Edition 15

LÜTZE-REPORT

The international magazine of the Lütze Group

PSA (PEUGEOT) MULHOUSE

LÜTZE NEWS

KUKA – INTEGRATION OF ROBOT CELLS

CONVERTER MODULES IN USE

25 YEARS OF LÜTZE AG SWITZERLAND

AUDI AG

MISSION (IM)POSSIBLE

DISSERTATIONS IN DEVELOPMENT

LÜTZE Systematic Technology

EDITORIAL

Friedrich Lütze
Founder
of the Lütze Group

25 years of Lütze AG

Switzerland and its citizens, working all over the country, are famous for designing and manufacturing like nowhere else in Europe. This has won them a reputation for reliability and punctuality. Fortunately, these qualities can also be applied to the staff of Lütze AG in the town of Siebnen.

Over the last 25 years, under the successful management of Mr. Karl Heberle, Lütze AG in Siebnen has earned itself an excellent reputation in Switzerland with many customers in industry.

I would therefore like to take this opportunity to pass on my thanks and best wishes to all employees of the entire Lütze Group and to wish them many more successful years to come.

At the same time, I would also like to thank the many customers of Lütze AG, with whom we have enjoyed many years of loyal co-operation.

Yours sincerely,
F. Lütze

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IMPRINT

Published by:
LÜTZE INTERNATIONAL GmbH
Bruckwiesenstrasse 17–19
D-71384 Weinstadt/Germany
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zVg + FOTarena Bern • Tel. 0041 31 313 30 36
E-mail: fotarena@complot.ch

Printed by:
Hertig Druck AG, Biel

TRADE FAIRS

Lütze goes around the world

Trade fairs	Place	Date		
Hanover Fair	Hanover	19 – 24	April	Lütze D
GO Automation Days	Basel	31/8 – 3	September	Lütze CH
elektrotechnik	Dortmund	6 – 9	October	Lütze D
InnoTrans	Berlin	21 – 24	October	Lütze D
efa	Leipzig	28 – 30	October	Lütze D
SPS/IPC/DRIVES	Nuremberg	23 – 25	November	Lütze D

PSA (Peugeot) Mulhouse
PRODUCTION LINE WITH LSC

Jimmy Oebel

For car manufacturers, the current tough situation as regards competition means that modernisation of assembly equipment is of fundamental importance.
The enlargement of the field of view of production equipment operators brings with it specific advantages. **It is for this reason that a project at PSA Mulhouse has the objective of reducing the numbers and, above all, the height of the switch cabinets along the production line.** One of this customer's requirements was that its switch cabinets should not exceed 1.6 m in height, and should have a maximum of three doors. The integration of electromechanical components in such an environment represented quite a challenge, as previously the same systems were housed in three-door cabinets that were 2 m tall. There was no way of solving this problem using conventional methods.

PSA contacted various suppliers in order to achieve the aims that had been set, and **after comprehensive testing, a solution using the LSC system from Lütze was selected, as this was the only one to sat- isfy the size requirements yet was still able to accommodate the same components.**

Studies carried out with the assistance of Lütze's design office established that the electromechanical systems could be mounted on two LSC frames that in turn could be integrated into a three-door cabinet with a height of 1.40 m. This cabinet stands on a base that is 0.20 m in height.

The proposed solution made it possible to modernise the «Controls and Instruments» station in the Mulhouse production line.

The supplier selected was able to fight off the competition thanks to an innovative, efficient solution: LSC from Lütze.

Yet again Lütze was able to demonstrate that the LSC system is the optimum solution for the modernisation of switch cabinets, whilst keeping costs and the space required the same.

Lütze-Group ...
NEW MANAGEMENT

Udo Lütze

With effect from 1 January 2004, Mr. Udo Lütze became Managing Director of Friedrich Lütze Elektro GmbH. As part **of the management team, Mr. Udo Lütze takes on the demanding job of looking after our subsidiary companies in France, Austria, Switzerland, England and the USA.** At the same time, he is responsible in the Lütze Group for the co-ordination and management of the «International Marketing» division.

