



Edition 38

LÜTZE-REPORT

The international magazine of the LÜTZE Group

LÜTZE 
SYSTEMATIC TECHNOLOGY

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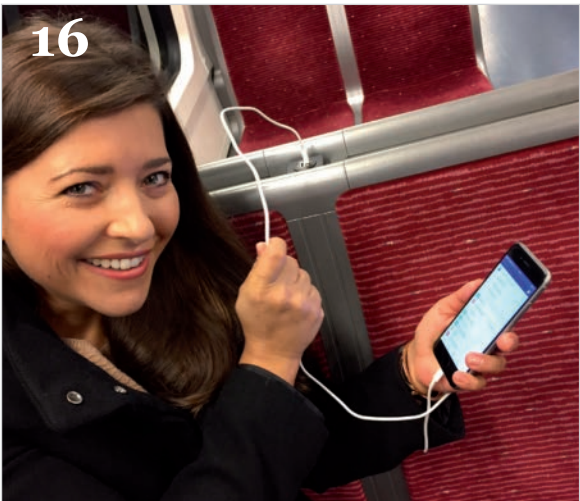
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EDITORIAL



Udo Lütze
Managing Director
Luetze International Group

Good connections!

Dear Readers,

Welcome to the latest issue of LÜTZE Report. A very special edition, as I am sure you have already noticed. On the one hand, this is a celebration of LÜTZE at 60 years, and on the other hand it's a relaunch with a completely new design.

Connection technology is the main topic as it is of central importance in the age of Industry 4.0.

We have collated exciting best practices and stories about connections between machine parts, whole facilities and most importantly, between people and machines.

I hope you enjoy reading this edition.

Best wishes
Udo Lütze

OFFSHORE INDUSTRY HAS LÜTZE IN THE PIPELINE

Specialised working vessels travel across the world's oceans to install pipelines and cables in the deep sea. A highly regarded manufacturer of this huge installation equipment has used LÜTZE products for many years at sea, including the LOCC-Box system for electronic current monitoring.

They have an extensive infrastructure on board these pipe-laying vessels. There are only very few outfitters, such as IMECA, which are part of the French Réel-Group, that has the expertise required for the very specialised needs of the offshore industry.

The pipelines are produced directly on board, single pipes of 12.2 m in length are welded into segments of up to 48.8 m in length. These are lowered into the water whilst a new section of pipe is added to the end, kilometer by kilometer, using equipment that is available today, it is possible to reach depths of up to 3000 m and distances of 4000 m in a day.

Very long cables

There are two main installation methods, either the pipes are welded horizontally and can be

lowered from the ship's deck into the sea or it is processed vertically from a high steel tower, especially for pipelines installed at great depth. There is a third method for more flexible lines, they are delivered to the ship as cables or longer pipe sections wound on a drum and are unwound and released onto the ocean bed.

Offshore work often sounds like 'heavy metal', nevertheless the installation equipment needs to handle the pipeline carefully, once it is lowered onto the sea bed, it either forms a long-drawn S-shaped curve (if installed horizontally) or a J-shaped form (if lowered vertically from a tower). For flexing relief purposes, the kilometer-long pipeline needs to be pulled carefully using a powerful tensioning and feeding device. Under tensile loads, the pipeline can also be moved axially, it is even possible to compensate

tidal currents using intelligent control systems. IMECA develops and produces this kind of offshore equipment at three sites in France with its 1800-strong workforce, hydraulic and electrical lifting and installation equipment for pipelines and standpipes on drilling rigs.

Made-to-measure equipment always requires high-performance winches (up to 600 t), deep-sea winches to install and pick up pipelines and cables (up to 750 t), and drums and tensioners (up to 400 t tensile force).



OFFSHORE INDUSTRY HAS LÜTZE IN THE PIPELINE



Steel tower for deep-sea installation of pipelines and unwinding of cables at depths of up to 3000 meters (Picture: IMECA).

On board: LÜTZE components

In recent years, various LÜTZE components have been installed in many of IMECA's control cabinets, for instance the LOCC-Box-System for intelligent power control. Since 2014, RJ45 connections and the AirSTREAM wiring system has been on the list of products purchased from LÜTZE. The LÜTZE wiring system makes use of two of its many strengths when used in the tight spaces available on ships, it makes optimum use of the available space and also fulfils the GL norm with respect to damaging salt spray.

