Industrial automation and connectivity

METZ CONNECT Highlights at a glance

METZ CONNECT –
YOUR partner for company-wide networking

The METZ CONNECT Group stands for high quality contact technology and connection elements in the electrotechnical and electronic area. Around the world, our products guarantee safe and reliable connections for smooth information flow – from the circuit board to the infrastructure environment.

P │ Cabling

Cabling solutions for networks

Copper and fiber optic components, as well as an automated infrastructure management for structured network cabling

U │ Contact

Connection technology

Circuit board connection technology for connecting devices and controls in building and industrial automation

C │ Logline

Intelligent system components

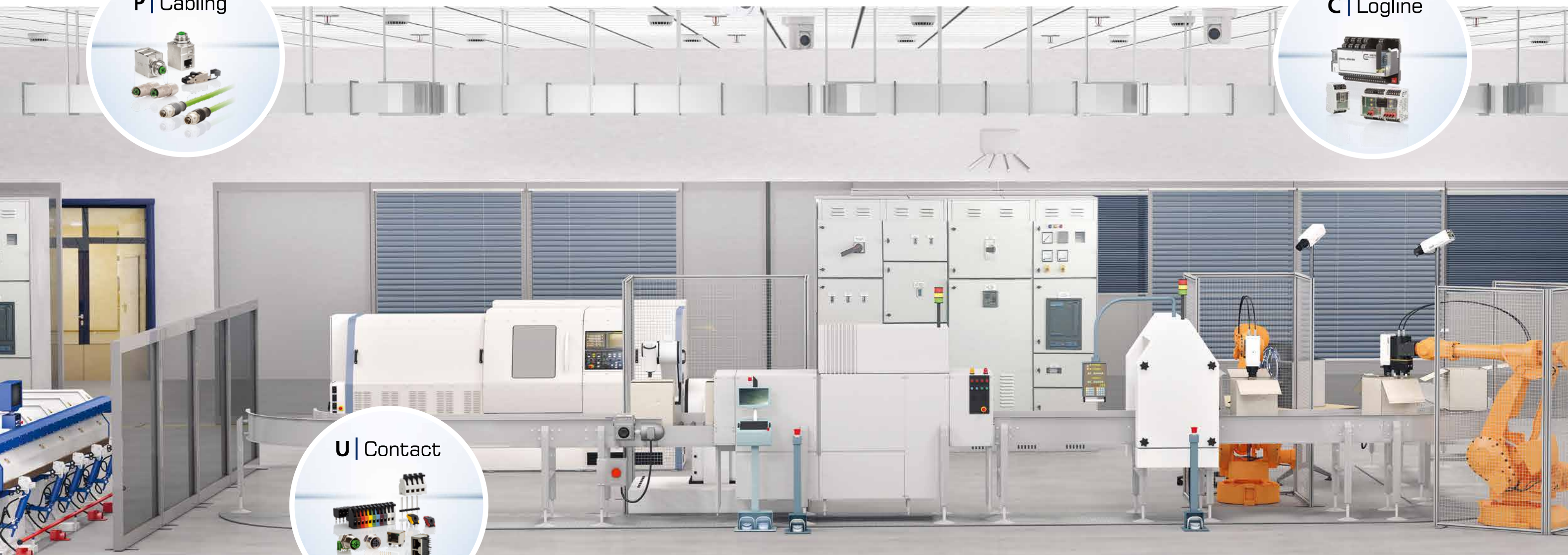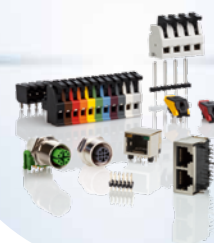Intelligent system and switch cabinet components for building and process automation
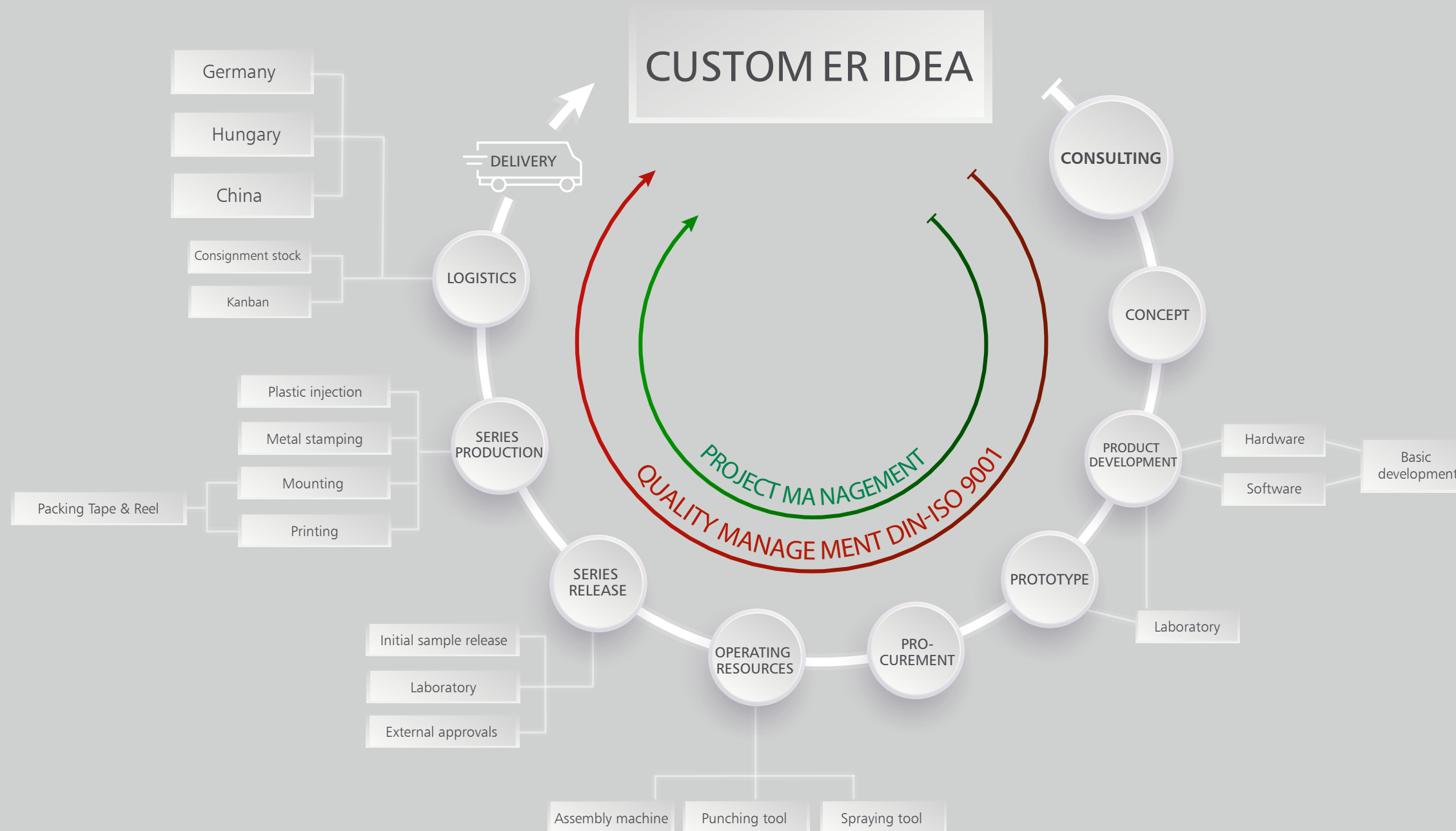
Our competences

