

# LÜTZE-REPORT

The international magazine of the Lütze Group

50 YEARS  
TRADITION IN AUTOMATION

RUBIN - NUREMBERGS NEW JEWEL

BAMATEC AG - OVER 50 YEARS  
MACHINES FOR PRODUCTION OF SPRINGS

INTELLIGENTLY SECURED  
SELECTIVE POWER MONITORING

HIGHLANDER - STRESSES LINES  
TO THE N<sup>TH</sup> DEGREE

STATIC - JUST WHAT THE  
DOCTOR ORDERED

**LÜTZE**   
Systematic Technology



Udo Lütze  
CEO Friedrich Lütze  
International Group

**Innovation beats recession**

Nothing is more constant than change. This statement will be valid for a long time, and will be a reminder to us if our business has been affected by the circumstances surrounding financial markets around the world. Certainly the need for action exists to adjust to these new conditions. We have done this, and approach the future with optimism.

What has not changed is the field of innovation at LÜTZE. We see innovation as being long term and as not to be disrupted by short term changes in the marketplace. Thanks to the close cooperation with our clients we have been able to present many new products and solutions in the past years. Some of these innovations can be found here, in this edition of the LÜTZE REPORT.

I hope that these topics are of interest to you.

Udo Lütze

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**50 years of Lütze - a great many events surrounding a great anniversary**

**Someone who has evolved from the proverbial garage business to an internationally established corporate group over a period of 50 years is entitled to truly celebrate his success story.**



That is exactly what LÜTZE has done: For a warm-up, an expert symposium at

Alte Reithalle, Stuttgart, for 400 guests. VIPs attending included State Secretary Drautz, District Administrator Johannes Fuchs, and Weinstadt Mayor Osswald.

**Modern electrotechnology at the old indoor riding arena**  
On May 2, 2008, outstanding contributions were presented, including control electronics on railway vehi-

cles under extreme conditions, scientifically explained by Dipl.-Ing. (FH) Andre Kengerter, our key account manager for railway business. There were additional contributions by Dr. Ing. Joachim Maul of Rittal RSC, one of the leading switch cabinet manufacturers, who presented a lecture about energy efficient switch cabinet heat dissipation. IEE chief editor Frank Nolte presented an inspiring overview of the symposium. At the same time, all Stuttgart prospects were invited to take a discovery tour, which offered local highlights such as the Old Castle or the new Mercedes Benz museum.

**Anniversary gala: 500 guests - 50 years**  
The anniversary gala followed in the evening at Liederhalle Stuttgart: 500 guests from all over the world, including from the USA to China and from many European nations, met for this large "Family Party". Customers, friends and employees were represented as internationally as the Lütze group is. One highlight followed the other including breathtaking vertical rope artists and, of course, the musical time travel with Germany's most popular party band Me and the.

**LÜTZE inside: Open doors for anyone**  
A little later, on September 20th, the work stores opened for the broad public at the lower Remstal. LÜTZE presented itself to more than 1,000 curious people as a high-tech employer and attractive potential training operation for future trainees and BA students. The program offered something for everyone, from tours of the development departments to the electro quads for the younger visitors and a chance to win a raffle. The grand prize winner was Kinderhaus Schnait,



who was happy to receive more than Euro 1,000



## Germany's first fully automated subway - LÜTZE is on board

Dimitrios Koutrouvis, LÜTZE Germany

### Nuremberg has a new jewel: The RUBIN

The name stands for "Realization of an automatic subway in Nuremberg", which is a train without conductor. The mixed operation of conductor-free and conductor controlled trains on the same section is unique in the world.

The automatic operation on Route U3 makes it possible to schedule the trains as needed. Wait times are reduced and more passengers can be transported. The concept is implemented by the City of Nuremberg, VAG Verkehrs-Aktiengesellschaft Nürnberg and Siemens.

