

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



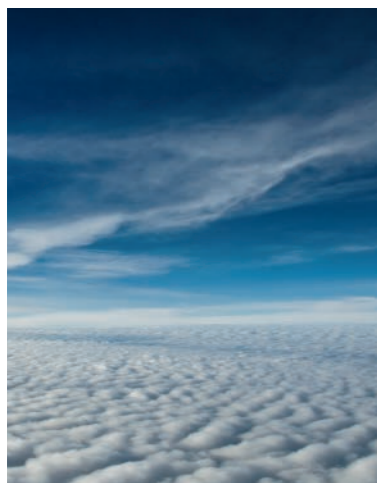
LÜTZE - Efficiency in Automation

A tradition in automation for over 60 years, with countless pioneering achievements and patents, the LÜTZE INTERNATIONAL 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 high flexing cables and cable assemblies, 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 INTERNATIONAL Group has multiple locations throughout Europe, Asia and the USA and numerous distribution partners across the world to provide global product availability and service to our customers in all markets.

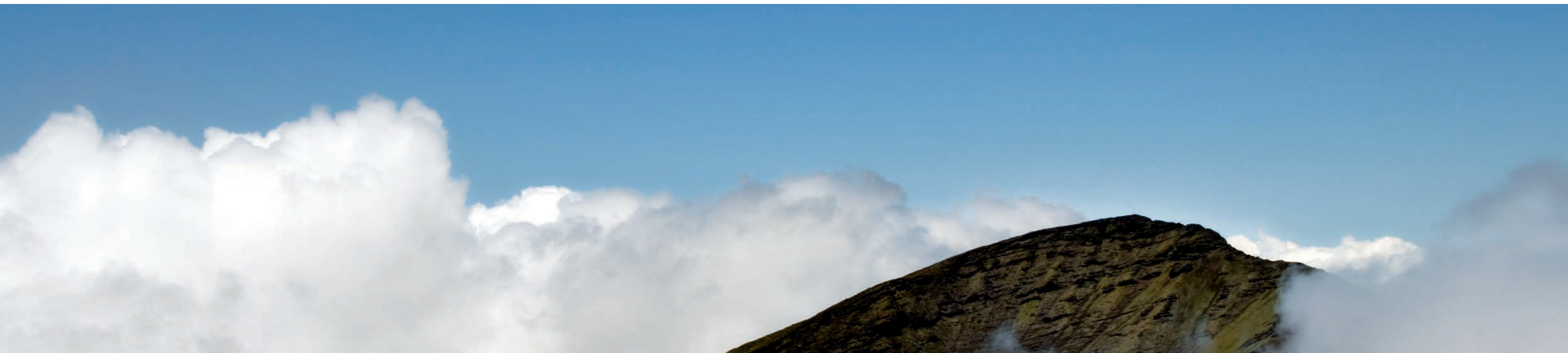
LÜTZE is one of the leading suppliers in the rail technology field. LÜTZE Transportation solutions are installed in numerous locomotives, city rail and underground rail systems, as well as high-speed trains across the world.



Business Management: Sustainable and forward-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



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.

