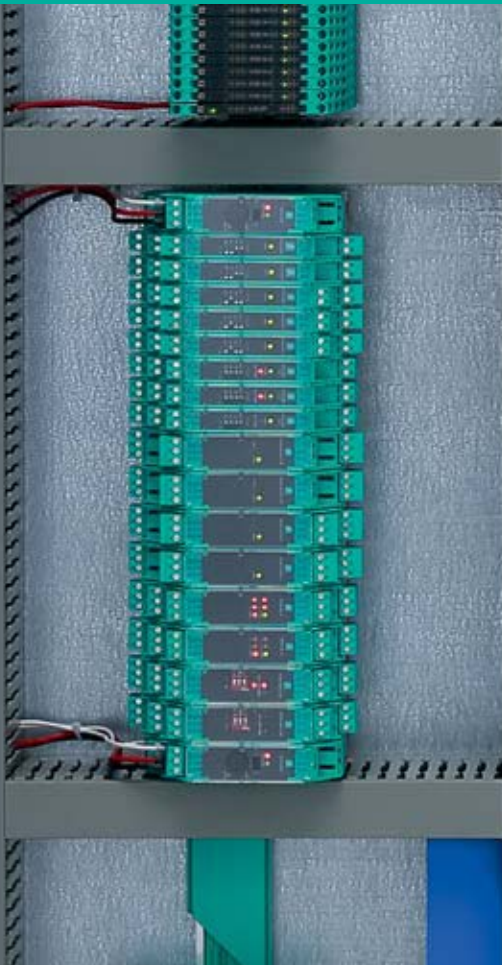
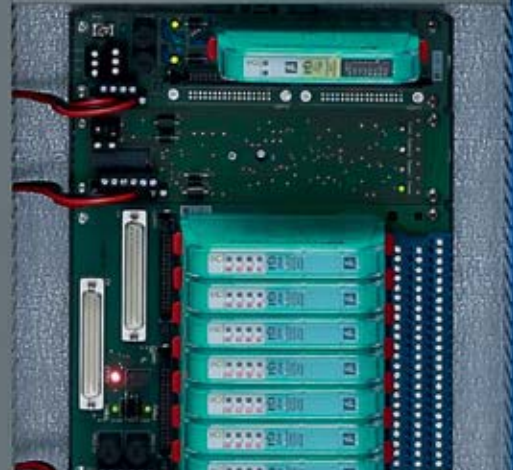
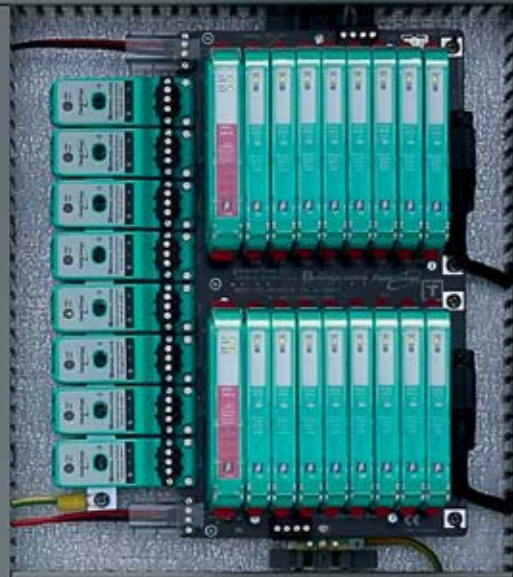


# Quick Select Product Guide Process Interfaces

Interface Technology  
Remote I/O Systems  
Fieldbus Infrastructure



**ETA Process Instrumentation**

[www.etapii.com](http://www.etapii.com)

[sales@etapii.com](mailto:sales@etapii.com)

tel 978.532.1330

*New England*

**Martech Controls**

[www.martechcontrols.com](http://www.martechcontrols.com)

[sales@martechcontrols.com](mailto:sales@martechcontrols.com)

tel: 315.876.9120

*Upstate New York*

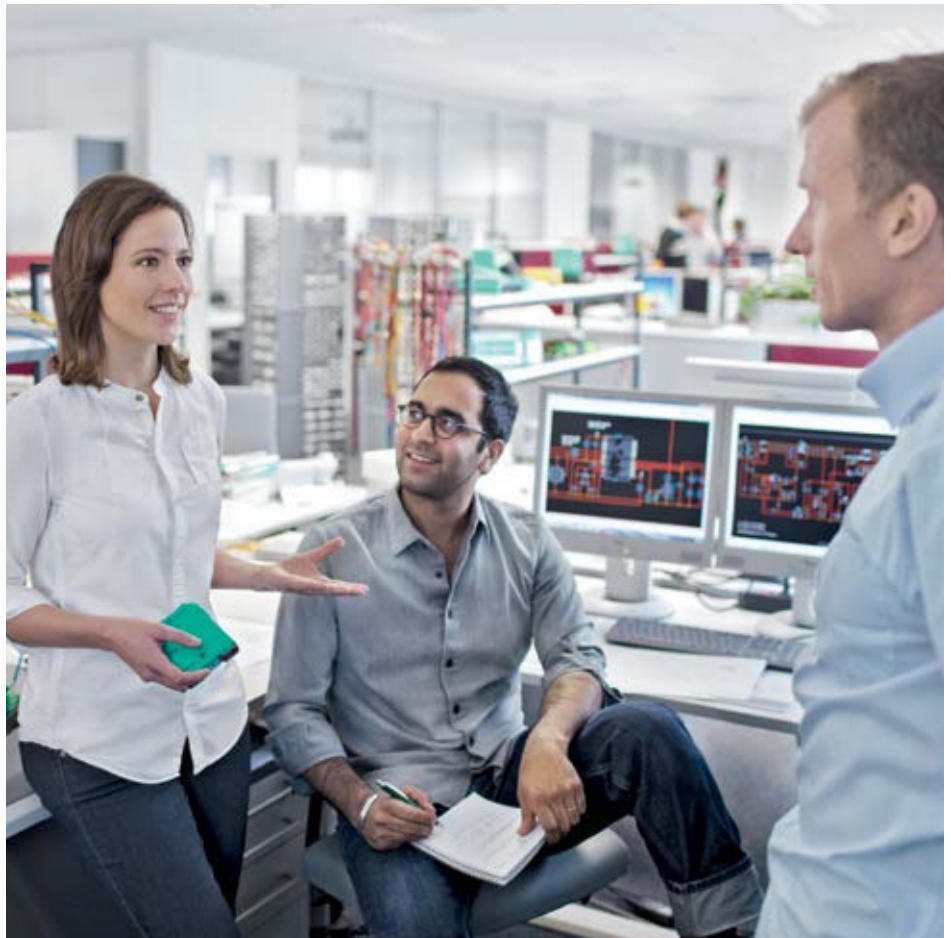
**PEPPERL+FUCHS**

# Quick Select Product Guide: Use, Purpose, and Target Group

The Quick Select Product Guide for interface technology, FieldConnex<sup>®</sup>, and remote I/O connection technologies is designed for experienced users such as technicians and engineers. This guide will help you select the correct technology and systems when designing plants.

Selection tables with specific product features will help you find the correct solution or component quickly and reliably. You can find more detailed system descriptions as well as a basic explanation of explosion protection and the technologies available (signal transmission, fieldbus technology, surge protection, etc.) on the individual product pages.

Particularly in the area of interface technology, specialist terms can vary from provider to provider. The terms required for product selection are explained on pages 9 and 51. You can always find our up-to-date product portfolio at



# Innovative Solutions. Perfect Applications.



The courage to take commercial risks, an inquiring mind, and the belief in one's own abilities—these are the assets on which Walter Pepperl and Ludwig Fuchs established a small radio workshop in the German city of Mannheim back in 1945. A few years later, they demonstrated their credentials by inventing the proximity sensor. This marked the start of a success story that has been shaped as much by close customer relationships as by pioneering technology and automation technology processes.

Then as now, our focus is directed squarely on the individual requirements of each customer. Whether as a pioneer in electrical explosion protection or as a leading innovator of high-performance sensors, close communication with our customers is what has allowed us to become a leader in automation technology. Our main objective is combining state-of-the-art technologies and comprehensive services to optimize our customers' processes and applications.

For more information, visit our website:  
[www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

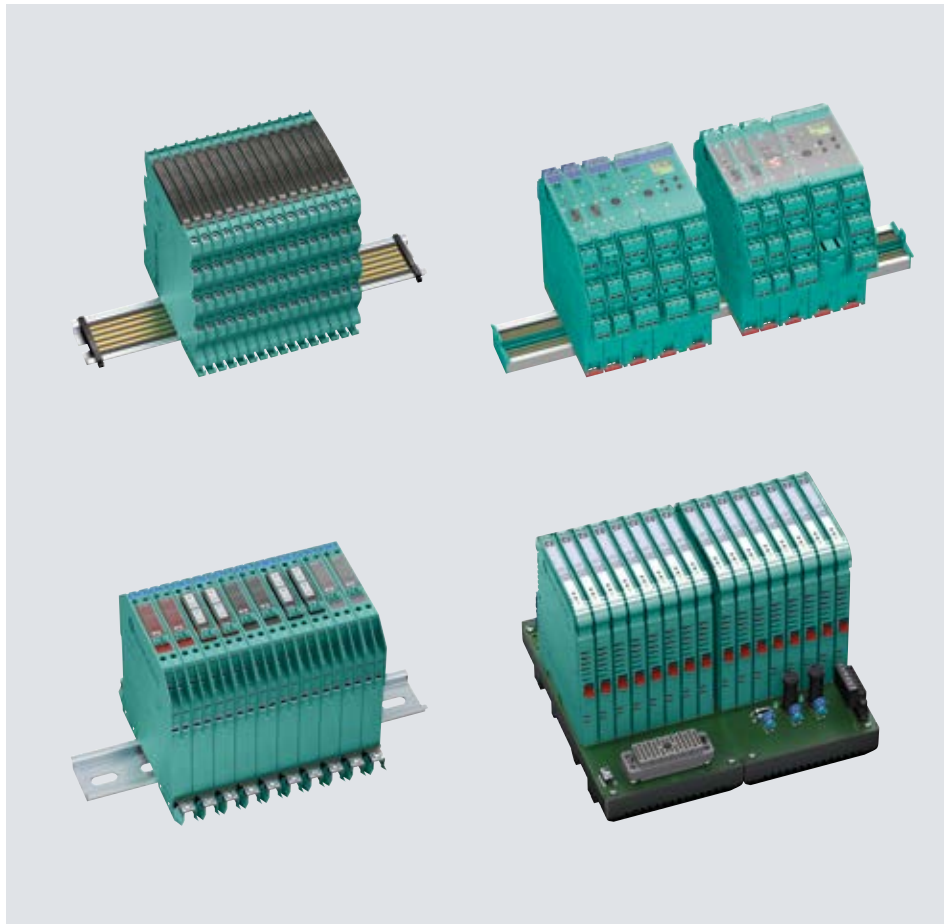
## Contents

<b>Technologies</b>	<b>4</b>
<b>Enclosure Solutions</b>	<b>6</b>
<b>Interface Technology</b>	<b>8</b>
K-System Isolated Barriers	10
H-System Isolated Barriers	22
K-System Signal Conditioners	28
SC-System Signal Conditioners	36
Z-System Zener Barriers	39
Surge Protection Barriers	42
HART Interface Solutions	45
WirelessHART Interface Solutions	48
<b>Remote I/O Systems</b>	<b>50</b>
LB System	52
FB System	59
Multifunction Terminals	66
<b>FieldConnex® Fieldbus Infrastructure</b>	<b>68</b>
PROFIBUS PA	70
FOUNDATION Fieldbus H1	74
<b>Enclosure Solutions for Segment Protectors and Field Barriers</b>	<b>78</b>
<b>Enclosure Solutions for Process Interfaces</b>	<b>91</b>

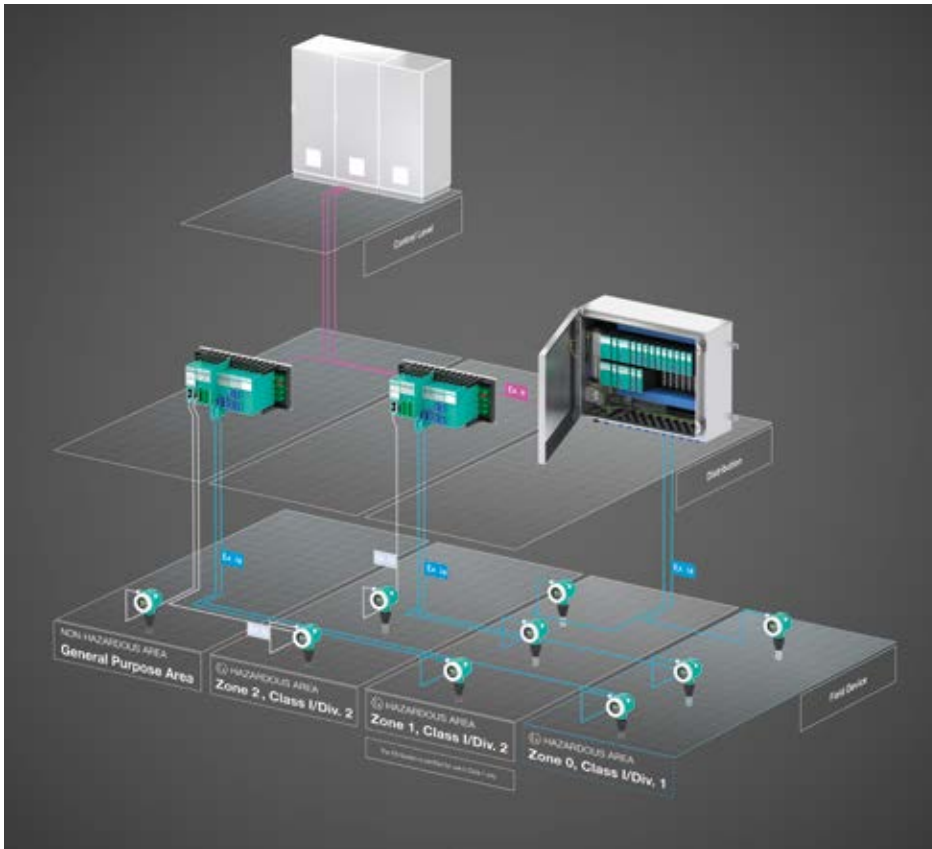
# The Correct Technology for Every Requirement

Choosing the correct connection technology is a fundamental part of plant design.

Interface technology is a proven, easy-to-manage method of assigning each signal to a terminal. Point-to-point wiring allows the device to be connected directly to the I/O card and used in the control cabinet. A wide range of modules and systems offers the correct solution for every application.



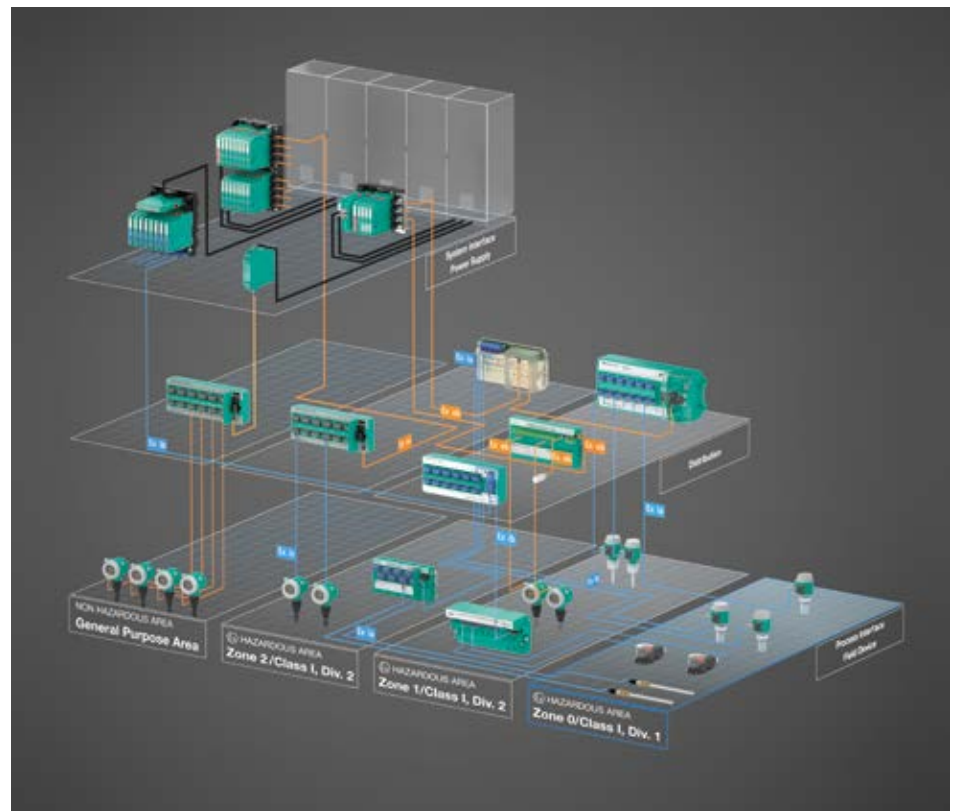
Examples of interface technology: K-System, H-System, Z-System, and SC-System (clockwise from top right).



Remote I/O network

Remote I/O systems combine conventional field technology with modern bus technology. This means that when modernizing and expanding plants, the existing field technology can be connected with the control system over the remote I/O system via a fieldbus.

FieldConnex® facilitates the connection of high-level bus systems to digital communication in the field. Wherever processes require high performance and maximum transparency, digital communication enables sophisticated, intelligent diagnostics and remote configuration. Deviations in the quality of the data and the installation itself will be detected before these changes can have an impact. This makes processes secure, efficient, and highly available.



FieldConnex architecture



# Enclosure Solutions

## Interface Technology

The entire range of interface products from Pepperl+Fuchs can be integrated into customer-specific cabinet and enclosure solutions. This reduces commissioning time and improves ROI.

