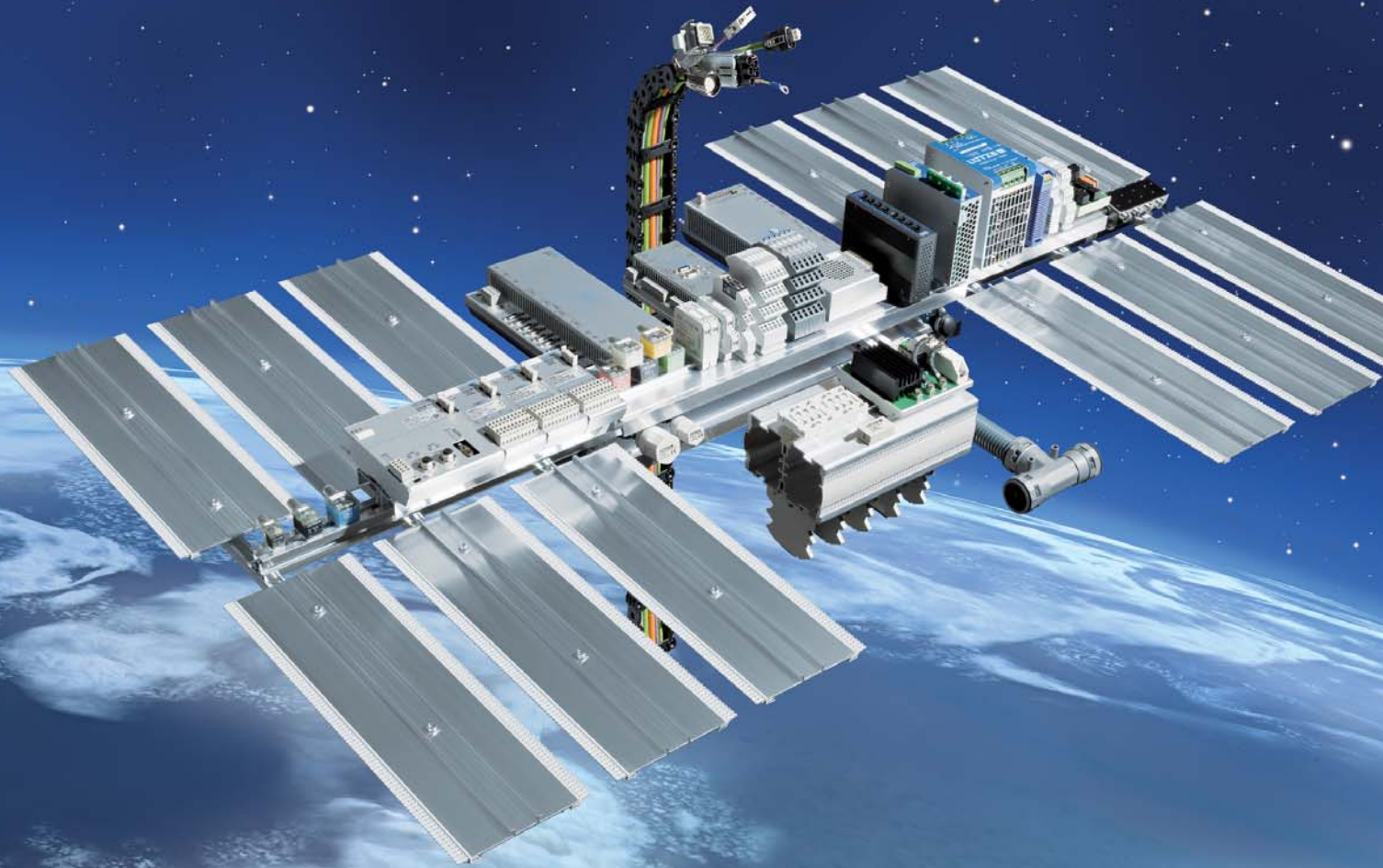


Product overview

- Cable
- Connectivity
- Cabinet
- Control
- Transportation

Efficiency in Automation

Cable • Connectivity • Cabinet • Control



Welcome to LÜTZE

Cable Solutions



Connectivity Solutions



Cabinet Solutions



Control Solutions



Transportation Solutions



LÜTZE - Efficiency in Automation

A tradition in automation for over 60 years, with countless pioneering achievements and patents, the international LÜTZE Group is today one of the leading companies in the automation industry. LÜTZE supplies very efficient electronic and electrotechnical components, system solutions for automation and high tech for rail engineering.

The comprehensive and coordinated supply program ranges from highly flexible cables and pre-fabricated cables, to energy efficient **AirSTREAM** wiring systems for control cabinets through to intelligent Industry 4.0 solutions from the fields of interface technology, current monitoring, power supply and Ethernet infrastructure.

The Lütze Group has sales companies throughout Europe, Asia and the USA and numerous sales partners across the world to provide global product availability and service to our customers in all markets.

LÜTZE is one of the leading suppliers in the rail technology field. LÜTZE transportation solutions are installed in numerous locomotives, city rail and underground rail systems, as well as high-speed trains across the world.