### Permanent data flow for traffic flow

A variety of computers in the vehicle, along the route, at the railway control center and at the central service management office permanently

exchange data. The trains and train stations are continuously monitored. This keeps the control center informed about all events without interruption and the control center can take immediate action in the event anything requires attention.

The control and monitoring of the automatic operation is entrusted to state-of-the-art technology. This is where the LÜTZE DIOSWITCH IP67 comes into play for use in railway vehicles: The data that is transmitted via wireless LAN is distributed throughout the vehicle using the Ethernet switch and data that is dependent upon the position is forwarded to the passenger information system. The video data of the passenger TVs is also transmitted via DIOSWITCH.

### Steering toward the future with DIOSWITCH IP67

The railcar control unit sends the data that was collected using the DIOSWITCH into the opposite direction to the maintenance computer at the control center. This data may consist of images of analog and digital cameras for passenger monitoring, values of automated passenger counts and, finally, the transmission of the mobile radio and emergency passenger emergency intercom to the control center. The conversion of Route U2 is planned for the next phase. An additional 14 RUBIN railcars are planned in addition to the already delivered 32 trains to steer toward the future.

## Bamatec AG - have manufactured machines used for the production of springs for over 50 years. René Koch, LÜTZE Switzerland

te range of compression springs can be manufactured using the fully CNC controlled machines.

In addition to winding machines, Bamatec also manufactures grinders, auxiliary equipment (measurement systems, winches) as well as specialised solutions such as palette systems or complete production lines for your customers.

Bamatec AG and LÜTZE AG have enjoyed an excellent co-operative relationship over many years. Bamatec has successfully used the LSC wiring system with fully installed units.

This applies to both new machines and the refurbishment of old equipment.

"The modern wiring system from LÜTZE convinced me in every respect." I have successfully used this system for a number of years and will continue to do so in the future," reports Marco Hold, Head of Electrical Engineering at Bamatec.

The following arguments influenced his decision to opt for the Lütze system:

- Maximum packing density, i.e. saving space in the on-machine cases
- Development of the most effective use of control panels.
- Reduced weight of the fully-equipped system
- Improved heat dissipation

- Excellent on-site service from regional LÜTZE AG branches

Marco Hold: "As the head of electrical installation, I am delighted that all the employees in production, maintenance and service completely accept, and are happy to work with, the LÜTZE wiring system.

I am fully satisfied with both the delivery and advice service and the flexibility provided by LÜTZE. A company that I can recommend with a clear conscience."



Bamatec AG is a subsidiary of Baumann Springs, a company founded in 1886, and which has operated as a family-run enterprise from that date.

From 1953, Bamatec AG, with a workforce of around 65 employees, has built machines for manufacturing compression springs in all shapes and sizes. Wires of 0.1 mm to 4.8 mm can be produced in spring sizes of 1 mm to 90 mm. An almost infinite



