

Press Kit

sps 2022, Nuremberg, 8 to 10 October 2022

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SMC at sps 2022

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SMC company profile

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Press release

Egelsbach, October 2022

sps 2022: SMC highlights at the trade fair in Nuremberg

From wireless communication to particularly precise e-actuators and comprehensive transparency with respect to compressed air consumption: at the international trade fair, smart production solutions (sps) 2022 in Nuremberg, SMC will be presenting several highlights from its product portfolio between 8 and 10 November. These will include the wireless EX600-W fieldbus system, electric actuators from the LEKFS series and the plug-and-use solution “EnergieTransparenz@SMC”.

The EX600-W fieldbus system, which can also be used for welding applications, ensures secure and reliable communication – and this wirelessly in the 2.4 GHz ISM frequency band with a signal transmission time of just 5 ms. Since it takes just 250 ms after the power supply is switched on until communication, operators benefit from rapid readiness for use. In addition, the maximum number of 128 inlets and outlets per unit and compatibility with the fieldbus protocols EtherNet/IP™ and PROFINET ensure a high degree of flexibility and combinability.

The electric actuator in the LEKFS series enables reliable, high-performance palletising applications or general transport systems. It impresses with a positioning accuracy of ± 0.01 mm, high rigidity thanks to innovative construction consisting of a 4-row circular arc on each side, and the complete prevention of drift through slide shift – whatever the size of assembly. It is also compatible with common communication protocols (including EtherCAT, EtherNet/IP™, PROFINET, IO-Link), while the type with the 24 V DC stepper motor can be equipped with a battery-less absolute encoder.

Reduce energy expenses and CO₂ emissions: companies can get a comprehensive overview of their compressed air use and possible leaks thanks to “EnergieTransparenz@SMC”. The plug-and-use solution, consisting of compact, ready-to-plug-in assembly and an IoT platform, provides users with an overview of their consumption data, such as compression and throughput values, in real time in less than ten minutes. This means that trends can be reported and unnecessary consumption prevented in the medium term.

Trade visitors will find SMC at sps 2022 in Nuremberg from 8 to 10 November in hall 4, stand 371.



Fig. 1: The EX600-W fieldbus system enables reliable and secure wireless communication thanks to a 2.4 GHz ISM frequency band and a signal transmission time of 5 ms.

Photo: SMC Deutschland GmbH

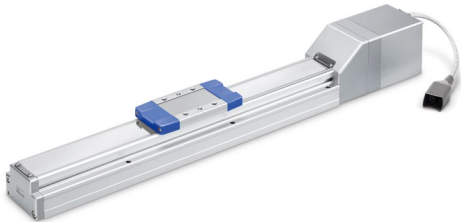


Fig. 2: The LEKFS series is particularly impressive thanks to its high positioning accuracy of ± 0.01 mm, and it also boasts high rigidity for precise, secure, and efficient applications.

Photo: SMC Deutschland GmbH



Fig. 3: The ready-to-connect plug-and-use solution is ready for use after just a short time and takes production another step in the direction of Industry 4.0 thanks to a connection to SMC's own IoT platform.

Photo: SMC Deutschland GmbH

For more information, please visit the SMC website at www.smc.de

Press release

Egelsbach, October 2022

Strong and absolutely accurate: Electric actuator from the LEKFS series ensures particularly high precision

Companies often use electric actuators for palletising or coating, for general transport systems or other double-axle applications. Where particularly high precision is required and a large payload is to be moved, only specially designed electric actuators can be used – such as the LEKFS series from SMC. It impresses with a positioning accuracy of ± 0.01 mm and high rigidity thanks to innovative construction consisting of a 4-row circular arc on each side. Easily mountable auto switches, simple exchange with actuators from the LEFS series, compatibility with a multitude of stepper motor controllers from the JXC series, and optional equipping with a battery-less absolute encoder added to the full package of the new electric actuator from the LEKFS series.