CUSTOMER IDEA

DELIVERY

Germany

Hungary

China

Consignment stock

Kanban

LOGISTICS

CONSULTING

CONCEPT

PROJECT MANAGEMENT

QUALITY MANAGEMENT DIN-ISO 9001

Plastic injection

Metal stamping

Mounting

Printing

Packing Tape & Reel

SERIES PRODUCTION

PRODUCT DEVELOPMENT

Hardware

Software

Basic development

SERIES RELEASE

PROTOTYPE

Laboratory

Initial sample release

Laboratory

External approvals

OPERATING RESOURCES

PRO- CUREMENT

Assembly machine

Punching tool

Spraying tool

WE REALIZE YOUR IDEAS!

From standard to customer-specific development

CUSTOM

BRAND

BASE

CUSTOM-LINE | You have the idea – We realize it

Our experts are your partners for customer-specific connection and casing solutions when you need professional, customer-oriented development on an equal footing. Thanks to our high level of vertical integration with our own plastic injection molding, our own lab, metal processing, special machinery and wool construction, we are able to develop and manufacture your connection solution quickly and flexibly.

BRAND-LINE | Would you like some more? – Color and print variants as desired

We customize the Base-Line products for you according to your desired colors and printing requirements. You can also customize the front of your device by integrating LEDs or a manual level.

BASE-LINE | You need a standard casing – We deliver quickly and simply

For standard requirements, you can rely on a wide-ranging assortment of standard connection technology products. This means a quick, uncomplicated and cost-effective use.

Another benefit: Many Base-Line products are available from the warehouse and even smaller quantities can be ordered.