## Switch cabinet builder is calling Lütze

Horst Heckel, LÜTZE Germany

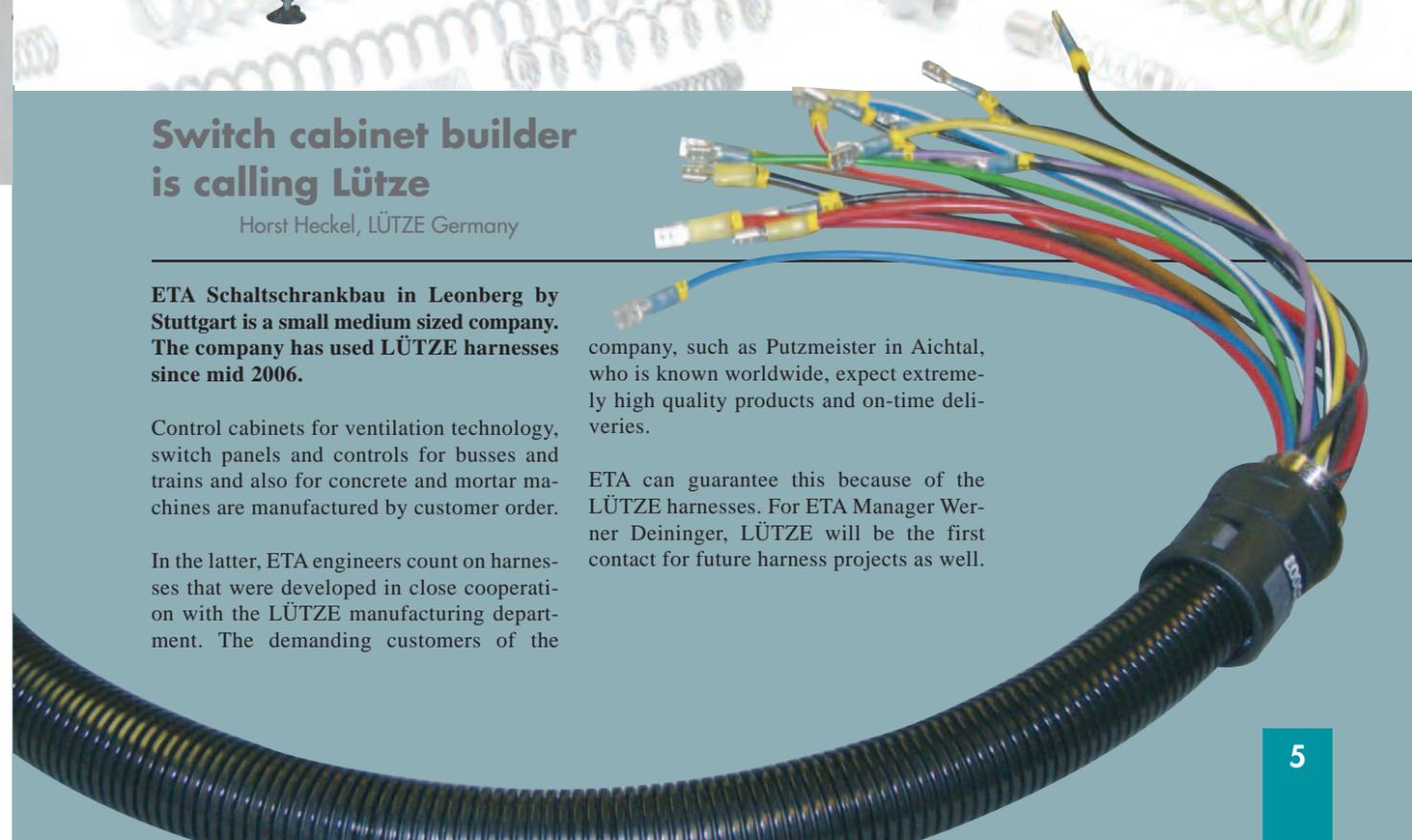
ETA Schaltschrankbau in Leonberg by Stuttgart is a small medium sized company. The company has used LÜTZE harnesses since mid 2006.

Control cabinets for ventilation technology, switch panels and controls for busses and trains and also for concrete and mortar machines are manufactured by customer order.

In the latter, ETA engineers count on harnesses that were developed in close cooperation with the LÜTZE manufacturing department. The demanding customers of the

company, such as Putzmeister in Aichtal, who is known worldwide, expect extremely high quality products and on-time deliveries.

ETA can guarantee this because of the LÜTZE harnesses. For ETA Manager Werner Deininger, LÜTZE will be the first contact for future harness projects as well.



## Intelligently secured selective power monitoring

Markus Müller, LÜTZE Germany



As an innovative company, ROBOT-TECHNOLOGY GmbH is extremely well versed in robot supported automation. High demands are placed on the required power monitoring systems, which is why the LOCC Box by LÜTZE is used.

The company supplies automation and laser cutting systems for the plastic and metal industries, mainly to customers from the automotive industry. In addition to the manufacturers themselves, the customer base also includes system suppliers.