Whether in the automotive, electrical or semi-conductor industry, the food sector, the packaging industry or general automation: electric actuators have long been standard repertoire. But when it's a question of moving heavy objects in a particularly safe and precise manner, electric actuators typically come up against their limits. As a solution for this, SMC has developed the LEKFS series, which offers users positioning accuracy of ± 0.01 mm as well as high rigidity thanks to its smart construction. In addition, auto switches are easy to fit using mounting grooves, seal bands are obtainable to protect against particles of all sizes, the solution is compatible with various stepper motor controllers from SMC's JXC series – and a battery-less absolute encoder is also available as an option. The specialist in pneumatic and electrical automation has also designed installation in such a way as to ensure compatibility with the LEFS series, enabling the replacement – and hence easy updating – of machines.

Safe and precise positioning

Within the LEKFS series, a 4-row circular arc on each side ensures that the electric actuator boasts particularly high precision and rigidity – in the LEFS series there was only one row of balls on each side on the rail guide. The result is precise positioning accuracy of ± 0.01 mm and also particularly high rigidity: With a size of assembly of 40 and a load of 500 N, table displacement is 50% lower compared with the LEFS series at just 0.027 mm. Drift through slide shift is fully

prevented and accordingly lies at 0 mm for all sizes of assembly. At up to 37 kg (size of assembly 40), the payload is also around 61% higher than with the LEFS series. The positioning pin holes for precise alignment, which are employed on the underside of the casing as standard specification for the first time, also ensure precise movements with exact repetition. Thanks to the LEKFS series, operators get an electric actuator that allows them to realise very secure and precise applications even in the event of a high payload. At the same time, identical dimensions provide the possibility of replacing their existing LEFS series actuators with the new LEKFS series without any additional work.

High compatibility and rapid readiness for (re-)use

With respect to stepper motor controllers, the JXC series from SMC is available for selection, offering extensive compatibility with all common communication protocols in its different variations: from EtherCAT and EtherNet/IP™ to PROFINET and IO-Link. In the type featuring a 24 V DC stepper motor, the LEKFS series can also be ordered with a battery-less absolute encoder. This saves the last position in the event of an emergency stop or a power outage, meaning that operation can simply be continued without a reference run, and so without any delay. This not only increases efficiency but also saves on energy – and the environment benefits from the lack of a battery.

As standard specification, the electric actuator is also fitted with mounting grooves for auto switches (D-M9), which allow the detection of intermediate and limit positions. All in all, with the LEKFS series, companies get an electric actuator that represents an optimal solution for a broad area of application – particularly where requirements with respect to precision and rigidity are high.

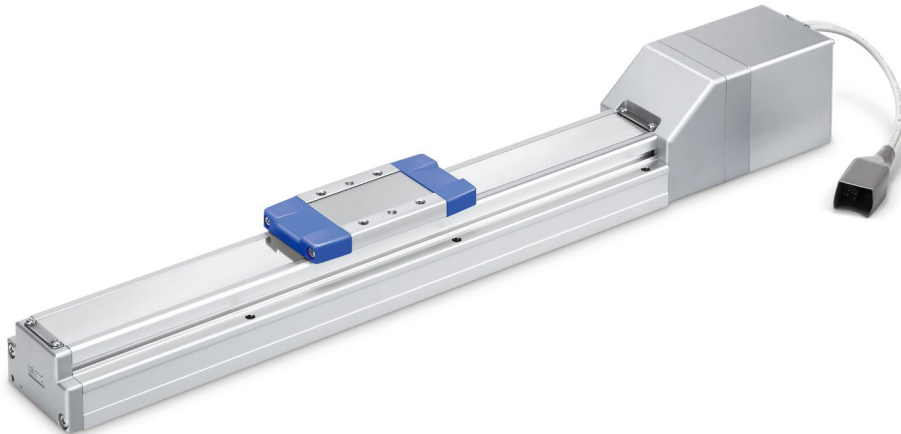


Figure: The LEKFS series is particularly impressive thanks to its high positioning accuracy of ± 0.01 mm, while also boasting high rigidity for precise, secure and efficient applications.