Product groups

> Circuit board terminals
> Male and female connectors
> Connection technology M12

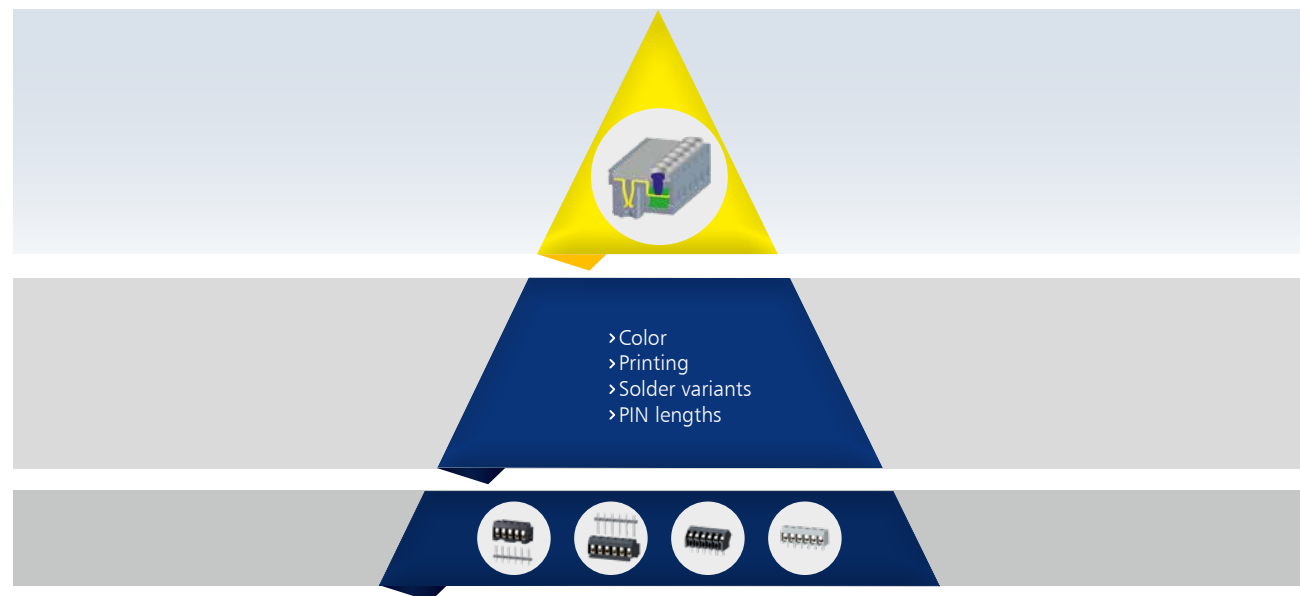> Board-to-board connectors
> Circuit board sockets / connectors

> DIN rail housing
> Accessories

Circuit board terminals

METZ CONNECT has been successfully manufacturing and selling terminal blocks for circuit boards for decades. The portfolio includes products for signal and data streams, moderate control currents and network terminal blocks and power terminals.

From a single supplier – whether developed in partnership, whether in Design-In with existing or modified products or even catalog articles – you will find we have your circuit board connection technology.

Portfolio

> Spring clamp
  terminal blocks

> Screw type
  terminal blocks

> Insulation displacement
  terminal blocks

> Ethernet
  terminal block

Screw type terminal blocks

> Color
> Printing
> Solder variants
> PIN lengths

Screw type terminal blocks, a connection technology tested and proved millions of times, are based on a metal terminal body, which is installed in an insulator. The stripped wire is clamped and contacted directly or indirectly with a screw. An integrated wire protection or lift system protects the wire when being clampe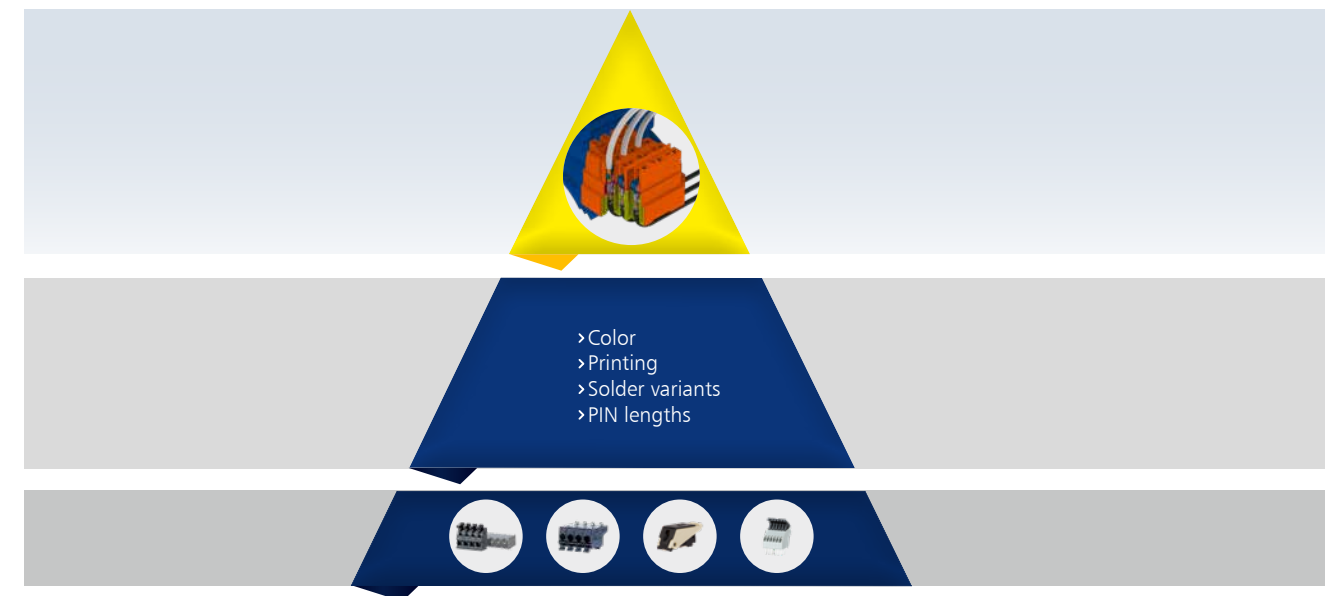d. The screw type terminal blocks are suitable for solid wires and stranded conductors with ferrules, and depending on the design, for connection cross-sections from 0.08 - 4 mm². Screw type terminal blocks allow two conductors to be connected in a terminal body and are characterized by good contact quality with low little heating.

