GEMÜ news

GEMÜ RISES TO MEET NEW CHALLENGES

Magazine for the customers, partners and friends of the GEMÜ Group

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Dear Readers,
We are living in exciting times – full of changes, innovations and transformation. Against all the odds, we are able to look back on a successful 2019. One of the longest upward phases in recent years in Germany seems to be coming to an end. The economy is in decline and the next year is not currently as tangible for us. A cooling of the economy can already be clearly felt in the automotive sector and is also affecting suppliers. Other sectors, such as industrial plant and machinery, may also be affected by this.

Even if the signs are in no way extreme, we must pay attention. GEMÜ is a family-owned enterprise and we are doing everything necessary to ensure that we can safely get through this time. The company is diversified and things are going well for us so we want to keep this going well into the future.

We are observing the markets extremely closely and are taking appropriate measures to ensure that we are well-prepared for the coming months.

Of course, we will also continue to develop new products, machines and systems in 2020 and, in particular, invest in our employees. To do this, we are focusing on the important things and ask for your understanding if, at times, a "nice to have" project is delayed until the following year.

On behalf of the entire Müller family and the GEMÜ management group, we would like to extend our thanks to everyone who has supported us this year and has ensured that the company has developed positively. We would therefore like to extend special thanks to all GEMÜ members of staff across the world for your outstanding performance, excellent collaboration and tireless commitment. Many thanks also to our business partners for the trust you have shown us and the loyalty you have shown to our company.

We look forward to a successful 2020 and wish you a wonderful and relaxing festive season with your loved ones, and a great start to the new year!

Gert Müller
Managing Partner

Stephan Müller
Managing Director

55 years
GEMÜ
innovation goes on
1964–2019

PRODUCT CATALOGUES FOR SPECIFIC TARGET GROUPS
A COMPLETE WORK MADE UP OF MANY PUZZLE PIECES

More than 15 product brochures with information on specific product groups are currently being used for sales support. To provide an overview of the complete product range of GEMÜ, a large number of brochures needs to be taken along when visiting the customer. These are all laid out manually and therefore require a high level of work to keep the product data up to date and consistent with the other output channels, such as, for example, the website.

At the end of 2018 the Global Marketing department was therefore tasked with optimizing the product communication and consolidating the number of product brochures. In the Business Unit Pharma, Food & Biotech (BU PFB) ideas have already been explored to create an overall catalogue. Once product responsibility is distributed to all business units, while the products are used in all sectors, it very quickly became clear that this project had to be organised across business units. In order to meet the different requirements of product selection, display and information content of the individual business units, there will, in future, be three industry specific product catalogues. The basic structure is the same for all catalogues. The catalogues are differentiated according to their different target groups. This results in different application examples, photos or levels of detail.

The product-specific data is contained in all the catalogues from the authoring/editing system "Schema ST4" from the technical documentation department. The website or Intranet also use this data so that, with this one data source, a high level of consistency can be maintained in future across all output channels.

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>>> In addition to the information on the products, the catalogues are also populated with general subjects on GEMÜ, the industrial sectors and information about valves drawn up by Global Marketing.

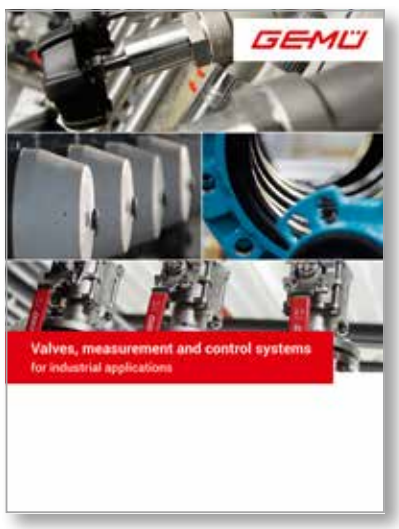
Digital access is also provided by means of web and QR codes on each product page. This takes the reader directly to the corresponding product page on the homepage www.gemu-group.com. From there, they can read further information such as data sheets, animations, CAD data etc. They can also access the GEMÜ Product Selection Tool and create and request their required configuration. The GEMÜ Product Selection Tool was previously only available via the online shop and is now available worldwide in all countries, even without online shop connections.
After almost a year, the three product catalogues are now ready and will be available to sales and customers in German and English from 2020. The result of this project is, however, much more than three catalogues. Much of the information collated during the creation of the catalogues can also be used for future product communication and will, in future, be used for all output media such as the website, online shop, SharePoint and price list. In addition, product data is electronically recorded and structured for each product group. This provides another step towards better comparability and selection of products.

THE PROJECT TEAM:

Helen Kraft – overall coordination
Sarah Mann – coordination and development of the BU IND specific content
Marei Stammler – coordination and creation of the BU PFB specific content
Jonas Claus – coordination and creation of the BS SEM specific content
Enrico Kliesch – implementation in the Schema ST4 authoring/editing system
Supporting departments – Global Marketing, Technical Documentation, Product and Applications Management BU PFB, BU IND and BS SEM, Sales BU PFB, BU IND, BS SEM

KEY FACTS ON THE CATALOGUES:

⇒ **Business Unit Pharma, Food & Biotech catalogue:**
184 products on 520 pages
⇒ **Business Unit Industry catalogue:**
222 products on 392 pages
⇒ **Business Segment Semiconductor catalogue:**
137 products on 255 pages



Enrico Kliesch
Head of Technical Documentation
enrico.kliesch@gemue.de

Helen Kraft
Sales Support
helen.kraft@gemue.de

CONEXO LITE
NEW APP BY INEVVO SOLUTIONS

20th September 2019 was an important day for inevvo solutions. The new CONEXO Lite app was available in the Apple App Store and the Google Playstore and was to be presented to the general public at the Hohenlohe business trade fair for the first time. The trade fair visitors were the first people who could download the app onto their mobile phones as part of a competition and try out the QR codes given out at the trade fair. As expected, the download was successful without any hitches and the trade visitors could work with the app immediately and intuitively, leading to consistently positive feedback.

What is CONEXO Lite?

CONEXO Lite has the basic functionalities of the full version and is designed for anyone owning CONEXO-compatible products but without access to their own CONEXO portal.
Compared to the full version, the product and component data can only be viewed. The functions for maintenance support, overview of the plant history and offline capacity are not available. But the CONEXO Lite app can be used to display data not only using an RFID chip, but a QR code as well if the manufacturer's products have a CONEXO QR code. The app has been completely re-programmed and differs from the full version in design as well.

Where does the data come from?

A component manufacturer who would like to make their products identifiable with CONEXO (Lite) needs to install a CONEXO portal at inevvo solutions and provide their products with RFID chips or unambiguous QR codes. If the customer reads out the product using the CONEXO Lite app, which for them is free of charge, they can then view the data stored in the database. This means that the end user accesses the manufacturer's portal and does not need their own.
inevvo solutions can develop a data creator so that the data record generation can be automated; the data creator accesses the data of the manufacturer's ERP system and then prepares it for CONEXO. Where necessary, inevvo solutions can also carry out the conexion procedure for the products. This means that the manufacturer can continue to concentrate on their core business and have inevvo solutions implement the digital identification process.
Every component manufacturer can have CONEXO Lite adapted to their own corporate design. For example, colours, pictures or app icons are customizable. The manufacturer can also specify which data the end user can view. If required, certificates or specific data, for example, can be omitted.

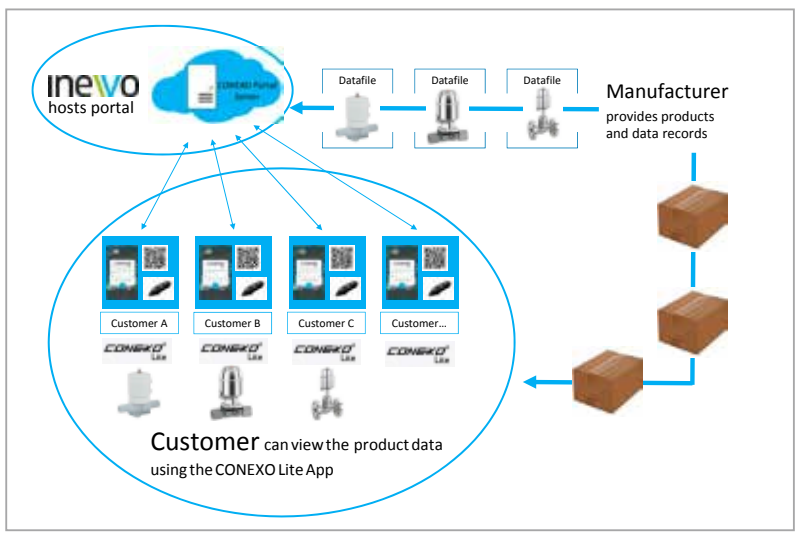
Who is CONEXO Lite for?

CONEXO Lite is designed for manufacturers of premium products who would like to use CONEXO to take the next step in the direction of digitalization and want to give their customers detailed information on serialized components. In order to demonstrate that CONEXO Lite can be used beyond just conventional industrial applications, inevvo solutions subjected locally manufactured tinned sausages and jam to the conexion process for the Hohenlohe business trade fair.
The manufacturer of a product for which detailed information has been provided digitally via CONEXO can continue to concentrate on their core business but still be a pioneer in terms of digitalization thanks to a collaboration with inevvo solutions. Customer loyalty is automatically strengthened with CONEXO Lite as it is easy to contact the manufacturer, the customer has all the product information at their fingertips and can very easily reorder the product. Manufacturers offering CONEXO Lite to their customers can also automatically provide data records for the full version so that the end users can manage the purchased components in their own in-house CONEXO infrastructure themselves.