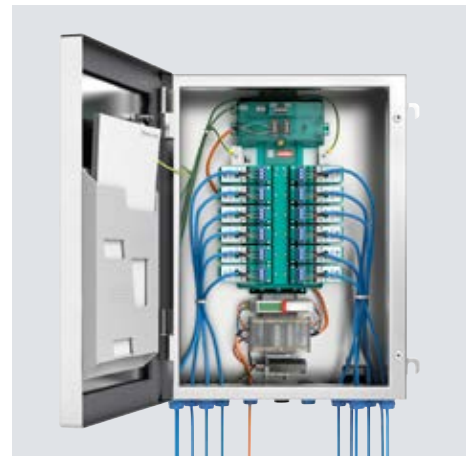
## Remote I/O Systems

Pepperl+Fuchs offers standard enclosure solutions for remote I/O that are designed for the most demanding applications in explosion-hazardous areas. The surrounding enclosures are already equipped with backplanes with simple connections to I/O modules. These solutions are available in corrosion- and impact-resistant stainless steel. Pre-configured solutions with a nonmetallic enclosure are also available. These enclosures offer a high degree of corrosion protection for both onshore and offshore installations.

## FieldConnex® Fieldbus Infrastructure

Pre-installed, complete fieldbus solutions from Pepperl+Fuchs offer easy and convenient operation. FieldConnex® junction boxes come with a variety of options and can be selected using a configurator. Enclosure size, electronics, ignition protection, and accessories are tailored to the specific application and the planned operating location.

To ensure an efficient connection to the control technology, FieldConnex® power supplies offer factory-made connector solutions that allow four segments to be connected to one another. Regional Solution Engineering Centers take care of full planning and execution, including documentation and factory testing.



## Tailor-Made SEC Solutions

More and more users are looking for complete system solutions from a single source. Experienced employees in Pepperl+Fuchs' Solution Engineering Centers (SECs) support companies from the initial planning stages up to the commissioning of new plants. All over the world, customers receive tailor-made system solutions complete with hazardous-location certification and documentation.

# Interface Technology: Isolated Barriers, Signal Conditioners, and Zener Barriers

Interface technology ensures reliable signal transmission between the control level and field devices. It includes products for explosion and surge protection, galvanic isolation between the field and control panel, and digital communication based on the HART protocol.





### K-System Isolated Barriers and Signal Conditioners

The K-System offers the broadest product portfolio of its kind, has the right solution for every requirement in the process industry, and is designed for a mixture of applications involving both Ex modules and non-Ex modules.

The modules are easily snapped onto a DIN mounting rail. They can be energized both via terminals or our unique Power Rail, which also transmits a collective error message for improved performance.

K-System isolators offer removable terminal blocks for wiring on the control and field sides, and control elements on the front of the device, making them user-friendly and easy to service. The modules are available as a 12.5 mm wide KC version as well as a 20 or 40 mm wide KF version.

### H-System Isolated Barriers

The H-System offers an interface solution based on a termination board for large plants and for plants directly connected to DCS/ESD systems. The modules are connected to termination boards mounted on a DIN rail without the need for tools. The termination boards connect the control system via system plugs, which ensure fast, error-free wiring.

The isolated barriers are available as HiC modules with a width of 12.5 mm for compact single-loop integrity or as multichannel HiD modules with a width of 18 mm for maximum packing density.

### Z-System Zener Barriers

Z-System Zener barriers offer cost-effective explosion protection and limit the energy supplied in intrinsically safe circuits to a safe level.

### SC-System Signal Conditioners

The SC-System was developed for plants where explosion-hazardous areas are not a factor. The powerful signal conditioners ensure fault-free communication between the control level and the field and feature a high level of isolation quality, an extended temperature range, and an extremely compact, space-saving design that is only 6 mm wide.

### HART Interface Solutions, WirelessHART Technology, and HART Modems

K- and H-System multiplexers are used to ensure the best possible communication between the asset management system and HART field devices. The HART loop converter in the K-System is a single-channel isolated barrier and utilizes the full potential of HART field devices.

Our wireless HART technology includes several industry-leading products to make wireless installations operate reliably in a wide range of applications.

As part of any HART-based installation, a Viator<sup>®</sup> HART modem is a critical tool for technicians or other installation/programming professionals. These industry-leading products are easy to use and provide quick access to HART data embedded in the field instrument.

### Surge Protection Modules

For reliable protection of field devices and the control level against surge voltage, Pepperl+Fuchs offers five product lines that are tailored to different process requirements:

P-LB series

Plug-in modules for the K-System

K-LB series, M-LB-5000 series

Universal DIN rail modules

F-LB series

Screw modules for field devices

M-LB series

For 120/230 V AC mains voltage

#### Product Selection Terms

You are looking for

Pepperl+Fuchs term

Isolating Amplifier

Signal Conditioner

Ex-isolator

Isolated Barrier

Coupling Relay

Relay Module

Safety Relay

Relay Module

Motherboard

Termination Board

Backplane

Termination Board

Base Plate

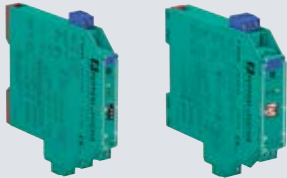
Termination Board

# Interface Technology

## K-System Isolated Barriers

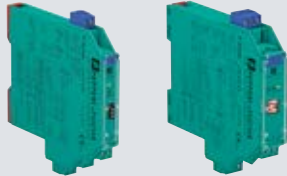
### Digital input signals

#### Switch amplifiers



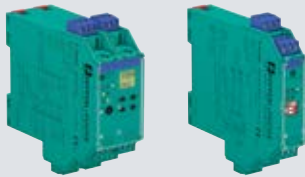
Model Number	Number of channels	Housing width			Input			Output				Functions						Supply				SIL 2	SIL 3	Installation in Zone 2	Installation in Div. 2			
		12.5 mm	20 mm	40 mm	NAMUR sensor	volt-free contact	SN/S1N sensor	Relays	Transistor	Relay and Voltage output	Relay and Transistor	Fault indication output	Line fault detection	Splitter function	Reversible mode of operation	Reset function	Time function	Line fault transparency	Interval relay	2:1 method	24 V DC					115 V AC	230 V AC	115 V AC/230 V AC
KCD2-SOT-EX1.LB	1	■			■	■		■				■	■	■							■				■		■	■
KCD2-SR-EX1.LB	1	■			■	■		■				■	■	■							■				■		■	■
KCD2-ST-EX1.LB	1	■			■	■		■				■	■	■							■				■		■	■
KFD2-SR2-EX1.W	1		■		■	■		■				■		■							■				■		■	■
KFA5-SR2-EX1.W	1		■		■	■		■				■		■							■				■		■	■
KFA6-SR2-EX1.W	1		■		■	■		■				■		■							■				■		■	■
KFD2-SR2-EX1.W.LB	1		■		■	■		■				■	■	■							■				■		■	■
KFA5-SR2-EX1.W.LB	1		■		■	■		■				■	■	■							■				■		■	■
KFA6-SR2-EX1.W.LB	1		■		■	■		■				■	■	■							■				■		■	■
KCD2-SON-EX1	1	■			■	■		■				■	■				■				■				■		■	■
KCD2-SON-EX1.R1	1	■			■	■		■				■	■	■			■				■				■		■	■
KCD2-SON-EX2.R1	2	■			■	■		■				■	■				■				■				■		■	■
KCD2-SON-EX2	2	■			■	■		■				■	■				■				■				■		■	■
KCD2-SOT-EX2	2	■			■	■		■				■	■				■				■				■		■	■
KCD2-SR-EX2	2	■			■	■		■				■	■				■				■				■		■	■
KCD2-ST-EX2	2	■			■	■		■				■	■				■				■				■		■	■
KFD2-SR2-EX2.W	2		■		■	■		■				■		■							■				■		■	■
KFA5-SR2-EX2.W	2		■		■	■		■				■		■							■				■		■	■
KFA6-SR2-EX2.W	2		■		■	■		■				■		■							■				■		■	■
KFA5-SR2-EX2.W.IR	2		■		■	■		■				■		■					■		■				■		■	■
KFA6-SR2-EX2.W.IR	2		■		■	■		■				■		■					■		■				■		■	■
KFD2-SRA-EX4	4		■		■	■		■				■		■					■		■				■		■	■
KFD2-ST3-EX1.LB	1		■		■	■		■				■	■	■							■				■		■	■
KFD2-ST3-EX2	2		■		■	■		■				■	■								■				■		■	■
KFD2-SOT2-EX1.LB	1		■		■	■		■				■	■	■							■				■		■	■
KFD2-SOT2-EX1.LB.IO	1		■		■	■		■				■	■	■							■				■		■	■
KFD2-SOT2-EX2	2		■		■	■		■				■	■	■							■				■		■	■
KFD2-SOT2-EX2.IO	2		■		■	■		■				■	■	■							■				■		■	■
KFD2-SOT2-EX2.IO-Y181008	2		■		■	■		■				■	■	■							■				■		■	■
KFD2-ST2-EX1.LB	1		■		■	■		■				■	■								■				■		■	■
KFD2-ST2-EX2	2		■		■	■		■				■	■								■				■		■	■
KFD2-SOT3-EX1.LB	1		■		■	■		■				■	■	■							■				■		■	■
KFD2-SOT3-EX1.LB.IO	1		■		■	■		■				■	■	■							■				■		■	■
KFD2-SOT3-EX2	2		■		■	■		■				■	■	■							■				■		■	■
KFD2-SOT3-EX2.IO	2		■		■	■		■				■	■	■							■				■		■	■
KFD2-SH-EX1	1			■	■	■		■				■	■								■				■		■	■

### Switch amplifiers



Model Number	Number of channels	Housing width			Input			Output			Functions							Supply											
		12.5 mm	20 mm	40 mm	NAMUR sensor	volt-free contact	SN/S1N sensor	Relays	Transistor	Relay and Voltage output	Relay and Transistor	Fault indication output	Line fault detection	Splitter function	Reversible mode of operation	Reset function	Time function	Line fault transparency	Interval relay	2:1 method	24 V DC	115 V AC	230 V AC	115 V AC/230 V AC	SIL 2	SIL 3	Installation in Zone 2	Installation in Div. 2	
KFD2-SH-EX1.T.OP	1	■			■	■	■	■	■		■	■									■					■	■		
KHA6-SH-EX1	1		■		■	■	■	■			■	■											■		■				
KFD2-DU-EX1.D	1			■	■	■	■	■		■		■				■	■				■						■	■	
KFA5-DU-EX1.D	1			■	■	■	■	■		■		■				■	■					■						■	■
KFA6-DU-EX1.D	1			■	■	■	■	■		■		■				■	■					■						■	■

### Frequency converters



Model Number	Number of channels	Housing width		Input			Output		Functions										Supply										
		20 mm	40 mm	Frequency	NAMUR sensor	volt-free contact	0(4) mA ... 20 mA	Relay and Transistor	Start-up override	Rotation direction monitoring	Rotation speed monitoring	Fault indication output	Frequency conversion	Synchronization monitoring	Trip relay	Line fault detection	Slip monitoring	Pulse divider	20 V ... 90 V DC / 48 V ... 253 V AC	24 V DC	115 V AC	230 V AC	SIL 2	Installation in Zone 2	Installation in Div. 2				
KFD2-SR2-EX2.W.SM	2	■		■	■	■		■	■	■					■	■								■	■	■	■		
KFD2-DWB-EX1.D	1		■	■	■	■		■		■	■				■	■								■		■	■		
KFA5-DWB-EX1.D	1		■	■	■	■		■		■	■				■	■										■	■		
KFA6-DWB-EX1.D	1		■	■	■	■		■		■	■				■	■								■		■	■		
KFD2-UFC-EX1.D	1		■	■	■	■	■	■		■	■				■	■										■	■		
KFU8-UFC-EX1.D	1		■	■	■	■	■	■		■	■				■	■										■	■		
KFD2-UFT-EX2.D	2		■	■	■	■	■	■		■	■				■	■											■	■	
KFU8-UFT-EX2.D	2		■	■	■	■	■	■		■	■				■	■											■	■	

# Digital input signals

## Conductive switch amplifiers



Model Number	Number of channels	Housing width	Input	Output	Functions						Supply			
		20 mm	Resistance	Relays	Fault indication output	Conductivity measurement	Line fault detection	Min./max. control	Time delay	24 V DC	115 V AC	230 V AC		
KFD2-ER-EX1.W.LB	1	■	■	■	■	■	■	■	■	■	■			
KFA5-ER-EX1.W.LB	1	■	■	■	■	■	■	■	■	■		■		
KFA6-ER-EX1.W.LB	1	■	■	■	■	■	■	■	■	■				■

## Earth fault detection



Model Number	Number of channels	Housing width	Output	Functions	Supply
		60 mm	Relays	Conformal coating	24 V DC
KFD2-ELD-EX16	16	■	■	■	■

# Digital output signals

## Solenoid drivers



Model Number	Number of channels	Housing width		Input				Output				Output voltage					Output Current					Functions				Supply						
		12.5 mm	20 mm	Logic input	Field device supply	Valve	Audible alarm	Visual alarm	9.8 V	10 V	11 V	11.2 V	11.7 V	12 V	12.5 V	13.5 V	20.4 mA	45 mA	65 mA	70 mA	80 mA	100 mA	Line fault detection	Fault indication output	Test pulse immunity	Conformal coating	24 V DC	Loop powered	SIL 2	SIL 3	Installation in Zone 2	Installation in Div. 2
KFD0-SD2-EX1.1045	1		■	■	■	■	■	■	■								■									■			■	■	■	
KFD0-SD2-EX2.1045	2		■							■																	■			■	■	■
KCD0-SD-EX1.1245	1	■				■	■	■						■													■			■	■	■
KFD0-SD2-EX2.1245	2		■			■	■	■						■													■			■	■	■
KFD0-SD2-EX1.1065	1		■			■	■	■	■									■									■			■	■	■
KFD0-SD2-EX1.1180	1		■			■	■	■	■					■													■			■	■	■
KFD0-SD2-EX1.10100	1		■			■	■	■						■								■					■			■	■	■
KFD2-SL2-EX1	1		■	■		■	■	■						■								■					■			■	■	■
KFD2-SL2-EX1.B	1		■	■		■	■	■						■								■					■			■	■	■
KFD2-SL2-EX1.LK	1		■	■		■	■	■						■								■	■				■			■	■	■
KFD2-SL2-EX1.LK.1045	1		■	■		■	■	■						■								■	■				■			■	■	■
KFD2-SL2-EX1.LK.1270	1		■	■		■	■	■						■								■	■				■			■	■	■
KFD2-SL2-EX2	2		■	■		■	■	■						■								■					■			■	■	■
KFD2-SL2-EX2.B	2		■	■		■	■	■						■								■					■			■	■	■
KFD2-RCI-EX1	1		■	■		■	■	■								■	■					■	■			■			■	■	■	■
KCD2-SLD-EX1.1045	1	■				■	■	■	■					■								■	■	■			■			■	■	■
KCD2-SLD-EX1.1065	1	■				■	■	■	■					■								■	■	■			■			■	■	■
KCD2-SLD-EX1.1245	1	■				■	■	■	■					■								■	■	■			■			■	■	■

## Relay modules



Model Number	Number of channels	Housing width		Input		Output		Supply		SIL 3	Installation in Zone 2	Installation in Div. 2
		20 mm		Logic input		Relays		Loop powered				
KFD0-RO-EX2	2		■			■		■		■		■

# Analog input signals

## Transmitter power supplies



Model Number	Number of channels	Housing width		Input				Output				Functions					Supply		SIL 2		SIL 3		Installation in Zone 2		Installation in Div. 2					
		12.5 mm	20 mm	2-wire-transmitters	3-wire-transmitters	Current source	0(4) mA ... 20 mA	4 mA ... 20 mA	0(4) mA ... 20 mA	0(2) V ... 10 V	0(1) V ... 5 V	1 V ... 5 V	Test sockets	For higher field voltages	Line fault detection	For long field lines	Fault indication output	Splitter function	24 V DC											
KCD2-STC-EX1	1	■		■		■		■		■								■		■				■		■		■		■
KCD2-STC-EX1.ES	1	■		■		■		■		■					■		■	■								■		■		■
KCD2-STC-Ex1.HC	1	■		■		■		■		■					■			■									■		■	
KFD2-STC4-EX1	1		■	■	■	■	■	■		■					■			■									■		■	
KFD2-STC4-EX1.ES	1		■	■		■	■	■		■						■		■									■		■	
KFD2-STC4-EX1.H	1		■	■	■	■	■	■		■					■	■		■									■		■	
KFD2-STV4-EX1-1	1		■	■	■	■	■	■		■					■			■									■		■	
KFD2-STV4-EX1-2	1		■	■	■	■	■	■			■				■			■									■		■	
KFD2-STC4-EX1.20	1		■	■	■	■	■	■		■					■			■									■		■	
KFD2-STC4-EX1.20.H	1		■	■	■	■	■	■		■					■	■		■									■		■	
KFD2-STV4-EX1.20-1	1		■	■	■	■	■	■		■					■			■									■		■	
KFD2-STV4-EX1.20-2	1		■	■	■	■	■	■			■				■			■									■		■	
KFD2-STC4-EX2	2		■	■		■		■		■					■			■									■		■	
KFD2-STC4-EX2-Y229428	2		■	■		■		■		■					■			■									■		■	
KFD2-STV4-EX2-1	2		■	■		■		■		■					■			■									■		■	
KFD2-STV4-EX2-2	2		■	■		■		■			■				■			■									■		■	
KFD2-STC3-EX1	1		■	■				■	■						■			■									■		■	
KFD2-STV3-EX1-1	1		■	■				■			■				■			■									■		■	
KFD2-STV3-EX1-2	1		■	■				■		■					■			■									■		■	
KFD2-STC5-EX1	1		■	■	■	■	■	■		■					■			■									■		■	
KFD2-STC5-EX1.20	1		■	■	■	■	■	■		■					■			■									■		■	
KFD2-STC5-EX1.20.H	1		■	■	■	■	■	■		■					■	■		■									■		■	
KFD2-STC5-EX1.H	1		■	■	■	■	■	■		■					■	■		■									■		■	
KFD2-STC5-EX2	2		■	■	■	■	■	■		■					■			■									■		■	
KFD2-STV5-EX1-1	1		■	■	■	■	■	■		■					■			■									■		■	