Photo: SMC Deutschland GmbH

For more information, please visit the SMC website at www.smc.de

Press release

Egelsbach, October 2022

Safe and efficient communication: SI unit from the EX600-W series ensures wireless transmission

Whether for handling, gripping or welding: industry-wide, there are applications where tools have to be changed frequently – and where the freedom of movement of robot arms, for instance, should be as unrestricted as possible. To achieve optimal results in such cases, SMC has developed the SI unit EX600-W for wireless transmission. Among other things, operators benefit from the rapid integration of tools in just 250 ms, disruption-resistant transmission thanks to use of the 2.4 GHz ISM frequency band, the comprehensive integration of up to 127 remote modules, data encoding for high security and compatibility with the widespread network protocols EtherNet/IP™ and PROFINET.

Companies that frequently have to change handling units in their applications or gripping tools on robots now have the possibility of completing this with minimal work within a short period of time: the solution is the wireless integration of valve manifolds or sensors into the overarching control system by means of the remote module EX600-W from SMC. The SI unit from the specialist for electrical and pneumatic automation enables handling axis or robot arms to move freely thanks to wireless transmission without signal lines getting in the way. In addition, the elimination of signal lines means that no unplanned stoppages occur due to cable breaks. Thanks to encoding and use of frequency-hopping spread spectrum transmission (5ms), operators benefit from stable and secure communication. Within just 250 ms, the SI units from the EX600-W series integrate any chosen tool into higher-level control systems. Transmission occurs in the licence-free ISM band (2.4 GHz).

Wireless communication therefore raises usage options to a new level.

Extremely communicative and compact

The connection of the EX600-W units to the overarching control system takes place via a stationary base unit using the conventional route to the PLC. This supports the most popular network protocols EtherNet/IP™ and PROFINET. In total, the wireless fieldbus systems offer up to 1,280 inlets and outlets and up to 127 remote modules can be integrated, depending on the basic module used. The range of the wireless connection remains stable over a distance of 10 metres, so that the EX600-W series is also well suited to large automation systems.

A weight of just 300 g means that the additional mass on moving axis after installation is low, and the moment of inertia generated through this also changes only minimally. On the one hand, this means that higher acceleration of the axle is possible, which results in shorter cycle times. On the other hand, the net payload on the supporting axis may be higher. In addition, the SI unit can be updated through subsequent hardware changes: as a result, additional scaling effects can be realised without having to acquire a completely new unit.

Fast tool changing and secure connection

It takes just 250 ms for a wireless connection to be established with the EX600-W. This allows tools to be changed in a short time, for instance in relation to a gripper system on a robot, lowering installation costs and meaning that a plant is ready for use again very quickly. Use of the licence-free ISM band (2.4 GHz) likewise eliminates further expenses. At the same time, the security of the connection is achieved through the encoding of the transferred data, while the limited range also prevents any influence from outside. Furthermore, certain channels can be selectively hidden through blacklisting, which fundamentally reduces interference. Should interference occur nonetheless, frequency-hopping spread spectrum transmission means that another frequency is switched to within 5 ms – with 79 channels available for this purpose.

The elimination of signal lines, the newly acquired agility of robot arms, the secure and rapid connection of remote modules over a distance of up to 10 m, and support of the most widespread communication protocols in industrial technology: from the perspective of Michael Losert, Product Manager at SMC, these are the most important arguments for using the new, wireless SI units from the EX600-W series. “Anyone who requires a wireless connection in their automation solution will find this system ideal for them,” adds the automation specialist. “And there are,” he says, “an awful lot of them.”



Figure: The SI unit from the EX600-W series enables wireless transmission over a distance of 10 m, offers fast and uncomplicated tool changing thanks to a connection speed of 250 ms, and uses the network protocols EtherNet/IP™ and PROFINET.