How do you install the CONEXO Lite app?

The CONEXO Lite app can be downloaded free of charge in the Apple App Store or Google Playstore.
You are warmly invited to try it out for yourself. Just install the "CONEXO Lite" app and scan the displayed QR code with CONEXO Lite. The data stored in the QR code can then be viewed.

CONEXO Lite is the cornerstone for establishing CONEXO as the standard in the market for electronic identification. Have fun trying it out for yourself!



Marina Dege
Commercial Management
marina.dege@inevvo-solutions.com

Kevin Johanning
Outside Sales
kevin.johanning@inevvo-solutions.com

GLOBAL PRODUCTION STRATEGY MADE BY GEMÜ
MODERN PRODUCTION BY GEMÜ IN CHINA

The latest generation of GEMÜ R480 Victoria butterfly valve will in future be produced in the new, highly automated Butterfly Valve Production Center at GEMÜ China. While production is being ramped up to ensure that customers can be fully supplied at market launch, Stephan Müller, Managing Director of GEMÜ, Matthias Fick, Head of Production & Logistics and Joachim Brien, Head of Business Unit Industry, give an insight into GEMÜ production expertise in Shanghai in the following interview.

GEMÜnews: Mr Müller, what significance does production in China have for the overall business strategy of the GEMÜ group?

Stephan Müller: Our business strategy is to implement a global production concept that is distributed across various locations. At the same time, each manufacturing site has its own focal areas and capabilities. Our site in China is focused on butterfly valves. We also have a production competence centre in Germany. Here we focus on stainless steel production. With the opening of the surface technology centre in the Hohenlohe business park, we have already further expanded our production expertise in 2018 for the optimization of surfaces, making further inroads into the market. GEMÜ products which have to be produced with absolute freedom from contamination are produced in our cleanroom plant in Switzerland. Our diaphragm manufacturing capabilities are located primarily in France. We have a fifth production competence centre in Brazil. Our focus there is on lined valves for industrial applications, for example for raw material extraction. Our site in the USA has an important role in the local American market and does not produce for the GEMÜ group. In addition to customized installation and end production, the focus is also on the production of stainless steel valve bodies.

GEMÜnews: What does Made in China mean for GEMÜ customers?

Stephan Müller: As the GEMÜ group we have, on the one hand, German roots, but, on the other hand, we are also a global enterprise and produce all over the world. Quality is based not on location but on our demands and expectations. So we don't say "Made in China" or "Made in Germany", we say "Made by GEMÜ". That means that we produce to internationally recognized production and safety standards. We subject all our products to the most stringent requirements worldwide and guarantee high quality across the board, regardless of where in the world we are producing.

GEMÜnews: Mr Brien, what are the objectives of the new butterfly valve production in China?

Joachim Brien: Our most important objectives for new butterfly valve production in China are increased production flexibility and further improvements to product quality. Production in China and in-house machining of the butterfly valve components means that we can increase production depth, giving us much greater control over processes that are essential to quality, for example when coating valve bodies. This will enable us to further improve quality. By expanding production capacities at a production site, we can also react more flexibly to worldwide demand. In addition, our plant in China also allows us to carry out low-volume production, enabling us to meet individual customer requirements.

GEMÜnews: What does the production in China mean for the GEMÜ range of solutions in the Industrial Processes business unit?

Joachim Brien: GEMÜ is one of the providers offering the widest range of valve products for a great variety of applications. The introduction of our business unit structure two years ago has enabled us to focus in a more targeted way on the specific requirements of our customers in the individual industrial areas. To this end, we are continually investing in research and development and in production expertise. Many people know that we are the global market leader for diaphragm valves for sterile applications. But it's not just our diaphragm valves that are state of the art. We also place the same demands on our other products. In the case of butterfly valves, the coating method has a significant effect on the product quality. For this reason, in addition to mechanical machining, we have also further expanded our production depth in our plant in China to include this important production step. Our innovative butterfly valve production in Shanghai is helping us make giant strides towards achieving this objective in the industrial sector as well.

Top quality surfaces:
The highly-automated plant produces even and robust coatings

GEMÜnews: Mr Fick, what exactly is new about the production at the expanded plant in Shanghai?

Matthias Fick: One thing that is new is that we can now mechanically machine our cast unmachined parts ourselves in a state-of-the-art machining centre. The most notable feature about this is the fact that we machine our valve bodies in one clamping position. This allows us to achieve precise shape and positional tolerances for our butterfly valves.

A further highlight is the fully automated coating system. We now use the whirl-sintering method. With the help of state-of-the-art robot technology, we produce a high-quality coating of the butterfly valve components with an even layer thickness. With it, we can offer our customers highly robust equipment for their systems that is classified to DIN EN ISO 12944 in the top corrosion protection class, C5-M. Incorporating these production steps in-house is another important milestone in offering our customers consistently high quality throughout.

GEMÜnews: How environmentally friendly is the new manufacturing process?

Matthias Fick: Environmental awareness is also increasing in China. The benchmark for us, however, are our own stringent directives, which often exceed local requirements. We therefore chose the powder coating method for environmental protection reasons. This coating method is better for both the employees and for the environment, as no contaminated and corrosive waste water is generated. A wet chemical painting of our components was out of the question for us. Once again, with the expansion of our plant in China, we are implementing our standards at a global site.

A reason to be proud - the project team, comprising German and Chinese colleagues, opens the Butterfly Valve Production Center

Sarah Mann
Product Marketing
Business Unit Industry
sarah.mann@gemue.de

GEMÜ DIAPHRAGM GLOBE VALVES CAN BE INTEGRATED IN MULTI-PORT VALVE BLOCKS MADE FROM STAINLESS STEEL

In recent months, the Mechanical Production and Technical Research & Development departments have worked together in collaboration with the product managers of the Business Unit Pharma, Food & Biotech and the Semiconductor Business Segment to develop solutions to reliably manufacture diaphragm globe valves with PD design (Plug Diaphragm) as well as multi-port valve blocks made from stainless steel.

The focus was on the requirements for "hygienic design" and cost effective process-optimized manufacture. It is possible with immediate effect to configure multi-port valves with diaphragm globe valves on a case-by-case basis according to customer requirements. In this context, multi-port valve blocks have already been designed with the GEMÜ 567 control valve for aseptic dosing from an ultra-pure water loop or filling blocks as a complete solution with the GEMÜ F40 and GEMÜ F60 filling valves in combination with auxiliary valves for gas control.
The integration of diaphragm globe valves in multi-port valve blocks makes it possible to combine the advantages of a valve block with those of PD design. This provides the customer with new options which we will be happy to provide depending on customer requests.

Filling block made from stainless steel with the GEMÜ F40 filling valve for media filling and three GEMÜ C50 iComLine auxiliary valves for gas handling

Multi-port valve block made from stainless steel with the control valve GEMÜ 567 BioStar control and diaphragm valves GEMÜ 650 BioStar for dosing from a sterile loop and distribution across several outlets

Christoph Winter
Strategic Product Manager
for globe, control and diaphragm globe valves
christoph.winter@gemue.de

GEMÜ R629 ESYLITE EXPANSION OF THE PRODUCT RANGE

GEMÜ is expanding the range of nominal sizes of motorized OPEN/CLOSE diaphragm valves.

GEMÜ R629 eSyLite

Martin Schifferdecker
Product manager
for motorized actuators
martin.schifferdecker@gemue.de

Following product release of actuator size 1 in July 2019, additional sizes and designs of the R629 type have now been completed.
In addition to the already available diaphragm size 20 (DN15 – DN25), the actuator size 0 with diaphragm size 10 (DN12 – DN20) is now also available.
In the first quarter of 2020, the actuator sizes 2 and 3 in diaphragm sizes 25 and 40 will also be available, covering the nominal sizes DN32, DN40 and DN50.

Fail-safe condition – no problem

The issue of the fail-safe condition in case of power failure has also been solved. Optionally, the R629 series is now also available with an integrated emergency power supply module, which automatically moves the valve to a safe, predefined position in case of power failure. The plant operator can choose between the closed or open fail-safe condition.
The R629 series can therefore hold its own against process solenoid valves or motorized plastic ball valves, presenting a cost-effective alternative in the DN12 – DN50 range of nominal sizes.

GEMÜ R480 VICTORIA THE LATEST GENERATION OF SOFT SEATED, CONCENTRIC BUTTERFLY VALVES

Next year the GEMÜ Victoria will be revealed with a brand new makeover. The redesigned GEMÜ R480 Victoria in wafer version will be ready for delivery from the second quarter of 2020.

But what is actually new about the tried-and-tested GEMÜ butterfly valve? A specialized team of employees from the design, product management, quality management and production departments has not only fine-tuned a great many technical details with the redesign of the GEMÜ R480, but more importantly has continued to consolidate GEMÜ's manufacturing capabilities. Thanks to investments in in-house machining and coating competencies, GEMÜ now has even more control over production processes affecting quality.