Mr. Udo Lütze, born in 1965, completed his Business Administration studies at the University of San Francisco and has successfully built up and managed our subsidiary, Lütze Inc. in Charlotte, since 1993. The experience he has gained in the USA will now prove most useful in Europe and other overseas markets.

We wish him every success in his new position.

Lütze Austria
INVESTING IN ITS CUSTOMERS ...

The Lütze team in Austria has been restructured to enable it to look after customers and potential customers better in that country, as well as offer an exceptional level of service.

Ing. Eduard Tanzer, Director

True to the motto of all companies in the Lütze Group, **«Expertise through proficiency»**, the team of innovative staff in this Vienna-based company is able to offer its customers and other interested parties **expert, specialist advice, as well as fast, reliable service.**

Bruno Horny, Internal Service Manager

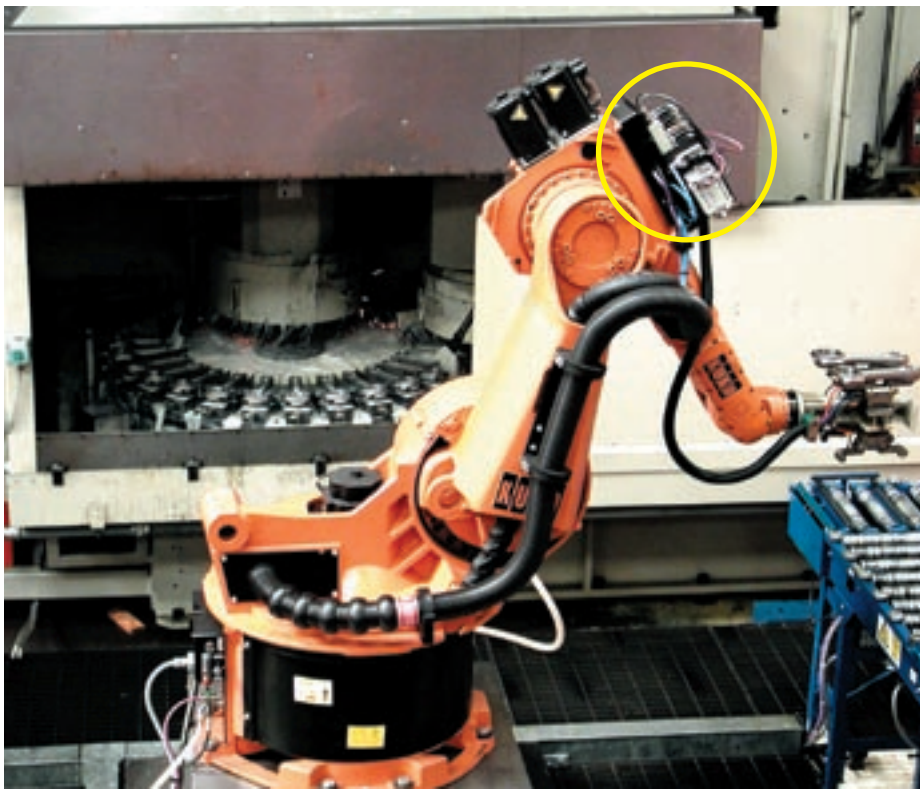
Edgar Ratschiller, External Customer Consultant

Johann Kraushofer, External Customer Consultant

Lütze and KUKA co-operate

INTEGRATION OF ROBOT CELLS

Nigel Broad



KUKA UK **provide** complete **«robot automation»** solutions to their customers. This involves examining the application, providing robot hardware, **tooling** and software to suit and incorporating electrical and mechanical installation, **provid-ing the customer with a complete turnkey solution.**

This process involves many areas of expertise, and the **KUKA** philosophy is to encourage suppliers to work in a partnership arrangement which goes beyond conventional supplier-customer relationships. Brett Green, **KUKA** UK Sales Director, says: «Over the past two years we have continued to penetrate and address new markets, where leading-edge technology is the difference between success and failure. To capitalise on these opportunities, we find it beneficial to encourage our suppliers to work with us at the design stage and integrate their technology and ideas with our robot expertise, ensuring we offer cost-effective «best fit» solutions to our customers».

