EN

FUTURE-PROOF COMMUNICATION –
INDUSTRY 4.0

EUCHNER
More than safety.

EUCHNER PAVING THE WAY
TO INDUSTRY 4.0

INDUSTRY 4.0 IN SAFETY ENGINEERING

The factory of tomorrow relies on networking individual production and control processes from the lowest field level all the way up to site management. Safety switches and safety systems with communication and network support contribute to this networking by enabling safety switches to exchange data with higher automation levels via the control system.

TOP-LEVEL AUTOMATION WITH EUCHNER SAFETY ENGINEERING

EUCHNER began offering products that can be readily integrated into comprehensive safety strategies as soon as safe bus systems such as PROFIBUS/PROFIsafe and AS Interface Safety at Work became available. These products are fully compatible with the established communication standards and safety protocols on the market. EUCHNER links proven safety engineering with state-of-the-art automation.

EUCHNER also plays a pioneering role when keeping pace with advancing standardization, expanding its diverse product range with IO-Link-compatible devices.

OUR PRODUCTS

- Devices with network support for various communication standards
- Minimal wiring effort
- Comprehensive data and information for the control system
- Clear diagnostic messages for rapid, targeted troubleshooting

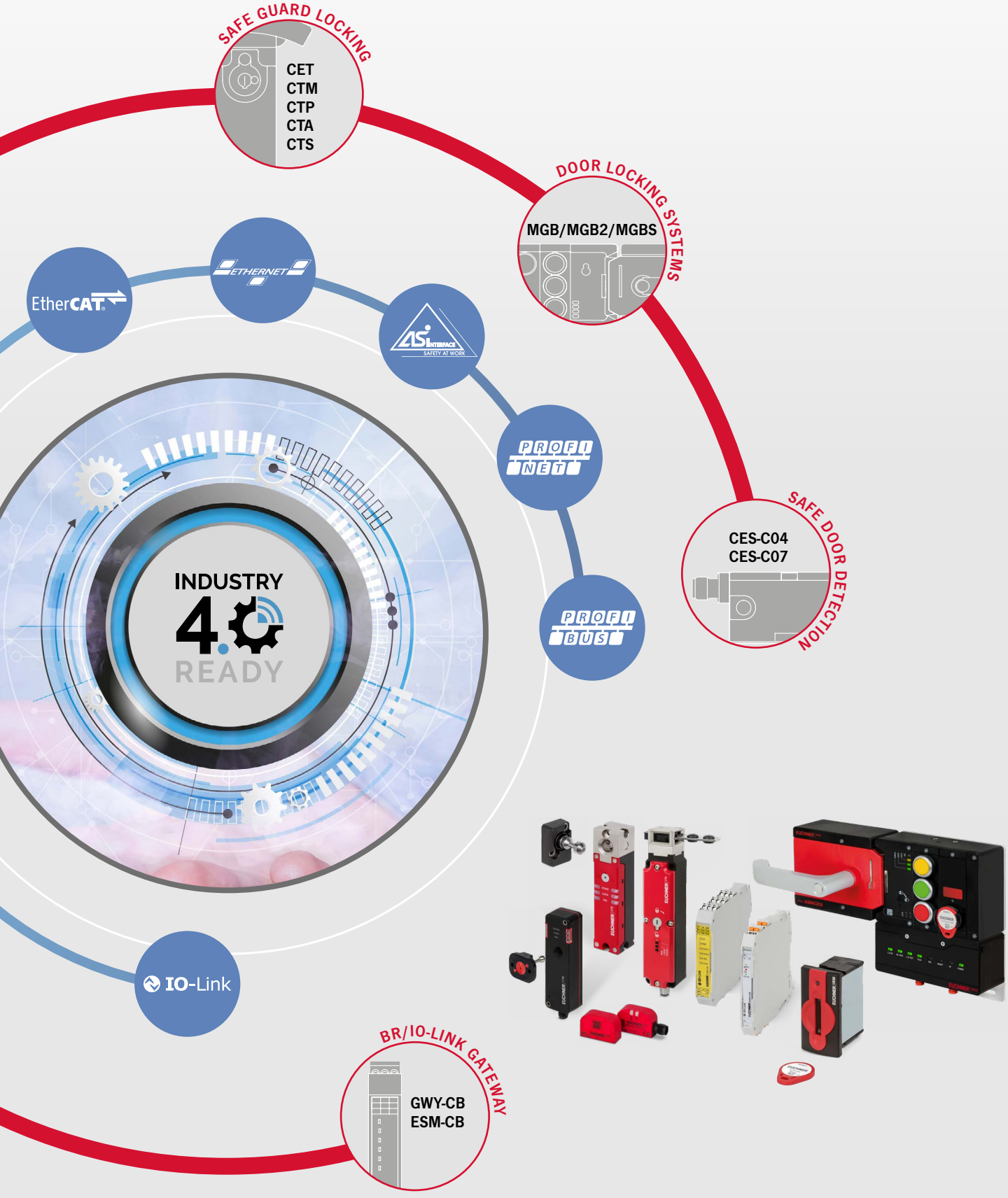
BENEFITS FOR YOU

- **Shorter setup times**
- **Preventive maintenance saves money**
- **Fewer, shorter downtimes**

INDUSTRY 4.0 READY

EUCHNER devices with communication capability are identified by the INDUSTRY 4.0 READY logo in the product descriptions.