Michael Mütsch
Strategic Product Manager for butterfly valves
michael.muetsch2@gemue.de

In-house mechanical machining for narrow mould and positional tolerances

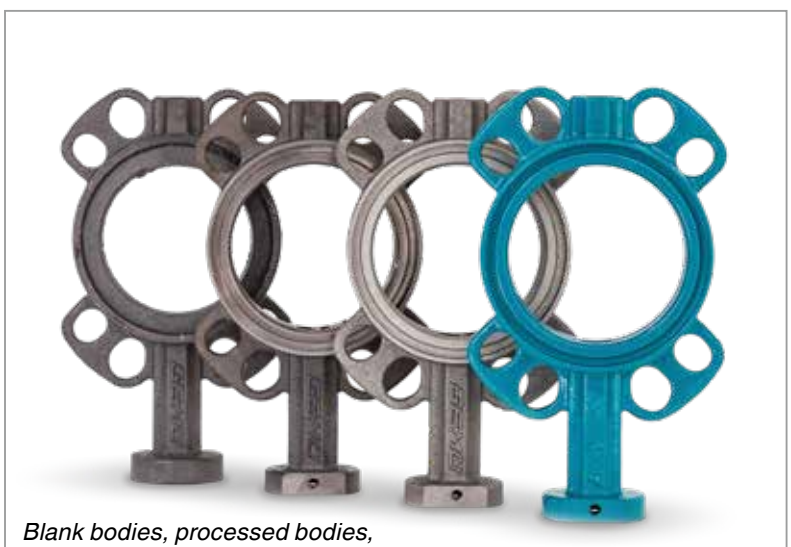
All valve bodies are milled in one clamping position in the highly automated valve manufacture at GEMÜ Valves China. This allows precise shape and positional tolerances to be achieved.

High-quality coating for robust valves

Using the whirl sintering method, the valve bodies are immersed in a basin with epoxy powder. The powder melts on to the hot valve body, interconnecting to form a robust and durable surface.

Features of the R480 Victoria butterfly valve:

⇒ Highest level of corrosion protection in accordance with ISO 12944-6 C5M
⇒ Layer thickness of at least 250 µm
⇒ Consistent coating, even in the liner area
⇒ Service friendly and replaceable components



Blank bodies, processed bodies, sand-blasted bodies and painted bodies

GEMÜ R480 VICTORIA ADVANTAGES AT A GLANCE

Durable
Lower torques thanks to PTFE-coated bushes

Smart
Liner material is easy to read when installed, compatible with CONEXO

Made by GEMÜ
Narrow shape and positional tolerance and high-quality epoxy coating from our in-house manufacturing capabilities

Reliable
Optimized liner for improved tightness

Flow-optimized
Sleek disc design for higher Kv values

GEMÜ GLOBE VALVES
ARE GRANTED USP CLASS VI CERTIFICATION

USP CLASS VI CERTIFIED

Christoph Winter
Strategic Product Manager for globe, control and diaphragm globe valves
christoph.winter@gemue.de

The GEMÜ globe valves 507, 550 and 554 with stainless steel valve bodies and PTFE seals have been awarded approval in accordance with USP Class VI. They now comply with the prerequisites for application in the medical and pharmaceutical industries.

The U.S. Food and Drug Administration (FDA) divides the plastics used in the medical and pharmaceutical industries into six biocompatibility classes in the American Drugs and Medicines Register (USP). The most stringent of the six categories is the USP Class VI classification. It is the prerequisite for use of the materials in the medical and pharmaceutical industries.
With immediate effect, the GEMÜ globe valves 507, 550 and 554 with PTFE gland packing (GEMÜ code 5P) and stainless steel valve bodies (GEMÜ code 37, 34 or C2) now have certification in accordance with USP Class VI and are therefore approved for use in the medical and pharmaceutical industries.

GEMÜ 507

GEMÜ 550

GEMÜ 554

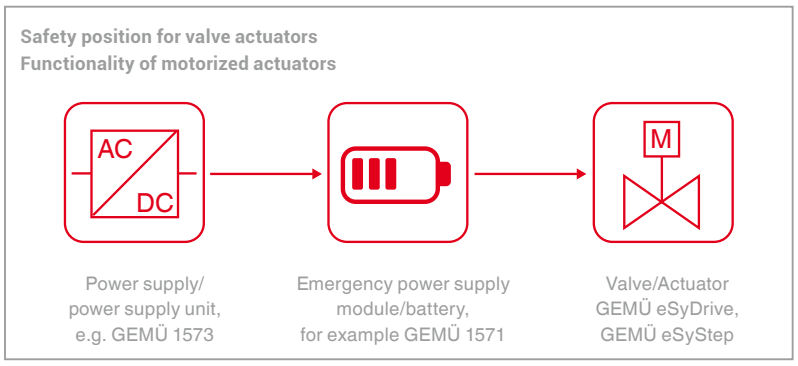
PTFE gland packing

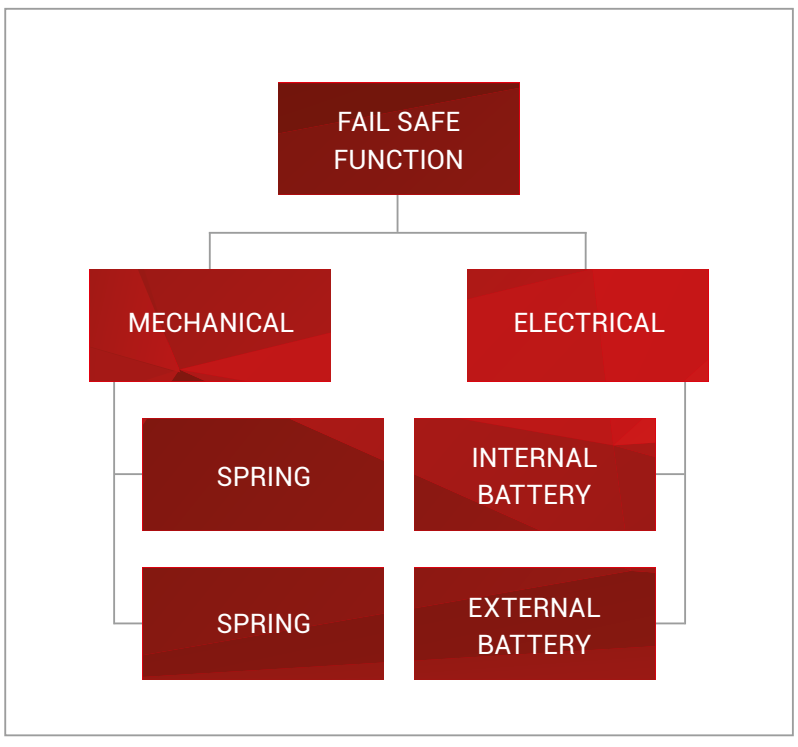
SAFETY POSITION FOR VALVES
EXTERNAL EMERGENCY POWER SUPPLY MODULE – GEMÜ 1571

GEMÜ valves control and regulate the most varied liquids and gases in a variety of the most diverse plants every day. But what happens if these plants fail, due to a power failure, an error in the control or a cable break, for example? In these cases, the plants must be placed in a safe state.

GEMÜ valves provide a fail-safe-function or safety position for these scenarios. If the supply of compressed air or electrical power fails or another error occurs, the actuator detects this and moves to the safety position. Pneumatically and magnetically active actuators achieve this via an internally installed spring and the general functional principle of the actuator. On the other hand, motorized linear actuators must move to the safety position via internal or external emergency power supply modules.

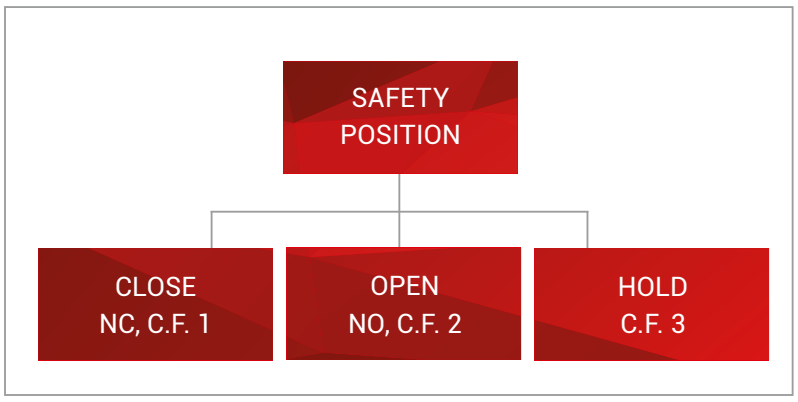
The emergency power supply module is clamped to the supply line, between the power supply unit and actuator. A digital input of the actuator recognizes a failure of the power supply and places the valve in a defined safe state with the help of the emergency power supply module.





To keep the space requirements as low as possible, the new drive series GEMÜ eSyStep and GEMÜ eSyDrive were developed without internal emergency power supply modules. Internal emergency power supply modules would increase the efficiently utilized installation space and space requirements of the actuator in these series. GEMÜ now offers an external emergency power supply module with the new GEMÜ 1571 which can be flexibly combined with the new GEMÜ eSyStep and GEMÜ eSyDrive drives and can be subsequently added without laborious modification of the drive.

Depending on the installed actuator, pneumatic actuators have a safety position that cannot subsequently be changed due to the design. The motorized actuator GEMÜ eSyLite with integrated emergency power supply module can also not be reconfigured retrospectively. The actuators GEMÜ eSyDrive and GEMÜ eSyStep can, by contrast, be flexibly configured.
If the process changes, the safety position can be changed accordingly to Open, Close or Hold. In the "Open" setting, the actuator opens the valve in the event of an error, in the "Close" setting, the valve is closed, and in the "Hold" setting, the current position is maintained.



The GEMÜ eSyDrive actuator series can currently be configured using Ethernet and the integrated web server as well as via Modbus. The safety position can then be simply changed using the connected PC or laptop via the browser.
An eSyStep valve can be ordered preconfigured for an emergency power supply module or can be configured and equipped later via the IO link interface for operation with an emergency power supply module.

The emergency power supply module GEMÜ 1571 also supports additional types of operation, for example, in which short voltage dips and momentary power failures can be buffered and bridged without limitations. In the simple type of operation, it is also possible, depending on the actuators used, to protect several of these by fuse using an emergency power supply module. The buffer time can also be extended using up to two additional memory modules.