«Our relationship with Lütze is an example of this philosophy, and over the past year we have worked together on a number of projects, **which have resulted in reduced build time and excellent reliability, and, importantly, the optimum solution for our customers.»**

Applications have involved cells designed for **car windscreen processing, concrete slab manipulation, welding and beer keg handling.**

The control concept changes from cell to cell where the end customer specifies PLC type and Fieldbus standard, for example, **but building blocks have been established which can be incorporated into cell designs. An example of this is shown in the picture opposite where the control assembly shown on the top of the robot was supplied by Lütze as a one-part assembly.** Working closely with **KUKA** engineers, the «axis 3 plate» was designed to control end-of-arm tooling involving electrical and pneumatic actuators. The I/O on the plate was controlled on Interbus, but the design was such that it could be transposed onto other systems such as Profibus DP and Devicenet. The whole assembly was constructed to IP65 rating providing protection against the ingress of dust and moisture.

Connection cabling was considerably reduced and Lütze Superflex cable was utilised for the vital Fieldbus connections used within the robot which were subject to continuous movement. The end result was reduced commissioning time on site and simpler integration into the customer's existing production line.

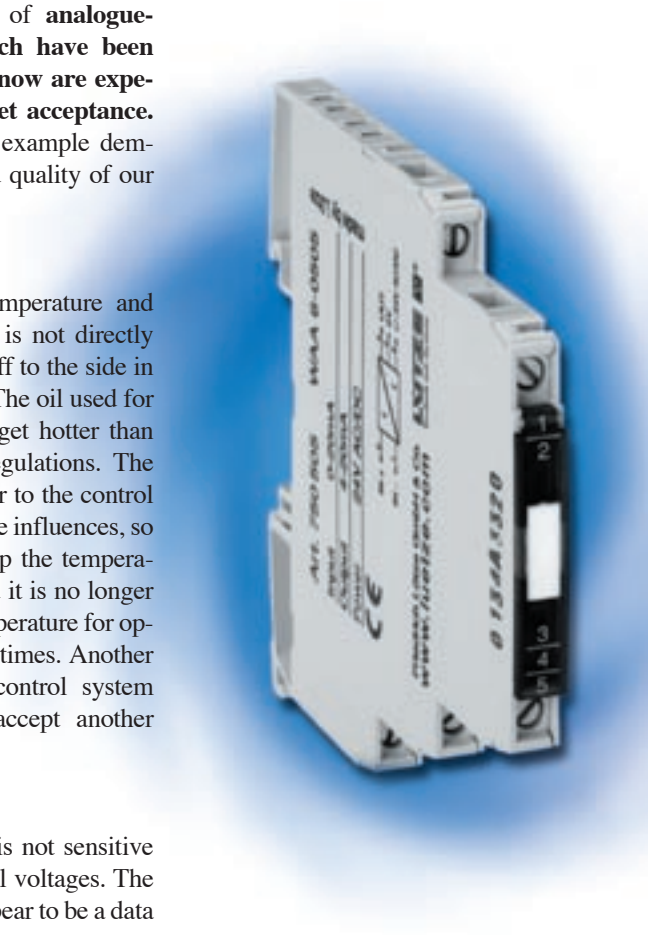
Lütze products used by **KUKA** include LSC wiring system, Fieldbus products, power supplies and custom-designed wiring and interface solutions for static and continuous movement.

Application example

NEW GENERATION OF LÜTZE CONVERTER MODULES

Jürgen Wendel

The **MICROKON** range of **analogue-analogue converters which have been available for over a year now are experiencing increasing market acceptance.** The following application example demonstrates the flexibility and quality of our developments to date.

