Fieldbus Box

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PC-based control technology

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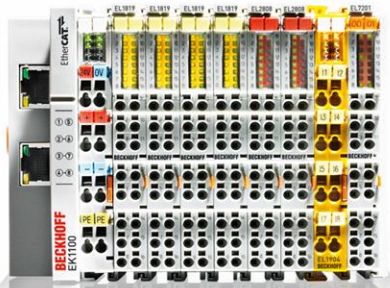

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1. **Introduction**
2. Fieldbus Box
3. IO-Link Box

Fieldbus components
For all common I/Os and fieldbus systems

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The compact IP 67 modules

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Fieldbus Box

PROFIBUS
Ethernet TCP/IP
LIGHTBUS
IO-Link
DeviceNet
EtherNet/IP
InterBus
PROFINET
EtherCAT
Modbus
RS 232
RS 485
CANopen

EtherCAT Box

EtherCAT

The compact IP 67 modules

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IO-Link Box

IO-Link

EtherCAT P Box

EtherCAT P

Fieldbus Box | The compact IP 67 modules

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3. IO-Link Box

The consistent continuation of the fieldbus concept

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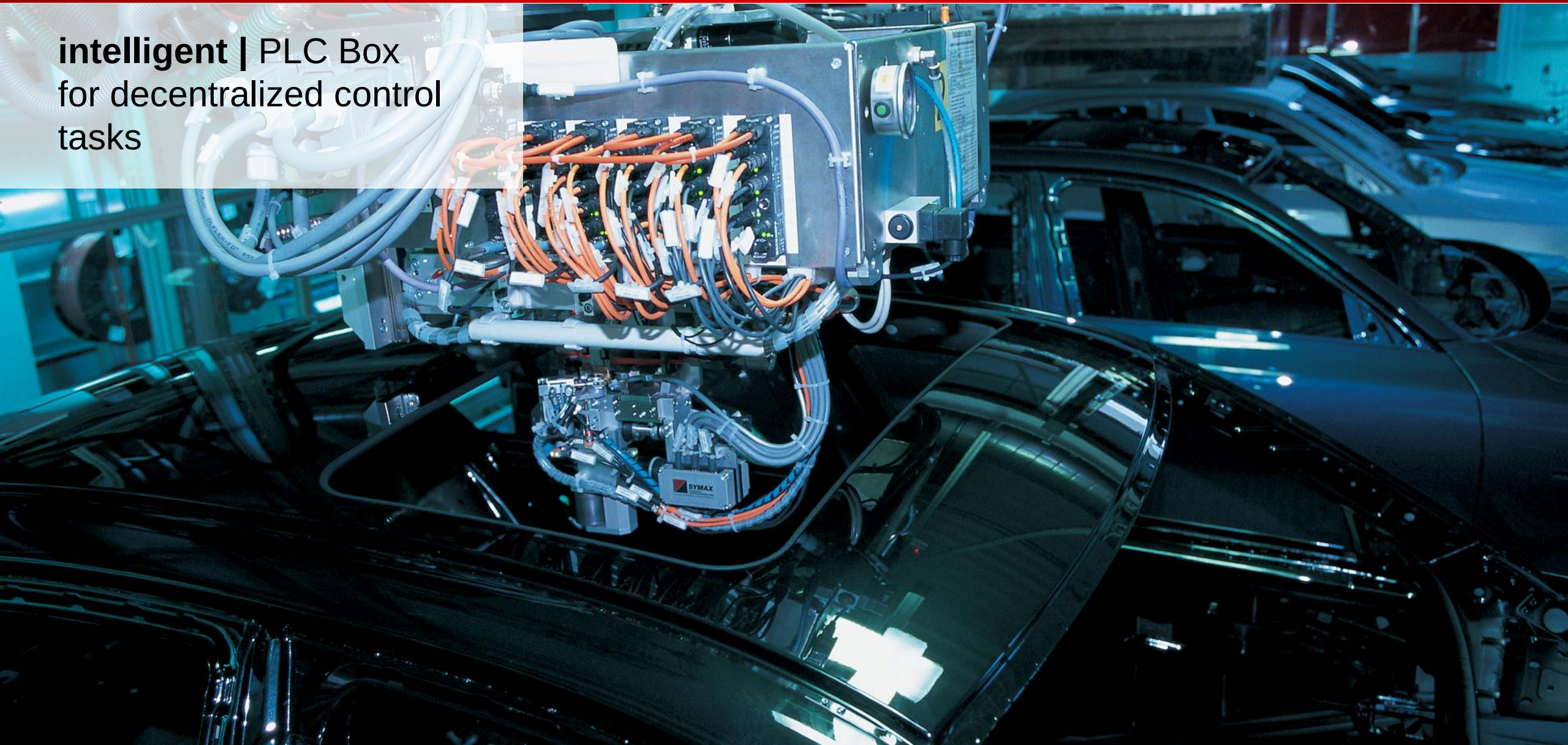
intelligent | PLC Box
for decentralized control
tasks