Business Management: Sustainable and forward



The future is blue

Sustainable enterprise means thinking and planning ahead, understanding and embedding the belief that long lasting success is more important than short-term profit maximisation.

This is an attitude that has existed within LÜTZE for quite some time. Economic and environmental responsibilities complement each

other well and are reflected in the sustainable management and product policy - and from now in the **SkyBLUE** campaign.

We manufacture our products in a resourceful and energy-conscious manner. We use long lasting, environmentally-friendly materials. And our products, in turn, help our customers save energy and resources.

Good for everyone: for us, for the environment, for our customers a win-win-win situation.

ard-looking

„The competitiveness of our industry and of its suppliers depends quite substantially on how we succeed in developing practical results. The results that we produce together today, are our competitive advantages in the future.“

Udo LÜTZE,

Member of the Executive Committee of
the Green Carbody Innovation Alliance



Goods with real value

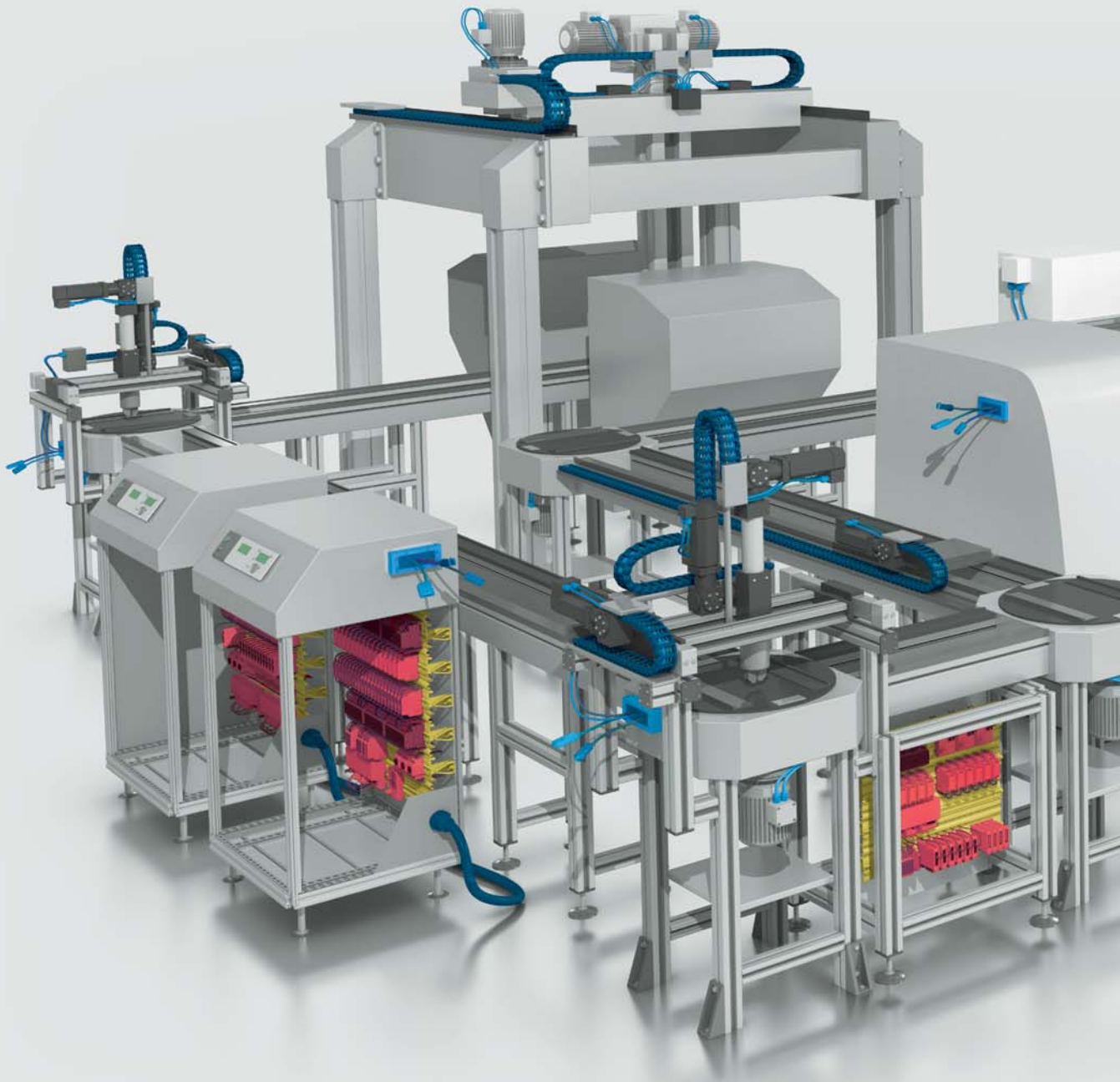
The value of a product or a solution from LÜTZE is determined by its sustainable qualities as well. Every innovation is only as successful in the future if it has a long-term positive effect. Therefore, we provide long lasting as well as highly efficient components. We are incorporating the necessary knowledge and manufacturing competence in numerous joint

projects with the objective of improving energy efficiency and sustainable technologies and industries. Thus, LÜTZE provides answers and demonstrates how to handle resources responsibly, with our environment and our future in mind.