Dominik Nied
Product Manager for motorized actuators
dominik.nied@gemue.de

A DAY IN THE LIFE OF AN AFTER SALES SERVICE ENGINEER
INTERVIEW WITH PATRICK OHR

Service calls from GEMÜ take place all over the world and relate to the entire product range, ranging from liner replacement for butterfly valves, and wearing parts to diaphragm replacement. In the following interview, Patrick Ohr, a member of the after sales service team, speaks about the coordination and implementation of a typical after sales service call for a customer.

GEMÜnews: What normally happens during an after sales service call from GEMÜ? How is it planned and carried out?

Patrick Ohr: Normally the customer contacts the external sales employee with a service inquiry, if they have a problem, require servicing or, for example, need a diaphragm replacement or some other type of support. First we check whether we can carry out the service job at the requested time. This depends on the country in which the service request is made. For international service jobs, A1 certificates are required and there are country-specific travel requirements. For some countries, for example such as Liechtenstein and Switzerland, specific work permits are also required. Next, we check which service engineers are available at that specific time. If it is possible to perform service job at the time requested, we confirm that with the customer. The service job is then organized and the material and tools required are sent to the site.

GEMÜnews: Which service jobs do you find the most interesting?

Patrick Ohr: Generally speaking all jobs are interesting as you never quite know what's waiting for you on site. For example, how accessible are the products and where are they installed. All service jobs in more exotic locations, such as Asia for example, are of course also very interesting, as local conditions and challenges can be every different to those found in Europe.

GEMÜnews: Have you got a particular job that you remember well?

Patrick Ohr: I remember going to Singapore just before Christmas last year. It was a very urgent job which had to be organized at the last minute. At 12 noon on the Friday, I received notification that I was to fly to Singapore for four days on the Sunday. I then flew on the Sunday from Germany, where it was -10 degrees, to over 30 degrees in Singapore.

GEMÜnews: What has been your most unusual job to date?

Patrick Ohr: No two jobs are the same. The job in Singapore certainly remains one of my most extraordinary service trips. In addition to the last-minute organization just before Christmas and the temperature difference, there was also a time difference of seven hours. A job in Poland also presented us with some considerable challenges. In a newly constructed coal-fired power station, we had to replace several bent butterfly discs. Despite the distance amounting to over 1200 kilometres, we didn't fly, as we had a lot of heavy equipment that we needed to take with us. So we ended up driving with a VW van. Transport by air freight or carrier would have taken too long and the tools wouldn't have been on site in time.

Removing a butterfly valve in a ground tank

Service employee retrofits GEMÜ 1242 ATEX position indicators on a tank

GEMÜnews: What are some of the challenges that you have to deal with on a service call?

Patrick Ohr: Organizing the correct travel documents for jobs abroad, such as A1 requests, can be very challenging – particularly when there is not much time between the request coming in and needing to be on site. Local conditions also often represent new challenges for us, as we are not always clearly told in advance what we should expect at the customer's premises, how accessible the products are in the plant, and who our contact persons are on site. It can sometimes be quite stressful on site, depending on our reason for being there. Planned maintenance is very different to complaints, where there is a threat of plant failure. In most cases, however, customers are very friendly and are happy to receive help and support from specialists. Another challenge is making sure that we have the right tools for the job. It's not always clear what tools we will need and what is available on site. If we are in Germany, missing material can be sent by express mail and is available on site by the next day. Things take a little longer when we are working abroad. At some plants, we are also not allowed to carry out work during normal working hours and have to wait until after work. Sometimes we therefore have to carry out our work at weekends or at night. Also, every plant has its own standards. For example, in addition to standard safety instructions, some plants also require special training or certificates, regardless of the work permit, before you are allowed to carry out work on site.

GEMÜnews: What do you enjoy most about your work?

Patrick Ohr: The uncertainty of what is waiting for us on site and whether everything will work properly given the local conditions always keeps us on our toes. It is also fun to troubleshoot and diagnose problems, as it is not always clear in advance where the problem lies. As an after sales service employee, we are expected to be willing to travel a certain amount. This can also be fun, as I like to travel, and I am always happy when work takes me to places I have never been before.

GEMÜnews: How far in advance are service jobs planned?

Patrick Ohr: Most scheduled service jobs are planned 4 to 12 weeks in advance. In the case of unplanned inquiries, where there is a threat of plant failure, things are somewhat different. In this case, service jobs are planned very quickly, as with my trip to Singapore last year. Of course, there are also maintenance visits which are scheduled one year in advance.

GEMÜnews: Which countries have you already visited as part of your service work?

Patrick Ohr: In addition to Germany, we often visit Austria and Switzerland. I have been working in the after sales service department since April 2018 and, alongside Singapore and Poland, have visited Liechtenstein, Ireland, France, South Korea and Scotland.

Ivona Meißner
Corporate Communications Advisor
ivona.meissner@gemue.de

Patrick Ohr
After sales service team member
patrick.ohr@gemue.de

TRIED AND TESTED AND VERSATILE – GEMÜ 1436 CPOS
NEW PROFINET FIELDBUS INTERFACE

The GEMÜ 1436 cPos positioner has been successfully used for many years for a wide variety of applications. The various configuration options offer users a high level of flexibility. Installation and commissioning are almost unbelievably simple.
GEMÜ is now expanding its tried and tested positioner to include additional options in fieldbus environments.

The previously available type with Profibus DP enables the user to preset all setting options easily using the fieldbus interface instead of having to enter it locally on the operating unit. In this way, the process data for controlling the valve position is also transmitted digitally. All this is now offered by the new Profinet type with decisive advantages with regard to the transmission rate, which is approximately 8x higher. The new fieldbus type with Profinet has other practical benefits for the user, such as a more stable connection and additional configuration options.

In addition to the "standard" versions with analogue signals (0/4…20mA) and the already available DeviceNet versions and Profibus DP, the electro-pneumatic positioner is now also available with Profinet, the industrial Ethernet standard, which will increasingly become the established standard in the near future in the automation sector.

GEMÜ is therefore expanding its product range in the area of positioners for pneumatically operated equipment. To achieve the widest range of control tasks, a complete product range of positioners can be accessed. The individual series each have specific features and characteristics whereby a balance must always be struck between wide-ranging functionality and cost/benefits.

The GEMÜ product range of positioners comprises the following series:

⇒ **GEMÜ 1434 µPos** as a simple, cost-effective and extremely compact basic controller with adjusted preconfiguration is specially designed for valves of small to medium nominal sizes with single acting linear actuators

⇒ **GEMÜ 1436 eco cPos** as a functionally comparable supplementary device for the 1434 µPos with regard to expanded valve adaptability and control speed based on the considerably increased flow capability

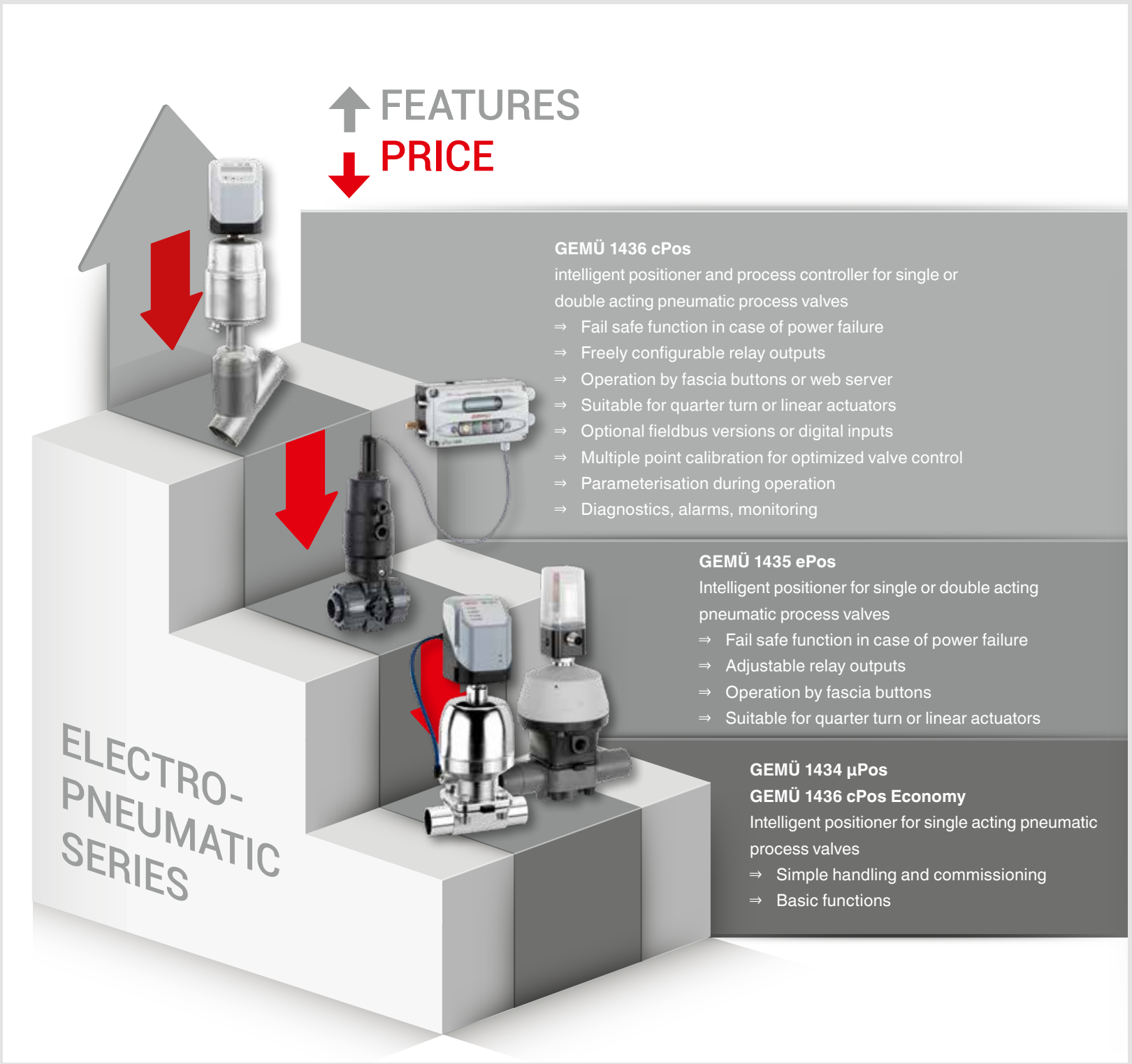
⇒ **GEMÜ 1435 ePos** as a controller for applications with expanded requirements or harsher environmental conditions, in which the robust aluminium housing offers increased resistance. Can be fitted to the full GEMÜ valve range