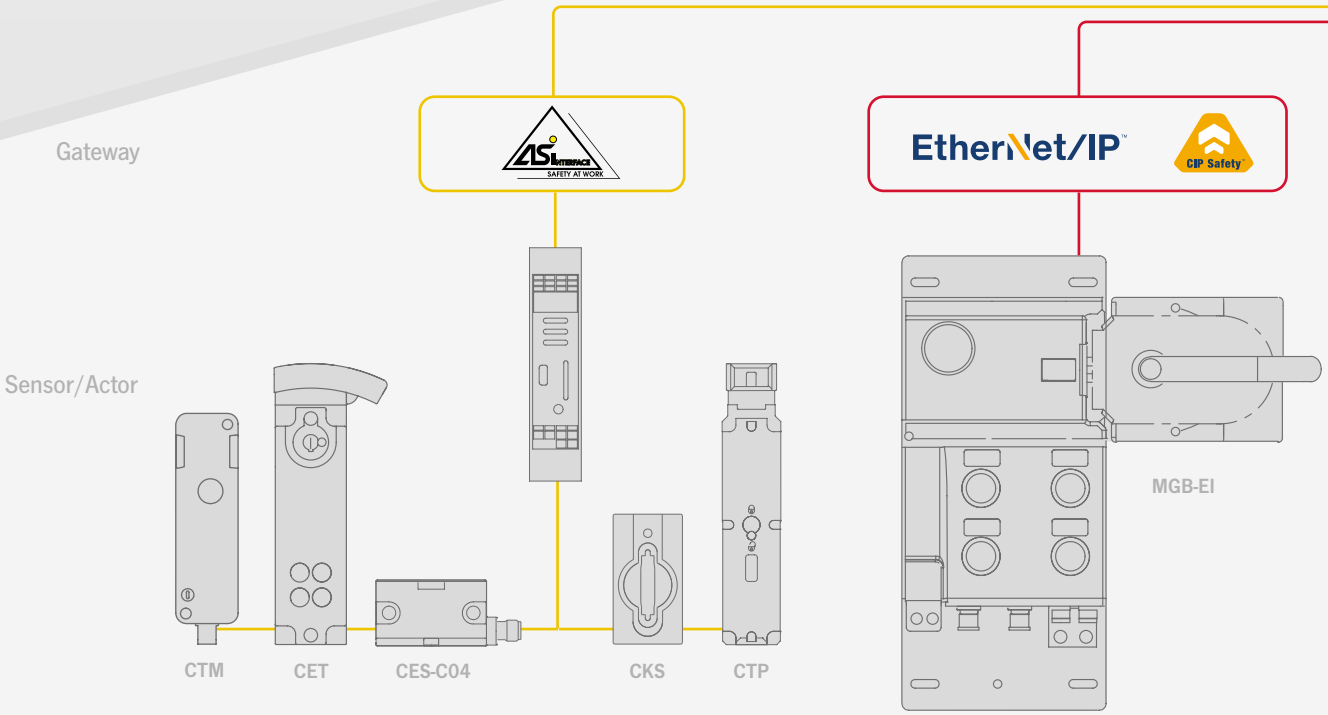
INDUSTRY 4.0 READY


SAFE GUARD LOCKING
CET
CTM
CTP
CTA
CTS
DOOR LOCKING SYSTEMS
MGB/MGB2/MGBS
EtherCAT
ETHERNET
AS-INTERFACE
SAFETY AT WORK
PROFINET
PROFIBUS
SAFE DOOR DETECTION
CES-C04
CES-C07
INDUSTRY
4.0
READY
IO-Link
BR/IO-LINK GATEWAY
GWY-CB
ESM-CB

OPEN TO NEW STANDARDS –