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

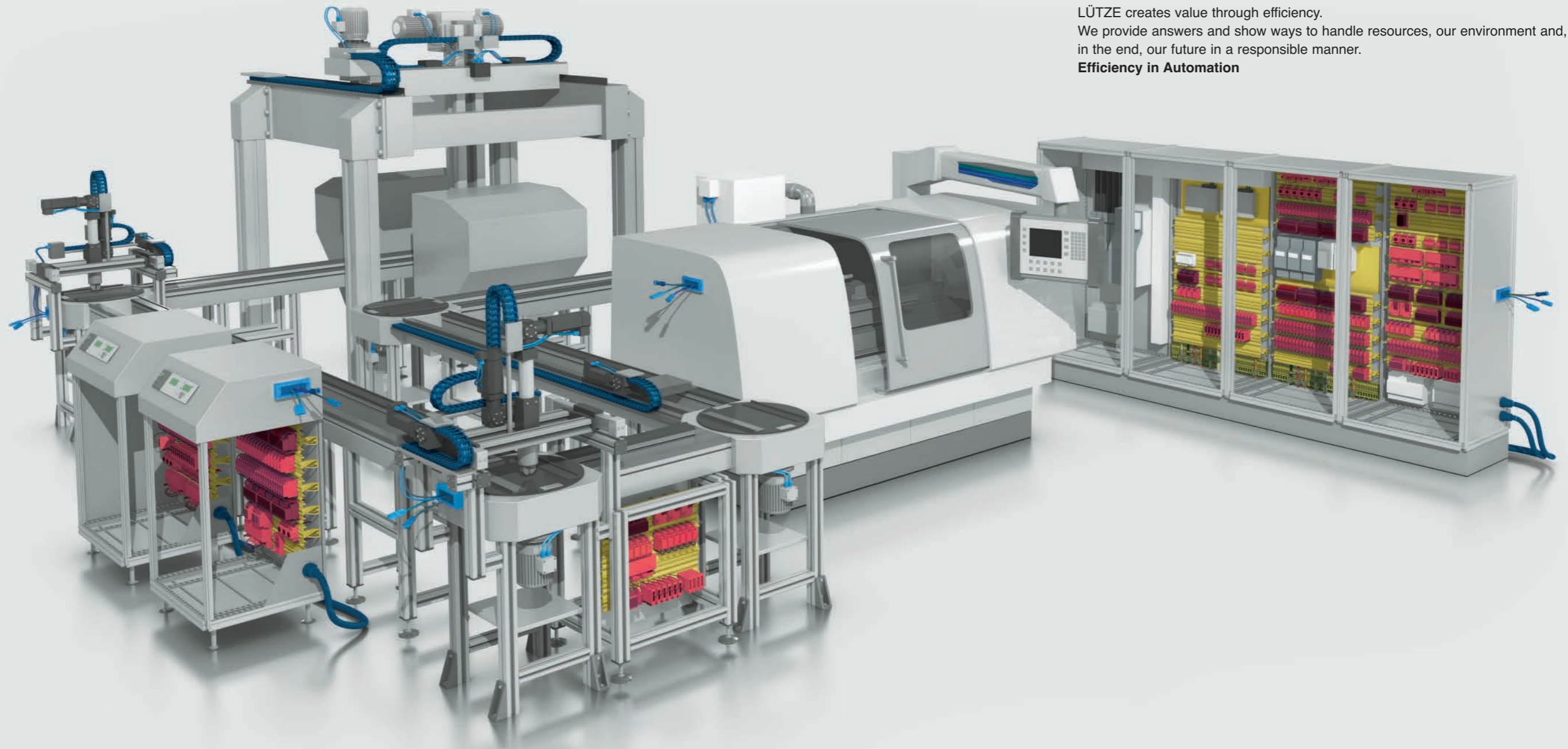
projects with the objective of improving energy efficiency and sustainable technologies and industries. Thus, LÜTZE provides answers and demonstrates how to handle resources responsibly, with our environment and our future in mind.



RoHS

Efficiency in Automation - **LÜTZE solutions at a glance**

LÜTZE creates value through 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



Cable Solutions

High flexing cables for industrial
automation

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Connectivity Solutions

Plug & Play in the industrial Ethernet

Page 12 - 15

Cabinet Solutions

The complete system for thermal
optimization of the control cabinet

Page 16 - 19

Control Solutions

Universal Interface technology and modular
housing systems

Page 20 - 23



Cable Solutions

LÜTZE is your professional partner for consulting and worldwide delivery of high-quality industrial cables for automated production. Our extensive expertise in high flexing cables and cable assemblies combined with our product offering of shielded and unshielded cables for power, control and network applications provide support options for your installations.