Spring clamp terminal blocks

> Color
> Printing
> Solder variants
> PIN lengths

The product range comprises terminal blocks based on a spring clamp connection. A spring clamp connection is an electrical connection, which is achieved by clamping a single stripped wire using a spring. It is suitable for solid wires and stranded conductors with a nominal cross-section of 0.08 - 2.5 mm² and allows direct clamping without having to pretreat the wire, direct clamping with shrink splice and indirect clamping via ferrule or terminal pin.
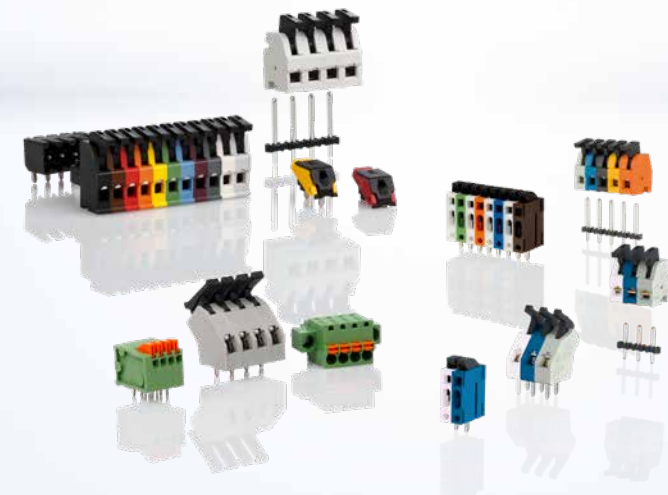
Casing solutions

for building installation and rail-mounted devices

As one of the leader providers of circuit board connection technology, METZ CONNECT offers innovative solutions for almost every application. Depending on the connection technology, we have a selected range of DIN rail housings.

DIN rail housings from METZ CONNECT offer flexibility, simple connection and assembly, as a high level of customization for rail-mounted devices and future-oriented applications in building automation.

Multiple designs and casing widths, extensive connection technology in screw type terminal blocks and push-in spring clamp terminal blocks, as well as RJ45 connection sockets in a standard design cover the demands from the various market applications. We are happy to support you during the design-in process or provide information about other product solutions from METZ CONNECT.

> Printing
> Terminal block
> Color
> Control fields
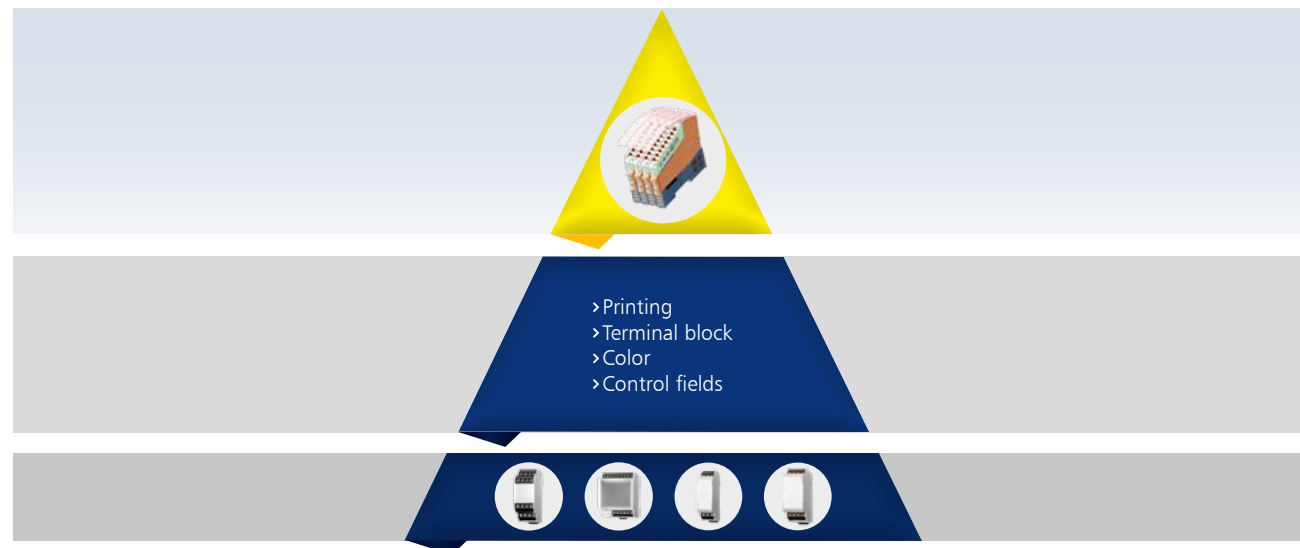
Product family Ethernet M12