The consistent continuation of the fieldbus concept

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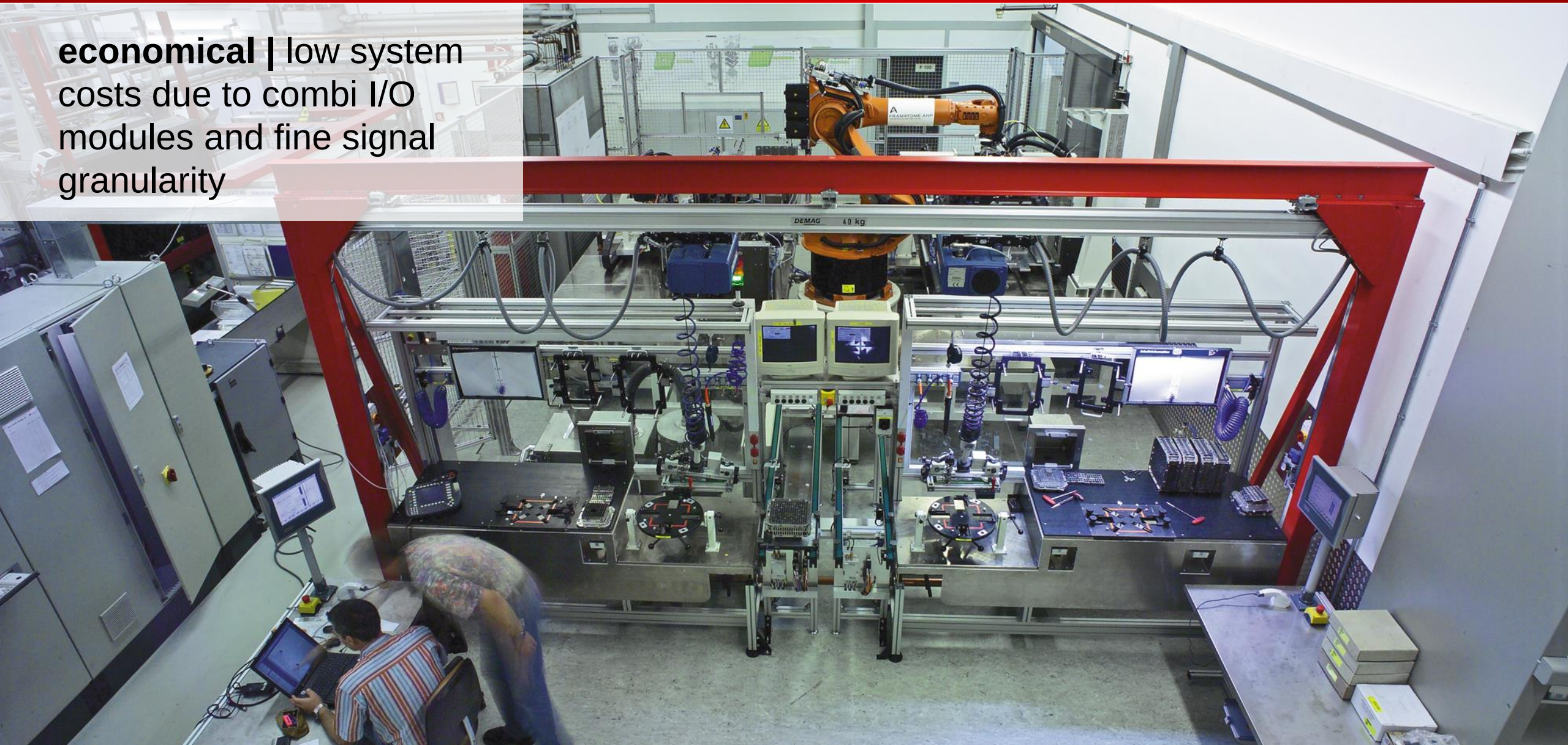
economical | low system costs due to combi I/O modules and fine signal granularity



The consistent continuation of the fieldbus concept

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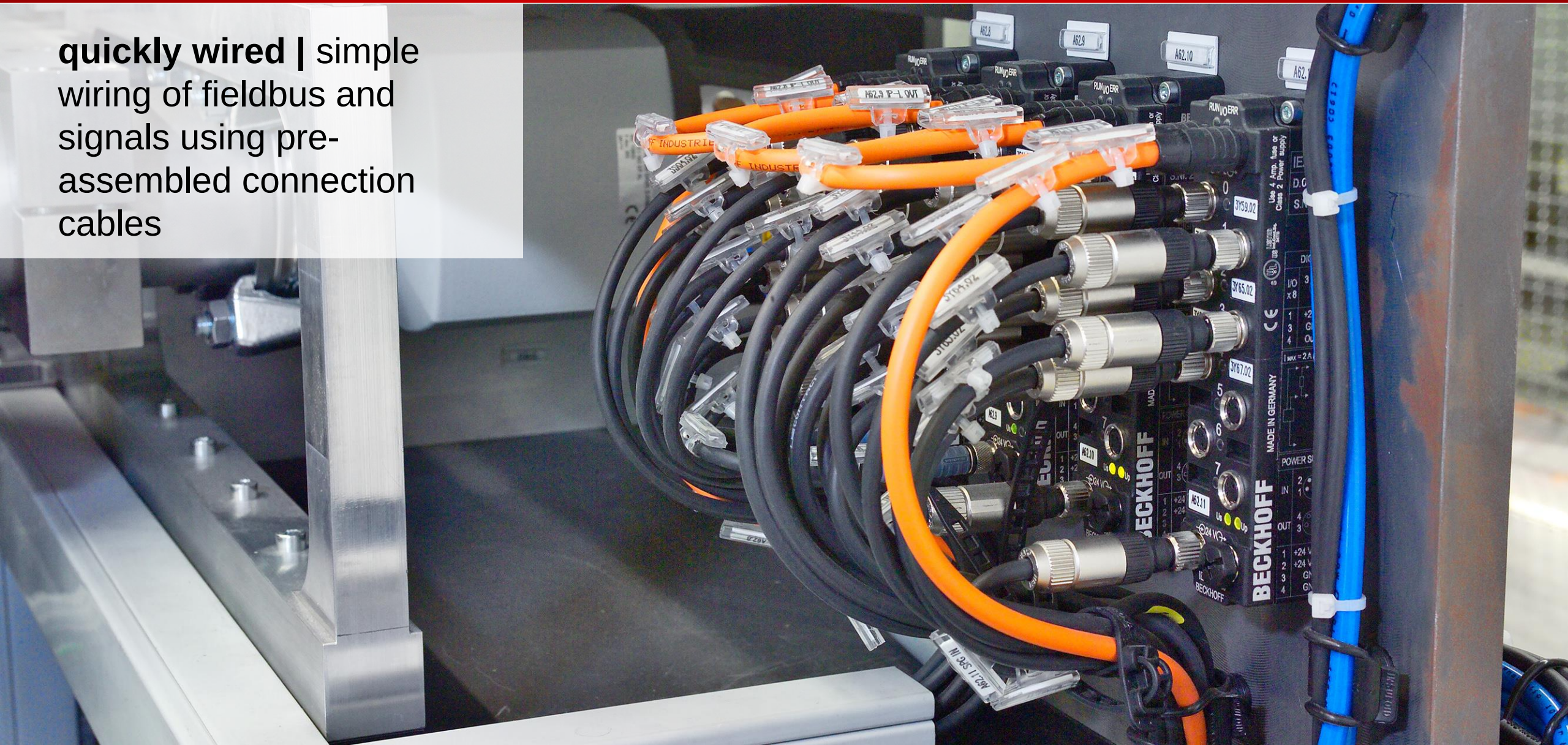
quickly wired | simple wiring of fieldbus and signals using pre-assembled connection cables



Features

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water and dust-proof,
protection class IP 65/66/67

connection of sensors/
actuators via connector:

- 8 mm, snap type
- M8 or M12, screw type

power supply input:
control voltage, load voltage

hinged inspection window

status display for fieldbus,
module or IP-Link

status displays power supply

compact design:
175 x 30 x 26,5 mm (L x W x H)

Features

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IP-Link interface for the connection of extension modules

signal status display

standard labelling fields

fixing holes

fieldbus interface (connection fieldbus-dependent)

address selection switch/ diagnostic interface

robust housing for harsh industrial use

power supply downstream connection

24 signal types

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digital I/O

analog I/O

0…20 mA

±10 V

counter

thermocouple

SinCos encoder

incremental encoder interface

PWM

PT100

RS485

SSI

TTY

24 V DC

RS232

12 fieldbus systems

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EtherCAT®

InterBus

EtherNet/IP™

CANopen

LIGHTBUS

PROFINET®

IO-Link

RS 232
RS 485

Ethernet TCP/IP

DeviceNet™

Modbus

PROFIBUS®

3 types of connection for sensors/actuators

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- The snap type plugs lock positively and result in a vibration-proof but nevertheless quickly releasable connection.
- The screwable connectors have a high tensile strength.

Connector M8,
screw type, straight

Connector M12,
screw type, angled

Connector M12,
screw type, straight

4 device classes

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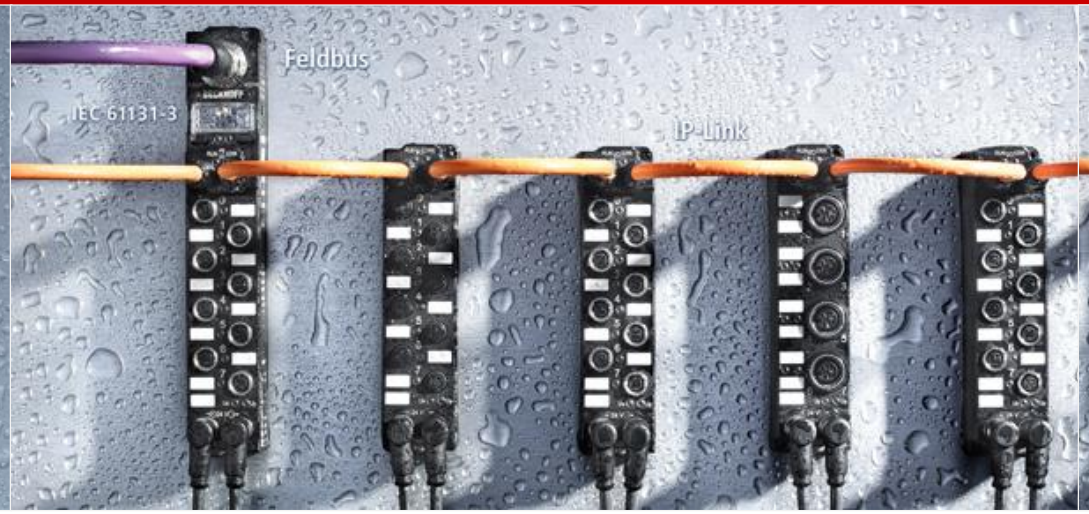

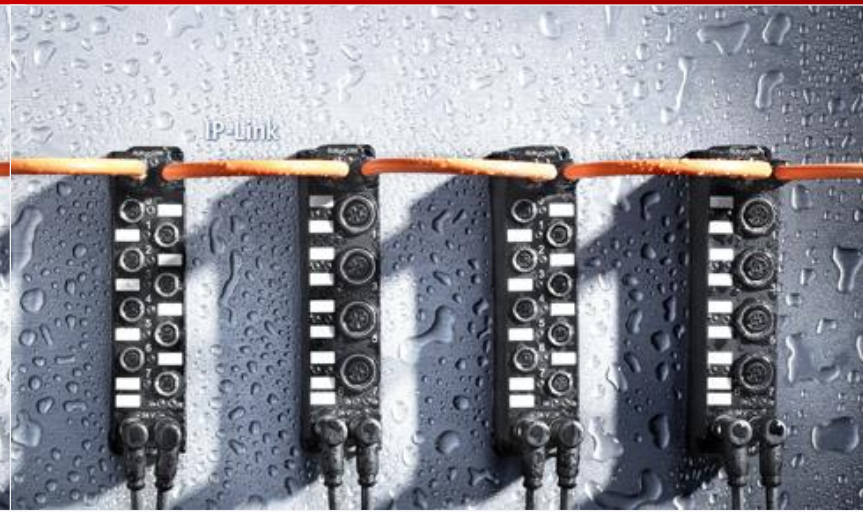

Compact Box
IPxxxx-Byyy

Coupler Box
IL230x-Byyy

PLC Box
IL230x-Cyyy

Extension Box
IExxxx

IP IL IL IE

xxxx yyy

signal/plug fieldbus system

IPxxxx-Bxxx | Compact Box

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- direct fieldbus connection to the Compact Box
- 25 different I/O signal types
- connection of the I/Os alternatively via snap type 8 mm, screw type M8 or M12 plug connectors
- Combi I/O modules combine inputs and outputs in one module.
- separate power supply for logic, inputs and outputs