The LOCC-Box monitors for overloads or short-circuits

IMECA opted for the LOCC-Box-System because of its very compact size and great scope for application-specific customisation. Also, it is very user-friendly and reliable when monitoring overloads and short circuits. The system is also able to satisfy requirements after selective shut-down under high line attenuation.

The LOCC-Box always switches capacitive loads to the optimum for safe output protection, and because the system stores errors, these malfunctions do not reoccur when it is switched on again. The LOCC-Box is used in control cabinets of huge hydraulic tensioners. In some projects, IMECA has been testing the possibility

of replacing these with electrically-driven units in a real-time simulation. These are able to respond just as well as hydraulic units in the range of 1 t/m to 150 t/m – but are more precise, easier to operate and have better reactivity characteristics. An ideal application for the solution proposed by LÜTZE, it will be integrated into the existing Profinet-IO system thereby allowing uncomplicated communication between the control system (PLC) and the LOCC-Box Net modules. This means it is possible to do without the previous digital IO cards for communication, reduce the amount of wiring required and ultimately cut costs.

Also, the options for the remote resetting of the cut-out switches, the malfunction history display and measuring of the current of each of the 24 V DC outputs are ideal for IMECA!

LOCC-Box for variable cable protection

The LOCC Box from LÜTZE offers a variety of options and services, which you can lead-seal after adjusting:

- Rated current from 1 A to 10 A
- Characteristics from fast to slow acting
- Power on-effect for switching capacitive loads
- Single or multiple fault method with storage of the last condition
- Spring terminals for use in strong vibration areas narrow construction at only 8.1 mm width
- temperature-independent response time
- Contact slot for use of jumper links

- interruption-free supply via screwless contact slide
- manual or remote On/Off
- 4 different status displays
- Flammability class according to UL 94-V0, NFF I2, F2
- optional bus interface
- international approval according to UL 508

Recording of all operating states via free-of-charge Windows-Software LOCC-Pads. Visualization for current and voltage on the selected consumers. You can analyze and process any function via the control system via gateways to CANopen, Profibus DP, ProfiNet and EtherCat.

LÜTZE CELEBRATES COMPANY'S 60TH ANNIVERSARY



Udo Lütze with his wife, Susan Lütze and Gitta Lütze (from left to right)

Efficiency in automation for 60 years – with countless pioneering achievements and patents, LÜTZE is now one of the world's leading companies for efficient automation solutions.

Friedrich Lütze (1923–2014) founded Lütze GmbH in Weinstadt near Stuttgart in 1958. Since then, electronic and electrotechnical components, system solutions for automation and high tech components for rail industry, have been designed and produced there. Friedrich Lütze GmbH in Weinstadt is a member of the globally-active LÜTZE INTERNATIONAL GROUP and plays a central role within the LÜTZE Group with its distribution network, production facilities and Research and Development Department.

With ground-breaking innovations and international patents, the company, still young at the time, was already developing a presence in the market. LÜTZE was one of the first companies to market cables for drag chains in the 1960s. The portfolio of industrial cables has been continuously developed and now covers 95% of all industrial manufacturing applications. Cable assemblies and connection technologies complete the cable specialist's product range.



Festive setting: On January 26th, 2018, LÜTZE celebrated the company's anniversary with a gala at Manufacture B26 in Schwäbisch Gmünd, Germany.

Research and development have been and will continue to be a top priority for LÜTZE. With the launch of the LSC system for control cabinet wiring in 1972, control cabinet manufacturers, could for the first time, save up to 30% more space than the conventional assembly panel layout. Since then, LÜTZE's advanced AirSTREAM system has set new standards in energy efficiency, space utilization and the service life of control cabinet components.

With its range of products from the area of Control, LÜTZE covers the area of electronic overload and short circuit protection, as well as the entire spectrum of industrial power supplies. The LOCC-Box and LCOS CC systems guarantee

intelligent and reliable power monitoring and all the possibilities of integration into the latest Industry 4.0 applications.

The company is constantly growing. LÜTZE operates a global network of distribution and production companies, and is represented in all of the world's major markets. Railway technology is another important mainstay. Lütze Transportation GmbH is among the world's leading suppliers in this sector. In 2010, LÜTZE was one of the first 20 companies to comply with the demanding railroad standard IRIS 02.

The family firm is under the second-generation leadership of Udo Lütze.