RoHS

Efficiency in Automation **LÜTZE** solutions at



Cable Solutions

Highly flexible cables for mechanical
engineering
Page 8 - 11

Connectivity Solutions

Plug & Play in the industrial Ethernet
Page 12 - 15

on - a glance

LÜTZE creates values by means of efficiency.
We provide answers and show ways to handle resources, our environment and,
in the end, our future in a responsible manner.
Efficiency in Automation



Cabinet Solutions

The complete system for thermal
optimization of the control cabinet
Page 16 - 19

Control Solutions

Universal Interface technology and flexible
casing systems
Page 20 - 23



Cable Solutions

LÜTZE is your professional partner for consulting and delivery of high-quality industrial cables for numerous automated manufacturing applications. Our specialised knowledge of flexible cables and cable assemblies supports your installation every bit as much as does our product range: shielded or unshielded, for power, control or data.

LÜTZE delivers your requirements for cables of automated manufacturing and many other applications - worldwide!

LÜTZE SUPERFLEX®
 ◀ connected

The **LÜTZE SUPERFLEX® Connected** -
 More than 50 years of experience with
 continuous flexing high quality cables for
 drag chains

RoHS
DESINA

UL US LISTED

CE

UL US

halogen free ✓

Low Capacitance ✓

halogen free ✓
 flame retardant



BUS- and Network Cables

- From Industrial Ethernet to Cat.7
- For static or C-track applications
- High active and passive interference resistance (EMC)
- UL Approvals
- Compatible with the BUS Standard



Direct link
LÜTZE Online Catalogue
BUS- and
Network Cables



Motor- and Servo Cables

- Low capacitance for efficient power transmission
- Highly efficient
- System compliant
- DESINA compliant
- Broad offering covering many systems
- Cable assembly available
- UL Approvals



Direct link
LÜTZE Online Catalogue
Motor- and
Servo Cables



Control Cables

- LÜTZE SUPERFLEX® for C-track applications
- LÜTZE SILFLEX® PUR and Multinorm for occasional mobile applications
- UL Approvals
- Small external diameter
- Low-capacitance
- Oil resistant



Direct link
LÜTZE Online Catalogue
Control Cables



Electronic Cables

- LÜTZE SUPERFLEX® TRONIC for C-track applications
- Actuator/sensor - variant
- UL Approvals
- Low-capacitance, oil resistant
- Silicon and halogen free
- Flame retardant



Direct link
LÜTZE Online Catalogue
Electronic Cables

Cable fittings and cabinet entry systems



LÜTZE CABLEFIX VARIO- The innovative cable gland for all cables and wires pre-assembled with connectors

- Also ideal for retrofitting
- Protection class IP65
- The wide variety of options can solve practically any fastening problem
- Optionally available in very high technical quality glass fibre reinforced polyamide 66 GF30 with additional inner brass reinforcement or of solid aluminium



LÜTZE CABLEFIX- The intelligent type of cable gland

- Convenient, time-saving and secure
- For actuator, sensor, bus and control cables
- Simple assembly, quick installation
- For clearly-organised arrangement of the cables



LÜTZE plastic cable fittings and accessories

- Over 60 different types
- Metric and PG designs available

LÜTZE metal cable fittings and accessories

- Over 40 different types
- Metric and PG designs available



LÜTZE EMC fittings

- PG fittings and metric EMC fittings for optimal shielding

Labelling systems



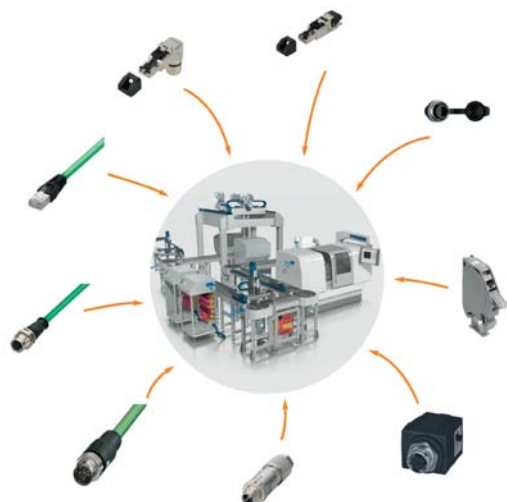
Labelling systems and accessories



Connectivity Solutions

LÜTZE's cable assemblies are used in almost all industries, but most notably in the areas of machine engineering, energy technology, and electromechanics. With more than 20 years' experience, LUTZE works closely with its international sales companies and representatives for the large global customers.

The chief principle for LÜTZE cable assemblies is quality assurance according to QM management system, ISO9001, supported by our internal CIP processes.



Cable assembly



Compatible assemblies for SIEMENS, ALLEN BRADLEY, BECKHOF and BOSCH REXROTH

- For servo motors, encoder cables and also hybrid cables (OCT)
- For use in c-tracks or fixed installation
- LÜTZE offers solutions with high quality cables for the highest demands



S7

- S7 pre-assembled
- S7 plugs compatible to SIEMENS SIMATIC SPS/S7, completely wired

Spiral Cables

- According to your specifications, for example; made for the highest demands from performance machines, lifts and many other moving applications.