IL230x-Bxxx | Coupler Box

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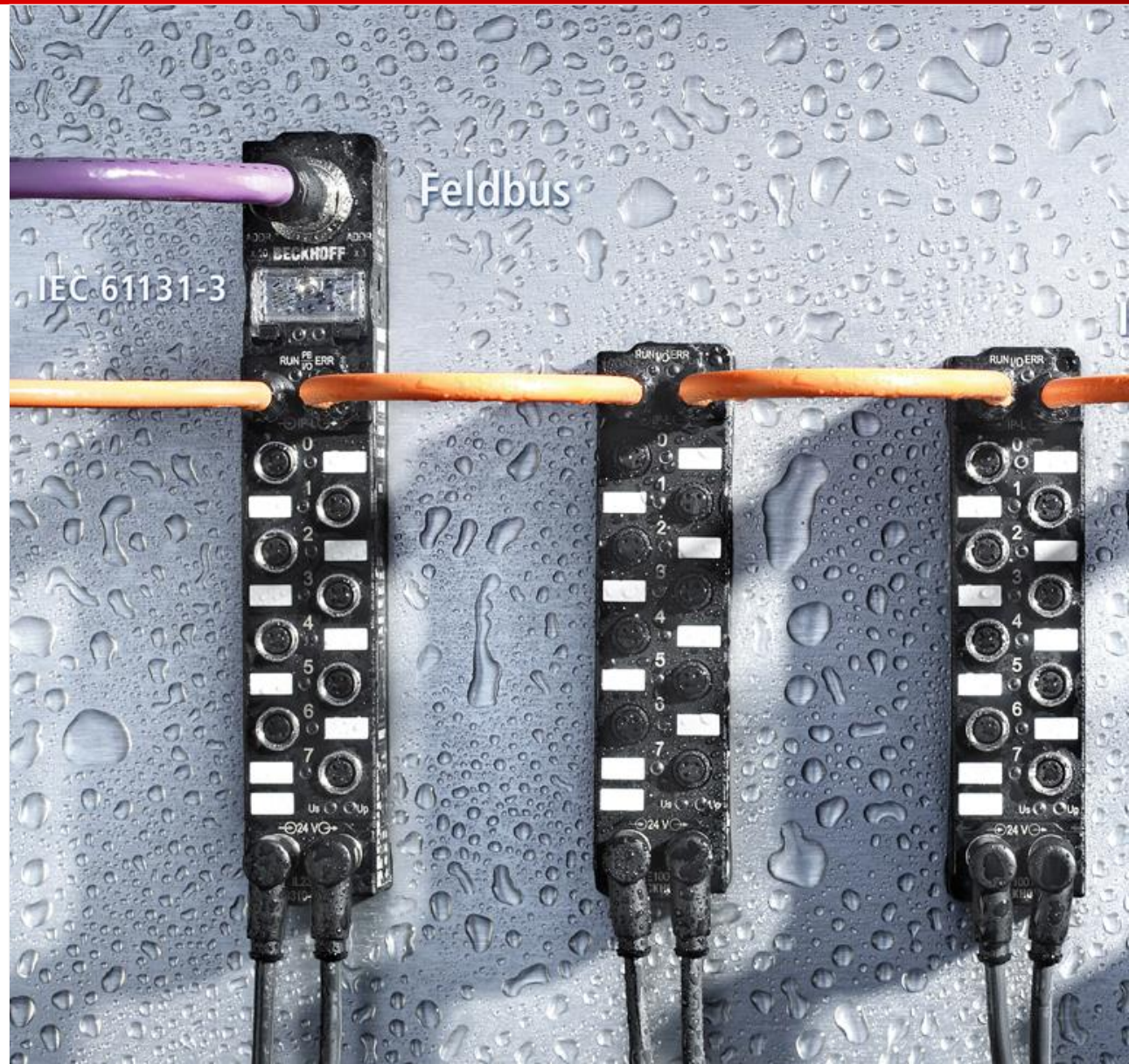
- Coupler Box for 12 fieldbus systems
- 4 digital inputs and 4 digital outputs in M8, M12 or 8 mm versions
- connection of up to 120 Extension Box modules of any type per Coupler Box
- automatic recognition of the connected Extension Box modules
- reading in of the I/O data via fail-safe IP-Link fibre-optic connection
- fast and simple on-site assembly of the IP-Link cables



IExxxx | Extension Box

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- All common I/O signals can be acquired.
- connection of the digital I/Os alternatively via snap type 8 mm, screw type M8 or M12 plug connectors
- Connection between Extension Box modules and fieldbus takes place via the Coupler Box.
- distance of up to 15 m between the Extension Box modules
- compact dimensions: 125 x 30 x 27 mm

IL230x-Cxxx | PLC Box

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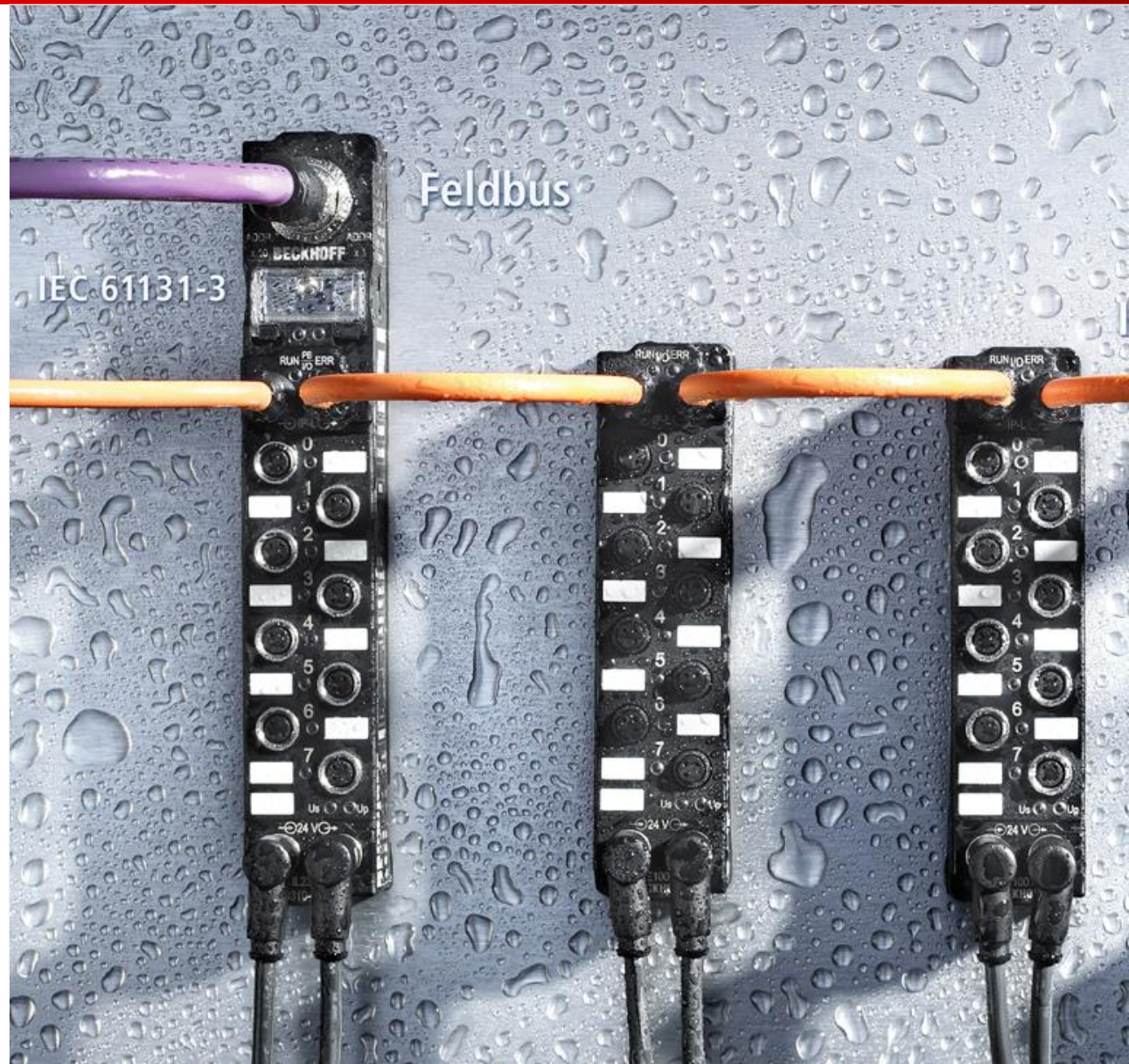
- Fieldbus Box with PLC functionality
- programming via IEC 61131-3 tool TwinCAT
- typical applications: decentralised counting, control or switching
- function retained in case of failure of the bus or the higher-level controller
- suitable for use as an autonomous small PLC for the control of plant sections or small machines