LÜTZE Germany

SUPER CONNECTIONS



LÜTZE is one of the first companies that launched cables for drag trains in the 1960s. If we travel back to 1958 we can see the company founder Friedrich Lütze in a VW beetle working as a 'backpack wholesaler'. His product assortment – electrical cables and components – is very well received by the industry and construction sector. A company told him about cables on gravel conveyor buckets used at motorway building sites that wore out very quickly, and that their rubber-coated control lines needed to be replaced every week. True to his motto 'Listen carefully as to how and with what we can help the customer', Friedrich Lütze developed cables that could withstand permanent movements over a much longer time. The customer loved it; especially because the cables could last an entire construction site lifetime, despite poor weather conditions and a tough environment. Encouraged by this, the original LÜTZE design was modified and adapted for further applications.

Material secrets uncovered

Even the name indicates that the innovative cable is highly resistant even when used in flexible applications: LÜTZE SUPERFLEX® became a trademark in 1967. Work continued in Weinstadt as the team learnt from numerous prototypes and extensive testing. Parameters such as the bending radius, travel path, speed and acceleration, determine the individual requirements, as do the temperature, damp and possible chemical impact. Finding a perfect balance of hardness and rigidity is essential when trying to achieve optimum cable properties with respect to reverse bending stress. In the middle of the 1990s, ultrafine

Because he always keeps his eyes and ears open, Friedrich Lütze hel-ped to invent the highly flexible cable in the 1960s. Today the LÜTZE SUPERFLEX® assortment contains several cable families for all applications in drag chains. What is the key to the lasting success of the SUPERFLEX®? How did this Swabian medium-sized company become the global dri-ver of the industry?



LÜTZE SUPERFLEX® PUR HYBRID SERVO 0.6/1 KV combined power supply cable for servo motors with Hiperface DSL® interface

wires were still the general standard, until tests performed by LÜTZE discovered that coarser single wires offer more expansion reserves in constantly moving applications. In a systematic process, the team were able to decrypt the secrets of the cable and insulating materials, including the fleece, shielding and jackets.

Develop, sample, test

Thanks to the emergence of new materials and material combinations, it is now possible to create much more powerful cable constructions; and these insights flow into new developments.

Here are some key benefits:

- Thermoplastic elastomers (TPE) improve the sliding properties considerably.
- Smaller cable diameters with simultaneously higher resistance to reverse bending cycle loads can be implemented.
- Improved electrical characteristics of many materials allow higher transmission frequencies.

In addition, electrical energy, signals or data can be easily transferred under the high mechanical loads. This means that parameters, such as the dielectric strength, touch-protection and EMC, also need to be consistent.

LÜTZE has worked closely with material



SUPER CONNECTIONS

LÜTZE SUPERFLEX PLUS M (C) PUR

LÜTZE SUPERFLEX® PLUS, drag chains suitable control line for the highest of standards

experts, drag chain manufacturers and users for decades; and its top priority has always been customer requirements. In this way, an enormous wealth of experience comprising material know-how and knowledge about construction and production is accumulated. It is also true that carefully optimized production steps also determine the performance quality. One interesting fact in this connection is that LÜTZE operates its own cable factory in the USA.

The 11-million test

Technical perfection is just as important as the commercial qualities. Although marketable prices are important, fail-safety is what is decisive because machine and production downtimes are always hugely expensive. LÜTZE

cables stand out for the following achievement: an endurance test by a reputed user was stopped after more than 11 million movement cycles.

95% of all applications are covered

Today, LÜTZE supplies five high-flexing cable models:

- Electronic cables
- Actuator-sensor cables
- Control cables
- Bus and network cables
- Motor, servo and feedback cables

This covers around 95 percent of all potential applications, for instance machine tools, handling equipment, robots, machine and plant construction, and also transport and conveyor technology, i.e. anywhere where energy and

signals are transferred to permanently moving systems and machine parts. LÜTZE cables are compatible with metal and plastic drag chains of all reputed manufacturers. Lütze also supplies assembled cables for suitable servo-drive systems as well as customer-specific solutions through to entire cable harnesses.

The cables from the LÜTZE SUPERFLEX® PLUS series are available in very high-quality materials such as 'High Glide' TPE insulation and a durable PUR jacket. This makes them the right choice for modern, fast machine tools. Recently, the LÜTZE SUPERFLEX® HIPER-FACE-DSL® extended the successful hybrid cable series for servo motors.