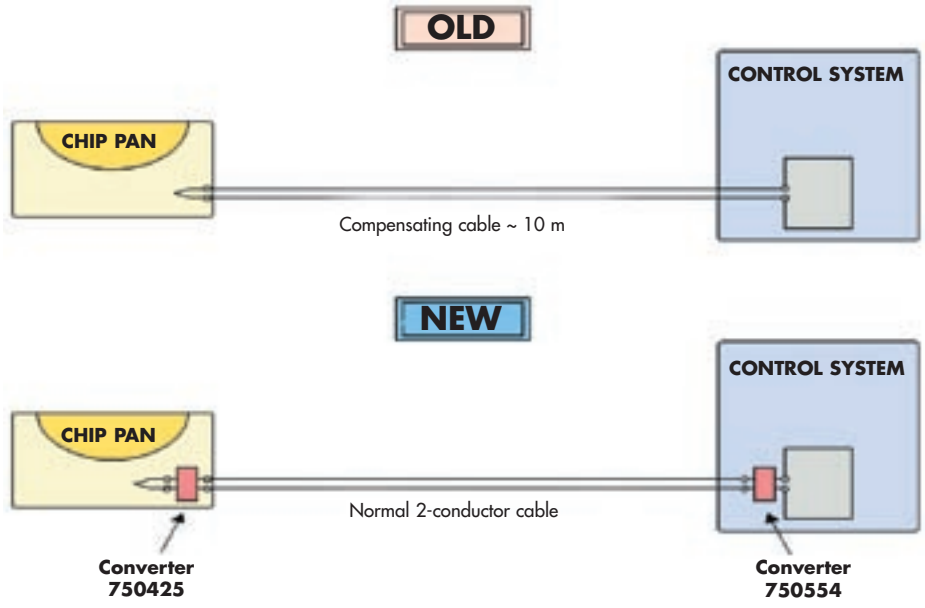


Remit

In a large kitchen, the temperature and monitoring control system is not directly on the chip fryer, but just off to the side in a separate control cabinet. The oil used for frying the chips must not get hotter than 190°C because of food regulations. The line leading from the sensor to the control system is affected by outside influences, so that it is impossible to keep the temperature at 190°C or lower, and it is no longer possible to regulate the temperature for optimum frying and cooking times. Another disadvantage is that the control system cannot be converted to accept another sensor input.

Approach to the solution

To find a sensor lead that is not sensitive to the influences of external voltages. The simplest solution would appear to be a data line with a 4 to 20 mA output.



Implementation of the solution

As conversion of the control input was definitely out of the question, and the sensor could only be adapted to suit this type of chip pan at considerable expense, **two converters from the MICROKON range were inserted in each temperature-measuring line.** The first one is a temperature converter: input for temperature sensor type J, temperature range 0 to 200°C; output 4 to 20 mA. (We have taken a step into the future here, because the temperature converters are still not available in all versions.) The second converter is a modified standard version of item 750506, WAA 4 to 20 mA/0 to 10V. The modification merely consists of adjusting the output voltage to the characteristic curve of the temperature sensor, in other words, the range has been changed over to 0 to 200 mV.

With this converter section, which admittedly can hardly be regarded as normal, and combined with the < 0.1% accuracy of the MICROKON range, the customer can convert his large kitchen without any problems to comply with the new, more demanding conditions. Thanks to the flexibility of the converters being added on, it was possible to keep the time required for the job of making the necessary adaptations to the modules to under a week, and this included the required tests in Weinstadt. The slender design of just 6.2 mm was, according to the customer, an advantage, because no adaptation work had to be carried out on the other equipment in the kitchen.

25 years of Lütze AG

A QUARTER OF A CENTURY AT THE SERVICE OF SWISS INDUSTRY

Karl Heberle

For us, this is an important milestone in the company's history, encouraging us to take a look back at what happened in the past, as well as taking a glance into the future.

Lütze AG, located in the town of Siebnen in the canton of Schwyz, **is part of the Lütze International GmbH** group of companies, with its headquarters in Weinstadt near Stuttgart, and belonging to the family of the industrialist, Friedrich Lütze. This company has grown to a point where it now employs over 250 people worldwide.