The LÜTZE SUPERFLEX® cable line was specifically developed for continuous motion applications providing the best electrical characteristics and lifetime of over 10 million flexing cycles.



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

RoHS

DESINA

cUL US LISTED

CE

RA US

halogen free ✓

Low Capacitance ✓

halogen free ✓
flame retardant

Cables for Industrial Automation



BUS and Network Cables

- Industrial Ethernet up to Cat.7
- For static or C-track applications
- High active and passive interference resistance (EMC)
- UL Approvals
- All common BUS systems

NEW: single pair Ethernet
NEW: Industrial Ethernet Cat. 6_A and
Cat. 7 for torsional flexing



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

NEW: One cable solutions with Ethernet element



LÜTZE Online Catalogue
**Motor and
Servo Cables**



Control Cables

- LÜTZE SUPERFLEX® for C-track applications
- LÜTZE SILFLEX® PUR and Multinorm for occasionally moving applications
- UL Approvals
- Small outer diameter
- Low capacitance
- Oil resistant



LÜTZE Online Catalogue
Control Cables



Electronic Cables

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



LÜTZE Online Catalogue
Electronic Cables

Cabinet Entry Systems



LÜTZE CABLEFIX® VARIO- The innovative cable entry system for cables with or without pre-installed connectors

- Also ideal for retrofitting
- Protection class IP65
- Modular design suitable for a wide range of applications
- Frames are available in solid polished aluminum or plastic made of glass fiber reinforced PA66 GF50 with brass support



LÜTZE CABLEFIX® X - The fast and simple cable entry

- UL Recognized
- Protection class IP65
- Fast and simple installation with snap in function



LÜTZE CABLEFIX® ONE - The intelligent cable entry kits

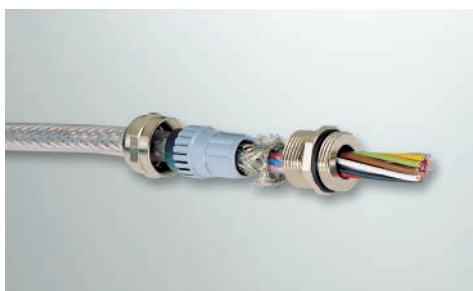
- UL Recognized
- Protection class IP65
- Pre-configured kits with 4, 7 or 10 openings
- Layered seals specified for each entry point



LÜTZE CABLEFIX®- The light duty modular cable entry system

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

Cable Fittings



LÜTZE EMC fittings

- PG and metric EMC fittings for optimal shielding



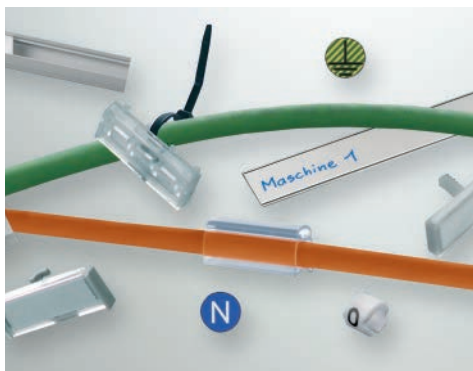
LÜTZE plastic cable fittings and accessories

- Over 60 different types
- PG and metric threads available

LÜTZE metal cable fittings and accessories

- Over 40 different types
- PG and metric threads available

Labelling Systems



Labelling systems and accessories



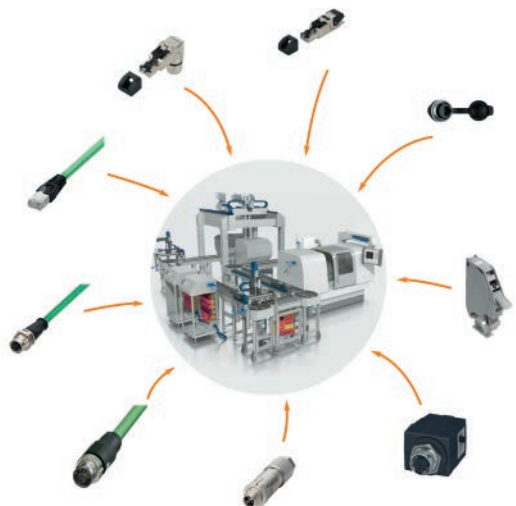
Please see the LÜTZE Online Catalogue for more information about our **installation accessories**



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 of experience in connectivity solutions, LÜTZE serves its large global customers together with multiple international locations and distribution partners.