Photo: SMC Deutschland GmbH

For more information, please visit the SMC website at www.smc.de

Press release

Egelsbach, October 2022

All-round knowledge: Reduce consumption, save on costs and increase production sustainability with “EnergieTransparenz@SMC”

Compressed air is an essential energy source for numerous applications in industry. With an energy requirement of around 10%, it is also a significant cost factor and so plays a crucial role in the matter of climate-friendly production. To ensure that companies have a seamless overview of their compressed air consumption at all times, SMC makes energy use visible. For this purpose, the solution provider offers “EnergieTransparenz@SMC”, an all-round service consisting of modern hardware and web-based data processing. The ready-to-connect plug-and-use solution is ready for use after just a short time and takes production another step in the direction of Industry 4.0 thanks to a connection to SMC’s own IoT platform.

Day after day, many litres of compressed air flow through industrial plants – without operators having a real overview of their consumption and possible leaks. In the case of older machinery, some 20% of the compressed air supplied vanishes due to leaks, and the loss of power also leads to reduced machine availability. Instead of looking for the causes of compressed air losses and rectifying these, an additional compressor is often installed, consuming additional electricity. The consequences are vast: unnecessary energy requirements, higher expenses, reduced process stability and a negative environmental footprint. To overcome the challenge of genuine transparency and to resolve this range of problems, SMC has developed the “EnergieTransparenz@SMC” service. With this, the automation specialist offers companies a full package that gives them real-time reporting about their compressed air and enables them to make production more efficient, economical and sustainable.

Plug-and-use solution

The commissioning of “EnergieTransparenz@SMC” is extremely easy: SMC provides a compact and ready-to-plug-in assembly that can be integrated at any point in a machine. It is simply a case of taking apart the existing tubing (inlet and outlet), integrating the assembly and plugging in the 230V mains adaptor. Via mobile telephony, the data from the measuring point is then transferred to SMC’s own IoT platform, which runs as a software-as-a-service (SaaS) solution via a cloud. All in all, operators get an overview of their consumption data, such as compression and throughput values, in

real time in less than ten minutes – without the installation of additional software. This is because access to the IoT platform and the data takes place via user name and password directly via a web browser, meaning that complicated integration into the company's network is not required either.

The data is evaluated automatically by SMC's IoT platform, which provides not only real-time analysis, but also detailed monthly reporting, including all raw data. Thanks to online access, access to data analysis in the form of clear dashboards is possible without any problem from different devices. Operators can, for example, view the last 60 minutes to track any short-term changes or get an overview of the last 30 days, permitting consumption trends to be analysed. The data can also be exported, allowing it to be used as the basis for ISO 50001, and so for sustainable energy savings. The individual items of data are saved and evaluated in a cloud on servers in Germany – meaning that they are subject to the highest security requirements according to German and EU data protection laws. "EnergieTransparenz@SMC" therefore offers everything from a single source – from the sensor and cloud to data evaluation.

Complete transparency – at any time

With "EnergieTransparenz@SMC", companies get a full solution that is ready for use in just a few minutes, providing them with targeted energy monitoring in real time. SMC therefore offers a tool that allows operators to discover leaks and weaknesses early on to achieve a variety of benefits: increased machine availability and process stability, reduced energy consumption in terms of compressed air and electricity through the elimination of additional compressors and so, ultimately, a lower CO₂ footprint and improved environmental performance. In view of rising energy prices and the need to enable climate-neutral production, "EnergieTransparenz@SMC" provides a comprehensive solution.



Figure 1: The ready-to-connect plug-and-use solution is ready for use after just a short time and takes production another step in the direction of Industry 4.0 thanks to a connection to SMC's own IoT platform.