## Analog input signals

### Transmitter power supplies with trip values



Model Number	Number of channels	Housing width	Input			Output		Supply			Installation in Zone 2	Installation in Div. 2
			2-wire-transmitters	3-wire-transmitters		0(4) mA ... 20 mA	Relays	20 V ... 90 V DC / 48 V ... 253 V AC	24 V DC	SIL 2		
KFD2-CRG2-EX1.D	1	40 mm	■	■	■	■	■	■	■	■	■	■
KFU8-CRG2-EX1.D	1	40 mm	■	■	■	■	■	■	■	■	■	■

### Transmitter power supplies with HART communication



Model Number	Number of channels	Housing width	Input				Output		Functions			Supply	Installation in Zone 2	Installation in Div. 2
			3-wire-transmitters	HART	Transmitter supply	active sources	4 mA ... 20 mA	Relays	Trip relay	HART communication	Splitter function			
KFD2-HLC-EX1.D	1	40 mm	■	■	■	■	■	■	■	■	■	■	■	■
KFD2-HLC-EX1.D.2W	1	40 mm	■	■	■	■	■	■	■	■	■	■	■	■
KFD2-HLC-EX1.D.4S	1	40 mm	■	■	■	■	■	■	■	■	■	■	■	■

# Analog input signals

## Current repeaters



Model Number	Number of channels	Housing width	Field Side				Control Side				Transmission Direction		Functions			Supply	SIL 2	SIL 3	Installation in Zone 2	Installation in Div. 2
			20 mm	1 mA ... 20 mA	4 mA ... 20 mA	0 mA ... 40 mA	Fire alarm	1 mA ... 20 mA	4 mA ... 20 mA	0 mA ... 40 mA	HART	To the control system	To the field / To the control system	Reverse polarity protection	HART communication					
KFD0-SCS-EX1.55	1	■	■				■				■				■	■				
KFD0-CS-EX1.50P	1	■	■				■				■				■	■				
KFD0-CS-EX1.51P	1	■			■	■					■				■	■				
KFD0-CS-EX1.52	1	■		■							■				■	■				
KFD0-CS-EX1.54	1	■	■				■				■				■	■		■		
KFD0-CS-EX2.50P	2	■		■			■				■				■	■				
KFD0-CS-EX2.51P	2	■			■	■					■				■	■				
KFD0-CS-EX2.52	2	■		■							■				■	■				
KFD0-CS-EX2.54	2	■	■				■				■				■	■		■		
KFD0-CS-EX1.54-Y2	1	■	■				■				■				■	■				

## Voltage repeaters



Model Number	Number of channels	Housing width	Field Side						Control Side					Transmission Direction	Supply	Cut-off frequency					SIL 2	Installation in Zone 2	Installation in Div. 2			
			RS 232	-20 V ... 0 V	-10 V ... +10 V	0 V ... 9 V	0 V ... 12 V	-50 mV ... +50 mV	-500 mV ... +500 mV	RS 232	-20 V ... 0 V	-10 V ... +10 V	0 V ... 9 V			0 V ... 12 V	-50 mV ... +50 mV	-500 mV ... +500 mV	24 V DC	350 Hz				1.2 kHz	10 kHz	20 kHz
KFD2-VR2-EX1.50M	1	■												■	■	■	■								■	■
KFD2-VR2-EX1.500M	1	■												■	■	■	■								■	■
KFD2-VR-EX1.12	1	■											■	■	■	■	■								■	■
KFD2-VR-EX1.18	1	■												■	■	■	■								■	■
KFD2-VR-EX1.19	1	■												■	■	■	■								■	■
KFD2-VR-EX1.19-Y109129	1	■												■	■	■	■								■	■
KFD2-VR4-EX1.26	1	■	■											■	■	■	■								■	■
KFD2-FF-EX2.RS232	1	■	■											■	■	■	■								■	■



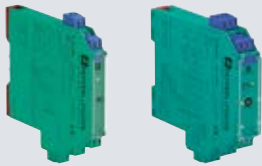
# Analog input signals

## Signal converters for current and voltage



Model Number	Number of channels	Housing width		Input			Output					Functions		Supply				
		20 mm	40 mm	Strain gauge bridge	Voltage	Current / voltage	-10 V ... +10 V	0 V ... 10 V	-20 mA ... +20 mA	0 mA ... 20 mA	4 mA ... 20 mA	Relays	Trip relay	Line fault detection	24 V DC	Loop powered	Installation in Zone 2	Installation in Div. 2
KFD0-CC-EX1	1	■				■					■				■	■	■	
KFD2-WAC2-Ex1.D	1		■	■	■		■	■	■	■		■	■	■	■			■

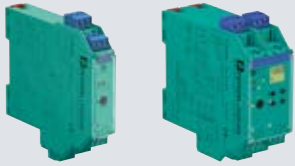
## Temperature converters and repeaters



Model Number	Number of channels	Housing width		Input						Output			Functions			Supply						
		12.5 mm	20 mm	2-wire connection	3-wire connection	4-wire connection	Thermocouple	Resistance thermometer	Potentiometer	Voltage	4 mA ... 20 mA	0(4) mA ... 20 mA	0(1) V ... 5 V	Resistance	Internal cold junction compensation	Line fault detection	Splitter function	24 V DC	Loop powered	SIL 2	Installation in Zone 2	Installation in Div. 2
KCD2-UT2-EX1	1	■		■	■	■	■	■	■	■					■			■			■	■
KFD2-UT2-EX1	1		■	■	■	■	■	■	■						■			■			■	■
KFD2-UT2-EX1-1	1		■	■	■	■	■	■	■			■			■			■			■	■
KFD2-UT2-EX2	2		■	■	■	■	■	■	■			■			■	■		■			■	■
KFD2-UT2-EX2-1	2		■	■	■	■	■	■	■			■			■	■		■			■	■
KFD0-TR-EX1	1		■		■						■							■	■		■	
KFD0-TT-EX1	1		■	■			■				■			■	■			■	■		■	
KCD2-RR-EX1	1	■											■		■			■			■	■
KCD2-RR-EX1-Y1	1	■											■		■			■			■	■
KCD2-RR-EX1.SP	1	■											■		■			■			■	■

# Analog input signals

## Temperature converters with trip values



Model Number	Number of channels	Housing width		Input				Output		Functions			Supply		SIL 2	Installation in Zone 2	Installation in Div. 2		
		20 mm	40 mm	Potentiometer	Voltage	Thermocouple	Resistance thermometer	Current / voltage	0(4) mA ... 20 mA	Relays	Trip relay	Line fault detection	Programmable high/low alarm	20 V ... 90 V DC / 48 V ... 253 V AC				230 V AC	24 V DC
KFD2-GU-EX1	1	■				■	■	■		■	■		■				■		■
KFD2-GUT-EX1.D	1		■	■	■	■	■		■	■	■	■					■		■
KFU8-GUT-EX1.D	1		■	■	■	■	■		■	■	■	■					■		

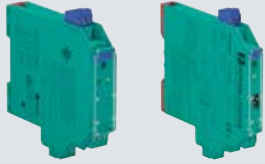
## Signal converters for resistors and potentiometers



Model Number	Number of channels	Housing width	Input				Output				Supply	SIL 2	Installation in Zone 2	Installation in Div. 2	
			20 mm	3-wire connection	4-wire connection	5-wire connection	Potentiometer	4 mA ... 20 mA	0 mA ... 20 mA	0 V ... 5 V					0 V ... 10 V
KFD2-PT2-EX1	1	■	■	■	■	■				■	■	■	■	■	■
KFD2-PT2-EX1-1	1	■	■	■	■	■			■		■	■	■	■	■
KFD2-PT2-EX1-4	1	■	■	■	■	■		■			■	■	■	■	■
KFD2-PT2-EX1-5	1	■	■	■	■	■	■				■	■	■	■	■

# Analog output signals

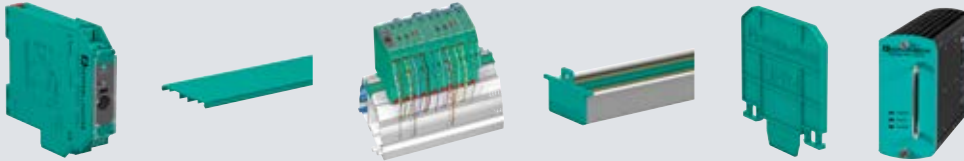
## Current drivers



Model Number	Number of channels	Housing width		Input								Output								Transmission Direction		Functions				Supply		Installation				
		12.5 mm	20 mm	0 V ... 10 V	0 V ... 5 V	1 V ... 5 V	2 V ... 10 V	0 mA ... 20 mA	0 mA ... 40 mA	4 mA ... 20 mA	HART	4 mA ... 20 mA	0 mA ... 40 mA	0 V ... 10 V	0 V ... 5 V	1 V ... 5 V	2 V ... 10 V	I/P converters	Positioner	Valve	Fire alarm	To the field	To the field / To the control system	HART communication	Line fault detection	Test sockets	For long field lines	Reverse polarity protection	24 V DC	Loop powered	SIL 2	Installation in Zone 2
KCD2-SCD-EX1	1	■								■	■						■	■	■		■		■					■		■	■	■
KCD2-SCD-EX1.SP	1	■								■	■						■	■	■		■		■					■		■	■	■
KCD2-SCD-Ex1.HC	1	■								■	■						■	■	■		■		■			■		■		■	■	■
KCD2-SCD-Ex1.HC.SP	1	■								■	■						■	■	■		■		■			■		■		■	■	■
KFD2-SCD-EX1.LK	1		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-SCD2-EX1.LK	1		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-SCD2-EX1-Y1	1		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-CD2-EX1	1		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-SCD2-EX2.LK	2		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-SCD2-EX2-Y1	2		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-CD2-EX2	2		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD0-SCS-EX1.55	1		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD0-CS-EX1.51P	1		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD0-CS-EX1.53	1		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD0-CS-EX2.51P	2		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD0-CS-EX2.53	2		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-CD-EX1.32-1	1		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-CD-EX1.32-2	1		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-CD-EX1.32-3	1		■		■	■				■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-CD-EX1.32-5	1		■		■					■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-CD-EX1.32-6	1		■		■					■	■					■	■	■		■		■	■	■			■		■	■	■	■
KFD2-CD-EX1.32-8	1		■		■					■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-CD-EX1.32-9	1		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-CD-EX1.32-10	1		■							■	■					■	■	■		■		■	■	■			■		■	■	■	■
KFD2-CD-EX1.32-12	1		■							■	■					■	■	■		■		■	■	■			■		■	■	■	■
KFD2-CD-EX1.32-13	1		■							■	■						■	■	■		■		■	■	■			■		■	■	■
KFD2-CD-EX1.32-15	1		■		■	■	■	■		■	■					■	■	■		■		■	■	■			■		■	■	■	■
KFD2-CD-EX1.32-21	1		■		■					■	■					■	■	■		■		■	■	■			■		■	■	■	■

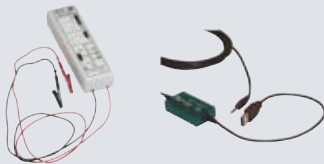
## Accessories

### Supply and assembly



Model Number	Description
<b>KFA6-STR-1.24.500</b>	Power supply, 24 V, 500 mA
<b>KFA6-STR-1.24.4</b>	Power supply, 24 V, 4 A
<b>KFD2-EB2</b>	Power Feed Module
<b>KFD2-EB2.R4A.B</b>	Power feed module, redundant supply
<b>UPR-03-S</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 0.8 m
<b>UPR-03-M</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 1.6 m
<b>UPR-03</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 2 m
<b>UPR-05-S</b>	Universal Power Rail with end caps and cover, 5 conductors, length: 0.8 m
<b>UPR-05</b>	Universal Power Rail with end caps and cover, 5 conductors, length: 2 m
<b>UPR-E</b>	End cap for universal power rail UPR-**-*
<b>UPR-I</b>	Insulation spacer for universal power rail UPR-**-*
<b>UPR-COVER</b>	Cover for 35 mm DIN mounting rail
<b>UPR-INS-03</b>	Insert for 35 mm DIN mounting rail
<b>UPR-MR</b>	35 mm DIN mounting rail, length: 2 m (packaging unit: 2 pieces)
<b>K-DUCT-BU-UPR-03</b>	Profile rail with UPR-03- * insert, 3 conductors, wiring comb field side blue
<b>K-DUCT-BU-UPR-05</b>	Profile rail with UPR-05- * insert, 5 conductors, wiring comb field side blue
<b>K-DUCT-GY-UPR-03</b>	Profile rail with UPR-03-* insert, 3 conductors, wiring comb field side gray
<b>K-DUCT-GY-UPR-05</b>	Profile rail with UPR-05-* insert, 5 conductors, wiring comb field side gray
<b>K-MS</b>	Mounting Socket
<b>PS3500-PM-1.24.15</b>	PS3500 Power Supply Module
<b>PS3500-TB-3</b>	PS3500 Power Supply Backplane - 3-position
<b>PS3500-TB-6</b>	PS3500 Power Supply Backplane - 6-position
<b>PS3500-DM</b>	PS3500 Diagnostic Module

### Commissioning



Model Number	Description
<b>K-ADP-USB</b>	Adapter with USB Interface
<b>IS01</b>	Simulator

## Terminal blocks



Model Number	Type		Accessories		Number of pins	Test sockets	External cold junction compensation	Color					Packing unit	Structure
	Spring terminal	Screw terminal	for KF modules	for KC modules				green	red	blue	blue, green	black		
K-CJC-BK		■	■		3		■						1 item(s)	one-rowed
K-CJC-BU		■	■		3		■			■			1 item(s)	one-rowed
KC-ST-5GN		■		■	2			■					5 item(s)	one-rowed
KF-ST-5BU		■	■		3					■			5 item(s)	one-rowed
KF-ST-5GN		■	■		3			■					5 item(s)	one-rowed
KC-STP-5BU		■		■	2	■				■			5 item(s)	one-rowed
KC-STP-5GN		■		■	2	■		■					5 item(s)	one-rowed
KF-STP-5BU		■	■		3	■				■			5 item(s)	one-rowed
KF-STP-5GN		■	■		3	■		■					5 item(s)	one-rowed
KC-CTT-3GN2BU	■			■	2	■						■	5 item(s)	one-rowed
KC-CTT-5BU	■			■	2	■				■			5 item(s)	one-rowed
KC-CTT-5GN	■			■	2	■		■					5 item(s)	one-rowed
KC-ST-5BU		■		■	2					■			5 item(s)	one-rowed
KF-CTT-3GN2BU	■		■		3	■						■	5 item(s)	one-rowed
KF-CTT-5BU	■		■		3	■				■			5 item(s)	one-rowed
KF-CTT-5GN	■		■		3	■		■					5 item(s)	one-rowed
KF-CP			■	■						■			120 item(s) (20 x 6 items)	

## Additional accessories



Model Number	Description
F-KD-EX2	Terminal module for NAMUR sensors
F-KDR-EX2	Terminal module for mechanical contacts
F-NR2-EX1	NAMUR Resistor Network
K-500R0%1	Measuring resistor
KCD0-LGH	Place holder barrier for KC modules, intrinsically safe
KFD0-LGH	Place holder barrier for KF modules, intrinsically safe
KFD0-LGH-GN	Place holder barrier for KF modules, intrinsically safe
KFD0-LGH-Y34868	Place holder barrier for KF modules, non-intrinsically safe, DC version, negative polarity
KF-SEAL	Adhesive sticker

# H-System Isolated Barriers

## Digital input signals

### Switch amplifiers



Model Number	Number of channels	Housing width		Input			Output			Functions					Supply		Installation in Zone 2	Installation in Div. 2		
		12.5 mm	18 mm	NAMUR sensor	volt-free contact	SN/SIN sensor	Transistor	Relays	Voltage output	Application-specific outputs	Fault indication output	Line fault transparency	Splitter function	Line fault detection	Reversible mode of operation	24 V DC			SIL 2	SIL 3
HIC2821	1	■		■	■			■			■		■			■	■		■	■
HIC2822	2	■		■	■			■			■		■			■	■		■	■
HIC2831	1	■		■	■		■				■	■	■			■	■		■	■
HIC2831R1	1	■		■	■		■				■	■	■			■	■		■	■
HIC2831R2	1	■		■	■		■				■	■	■			■	■		■	■
HIC2831R3	1	■		■	■		■				■	■	■			■	■		■	■
HIC2832	2	■		■	■		■				■	■	■			■	■		■	■
HIC2832R1	2	■		■	■		■				■	■	■			■	■		■	■
HIC2832R2	2	■		■	■		■				■	■	■			■	■		■	■
HIC2832R3	2	■		■	■		■				■	■	■			■	■		■	■
HIC2841	1	■		■	■		■				■		■	■	■	■	■		■	■
HIC2842	2	■		■	■		■				■		■	■	■	■	■		■	■
HIC2851	1	■			■	■	■		■		■					■		■	■	■
HIC2853	1	■			■	■	■		■		■					■		■	■	■
HIC2853R1	1	■			■	■	■		■		■					■		■	■	■
HIC2853R2	1	■			■	■	■		■	■	■					■		■	■	■
HID2821	1		■	■	■			■			■		■	■		■	■		■	■
HID2822	2		■	■	■			■			■		■	■		■	■		■	■
HID2824	4		■	■	■			■			■		■	■		■	■		■	■
HID2842	2		■	■	■		■				■		■	■		■	■		■	■
HID2844	4		■	■	■		■				■		■	■		■	■		■	■

## Digital output signals

### Solenoid drivers



Model Number	Number of channels	Housing width		Input			Output			Output voltage			Output Current			Functions				Supply				
		12.5 mm	18 mm	Field device supply	Logic input	Contact input	Valve	Audible alarm	Visual alarm	11.2 V	12 V	13 V	40 mA	45 mA	60 mA	Filter	Test pulse immunity	Line fault detection	Fault indication output	24 V DC	Loop powered	SIL 3	Installation in Zone 2	Installation in Div. 2
HIC2871	1	■		■			■	■	■				■							■	■	■	■	■
HIC2873	1	■		■	■	■	■	■	■				■							■	■	■	■	■
HIC2877	1	■		■	■	■	■	■	■											■	■	■	■	■
HID2872	2		■	■	■	■	■	■	■											■	■	■	■	■
HID2876	2		■	■	■	■	■	■	■											■	■	■	■	■
HID2881	1		■	■	■	■	■	■	■					■						■	■	■	■	■
HIC2883	1	■		■	■		■	■	■				■							■	■	■	■	■