System overview

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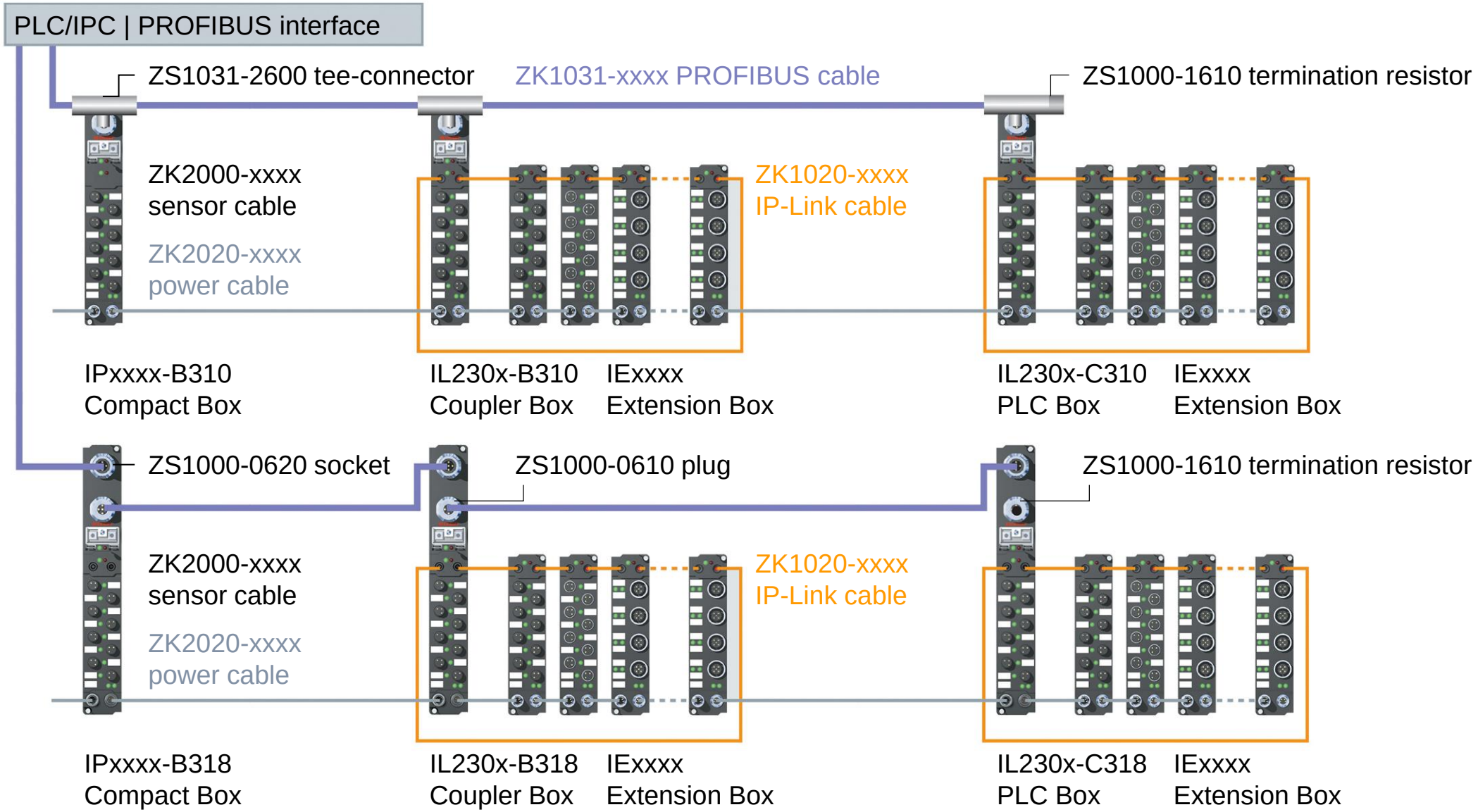

Product overview Fieldbus Box

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Fieldbus	Compact Box **Fieldbus Box** without IP-Link interface		Coupler Box **Fieldbus Box** with IP-Link interface		PLC Box **Controller for TwinCAT 2 (IEC 61131-3)** with IP-Link interface	
EtherCAT			IL230x-B110			
Lightbus	IPxxxx-B200		IL230x-B200			
PROFIBUS	IPxxxx-B310	IPxxxx-B318 with integrated tee-connector	IL230x-B310	IL230x-B318 with integrated tee-connector	IL230x-C310	IL230x-C318 with integrated tee-connector
Interbus	IPxxxx-B400		IL230x-B400			
CANopen	IPxxxx-B510	IPxxxx-B518 with integrated tee-connector	IL230x-B510	IL230x-B518 with integrated tee-connector		
DeviceNet	IPxxxx-B520	IPxxxx-B528 with integrated tee-connector	IL230x-B520	IL230x-B528 with integrated tee-connector		
Modbus	IPxxxx-B730		IL230x-B730			
RS485	IPxxxx-B800		IL230x-B800			
RS232	IPxxxx-B810		IL230x-B810		IL230x-C810	
Ethernet TCP/IP			IL230x-B900	IL230x-B901	IL230x-C900	
PROFINET			IL230x-B903			
EtherNet/IP			IL230x-B905			