Friedrich Lütze, together with Karl Heberle, founded Lütze AG in Switzerland in 1979. This was the third subsidiary company in a European country, after Austria and France. **The pleasing acceptance of the Lütze product range,** which has been developed, manufactured and marketed to meet the real demands of the market and the actual requirements of our customers, **has contributed towards the continuous, rapid growth of Lütze Switzerland.**

In our **twelfth year** of operation our dream came true. Our **own industrial premises** were planned and then became a reality. In 1991, in Siebnen, just south of the lake of Zurich, the up-to-date, custom-built, new building was put into service.

Needless to say, the structure of Lütze AG has changed markedly in the last 25 years. **The company has developed from a purely commercial enterprise and component supplier into a service company that is happy to take on complex system solutions, as well as design engineering and production tasks for its clients in many sectors of Swiss industry.**

In the meantime, the original small firm has grown into a business employing **over 20 members of staff,** something which all those involved can rightly be proud of.

We would also like to add our thanks to this justifiable pride – thanks I would like to take this opportunity to pass on to our loyal customers which now number over 2,500, as well as our suppliers and, of course, all of my work colleagues. Without them, our above-average growth rate and success in a market that is highly competitive would never have been possible.

Thanks to the ongoing further development of our products, systems and services, as well as the exemplary performance of our personnel and the efficiency of our business partners, we can count on continued growth in the future.

In the coming years, the Lütze team, working under the motto «Expertise through proficiency» and in close cooperation with our customers and potential customers, also looks forward to developing and realising highly efficient products, system solutions and services that are matched to their needs.

Karl Heberle
Managing Director, Lütze AG, Switzerland

Standard procedures in the car industry
AUDI AG

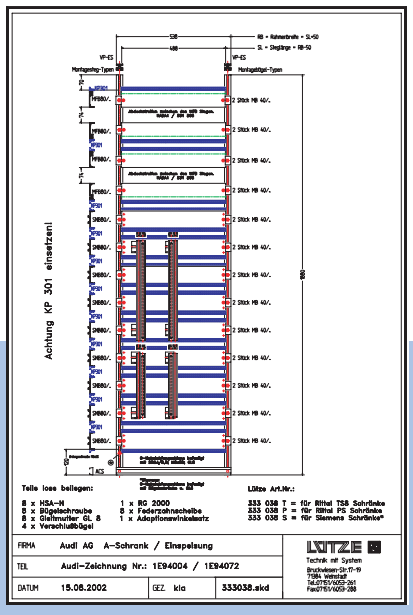
Andreas Klappstein

Standardisation at Audi AG

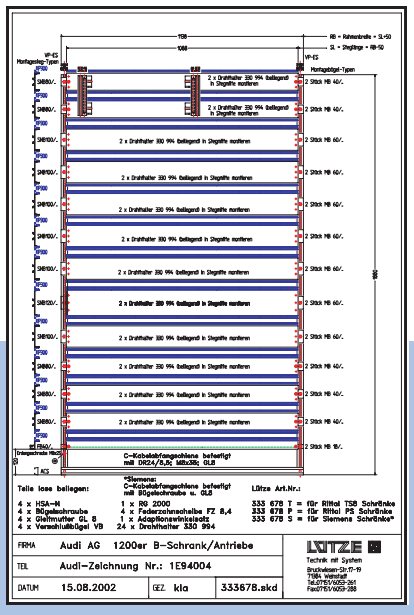
As a result of increasing international competition and pressure on costs, the car industry is working away with heightened intensity on **making tried and trusted solutions reproducible, easy to plan and therefore more favourably priced.** This is especially the case for the world of production equipment, which is getting more and more complex, whilst becoming much more efficient and versatile at the same time. Plants are planned by central teams for the entire works and maintained by constantly changing teams. This requires **straightforward, modular structures, in terms of both the control systems and the design of the cabinets that house them.**

