the compressed air consumption of your system. The integrated proportional pressure regulator ensures optimum production by regulating the pressure according to your specifications. You specify the waiting time after which the pressure level automatically drops to a particular stand-by pressure. You save energy and thus CO2 when the system is at a standstill. Leakage detection is active inline while the compressed air is being reduced.

All functions are controlled digitally via PROFINET. The digital inputs and outputs on the MSE6-C2M eliminate the need for additional I/O terminals for other devices nearby.

- Optimised consumption through adjustable, regulated output pressure
- Avoiding or reducing compressed air consumption during system downtime
- Leakage detection
- Recording and preparation of pneumatic measured variables
- Connecting external components via electrical inputs and outputs

Automatically saving energy in compressed air systems with the MSE6-D2M!

All fully automatic: the intelligent combination of service unit components and sensors detects the end of production and then shuts off the compressed air supply. The integrated inline leakage measurement enables the system to be serviced when required. The module can be connected to the new MSE6-C2M as an extension for a second string or to a CPX terminal. This provides a cost-effective way of implementing further energy efficiency and monitoring functions without additional fieldbus nodes.

- Avoids compressed air consumption during system downtime
- Leakage detection
- Gathering and preparing pneumatic measured variables for process monitoring
- Connecting external components via electrical inputs and outputs
**Pressure regulators VRPA**

Attractive, compact, powerful: our classic regulator in a new guise!

The new VRPA series is the successor to the popular compact pressure regulator LRMA. The VRPA can be installed inline to reduce the pressure between tubing, or mounted directly on the valve terminal. Both versions have integrated QS inserts for quickly connecting and releasing the tubing. The pressure is adjusted using a rotary knob with detent, with or without pressure gauge. When combined with the service unit MS2, the VRPA delivers a high-performance range of compact compressed air regulators.

- Attractive price options
- Compact
- Interfaces compatible with LRMA

**One-way flow control valves VFOE**

Easy to install, quick to commission – perfect for standard applications.

The VFOE lets you regulate the speed of pneumatic cylinders to suit your needs. The new one-way flow control valve has a large number of functional variants, making it ideal for implementing standard requirements at an optimised cost. Adjustment is reliable and very easy – three steps is all it takes. The actuator button in different colours makes it quick and easy to identify the right solution for the individual application.

- Compact design
- Quick and intuitive selection of the appropriate valve function
- Low-cost solution for standard applications

**Stainless steel fittings NPQR**

Extreme conditions? The NPQR can handle them.

You can use this stainless steel fitting easily and reliably, even if your machines are subjected to the most extreme conditions. And when it comes to directives and standards such as EC1935/2004 or conformity to FDA 21 CFR (in certification), the NPQR is always the right choice for your connection technology.

The high pressure and temperature ranges, a reduced number of edges where dirt can accumulate and high levels of resistance to most media make this series of fittings the optimum solution in the food industry. However, the sturdy fitting NPQR is also ideal for applications in the process industry, battery production or the automotive industry.

- Sturdy and resistant to media
- Very easy to clean thanks to chamfered O-ring and reduced number of edges where dirt can accumulate.
- Optimal price/performance ratio: ideal for applications with extended requirements
The future of machining is flexible and energy-efficient

The world of abrasive manufacturing methods is in flux. Modern milling-turning centres marry speed and precision. Complex components, in particular, require high flexibility, dynamic response and precision. The new MT 733 series is machine tool manufacturer STAMA’s answer to reliable and complete machining using milling and turning.

Anyone who wants to be at the forefront of building machines for abrasive manufacturing needs to develop solutions that increase productivity in the long term. These need to meet the requirements of manufacturing series as well as different variants, in other words they need to reconcile the apparent contradiction between highly flexible and fully productive. With the MT 733 series, STAMA has developed a new generation of five-axis milling/turning centres that automatically machine all six sides of a workpiece in just one setup.

Energy efficiency built in
The compressed air supply is monitored and regulated by the energy efficiency module MSE6-E/M with cloud connection. It reduces the compressed air consumption by actively intervening in the supply, especially during the machine’s standby times. In addition, monitoring and regulating central operating parameters such as pressure and flow rate ensure reliable production.

Intelligent energy monitoring
When the system is at a standstill, the energy efficiency module MSE6-E/M automatically shuts off the compressed air supply, thus reducing the energy consumption. Using predefined parameters for pressure drops, it autonomously detects leakages in the pipes, thereby increasing system availability. The downloadable flow rate, consumption and pressure measurement values form the basis for intelligent energy monitoring.