Photo: SMC Deutschland GmbH

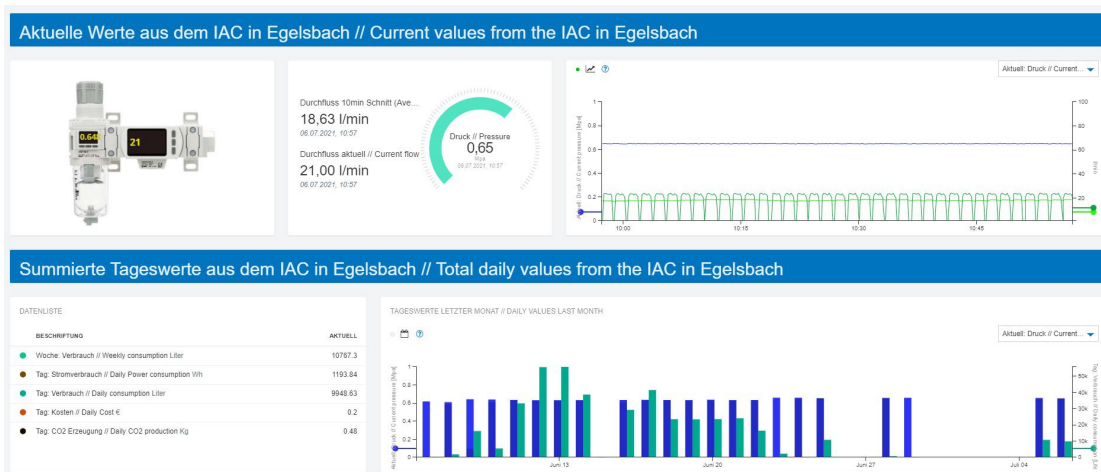


Figure 2: Detailed dashboards that users can access via their web browser with password protection provide a rapid overview of consumption data such as compression and throughput values.

Photo: SMC Deutschland GmbH

For more information, please visit the SMC website at www.smc.de

Press release

Egelsbach, October 2022

New EX260-FPS1 series fieldbus system: More communication and operational safety plus quick and easy connection

To ensure the safe and reliable control of valve manifolds, SI units must already meet correspondingly high requirements. A comprehensive solution also offers additional aspects, such as high flexibility and compatibility as well as simple and fast connection. With the new EX260-FPS1 series, SMC has developed a module that combines these capabilities and, thanks to the integrated safety output for the PROFIsafe protocol, ensures particularly high machine safety, as well as saving space to enable particularly compact machine designs.

Whether in the automotive, food and packaging industries or in modern robotics, in a large number of industries, valve manifolds that are controlled via corresponding SI units are used for pneumatic applications. In some cases, particularly high machine safety standards according to ISO 13849-1 PL e and IEC 61508/IEC 62061 SIL 3 must be met. System managers are therefore faced with the challenge of implementing all requirements for efficient, reliable and flexible operation in addition to the necessary safety aspects. To make this possible, the automation specialist SMC has developed the EX260-FPS1 series fieldbus systems. These stand out, among other things, due to their direct connection to PROFIsafe, compliance with protection class IP67, a compact design, standardised interfaces for high compatibility, as well as simple and fast configuration and wiring.

Very safe in a small space

The integrated safety output for the PROFIsafe protocol not only eliminates the need for a separate safety output unit; it also renders wiring between the safety output device and the EX260-FPS1 series superfluous. This saves space, reduces wiring and overall hardware costs while enabling more fail-safe communication of safety-relevant data. This enables users to meet the ISO 13849-1 PL e (highest performance level) and IEC 61508/IEC 62061 SIL 3 (second highest safety integrity level) safety standards, thus ensuring a particularly high level of machine safety. If a PROFIsafe-compatible PLC is available, a PROFINET- and a PROFIsafe-compatible SI unit can be used simultaneously on a single communication line. In addition, the new SI unit can also be used in harsh environments thanks to the IP67 protection class – even without special enclosures.