Notable applications

Over the past 50 years, thousands of drag chain

installations have been created with LÜTZE SUPERFLEX®. Here are two applications that we would like to mention:

- A six meter high King Kong weighing 12 tonnes is used in a musical in Melbourne. The automation package on the inside uses 3,000 meters of highly flexible cables by LÜTZE.
- The cables of the crane-controlled derailing systems at the Pittsburgh International Airport needed to be replaced every season due to the rough ambient conditions. The LÜTZE cables that were installed are still functioning after seven years.

The industry is eager to see how LÜTZE will continue to push forward the culture of innovation in the cable sector over the next 50 years.

CAST OFF FOR LÜTZE

The famous Meyer shipyard in Papenburg, Germany, recently delivered a new cruise liner. On board this cruise liner are LÜTZE wiring systems, power supplies and dozens of kilometers of LÜTZE cables. These LÜTZE products help to highlight the many features of this adventure cruise ship.

Author: Rudolf Killmann
LÜTZE Germany

There are many impressive features in the luxury cruise ship, Norwegian Joy. The ship's 20 decks are 333 meters long and 41 meters wide. The 1,925 passenger cabins can accommodate up to approximately 3,900 passengers. This cruise ship of the Breakaway-Plus Class, specifically designed to serve the Chinese market, will start operations from Shanghai in mid-2017.

Bright travels with LÜTZE on board

The Norwegian Cruise Line places great value on the luxurious experience and wellness of its guests. This included the impressive design of the ship's central areas. The particularly spacious casino and shopping areas, as well as the atrium, restaurants, and the theatre are genuine highlights - also in respect of the effective LED lighting and latest event controls.

This was produced by Wärtsilä FUNA from Emden, a division of the Wärtsilä Group. Wärtsilä FUNA is a global provider of solutions for entertainment, lighting and communication systems. LÜTZE was brought on board for the LSC cabling system, control cables and other components such as power supplies.

Electrifying orders for large cruise liners

In the last ten years, LÜTZE and Meyer Werft have often crossed paths. In the beginning there was a built-in USB outlet for the bridge so that pilots could connect their laptops. The benefits of the LSC wiring system cabling impressed Meyer Werft. Particularly compact control cabinets are needed on these 'floating cities on water' because there is only limited space behind the scenes. Every centimeter counts. Instead of closely fitting installation panels on both side



Left: Norwegian Joy (Meyer Werft) Above: Also on board: Highlights such as the spacious casino (Meyer Werft) Below: Looking in one of the numerous control cabinets with the LÜTZE wiring system (Funa)

walls, the innovative LÜTZE LSC wiring system carries all the components. With 30 to 60 control cabinets per ship, a considerable amount of space and weight is saved. There is also the benefit of enhanced air circulation in the control cabinet because there are no disruptive cable channels in the LSC. This results in a more consistent climate inside the control cabinet, which is improved through a connection to air-conditioning.

Long cables needed

Over the last two years LÜTZE has been manufacturing various control cables for Meyer Werft as well as for the Aida liner. 70 to 90 kilometers of these cables snake their way around the luxury liner for special event effects. A total of approximately 2500 km of cable is used on a

new ship. The consistent high quality, reliability, easy handling and installation qualities of the LÜTZE materials are important and critical aspects for Meyer. Additionally, Ethernet Switches and powerful, yet slimly designed power supplies are purchased from Weinstadt.

LÜTZE components were also a part of the Norwegian Joy's leading feature: the first Go-Kart track ever built on a cruise liner. On the first two decks, passengers can race on a 230-meter long track approximately 60 meters above the ocean. It is truly an adventure ship in every respect. Lütze wishes safe sailings and lots of pleasant journeys!



Charging phones or tablets by USB – a useful service (Hamburger Hochbahn AG)

CHARGING POWER IN THE HAMBURG U-BAHN (SUBWAY)

Several DT5 rail vehicles belonging to Hamburger Hochbahn AG, the rail transportation company in Hamburg, Germany, are already underway with full USB power. The USB charging ports found in every rail vehicle ensure that the passengers can conveniently charge their smartphones or tablets while on board.

Using smartphones or tablets on public transportation is second nature for many passengers. Passengers enjoy surfing the web, writing emails and using messaging services, or simply playing games online. If the battery were to run out, the convenient access to a charging port provides a useful service to passengers.