Flexible, yet productive
“We don’t know which of our customers’ workpieces we’ll be machining in the future, because an ever-changing market demands greater individuality in terms of products and the methods used to manufacture them,” explains Dr.-Ing. Frank Müller, Head of Design and Development at STAMA Maschinenfabrik GmbH. “To ensure the processes are very flexible, while at the same time increasing productivity and significantly reducing unit costs, we switched everything to test benches in 2015 and reviewed our entire setup,” he says.

Full machining in one setup
The workpiece – fed in as a rod or chuck part – is first machined on sides 1 to 5 (OP10) and then, after a position-oriented, highly accurate workpiece transfer, finished on sides 2 to 6 in OP20. “Thanks to the automatic, extremely precise workpiece transfer, we not only increase precision but process reliability too,” explains Müller. With the four types of MT 733, STAMA offers an innovative and future-oriented concept for complete machining both for the flexible manufacturing of different variants and for highly productive series manufacturing. Workpieces that in the past would have needed two or more machines to finish them can now be milled and turned in a single setup with the STAMA MT 733.
Active energy efficiency: the energy efficiency module MSE6-E²M facilitates intelligent energy monitoring and actively intervenes if, for example, the pressure can be reduced during standby times. The values can be conveniently tracked using dashboards.
SDBT-MSX – the first programmable proximity switch with auto teach-in!

Precise adjustment? A thing of the past!
Simply install SDBT-MSX in the approximate end position, connect the cable to the controller and switch on the system. Done!

Much easier, faster and reliable than ever before. The automatic switching point detection learns the switching point during operation. Incidentally, the SDBT-MSX doesn’t require a power supply during installation – this makes it even easier for you!

More options thanks to the capacitive control button
Alternatively, you can use the capacitive control button. You then teach in the switching point manually. And you define whether you require PNP, NPN or NO, NC as well as the switching window of 2 ... 15 mm. With these options, the variety of sensor types you need to stock can be much reduced.

2 LEDs
For indicating:
- Teach-in mode
- Sensing range
- Switching output “ON”

Compact and sturdy housing
- Only 26 mm long
- IP65/IP68

Sturdy and simple mounting
- Securely retained in the slot
- Captive retaining screw

Auto teach-in
The proximity switch detects the end position of the piston stroke and automatically learns the switching point – during operation.

Capacitive control button
Programming of:
- Switching point
- PNP/NPN
- NO/NC
- Switching window range 2 ... 15 mm
Commissioning a proximity sensor has never been so easy thanks to the initial automatic switching point adjustment. With its large detection range of 20 mm, it is easy and reliable to install too. Ideal for all standard applications, especially in factory automation and the electronics industry/small parts handling.

Find out more:
www.festo.com/sdbt-msx
Flow transmitter SFTE

Lightweight, compact, reliable. And with a large number of mounting options: the SFTE.

The lightweight and compact flow transmitter SFTE with four flow rate ranges is ideal if you need high reliability and flexibility in the production process, even with negative vacuum. In pick & place applications, the sensitivity enables the SFTE to reliably detect even the smallest workpieces.

The flow transmitter SFTE is suitable for monitoring compressed air and non-corrosive gases. To record the flow rate, the non-linear sensor signal is output in analogue form as a voltage signal. This signal can optionally be processed, for example by a controller or signal converter. The SFTE is protected against incorrect polarity connection.

- Fast reaction times
- Wide operating pressure range
  -0.9 ... 10 bar
- Available with a short cable length and M8 plug
- Output 0 ... 10 V or 1 ... 5 V
- Three different pneumatic connection options

Pressure sensor and pressure transmitter SPAU

Detect the pressure status at a glance – with SPAU for MS service unit components.

Increase productivity and process reliability with the sensor SPAU for pressure monitoring; you will have the system pressure on the MS service unit components under control. With the large, easy-to-read and two-colour blue/red LCD display, you can immediately tell whether the pressure level is acceptable.

And your systems can be commissioned more quickly, also thanks to the clear 3-button menu guidance. The settings can be taught in quickly and easily using the pressure switching point. The integrated and highly compact solution can be adapted to all controllers by the switchable PNP/NPN current and voltage outputs.

- Integrated and therefore highly compact solution
- IO-Link®
- Visual pressure status indicator.
  Blue: pressure OK, red: pressure not OK
- Freely programmable threshold value or window comparator
- IP65

Optoelectronic sensors SOOE

Powerful, reliable and universal for all optical functions!

With the SOOE you get all the optical functions for object detection in an identical sensor housing. From through-beam sensing to distance sensing, you benefit from the most innovative technologies and at the same time reduce the component variety thanks to universal assembly. The SOOE is amazingly quick and easy to commission.