The design of automation systems at ROBOT-TECHNOLOGY is processed at two modern and well equipped assembly halls in Kleinostheim. In order to be able to respond quickly during the in-house commissioning, all important processing machines are ready for operation at the mechanical production section. A complete laser cutting chamber is



equipped with the Robocut A 300 laser robot to perform customer testing, e.g. quality and interval testing.

### Dependable protection of 24V DC circuits

ROBOT-TECHNOLOGY places the highest demands possible on the development of special solutions with regard to functionality and quality of the systems to be supplied. One example is the high demand for system availability, which makes protecting 24V load circuits the central topic of system planning more and more. Conventional protection using fuses especially lacked selectivity. Instead of a completely failed power supply, only the affected load circuit should be shut off safely and as quickly as possible in the event of a malfunction.

### Remaining flexible in the event of a malfunction

For this reason, ROBOT-TECHNOLOGY decided to use the LOCC Box power monitoring system by LÜTZE. This system safely disconnects the malfunctioning path of the circuit in the event of an overload such as a short circuit. This ensures that other unaffected parts of the system remain available. In the event of a shut-off due to overload current or short circuit, a red LED signals the error. Another advantage of the LOCC Box system is the variable adjustability not only in the rated current range from 1A to 10A with locking positions but also the tripping characteristic. The device protection can thereby be changed and adjusted without a problem and as often as needed. Its slim design also speaks for the electronic power monitoring system: Only 8.2 mm width is required for each channel.

ROBOT-TECHNOLOGY can thereby offer a safe and practical solution to its customers to minimize downtimes and respond quickly and flexibly in the event of an error.



## CRENEAU INDUSTRIEL - tradition and state-of-the-art technology

Bernard Canal, LÜTZE France

CRENEAU INDUSTRIEL, a company with its registered office in Annecy le Vieux in the Département Haute-Savoie, designs and manufactures enormous 3, 4 and 5-axis machining centres for the machining of soft materials (aluminium, composites, plastics, ...) that are used in the manufacture of parts for important branches of industry, such as aviation, and in the automotive industry, processing industry etc.

This dynamic company has made a name for itself in the aviation industry by combining tradition with state-of-the-art technology. For 30 years the company has been manufacturing machines that are specially suited for their specific target market segment and provide a high degree of flexibility in production.

We have been able to present ourselves and our innovations from the LÜTZE product

range to their technical department, which is constantly on the lookout for innovative solutions.

Our selective load monitoring system in DC 24 V circuits met with special interest. Créneau Industriel has already been using a similar system from the competition. In their view, though, our LÜTZE automatic circuit breaker was more powerful. After the system had been in use for a year we were able to learn of the reasons for their decision at our recent meeting:

- The greater flexibility of the circuit breaker: on the one hand due to the selective fuse protection of various circuits from 1 to 10 A in steps of 1 A, on the other hand due to the setting facility for the breaking times (quick, semi time lag and time lag) and finally due to the possibility of being able to program a specific curve.
- The small space requirement with an over

all width of 8.1 mm

- Due to the modular technique of its single channel mode it is suitable for all machine configurations.
- Communication with the automatic circuit breaker: error output and reset input.

Our collaboration with the company CRENEAU INDUSTRIEL was very pleasant on both the technical and commercial level. It was this collaboration that has made it possible for the control boxes to now be equipped with the LÜTZE LOCC Box System, which provides for better protection and better monitoring of the electrical circuits. Créneau Industriel is also collaborating with us on other products, e.g. the cable protection system Condufix. We are therefore able to offer whole solution packages.