If you are using your mobile device while in the Hamburg U-Bahn (subway), you no longer have to worry about the battery life of your device. Especially, in the new Bombardier DT5 rail vehicles. Hamburger Hochbahn AG is having them fitted with USB charging ports: eight per

rail car for a total of 24 per vehicle. Each one is conveniently located between the seats; you just need to bring your own charging cable.

Several newly delivered vehicles are already equipped with these charging ports, and Bombardier is sending a new DT5 to the Hamburg rail network every 2 to 3 weeks. If you happen to board a DT5 without USB charging ports, do not worry as the Hamburg U-Bahn will be installing charging ports in all of its current vehicles as well.



USB charger system

- For tablets and mobile phones
- Specifically for use in the passenger vehicles and in the driver's cab
- 2 outputs each with 2.1 A charging current
- Outputs protected against short circuit and overload
- Galvanic isolation between input and output
- Wide input range of DC 24 V - 110 V

Specially developed for use on trains

The passengers will only see a double USB port at each charging station, which is supplied via a two-channel DC/DC converter. This device, specifically developed for use on rail vehicles, has a wide input range of DC 24 – 110 V. This means the solution from Lütze Transportation GmbH can be used worldwide in any rail vehicle – without having to flip a single switch; whether the electricity is 110 volts in subways or ICEs, 24 volts in diesel locomotives or DB-Regio doubledecker vehicles, 72 volts in French vehicles or 36 volts in Swiss local trains. The converter also meets the specifications of the USB-IF organization.

CHARGING POWER
IN THE HAMBURG
U-BAHN (SUBWAY)



Above: In easily reachable locations between the seats.
Below: Hamburg Hochbahn

Hot topic: fire safety

There is another important point: the converter and USB ports are tested according to all railway standards and meet all current fire safety requirements. The latter are more stringent in the passenger area than in the driver's cab.

Speaking of the driver's cab, the USB ports are also installed there. Bombardier first started to equip its DT5 with ports in the driver's cab as drivers began using tablets to replace printed documents. The positive results led to the decision to offer USB connections in the passenger areas of the train as well. And

Hamburg is just the start. At present the Metro in Oslo is planning to retrofit its passenger vehicles with this system. This charging system is also found in the driver's cabs of other rail operators. For example, DB Regio, a German commuter train company, and some local Swiss commuter rail operators are equipping their train drivers with this permanent charging solution.

AURA TRAINING PROJECT

LÜTZE and Audi cooperate

LÜTZE cooperates as a process partner with the automobile manufacturer Audi on the AURA project. The goal is qualified and practice-based training of the Audit apprentices (mechatronic technician/IT specialist) in the field of Industry 4.0 automation technology.

Audi's AURA training project is a training simulation that represents the entire process in the car body production facility, and simulates the whole control technology of Audi's classic car body construction, including safety systems. The hardware side of the AURA station is merged into a transportable rack - almost 2 meters of rack, with an installed industrial visualization panel and various interfaces in which a standard control cabinet is installed, can be commissioned in just a few minutes. In the case of AURA, Audi uses the patented LÜTZE **AirSTREAM** wiring technology - the **AirSTREAM** wiring frame in the control cabinet not only helps the rewiring process, it also creates space in the AURA control cabinet. Additionally, the LÜTZE wiring frame offers important benefits with respect to thermal optimization: Air currents are actively influenced so that the temperature in the control cabinet is generally lower. In this case no cooler was required at all.



Control of the AURA training system using a tablet

The AURA project

The AURA project (Automation-Rack) initially started as an apprentice project, and is now the official content of automation technology training courses at Audi. The AURA-Rack allows the entire car body control system of the production line to be represented.

The core of the AURA project is an automation training rack that can simulate an entire production line or an individual production machine. The employees can also be trained

on Industry 4.0 as AURA can be controlled via a smartphone or tablet on a Wi-Fi network.

There are now eight AURA training systems for the complex automation processes, on which two employees can be trained on each, simultaneously. The AURA racks are designed as transportable systems, meaning they can be used at various training sites. Commissioning only takes a few minutes.

Training on the AURA racks including programming and commissioning takes about four weeks per employee.

More *AirSTREAM*. Less cooling performance. Advantages for the AURA project

The control cabinet required for the AURA rack is equipped with the **AirSTREAM** wiring frame by LÜTZE. **AirSTREAM** has not just brought about a new way of looking at control cabinet wiring, but also sets new standards with respect to stability and modularity. In particular, the LÜTZE **AirSTREAM** wiring frame helps save time when rewiring, compared to wiring with assembly panels and cable ducts.