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



High Quality Cable Assemblies



Servo drive assemblies

LÜTZE offers cable assemblies which are 100 % compatible with common servo-drive systems according to the following standards

- ALLEN BRADLEY® standard
- BOSCH REXROTH® standard
- SIEMENS® standard

Customized options

On request, we customize servo assemblies according to your specifications and requirements, we will gladly assist you with the project planning and documentation.



LÜTZE Online Catalogue
Servo drive assemblies



Bus system and Industrial Ethernet Cables

LÜTZE connectorized Industrial Ethernet cables and connectors are able to withstand the respective system requirements for all electronic and mechanical parameters. LÜTZE Cable Assemblies are manufactured according to all system requirements.

You can rely on the fact that all components are subjected to a 100% electrical test and comply with all standard network specifications.



LÜTZE Online Catalogue
Bus system and Industrial Ethernet Cables

Connectors for all applications

LUTZE offers a wide variety of industrial connectors ensuring optimal and reliable connectivity in the following fields:

- Valve Suppressors, also with special function
- M8 or M12 connectors, preassembled or field wireable, shielded or unshielded
- Data connector RJ45
- Panel pass through devices





Actuator Sensor in the automation technology

The field of sensor actuator networks is currently experiencing a major boom, not least thanks to the digital transformation of a growing number of Industry 4.0 applications. Whether in automation or in other fields, these networks are always composed of numerous sensor or actuator nodes, providing data to be observed and analyzed for forming various decisions. Every node is equipped with sensors or actuators, microcontrollers and communication components, to capture values, transfer them and also to react thereupon according to target goals.

LÜTZE supports you with plug connections from the actuator sensor area as well as network technology, on which you can rely upon!



LÜTZE Online Catalogue
Actuator Sensor



Suppression Technology

Suitable protection for contactors, valves and motors

As a specialist in suppressors, LÜTZE offers suitable overvoltage protections in various housing options for contactors, valves, motors or other inductors. Special functions or designs are available on request.



LÜTZE Online Catalogue
Suppression Technology



Panel Pass Through Devices

In order to program and parameterize a system, the controls and computers in the control cabinet have to be accessed via standardized interfaces, such as RJ45 and USB. The user would have to open the control cabinet door for service.