IO-Link® makes the SOOE suitable for Industry 4.0, for example for sensing function reserves, signal quality or operating hours. This enables you to increase throughput and quality.

- Easy to operate
- Reliable and stable detection
- IO-Link®
- Low complexity, PNP and NPN in one device
- Reduced component variety for reduced part storage
<table>
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<tr>
<th><strong>Optoelectronic sensors SOOD</strong></th>
<th><strong>Vision sensor SBSx</strong></th>
<th><strong>Smart camera SBRD</strong></th>
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<tr>
<td>Lightning fast engineering and perfect results!</td>
<td>User-friendly and highly flexible, but still clear and simple.</td>
<td>CCS – Camera Configuration Studio. Software that packs a punch!</td>
</tr>
<tr>
<td>The optoelectronic sensors SOOD are the perfect solution for a wide variety of object detection tasks, even in very confined application environments. They are fast and cost-effective thanks to an integrated concept with standardised sensor functions. The SOOD can be used straightaway without needing to be parameterised first. The sensor response time of just 250 µs and the background suppression increase the throughput – virtually independently of colour.</td>
<td>The new firmware and the intuitive software version 1.23 give you a high level of flexibility when creating the application solution. Customer-specific job templates can be generated for frequently used settings. If multiple sensors are installed in the machine, a favourites list helps to improve administration and simplifies connection setup. For position tracking, you can freely select which detectors will be positioned or fixed in the image. A new edge detection feature works like a mechanical stop and offers fast angle tracking. The commands for controlling the sensor via PLC have been extended. Firmware updates can now be carried out automatically without PC software.</td>
<td>The Festo image processing system SBRD-Q consists of a low-cost controller, high-resolution USB cameras in monochrome and colour and powerful CCS software and has a Job Navigator for creating applications on the new interface. CCS provides all standard tools for camera applications in automation and robotics. The calculation of the limit values based on the image list provides perfect coverage for the fluctuating range of good part production.</td>
</tr>
</tbody>
</table>
| The eye-safe laser LEDs with laser class 1 are particularly durable. | • Easy to operate  
• Quick commissioning  
• Reliable and stable detection  
• Low complexity, PNP and NPN in one device  
• Reduced component variety for reduced part storage | • xRun in xBLOB, xSBLOB, xPMATCH, xBARCODE, xDATACODE  
• Position tracking automatically linked  
• Execution of the tools as a function of the number of objects found  
• EtherNet IP/Modbus®  
• 5 megapixel lenses (8, 16, 25, 50)  
• Optical USB cable up to 30 m  
• Adapter cable with angled connector  
• Highly precise triggering: I/O cable for the camera head  
• External medium for saving and backing up jobs |
Perfectly filled thanks to optoelectronic sensors SOOE

Do chemicals or materials for dental impressions get to precisely where they are needed? And in the quantity correct? Reliable filling processes are essential in the chemical industry and in dental technology. In the filling systems of HSV Sondermaschinenbau GmbH based in Asperg near Stuttgart, Germany, the optoelectronic sensors SOOE from Festo have everything in view.

The 2C and 1C filling systems of HSV Sondermaschinenbau GmbH are suitable for chemical/technical, dental, cosmetic and pharmaceutical filling materials and feature various high-precision volumetric proportioning and filling nozzle systems. They can be used to fill liquid, highly viscous, flammable and reactive goods all the way up to hot melts into many different packagings made from a wide range of materials and in a wide range of sizes.

The smallest of its kind in the world
The highly compact measurement core is the first time that precise distance measurement is integrated in extremely small sensors using Multi-Pixel Technology (MPT). LEDs or laser LEDs on the sensor array detect when light paths are interrupted or the light intensity changes and calculate exact distances using software algorithms, independently of colour and with minimal black/white difference.

Good cooperation – digital and personal
The good cooperation between HSV and Festo is an important aspect. The discussions that take place, including about new developments, are very in-depth and benefit both parties. “We’re very happy, not only with the products offered by Festo, but also their services. Service and documentation are outstanding and the Online Shop is an excellent resource for quick and easy downloading of, say, CAD models or EPLAN macros. The benefit of this to us is so great,” explains Jörg Leonberger, “that it offsets the occasionally higher product prices.”

Multifunctional and extremely small: sensors SOOE
The optoelectronic sensors SOOE ensure that, among other things, the process is reliable by verifying if components are present. If the verification is positive, the chemicals or mixtures are filled. Key criteria are the reliability as well as the precision and size of the light spot, which should be as small as possible. The optoelectronic sensors are also used as a light barrier or laser sensor.