Product overview Fieldbus Box
Compact Box, Extension Box: Digital I/O

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Input		8 mm	M8	M12
24 V DC	8-channel filter 3.0 ms	IP1000-Bxxx, IE1000	IP1001-Bxxx, IE1001	IP1002-Bxxx, IE1002
	8-channel filter 0.2 ms	IP1010-Bxxx, IE1010	IP1011-Bxxx, IE1011	IP1012-Bxxx, IE1012
Counter	2-channel up/down counter, 24 V DC, 100 kHz			IP1502-Bxxx, IE1502
Output		**8 mm**	**M8**	**M12**
24 V DC	8-channel I_{max} = 0.5 A	IP2000-Bxxx, IE2000	IP2001-Bxxx, IE2001	IP2002-Bxxx, IE2002
	8-channel I_{max} = 2 A, Σ 4 A	IP2020-Bxxx, IE2020	IP2021-Bxxx, IE2021	IP2022-Bxxx, IE2022
	8-channel I_{max} = 2 A, Σ 12 A	IP2040-Bxxx, IE2040	IP2041-Bxxx, IE2041	IP2042-Bxxx, IE2042
	16-channel I_{max} = 0.5 A, Σ 4 A, D-sub			IE2808
				IE2808-0001
PWM	2-channel PWM, 24 V DC, I_{max} = 2.5 A			IP2512-Bxxx, IE2512

Product overview Fieldbus Box
Compact Box, Coupler Box, PLC Box, Extension Box: Digital I/O

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Combi		8 mm	M8	M12	Sonstige
24 V DC	8-channel 4 inputs + 4 outputs, filter 3.0 ms, I_{max} = 0.5 A	IL2300-Bxxx	IL2301-Bxxx	IL2302-Bxxx	
		IL2300-Cxxx	IL2301-Cxxx	IL2302-Cxxx	
		IP2300-Bxxx	IP2301-Bxxx	IP2302-Bxxx	
		IE2300	IE2301	IE2302	
	8-channel 4 inputs + 4 outputs, filter 0.2 ms, I_{max} = 0.5 A	IP2310-Bxxx	IP2311-Bxxx	IP2312-Bxxx	
		IE2310	IE2311	IE2312	
	8-channel 4 inputs + 4 outputs, filter 3.0 ms, I_{max} = 2 A, Σ 4 A	IP2320-Bxxx	IP2321-Bxxx	IP2322-Bxxx	
		IE2320	IE2321	IE2322	
	8-channel 4 inputs + 4 outputs, filter 0.2 ms, I_{max} = 2 A, Σ 4 A	IP2330-Bxxx	IP2331-Bxxx	IP2332-Bxxx	
		IE2330	IE2331	IE2332	
	16-channel combi inputs/outputs, filter 3.0 ms, I_{max} = 0.5 A	IP2400-Bxxx	IP2401-Bxxx		
		IE2400	IE2401		IE2403 IP 20 connector

Product overview Fieldbus Box
Compact Box, Extension Box: Analog I/O

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Input		M12
±10 V	4-channel differential inputs, 16 bit	IP3102-Bxxx, IE3102
0/4…20 mA	4-channel differential inputs, 16 bit	IP3112-Bxxx, IE3112
Resistance thermometer	4-channel PT100, PT200, PT500, PT1000, Ni100, 16 bit	IP3202-Bxxx, IE3202
Thermocouple/ mV	4-channel type J, K, L, B, E, N, R, S, T, U, 16 bit	IP3312-Bxxx, IE3312
Output		**M12**
±10 V	4-channel 16 bit	IP4132-Bxxx, IE4132
0/4…20 mA	4-channel 16 bit	IP4112-Bxxx, IE4112

Product overview Fieldbus Box
Compact Box, Extension Box: Special functions

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Function		M12	M23
Position measurement	1-channel SSI encoder interface		IP5009-Bxxx, IE5009
	1-channel incremental encoder interface, 1 MHz		IP5109-Bxxx, IE5109
	1-channel SinCos encoder interface		IP5209-Bxxx 1 V_{PP}
			IP5209-Bxxx-1000 11 μA_{PP}
Communication	1-channel serial interface, RS232	IP6002-Bxxx, IE6002	
	1-channel serial interface, 0…20 mA (TTY)	IP6012-Bxxx, IE6012	
	1-channel serial interface, RS422/RS485	IP6022-Bxxx, IE6022	

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2. Fieldbus Box
3. **IO-Link Box**

IO-Link Box

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IO-Link

EPIxxxx, ERIxxxx | IO-Link Box modules

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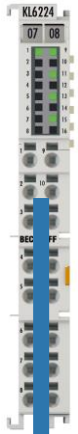
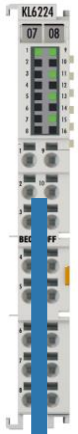
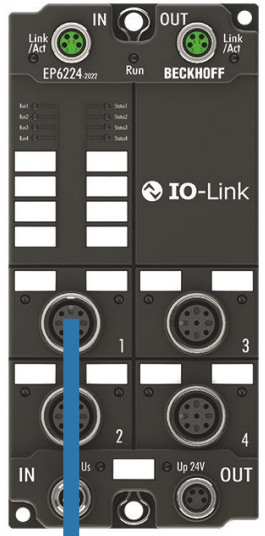
Master
(4-channel)

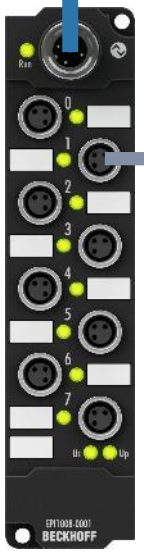




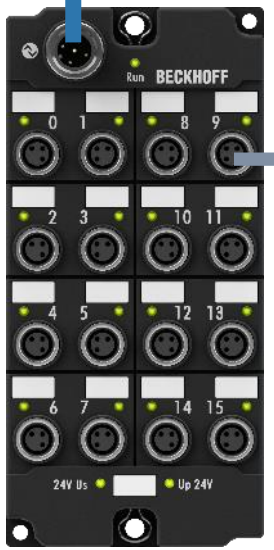


IO-Link

Device



standard
sensor x 8



standard
sensor x 16

EPIxxxx, ERIxxxx | IO-Link Box modules

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- plastic (EPIxxxx) or zinc die-cast (ERIxxxx)
- Class A or B according to type
  - Class A for digital inputs
  - Class B with additional 24 V up to 1.6 A for digital outputs or inputs/outputs
- parameters like filter, supply diagnostics, etc.