Additional space savings are possible, on the one hand through daisy-chain cabling that enables simple and fast wiring without branch connectors, and which also has a positive effect on the installation time. On the other, the use of the SI unit with a width of only 28 mm means that the space required in the system is extremely small.

Compatible and extremely easy to configure

As part of the EX260 family, the new EX260-FPS1 series also complies with the SMC standardised interface and is compatible with the manifolds for the SY, JSY and VQC valve series from SMC. This not only simplifies parts lists, but also stocking. Process engineers can therefore control up to 32 solenoid coils on up to 16 stations and use cylinder sizes with diameters of 50, 63, 80 mm (SY3000/5000/7000), 40, 50, 80 mm (JSY1000/3000/5000) and 40, 63, 160 as well as 180 mm (VQC1000/2000/4000/5000). This provides a wide range of application possibilities.

In order to act quickly in machine design and, at the same time, be on the safe side, SMC offers an intuitive [online valve manifold configurator](#) on its website, which eliminates the risk of incorrect configuration. A simple representation of the parts list, CAD data and the corresponding documentation are also available here.



Caption:

Thanks to the integration of the PROFI-safe protocol, the new EX260-FPS1 series SI unit ensures a particularly high level of machine safety, saves both space and time thanks to its simple and quick wiring, and is compatible with the SY, JSY and VQC series.

Photo: SMC Deutschland GmbH

For more information, visit the SMC website at www.smc.eu

Press release

Egelsbach, October 2021

Even better protection: new LEY-X8 series allows electric actuators to be used in harsh environments

Pushing or pulling movements as well as vertical applications that take place in dusty environments, or where there is even temporary submersion in water, are not feasible with conventional electric actuators. At the same time, they also have to meet high capacity ratios in order to efficiently cover a wide range of applications. To meet this requirement profile, SMC has expanded its proven and established LEY series actuators by introducing the LEY-X8 series, which now also has the IP67 protection class in addition to IP65. This means they can be used reliably in particularly harsh environments. In addition to the sophisticated technology of the LEY series, they also feature a battery-less absolute encoder, which enables quick (re)commissioning.

Electric actuators are used throughout the industry for transfer applications. In some cases, they operate in dusty environments or are exposed to moisture, which requires special protection of the technology to ensure process stability. With its established LEY series, SMC already has electric actuators in its portfolio that feature high capacity figures – and is now stepping up a gear when it comes to a wide range of applications. With the LEY-X8 series, for example, the specialist for pneumatic and electric automation is enhancing process stability thanks to the IP65/67 protection class, a metal plug and a battery-less absolute encoder. Designers are therefore provided with a solution that enables robust and powerful operation, even in harsh environments.