## Exhibitions 2008/2009

Exhibition	Place	Country	Date
SPS/IPC/DRIVES	Nürnberg	D	25.-27.11.2008
Industrial Automation India	Bangalore	IND	10.-13.12.2008
AM Expo 2009	Charlotte	USA	11.-12.3.2009
Magyar Regula	Budapest	HUN	24.-27.3.2009
Amper	Prag	CZ	31.3.-3.4.2009
Hannover Messe	Hannover	D	20.-24.4.2009
Mach Tech	Budapest	HUN	19.-22.5.2009
MOTEK	Stuttgart	D	21.-24.9.2009
Smart Automation	Linz	AT	7.-9.10.2009
ELO Sys	Trencin	SK	13.-16.10.2009
SPS/IPC/DRIVES	Nürnberg	D	24.-26.11.2009





# Highlander

8

## Highlander - stresses lines to the n<sup>th</sup> degree

Konrad Gnigler, LÜTZE Austria

Those who build machines for the rough forest industry must be able to bring to the end users experience and an exact knowledge of the application demands. A special focus is on the selection of the correct mechanical and electrical elements. At Konrad Forsttechnik, LÜTZE-SUPERFLEX®-PLUS lines provide longevity and resistance to even the most adverse environmental conditions.

Konrad Forsttechnik in Preitenegg has been developing and building forestry machinery for 16 years. The customer list includes large domestic and international forestry operations. Export sales account for approximately 60 percent. The company is especially proud of the development and market introduction of the new Highlander, which is a mobile harvester that is setting new benchmarks with regard to mobility and flexibility, especially when used in the mountains.

“The highlander can handle uphill grades of 100 percent”, explains Ing. Markus Konrad, “and in addition, it can not only move through the terrain by driving but also by treading. We achieved this with a clever hydraulic drive concept.” Konrad Forsttechnik is thereby the specialist on the bluff, because “the new machine makes the extremely dangerous work in the forest a lot easier and safer.”

No wonder that all aggregates including their control and supply lines in this application are exposed to extreme conditions. Especially the harvester head with its hydraulic valves is extremely stressed. This is where Konrad Forsttechnik counts on LÜTZE-SUPERFLEX®-PLUS lines. “Not only water, oil and dirt must be taken into consideration, but also snow and ice”, says company founder Josef Konrad and explains: “The broad temperature range from -40°C to +80°C impacts the lines in addition to the high UV radiation on high mountain ranges.” That is not all: The

work is accompanied by permanent shocks, vibration and extreme dust due to processed tree trunks. LÜTZE-SUPERFLEX®-PLUS lines can even withstand the major grinding effect of this dust due to their extraordinary resistance to grinding and impact resistance.

Konrad takes service and support for the machines, which is ensured domestically and also in all export markets, especially seriously. Similarly, LÜTZE not only offers a comprehensive line program for flexible applications that meet all market demands with the right line, consultation and service throughout the process to the packaging of the selected lines are self-evident for LÜTZE customers.

## Just what the doctor ordered

Nigel Broad, LÜTZE UK

Static Systems Group plc is an established specialist in the design, manufacture, installation, project management and maintenance of communication and fire detection systems for healthcare establishments, prisons and commercial and public buildings.

One of their products is a nurse call system which consists of a handset connected to a 'wall mounted control unit'. The handset allows patients to call for assistance as and when required. Over the years, one of the major problems associated with the system was the 'abuse' the connection cable was exposed to, as bored patients continually twisted and pulled the cable as they lay in their hospital beds, spending hours awaiting their recovery. This abuse meant that cables needed to be replaced regularly.

The engineers at Static had an objective of finding a cable which could withstand the rigours of hospital life and designed a test system to simulate the type of movement that the cable was expected to endure.

Lütze were selected to work with Static Systems on the basis of their considerable experience in cables for movement applications. Working closely with the engineers at Static Systems, Lütze proposed different solutions involving outer jacket material, conductor insulation, conductor pitch and copper stranding construction.

After a number of prototyping stages, an optimum construction was determined which met the criteria laid down by the customer. The ultimate solution was unique as the type of movement endured was completely different than conventional movement, such as those encountered in drag chains in automation systems.

Static Systems planned to introduce the new cable in a redesigned hand set. One of the major features was that the patient handset incorporated antimicrobial additives. Build up of bacteria on surfaces that are regularly touched presents a major challenge for healthcare professionals working in the acute hospital environment. Consequently, good hygiene is of paramount importance in the fight against the transmission of harmful bacteria - particularly 'super bugs' such as MRSA.