FLEXIBLE AND CUSTOMIZED

Operating modern production processes involves measuring process states, converting them into data and forwarding this data to control systems.

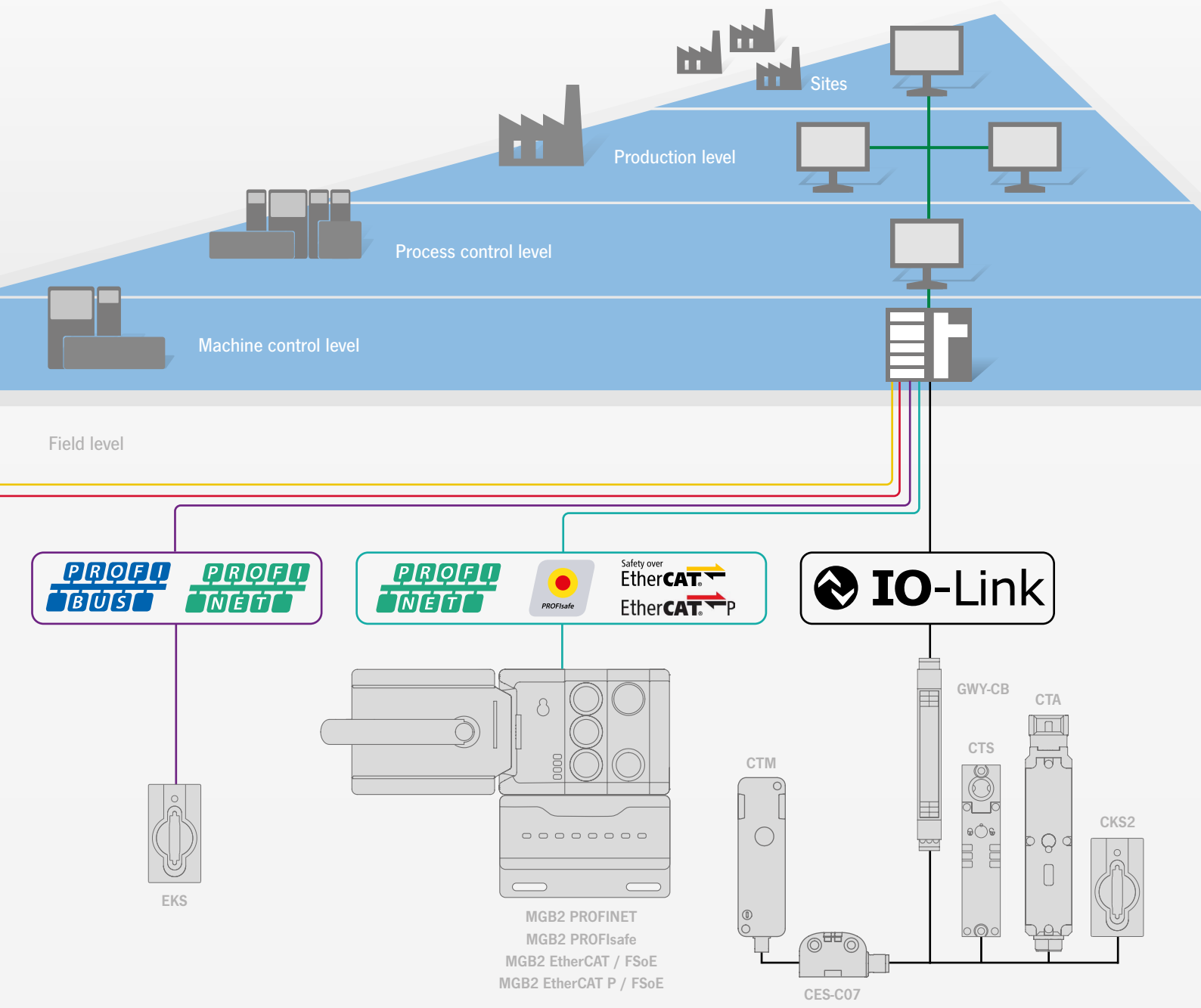
EUCHNER supplies versatile, innovative products that can be customized to your needs and offer a wealth of networking options.