⇒ **GEMÜ 1436 cPos** as a positioner, optionally with integrated process controller, for use in the most demanding control tasks. The selectable fieldbus interfaces or digital inputs enable a variable function control and the optional process controller permits self-sufficient applications independent of a central process control system (referred to as PLC). GEMÜ 1436 cPos can also be adapted to the full range of GEMÜ valves and beyond in some cases

GEMÜ 1436 cPos

PROFIBUS • PROFINET

Thorsten Ungerer
Product manager for positioners, Competence Center Automation
thorsten.ungerer@gemue.de



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gemue.news@gemue.de
www.gemu-group.com

Editors:
Ivona Meißner (GEMÜ)
Norbert Neumann (GEMÜ)
Birgit Seuffert (factum | adp)

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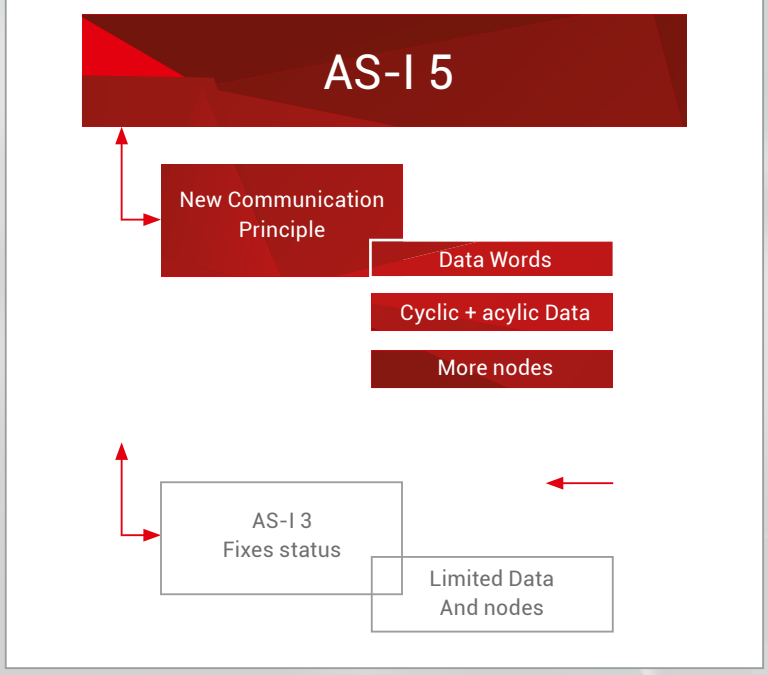
NEW TECHNOLOGIES FOR AS-I AND IO-LINK
INDUSTRIAL COMMUNICATION SYSTEMS

The established AS-i and IO-Link industrial communication systems offer new technologies and expanded application possibilities.

ASi-5

A new technology for the popular AS-I system is now ready for future further developments. The new system offers more data transport and enables more participants in the network. AS-I 5 therefore provides a bridge to Industry 4.0 and IoT (Internet of Things).



Main features of AS-I 5

⇒ 16 bit per device per cycle
⇒ 16 safe bits for safe communication
⇒ Fast analogue transmission (bidirectional)
⇒ Concurrent parameter-data channel
⇒ Channel-specific diagnostics
⇒ Combined transmission of safe and standard data for each participant
⇒ Maximum process data image 3072 bytes per system
⇒ Flexible process data of up to 32 bytes per device

Basic solution for expanded customer benefits

⇒ Predictive maintenance capability (extended diagnostic facilities)
⇒ Suitable for fast control tasks
⇒ Industry 4.0 and IIoT (Industrial Internet of Things) optimal connection and implementation

High compatibility ensures inventory and investment protection

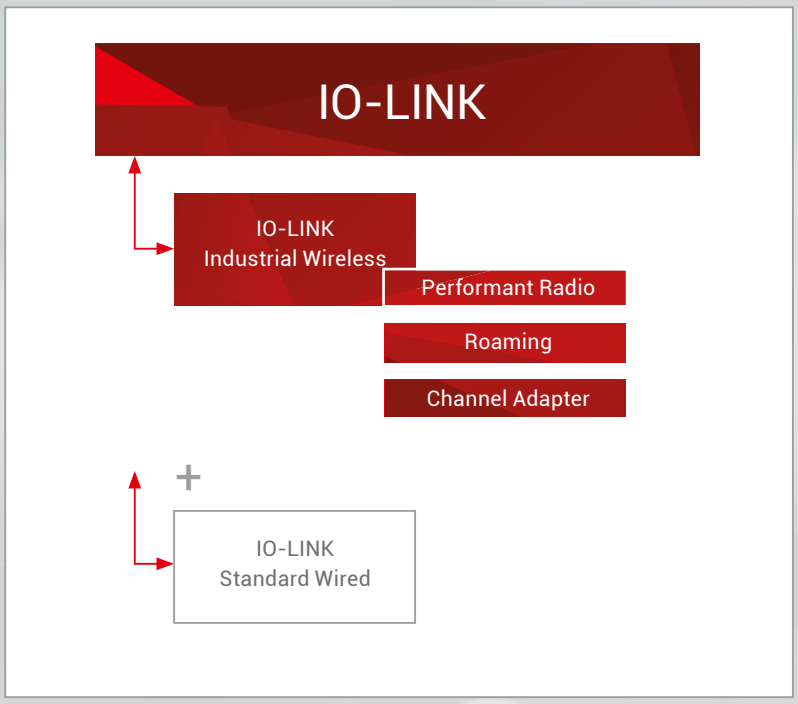
⇒ Slaves of all generations can be used concurrently in ASi networks
⇒ Existing devices can be upgraded to ASi-5
⇒ Masters and slaves of all generations can be used together on the same cable

GEMÜ is a member of the AS-I Association and offers various products with AS-I interfaces, for example the GEMÜ 4242 combi switchboxes. Today we use the AS-I basic with AS-I 3. Please talk to us about these future generations and applications of Industry 4.0 for AS-I 5.

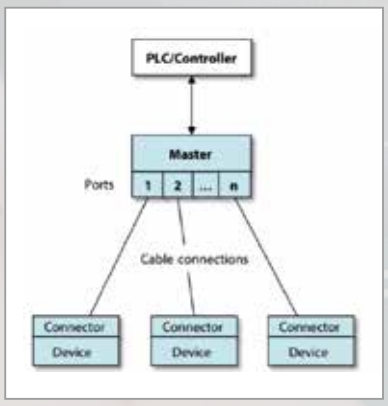
IO-Link expanded to include IO-Link Wireless

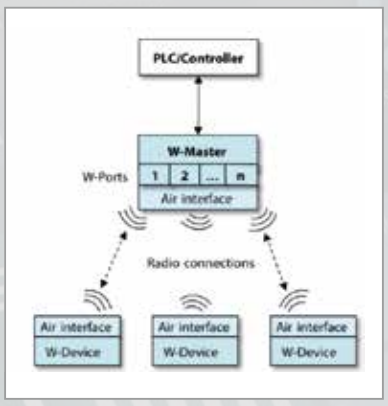
IO-Link + IO-Link wireless

Bring greater flexibility to your application installation with wireless transmission



The established IO-Link now offers an even simpler area of application using wireless communication. Particularly in specially protected areas or areas that are difficult to access, wireless communication provides a valuable alternative. This technology is based on a solid radio link in the point-to-multipoint network to industrial quality IEC 61131-9.





Compatible with IO-Link standard (wired), with 120 devices per radio cell and roaming support, IO-Link networks can now be fitted with wired and wireless device communications matched to requirements.

GEMÜ is a member of the PNO (Profibus User Organization) and IO-Link working groups and offers its customers various products such as GEMÜ eSyStep 639 motorized valves or GEMÜ 4242 combi switchboxes with IO-Link interface.
A wired IO-Link installation can easily be expanded to include IO-Link wireless using a wireless adapter.

Please contact us to talk about these new options for IO-Link Wireless, providing you with much greater flexibility.