LÜTZE's patented **AirSTREAM** control cabinet system is a future-oriented thermal concept for control cabinets. The design uses insights from flow engineering.

Special feature: The air flow in the cabinet is actively influenced by the intelligent air circulation concept, and considerably minimizes the thermal stress on components, reduces the general temperature level in the cabinet and prevents hot spots. This means that coolers can be designed much smaller. In some cases, no coolers are required at all.

In addition to the LÜTZE **AirSTREAM** wiring frame, the **AirBLOWER** fan with control unit is



Presentation of the AURA training system by Sarah Schönfelder, mechatronic apprentice at Audi.



Udo Lütze and Sarah Schönfelder talking about energy efficiency in the control cabinet.

used in the AURA rack. With the **AirBLOWER** it is possible to reduce the average temperature in the control cabinet by up to 10K, and create a more stable control cabinet climate.

BEST-IN-CLASS ENERGY EFFICIENT MACHINES, REDESIGNED AND EVERYTHING IS RUNNING SMOOTH!

Mazak opened its European manufacturing plant in Worcester, England in 1987. Since then it has continually invested in new machinery and equipment which has significantly increased capacity to meet the rising demand for their products.

The UK operation is not just a machine tool assembly plant. On site castings are machined and many mechanical components manufactured, including spindles and tool magazines. The Company believes this is the key to them achieving a market leading position. The site also includes a technology centre where customers can visit to explore the latest in machine tool innovation.

In the last couple of years Mazak have introduced a new concept in the control of their machines, called “Smooth Technology”. This incorporates the new Mazatrol Smooth X CNC alongside new hardware and Servo Systems to deliver an improved operator experience, faster machining times and further integrates CNC into factory management systems.

The result is a breakthrough in CNC that uses intuitive operations in a similar manner to smart phones and tablets. The new interface reduces the number of key strokes to write a conventional program by 38% compared to its predecessor.

The new technology ensures customers benefit from a number of environmentally friendly features. These include LED lighting for machine work areas and automatic lighting and chip conveyor shut off, after a predetermined time period – which delivers lower power consumption.

Resource Saving

The new controller was introduced on to a number of machines during 2017. This meant that the connectivity and cables needed to be reviewed to ensure the engineering phase was completed quickly, and the new machines could be introduced into the market.

Energy Saving

Reducing Waste



Mazak Smooth Technology

Lütze Ltd has been a supplier to Mazak for over 20 years and is familiar with the technical requirements demanded on Mazak machines. We worked closely with Mazak engineers and its production partners to complete the redesigns. Attention had to be paid to the cable routing and the exposure of the cables to cutting fluid, particularly the cables that were subjected to continuous movement. In many cases Lütze Superflex PUR cables were used for control and motor power applications. These cables are suitable for continuous movement and the PUR jackets are abrasion resistant and have a high resistance to cutting fluids. Low capacitance insulation was used to reduce power loss and increase efficiency in the supply to the spindle motors on the machines.

Once the design phase was completed, a robust supply chain needed to be put in place to

manage the increasing demand, and ensure Mazak met their impressive manufacturing targets, after what has been a very favourable response from the market to the new machines.

5 YEARS ON THE ROAD



From 2013 to 2017, the LÜTZE AirSTREAM Roadshow toured Europe, bringing visitors efficient automation solutions from LÜTZE directly to their business. Now it's time to say goodbye.

After 5 successful and exciting years, with many unforgettable moments, the LÜTZE AirSTREAM Roadshow finally came to a standstill at the end of October 2017. Launched at the Hanover Fair in 2013 and initially on tour throughout Germany, the LÜTZE Roadshow has been a real success over the years. From Poland to Hungary and the Czech Republic, through Switzerland, France and Benelux to Spain, for our pilot Ernst Nettingsmeier there was no way too long, and no road too dusty.

Many sales colleagues from all European LÜTZE branches, have had the opportunity to present the latest innovations and, efficient solutions from LÜTZE with the AirSTREAM Roadshow. Housed in the lovingly restored Airstream Sovereign 31-foot trailer, with a Land Rover Defender 110 as the tractor, our team caught the eye wherever they appeared. We thank thousands of visitors for their great interest shown during the last 5 years of the LÜTZE AirSTREAM Roadshow.