OUR SOLUTIONS FOR YOUR APPLICATIONS

Whether for tight spaces, harsh ambient conditions, strict hygiene requirements or high locking forces, we can offer a solution to meet any challenge.

CTM



CET

EKS

CTP

CES

NEW APPROACHES TO NETWORKING – AN EXTENSIVE PRODUCT RANGE FOR MANY BUS SYSTEMS

EUCHNER supplies exactly the right products for any application from simple communication via AS-Interface to extensive networking via EtherCAT or PROFINET, for example.

Safe bus systems have proven their usefulness in various automation tasks. Depending on the safety engineering used, the bus systems are already incorporated in the safety devices or available in the higher-level networks.

Head to www.euchner.com to learn more about our products and their applications.

PROFINET
ETHERNET
PROFIBUS
Safety over EtherCAT
EtherCAT P
PROFIsafe
PROFINET

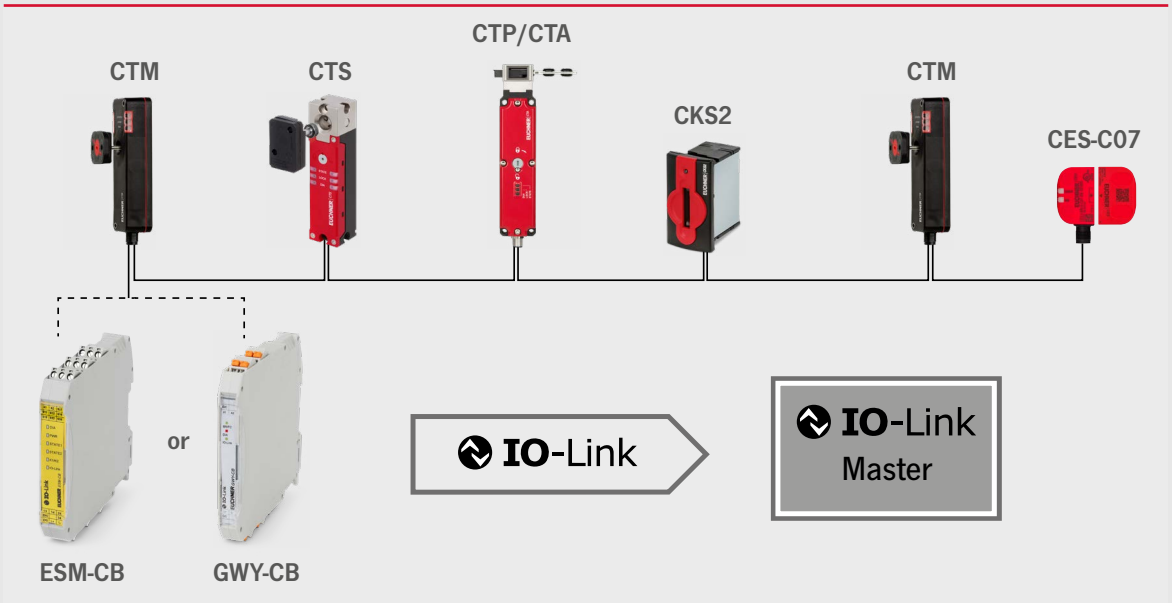
ONE COMMUNICATION STANDARD –
FOR MANY APPLICATIONS

IO-Link

IO-Link is a solution for transmitting data to different fieldbus systems. It readily lets you send data to and from safety switches using any of the various communication standards employed in the individual fieldbus systems. Our IO-Link Gateways GWY-CB and ESM-CB serve as the interface between the switch and the IO-Link master. Standard, unshielded industrial cables can be used for IO-Link communication.