Werner Flögel
Digital Officer – Innovation
GEMÜ Group
werner.floegel@gemue.de

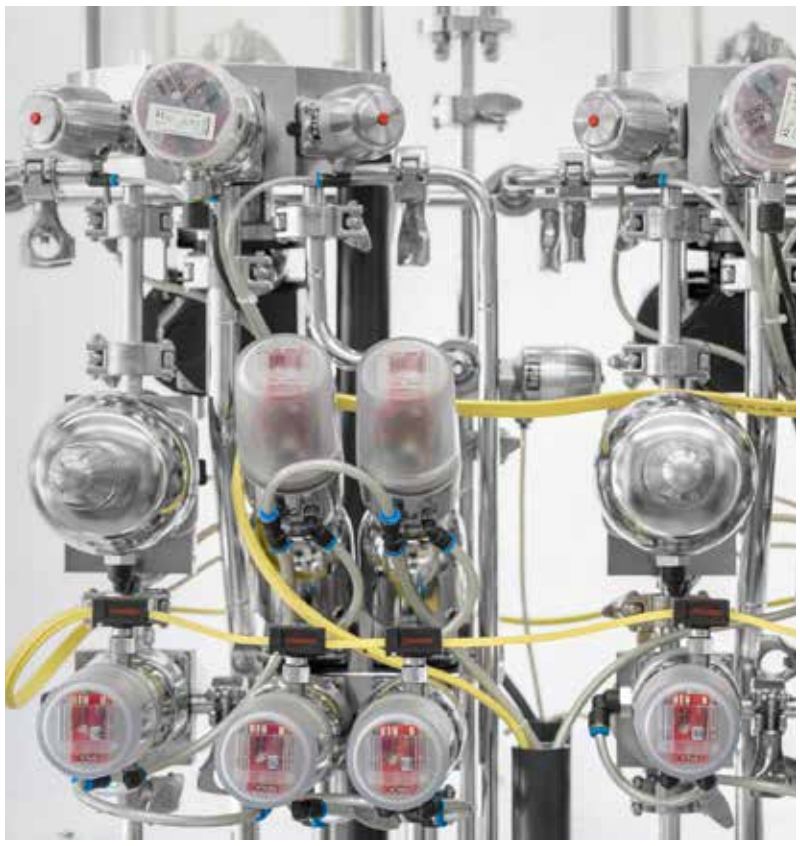
INTELLIGENT VALVE CONTROL
GEMÜ 4242 COMBI SWITCHBOX FOR EXPLOSIVE AREAS

The GEMÜ 4242 combi switchbox is awarded ATEX approval for use in AS-Interface and DeviceNet fieldbus systems.

The GEMÜ 4242 combi switchbox is designed for the most varied industrial working environments and all common process landscapes. These also include special requirements for areas of application in explosion protection such as ATEX, IECEx and NEC, for which the GEMÜ 4242 combi switchbox has the corresponding approvals.

In addition, the GEMÜ 4242 combi switchbox covers the most varied electrical connection scenarios. This includes communication via IO-Link as well as integration in modern fieldbus systems such as AS-Interface or DeviceNet. Backward compatibility is guaranteed; and the integration option with various AS-Interface profiles also enables retrofitting of older plants.
The GEMÜ 4242 combi switchbox is systematically designed for user friendliness. Microprocessor controlled functions and intelligent and user-friendly programme routines facilitate easy commissioning and service of the valves.
With the ATEX approval of the GEMÜ 4242 combi switchbox, GEMÜ is expanding its offer for use in explosive areas in a wide range of industrial operating environments and process landscapes.

Anesa Stanke
Product manager for electrical position indicators and combi switchboxes
anesa.stanke@gemue.de



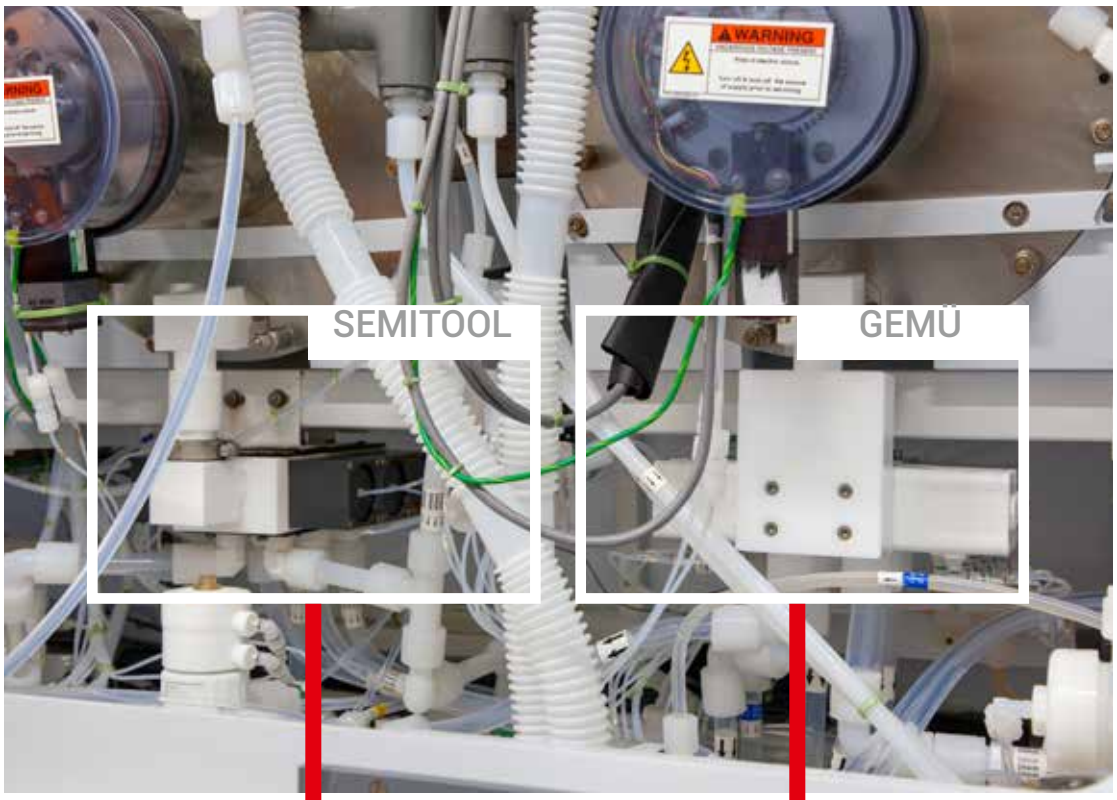
FOCUS ON MARKETS
FOR REFURBISHMENT AND RETROFIT APPLICATIONS

Immense potential worldwide thanks to the modernisation of microchip production plants. Digitalization, Industry 4.0, IoT and autonomous driving are just a few examples of current trends that are driving demand for microchips and are raising the bar when it comes to the requirements for the performance capability of modern microchips. To further improve performance capability, however, will also require an improvement in manufacturing technologies.

If you look at developments in recent years, it is clear that a lot has happened in this sector. In the 1980s, the structures that could be manufactured were at least 10 micrometres in size. Current technologies, in contrast, make it possible to produce structures which are 500 times smaller (under 20 nanometres), enabling microelectronic innovations in the field of digitalization.

This analysis is based on the assumption that production plants are regularly replaced with latest generation technology to enable more powerful and efficient microchips to be manufactured. However, this is not the case, as the demand for microchips for simpler applications is still high, and these continue to be manufactured using the same or similar processes that have been used for a number of years.

One manufacturer of these plants was Semitool, which produced processing devices for the manufacture of 150 and 200 mm wafers. These processing devices are still present in semiconductor factories around the world today and now, after several company mergers and acquisitions, belong to the product portfolio of Applied Materials, the global market leader for processing devices in semiconductor production. What is interesting about these plants is the fact that Semitool manufactured the required valve designs themselves and installed them in their machinery. After the company was first sold to the OEM Group, these activities were discontinued and replacement valves were no longer produced. Since these plants have been in operation for a number of years now, the valve technology that they use needs to be replaced gradually to ensure continued process reliable production. Replacement valves are no longer available and therefore GEMÜ is providing the optimal replacement with its iComLine series in order to safeguard production or even to improve production processes. One example of this is the Drainblock for use in Semitool Raider plants and is available in a wide range of configurations. Due to the immense potential worldwide, an attractive market has opened up for these replacement valves which GEMÜ is focused on pursuing.



Exemplary illustration

Jonas Claus
Application Engineer
jonas.claus@gemue.de

- ⇒ The old Semitool Drainblock was replaced with a GEMÜ PC50 iComLine block.
- ⇒ Flow chart and connection sizes could be maintained one to one.
- ⇒ The plants of Semitool are installed worldwide in all semiconductor production facilities. This represents great potential.
- ⇒ There are no genuine spare parts available and no simple alternative solutions on the market. The solutions that are being offered by GEMÜ are increasingly in demand.
- ⇒ With the help of minimal information, such as flow chart, connection and actuator sizes, GEMÜ can quickly and easily supply customized spare parts.

GEMÜ 8500
EXTENDED PORTFOLIO

Pilot solenoid valves – more powerful and more compact. The new electrical pilot solenoid valve – GEMÜ 8500 – extends the control technology range for pneumatically driven valves to include a cost-effective alternative.

The new type GEMÜ 8500 offers even more increased air volume of 1250 l/h compared to the existing series, leading to improved opening and closing times for the pneumatic actuator driven by this valve. At the same time, the new connector with the B IND design makes the size even more compact.
The servo assisted pilot solenoid valve GEMÜ 8500 with an aluminium body is indirectly controlled. The coil is encapsulated in plastic and is detachable, so that is possible to change the voltage or frequency easily. The piston valve has a soft elastomer seal. The new type is available with immediate effect in variants 3/2-, 5/2-, 3/2-Namur and 5/2-Namur. The entire series can also be delivered with base plates for construction as a valve manifold.

GEMÜ 8500 pilot solenoid valve

Andreas Steckling
Operational Product Manager for pilot solenoid valves, Competence Center Automation
andreas.steckling@gemue.de

GEMÜ BC
EXPANSION OF MOTORIZED QUARTER TURN ACTUATORS

GEMÜ is expanding the product range to include the new motorized GEMÜ BC quarter turn actuator.