Audi AG has been taking into account this trend that has already been around for some time, **and has settled on a standardised cabinet design with Lütze LSC-B and LSC-C,** which makes it possible to both plan and repair its electrical and control equipment. Therefore, all of the parts of a switch cabinet group were investigated and broken down into parts that could be reproduced. Basically, **Audi has managed with five standard LSC structures:** this makes possible the modularisation of cabinet superstructure, **a significant shortening of deliveries,** the option of obtaining virtually **the same cabinets from countless suppliers,** the standardisation of different parts of the factory (coachwork/painting/assembly), **the simplification of projects** through the effects of synergy and, last but not least, **uncomplicated commissioning and repair work.** The bottom line therefore being cost advantages.

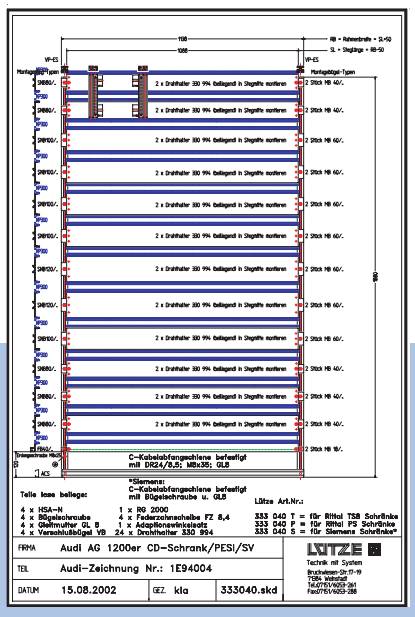
In general terms, the following applies at Audi: no subsequent processing on racks or track involving metal cutting should be necessary, in other words, all of the additional parts for fixing on top-hat rail mod-ules that cannot be snapped on come into play. These are combinations of MFB racks, sliding nuts (including retainers), grub screws, top-hat rail adaptors and switching racks.



A cabinet



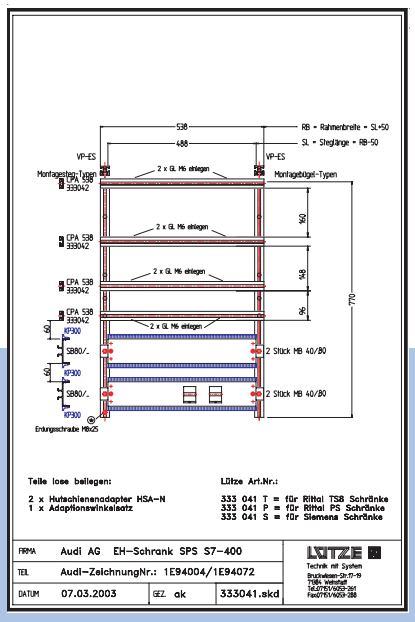
B cabinet



CD cabinet

In the event of a fault, a repair engineer at Audi can make modular modifications or adjustments to an LSC rack on site using just screwdrivers and Allen keys.
Audi dimensions, such as 538 mm or 1138 mm frame width (rack length 488 mm/1088 mm) with 600 mm and 1200 mm cabinets, ensure more extensive options for intervention, and the single-sided assembly of VP mounting rails is used here.

Strict attention must also be paid to the correct wiring. All the wires are laid only in the frames, either underneath or on top, so that any subsequent wiring or rewiring is possible from the front (i.e. no looped or X-wiring). Audi checks this on acceptance, in that no wires must be laid either between the upper and lower comb or in the middle of the rack (from behind).



EH-/EH-DV cabinet

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MISSION (IM)POSSIBLE

Chris Stanke

REM Services, Inc., headquartered in Charlotte, North Carolina, is the Carolinas' representative organisation offering process automation services manufactured by Emerson Process Manage-ment, formerly Fisher-Rosemount a lead-ing supplier of process management products and solutions, including control valves, regulators, transmitters, analysers, and automation systems.