Pre-assembled cables for short-term needs

Patch cable Cat5e or Cat6 for PROFINET or ETHERNET applications or USB 3.0 applications



Solutions for your assembly tasks

LÜTZE makes it easy for you, because all of the components are grouped under a single article number. In this way external assembly even reduces the workload for your internal administration - from the order all the way through to the invoice!



LÜTZE SAFECON plastic moulded round connectors for industrial

- Economical and safe solution for the electrical connection of machines and systems
- The integrated protection against kinking and the inner metal housing with 360° EMC shielding ensures the cable assemblies meet the requirements for the industrial sector

Actuator Sensor Interface



LÜTZE actuator sensor cables

- M8 or M12, with and without shielding, straight and angled
- 3 to 8-pole cables, with free cable end or as a completely assembled connecting cable
- Field bus cables, M12
- Profibus, Profinet, Ethernet applications



LÜTZE connectors

for **LÜTZE actuator sensor boxes and cables...**

- Circular connectors of all types for self-assembly
- T distributors M8/M12, connectors shielded and not shielded
- A, B, D or X coded
- RJ 45 Connectors



LÜTZE wall bushings

- M8, M12
- USB 3.0
- RJ45 Cat5e / Cat6A

Suppression Technology



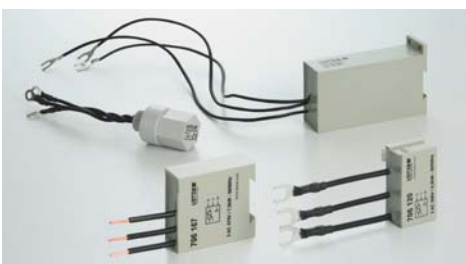
LÜTZE suppressor for switching gear

- For AC/DC 12 to 400 V, with various protective circuits and connection options
- Universal interference suppression modules suitable for all standard commercial brands of contactor



LÜTZE valve suppressors

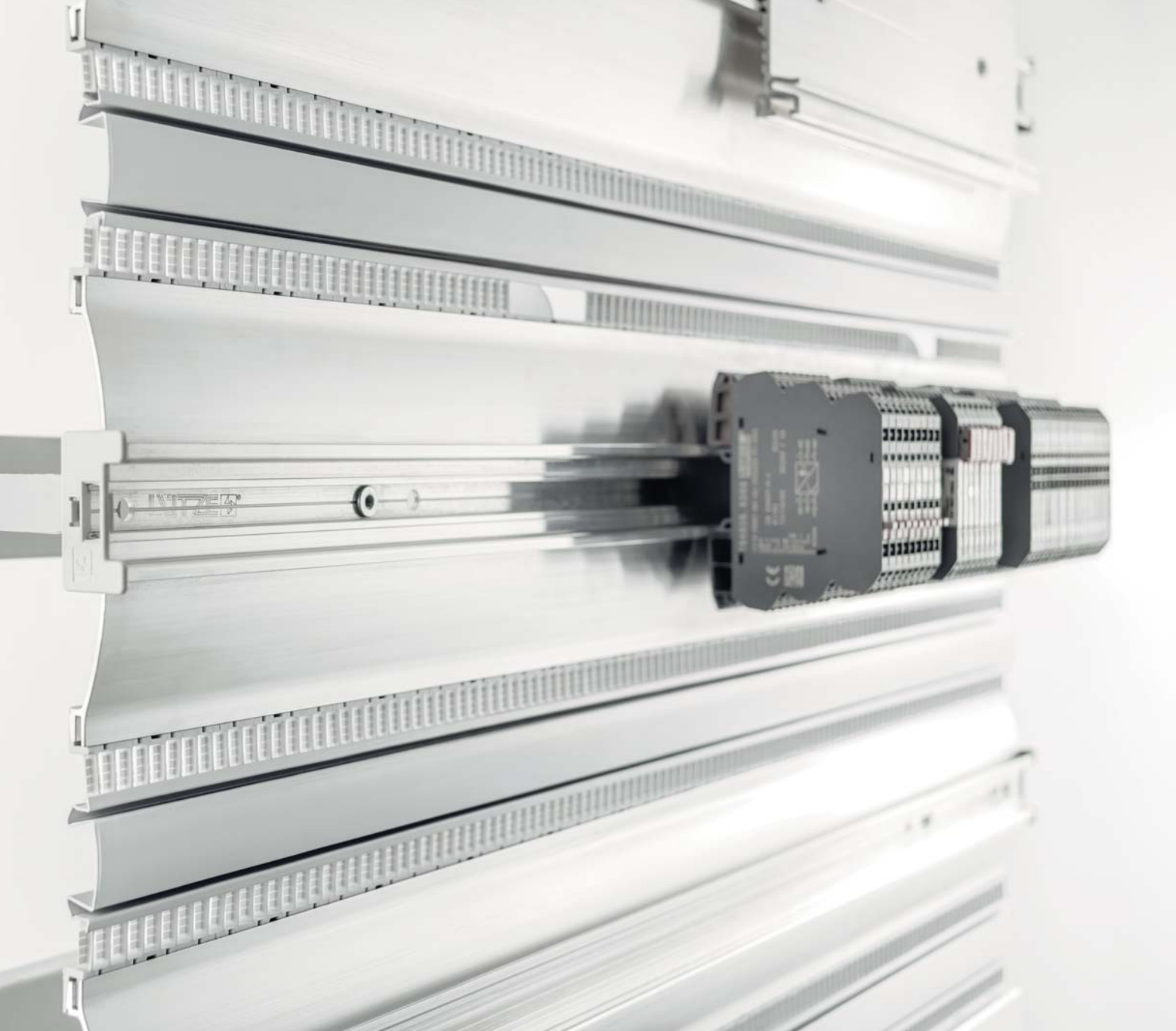
- With PVC and PUR connecting cables
- With free or pre-assembled cable end
- Suitable for all standardised solenoid valves with various interference suppression functions, overvoltage protection, switching amplifiers, etc.
- With and without status displays
- Various cable lengths
- AMP connectors, Deutsch connectors