### Relay modules



Model Number	Number of channels	Housing width		Input				Output	Functions			Supply			
		12.5 mm	18 mm	Field device supply	Logic input	Test input	Contact input		Relays	ETS function	Test pulse immunity	DTS function	Loop powered	SIL 3	Installation in Zone 2
HID2862	2		■					■					■		■
HIC5861	1	■		■	■	■		■				■	■	■	■
HIC5861Y1	1	■		■	■	■		■				■	■	■	■
HiC5863	1	■		■	■	■		■	■			■	■	■	■
HiC5863Y1	1	■		■	■	■		■	■			■	■	■	■

# Analog input signals

## Transmitter power supplies



Model Number	Number of channels	Housing width		Input				Output		Functions				Supply		Installation			
		12.5 mm	18 mm	2-wire-transmitters	3-wire-transmitters	Current source	0(4) mA ... 20 mA	0(1) V ... 5 V	0(4) mA ... 20 mA	0(1) V ... 5 V	Fault indication output	HART communication	Line fault detection	Splitter function	For long field lines	24 V DC	SIL 2	SIL 3	Installation in Zone 2
HIC2025	1	■		■		■	■	■	■	■	■				■	■		■	■
HIC2025ES	1	■		■		■	■	■	■	■	■	■			■		■	■	■
HIC2025HC	1	■		■		■	■	■	■	■	■			■	■		■	■	■
HIC2027	1	■		■		■	■	■	■	■	■		■		■		■	■	■
HIC2027DE	1	■		■		■	■	■	■	■	■		■		■		■	■	■
HIC2027ES	1	■		■		■	■	■	■	■	■		■		■		■	■	■
HID2022	2		■	■	■	■	■	■	■	■	■				■	■		■	■
HID2022SK	2		■	■	■	■	■	■	■	■	■				■	■		■	■
HID2024	4		■			■	■	■	■	■	■				■	■		■	■
HID2025	1		■	■		■	■	■	■	■	■				■	■		■	■
HID2025SK	1		■	■		■	■	■	■	■	■				■	■		■	■
HID2026	2		■	■		■	■	■	■	■	■				■	■		■	■
HID2026SK	2		■	■		■	■	■	■	■	■				■	■		■	■
HID2029	1		■	■		■	■	■	■	■	■		■		■	■		■	■
HID2030	2		■	■		■	■	■	■	■	■		■		■	■		■	■
HID2029SK	1		■	■		■	■	■	■	■	■		■		■	■		■	■
HID2030SK	2		■	■		■	■	■	■	■	■		■		■	■		■	■

## Current repeaters



Model Number	Number of channels	Housing width	Field Side			Control Side	Transmission Direction	Functions		Supply	Installation		
			18 mm	Fire and smoke detectors	I/P converters			Current	1.5 mA ... 50 mA		To the field / To the control system	Conformal coating	Reverse polarity protection
HID2035	1	■	■	■	■	■	■	■	■	■	■	■	■
HID2036	2	■	■	■	■	■	■	■	■	■	■	■	■



## Voltage repeaters



Model Number	Number of channels	Housing width		Field Side							Control Side			Transmission Direction	Functions		Supply	SIL 2	Installation in Zone 2	Installation in Div. 2
		12.5 mm	18 mm	Acceleration Sensor	Voltage	Vibration sensor	Strain gauge	Thermocouple	Amplifiers	Load cell	-20 V ... 0 V	0 V ... ±500 mV	0 V ... ±50 mV		Fault indication output	Line fault detection				
HIC2065	1	■		■	■	■	■	■	■	■			■	■	■	■	■		■	■
HIC2068	1	■		■	■	■	■	■	■		■		■	■	■	■	■		■	■
HIC2095	1	■		■	■	■				■			■				■	■	■	■
HID2096	2		■	■	■	■				■			■				■	■	■	■

## Signal converters for current and voltage



Model Number	Number of channels	Housing width	Input		Output			Supply	Installation in Zone 2	Installation in Div. 2
			Voltage	Current / voltage	0(1) V ... 5 V	0(2) V ... 10 V	0(4) mA ... 20 mA			
HID2012	2	18 mm	■	■	■	■	■	■	■	■

## Analog input signals

### Temperature converters and repeaters



Model Number	Number of channels	Housing width		Input						Output			Functions			Supply		Installation in Zone 2	Installation in Div. 2	
		12.5 mm	18 mm	2-wire connection	3-wire connection	4-wire connection	Potentiometer	Voltage	Thermocouple	Resistance thermometer	0(1) V ... 5 V	0(4) mA ... 20 mA	Resistance	Fault indication output	Line fault detection	Splitter function	24 V DC			SIL 2
HIC2077	1	■								■		■				■			■	■
HIC2081	1	■		■	■	■	■	■	■	■						■		■	■	■
HID2061	1		■	■	■	■		■	■		■	■				■		■	■	■
HID2062	2		■	■	■	■		■	■		■	■				■		■	■	■
HID2071	1		■	■	■	■	■			■	■	■				■		■	■	■
HID2072	2		■	■	■	■	■			■	■	■				■		■	■	■
HID2081	1		■	■	■	■	■	■	■	■	■	■				■		■	■	■
HID2082	2		■	■	■	■	■	■	■	■	■	■				■		■	■	■

## Analog output signals

### Current drivers



Model Number	Number of channels	Housing width		Input			Output						Transmission Direction		Functions				Supply		Installation in Zone 2	Installation in Div. 2					
		12.5 mm	18 mm	0(4) mA ... 20 mA	4 mA ... 20 mA	1.5 mA ... 50 mA	0(1) V ... 5 V	4 mA ... 20 mA	0(4) mA ... 20 mA	1.5 mA ... 50 mA	I/P converters	Positioner	Visual alarm	Fire and smoke detectors	To the field	To the field / To the control system	HART communication	Line fault detection	Reverse polarity protection	Fault indication output			For long field lines	24 V DC	Loop powered		
HIC2031	1	■			■										■							■			■	■	■
HIC2031HC	1	■			■										■							■			■	■	■
HID2024	4		■	■		■									■							■			■	■	■
HID2031	1		■		■										■							■			■	■	■
HID2032	2		■		■										■							■			■	■	■
HID2033	1		■		■										■							■			■	■	■
HID2034	2		■		■										■							■			■	■	■
HID2035	1		■		■										■							■			■	■	■
HID2036	2		■		■										■							■			■	■	■
HID2037	1		■		■										■							■			■	■	■
HID2038	2		■		■										■							■			■	■	■
HID2038Y	2		■		■										■							■			■	■	■

# Analog output signals

## Termination boards



Model Number	Number of modules	Construction type		Control side		Field side		Number of channels per module	Number of HART communication channels
		HiD	HiC	screw terminals per module, black	37-pin Sub-D connector	screw terminals per module, blue			
HICTB08-SCT-44C-SC-RA	8		■	4		4		1, 2	2 per module
HICTB16-SCT-44C-SC-RA	16		■	4		4		1, 2	2 per module
HICTB08-SDC-44C-SC-RA	8		■		1	4		1, 2	2 per module
HICTB16-SDC-24C-SC-RA	16		■		1	4		1	1 per module
HICTB16-SDC-44C-SC-RA	16		■		2	4		1, 2	2 per module
HICTB32-SDC-24C-SC-RA	32		■		2	4		1	1 per module
HIDTB16-SCT-44C-SC-RA	16	■		4		4		1, 2	2 per module
HIDTB08-SCT-49C-SC-RA	8	■		4		9		1, 2	2 per module
HIDTB08-SCT-99C-SC-RA	8	■		9		9		1, 2, 4	2 per module
HIDTB08-SDC-44C-SC-RA	8	■			1	4		1, 2	2 per module
HIDTB08-SDC-89C-SC-RA	8	■			2	9		1, 2, 4	4 per module
HIDTB16-SDC-44C-SC-RA	16	■			2	4		1, 2	2 per module
HIDTB08-SCT-44C-SC-RA	8	■		4		4		1, 2	2 per module
HIDTB08-SDC-49C-SC-RA	8	■			1	9		1, 2	2 per module

## Accessories



Model Number	Description
HIALC-HICTB-SET-108	Label carriers for HiC termination boards
HIALC-HIDTB-SET-150	Label carriers for HiD termination boards
HIACA-UNI-FLK34-FLK34-0M5	HART Connection Cable, length: 0.5 m
HIACA-UNI-FLK34-FLK34-2M0	HART Connection Cable, length: 2 m
HIACA-UNI-FLK34-FLK34-3M0	HART Connection Cable, length: 3 m
HIACA-UNI-FLK34-FLK34-6M0	HART Connection Cable, length: 6 m
HIC2000 BLANK	Place holder barrier for HiC modules
HID2000 BLANK	Place holder barrier for HiD modules

# K-System Signal Conditioners

## Digital input signals

### Switch amplifiers



Model Number	Number of channels	Housing width		Input			Output		Functions							Supply			Installation in Zone 2		
		12.5 mm	20 mm	3-wire sensor	Push-pull (4 in 1) output	NAMUR sensor	volt-free contact	Relays	Transistor	Splitter function	Time function	Line fault detection	Reversible mode of operation	Fault indication output	Interval relay	Min./max. control	24 V DC	230 V AC		115 V AC + 230 V AC	SIL 2
KCD2-SOT-1.LB	1	■				■	■		■		■						■			■	
KCD2-SOT-2	2	■				■	■		■		■						■			■	
KCD2-SR-1.LB	1	■				■	■	■		■				■			■			■	
KCD2-SR-2	2	■				■	■	■		■				■			■			■	
KCD2-ST-1.LB	1	■				■	■		■		■		■				■			■	
KCD2-ST-2	2	■				■	■		■		■		■				■			■	
KFD2-SR3-2.2S	2		■			■	■	■		■		■					■			■	■
KFU8-SR-1.3L.V	1		■	■	■			■		■		■						■			■
KFA6-SR-2.3L	2		■	■	■			■										■	■		■

### Frequency converters



Model Number	Number of channels	Housing width		Input			Output		Functions										Supply			Installation in Zone 2	Installation in Div. 2					
		20 mm	40 mm	Frequency	NAMUR sensor	volt-free contact	0(4) mA ... 20 mA	Relay and Transistor	Relays	Start-up override	Rotation direction monitoring	Rotation speed monitoring	Fault indication output	Frequency conversion	Synchronization monitoring	Trip relay	Line fault detection	Slip monitoring	Pulse divider	20 V ... 90 V DC / 48 V ... 253 V AC	24 V DC			SIL 2				
KFD2-SR2-2.W.SM	2	■		■	■	■		■	■	■	■					■	■			■		■						
KFD2-DWB-1.D	1		■	■	■	■			■		■					■	■			■		■						
KFU8-DWB-1.D	1		■	■	■	■			■		■					■	■			■		■						
KFD2-UFC-1.D	1		■	■	■	■			■		■					■	■			■		■						
KFU8-UFC-1.D	1		■	■	■	■			■		■					■	■			■		■						
KFD2-UFT-2.D	2		■	■	■	■			■		■					■	■			■		■						
KFU8-UFT-2.D	2		■	■	■	■			■		■					■	■			■		■						

## Digital input/output signals

### Conductive switch amplifiers



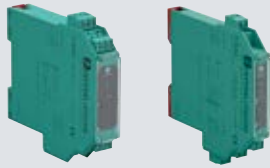
Model Number	Number of channels	Housing width 20 mm	Input Resistance	Output Relays	Functions					Supply	
					Fault indication output	Conductivity measurement	Line fault detection	Min./max. control	Time delay	230 V AC	24 V DC
KFD2-ER-1.5	1	■	■	■	■						■
KFD2-ER-1.6	1	■	■	■		■					■
KFA6-ER-1.5	1	■	■	■		■				■	
KFA6-ER-1.6	1	■	■	■		■				■	
KFD2-ER-1.W.LB	1	■	■	■	■	■	■	■	■		■
KFD2-ER-2.W.LB	2	■	■	■	■	■	■	■	■		■
KFA6-ER-1.W.LB	1	■	■	■	■	■	■	■	■	■	
KFA6-ER-2.W.LB	2	■	■	■	■	■	■	■	■	■	

### Solenoid drivers



Model Number	Number of channels	Housing width 20 mm	Input Logic input	Output			Output Current 600 mA	Functions Line fault detection	Supply 24 V DC	SIL 2
				Valve	Audible alarm	Visual alarm				
KFD2-SL-4	4	■	■	■	■	■	■	■	■	

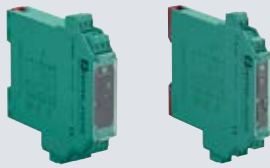
## Relay modules



Model Number	Number of channels	Housing width		Input			Output		Functions				Supply				
		12.5 mm	20 mm	Logic input	Field device supply	Test input	Relays	DTS function	Test pulse immunity	ETS function	DPS function	Loop powered	SIL 3	Installation in Zone 2	Installation in Div. 2		
KFD0-RSH-1.4S.PS2	1		■	■	■	■	■	■	■		■	■	■	■	■	■	
KFD0-RSH-1.1D.F1	1		■	■	■	■	■	■	■	■	■		■	■	■	■	■
KFD0-RSH-1.1E.1	1		■	■	■	■	■	■		■	■		■	■	■	■	■
KCD0-RSH-1.1D.1	1	■		■	■	■	■	■	■		■		■	■	■	■	■
KCD0-RSH-1.1E.1	1	■		■	■	■	■	■		■	■		■	■	■	■	■
KFD0-RSH-1	1		■	■	■		■	■					■	■	■	■	■
KFD0-RO-2	2		■	■			■	■					■	■			

## Analog input signals

### Transmitter power supplies



Model Number	Number of channels	Housing width		Input				Output			Functions			Supply				
		12.5 mm	20 mm	2-wire-transmitters	3-wire-transmitters	Current source	0(4) mA ... 20 mA	4 mA ... 20 mA	0(2) V ... 10 V	0(4) mA ... 20 mA	0(2) V ... 10 V	0(1) V ... 5 V	HART communication	Test sockets	Splitter function	24 V DC	SIL 2	SIL 3
KCD2-STC-1	1	■		■		■		■				■			■		■	
KCD2-STC-1.20	1	■		■		■	■				■	■		■	■	■	■	
KFD2-STC4-1	1		■	■	■	■	■					■	■	■	■	■	■	
KFD2-STC4-1-3	1		■	■	■	■	■					■	■	■	■	■	■	
KFD2-STV4-1-1	1		■	■	■	■	■				■	■	■	■	■	■	■	
KFD2-CR4-1	1		■	■	■	■	■					■		■	■	■	■	
KFD2-STC4-1.20	1		■	■	■	■	■					■	■	■	■	■	■	■
KFD2-STC4-1.20-3	1		■	■	■	■	■					■	■	■	■	■	■	■
KFD2-CR4-1.20	1		■	■	■	■	■					■		■	■	■	■	■
KFU8-VCR-1	1		■	■	■	■	■	■	■	■					■	■	■	■
KFD2-STC4-2	2		■	■	■	■	■					■	■	■	■	■	■	■
KFD2-STC5-1	1		■	■	■	■	■					■	■	■	■	■	■	■
KFD2-STC5-1.20	1		■	■	■	■	■					■	■	■	■	■	■	■
KFD2-STC5-2	2		■	■	■	■	■					■	■	■	■	■	■	■
KFD2-CR4-2	2		■	■	■	■	■					■	■	■	■	■	■	■
KFD2-STC4-2-3	2		■	■	■	■	■					■	■	■	■	■	■	■

## Transmitter power supplies with trip values



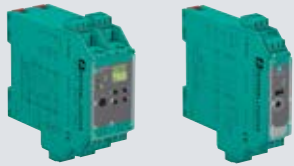
Model Number	Number of channels	Housing width	Input				Output		Relays	Trip relay	Functions	Supply	SIL 2
			2-wire-transmitters	3-wire-transmitters	Current source	0(4) mA ... 20 mA	0(4) mA ... 20 mA						
KFD2-CRG2-1.D	1	40 mm	■	■	■	■	■	■	■	■	20 V ... 90 V DC / 48 V ... 253 V AC	24 V DC	■
KFU8-CRG2-1.D	1	40 mm	■	■	■	■	■	■	■	■	■		■

## Current repeaters



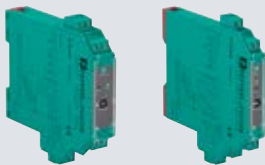
Model Number	Number of channels	Housing width	Field Side		Control Side		HART	Functions			Loop powered	SIL 2
			4 mA ... 20 mA	0 mA ... 40 mA	4 mA ... 20 mA	0 mA ... 40 mA		HART communication	Line fault detection			
KFD0-SCS-1.55	1	20 mm	■	■	■	■	■	■	■	■	■	■
KFD0-CS-1.50	1	20 mm	■	■	■	■					■	■
KFD0-CS-2.50	2	20 mm	■	■	■	■					■	■
KFD0-CS-2.51P	2	20 mm	■	■	■	■					■	■

## Signal converters for current and voltage



Model Number	Number of channels	Housing width		Input				Output				Functions				Supply								
		20 mm	40 mm	Voltage	Strain gauge bridge	Current / voltage	-20 mA ... +20 mA	0 mA ... 20 mA	0(4) mA ... 20 mA	4 mA ... 20 mA	-10 V ... +10 V	0 V ... 10 V	0(1) V ... 5 V	0(2) V ... 10 V	Relays	Trip relay	Line fault detection	Programmable high/low alarm	Test sockets	20 V ... 90 V DC / 48 V ... 253 V AC	24 V DC	Loop powered		
KFD0-CC-1	1	■				■																■	■	
KFD2-USC-1.D	1	■				■		■				■	■	■		■							■	
KFU8-USC-1.D	1	■				■		■				■	■	■		■						■	■	
KFD2-GS-1.2W	1	■				■								■			■	■					■	
KFD2-WAC2-1.D	1		■	■	■		■	■		■	■			■	■	■							■	
KFU8-VCR-1	1	■			■																		■	