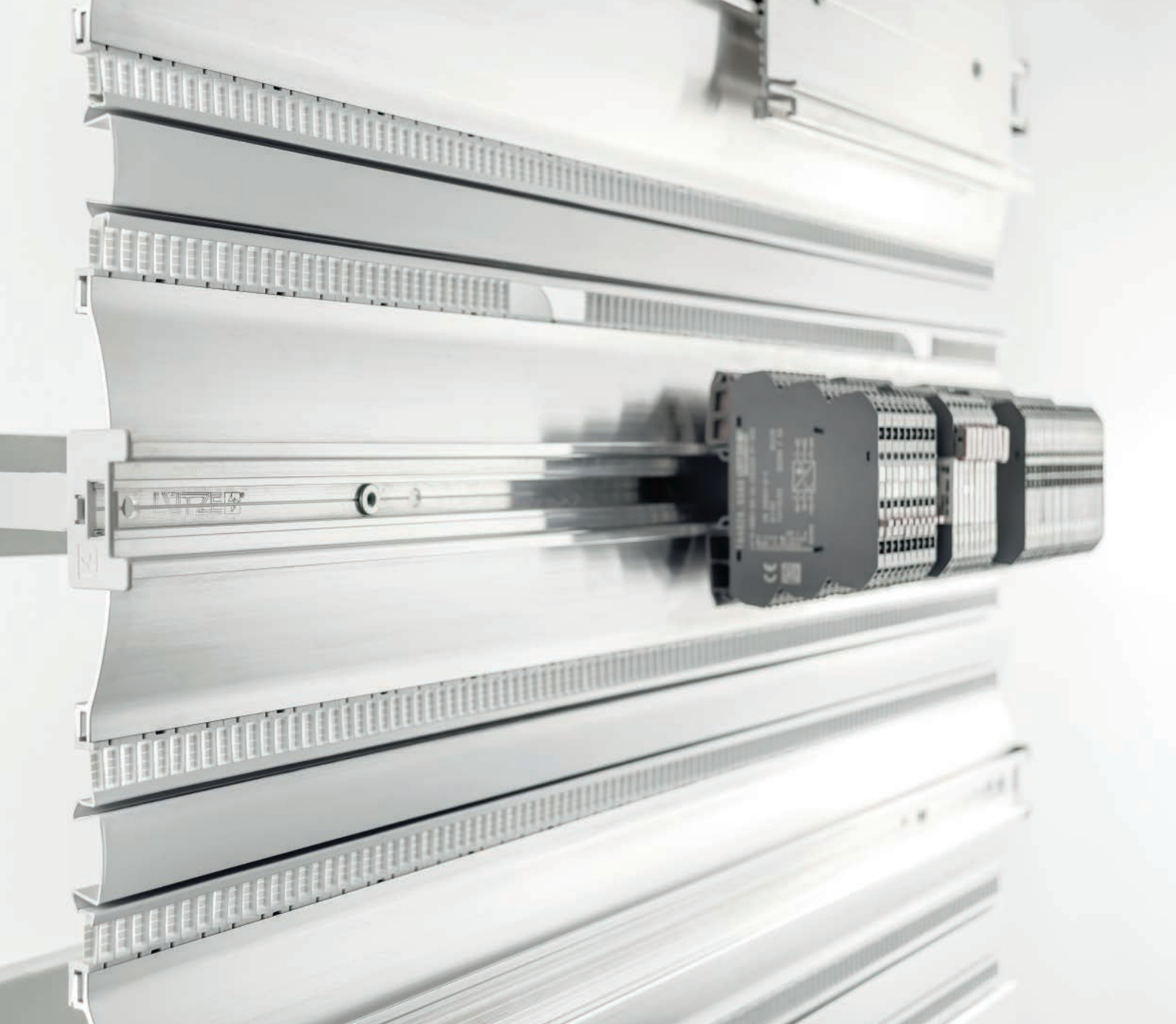
To prevent injury and ensure safety when the control cabinet door is open, LÜTZE provides panel pass through devices for the control cabinet for M8, M12, RJ45 and USB. With the pluggable Plug-and-Play standard interfaces, the connections between all control and data cables and the control cabinet are guaranteed.

The LÜTZE panel pass throughs have IP65 in 'cap closed' position and IP20 when in inserted operation, thus providing easy and safe access to the components and devices in the control cabinet.



LÜTZE Online Catalogue
Panel pass throughs





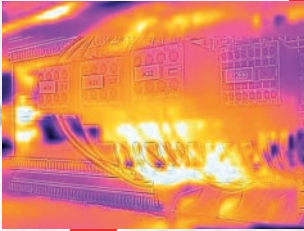
Cabinet Solutions

Today's industrial control components are becoming more and more compact even though their load capacity is increasing. This means that the thermal loss rate is increasing as well. Additionally, heat can build up and become trapped in and around the standard wire ways, thus creating unwanted hotspots inside the control cabinets. Some climate control solutions within control cabinets are not effective enough to dissipate the hotspots and keep the ambient temperature at optimal level. The consequences could result in decreased lifetime of components and possible machine downtime.