IO-LINK IS THE FUTURE

- **Economical:** standard cables instead of expensive special-purpose cables.
- **Simple:** standardized plug connectors make it easier to connect and install different products.
- **Versatile:** a single safety switch type can be used in different higher-level control strategies.



SAFETY SWITCHES – COMMUNICATION VIA IO-LINK

INDUSTRY 4.0 READY

INTERLOCKING

CES-C07

- Compact version
- Easy, space-saving mounting
- Large actuating range
- Category 4 / PL e according to EN ISO 13849-1
- Available for separate operation or series connection
- Variant for detecting several safe positions

GUARD LOCKING

CTM

- Highly compact version
- Diverse applications
- Inconspicuous installation in the door frame
- For small, lightweight doors and flaps
- Elastomer-supported ball actuator for small pivoting radii
- Category 4 / PL e according to EN ISO 13849-1
- Bistable locking function prevents people from being locked inside in the event of a power failure
- Hygienic version for the packaging and food industries

CTS

- Compact switch in robust design
- High locking force
- Configurable functions via the actuator
- Connecting cable for easy installation
- Escape release can be retrofitted
- Category 4 / PL e according to EN ISO 13849-1

CTP/CTA

- Robust versions with high locking force
- Mounting compatible with existing safety switches
- With optional or retrofittable escape release
- Category 4 / PL e according to EN ISO 13849-1
- Secure against tampering (high coding level according to EN ISO 14119)

IO-LINK GATEWAYS

ADDED VALUE COMES IN SMALL PACKAGES

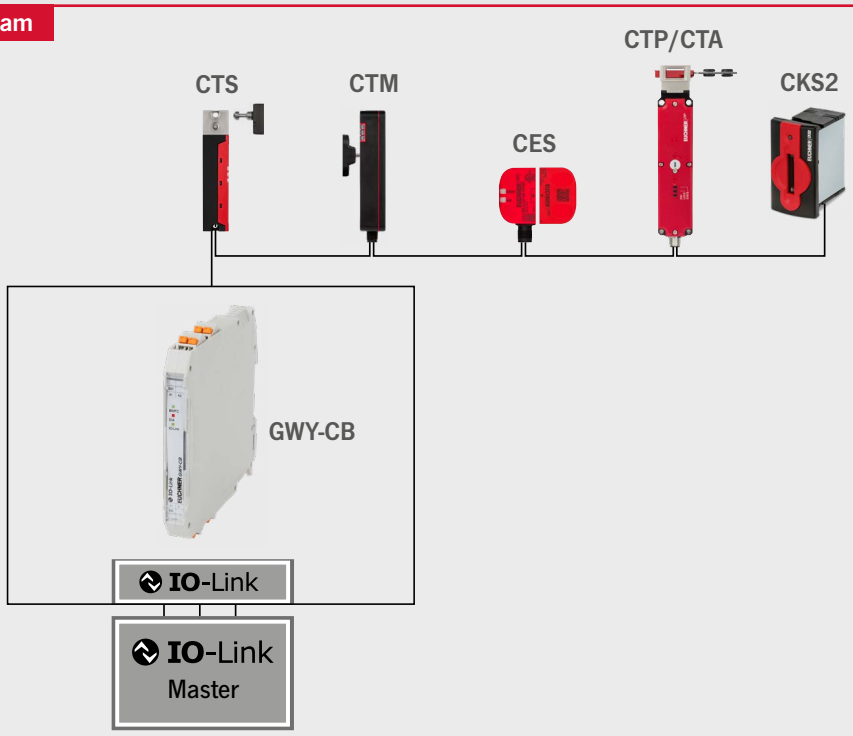
BR/IO-LINK GATEWAY GWY-CB

The IO-Link Gateway can be used to read process and device data relevant to control from a BP safety switch or a BR safety switch chain. This data, transmitted to the IO-Link master in real time, represents clear added value in terms of preventive maintenance.