## Temperature converters and repeaters



Model Number	Number of channels	Housing width		Input			Output			Functions			Supply				
		12.5 mm	20 mm	Thermocouple	Potentiometer	Voltage	Resistance thermometer	0(4) mA ... 20 mA	4 mA ... 20 mA	0(1) V ... 5 V	Internal cold junction compensation	Line fault detection	Splitter function	24 V DC	Loop powered	SIL 2	
KCD2-UT2-1	1	■		■	■	■	■	■				■			■		
KFD2-UT2-1-1	1		■	■	■	■	■			■		■			■		■
KFD2-UT2-1	1		■	■	■	■	■	■				■			■		■
KFD2-UT2-2	2		■	■	■	■	■	■				■	■		■		■
KFD2-UT2-2-1	2		■	■	■	■	■			■		■	■		■		■
KFD0-TR-1	1		■				■		■						■		■
KFD0-TT-1	1		■	■					■		■	■			■		■



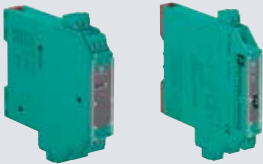
## Temperature converters with trip values



Model Number	Number of channels	Housing width		Input			Output			Functions			Supply		SIL 2
		20 mm	40 mm	Potentiometer	Voltage	Thermocouple	Resistance thermometer	0(4) mA ... 20 mA	Output Relays	Trip relay	Line fault detection	Programmable high/low alarm	20 V ... 90 V DC / 48 V ... 253 V AC	24 V DC	
KFD2-GU-1	1	■				■	■		■	■		■		■	
KFD2-GUT-1.D	1		■	■	■	■	■	■	■	■	■	■		■	■
KFU8-GUT-1.D	1		■	■	■	■	■	■	■	■	■			■	■

## Analog output signals

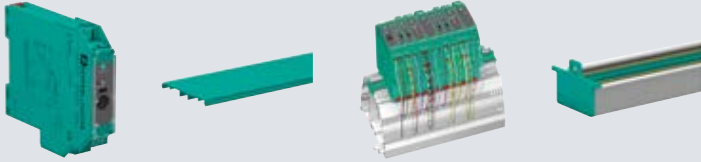
### Current drivers



Model Number	Number of channels	Housing width		Input			Output					Transmission Direction		Functions			Supply		SIL 2		
		12.5 mm	20 mm	0 mA ... 20 mA	4 mA ... 20 mA	0 mA ... 40 mA	0 mA ... 40 mA	4 mA ... 20 mA	I/P converters	Positioner	Valve	Fire alarm	To the field	To the field / To the control system	Reverse polarity protection	HART communication	Line fault detection	Test sockets		24 V DC	Loop powered
KCD2-SCD-1	1	■			■			■	■	■		■			■				■		■
KFD2-SCD2-1.LK	1		■		■				■	■		■						■			■
KFD2-SCD2-2.LK	2		■		■				■	■		■						■			■
KFD0-SCS-1.55	1		■		■			■						■						■	■
KFD0-CS-2.51P	2		■			■	■							■						■	■
KFD2-CD-1.32	1		■	■					■	■		■								■	■

## Accessories

### Supply and assembly



Model Number	Description
<b>KFA6-STR-1.24.500</b>	Power supply, 24 V, 500 mA
<b>KFA6-STR-1.24.4</b>	Power supply, 24 V, 4 A
<b>KFD2-EB2</b>	Power Feed Module
<b>KFD2-EB2.R4A.B</b>	Power feed module, redundant supply
<b>UPR-03-M</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 1.6 m
<b>UPR-03-S</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 0.8 m
<b>UPR-05-S</b>	Universal Power Rail with end caps and cover, 5 conductors, length: 0.8 m
<b>UPR-E</b>	End cap for universal power rail UPR-**-*
<b>UPR-I</b>	Insulation spacer for universal power rail UPR-**-*
<b>UPR-COVER</b>	Cover for 35 mm DIN mounting rail
<b>UPR-INS-03</b>	Insert for 35 mm DIN mounting rail
<b>UPR-MR</b>	35 mm DIN mounting rail, length: 2 m (packaging unit: 2 pieces)
<b>K-DUCT-GY-UPR-03</b>	Profile rail with UPR-03-* insert, 3 conductors, wiring comb field side gray
<b>K-DUCT-GY-UPR-05</b>	Profile rail with UPR-05-* insert, 5 conductors, wiring comb field side gray
<b>K-MS</b>	Mounting Socket

### Commissioning



Model Number	Description
<b>K-ADP-USB</b>	Adapter with USB Interface

## Terminal blocks



Model Number	Type		Accessories		Number of pins	Test sockets	External cold junction compensation	Color			Packing unit	Structure
	Spring terminal	Screw terminal	for KF modules	for KC modules				red	green	black		
K-CJC-BK		■	■		3		■			■	1 item(s)	one-rowed
KC-ST-5GN		■		■	2				■		5 item(s)	one-rowed
KF-ST-5GN		■	■		3				■		5 item(s)	one-rowed
KC-STP-5GN		■		■	2	■			■		5 item(s)	one-rowed
KF-STP-5GN		■	■		3	■			■		5 item(s)	one-rowed
KC-CTT-5GN	■			■	2	■			■		5 item(s)	one-rowed
KF-CTT-5GN	■		■		3	■			■		5 item(s)	one-rowed
KF-CP			■	■					■		120 item(s) (20 x 6 items)	

## Additional accessories



Model Number	Description
K-500R0%1	Measuring resistor
KFD0-LGH-GN	Place holder barrier for KF modules, intrinsically safe
KFD0-LGH-Y34868	Place holder barrier for KF modules, non-intrinsically safe, DC version, negative polarity
KF-SEAL	Adhesive sticker

# SC-System Signal Conditioners

## Digital input signals

Switch amplifiers														
Model Number	Number of channels	Housing width	Digital input								Output	Supply	Functions	
			2-wire DC sensor	AC/DC voltage source	NAMUR sensor	NPN sensor	PNP sensor	S0 sensor	SN sensor	volt-free contact				
S1SD-1DI-1R	1	6.2 mm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Rotation speed monitors																	
Model Number	Number of channels	Housing width	Digital input								Output	Supply	Functions				
			2-wire DC sensor	AC/DC voltage source	NAMUR sensor	NPN sensor	PNP sensor	S0 sensor	SN sensor	volt-free contact			Relays	24 V DC	Start-up override	Restart inhibit	Time function
S1SD-1FI-1R	1	6.2 mm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## Analog input signals

Transmitter power supplies														
Model Number	Number of channels	Housing width	Analog input			Output			Supply	Functions				
			2-wire-transmitters	3-wire-transmitters	0(4) mA ... 20 mA	0(4) mA ... 20 mA	0(2) V ... 10 V	Splitter function		HART communication	Installation in Zone 2	Installation in Div. 2		
S1SD-1AI-1U	1	6.2 mm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
S1SD-1AI-1C.H	1	6.2 mm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
S1SD-1AI-2C	1	6.2 mm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



## Temperature converters



Model Number	Number of channels	Housing width 6.2 mm	Analog input				Output			Supply 24 V DC	Functions Line fault detection	Installation in Zone 2	Installation in Div. 2
			± mV	2-wire connection	3-wire connection	4-wire connection	0(1) V ... 5 V	0(2) V ... 10 V	0(4) mA ... 20 mA				
S1SD-1TI-1U	1	■	■	■	■	■	■	■	■	■	■	■	

## Accessories

### General



Model Number	Description
POWERBUS-SETL5.250	Power bus for 35 mm DIN mounting rail, height: 7.5 mm, length: 250 mm
POWERBUS-SETH5.250	Power bus for 35 mm DIN mounting rail, height: 15 mm, length: 250 mm
POWERBUS-SETL5.500	Power bus for 35 mm DIN mounting rail, height: 7.5 mm, length: 500 mm
POWERBUS-SETH5.500	Power bus for 35 mm DIN mounting rail, height: 15 mm, length: 500 mm
POWERBUS-COV.250	Cover for 35 mm DIN mounting rail, length: 250 mm
POWERBUS-CAP	End Cap for Power Bus
S1SD-2PF	Power feed module with screw terminals
S-ADP-USB	Adapter with USB Interface

# Z-System Zener Barriers


## DC versions

### Positive polarity



Model Number	Number of channels	Supply loop	Measurement loop	Series resistance	Fuse rating	Asymmetrical version	High power version	Increased nominal resistance	Current limit	Internal measuring resistor	Replaceable back-up fuse	Diode return
Z040	2	5 V	3 V at 10 $\mu$ A (1 V at 1 $\mu$ A)	50 $\Omega$	100 mA							
Z041	2	7.5 V	7 V at 10 $\mu$ A (6 V at 1 $\mu$ A)	2030.5 $\Omega$	80 mA							
Z042	2	5 V	3 V at 10 $\mu$ A (1 V at 1 $\mu$ A)	209.5 $\Omega$	100 mA							
Z 705	1	4.3 V	0.9 V at 1 $\mu$ A	18.18 $\Omega$	250 mA							
Z 710	1	8.5 V	6.5 V at 10 $\mu$ A	56 $\Omega$	100 mA							
Z 713	1	14.1 V	13.7 V at 10 $\mu$ A	29 $\Omega$	160 mA							
Z 715	1	13.3 V	13 V at 10 $\mu$ A	107 $\Omega$	100 mA							
Z 715.1K	1	13.3 V	13 V at 10 $\mu$ A	1025 $\Omega$	100 mA			■				
Z 715.F	1	13.3 V	13 V at 10 $\mu$ A	121 $\Omega$	63 mA						■	
Z 722	1	19.5 V	19 V at 10 $\mu$ A	166 $\Omega$	50 mA							
Z 728	1	26.9 V	26.5 V at 10 $\mu$ A	327 $\Omega$	50 mA							
Z 728.CL	1	26.9 V	26.5 V at 10 $\mu$ A	342 $\Omega$ +2 V	50 mA				■			
Z 728.F	1	26.9 V	26.5 V at 10 $\mu$ A	341 $\Omega$	50 mA						■	
Z 728.H	1	26.9 V	26.5 V at 10 $\mu$ A	250 $\Omega$	80 mA		■					
Z 728.H.F	1	26.9 V	26.5 V at 10 $\mu$ A	273 $\Omega$	50 mA		■				■	
Z 755	2	4.4 V	0.9 V at 1 $\mu$ A	18.18 $\Omega$	250 mA							
Z 757	2	6.4 V	6 V at 10 $\mu$ A	15.5 $\Omega$	200 mA							
Z 764	2	10.4 V	10 V at 10 $\mu$ A	1033 $\Omega$	50 mA							
Z 765	2	13.3 V	13 V at 10 $\mu$ A	107 $\Omega$	100 mA							
Z 765.F	2	13.3 V	13 V at 10 $\mu$ A	121 $\Omega$	63 mA						■	
Z 772	2	19.6 V	19 V at 10 $\mu$ A	166 $\Omega$	50 mA							
Z 778	2	27 V	26.5 V at 10 $\mu$ A	646 $\Omega$	50 mA							
Z 779	2	27 V	26.5 V at 10 $\mu$ A	327 $\Omega$	50 mA							
Z 779.F	2	27 V	26.5 V at 10 $\mu$ A	341 $\Omega$	50 mA						■	
Z 779.H	2	27 V	26.5 V at 10 $\mu$ A	250 $\Omega$	80 mA		■					
Z 779.H.F	2	27 V	26.5 V at 10 $\mu$ A	273 $\Omega$	50 mA		■				■	
Z 786	2	27 V	26.5 V at 10 $\mu$ A	36 $\Omega$ + 0.9 V	50 mA							■
Z 787	2	27 V	26.5 V at 10 $\mu$ A	327 $\Omega$	50 mA							■
Z 787.F	2	27 V	26.5 V at 10 $\mu$ A	341 $\Omega$	50 mA						■	■
Z 787.H	2	27 V	26.5 V at 10 $\mu$ A	250 $\Omega$	80 mA		■					■
Z 787.H.F	2	27 V	26.5 V at 10 $\mu$ A	273 $\Omega$	50 mA		■				■	■
Z 788	2	27 V / 8.6 V	26.5 V at 10 $\mu$ A / 6.5 V at 10 $\mu$ A	327 $\Omega$ / 64 $\Omega$	50 mA	■						
Z 788.H	2	27 V / 8.6 V	26.5 V at 10 $\mu$ A / 6.5 V at 10 $\mu$ A	250 $\Omega$ / 64 $\Omega$	80 mA	■	■					
Z 788.R	2	27 V / 8.6 V	26.5 V at 10 $\mu$ A / 6.5 V at 10 $\mu$ A	327 $\Omega$ / 64 $\Omega$	50 mA	■				■		
Z 789	2	27 V	26.5 V at 10 $\mu$ A	640 $\Omega$	50 mA							■
Z 796	2	24.6 V / 19 V	24 V at 10 $\mu$ A / 18 V at 10 $\mu$ A	340 $\Omega$ / 437 $\Omega$	50 mA	■						

## DC versions

Negative polarity										
										
Model Number	Number of channels	Supply loop	Measurement loop	Series resistance	Fuse rating	High power version	Asymmetrical version	Current limit	Replaceable back-up fuse	Diode return
Z 810	1	8.6 V	6.5 V at 10 $\mu$ A	56 $\Omega$	100 mA					
Z 810.CL	1	8.6 V	6.5 V at 10 $\mu$ A	56 $\Omega$	100 mA			■		
Z 813	1	14.2 V	13.7 V at 10 $\mu$ A	29 $\Omega$	160 mA					
Z 822	1	19.6 V	19 V at 10 $\mu$ A	166 $\Omega$	50 mA					
Z 828	1	27 V	26.5 V at 10 $\mu$ A	327 $\Omega$	50 mA					
Z 828.H	1	27 V	26.5 V at 10 $\mu$ A	250 $\Omega$	80 mA	■				
Z 828.H.F	1	27 V	26.5 V at 10 $\mu$ A	273 $\Omega$	50 mA	■			■	
Z 857	2	6.4 V	6 V at 10 $\mu$ A	15.5 $\Omega$	200 mA					
Z 864	2	10.4 V	10 V at 10 $\mu$ A	1033 $\Omega$	50 mA					
Z 865	2	13.3 V	13 V at 10 $\mu$ A	107 $\Omega$	100 mA					
Z 865.F	2	13.3 V	13 V at 10 $\mu$ A	121 $\Omega$	63 mA				■	
Z 879.F	2	27 V	26.5 V at 10 $\mu$ A	341 $\Omega$	50 mA				■	
Z 872	2	19.6 V	19 V at 10 $\mu$ A	166 $\Omega$	50 mA					
Z 878	2	27 V	26.5 V at 10 $\mu$ A	646 $\Omega$	50 mA					
Z 879.H.F	2	27 V	26.5 V at 10 $\mu$ A	273 $\Omega$	50 mA	■			■	
Z 886	2	27 V	26.5 V at 10 $\mu$ A	36 $\Omega$ + 0.9 V	50 mA					■
Z 887	2	27 V	26.5 V at 10 $\mu$ A	327 $\Omega$	50 mA					■
Z 887.F	2	27 V	26.5 V at 10 $\mu$ A	341 $\Omega$	50 mA				■	■
Z 887.H.F	2	27 V	26.5 V at 10 $\mu$ A	273 $\Omega$	50 mA	■			■	■
Z 888	2	27 V / 8.6 V	26.5 V at 10 $\mu$ A / 6.5 V at 10 $\mu$ A	327 $\Omega$ / 64 $\Omega$	50 mA		■			
Z 888.H	2	27 V / 8.6 V	26.5 V at 10 $\mu$ A / 6.5 V at 10 $\mu$ A	250 $\Omega$ / 64 $\Omega$	80 mA	■	■			
Z 896	2	24.6 V / 19 V	24 V at 10 $\mu$ A / 18 V at 10 $\mu$ A	340 $\Omega$ / 437 $\Omega$	50 mA		■			



# AC versions

## AC versions



Model Number	Number of channels	Supply loop	Measurement loop	Series resistance	Fuse rating	High power version	Increased nominal resistance	Replaceable back-up fuse	Diode return
Z 905	1	4.3 V	0.9 V at 1 $\mu$ A	18.18 $\Omega$	250 mA				
Z 910	1	8.8 V	6.5 V at 10 $\mu$ A	56 $\Omega$	100 mA				
Z 915	1	13.6 V	13 V at 10 $\mu$ A	107 $\Omega$	100 mA				
Z 915.1K	1	13.6 V	13 V at 10 $\mu$ A	1025 $\Omega$	100 mA		■		
Z 928	1	26.3 V	26 V at 10 $\mu$ A	327 $\Omega$	50 mA				
Z 954	3	3.7 V	0.6 V at 1 $\mu$ A	27.27 $\Omega$	50 mA				
Z 955	2	4.3 V	0.9 V at 1 $\mu$ A	18.18 $\Omega$	250 mA				
Z 960	2	8.8 V	6.5 V at 10 $\mu$ A	64 $\Omega$	50 mA				
Z 960.F	2	8.8 V	6.5 V at 10 $\mu$ A	79 $\Omega$	50 mA			■	
Z 961	2	7.7 V	6.5 V at 10 $\mu$ A	106 $\Omega$	100 mA			■	
Z 961.F	2	7.7 V	6.5 V at 10 $\mu$ A	115 $\Omega$	100 mA			■	
Z 961.H	2	7.7 V	6.5 V at 10 $\mu$ A	380 $\Omega$	50 mA	■			
Z 964	2	11.1 V	10 V at 10 $\mu$ A	1033 $\Omega$	50 mA				
Z 965	2	13.6 V	13 V at 10 $\mu$ A	115 $\Omega$	50 mA				
Z 966	2	11.1 V	10 V at 10 $\mu$ A	166 $\Omega$	50 mA				
Z 966.F	2	11.1 V	10 V at 10 $\mu$ A	169 $\Omega$	63 mA			■	
Z 966.H	2	11.1 V	10 V at 10 $\mu$ A	82 $\Omega$	100 mA	■			
Z 967	2	15.6 V	15 V at 10 $\mu$ A	136 $\Omega$	50 mA				■
Z 972	2	19.6 V	19 V at 10 $\mu$ A	327 $\Omega$	50 mA				■
Z 978	2	26.3 V	26 V at 10 $\mu$ A	646 $\Omega$	50 mA				■