One housing for different functions
With the SOOE, all the optical functions for object detection, from through-beam sensing to distance sensing, are available in an identical sensor housing. “This dramatically reduces component variety and means we have just one supplier. We also benefit from consistent assembly,” says Jörg Leonberger, Operations Manager of HSV Sondermaschinenbau GmbH.
The many optical functions for object detection are all enclosed in one housing.
Ideal for the chemical and heavy industries: the quarter turn actuator DFPD-C

The DFPD-C is suitable for actuating butterfly valves, dart valves and ball valves in process plants in the chemical and petrochemical industry, and can also be used with a positioner for control applications.

Compact and modular
The rack-and-pinion combination is easy to install even when space is at a premium. The many types of pilot valves and numerous compatible peripheral devices open up a large variety of applications. The optimised spring design means that you can size the actuator exactly in line with the available pressure range. The variant DFPD-..-C-VDE2 has a hot-swap function in the top valve block, so that the positioner and pilot valve can be changed during operation.

Metal-free, non-ferrous spring cartridges

Optionally with VDI/VDE 3847 interface for directly attaching the adapter kit DADG-FM-F9-VDE2

Blow-out-proof screws for safely setting the end position

Centring ring for a minimum offset mounting on a bridge
The quarter turn actuators DFPD-C and DFPD-C-VDE2 with NAMUR interface to VDI/VDE 3847 are well suited to the harsh conditions in the chemical industry. The hard-anodised end caps, blowout-proof adjusting screws for the end position, shaft centring ring and spring cartridges that are free of non-ferrous metals set a new benchmark.

**Technical details**

- Single-acting or double-acting
- Size 10 ... 2300
- Operating pressure 2 ... 8 bar
- Single-acting version: optimised spring cartridge design for more efficient operation in increments of 0.5 bar
- End position adjustable on both sides
- Operating temperature −20 ... +80 °C
- Configurable supply port type: G thread or NPT

**Quarter turn actuator DFPD-...-C-VDE2**

**Option with VDI/VDE 3847 interface**

Save yourself the trouble of time-consuming and expensive tubing thanks to the extended NAMUR interface on top of the actuator. Its design allows you to use the DFPD under difficult conditions in the chemical industry.

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**Adapter kit DADG-FM-F9-VDE2**

Thanks to the adapter kit, you can connect all types of pilot valves with NAMUR interfaces as well as positioners in accordance with VDI/VDE 3847 to the actuator without additional tubing. This makes maintenance easier for you. And it avoids potential leakage and possible installation errors.

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**Hard-anodised end cap**

Find out more:

[www.festo.com/dfpd](http://www.festo.com/dfpd)
Configurator for process valve units KVZA and KVZB

Intuitive programming of processes with the PA-Toolkit!

When a process plant is being programmed, its piping and instrumentation diagram is often “transferred” to the controller or visualisation system. That’s why Festo offers you a toolkit consisting of function blocks and visualisation elements. A good way of programming the controller is with reusable function block templates, which can be viewed as digital twins of the sensors and actuators. The benefit of this is that these preprogrammed function blocks are tested and their mode of operation is known.

In addition to static elements like pipes and reservoirs, dynamic visualisation elements are also used to represent the field devices.

- Intuitive IEC 61131-3 modules for the popular field devices from the process industry
- Visualisation elements natively programmed in CODESYS (IEC 61131-3)
- Modules developed in accordance with the MTP standard (Module Type Package) for easy connection to other controllers and visualisation devices

Just a few steps to an automated process valve!

The configurators for butterfly valve units KVZA and ball valve units KVZB greatly simplify engineering and procurement processes. The tools ensure quick and successful project management by taking all relevant factors into account: from the initial product search, configuration, sizing and documentation right through to ordering and delivery of the ready-to-install unit – everything is combined in one tool, including customer-specific requests.

All components, from ball valves, butterfly valves, pilot valves, quarter turn actuators, and sensor boxes to positioners, adapter kits and hand levers, are from a single source and are perfectly matched and pre-assembled. Simply choose the required parameters in the configurator’s input menu and the configurator suggests the right solutions.

The benefits to you at a glance:
- Tailored and ready-to-install solutions
- Increased reliability for your specific application
- CAD data for configuration and documentation for direct download
- The system ID can also be used for subsequent orders
- Reliable planning with immediate price and delivery time information

To the configurator for butterfly valve units:
www.festo.com/kvza
To the configurator for ball valve units:
www.festo.com/kvzb

www.festo.com/pa-toolkit
Linear actuator DFPC

The new linear actuator DFPC offers precisely that choice between predefined standard variants that are available quickly from stock or comprehensive and individual configuration options for stroke, length of the spacer bolts at the bearing cap, piston rods of differing lengths, thread types and diameters as well as ATEX certification, if required. It has been specially designed for actuating process valves such as knife gate valves or pinch valves.