ON FIRE FOR THE DISTRICT HEAT PROJECT

District heat and control technology migration at the AWG Waste Management Company Wuppertal

One of around 80 German waste-to-energy plants operates on a hill above Wuppertal. Until now it has supplied a part of the city with district heat, and in the near future the network will reach the entire population in the valley. The engineers at LÜTZE were all very excited to be able to help create this technology using components and the support of LÜTZE.



Generates 160,000 MWh electrical energy and also district heat for 350,000 people: the MHKW Wuppertal (Fig.: AWG)



Wolfgang Krause from the company AWG in Wuppertal, Germany (right) and Jose Antonio Ruiz Simon (left) from the company a+h Vertriebsgesellschaft mbH, one of LÜTZE's partners/distributors. A control cabinet fitted with LÜTZE LSC is examined (Fig.: LÜTZE)

The waste-to-energy plant run by the company AWG, a Waste Management Company, in Wuppertal is crucial for regional waste disposal. And for good reason, last year it received almost 64,000 deliveries with a waste volume in excess of 400,000 t.

Full steam ahead

Since it went into operation, the waste-to-energy plant's five boilers (MHKW) have been running 24/7. It is therefore no surprise that there are very few aggregates and parts that still originate from its installation 40 years ago. The third renewal cycle of the technical plant was started in 2014. By means of a cogeneration system, the AWG uses a large part of the released thermal energy to create power and heat which it supplies to Wuppertal.

District heat for a population of 350,000

The district heat network on the southern heights of Wuppertal is supplied with around 70,000 MWh of thermal energy. Recently, a lot of work has gone into connecting the entire heat network in the valley base of this large city to the MHKW (waste-to-energy plant). This will increase the efficiency of the system, both ecologically and economically, in favour of district heat.

Components and support from LÜTZE

In addition to the district heat project, there were other good reasons to migrate the former old and obsolete control equipment into a new modern process control system. One advantage was that the migration concept meant it was possible to supplement and partially replace the

control level relatively quickly and inexpensively, and this is where the LSC system from LÜTZE came into play. This has been used in the new cabinets for the district heat project to develop the control level, similarly, the LSC system now also replaces the structure in the previous control equipment cabinets. These can also be equipped with the new technology and as a result is a continuous system that saves lots of additional effort.

The two key players, Wolfgang Krause at AWG and Jose Antonio Ruiz Simon from the field sales team of the company a+h Vertriebsgesellschaft, a distribution company, based in Remscheid, worked together with the engineers at Friedrich Lütze GmbH in Weinstadt, Germany to come up with a suitable and future-oriented technical solution. The extremely compact LSC wiring system had also proven its value in earlier projects by the distributor a+h, because it is possible to reduce the space requirements in the control cabinet by 30% with the duct-free LÜTZE system. This wiring system also has a lot of potential for creating a homogenous climate inside the control cabinet.

In addition, a+h could make a good impression with the intelligent LÜTZE current monitoring systems LOCC-Box and LOCC-Box-Net. Important criteria for AWG were being able to set the current ranges (1 - 10 A), the trigger characteristics and the individual fault messages. Another positive factor is that the LOCC-Box-Net can easily be integrated into the field bus system that transfers all important data to a central control station. Any problems that arose during the course of the project were solved quickly and easily thanks to the technical support provided by LÜTZE, thereby allowing the final details to be implemented. A great team approach that generated glowing enthusiasm and lead to the desired result.



Example of an overhauled control cabinet with the LSC system as a drawer variant with vertical terminals. Practically two wiring levels in one cabinet (Fig.: LÜTZE)

LÜTZE SPONSORS A EUROPEAN YOUTH PROJECT

The automation specialist Friedrich Lütze GmbH, Weinstadt, supports an exchange between the Weinstadt club and a British youth football team.



Fig.: Udo Lütze (2nd from the right.) with representatives of the Weinstadt club

Thanks to the financial support from the owner family of Friedrich Lütze GmbH, it was possible to send 27 players from the Weinstadt U15 team along with a training team to Wales for 10 days of sport.

In addition to training sessions, sightseeing and a great time with our hosts in Port Talbot near Swansea, South Wales, one absolute highlight was a game against the Welsh U15 national team.

This visit also offered an opportunity to consolidate the European idea: “In a time in

when this idea is increasingly subject to scepticism, it is particularly important to support the international youth exchange by taking specific action,” says Udo Lütze, owner of the LUETZE INTERNATIONAL GROUP.