## Accessories



Model Number	Description
USLKG5	Terminal Block
ZH-Z.NLS-CU 3/10	Grounding Rail
Z 799	Place Holder Zener Barrier
ZH-ES/LB	Insertion Strip
ZH-Z.AB/NS	Mounting Block
ZH-Z.AB/SS	Mounting Block
ZH-Z.AK16	Connection Terminal
ZH-Z.AR.125	Spacing Roller
ZH-Z.BT	Label Carrier
ZH-Z.ES	Single Socket
ZH-Z.LL	Ground Rail Feed

# Surge Protection Barriers

## K-LB

### Modules for measuring signals for DIN rail mounting



Model Number	Number of protected signal lines	Maximum continuous operating voltage	Topology grounded	Topology non-grounded
K-LB-1.30	2	30 V DC		■
K-LB-2.30	4	30 V DC		■
K-LB-1.6	2	6 V DC		■
K-LB-2.6	4	6 V DC		■
K-LB-1.30G	2	30 V DC	■	
K-LB-2.30G	4	30 V DC	■	
K-LB-1.6G	2	6 V DC	■	
K-LB-2.6G	4	6 V DC	■	

## P-LB

### K-System plug-in modules



Model Number	Number of protected signal lines	Rated voltage	Connection
P-LB-1.A.13	2	max. 30 V	terminals 1, 3
P-LB-2.A.1346	4	max. 30 V	terminals 1, 3; 4, 6
P-LB-1.B.12	2	max. 30 V	terminals 1, 2
P-LB-2.B.1245	4	max. 30 V	terminals 1, 2; 4, 5
P-LB-1.C.123	3	max. 30 V	terminals 1, 2, 3
P-LB-2.D.123456	6	max. 30 V	terminals 1, 2, 3; 4, 5, 6
P-LB-1.E.23	2	max. 30 V	terminals 2, 3
P-LB-2.C.2356	4	max. 30 V	Terminals 2, 3; 5, 6
P-LB-1.D.1234	4	max. 30 V	terminals 1, 2, 3, 4
P-LB-1.F.1236	4	max. 30 V	terminals 1, 2, 3, 6

## F\*-LB

### Screw Modules for Field Devices



Model Number	Number of protected signal lines	Supply	Mounting NPT1/2 thread	Mounting PG13.5 thread	Mounting M20 x 1.5 thread
FS-LB-I	1	48 V			■
FP-LB-I	1	48 V		■	
FN-LB-I	1	48 V	■		

## M-LB-1/2/3/4

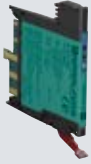
### Surge protection for supply lines



Model Number	Number of protected supply lines	Nominal voltage	Network configuration	Fault indication output	status display
M-LB-1.150.D	1	120 V AC		■	■
M-LB-1.275.D	1	230 V AC		■	■
M-LB-2.150TN.D	2	120 V AC	TN	■	■
M-LB-2.275TN.D	2	230 V AC	TN	■	■
M-LB-2.275TT.D	2	230 V AC	TT	■	■
M-LB-3.150TNC.D	3	120 V AC / 240 V AC	TN-C	■	■
M-LB-3.275TNC.D	3	230 V AC / 400 V AC	TN-C	■	■
M-LB-4.150TNS.D	4	120 V AC / 240 V AC	TN-S	■	■
M-LB-4.275TNS.D	4	230 V AC / 400 V AC	TN-S	■	■
M-LB-4.275TT.D	4	230 V AC / 400 V AC	TT	■	■
M-LB-2.30.T3.D	2	24 V AC		■	■
M-LB-2.150.T3.D	2	120 V AC		■	■

# M-LB-5000

## Surge protection for signal lines



Model Number	Number of protected signal lines	Nominal voltage	Nominal discharge current (8/20 $\mu$ s)	Total discharge current (8/20 $\mu$ s)	Topology grounded	Topology non-grounded	Display elements	SIL 3
M-LB-5111	1	1 V DC	5 kA per line (10x)	10 kA (1x)		■		■
M-LB-5112	2	1 V DC	5 kA per line (10x)	20 kA (1x)		■		■
M-LB-5113	1	1 V DC	5 kA per line (10x)	10 kA (1x)	■			■
M-LB-5114	2	1 V DC	5 kA per line (10x)	20 kA (1x)	■			■
M-LB-5141	1	24 V DC	5 kA per line (10x)	10 kA (1x)		■		■
M-LB-5142	2	24 V DC	5 kA per line (10x)	20 kA (1x)		■		■
M-LB-5143	1	24 V DC	5 kA per line (10x)	10 kA (1x)	■			■
M-LB-5144	2	24 V DC	5 kA per line (10x)	20 kA (1x)	■			■
M-LB-5211	1	1 V DC	5 kA per line (10x)	10 kA (1x)		■	■	■
M-LB-5212	2	1 V DC	5 kA per line (10x)	20 kA (1x)		■	■	■
M-LB-5213	1	1 V DC	5 kA per line (10x)	10 kA (1x)	■		■	■
M-LB-5214	2	1 V DC	5 kA per line (10x)	20 kA (1x)	■		■	■
M-LB-5241	1	24 V DC	5 kA per line (10x)	10 kA (1x)		■	■	■
M-LB-5242	2	24 V DC	5 kA per line (10x)	20 kA (1x)		■	■	■
M-LB-5243	1	24 V DC	5 kA per line (10x)	10 kA (1x)	■		■	■
M-LB-5244	2	24 V DC	5 kA per line (10x)	20 kA (1x)	■		■	■
M-LB-EX-5111	1	1 V DC	5 kA per line (10x)	10 kA (1x)		■		■
M-LB-EX-5112	2	1 V DC	5 kA per line (10x)	20 kA (1x)		■		■
M-LB-EX-5113	1	1 V DC	5 kA per line (10x)	10 kA (1x)	■			■
M-LB-EX-5114	2	1 V DC	5 kA per line (10x)	20 kA (1x)	■			■
M-LB-EX-5141	1	24 V DC	5 kA per line (10x)	10 kA (1x)		■		■
M-LB-EX-5142	2	24 V DC	5 kA per line (10x)	20 kA (1x)		■		■
M-LB-EX-5143	1	24 V DC	5 kA per line (10x)	10 kA (1x)	■			■
M-LB-EX-5144	2	24 V DC	5 kA per line (10x)	20 kA (1x)	■			■
M-LB-EX-5211	1	1 V DC	5 kA per line (10x)	10 kA (1x)		■	■	■
M-LB-EX-5212	2	1 V DC	5 kA per line (10x)	20 kA (1x)		■	■	■
M-LB-EX-5213	1	1 V DC	5 kA per line (10x)	10 kA (1x)	■		■	■
M-LB-EX-5214	2	1 V DC	5 kA per line (10x)	20 kA (1x)	■		■	■
M-LB-EX-5241	1	24 V DC	5 kA per line (10x)	10 kA (1x)		■	■	■
M-LB-EX-5242	2	24 V DC	5 kA per line (10x)	20 kA (1x)		■	■	■
M-LB-EX-5243	1	24 V DC	5 kA per line (10x)	10 kA (1x)	■		■	■
M-LB-EX-5244	2	24 V DC	5 kA per line (10x)	20 kA (1x)	■		■	■

## Accessories

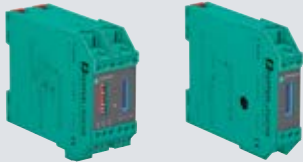


Model Number	Description
M-LB-5000	Base module for non-intrinsically safe protection modules or function modules
M-LB-5000.SP	Base module for non-intrinsically safe protection modules or function modules, with spring terminals
M-LB-EX-5000	Base module for intrinsically safe protection modules
M-LB-EX-5000.SP	Base module for intrinsically safe protection modules, with spring terminals
M-LB-5900	Place holder module for non-intrinsically safe protection modules or function modules
M-LB-EX-5900	Place holder module for intrinsically safe protection modules
M-LB-5300	Power Feed Module
M-LB-5400	Fault Status Module
M-LB-5500	Maintenance Status Module
M-UPR-03-S	Universal Power Rail, 3 conductors, length: 0.8 m
M-UPR-I	Insulation Spacer for Universal Power Rail

# HART Interface Solutions

## K-System HIS

### HART multiplexers



Model Number	Description	Number of channels	Housing width		Function		SIL 3	Installation in Zone 2
			20 mm	40 mm	Slave	Master		
KFD2-HMM-16	HART Multiplexer Master	16		■		■	■	■
KFD0-HMS-16	HART Multiplexer Slave	16	■		■		■	■

### Termination boards



Model Number	Description
FI-PFH-NS0137-R	HART termination board for K-System HART Multiplexer

## HART loop converters



Model Number	Number of channels	Housing width 40 mm	Input				Output		Functions			Supply		
			3-wire-transmitters	HART	Transmitter supply	active sources	4 mA ... 20 mA	Relays	Trip relay	HART communication	Splitter function	24 V DC	Installation in Zone 2	Installation in Div. 2
KFD2-HLC-EX1.D	1	■	■	■	■	■	■		■	■	■	■	■	■
KFD2-HLC-EX1.D.2W	1	■	■	■	■	■	■	■	■	■	■	■	■	■
KFD2-HLC-EX1.D.4S	1	■	■	■	■	■	■	■	■	■	■	■	■	■

## Accessories



Model Number	Description
K-22μ	HART Filter
K-HM14	HART connection cable for master – slave connection
K-HM26	HART connection cable for master/slave – termination board connection

# H-System HIS

## HART multiplexers



Model Number	Number of channels	Housing width	Supply	SIL 3	Installation in Zone 2	Installation in Div. 2
HIDMUX2700	32	18 mm	24 V DC	■	■	■

## Termination boards



Model Number	Number of channels	Splitting	Type/number 2 x RS-485	Supply	Redundancy available
HIATB01-HART-2X16	32-channel	2 x 16	■	24 V DC	■
HIATB01-HART-4X8	32-channel	4 x 8	■	24 V DC	■
HIATB01-HART-4X8-Y1	32-channel	4 x 8	■	24 V DC	■
HISHPSM/32/MM-01	32-channel	1 x 32	■	24 V DC	■

## Accessories



Model Number	Description
HIACA-UNI-FLK34-FLK34-0M5	HART Connection Cable, length: 0.5 m
HIACA-UNI-FLK34-FLK34-1M0	HART Connection Cable, length: 1 m
HIACA-UNI-FLK34-FLK34-2M0	HART Connection Cable, length: 2 m
HIACA-UNI-FLK34-FLK34-3M0	HART Connection Cable, length: 3 m
HIACA-UNI-FLK34-FLK34-6M0	HART Connection Cable, length: 6 m

# Wireless HART Interface Solutions

## Viator modems



Model Number	Description
HM-MT-BT-Ex-010041	Interface for wireless communication between PC host and HART field devices
HM-MT-BT-GP-010040	Interface for wireless communication between PC host and HART field devices
HM-MT-RS232-01001	Interface for communication with HART field devices
HM-MT-USB-010031	Interface for commissioning, calibrating, and acquiring data from HART field devices
HM-MT-USB-PWRX-010031P	Interface for commissioning, calibrating, and acquiring data from HART field devices

## Adapters



Model Number	Input	HART communication	internal antenna	external antenna	IECEx approval	ATEX marking
WHA-BLT-F9D0-N-A0-GP-1	4 ... 20 mA	8 devices	■			
WHA-BLT-F9D0-N-A0-Z0-Ex1	4 ... 20 mA	8 devices	■		■	■
WHA-BLT-F9D0-N-A0-Z1-1	4 ... 20 mA	8 devices	■		■	■
WHA-ADP2-F8B2-0-A0-Z1-Ex1	4 ... 20 mA	4 devices		■	■	■
WHA-ADP2-F8B2-0-P0-GP-1	4 ... 20 mA	4 devices		■		
WHA-ADP2-F8B2-0-P0-Z1-Ex1	4 ... 20 mA	4 devices		■	■	■

## Gateways



Model Number	Description	Protocols			Installation in Zone 2	Installation in Div. 2
		HART	MODBUS	Ethernet/IP		
WHA-GW-F2D2-0-AS-Z2-ETH	MODBUS WirelessHART Gateway	■	■		■	■
WHA-GW-F2D2-0-AS-Z2-ETH.EIP	Ethernet/IP WirelessHART Gateway	■		■	■	■





# Remote I/O Systems: The Link Between Conventional Field Technology and Bus Technology

Modular remote I/O systems from Pepperl+Fuchs transfer process data from explosion-hazardous and non-explosion-hazardous areas by connecting digital or analog sensors and actuators to the control system via a bus interface. This reduces costs by allowing plants to be modernized or expanded without replacing existing field-level technology.



### Typical Industries

Remote I/O systems are the ideal solution for applications in explosion-hazardous areas or harsh industrial environments. The technology is used in the oil and gas industry (both onshore and offshore), in the pharmaceutical and chemical sector, in the wastewater sector, and in the food and beverage industry.

### The FB System

The FB remote I/O system is certified for use in Zone 1. The modular system allows modules with Ex-i (intrinsic safety) field circuits and Ex-e (Increased safety) field terminals to be combined directly next to one another. An innovative plug-in design saves space and reduces costs. The FB system can be installed in a nonmetallic or stainless steel enclosure.

### The LB System

The LB remote I/O system is certified for use in Class I, Div. 2/ Zone 2 and non-explosion-hazardous areas. The modular system allows different circuits to be operated directly next to one another. Signals can be transferred to the process control system via the Ex-i field circuits in a non-explosion-hazardous area. The LB remote I/O system is mounted on a backplane.

#### Product Selection Terms

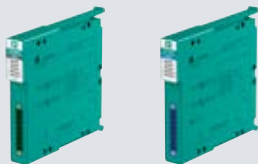
You are looking for	Pepperl+Fuchs term
Current Driver	Analog Output Signals
Output Isolator Transformer	Analog Output Signals
Input Isolator	Analog Input Signals
Gateway	Com Unit
Pt100	Temperature Converter
Thermocouple	Temperature Converter
Motherboard	Backplane
Power Supply	Power Supply
Switch Amplifier	Digital Input Signals
Transmitter Power Supply	Analog Input Signals
Isolated Switch Amplifier	Digital Input Signals
	Analog Input Signals
Isolator Transformer	Digital Output Signals
Solenoid Driver	Digital Output Signals
Valve Driver	

# Remote I/O Systems

## LB System

### Universal input and output signals

#### Analog output



Model Number	Number of input channels	Number of output channels	Occupied slots	Voltage	Current	Power	Explosion protection		Installation in Zone 2	Installation in Div. 2
							Ex ia	Ex ic		
LB7004A	4	4	1					■	■	
LB7104A	4	4	1	27 V	87 mA	575 mW	■		■	■

#### Digital input signals

#### Digital input



Model Number	Number of input channels		Connection		Operating frequency	Voltage	Current	Power	Explosion protection			Installation in Zone 2	Installation in Div. 2
	Occupied slots	NAMUR sensor	volt-free contact						Ex ia	Ex ic	Ex nA		
LB1001A	2	1	■	■						■		■	
LB1002A	3	1	■	■		10.5 V	35 mA	92 mW		■		■	
LB1003A	1	1	■	■	0 ... 15 kHz					■			
LB1003C	1	1	■	■	0 ... 400 Hz					■			
LB1008A	8	2	■	■						■		■	
LB1009A	8	1	■	■		10 V	12 mA	30 mW		■		■	
LB1015A	15	2									■		
LB1101A	2	1	■	■		12.6 V	12.8 mA	40.1 mW	■			■	■
LB1102A	3	1	■	■		10.5 V	35 mA	92 mW	■			■	■
LB1103A	1	1	■	■	0 ... 15 kHz	10.5 V	23.3 mA	61.2 mW	■			■	■
LB1103C	1	1	■	■	0 ... 400 Hz	10.5 V	23.3 mA	61.2 mW	■			■	■
LB1108A	8	2	■	■		14.9 V	15.7 mA	58.2 mW	■			■	■
LB1109A	8	1	■	■		10 V	12 mA	30 mW	■			■	■

## Digital output signals

### Digital output with position feedback



Model Number	Number of output channels			Open loop voltage	Internal resistor	Current limit	Voltage	Current	Power	Explosion protection			
	Number of input channels	Number of output channels	Occupied slots							Ex ic	Ex ia	Installation in Zone 2	Installation in Div. 2
LB2016E	2	1	1	23 V	258 Ω	50 mA	24.2 V	108 mA	654 mW	■		■	
LB2017E	2	1	1	16.5 V	131 Ω	50 mA	17.8 V	162 mA	721 mW	■		■	
LB2116E	2	1	1	23 V	258 Ω	50 mA	24.2 V	108 mA	654 mW		■	■	■
LB2117E	2	1	1	16.5 V	131 Ω	50 mA	17.8 V	162 mA	751 mW		■	■	■

### Digital output with shutdown input



Model Number	Number of output channels			Field device	Current limit	Internal resistor	Open loop voltage	Voltage	Current	Power	Explosion protection				
	Number of output channels	Occupied slots	Solenoid Valve								audible alarm	visual alarm	Ex ia	Ex ib	Ex ic
LB6008A	8	2	■	■	■		8 mA	20 V	28 V	13.5 mA	376 mW			■	■
LB6016E	2	1	■	■	■	258 Ω	40 mA	23 V	24.2 V	108 mA	654 mW			■	■
LB6017E	2	1	■	■	■	131 Ω	50 mA	16.5 V	17.8 V	162 mA	721 mW			■	■
LB6108A	8	2	■	■	■		8 mA	20 V	28 V	13.5 mA	376 mW		■	■	■
LB6108C	8	2	■	■	■		5.2 mA	21.6 V	30 V	13.5 mA	404 mW		■	■	■
LB6116E	2	1	■	■	■	258 Ω	40 mA	23 V	24.2 V	108 mA	654 mW	■		■	■
LB6117E	2	1	■	■	■	131 Ω	50 mA	16.5 V	17.8 V	162 mA	721 mW	■		■	■