The process data includes all status signals indicating the door position and guard locking position or whether a switch is out of adjustment, for example. Additionally, acyclical services can be used to collect environmental data including the switch temperature, the applied voltage and other values.

- IO-Link Gateway
- Comprehensive diagnostic data
- Minimal wiring effort
- Slim, space-saving device

Block diagram



INDUSTRY 4.0 READY

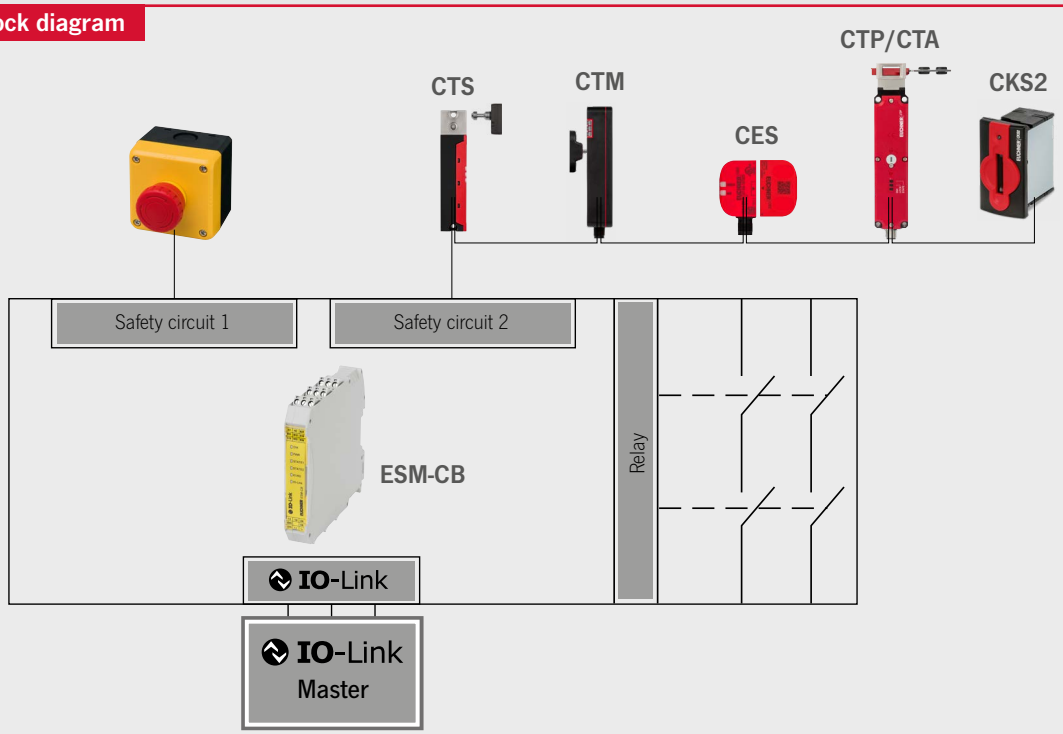
ESM-CB SAFETY RELAY WITH INTEGRATED BR/IO-LINK GATEWAY

Triple functionality – the ESM-CB combines evaluation unit, safety relay and IO-Link in a single, compact device measuring only 18 mm wide.
Two safety circuits can be connected to the input side. Equipment such as an emergency stop chain and mechanical safety switches can be connected to one safety circuit. The second safety circuit is designed for the connection of EUCHNER safety switches from the BP/BR system families.

Process and device data can be read and transmitted in real time via the IO-Link Gateway.

- Evaluation unit, safety relay and IO-Link Gateway in a single device
- Connection option for two safety circuits
- Two safety inputs for up to 20 safety switches in a BR series connection
- Comprehensive diagnostic data
- Slim, space-saving device

Block diagram



SAFETY SWITCH COMMUNICATION DATA
INDUSTRY 4.0 READY

Devices use the IO-Link Gateway to transmit both process data, which the system continuously supplies to the IO-Link master, and acyclical data, which can be polled specifically as needed.