The Ethernet M12 family of products comprises of X- or D-coded board jacks, field installable plugs and sockets, cable assemblies and switch cabinet feed-throughs. They form a link for system cabling and free cable connections and thanks to the total metal shielding, they can also be used under conditions that are technically problematic for transmission without an issue.

Benefits

> Robust M12 connectors have a very high mechanical and electrical strength
> Dirt and moisture-resistant (IP67) when plugged in
> Error-free data transmission thanks to secure and reliable contact
> Approved for railway applications

Data transmission rates

> X-coded components: according to category 6_A for data transmission up to 10 Gigabit
> D-coded components: according to category 5 for data transmission up to 10/100 Megabit (e.g. for Fast Ethernet or PROFINET)

> Cable lengths
> Plug configuration
> Cable types adjustable
> Printing fields
> OEM
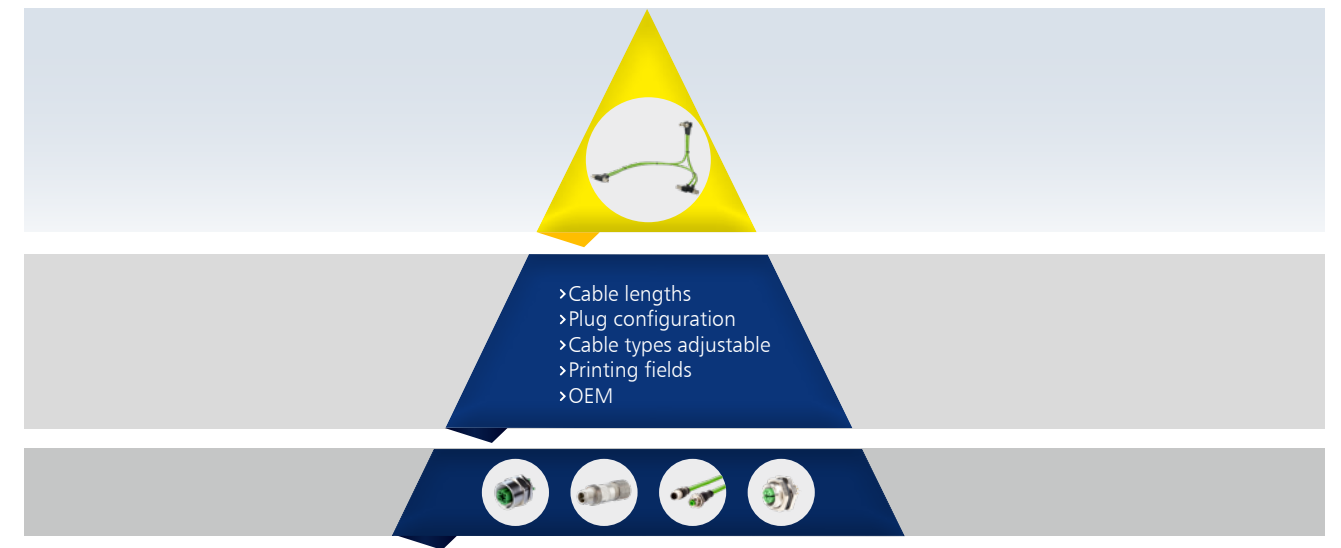
Ethernet terminal blocks

Circuit board terminal blocks instead of connectors are of interest for devices that are permanently installed and do not need a frequently plug/removable connection and which typically are installed permanently in one location. For example sensors, lights, but also IP cameras, etc. Circuit board terminal blocks are and increasingly will be a beneficial alternative to the standard Ethernet connectors and connection technologies.

Ethernet terminal block solutions

In principle, corresponding mechanical requirements, data transfer rates and PoE power supply are needed for different applications. There are also corresponding connectors.