LÜTZE's offers with its *AirSTREAM* wiring system a complete system for thermal optimization of control cabinets resulting in less machine downtime and higher energy efficiency.

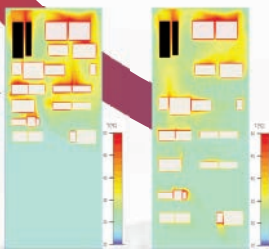
①



②



③



⑥



⑤



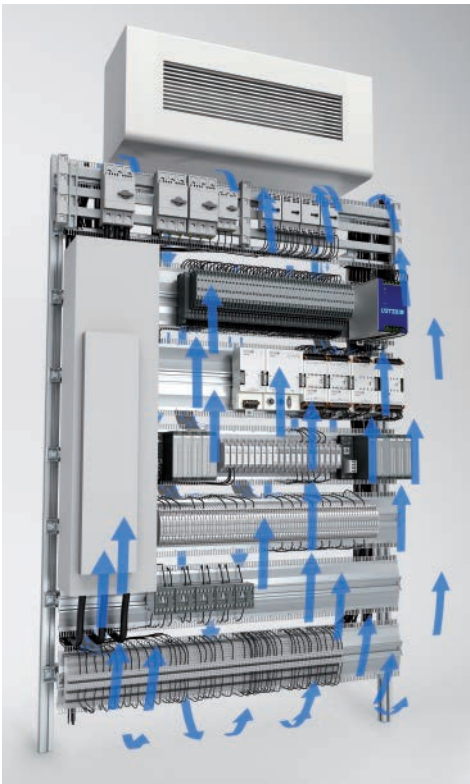
④



- ① **Recognizing the problem**
Hot spots and/or high-energy costs due to air conditioning, machine downtimes, uneven control cabinet climate and 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 *AirBLAWER*, intelligent air guidance thanks to *AirBLADES*
- ⑤ **Design 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!

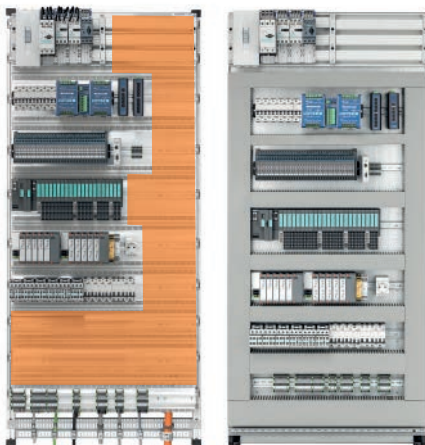
By separating the structure into a mounting plane and a wiring layer, the air flows freely passing the modules and wires - heat is efficiently removed.

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 ducts, no need for individually drilled holes or the tedious task of lining up the components.

Including reduced cabinet volume through optimised use of space!



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 demonstrates impressively how the Lütze **AirSTREAM** wiring system ensures free air circulation as it does not use conventional cable ducts, ensuring a more uniform airflow around the components in the cabinet. The free configurator is available for all cabinet designers.

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.

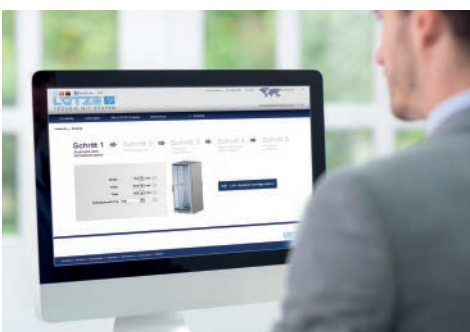


The AirBLADE eliminates the hot spot



AirBLADES are like comb segments in a 50mm grid and can be easily installed. 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 user. The intuitive operation, numerous help features and predefined standard settings make the configurator easy to use. 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/2JJJoOll>

Direct link **AirSTREAM**
Online Configurator





Control Solutions

With its portfolio of Control products, LÜTZE covers the area of current 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

- Economical 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 operation
- Up to 89 % efficiency
- Can be snapped onto 35 mm DIN rail
- UL Listed