### Relay output



Model Number	Number of output channels	Occupied slots	Connection	Explosion protection		
				Ex nA nC	Installation in Zone 2	Installation in Div. 2
LB6005A	4	2	Relay output	■	■	■
LB6006A	8	2	Relay output	■	■	■


# Analog input signals

## Transmitter power supplies



Model Number	Number of input channels	Occupied slots	Connection					Voltage	Current	Power	Explosion protection		Installation in Zone 2	Installation in Div. 2
			2-wire transmitter	3-wire transmitter	4-wire transmitter	HART communication	HART secondary variable				Ex ia	Ex ic		
LB3002A2	1	1	■	■	■	■	■				■	■		
LB3005A2	4	2	■	■	■	■	■				■	■		
LB3006A	4	1	■	■	■	■	■				■	■		
LB3103A2	1	1	■	■	■	■	■	24.9 V	77 mA	478 mW	■	■	■	■
LB3104A2	4	2	■	■	■	■	■	27 V	90 mA	588 mW	■	■	■	■
LB3105A2	4	2	■	■	■	■	■	27 V	90 mA	588 mW	■	■	■	■
LB3106A	4	1	■	■	■	■	■	27 V	87 mA	575 mW	■	■	■	■
LB3101A2	1	1	■	■	■	■	■	23.8 V	90 mA	533 mW	■	■	■	■
LB3102A1	1	1	■	■	■	■	■	27 V	87 mA	575 mW	■	■	■	■
LB3102A2	1	1	■	■	■	■	■	27 V	92 mA	619 mW	■	■	■	■

## Temperature converters, voltage converters



Model Number	Number of input channels	Occupied slots	Field device					Connection			Voltage	Current	Power	Explosion protection		Installation in Zone 2	Installation in Div. 2
			resistance thermometer	Thermocouple	slide-wire sensors	mV source	potentiometer	voltage input	2-wire sensor	3-wire sensor				4-wire sensor	Ex ia		
LB5001A	1	1	■	■	■	■	■	■	■	■				■	■		
LB5002A	1	1	■	■	■	■	■	■	■	■				■	■		
LB5004A	4	2	■	■	■	■	■	■	■	■				■	■	■	■
LB5005A	4	2	■	■	■	■	■	■	■	■				■	■		
LB5101A	1	1	■	■	■	■	■	■	■	■	2.7 V	43 mA	93 mW	■	■	■	■
LB5102A	1	1	■	■	■	■	■	■	■	■	1.8 V	43 mA	67 mW	■	■	■	■
LB5104A	4	2	■	■	■	■	■	■	■	■	7.14 V	70 mA	123 mW	■	■	■	■
LB5105A	4	2	■	■	■	■	■	■	■	■	1 V	71 mA	62 mW	■	■	■	■
LB5106A	1	1	■	■	■	■	■	■	■	■	0.9 V	0.2 mA	0.2 mW	■	■	■	■

## Analog output signals

### Analog output



Model Number	Number of output channels	Occupied slots	Field device						Voltage	Current	Power	Explosion protection		Installation in Zone 2	Installation in Div. 2
			Proportional Valve	I/P converters	on-site display	HART secondary variable	HART communication	Ex ia				Ex ic			
LB4002A2	1	1	■	■	■		■					■		■	
LB4005A2	4	2	■	■	■	■	■						■	■	
LB4005C2	4	2	■	■	■	■	■						■	■	
LB4101A2	1	1	■	■	■			27 V	87 mA	575 mW	■		■	■	
LB4102A2	1	1	■	■	■		■	27 V	87 mA	575 mW	■		■	■	
LB4102C2	1	1	■	■	■		■	27 V	87 mA	575 mW	■		■	■	
LB4104A2	4	2	■	■	■	■	■	27 V	87 mA	575 mW	■		■	■	
LB4105A2	4	2	■	■	■	■	■	27 V	87 mA	575 mW	■		■	■	
LB4105C2	4	2	■	■	■	■	■	27 V	87 mA	575 mW	■		■	■	
LB4106A	4	1	■	■	■	■	■	27 V	87 mA	575 mW	■		■	■	
LB4106C	4	1	■	■	■	■	■	27 V	87 mA	575 mW	■		■	■	

## Power Supplies

### Power supply units



Model Number	Bus coupler	I/O modules	Input voltage range	Installation in Zone 2	Installation in Div. 2
LB9006C	2	>12	18 ... 32 V DC	■	■

## Com units

### Gateways



Model Number	Description	Cyclic process data		Number of stations per bus line			Fieldbus					
		240 bytes input	240 bytes output	PROFIBUS	MODBUS	service bus	MODBUS TCP	PROFIBUS DP / DP-V1	MODBUS RTU	HART communication	Installation in Zone 2	Installation in Div. 2
LB8106H0629	EasyCom Com Unit for PROFIBUS DP/DP-V1	■	■	125		119		■		■	■	■
LB8107H0706	Com Unit for MODBUS RTU				245	119		■	■	■	■	■
LB8109H0907	Unicom Com Unit for PROFIBUS DP/DP-V1	■	■	125		119		■		■	■	■
LB8111A2-0756	Com Unit for MODBUS TCP						■		■	■	■	■

## Enclosures

### Field units

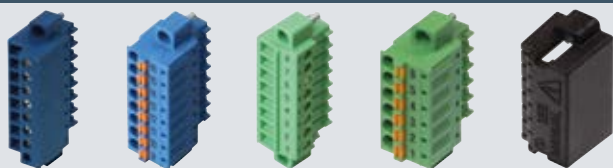


Model Number	Field Unit		I/O modules		Fieldbus				
	Field Unit	Redundancy Field Unit	(single width) [max.]	(dual width) [max.]	MODBUS TCP	MODBUS RTU	PROFIBUS DP / DP-V1	FOUNDATION Fieldbus H1	Installation in Zone 2
LB9508-PB0-0-0-1-0-0	■		8	4		■	■		■
LB9510-PB0-0-0-1-0-F	■			5				■	■
LB9510-S90-0-0-1-0-F	■			5				■	■
LB9513-PB0-0-0-1-0-0		■	12	6		■	■		■
LB9516-PB0-0-0-1-0-0	■		16	8		■	■		■
LB9532-S60-0-0-1-0-0	■		32	16		■	■		■
LB9547-S70-0-0-1-0-0		■	46	23		■	■		■
LB9547-S70-0-0-1-0-M		■	46	23	■				■



# Accessories

## Terminal blocks



Model Number	Description	Construction type			Number of pins	Housing		
		screw terminal	spring terminal	front screw terminal		green	blue	black
LB9007A	Terminal Block	■			6	■		
LB9008A	Protective Cover for Terminal Blocks				6	■		
LB9009A	Terminal Block		■		6	■		
LB9010A	Protective Cover for Terminal Blocks				8	■		
LB9011A	Cold Junction Module with Protective Cover				6	■		
LB9013A	Terminal Block	■			8	■		
LB9014A	Terminal Block	■			2 x 8	■		
LB9015A	Terminal Block		■		8	■		
LB9016A	Terminal Block		■		2 x 8	■		
LB9017A	Terminal Block			■	6	■		
LB9018A	Terminal Block			■	8	■		
LB9019A	Terminal Block			■	2 x 8	■		
LB9107.E.6	Protective Cover for Ex e Modules				6			
LB9107.E.8	Protective Cover for Ex e Modules				8			
LB9107A	Terminal Block	■			6		■	
LB9107P	Terminal Block		■		6		■	
LB9108A	Protective Cover for Terminal Blocks				6		■	
LB9111A	Cold Junction Module with Protective Cover				6		■	
LB9112A	Cold Junction Module				6		■	
LB9113A	Terminal Block	■			8		■	
LB9115A	Terminal Block		■		8		■	
LB9116A	Terminal Block		■		2 x 8		■	
LB9117A	Terminal Block			■	6		■	
LB9118A	Terminal Block			■	8		■	
LB9119A	Terminal Block			■	2 x 8		■	
LB9109.E.6.1	Plug for Ex e Modules		■		6			■
LB9109.E.8.1	Plug for Ex e Modules		■		8			■
LB9109.E.8.2	Plug for Ex e Modules		■		8			■
LB9120A	Protective Cover for Terminal Blocks				8		■	
LB9124A	Terminal Block	■			2 x 8		■	
LB9125A	Terminal Block	■			8		■	
LB9126A	Terminal Block		■		8		■	
LB9127A	Terminal Block			■	8		■	
LB9130A	Terminal Block		■		8		■	
LB9131A	Terminal Block		■		8	■		

## Backplanes



Model Number	Backplanes		Redundancy		I/O modules		Fieldbus					
	Base Backplane	Extension Backplane	Fieldbus	Power Supply	(single width) [max.]	(dual width) [max.]	FOUNDATION Fieldbus H1	MODBUS RTU	PROFIBUS DP / DP-V1	MODBUS TCP	Installation in Zone 2	Installation in Div. 2
LB9022E	■		■	■	22	11				■	■	■
LB9022S	■		■	■	22	11		■	■		■	■
LB9023A	■				8	4		■	■		■	■
LB9023E	■				8	4				■	■	■
LB9024S		■		■	24	12		■	■	■	■	■
LB9025A		■			8	4		■	■		■	■
LB9026A	■				16	8		■	■		■	■
LB9026E	■				16	8				■	■	■
LB9027A		■			16	8		■	■	■	■	■
LB9029A	■		■	■	12	6		■	■		■	■

## Additional accessories



Model Number	Description
LB9099	I/O module placeholder, green screw terminal
LB9199	I/O module placeholder, blue screw terminal
LB9110A	D-Sub plug, 9-pin, bus terminator, switchable
LB9180	Watchdog Plug, 1-channel
LB9182A	Separation wall for mounting on LB backplanes, color: green
LB9001A	D-Sub plug 9-pin, cable feed below 35°
LB9002A	D-Sub plug 9-pin, axial cable feed
LB9003A	D-Sub plug 9-pin, cable feed below 90°

# FB System

## Digital input signals

### Digital input



Model Number	Number of input channels		Function			Connection			Voltage	Current	Power	Explosion protection		
	Number of input channels	Occupied slots	Counter	frequency	direction of rotation	NAMUR sensor	volt-free contact	active binary signal 24 V DC				Ex e connection	Ex ia	Installation in Zone 1
FB1201B	2	1				■	■	■	12.6 V	12.8 mA	40.1 mW		■	■
FB1202B	3	1				■	■	■	10.5 V	35 mA	92 mW		■	■
FB1203B	1	1	■	■	■	■	■		10.5 V	23.3 mA	61.2 mW		■	■
FB1203D	1	1	■	■	■	■	■		10.5 V	23.3 mA	61.2 mW		■	■
FB1208B	8	2				■	■		14.9 V	15.7 mA	58.2 mW		■	■
FB1301B2	2	1				■	■	■				■		■
FB1302B2	3	1				■	■	■				■		■
FB1303B2	1	1	■	■	■	■	■	■				■		■
FB1308B2	8	2				■	■	■				■		■

## Digital output signals

### Digital outputs with position feedback



Model Number	Number of input channels		Number of output channels		Open loop voltage	Internal resistor	Current limit	Voltage	Current	Power	Explosion protection	
	Number of input channels	Number of output channels	Occupied slots	Number of output channels							Ex ia	Installation in Zone 1
FB2201BR	2	1	1	1	22 V	315 Ω	53 mA	24.9 V	91 mA	558 mW	■	■
FB2201ER	2	1	1	1	22 V	315 Ω	53 mA	24.9 V	91 mA	558 mW	■	■
FB2203BR	2	1	1	1	24 V	360 Ω	50 mA	27.83 V	91.7 mA	636 mW	■	■
FB2203ER	2	1	1	1	24 V	360 Ω	50 mA	27.83 V	91.7 mA	636 mW	■	■
FB2204B	2	1	1	1	22 V	220 Ω	52 mA	24.2 V	145 mA	872 mW	■	■
FB2212BR	2	1	1	1	25.3 V	329 Ω	53 mA	27.8 V	108 mA	751 mW	■	■
FB2212ER	2	1	1	1	25.3 V	329 Ω	53 mA	27.8 V	108 mA	751 mW	■	■
FB2213BR	2	1	1	1	26.7 V	509 Ω	40 mA	28.7 V	68 mA	485 mW	■	■
FB2213ER	2	1	1	1	26.7 V	509 Ω	40 mA	28.7 V	68 mA	485 mW	■	■

## Digital output



Model Number	Number of output channels	Occupied slots	Field device			Internal resistor	Current limit	Voltage	Current	Power	Explosion protection		
			Solenoid Valve	audible alarm	visual alarm						Ex e connection	Ex ia	Ex ib
FB6208B	8	2	■	■	■		8 mA					■	■
FB6208C	8	2	■	■	■		5.2 mA					■	■
FB6210BR	4	2	■	■	■	max. 370 Ω	37 mA	27.8 V	90.4 mA	629 mW		■	■
FB6210ER	4	2	■	■	■	max. 370 Ω	37 mA	27.8 V	90.4 mA	629 mW		■	■
FB6211BR	4	2	■	■	■	max. 320 Ω	40 mA	27.8 V	107 mA	744 mW		■	■
FB6211ER	4	2	■	■	■	max. 320 Ω	40 mA	27.8 V	107 mA	744 mW		■	■
FB6213BR	4	2	■	■	■	max. 290 Ω	42 mA	26 V	110 mA	714 mW		■	■
FB6215BR	4	2	■	■	■	max. 90 Ω	70 mA	18.9 V	286 mA	1350 mW		■	■
FB6308B2	8	2	■	■	■		8 mA				■		■

## Relay output



Model Number	Number of output channels	Occupied slots	Connection	Switching voltage	Switching current	Switch power	Explosion protection	
							Ex e connection	Installation in Zone 1
FB6306B2	2	2	Relay output	24 V DC / AC	1 A DC / AC resistive load	30 VA / 30 W	■	■

## Analog input signals

### Transmitter power supplies




Model Number	Number of input channels	Occupied slots	Connection						Voltage	Current	Power	Explosion protection	
			2-wire transmitter	3-wire transmitter	4-wire transmitter	HART communication	HART secondary variable	Ex e connection				Ex ia	Installation in Zone 1
FB3201B2	1	1	■	■	■			23.8 V	90 mA	533 mW		■	■
FB3202B1	1	1	■			■	■	27 V	87 mA	575 mW		■	■
FB3203B2	1	1	■	■	■	■		24.9 V	77 mA	478 mW		■	■
FB3204B2	4	2	■	■	■			27 V	90 mA	588 mW		■	■
FB3205B2	4	2	■	■	■	■	■	27 V	90 mA	588 mW		■	■
FB3302B2	1	1	■	■	■	■	■				■		■
FB3305B2	4	2	■	■	■	■	■				■		■

### Temperature converters, voltage converters




Model Number	Number of input channels	Occupied slots	Field device						Voltage	Current	Power	Explosion protection	
			resistance thermometer	Thermocouple	slide-wire sensors	mV source	potentiometer	voltage input				Ex ia	Installation in Zone 1
FB5201B	1	1	■		■				2.7 V	43 mA	93 mW	■	■
FB5202B	1	1		■		■			1.8 V	43 mA	67 mW	■	■
FB5204B	4	2	■		■		■		7.14 V	70 mA	123 mW	■	■
FB5205B	4	2		■		■			1 V	71 mA	62 mW	■	■
FB5206B	1	1						■	0.9 V	0.2 mA	0.2 mW	■	■

## Analog output signals

Output isolators											
											
Model Number	Number of output channels	Occupied slots	Field device			HART communication	HART secondary variable	Explosion protection		Installation in Zone 1	
			Proportional Valve	I/P converters	on-site display			Ex e connection	Ex ia		
FB4201B2	1	1	■	■	■				■	■	
FB4202B2	1	1	■	■	■	■			■	■	
FB4205B2	4	2	■	■	■	■	■		■	■	
FB4204B2	4	2	■	■	■	■	■		■	■	
FB4205C2	4	2	■	■	■	■	■		■	■	
FB4302B2	1	1	■	■	■	■		■		■	

## Power supplies

Power supplies				
				
Model Number	Bus coupler	I/O modules	Input voltage range	Installation in Zone 1
FB9205C			95 ... 230 V AC	■
FB9206D	2	>12	18 ... 32 V DC	■
FB9215B2	2	>12	90 ... 253 V AC	■

## Com units

Gateways						
Model Number	Description	Number of channels per station		HART communication	Installation in Zone 1	
		analog [max.]	binär [max.]			
FB8206H0629	EasyCom Com Unit for PROFIBUS DP/DP-V1	80	184	■	■	
FB8207H0706	Com Unit for MODBUS RTU	80	184	■	■	
FB8209H0907	Unicom Com Unit for PROFIBUS DP/DP-V1	80	184	■	■	
FB8211B2-0756	Com Unit for MODBUS TCP	80	184	■	■	

## Enclosures

Field units						
Model Number	Field Unit	Redundancy Field Unit	I/O modules		Installation in Zone 1	
			(single width) [max.]	(dual width) [max.]		
FB9210-PB0-0-0-0-0-0	■		10	5		■
FB9210-PB0-0-0-0-0-F	■		10	5		■
FB9210-S50-0-0-0-0-0	■		10	5		■
FB9211-PB0-0-0-0-0-0		■	10	5		■
FB9224-PG0-0-0-0-0-0	■		24	12		■
FB9224-PH0-0-0-0-0-0	■		24	12		■
FB9224-S60-0-0-0-0-0	■		24	12		■
FB9225-PG0-0-0-0-0-0		■	24	12		■
FB9225-PH0-0-0-0-0-0		■	24	12		■
FB9225-S70-0-0-0-0-0		■	24	12		■
FB9248-PG0-0-0-0-0-0	■		48	24		■
FB9248-PH0-0-0-0-0-0	■		48	24		■
FB9248-S70-0-0-0-0-0	■		48	24		■
FB9249-PG0-0-0-0-0-0		■	48	24		■
FB9249-PH0-0-0-0-0-0		■	48	24		■
FB9249-S80-0-0-0-0-0		■	48	24		■