This actuator is also available for butterfly valves with nominal sizes from DN400 to DN1200. Areas of application for the new motorized quarter turn actuator include agriculture, drinking and waste water treatment, biogas plants, power stations, chemical plants and the shipbuilding industry. The actuator is equipped with an aluminium housing which makes the actuator very robust and weather-resistant. The GEMÜ BC is comparable with the GEMÜ AQ actuator in terms of technology, but the new motorized GEMÜ BC quarter turn actuator is more economically priced than a GEMÜ AQ. The options range from OPEN/CLOSE to a positioner logic actuator with display and on-site control. The new motorized GEMÜ BC quarter turn actuator is available in all nominal sizes from DN 25 to 1200 from spring 2020.

GEMÜ 498 Edessa butterfly valve with GEMÜ BC motorized actuator

Hendrik Kunze
Strategic Product Manager for motorized quarter turn actuators, Competence Center Automation
hendrik.kunze@gemue.de

GEMÜ SERIES
SPECIALIST JOURNAL TECHNOPHARM

Technical papers on sterile and aseptic valves.

This year, the Business Unit Pharma, Food & Biotech published a series on sterile and aseptic valves in the specialist journal TechnoPharm. TechnoPharm publishes scientific and technical information for experts in the pharmaceutical sector and has a publishing run of over 10,000 copies per edition. The series "Sterile and aseptic valves" from GEMÜ included the following technical papers:

⇒ Innovative sealing concept for hygienic and aseptic filling *by Dr.-Ing. Klaus Heller*
⇒ Properties and optimum manufacturing process for functional stainless steel surfaces *by Matthias Wolpert*
⇒ Research & development, manufacture and qualification of seal materials in aseptic valve designs *by Thomas Köder*

You can also read the papers on our website under the tab:
Latest news_News & press_ Technical papers

2020 training dates
THEORETICAL TRAINING COURSES

ALLROUNDER LEVEL

⇒ Basic technical principles of valve designs

GV0100GB GEMÜ Products and markets
Half-day training course, on request
GV0101GB Functional principles of valves and their selection criteria (basic module)
20th April 2020, 08:00 – 17:00
GV0102GB Plastics in valve and pipeline construction
21st April 2020, 08:00 – 12:30
GV0103GB Metals in valve and pipeline construction
22nd April 2020, 08:00 – 12:30
GV0104GB Pipe connectors and assembly information
23rd April 2020, 08:00 – 14:30
GV0105GB Explosion protection, ATEX / IECEx
24th April 2020, 08:00 – 14:30

⇒ Basic technical principles of application technology

GA1000GB Procedures and processes in the biotechnology, pharmaceutical, foodstuffs and cosmetics industries
27th April 2020, 08:00 – 17:00
GA2000GB Procedures and processes in the high purity, semiconductors and critical media industries
28th April 2020, 08:00 – 14:30
GA3000GB Procedures and processes in the chemical, processing and water industries
29th April 2020, 08:00 – 17:00

⇒ Basic technical principles of measurement and control systems

GM0101GB Introduction to electric systems, electronic systems and pneumatics (basic module)
18th May 2020, 08:00 – 17:00
GM0102GB Measurement variables and measurement principles in process engineering
19th May 2020, 08:00 – 17:00
GM0103GB Control circuits: Their construction and function
20th May 2020, 08:00 – 17:00

SPECIALIST LEVEL

⇒ Product training in valve designs

PV1000GB Valves for the biotechnology, pharmaceutical, foodstuffs and cosmetics industries
4th May 2020, 08:00 – 17:00
PV1100GB Single-use valves for the biotechnology and pharmaceutical industries
5th May 2020, 08:00 – 14:30
PV2000GB Valves for high purity, semiconductors and critical media industries
6th May 2020, 08:00 – 14:30
PV3000GB Globe valves and diaphragm valves in the chemical and processing industries and water
11th and 12th May 2020, 08:00 – 17:00
PV3001GB Butterfly valves and ball valves in the chemical and processing industries and water
13th and 14th May 2020, 08:00 – 17:00
PV4000GB Valve designs – accessories and instrumentation for linear valves and quarter turn valves
7th May 2020, 08:00 – 17:00
PV5000GB Innovations, upgrades and refresher course
Training course on request as required

⇒ Product training in measurement and control systems

PM0101GB Measurement devices and measurement principles for pressure, temperature, level and volumetric flow
25th May 2020, 08:00 – 17:00
PM0201GB Positioners: Function and application
26th May 2020, 08:00 – 17:00
PM0301GB Process controllers: Function and application
27th May 2020, 08:00 – 17:00
PM0501GB Innovations, upgrades and refresher course
Training course on request as required

SERVICE TRAINING

SPECIALIST LEVEL

⇒ Qualified service fitter in accordance with GMP/FDA

SM1001GB* Servicing and changing replacement and wearing parts in diaphragm valves for hygienic and sterile applications, attachment and readjustment of valve accessories. *On-site briefing, approx. three hours, appointments by arrangement, minimum five participants*

SM2001GB* Servicing and changing replacement and wearing parts in HP Cleanstar diaphragm valves, attachment and readjustment of valve accessories. *On-site briefing, approx. three hours, appointments by arrangement, minimum five participants*

SM2002GB* Expert manufacture of ultra pure PFA tube connections for the GEMÜ FlareStar/TubeStar tubing and fitting system. *On-site briefing, approx. three hours, appointments by arrangement, minimum five participants*

SM3001GB* Servicing and changing replacement and wearing parts in globe valves, attachment and readjustment of valve accessories. *On-site briefing, approx. three hours, appointments by arrangement, minimum five participants*

SM3002GB* Servicing and changing replacement and wearing parts in elastomer butterfly valves, attachment and readjustment of valve accessories. *On-site briefing, approx. three hours, appointments by arrangement, minimum five participants*

SM3003GB* Servicing and changing replacement and wearing parts in diaphragm valves for industrial applications, attachment and readjustment of valve accessories. *On-site briefing, approx. three hours, appointments by arrangement, minimum five participants*

SM4001GB* Installation and commissioning of valve accessories such as stroke limiters, electr. position indicators and positioners. *On-site briefing, approx. three hours, appointments by arrangement, minimum five participants*

SM5001GB* Servicing for various GEMÜ products, upon consultation. *On-site briefing, approx. three hours, appointments by arrangement, minimum five participants*

EXPERT LEVEL

⇒ Qualified Service expert in accordance with GMP/ FDA

ET1001GB Training as authorized service expert for GEMÜ diaphragm valves. *Suitable for external service and maintenance personnel with the skills of an experienced mechanic*

The training courses will be held in English.

Jessica Donner

Assistenz der Abteilung Service | Organisation Technische Schulungen

jessica.donner@gemue.de training@gemue.de

FIRST STEPS IN SUCCESSFUL CAREERS
START OF TRAINING 2019

GEMÜ welcomed a total of 25 new apprentices and six dual studies students starting their training on 1st September 2019.

With more than 20 different training perspectives, GEMÜ offers a wide range of opportunities for getting started in the world of work. Throughout the entire duration of their training or studies, GEMÜ supports the young professionals and ensures they receive an easy introduction to the everyday world of work. To this end, GEMÜ organises a varied programme for the apprentices and students during the group introduction week, which includes getting to know one another as well as the trainers responsible for them. As a result, they have the opportunity to make new contacts and benefit from the expertise of their fellow apprentices and trainers right from the start. At presentations of the company and its various sites, new starters are able to get to know a large part of the business right away. The first day of was rounded off by a team building event with the trainers. During various team building activities, such as personality bingo and the "Unidentified Flying Object", the focus was on getting to know each other and having fun.

In the days that followed, the apprentices and students went on to attend various training courses on topics such as "Occupational safety", "Successfully starting your career" and "The world of GEMÜ products", providing them with an initial overview of all important areas. This is designed to ensure that absolutely nothing stands in the way of our apprentices as they make a successful start in their professional lives.

The apprentice trip to Optima in Schwäbisch Hall and the subsequent highland games rounded off the introduction week. After each participant had received a kilt, the teams competed against each other in Scottish and other original disciplines. After caber tossing, archery, axe throwing and many other disciplines, the new job starters said goodbye – exhausted but happy that it was the weekend.

GEMÜ wishes its new apprentices and students a good start and the best of luck in their endeavours!

Apprentices (group photo, stairs from rear left to front right):

Luca Fischer, Hannes Lotz, Felix Mancic, Maximilian Stadtmüller, Lukas Schlipf, Luke Schweizer, Nico Reichert, Fabian Winter, Christian Beck, Jan Löchner, Josua Dürrstein, Felix Rogotzki, Robin Stolz, Leon Jung, Waldemar Dieterle, Yannick Gerner, Tobias Hetzler, Leon Friedrich, Yakouba Oudraogo, Sandro Wernado, Nina Storz, Christina Rimmer, Selina Eichhorn, Justin Münch, Klara Woitalla, Simeon Buck, Georgios Gounaris, Loreen Schmitt, Isabelle Gseller, Fabienne Bogert, Yazan Alsaadi

Katrin Engert

Training Manager

katrin.engert@gemue.de

NEW CAR FOR APPRENTICES

E-Smart for special services. In recognition of special commitment to the company, one apprentice is chosen as the "Apprentice of the Month" at GEMÜ and is awarded an E-Smart convertible for four weeks, to be used for personal and business purposes.

When suggesting and then selecting the apprentice of the month, commitment to the business in the form of projects, events or trade fairs is taken into consideration, as well as feedback from the departments during the different apprenticeship stages. In recognition of their services, the dedicated apprentices have access to the GEMÜ apprentice car for four weeks for personal and business use.