		CES-C07	CTM	CTS	CTP/CTA
PROCESS DATA (CYCLICAL DATA)					
Door position status	O_D	●	●	●	●
Actuator in the limit range	O_W	●	–	–	–
State of the switch's safety outputs	O_M	●	●	●	●
General error message	O_I	●	●	●	●
Guard locking state	O_L	–	●*	●	●
Locking element state	O_{LS}	–	●*	●	●
Escape release state	O_{ER}	–	–	●	●
DEVICE DATA AND EVENTS (ACYCLICAL DATA)					
Sensor order number / version		●	●	●	●
Number of devices in the switch chain		●	●	●	●
Current diagnostic code		●	●	●	●
Stored diagnostic code		●	●	●	●
Code of current actuator		●	●	●	●
Code of blocked actuator		●	●	●	●
Code of taught-in actuator		●	●	●	●
Voltage		●	●	●	●
Temperature		●	●	●	●
Number of switching cycles		●	●	●	●
LOG files		●	●	●	●

* depending on variant

IO-LINK GATEWAY

The devices transmit both process data, which the system continuously supplies to the IO-Link master, and acyclical data, which can be polled specifically as needed.

PROCESS DATA (CYCLICAL DATA)		**GWY-CB**	**ESM-CB**
Door position status	O_D	●	●
Actuator in the limit range	O_W	●	●
State of the switch's safety outputs	O_M	●	●
General error message	O_I	●	●
Guard locking state	O_L	●	●
Bolt / actuator	O_T	●	●
Switch chain reset		●	●
State of safety circuit 1	S_1	–	●
State of safety circuit 2	S_2	–	●
Start circuit enable signal sent by the control system via IO-Link		–	●

DEVICE DATA AND EVENTS (ACYCLICAL DATA)			
Device order number/version		●	●
Expanded diagnostic code		●	●

● available – not available

YOUR PARTNER FOR
INDUSTRIAL SAFETY ENGINEERING

Safety for people, machines and products is the maxim of our family-owned company, now under its third generation of management with Stefan Euchner.

As specialists in industrial safety engineering, we develop and manufacture products and solutions tailored to the requirements of customers from a wide range of sectors. Using our guards on machines and installations helps to minimize hazards and risks, which in turn protects people and processes. For our 900 employees around the world, safety is the watchword.