REM Services is recognised throughout the manufacturing industries for their process applications, knowledge, project management and control system integration expertise. **With large-profile customers in the pharmaceutical, chemical, plastic manufacturing, nuclear and tobacco indus-tries, they have seen great success with LSC.**

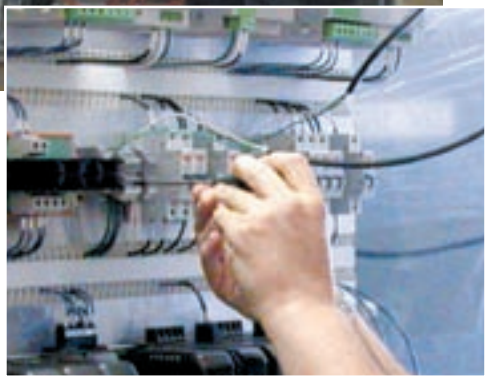
By utilising **the innovative LSC product** in these various project applications, REM Services **experienced the many benefits provided by the Lütze SYSTEMATIC** system. One such benefit came from the realisation that they could save their customers valuable plant floor space. This was achieved not by reducing the enclosure size in some cases, but by being able to increase the amount of components they could populate into each enclosure, thus reducing the amount of enclosures needed for a particular project.

Another valuable benefit was to have the capabilities to seamlessly replace older existing control panels with new process control equipment, while keeping the existing enclosures. By designing the

Chris Stanke and Rich Vicente

LSC frame around the enclosure and component specifications, they were able to make a large-scale transition an easy task.

Electrical and Design Engineer Rich Vicente of REM Services says: **«LSC has become an integral part of our engineering lifes. After some initial doubts it didn't take us long to see the many benefits of LSC, and today we once in a while ask ourselves the question why we didn't start using LSC a lot sooner.** To list all the benefits and advantages of LSC in this context would take far too long; however, I would like to say that **for us as a systems integrator facing todays tough market demands, we have been able to gain significant competitive advantages by using LSC and provide faster, better and more cost-efficient solutions to our clients.** Some projects we have successfully completed would have been simply impossible to do without LSC. Thank you, Lütze.»



DISSERTATIONS IN DEVLOPMENT

Compact digital temperature controller suitable for rail transport

Within the context of his degree work **in the electrical engineering field, Markus Roth developed a temperature controller as a customer-specific solution for the company, Bombardier Transportation.** It has four separate control channels. PT 1000s are connected as temperature sensors, and each output can take a load of 10 A. The functions of the controller are programmed in a microcontroller. The temperature controller is in use in the rail-bound electric vehicles of Bombardier Transportation all over Europe. It regulates the temperature of the front windscreen and that of the floor close to the engine driver. The first units have already been delivered.

Markus Roth

1979	Born in Waiblingen
1999	«Abitur» examinations at Technical Grammar School in Waiblingen
2000 - 2003	Course of studies at the Vocational Academy, Stuttgart Specialisation: electrical engineering/automation technology
Sept. 2003	Completion of Dipl.-Ing. in electrical engineering (BA)

Universal minicontrol system suitable for rail transport

The degree work of Dimitrios Koutrouvis led to the development of a minicontrol system suitable for use in rail transport systems. The module has a limited number of inputs and outputs. Logical interconnections employ a programmable microcontroller in order to be able to cover the most extensive possible range of applications in the rail sector. The integrated semiconductor power outputs for direct current loading, as well as the small size of the design mean that cost-efficient use on railway rolling stock is possible. Various expansion stages allow for individual matching to customer requirements. **The resulting control device is compact and can be used universally.** The first use is planned to be a control system for the interior lighting of a tram.

Dimitrios Koutrouvis

1978	Born in Ludwigsburg (BW)
1998	«Abitur» examinations at Technical Grammar School in Bietigheim-Bissingen
1998 - 2000	Course of studies at Karlsruhe University, specialisation electrical engineering
2000 - 2003	Course of studies at the Vocational Academy, Stuttgart Specialisation: electrical engineering/automation technology
Sept. 2003	Completion of Dipl.-Ing. in electrical engineering (BA)