This has become particularly attractive since July 2019 as GEMÜ provides the apprentice of the month with an E-Smart convertible. The new convertible extends the company's electric car fleet, taking a further step in the direction of sustainability. Our apprentices are now driving in an environmentally friendly manner, using electricity, while enjoying the privilege of trying out an electric car. Of course, the apprentice car comes with its own parking space on the GEMÜ company premises and a charging point which the apprentices can use to charge the electric car round the clock, including during working hours. The vehicle is charged within a short period of time and can then run for approximately 160 km.

We wish all "apprentices of the month" happy driving with the new apprentice car!

THE ON-TREND TOPIC OF AUTONOMOUS PRODUCTION
KEY THEME FOR FUTURE MARKET

A lot has been written and said in the industry about digital transformation. There is no doubt that this represents real economic opportunities for companies. At the same time, however, it is also clear that smaller companies in particular – according to their own information – feel less prepared for these innovations than larger ones. Implementing specific digitalization projects requires strategic support and assistance.

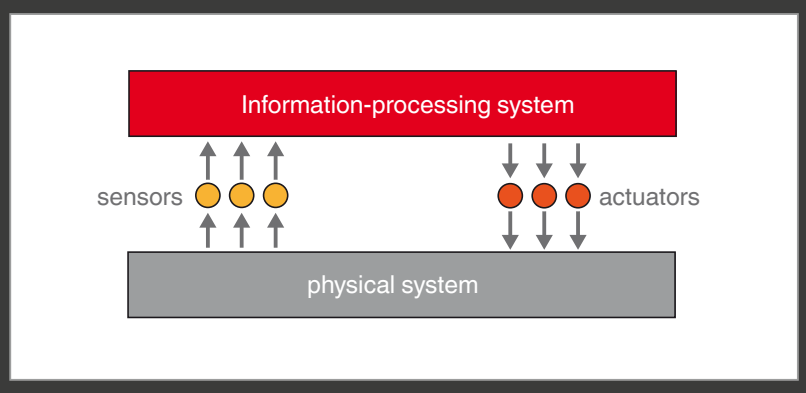
The on-trend topic of "autonomous production" is going to be, without doubt, a key theme for future market success, particularly for machinery and plant construction, but also for production companies in general.

The challenge of autonomization

The term autonomization leads most people to think about autonomous driving in the first instance. However, in the shadows of the media-effective pilot studies by Internet companies and the automotive industry, autonomous business processes are already well established, for example in the service sector. In banking, insurance or trade, intelligent, self-learning algorithms are already covering large areas of work. In industry, in contrast, autonomous production seems to be still in the early stages. It is currently more vision than reality. However, future development pathways are definitely opening up. The first autonomous production cells that are self-optimizing are already manufacturing.

For companies, autonomous production and business processes can be of considerable benefit, and can improve process efficiency – adding customer benefits and value, in spite of increasingly complex manufacturing conditions.

Autonomous technical systems – a new paradigm?



Autonomous systems are different to controlled systems based on the methods used by the information-processing components. Controlled systems are designed to use ("classic") control technology methods.

⇒ Control technology focuses on continuous linear physical systems.

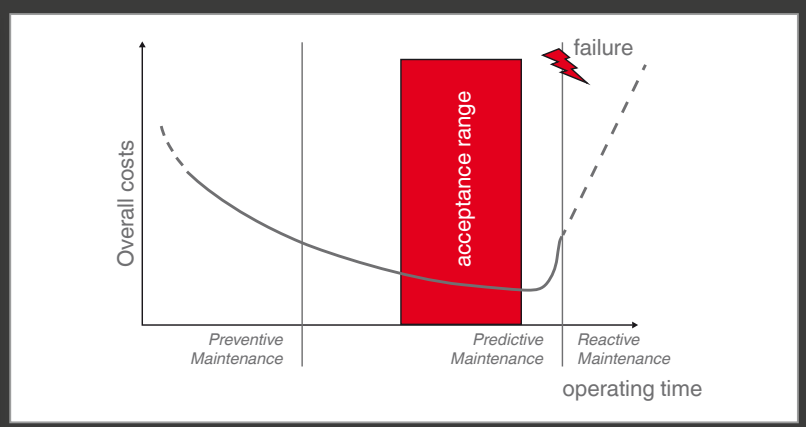
⇒ Autonomization focuses on more complex (non-linear, discrete, hybrid, stochastic) systems.

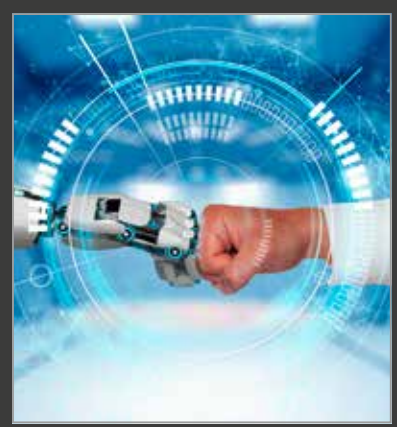
Case study of an autonomous system – GEMÜ Smart Services

The GEMÜ group, as a leading manufacturer of valves, measurement and control systems, develops innovative solutions for digitalization and Industry 4.0 for modern and futuristic applications.

The case study shows a typical application for media control in plants of customers who use valves, measurement and control systems. Well-known applications include, for example, cooling circuits, supply lines, mixers, dosing installations etc. In this case, correct media and fluid controls ensure correct process sequences and production quality.

Over the service life, operational tolerances or influences can deviate from the original functional performance as a result of wear. Automation-capable equipment can be integrated in the current state in control circuits and can control and monitor each control unit with target values.

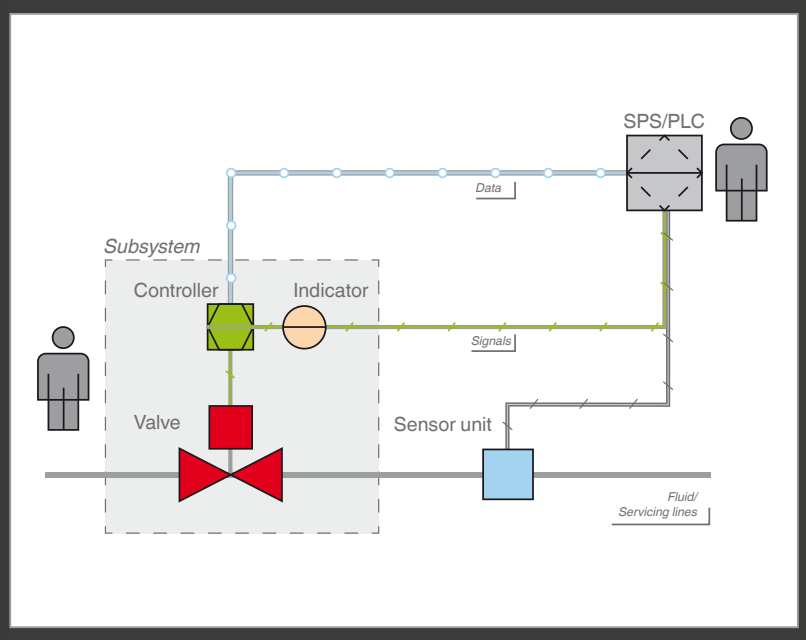




As more autonomous tasks are introduced, some deviations in the devices can be balanced out by means of limited automatic readjustments. Typical features, for example clearing values for wear for moving mechanical parts, are calculated and activated by condition monitoring. Corrections are made automatically in coordination with the higher-level control system. The result is a more efficient and more stable performance.

The aim is to replace interventions by an operator where repetitive algorithms can perform tasks in a comprehensive manner, while the operator maintains an overview and carries out more of a monitoring role.

Active work on the on-trend subject of "autonomous production"



We are actively working on this subject in working and specialist groups. Specialists are predicting that production will increasingly move towards a more autonomous setup. Experience in the application and use of AI will no doubt be one of the keys to autonomous production. Let's not forget: Vehicles today are already well on the way to autonomous driving. **It's going to be interesting.**

Werner Flögel
Digital Officer – Innovation
GEMÜ Group
werner.floegel@gemue.de

TRADE FAIRS 2020
(INTER)NATIONAL

EXPO Lounges	28.01. – 30.01.	Karlsruhe (DE)
National Manufacturing & Supply Chain Conference	29.01. – 30.01.	Dublin (IE)
Pharmapack	05.02. – 06.02.	Paris (FR)
Semicon Korea	05.02. – 07.02.	Seoul (KR)
Pumps & Valves Dortmund	12.02. – 13.02	Dortmund (DE)
Semicon China	18.03. – 20.03.	Shanghai (CN)
Pharma-Kongress	24.03. – 25.03.	Düsseldorf (DE)
Pumps & Valves BE	25.03. – 26.03.	Antwerp (BE)
MSR Spezialmesse Rhein-Main	25.03.	Frankfurt (DE)
ISPE Europe	30.03. – 01.04.	Madrid (ES)
PHARMACOSMETECH	31.03. – 02.04.	Chartres (FR)
CIPM (Spring)	01.04.	Chongqing (CN)
Cophex	14.04. – 17.04.	Kintex (KR)
Kunststoffe im Anlagenbau	21.04. – 22.04.	Munich (DE)
Interphex USA	28.04. – 30.04.	New York (US)
IFAT	04.05. – 08.05.	Munich (DE)
Components (Interpack)	07.05. – 13.05.	Düsseldorf (DE)
CHEMUK	13.05. – 14.05.	Manchester (GB)
MSR Spezialmesse Rheinland	27.05.	Leverkusen (DE)
FCE Pharma	02.06. – 04.06.	Sao Paulo (BR)
Surface Technology	16.06. – 18.06.	Stuttgart (DE)
Semicon West	21.07. – 23.07.	San Francisco (US)

Trade fairs - inevvo solutions

Maintenance	12.02. – 13.02.	Dortmund (DE)