LÜTZE motor interference suppression

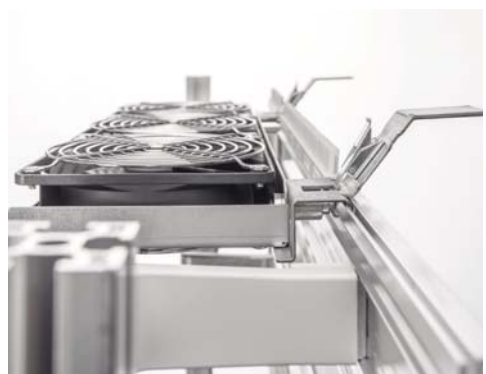
- From 400 to 690 V and motor outputs up to 30 KW
- For installation in a control cabinet (DIN rail)
- Direct mounting





Cabinet Solutions

The components used to design control cabinets are becoming more and more compact, even though their switching capacity is increasing. This also means that the thermal loss rate is higher, and heat builds up in the standard cable ducts. Hotspots are created. Standard climate control features in control cabinets are often not able to dissipate these hotspots, and cool air does not get to where it is needed. The consequences could result in frequent failures and machine downtimes.



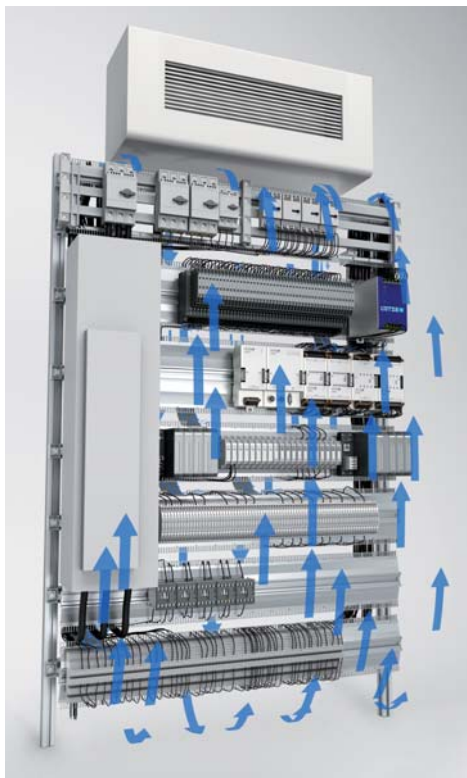


LÜTZE with it's *AirSTREAM* complete system for thermal optimization of control cabinet designs offers less machine downtime and more energy efficiency.

- ① Recognizing the problem**
Hot spots and/or high-energy costs due to air conditioning, machine downtimes, inconsistent control cabinet climate and cold short-circuits
- ② Discover differences**
AirTEMP thermal simulation with different wiring types and cooling systems
- ③ Optimize**
Improved thermal arrangement of the components, component density, component placement

- ④ Climate stability inside the control cabinet**
The use of the *AirBLOWER*, intelligent air guidance thanks to *AirBLADES*
- ⑤ Plan the control cabinet**
Use of the free *AirSTREAM* online configurator
- ⑥ Find a solution**
Longer lifecycle of the electrical components, power savings thanks to reduced energy requirements of the air conditioning, fewer machine downtimes, higher energy efficiency

Energy Efficiency in Cabinets



Less cooling power, no hotspots, less thermal stress for components and longer life for your components!

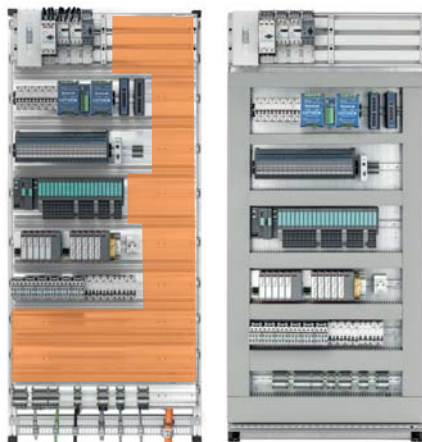
By separating the structure into a mounting plane and a wiring layer, the air flows freely passing the modules and wires - heat is efficiently removed.