Product overview Fieldbus Box
IO-Link Box: Digital I/O

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Input		8 x M8	16 x M8	4 x M12	8 x M12
24 V DC	8-channel filter 3.0 ms	EPI1008-0001		EPI1008-0002	
		ERI1008-0001		ERI1008-0002	
	16-channel filter 3.0 ms		EPI1809-0021		EPI1809-0022
			ERI1809-0021		ERI1809-0022
Output		**8 x M8**	**16 x M8**	**4 x M12**	**8 x M12**
24 V DC	8-channel I_{max} = 0.5 A	EPI2008-0001		EPI2008-0002	
		ERI2008-0001		ERI2008-0002	
	16-channel I_{max} = 0.5 A, Σ 4 A		EPI2809-0021		EPI2809-0022
			ERI2809-0021		ERI2809-0022
Combi		**8 x M8**	**16 x M8**	**4 x M12**	**8 x M12**
24 V DC	8-channel 8 inputs/outputs, filter 3.0 ms, I_{max} = 0.5 A	EPI2338-0001		EPI2338-0002	
		ERI2338-0001		ERI2338-0002	
	16-channel 16 inputs/outputs, filter 3.0 ms, I_{max} = 0.5 A, Σ 4 A		EPI2339-0021		EPI2339-0022
			ERI2339-0021		ERI2339-0022

Produkt overview Fieldbus Box
IO-Link Box: Analog I/O

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Input		M12
±10 V, 0/4…20 mA	4-channel parameterisable, differential inputs, 16 bit	EPI3174-0002
		ERI3174-0002
Output		**M12**
±10 V, 0/4…20 mA	4-channel 2 inputs + 2 outputs, parameterisable, 16 bit	EPI4374-0002
		ERI4374-0002

For all branches and industries

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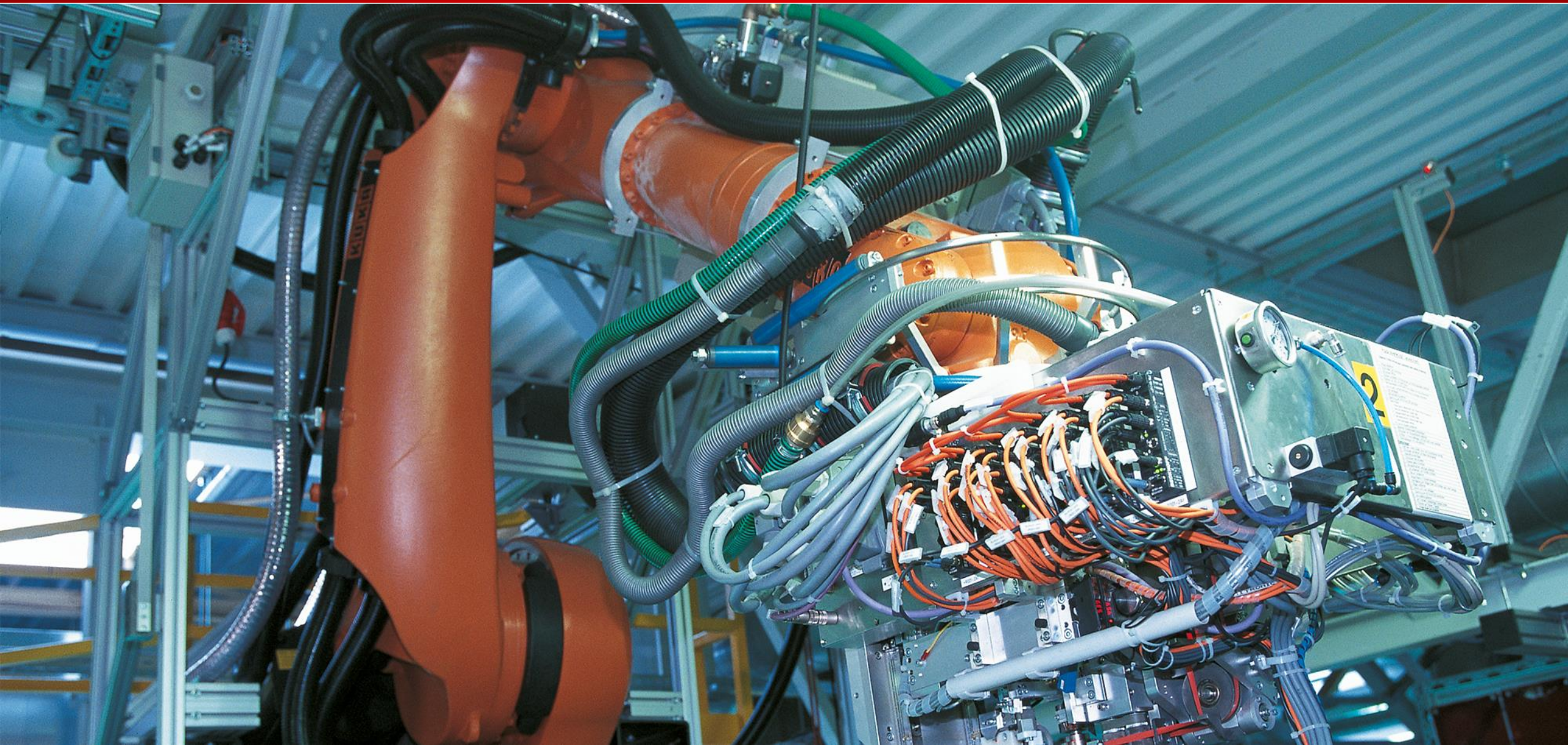