	DESCRIPTION	PROPERTIES	CABLE STRUCTURE
	Gigabit Ethernet	4 pairs; 8 wires; 1/10 GBit/s PoE; PoE+; 4PPoE (up to 90 W); up to 100 m	
	Fast Ethernet & Industrial Ethernet	2 pairs; 4 wires; 10/100 MBit/s PoE (15,4 W); PoE+ (30 W); up to 100 m	
	SPE Single Pair Ethernet	1 pair; 2 wires; 10/100/1000 MBit/s Power over Data Line (60 W); up to 1.000 m	
	Ethernet APL Advanced Physical Layer	1 pair; 2 wires; 10 MBit/s up to 1.000 m; ex-protection	

Benefits

> Easy handling, color coding
> assembly-friendly, without special tools
> pluggable or permanently soldered
> board cover of cable cross-sections
> different designs

> ideal for compact devices with tight space conditions
> Cost-effective solutions
> Fewer components
> Data transfer properties for up to 10 GBit/s Ethernet

> Single, double or four-pair Ethernet
> PoE, PoE+, 4PPoE, PoDL and more*
> Hybrid system for Ethernet and power supply possible
> ideal for Ethernet APL
> SPE ready for up to 1,000 m (AWG 16)

*Switching states are to be changed for load-free systems
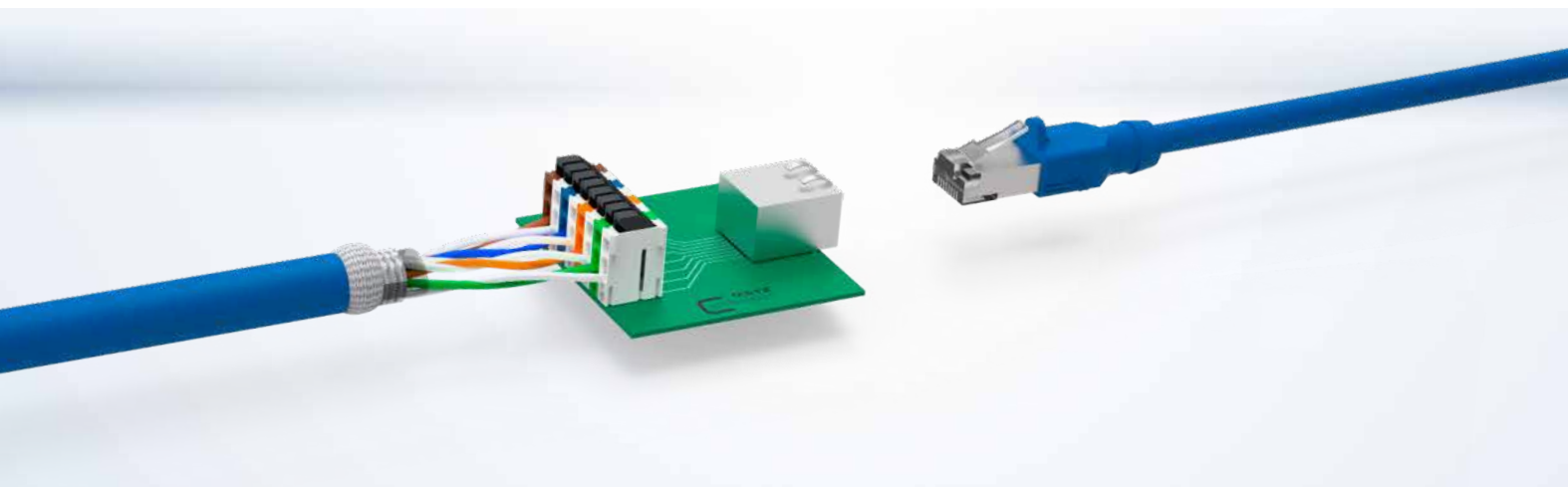
Single Pair Ethernet – SPE