COMPACT Power Supplies

- Power supply units to supply inductive, ohmic and highly capacitive loads
- One, three and 1- / 2- / 3-phase
- 30 W - 2400 W output
- Extremely compact
- Parallel and redundant operation
- Up to 94 % efficiency
- Overload current 150 %, 5 s
- Output voltages 24 V, 48 V and 72 V
- UL Listed



LCOS-PS

- Single-phase power supply units with wide range input for worldwide 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 Relays



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

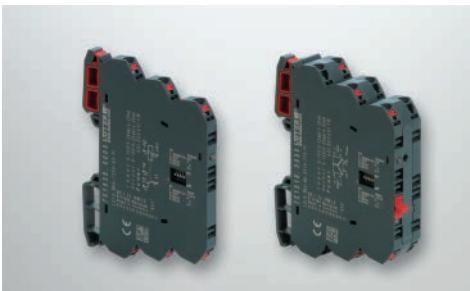
- For potential-free switching
- Positive-action contacts
- Wide range input
- Complete family
- UL Approvals

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



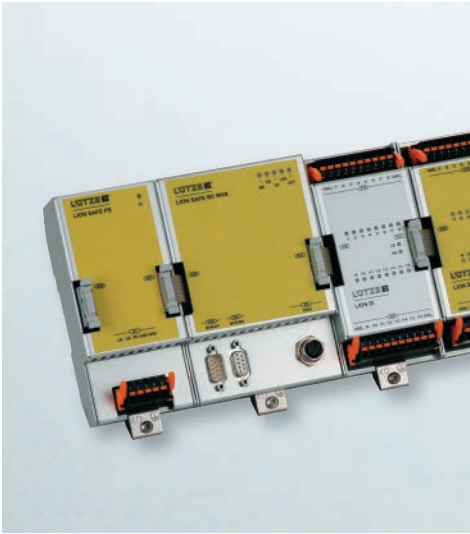
Transportation Solutions

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 rolling stock.

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



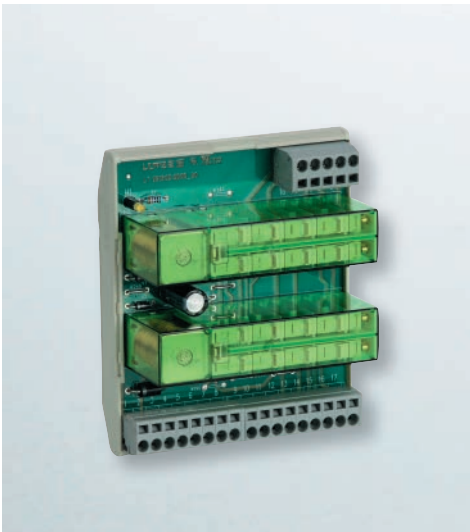
Control and diagnostics systems

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, specifically developed for the vehicle technology, combine 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.