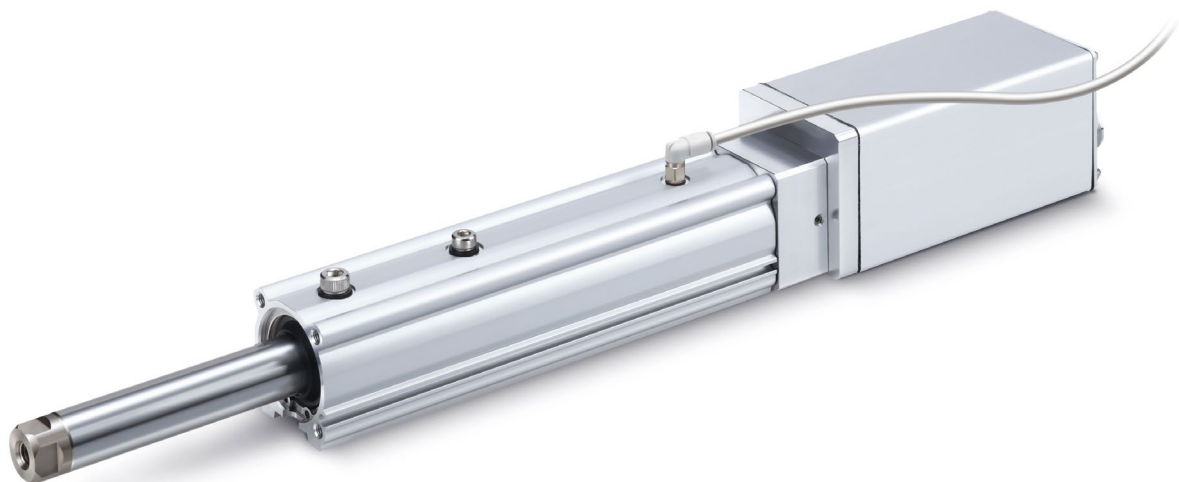
Safe processes across applications

The addition of the IP67 protection class and a metal connector also prevents dust and water deposits entering into the new LEY-X8 series – even when submerged in water 1 meter deep for up to 30 minutes. This makes the electric actuators easily suitable for reliable operation even in harsh environments. In addition, the added battery-less absolute encoder ensures that the position of the actuator is stored even if the power supply is lost. Operation can therefore be resumed immediately from the last position without a reference run. This also reduces maintenance and programming work, which minimises the error rate and increases productivity.

Established product for high capacity

SMC offers the LEY-X8 series as an extension of the LEY series, therefore drawing on a proven technology for electric actuators. The ball screw drive, which can be operated with a stepper (24 V DC), ensures high precision with a position repeatability of ± 0.02 mm. Optional locks and interlocks provide additional process stability. Housing sizes of 25, 32 and 40 allow a range of strokes from 30 to 400 (for size 25) or 30 to 500 mm (for size 32/40). Payloads between up to 90 kg can be moved in a horizontal operating direction, and up to 52 kg in vertical operation. Depending on the payload, horizontal or vertical operating direction and feed screw lead, the actuator achieves a thrust speed of between 5 and 300 mm/s with a maximum acceleration of 3000 mm/s^2 .

While an aluminium housing protects the motor, the line input through a metal connector prevents dust or moisture from entering between the cable and the motor cover. This is also ensured by the exhaust port, which also reduces internal pressure fluctuations. Additional protection is provided by wipers for grease next to the apertures for grease nipples. Auto switches can also be easily attached externally via a mounting groove. All in all, this provides designers with a reliable, precise and high-performance solution for all industries with transfer applications, which is also suitable for tight installation spaces in harsh environments – and makes it possible to control intermediate positions and sliding operation.



Caption:

The extension of SMC's range of electric actuators with the LEY-X8 series features IP65 and IP67

protection standards, provides additional process stability thanks to a battery-less absolute encoder and builds on the reliable and powerful technology of the established LEY series electric actuators.

Photo: SMC Deutschland GmbH

For more information, please visit the SMC website at www.smc.de

Company profile

About SMC Deutschland

As a leading manufacturer, partner and solution provider for pneumatic and electrical automation technology for more than 40 years, SMC Deutschland GmbH has provided a comprehensive product range from valves to temperature control devices with more than 12,000 basic models and over 700,000 variations for all kinds of industrial sectors. The innovative automation solutions of the company, which is headquartered in Egelsbach near Frankfurt am Main, can be found, among others, in automotive and machine tool manufacturing, automation technology, electronics and robotics as well as in the food and packaging industry and in the fields of life science and medical technology. SMC Deutschland generated sales of 185 million euros in the 2021/22 financial year and employs more than 735 people in Germany. In addition, a comprehensive expert service and distribution network is available to all customers. SMC also promotes sustainability in a broad context of environmental and climate protection, healthcare and employee promotion, as well as social commitment: from products and services to internal measures and community projects.

SMC Deutschland GmbH is part of the SMC Corporation that was founded in 1959 in Japan and can be found in 83 countries worldwide with 31 production locations. The global market leader for pneumatic automation technology, with a market share of 38 per cent, generated sales of 5.6 billion euros in the 2021/22 financial year and employs some 21,620 employees worldwide.