For some time now, companies like METZ CONNECT have been working with transmission and cabling technologies such as the IoT and IIoT networks of today and tomorrow. As fiber glass, 5G and WLAN transmission media become increasingly widespread, the justified question arises about what is gong to happen with twisted-pair network cabling. The good news here is that new applications with are being created with Ethernet interfaces as a result of the further development of Ethernet transmission technology and PoE power supply of up to 90 W at present. In addition, an increased need for standardized, lean transmission technology is developing, both in respect of the transmission protocol as in respect of hardware, connectors and cabling – ideally right to the field level directly to the sensors and actuators. Single Pair Ethernet (SPE), a suitable solution for this, is in the starting blocks.
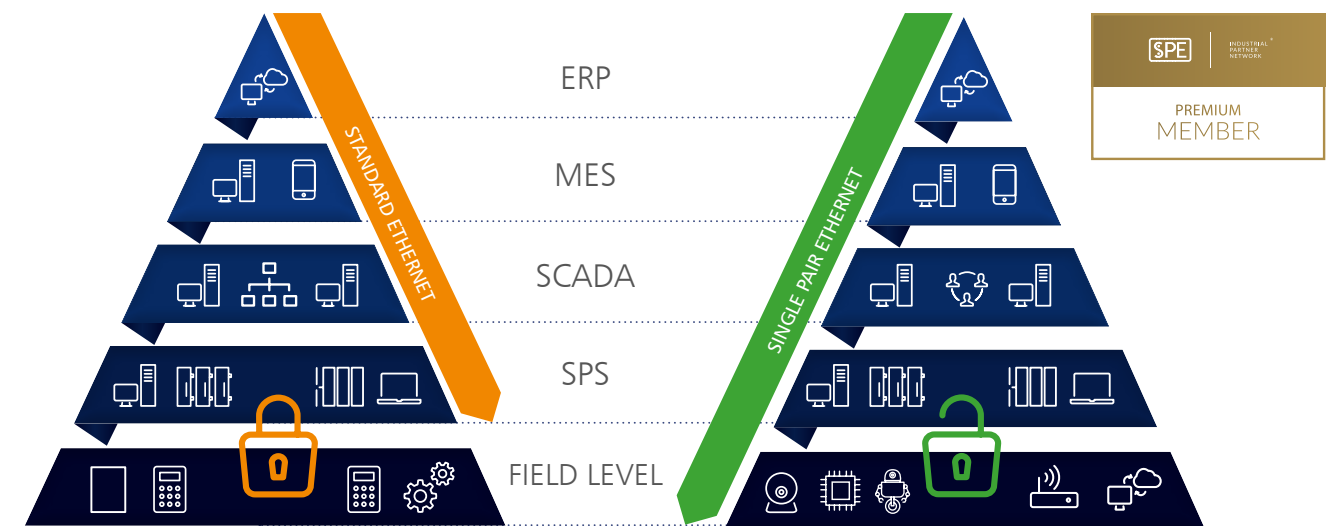
Benefits of SPE

> Universal Ethernet communication to the field level
> Sensors and actuators become part of the IT infrastructure
> Simpler implementation and operation
> Reduced weight and space, up to 50 %
> 10-times longer range, up to 1,000 m

> With TSN, a perfect infrastructure for IoT and IIoT
> Data and power via one medium
> Data transfer currently up to 1 GBit/s
> PoDL – Power over Data Line with up to 50 W*

*Switching states are to be changed for load-free systems

Solutions from METZ CONNECT

SPE terminal blocks
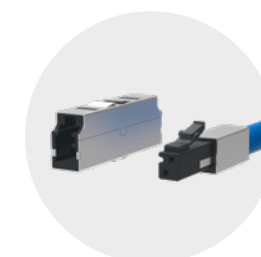
SPE connectors according to IEC 63171-1 for building automation
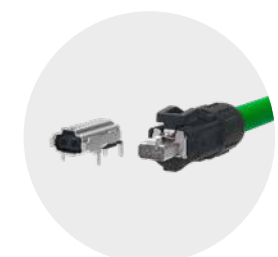
SPE connectors according to IEC 63171-6 for industry and process automation

Cabling solutions
for networks

Highly specialized, internationally standardized and powerful network solutions in WLAN, copper and fiber optic technology convince with convenient installation, maximum quality and highest system capability across all relevant performance classes.

DEVICES CONNECTION

CEILING WIRING

STRUCTURED CABLING

PATCH PANELS AND HOUSINGS

DIN RAIL HOUSING

IP PROTECTED CONNECTORS INDUSTRY

CABLES AND WIRES

M12 CIRCULAR CONNECTOR

Cabling solutions for networks

Highly specialized, internationally standardized and powerful network solutions in WLAN, copper and fiber optic technology impress with convenient installation, maximum quality and the highest system capability across all relevant performance classes. They are used in structured building and industrial cabling as well as in data centers. The increasing demand for data transmission volumes requires ever greater performance and continuity of data networks. IT technologies can be found in many application areas in buildings, data centers and industrial plants.

Copper cabling

RJ45 plugs and sockets

The portfolio with RJ, USB, M12, coax and FO connectors for cabling systems offers a wide range of plugs and sockets in various performance and protection classes for copper and FO connections.

> 10/100 MBit, 10 GBit and 25 GBit Ethernet systems
> simple mounting without special tools
> robust zinc diecast casing
> suitable for PROFINET, EtherNet/IP, EtherCAT, etc., Remote Powering (PoE, PoE plus and 4PPoE) and HDBaseT, AV over IP, SAT-IP, and much more

Patch panels and patch cords

For the distribution of structured cabling, we offer patch panels, module or subracks with suitable accessories for copper and fiber optic connections in modular or compact design in different performance classes, height units and with different numbers of ports.