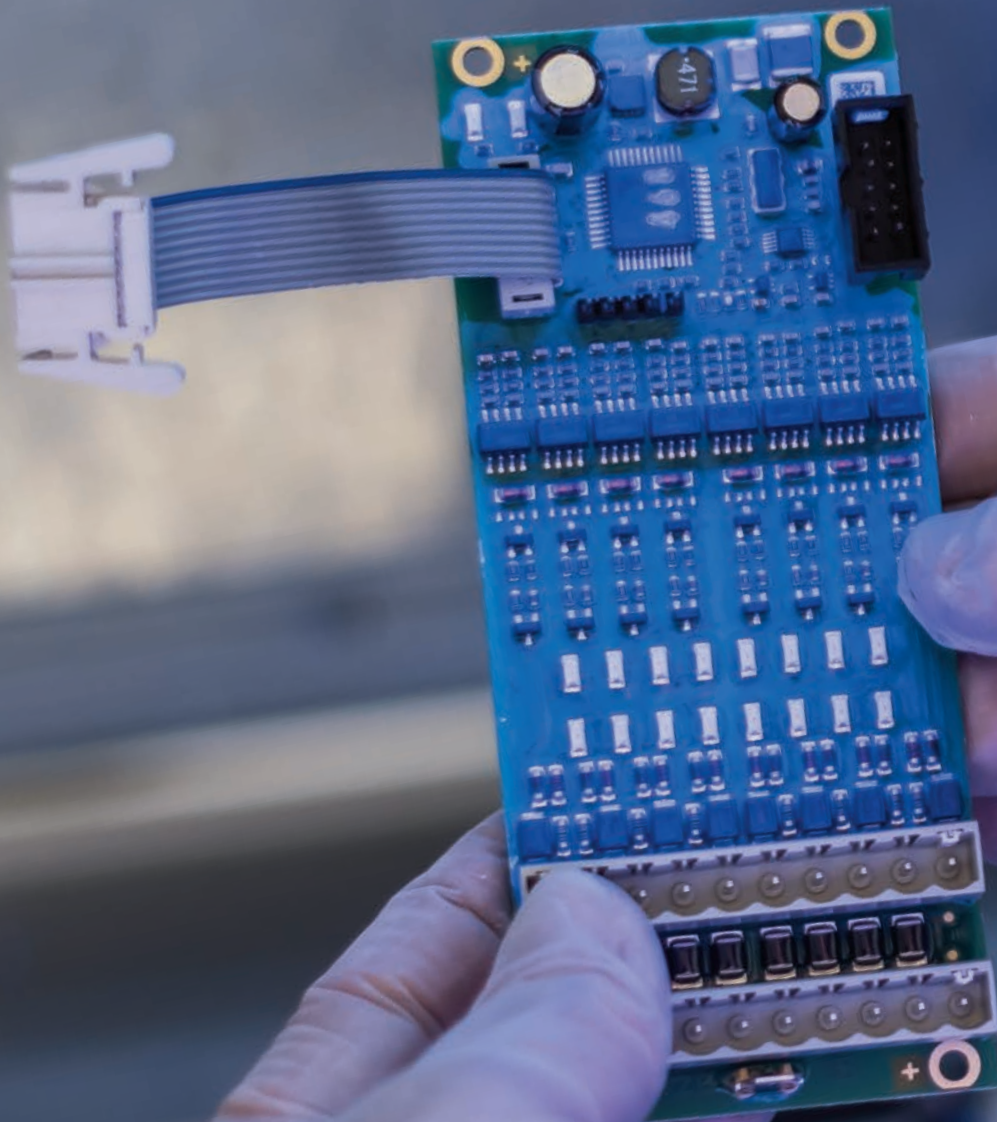
Control gear and signal units for the driver's cab

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, cable assemblies, 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

Germany

Friedrich Lütze GmbH
Postfach 12 24 (PLZ 71366)
Bruckwiesenstraße 17-19
D-71384 Weinstadt
Tel.: +49 71 51 60 53-0
Fax: +49 71 51 60 53-277(-288)
info@luetze.de

USA

LUTZE INC.
13330 South Ridge Drive
Charlotte, NC 28273
Tel.: +1 704 504-0222
Fax: +1 704 504-0223
info@luetze.com

United Kingdom

LÜTZE Ltd.
Unit 3 Sandy Hill Park
Sandy Way, Amington
Tamworth, Staffs, B77 4DU
Tel.: +44 1827 313330
Fax: +44 1827 313332
sales.gb@luetze.co.uk

Austria

LÜTZE Elektrotechnische
Erzeugnisse Ges.m.b.H.
office@luetze.at

Switzerland

LÜTZE AG
info@luetze.ch

France

LUTZE SASU
lutze@luetze.fr

Spain

LUTZE, S.L.
info@luetze.es

China

Luetze Trading (Shanghai) Co.Ltd.
info@luetze.cn



RoHS

www.luetze.com