With **AirSTREAM** the costs for cabinet cooling can be reduced up to 23 %*.



* Results of the Innovationsallianz Green Carbody, TP 3.2.1

More Space in Cabinet



AirSTREAM

Conventional cabinet

 Space saving

Simply more space!

You can mount all your control components efficiently and integrate your wiring easily: no longer any need for cable trunking, no need for individually drilled holes or the chore of lining up the components.

Including reduced cabinet volume through optimised use of space!



Find more Informations
about **LUTZE LSC-System**
www.youtube.de/luetzesolutions



Direct link for more
informations about the
AirSTREAM System

AirTEMP-Heat simulation



Thermodynamic analysis of a control cabinet

The web-based **AirTEMP** configurator enables an analysis of the heat build-up and distribution in the control cabinet - more precise than comparable tools. **AirTEMP** allows a differentiated thermodynamic analysis of a control cabinet with mounting plate or **AirSTREAM** wiring system. The new application also impressively demonstrates how the Lutze **AirSTREAM** wiring system ensures free air circulation as it does not use conventional cable trunking, ensuring a more uniform airflow around the components in the cabinet. The configurator can be used free-of-charge and is available to all cabinet engineers.

Direct link **AirTEMP**
Heat simulation



The AirBLOWER for a better climate



The hook-in **AirBLOWER** can be easily mounted onto the wiring frame from the front without tools. The adapter is hooked into the groove instead of a comb segment and the **AirBLOWER** is attached to the module with a snap fastener.

The DIN rail mountable control unit, controls the **AirBLOWER** and can be configured to operate the fans.



The AirBLADE eliminates the hot spot



AirBLADES are like comb segments in a 50mm grid and can be easily replaced. Hot spots are reduced thanks to the precise ventilation. However, bear in mind that sensitive components need to be protected and should not be placed in hot spot areas. If the components on each side are given enough space, the air can flow freely past the parts.

LÜTZE Online configurator



5 steps to the AirSTREAM frame. Configure the AirSTREAM wiring system online.

With the free online configurator, users can easily switch to the **AirSTREAM** wiring system, or configure their own **AirSTREAM** wiring frame as a registered customer. The intuitive operation, numerous help features and predefined standard settings make the configurator child's play. A LÜTZE **AirSTREAM** assembly frame can be configured in 5 steps. Log on to the LÜTZE **AirSTREAM** online configurator located at the following web address:
<https://bit.ly/2JJoOll>

Direct link **AirSTREAM**
Online Configurator





Control Solutions

With its portfolio of Control products, 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 offer intelligent and reliable power monitoring, and all the possibilities of integration into the applications of the Industrial Internet of Things.



Power Supplies



DELTA Power Supplies

- Low-cost units to supply inductive, ohmic and slightly capacitive loads
- One and three-phase units; wide range input for worldwide use
- 30 W - 960 W output
- Parallel and redundant switchable
- Up to 89 % efficiency
- Can be snapped onto 35 mm DIN rail
- UL Approvals



COMPACT Power Supplies

- Mains units to supply inductive, ohmic and highly capacitive loads
- One, three and 1- / 2- / 3-phase
- 30 W - 2400 W output
- Extremely small size
- Parallel and redundant switchable
- Up to 94 % efficiency
- Power Boost 150 %, 5 s
- Output voltages 24 V, 48 V and 72 V
- UL Approvals



LCOS-PS

- Single-phase mains units with wide range input for global use
- 30 W, 60 W and 120 W units
- Can be used as a standalone module or in the 'Lütze Communication System'
- Very high output reserve, e.g. 150% for 5s at 24 V
- Can be integrated in a field bus system such as Profinet and EtherCAT
- Compact design
- UL Approvals

Current Control



LOCC-Box Current Control

- Adjustable current (1-10 A)
- Adjustable characteristics
- Electrical and optical status indication
- Communication over fieldbus like e.g. Profinet-IO, Profibus-DP, EtherCAT and CANopen
- Compact
- Very narrow electronic load monitoring with 4.05 mm per channel
- Single-channel and two-channel versions
- Can be used in 12 V, 24 V or 48 V applications
- Modular
- UL and DNV GL Approvals



LCOS CC

- Electronic load monitoring in the 'Lütze Communication System'
- Adjustable current (1-10 A)
- Adjustable characteristic fast-acting - super slow
- Electrical and optical status indication
- 1 channel design with 2 pole disconnection (galvanic insulation)
- 2 channel design with 1 pole disconnection
- Direct connection „+“ and „-“
- Tool-free installation
- Can be used in 12 V, 24 V or 48 V applications
- Communication via field buses such as Profinet and EtherCAT
- UL and DNV GL Approvals

Ethernet Connectivity / Switches



Unmanaged Ethernet-Switches

- Complete family of unmanaged switches
- Solid metal housing; expanded temperature range -40 °C/+75 °C
- 10/100/1000 MBit; Power over Ethernet
- Broadcast storm protection; auto negotiation, auto crossing, auto polarity
- Wide range and redundant supply
- UL Approvals