Patch panels:
> for copper and fiber glass connections
> modular or compact design
> Cat.5, 5e, 6, 6$_A$
> DCCS Data Center Compact Solutions for up to 48 ports in one sovereign unit

Patch cords:
> Ethernet Cat.6$_A$ - up to 10 GBit Ethernet
> seven colors, 0.5 m to 30 m long

Subscriber connections – Terminal casing for copper and fiber glass plug connections

> Wall outlets
> Top-hat rail adapters
> Under-floor systems
> Surface-mounted distributors
> Consolidation points

IP67 protective casing for plugs and sockets

For RJ45 and fiber optic connectors we offer IP-protected. Empty housings for wall/surface mounting or as a freely laid cable coupling and flanges as a housing wall bushing in the industrial variants V1, V4, V5, V6 and V14.

> IP67 degree of protection
> Resistant metal and plastic casing

M12

M12 circular connectors X-, D- and A-coded for Industrial Ethernet

The M12 connection technology product family consists of X-, D- and A-coded PCB sockets and inserts, field-terminable connectors, cable assemblies, and control cabinet bushings as well as field-terminable M12 X-coded / D-coded sockets with or without flange.

> **D-coded:** Cat.5 for 10/100 MBit Ethernet
> **X-coded:** Cat.6$_A$ for 10 GBit Ethernet
> **A-coded:** Sensor - actuator, connection technology

> IP67 when plugged in
> 360° shielding
> Connecting two and four-pair data cables, AWG 22-26

> Mounting without special tools
> Very robust: vibration-proof and shock-resistant (IEC 61076-2-101/-109)
> Board jacks, terminal and connection cables, field plugs and sockets as well as switch cabinet feed-throughs

Fiber optic cabling

Plugs, jacks and couplings for network cabling

For fiber optic transmission we offer connection technology in different performance classes for singlemode and multimode connections in protection classes IP20 and IP67. Distributors are available in various sizes.

> OpDAT FAST^{TM} – field assembly connector kits for SM and MM
> OpDAT MPO/MTP$^{®}$ – Cable assemblies

> OpDAT REGpro
> OpDAT Consolidation point

Industry automation

With METZ CONNECT from the field level with sensors and actuators to the data center

In the market segments of Industrial electronics, Data and communication technology as well as in Building technology, METZ CONNECT offers universal systems for a secure and smooth data flow – from the circuit board via connectors, cables and patch panel to the infrastructure environment. Consequently, METZ CONNECT guarantees holistic and transparent communication in all application fields – without system breaks and performance losses. Alongside the large variety of different and future-oriented connection technology, METZ CONNECT also offers cross-range and customer-specific special solutions.

System components for control cabinet – applications

Measuring and monitoring relays

The METZ CONNECT monitoring relays are used for the protection of man and machine as well as for the control of electrical processes depending on electrical or physical variables.

- Current monitor for universal use
- Phase monitor for protecting against destruction/damage to system parts
- Phase sequence relays for monitoring the rotating field
- Asymmetry relay for safe detection of a phase failure
- Multifunctional three-phase monitor
- Level relay for fill level monitoring

Time relay

A time relay is a special type of relay, with which switch-on or switch-off delays can be achieved, for example, in control and automation technology. The product spectrum offers time relays with multiple functions and adjustable time ranges, as well as relays with specific functions such as switch-on delay, switch-off delay, impulse-on delay, flashing, timing and star-and-delta relays.

Interface modules

The METZ CONNECT interface modules form the separation between the logic level and the load level in control and automation technology.

- Universally usable coupling components
- Sensor and actuator interface modules as optocouplers, power distributors, diode modules, signal modules, threshold switches, analog data encoders, analog-digital converters and as potential separators
- Powerful and compact, pluggable 14-pole industry relays

Energy controlling

For energy and consumption monitoring as well as data monitoring in buildings, as well as on industrial plants and systems, Linux-based, high-performance data loggers are used. The multi-protocol capability of the data logger is made possible by the many connections and interfaces (TCP/IP, BACnet/IP, Modbus TCP, Modbus RTU, M-Bus, SO-Impulse, digital and analog inputs and outputs) and supports you, for example, in your tasks in energy management systems according to DIN EN ISO 50001 to increase energy efficiency by integrating the MSR and HVAC technology to the building management system.
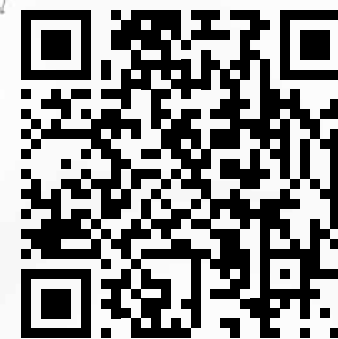
We look forward to meeting you!

Enter the new virtual world of
METZ CONNECT. Take a tour with our
360-degree product experience.

You will quickly and easily find your personal
contact here.

We look forward to hearing from you.

METZ CONNECT GmbH is a member of the following organizations and associations.

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