The piston rods, screws, nuts and tie rods are made of stainless steel, and are thus extremely sturdy and resistant to corrosion, while the cylinder barrels and end caps are made of aluminium. This ensures that the actuators have a long service life. The end-position cushioning on both sides enables high travel speeds.

- Sturdy design
- Double-acting
- Piston diameter 80, 100, 125 mm
- Stroke 40 ... 1600 mm
- Interfaces for process valve to ISO 5210 and ISO 15552 with spacer bolts
- Optionally with ATEX II 2GD

Filter regulator PCRP

The extremely corrosion-resistant filter regulator PCRP excels at high flow rates, reliable pressure regulation and is amazingly sturdy. It comes in 1/4” and 1/2” sizes with G or NPT thread. The housing and internal components are made entirely from stainless steel, which means that the PCRP can also withstand adverse ambient conditions. Thanks to its temperature resistance from −60 to +80 °C, it can also be used without any problem in extreme cold or heat. The patented sealing technology protects against return flow and ensures reliable exhausting.

- Fully stainless steel version
- Flow rate of up to 4115 l/min
- Temperature range −60 ... +80 °C
- UV-resistant
- Reliable manual drain
- Suitable for use in potentially explosive areas of zones 1, 2, 21 and 22

NAMUR valve VSNC

The standard NAMUR valve VSNC is certified worldwide in accordance with current Ex standards. The classic spool versions and the new variants with sturdy poppet valve technology make the VSNC suitable for virtually all industry segments and applications, even under the harsh conditions in wastewater treatment and the chemical industry. Its distinguishing features are its modern design, durable quality and fully tested technology and materials. It also offers outstanding value for money. That is what NAMUR valves should be!

New: CNOMO interface, standardised to ISO 15218, and the solenoid coils VACC-S13 with electric connection box for Ex me and Ex ia.

- Wide range of Ex solenoid systems: IECEx-certified for zones 1/21 and 2/22, C1-Div. 1 to NEC 500
- Rotatable seal for 3/2-way or 5/2-way function
- Sturdy and with high flow rates
- Suitable for a broad range of applications
- Extended temperature range −20 ... +60 °C
Successful project collaboration with Festo in the role of coordinator

With more than 80 products for professionals and amateurs, the successful car cosmetics company Alfa Car offers a large range of care products for cars. Alfa Car together with system integrator Arp Lučko wanted to fully automate all the process valves in their brand new plant in Croatia and so turned to solutions from Festo.

The two partners had defined three major goals: Alfa Car and Arp Lučko wanted to increase the capacity twenty-fold, fully automate the entire production cycle and at the same time design an explosion-proof production setup because of the potentially explosive conditions. System integrator Arp Lučko suggested Festo as a supplier for these challenges, and won over Alfa Car. The company demands reliable and perfectly protected systems that meet the high standards of its investors.

**Many different media and a solution from a single source**
In addition to water, quite a number of other chemicals such as glycerine, surfactants, oleic and acetic acids or alcohol and ethyl alcohol are transferred into the tanks and mixers at Alfa Car before being filled into containers as a finished mixture. This solution is also used for rinsing systems with water.

The experts at Festo designed a complete solution, ranging from ATEX-certified process valve units with sensor boxes SRBx and single-acting quarter turn actuators DFPD to valve terminals VTUG. The experts combined the more than 200 ball valves from various manufacturers with suitable Festo automation components and connected them to the piping. The final stage to complete the system was taken care of by the system integrator. This enabled the entire production setup, from the raw material to the filling line for finished products, to be fully automated.

**Good and dependable cooperation**
Arp Lučko had already worked on a project with Festo and was very impressed by the quality of the solution from a single source and the good cooperation with the local valve manufacturers. Another major benefit that Festo offers as a project coordinator is fast and helpful support around the clock. This is the only way to achieve high-quality, lasting solutions that combine maximum productivity and a high level of process reliability.

“Festo took over the coordination with process valve suppliers and delivered a complete automation solution, from the process valve units to the valve terminals. It saved us lots of time and resources.”

Miroslav Sulejmani, Director at Alfa Car d.o.o.
Project solution from a single source: Festo supplies reliable automation solutions from the field level to the control level.

Clean solution: one of the process valve units.
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/whyfesto