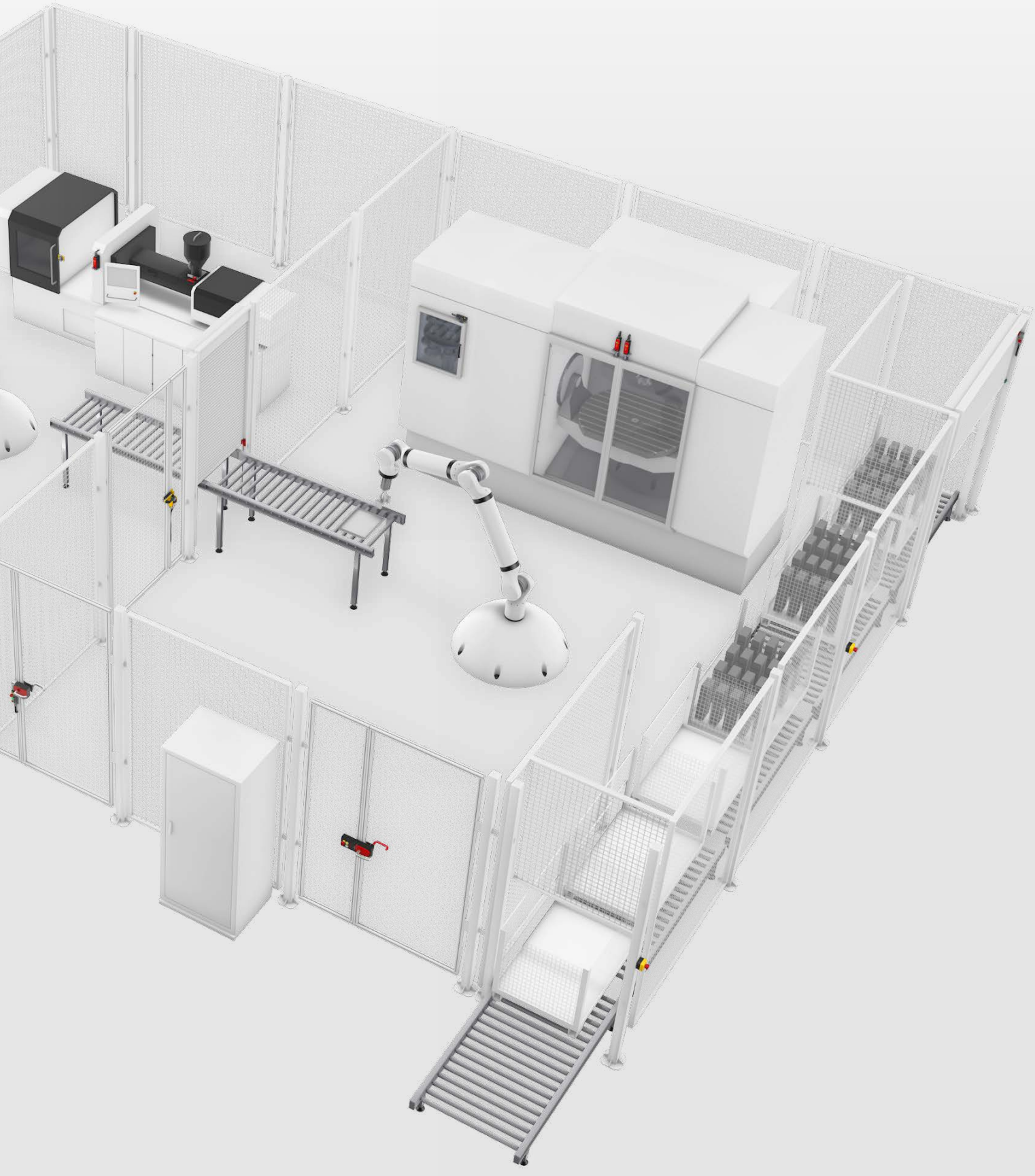
CONSTANT, CLOSE COLLABORATION

We consider customers to be more than just purchasers of our products. They are esteemed partners with whom we collaborate closely to co-develop the best solutions.

WHEN IT COMES TO QUALITY, WE SET THE BAR HIGH

Our quality standards go beyond those stipulated by standards and laws, and our aspirations are higher still. We manufacture all central components in-house on the latest machinery. What's more, our internal quality management processes ensure that no product leaves our premises without detailed inspection.

INDUSTRY 4.0 READY



OUR PRODUCTS FOR YOUR SAFETY

SAFE DOOR DETECTION
Transponder-coded safety switches without guard locking
CES-C04 / CES-C07

Magnetically coded safety switches without guard locking
CMS

Electromechanical safety switches without guard locking
NM / NP / GP / NZ

SAFE GUARD LOCKING
Transponder-coded safety switches with guard locking
CTS / CTM / CTP / CTA / CET

Electromechanical safety switches with guard locking
TP / STP / STA / STM

Safety switches with integrated mounting magnet
CEM-C40 / CEM-C60

DOOR LOCKING SYSTEMS
MGB / MGB2 / MGBS

SAFE KEY SYSTEMS
EKS / CKS / CKS2

OPERATING DEVICES
ZSM / ZSB / HBA / HBM

LIGHT GRIDS / LIGHT CURTAINS
LCA

EMERGENCY STOP DEVICES
ES / RPS

SAFETY CONTROL SYSTEMS / SAFETY RELAYS
MSC / ESM / ESM-CB / GWY

> YOU CAN FIND MORE INFORMATION ABOUT OUR PRODUCTS HERE
www.euchner.de/en-us/Products

> YOU CAN DOWNLOAD CATALOGS AND FLYERS HERE
www.euchner.de/en-us/Service/Downloads

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