For all branches and industries

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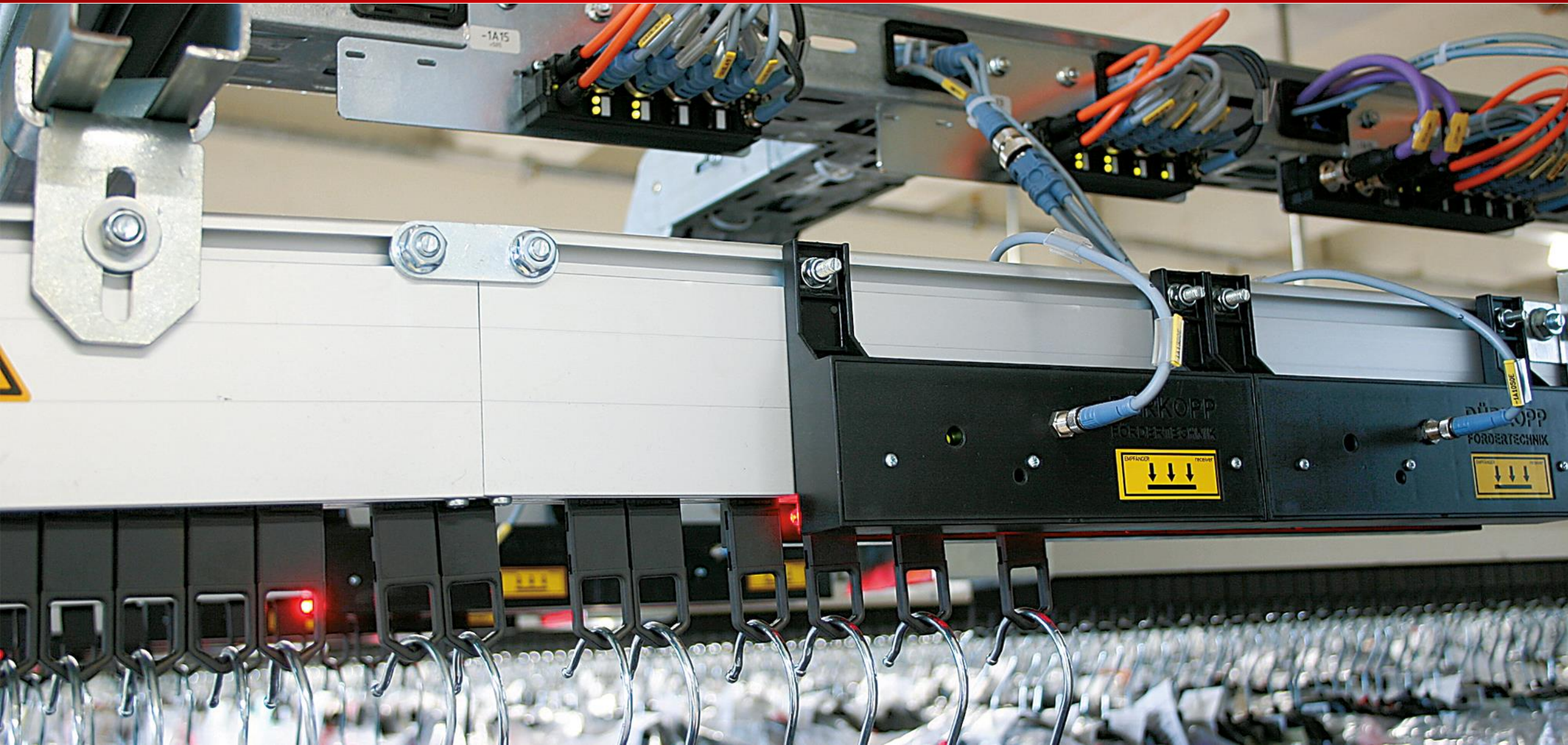

For all branches and industries

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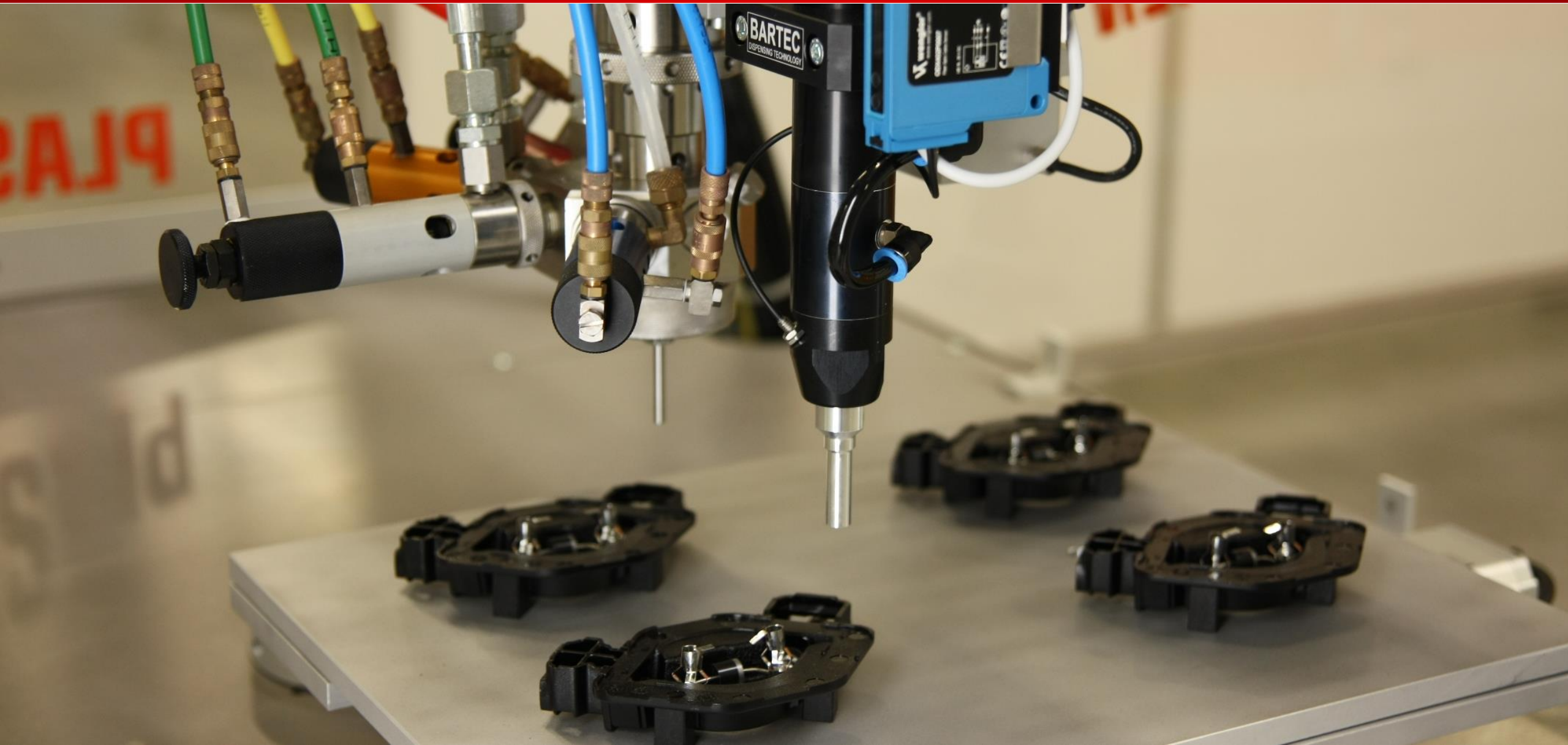

For all branches and industries

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