LCOS Unmanaged Ethernet-Switches

- AC/DC 24V power supply
- Variable power supply
 - Energy bus or
 - 3-pin clamp-type terminal Push-In
- Can be used as a standalone module or in the 'Lütze Communication System'
- Compact design and universal application
- QoS - Quality of Services
- Extended temperature range
- UL Approvals

LCIS-Relais



Relay modules

- For potential-free switching
- Space-saving in 6.2 mm microcompact design
- Closed and pluggable design
- Control voltage of DC 12 V - AC/DC 230 V
- Relay with 1 changeover contact
- Screw or Push-In connection
- UL and DNV GL Approvals



Semiconductor relay modules

- For contact-free switching of loads up to 10 A
- Switching voltages up to AC 275 V
- Space-saving in 6.2 mm microcompact design
- Closed and pluggable designs
- 2 and 3-conductor technology
- Screw or Push-In connection
- UL and DNV GL Approvals



Relay modules with positive-action contacts

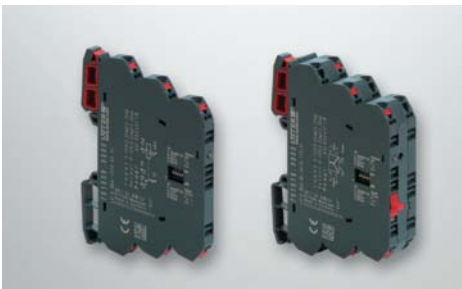
- For potential-free switching
- Positive-action contacts
- Wide range input
- Complete family
- UL Approvals

Converter Modules



LCIS Converter series

- With fixed input/output
- 3-way separation
- Power supply AC/DC 24
- Isolation voltage up to 2.5kV
- Standard signal converters active / passive
- Screw or Push-In connection
- UL and DNV GL Approvals



LCIS Universal converter

- Universal setting of measuring ranges thanks to DIP switches
- 2 and 3-way separation
- Wide range supply of AC/DC 24 - 240 V
- Isolation voltage up to 4kV
- Frequency, temperature and standard signal converter
- Variants for building technology with Manual-0-Automatic
- UL and DNV GL Approvals



LCON Monitoring modules, FDT/DTM

- With galvanic isolation
- High accuracy (0,1 %)
- Freely settable switching thresholds
- Separately settable hysteresis
- Setting via DIP switches or software: current, voltage, temperature
- FDT/DTM
- Expanded temperature range -25/+75 °C
- UL and Class 1 Div 2 Approvals



LCON Temperature converter, FDT/DTM

- PT, TC, resistance
- Accuracy 0,1 %
- 1 kHz transmission frequency
- Various analogue outputs
- Setting via software and/or DIP switch
- UL and Class 1 Div 2 Approvals



LCON Analogue converter, FDT/DTM

- Analogue input ± 0 V bis ± 30 V
- Accuracy 0,1 %
- 1 kHz transmission frequency
- Various analogue outputs
- Setting via software and/or DIP switch
- UL and Class 1 Div 2 Approvals



Transportation Solutions

Anyone who wants to offer reliable transportation solutions has to have exact knowledge of the operational conditions, and above all a great deal of experience with electronics on wheeled vehicles. For more than two decades, LÜTZE has been developing and supplying solutions for the demanding railway industry. All over the world, numerous locomotives, railcars, and control cars are able to operate safely thanks to individual LÜTZE solutions.



Control technology



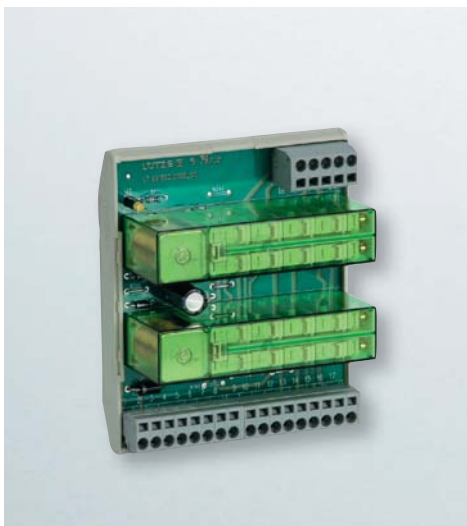
Control and diagnostics systems

Control and diagnostic systems have a special task in modern rail vehicles. In order to guarantee rational planning and production of the vehicles under the continuously increasing requirements on process control technology, individually adaptable platform concepts are required.

The flexible to use process control technology components by LÜTZE always take this into account. In this way, intelligent special solutions, such as the LÜTZE powerpack control, are available as complete control technology systems with individual components aligned optimally to each other.

One example of this is the DIOLINE system, which, in addition to the vehicle control, also comprises the control of subsystems and the I/O level for all signal voltages, generally used in the rail sector.

Interface



Streamlining vehicle planning and wiring, making optimal use of installation space with LÜTZE interface products for the railway industry

The large number of different electrical components on rail vehicles frequently requires amplification, adaptation and interference suppression between the process control technology and actuating elements. The interface level required for this has been optimised by LÜTZE. Innovative devices especially development for the vehicle technology combined functions, which previously required a series of individual devices. This minimises space requirements and simplifies planning and wiring. A broad spectrum of standard products thus covers numerous areas of application and is perfectly supplemented through customer-specific products which we develop, according to individual specifications.