Sponsoring and supporting youth work is highly important to LÜTZE. For instance, LÜTZE is cooperating in education partnerships with local schools, investing in education centres, and sponsoring the youth work done by local sports clubs.

EXHIBITIONS

EXHIBITION	PLACE	COUNTRY	DATE
SPS/IPC/Drives	Nürnberg	D	27.-29.11.2018
ATX West	Anaheim, CA	USA	05.-07.02.2019
all about automation	Friedrichshafen	D	12.-13.03.2019
SIFER	Lille	FR	26.-28.03.2019
HMI Hannover	Hannover	D	01.-05.04.2019
Automate 2019	Chicago, IL	USA	08.-11.04.2019
ADM Toronto	Toronto	CAN	04.-06.06.2019



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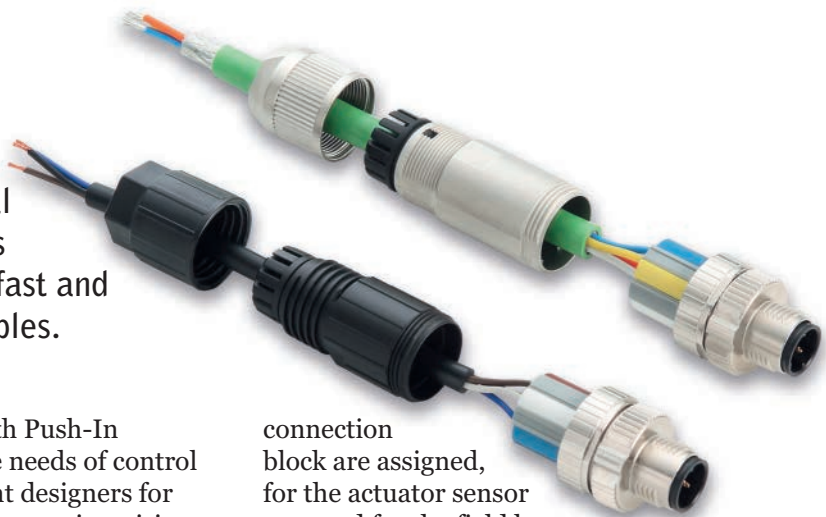
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PUSH-IN M12- CONNECTOR

LÜTZE has expanded its easily configurable M12 connectors, to include the simple and tool-free spring-loaded terminal technology that allows full use of its benefits as Push-In Technology, for fast and fault-free wiring of configurable cables.



The LÜTZE M12 connectors with Push-In connection technology meet the needs of control cabinet, machine and equipment designers for safe, fault-free and therefore inexpensive wiring technology. Rigid conductors and conductors with ferrules can be wired quickly and without tools by direct insertion without having to first open the contact point. To connect the fire-wire strands without ferrules, the terminal point is opened by a coloured lever without tools, and then closed again.

Depending on the application, the LÜTZE M12 connectors are suitable for transferring signals, data and output, for shielded and unshielded applications. Thanks to the new Push-In-Technology, the insertion forces are very low which greatly simplifies the connection. In contrast, the pull-out forces are higher so that all connections guarantee a high level of wiring security. LÜTZE supplies the M12 connectors with Push-In-Technology for the same price as the screw terminal technology.

Improving the wiring efficiency

The LÜTZE Push-In-Technology makes full use of its benefits when prefabricated cables and cable harnesses are used. It can be operated intuitively and in only a few steps, whilst ensuring the highest contact security at the same time. LÜTZE uses a clear colour coding system for the wires during assembly. All colours in the

connection block are assigned, for the actuator sensor area and for the field bus wiring such as CAN-Bus, Profibus, Ethernet and Profinet, according to the corresponding standards EN 60947-5-2. This means that firstly, it is almost impossible to confuse the PINS, and secondly there is no need for any more time-consuming and error-prone recoding of the individual colour codes.

A permanent spring pushes each wire back so that even in the event of heavy vibration, and after numerous operating years with possible material fatigue in the copper wires, a constant pressure and therefore optimum, safe and uninterrupted contact is guaranteed.

The new M12 Push-In connectors by LÜTZE are available in various versions, either with a straight or angled connector, with the option of shielded or unshielded. The angled version allows the cable outlet to be positioned in 45° steps compared to the pole pattern. The LÜTZE M12 connectors with Push-In Technology have the same design as the screw terminal technology and are designed for more than 100 plug cycles.

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