Existing methods at the disposal of staff, such as increased surveillance and greater focus on hygiene issues, have proved not to be enough, particularly as the number of bacteria resistant to antibiotics is set to rise. No one doubts the importance of a well managed cleaning regime as the fundamental foundation in the fight against infection transmission, but no matter how effective the cleaning the surface could be contaminated just after the cleaning has taken place. This microbial contamination could then multiply and be propagated around the ward until the next cleaning cycle is conducted. This is where antimicrobial surfaces, as used in the Static handset, can play a vital supporting role. During the period between cleaning cycles, the 'active' surface contributes to reducing the likelihood of pathogenic organisms multiplying and being transported around the care environment.

Static Systems wondered if the benefits of the antimicrobial compound could be extended to the cable as this would enable the complete handset assembly to be antimicrobial. Lütze investigated and were confident that the antimicrobial compound could be added at the correct dosage at the right stage in the production process to achieve the required result. Further prototyping was undertaken and the cable was submitted for testing by an independent authority. The tests proved that the cable was antimicrobial. The end result is that Static Systems have a cable that meets their stringent mechanical demands and conforms to the antimicrobial requirements that are so important to healthcare professionals.

The success of this project was due to the close co-operation between Lütze Limited and the customer, ensuring that final product would meet their exacting standards.

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# Keep Cool!

## Keep Cool - NFPA 79, 2007 Edition

Stefan Grunwald, LÜTZE USA

NFPA 79 is the electrical standard for Industrial Machinery in the USA. A number of significant updates were implemented in the 2007 edition. The NFPA 79 is a code published by the National Fire Protection Agency, the same Agency that publishes the National Electric Code (a.k.a. NEC or NFPA 70) every three years.

The NFPA 79 has special provisions addressing safe wiring practices for industrial machinery such as machine tools. Chapter 12 of the NFPA 79 addresses cables and cords for use with industrial machinery.

Article 12.2.7.3 enforces a significant change as it specifically prohibits the use of AWM (Appliance Wiring Material) style cable "unless it is part of a listed assembly".

### Validity of NFPA 79 in the USA

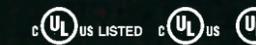
In most cases the AHJ (Authority Having Jurisdiction) decides whether or not the NFPA 79 applies. The state of Ohio already has written the NFPA 2007 edition mandatory into its state law at the moment. Six other states are investigating to implement this new standard as well.

### Difference between "Appliance Wiring Material - AWM" and other types of cables:

Appliance Wiring Material is regulated by UL and is generally a UL recognized type of cable showing the recognized logo:



NFPA 79 requires UL listed types. These cables carry a UL listed logo. UL listed cable has been manufactured and tested per specific UL standards.



Lutze offers listed types with MTW, TC-ER, PLTC and CM marks. Cables with these markings are considered listed types and are permitted to be used in NFPA 79 compliant applications.

### Meaning of NFPA 79 for Control cables

PVC 600V control cable made per AWM-style is commonly used as control cable in machine tool applications. This type of cable is no longer permitted for installations requiring NFPA 79 compliance. A permissible alternative for most control applications is cable with MTW rating or flexible TC-ER cable such as Lutze A322 and A308 series.

Given the broad range of machine tool requirements, this new NFPA code requirement may represent a challenge to satisfy special application requirements with the limited range of UL listed cables. The need for compliance with NFPA79 is resulting in a limited choice of cable types. All AWM cables designed for a special application now require special inspection, exception and permission to be used.

### Resolution

Standard Power & Control applications requiring flexible cable for easy routing can be fully satisfied with MTW style or flexible tray cable-ER. Electronic cables can be covered with cables of types CM, CMG or PLTC.

Flexing applications may require special cables.

Please contact your authorized LÜTZE representative for further information concerning LÜTZE cables compliant with NFPA 79 requirements.

For more information please see [www.lutze.com](http://www.lutze.com)



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