Indication



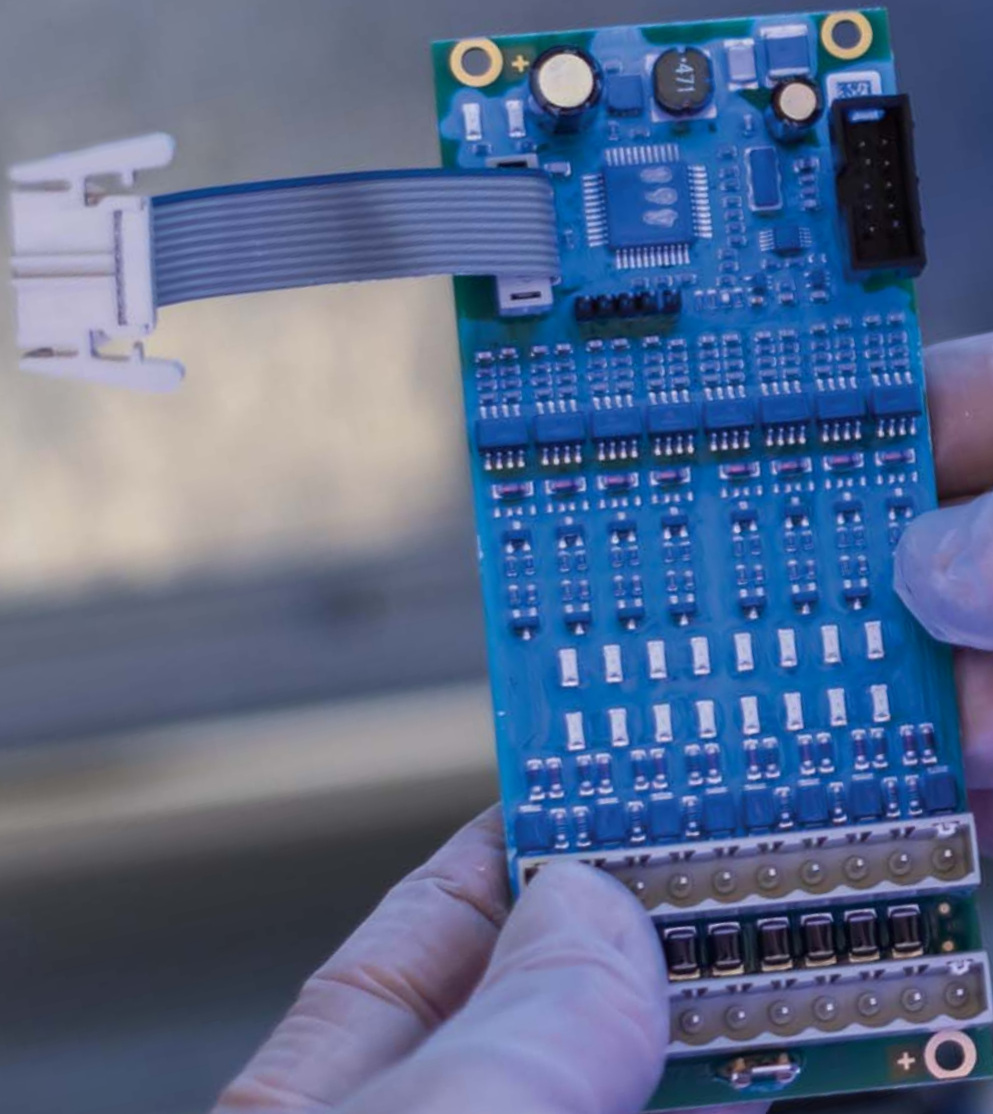
Control gear and signal units for the driver's cab

So that everything remains under control in the driver's cab, we have developed maintenance-free, durable and ergonomically suitable LED, display and lighting elements, as well as acoustic signal encoders which in practical use, have proven their worth multiple times over.

Do we have special solutions for you, too?
Of course we do!



Manpower, quality, innovation **Efficiency in Automation**



Quality, innovation and efficiency begin with people. We would not be where we are today without our highly qualified and motivated employees. An uncompromising focus on quality, nearly 60 years of experience in automation and rail technology, and of course a common desire for greater innovation and efficiency – that's what makes LÜTZE so successful.

Cable Solutions

High flexing cables for industrial applications

Connectivity Solutions

Industrial Ethernet, assembled cables,
Actuator Sensor Interface, connectors and
suppression technology

Cabinet Solutions

AirSTREAM complete system for thermally
optimized and space-saving cabinet wiring

Control Solutions

Industrial Power Supplies and electronic current
control for Industrial Internet of Things. Infrastructure
for industrial networks, signal converter, relays and
modular electronics housing

Transportation Solutions

Solutions for the demanding Railway Sector,
for example control technology,
Interface solutions and signalling

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SkyBLUE
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RoHS

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LUTZE 
SYSTEMATIC TECHNOLOGY