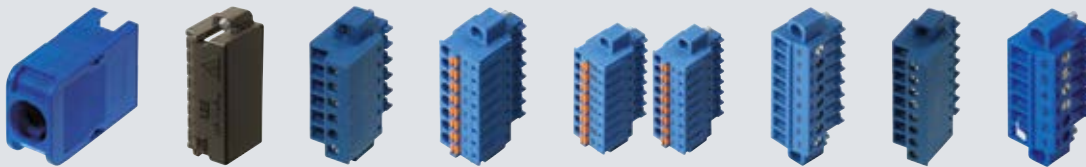
# Accessories

## Bus termination modules



Model Number	Description
FB9293B	Bus termination module, service bus termination
FB9293F	Bus termination module, fieldbus terminating resistor
FB9294B	Bus termination module, bus termination
FB9295B	Bus termination module, bus and service bus termination

## Terminal blocks



Model Number	Description	Construction type			Number of pins	Housing
		spring terminal	screw terminal	front screw terminal		
LB9107A	Terminal Block		■		6	■
LB9107P	Terminal Block	■			6	■
LB9108A	Protective Cover for Terminal Blocks				6	■
LB9111A	Cold Junction Module with Protective Cover				6	■
LB9112A	Cold Junction Module				6	■
LB9113A	Terminal Block		■		8	■
LB9115A	Terminal Block	■			8	■
LB9116A	Terminal Block	■			2 x 8	■
LB9117A	Terminal Block			■	6	■
LB9118A	Terminal Block			■	8	■
LB9119A	Terminal Block			■	2 x 8	■
LB9120A	Protective Cover for Terminal Blocks				8	■
LB9124A	Terminal Block		■		2 x 8	■
LB9125A	Terminal Block		■		8	■
LB9126A	Terminal Block	■			8	■
LB9127A	Terminal Block		■		8	■
LB9107.E.6	Protective Cover for Ex e Modules				6	
LB9107.E.8	Protective Cover for Ex e Modules				8	



**Additional accessories**

Model Number	Description
<b>FB9272-300</b>	Backplane cordset FB9272, redundancy unit to extension unit (3 m)
<b>FB9299B</b>	Place Holder Module
<b>FOL7250B059</b>	PROFIBUS Fiber Optic Link Coupler and Repeater

# Multifunction Terminals

## Multifunction terminal with fuse



Model Number	Description
<b>MFT-2F.0500</b>	Multifunction terminal, 4-pin, 2x fuses (0.5 A)
<b>MFT-F.0315</b>	Multifunction terminal, 2-pin, 1x fuse (0.315 A)
<b>MFT-F.1000.L</b>	Multifunction terminal, 4-pin, 1x fuse (1 A) and bridge

## Multifunction terminal with diode



Model Number	Description
<b>MFT-2D.0500</b>	Multifunction terminal, 4-pin, 2x diodes (230 V/0.5 A)
<b>MFT-D.1000</b>	Multifunction terminal, 2-pin, 1x diode (230 V/1 A)
<b>MFT-D.1000.L</b>	Multifunction terminal, 4-pin, 1x diode (230 V / 1 A), 1 x bridge

## Multifunction terminal with resistor



Model Number	Description
<b>MFT-2R.1004</b>	Multifunction terminal, 4-pin, 2x resistors (1 kOhm)
<b>MFT-R.1003</b>	Multifunction terminal, 2-pin, 1x resistor (100 Ohm)

## Multifunction terminal with relay



Model Number	Description
<b>MFT-RNC.0006</b>	Multifunction terminal, 4-pin, 1x relay (NC)
<b>MFT-RNO.0006</b>	Multifunction terminal, 4-pin, 1x relay (NO)

### Multifunction terminal with bus terminator



Model Number	Description
<b>MFT-FT.0001</b>	Multifunction terminal, 4-pin, 1x terminator

### Module socket



Model Number	Description
<b>MFT-BASE.2P</b>	Multifunction terminal socket, 2-pin
<b>MFT-BASE.4P</b>	Multifunction terminal socket, 4-pin

# FieldConnex®: Fieldbus Technology for Maximum Transparency

The FieldConnex® product portfolio from Pepperl+Fuchs enables easy management of FOUNDATION Fieldbus H1 and PROFIBUS PA infrastructure.



## Power Supplies

Fieldbus power supplies are typically installed in control buildings and are designed for use in Class I, Div. 2/Zone 2. For FOUNDATION Fieldbus H1, machine-made cordsets are available that provide seamless integration into all standard control systems. For PROFIBUS PA, you have a choice between PROFINET and PROFIBUS DP control protocols.

Power supplies are available with advanced diagnostics. This feature monitors the quality of the installation in real time and indicates deviations before they can have a negative impact on the availability of the automation, ensuring maximum transparency and availability.

## Fieldbus Junction Boxes

Segment protectors allow devices to be connected in plants without requirements for explosion protection and make them suitable for Div. 2/Zone 2. Field barriers connect field devices in Div. 1/Zone 0...1. All fieldbus junction boxes offer extensive fault protection at the output, which protects the fieldbus from issues that can occur when working on a field device. They are available with screw or spring terminals.

Enclosure solutions made from aluminum, glass fiber reinforced plastic, or stainless steel offer a host of options for adapting the device to the plant's ambient conditions. This includes the size and material of the cable glands, nameplate, shield connection, lightning protection, and terminator. The fieldbus junction box is mounted and pre-wired at the factory.

## Process Interfaces

Process interfaces connect basic signals with control technology. The multi-input/output connects discrete signals such as low-power valves, vibrating forks, pulse generators, or up to twelve NAMUR switches to the control system. The same enclosure solutions are available as for the field junction box.

## Commissioning Tools and Accessories

Diagnostic handhelds assist field service technicians and engineers during inspections. An embedded expert system, automated segment checking, and other features reduce the time needed for commissioning and troubleshooting.

Lightning protection with self-diagnostics reports its status automatically. Moisture ingress can be detected in critical applications using leakage sensors.

FieldConnex ® components are specially developed for use in extreme conditions and can withstand temperature fluctuations, changes in humidity, and vibration. They also meet all current national and international safety requirements and are marine-certified.

# Fieldbus Infrastructure

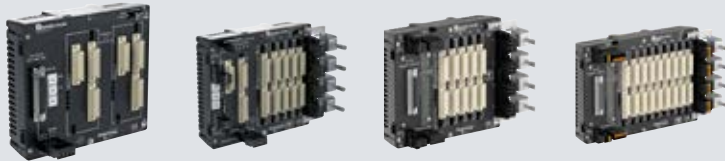
## PROFIBUS PA

### Fieldbus power supply – power hub modules



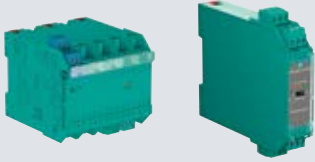
Model Number	Description	Function			Output voltage			Output current
		Gateway	Physical layer diagnostics	Fieldbus power supply	9 ... 32 V	28 ... 29,5 V	21 ... 23 V	
HCD2-FBPS-1.23.500	Fieldbus Power Hub, Compact Power Supply Module			■			■	■
HCD2-FBPS-1.500	Fieldbus Power Hub, Compact Power Supply Module			■		■		■
HD2-GTR-4PA	PROFIBUS Power Hub, Gateway Module	■						
HD2-GTR-4PA.PN	PROFINET Power Hub, Gateway Module	■						
ACC-MB-HDC	Diagnostic Cordset for Motherboards							

### Fieldbus power supply – power hub motherboards



Model Number	Description	Number of segments	Connection type	
			pluggable, spring terminal	pluggable, screw terminal
MB-FB-GTR1	Fieldbus Power Hub, Gateway Motherboard	4 redundant		■
MB-FB-GTR1.1	Fieldbus Power Hub, Gateway Motherboard	4 redundant	■	
MBHC-FB-4.GT	Fieldbus Power Hub, Motherboard for Gateway and Power Supply Modules	4 simplex		■
MBHC-FB-4.GT.1	Fieldbus Power Hub, Motherboard for Gateway and Power Supply Modules	4 simplex	■	
MBHC-FB-4.HSC	Compact Fieldbus Power Hub Motherboard with Host System Connectors	4 simplex		■
MBHC-FB-4.HSC.1	Compact Fieldbus Power Hub Motherboard with Host System Connectors	4 simplex	■	
MBHC-FB-4R.HSC	Compact Fieldbus Power Hub Motherboard with Host System Connectors	4 redundant		■
MBHC-FB-4R.HSC.1	Compact Fieldbus Power Hub Motherboard with Host System Connectors	4 redundant	■	

Fieldbus power supply – basic power supplies



Model Number	Description	Function	Output voltage		Rated current	
			12.6 ... 13.4 V	24 ... 26 V	max. 100 mA	max. 400 mA
KFD2-BR-1.PA.1500	Basic Segment Coupler	<input checked="" type="checkbox"/> PROFIBUS gateway	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
KFD2-BR-EX1.3PA.93	Segment Coupler 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## Device couplers



Model Number	Description	Number of outputs	Connection type		
			pluggable, spring terminal	pluggable, screw terminal	screw fixing
R2-SP-IC10	Segment Protector for Cabinet Installation	10		■	
R2-SP-IC10.1	Segment Protector for Cabinet Installation	10	■		
R2-SP-IC12	Segment Protector for Cabinet Installation	12		■	
R2-SP-IC12.1	Segment Protector for Cabinet Installation	12	■		
R2-SP-IC4	Segment Protector for Cabinet Installation	4		■	
R2-SP-IC4.1	Segment Protector for Cabinet Installation	4	■		
R2-SP-IC6	Segment Protector for Cabinet Installation	6		■	
R2-SP-IC6.1	Segment Protector for Cabinet Installation	6	■		
R2-SP-IC8	Segment Protector for Cabinet Installation	8		■	
R2-SP-IC8.1	Segment Protector for Cabinet Installation	8	■		
R-SP-E12	Segment Protector for Cabinet Installation	12			■
R4D0-FB-IA10.0	FieldBarrier® for Cabinet Installation	10		■	
R4D0-FB-IA10.1	FieldBarrier® for Cabinet Installation	10	■		
R4D0-FB-IA12.0	FieldBarrier® for Cabinet Installation	12		■	
R4D0-FB-IA12.1	FieldBarrier® for Cabinet Installation	12	■		
R4D0-FB-IA8.0	FieldBarrier® for Cabinet Installation	8		■	
R4D0-FB-IA8.1	FieldBarrier® for Cabinet Installation	8	■		
RD0-FB-Ex4	FieldBarrier® for Cabinet Installation	4			■
RD0-FB-Ex4.COM	FieldBarrier® for Cabinet Installation	4		■	

## Physical layer diagnostics



Model Number	Description
DTM-FC.AD	Diagnostic Manager Software Standard License (up to 100 Segments)
DTM-FC.AD.1	Diagnostic Manager Software Bulk License (from 100 Segments)
DTM-FC.AD.UPG	Diagnostic Manager Upgrade License (up to 100 Segments)
DTM-FC.AD.1.UPG	Diagnostic Manager Upgrade Bulk License (from 100 Segments)
KT-MB-DMA	Advanced Diagnostic Module, Kit for stand-alone Operation
KT-MB-GT2AD.FF	Advanced Diagnostic Gateway with Ethernet and FF-H1 Interface
KT-MB-GT2AD.FF.1	Advanced Diagnostic Gateway with Ethernet and FF-H1 Interface
KT-MB-GT2AD.FF.IO	Advanced Diagnostic Gateway with Ethernet and FF-H1 Interface and I/O
HD2-DM-A	Fieldbus Power Hub, Advanced Diagnostic Module
HD2-DM-A.RO	Fieldbus Power Hub, Advanced Diagnostic Module with Relay Output
HD2-DM-B	Fieldbus Power Hub, Basic Diagnostic Module
FDH-1	Fieldbus Diagnostic Handheld
FDH-SW-P	FDH-1 Manager Software, Premium License
ACC-FDH-CTRG	FDH-1 Accessory Cable



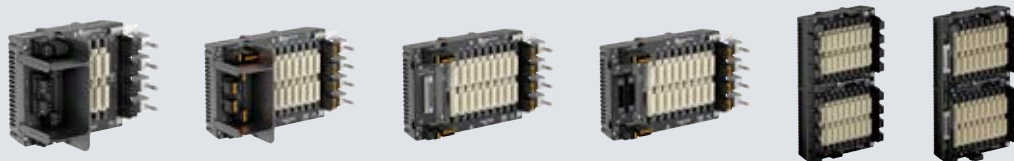
## Interface for discrete I/O



Model Number	Description	Design / Mounting		Connection type	
		Outside installation	Cabinet installation	plug-in terminals, screw terminal	plug-in terminals, spring terminal
R8D0-MIO-EX12.PA.1	Multi-Input/Output Device for Cabinet Installation		■	■	
R8D0-MIO-EX12.PA.2	Multi-Input/Output Device for Cabinet Installation		■		■
F2D0-MIO-EX12.PA.1.02	Multi-Input/Output Device with Aluminum Housing	■		■	
F2D0-MIO-EX12.PA.1.05	Multi-Input/Output Device with Aluminum Housing	■		■	

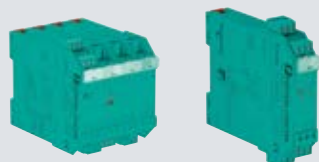
# FOUNDATION Fieldbus H1

## Fieldbus power supply – power hub motherboards



Model Number	Description	Number of segments	System Interface						Connection type	
			All systems	Yokogawa	Honeywell	Invensys	ABB	Emerson	pluggable, spring terminal	pluggable, screw terminal
MBHC-FB-4	Compact Fieldbus Power Hub Motherboard with Common Interface	4 simplex	■				■	■		■
MBHC-FB-4.1	Compact Fieldbus Power Hub Motherboard with Common Interface	4 simplex	■				■	■	■	
MBHC-FB-4.HSC	Compact Fieldbus Power Hub Motherboard with Host System Connectors	4 simplex			■	■				■
MBHC-FB-4.HSC.1	Compact Fieldbus Power Hub Motherboard with Host System Connectors	4 simplex			■	■			■	
MBHC-FB-4.YO	Compact Fieldbus Power Hub Motherboard for Yokogawa ALF111	4 simplex		■						■
MBHC-FB-4.YO.1	Compact Fieldbus Power Hub Motherboard for Yokogawa ALF111	4 simplex		■					■	
MBHC-FB-4R	Compact Fieldbus Power Hub Motherboard with Common Interface	4 redundant	■				■	■		■
MBHC-FB-4R.1	Compact Fieldbus Power Hub Motherboard with Common Interface	4 redundant	■				■	■	■	
MBHC-FB-4R.HSC	Compact Fieldbus Power Hub Motherboard with Host System Connectors	4 redundant			■	■				■
MBHC-FB-4R.HSC.1	Compact Fieldbus Power Hub Motherboard with Host System Connectors	4 redundant			■	■			■	
MBHC-FB-4R.YO	Compact Fieldbus Power Hub Motherboard for Yokogawa ALF111	4 redundant		■						■
MBHC-FB-4R.YO.1	Compact Fieldbus Power Hub Motherboard for Yokogawa ALF111	4 redundant		■					■	
MBHC-FB-8R	Compact Fieldbus Power Hub Motherboard with Common Interface	8 redundant	■				■	■		■
MBHC-FB-8R.1	Compact Fieldbus Power Hub Motherboard with Common Interface	8 redundant	■				■	■	■	
MBHC-FB-8R.HSC	Compact Fieldbus Power Hub Motherboard with Host System Connectors	8 redundant			■	■				■
MBHC-FB-8R.HSC.1	Compact Fieldbus Power Hub Motherboard with Host System Connectors	8 redundant			■	■			■	
MBHC-FB-8R.HSC.R	Compact Fieldbus Power Hub Motherboard with Host System Connectors	8 redundant			■	■				■
MBHC-FB-8R.HSC.R.1	Compact Fieldbus Power Hub Motherboard with Host System Connectors	8 redundant			■	■			■	
MBHC-FB-8R.RH	Compact Fieldbus Power Hub Motherboard with Redundant Host Terminals	8 redundant	■				■			■
MBHC-FB-8R.RH.R	Compact Fieldbus Power Hub Motherboard with Redundant Host Terminals	8 redundant	■				■			■
MBHC-FB-8R.YO	Compact Fieldbus Power Hub Motherboard for Yokogawa ALF111	8 redundant		■						■
MBHC-FB-8R.YO.1	Compact Fieldbus Power Hub Motherboard for Yokogawa ALF111	8 redundant		■					■	

## Fieldbus power supply – basic power supplies



Model Number	Description	Function	Output voltage		Output current	
			25 ... 27 V	12 ... 13 V	360 mA	220 mA
KLD2-FBPS-1.12.220	Fieldbus Power Supply	■		■		■
KLD2-FBPS-1.25.360	Fieldbus Power Supply	■	■		■	
KLD2-PR-1.IEC	Fieldbus Power Repeater	■				

## Commissioning tools



Model Number	Description
<b>FDH-1</b>	Fieldbus Diagnostic Handheld
<b>FDH-SW-P</b>	FDH-1 Manager Software, Premium License
<b>ACC-FDH-CTRG</b>	FDH-1 Accessory, Trigger Output Cable
<b>KT-SRT-FF</b>	Starter Kit for FOUNDATION Fieldbus H1 Infrastructure
<b>USB-FBPS-1.11.45.NI</b>	USB Fieldbus Power Supply
<b>BP-FBPS-1.30.1</b>	Portable Fieldbus Battery

# Accessories

## Enclosure leakage sensors



Model Number	Description
ELS-1	Housing leakage sensor, for operation with FOUNDATION Fieldbus and PROFIBUS PA

## Surge protection



Model Number	Description	Diagnostics function	Design / Mounting	
			Cabinet installation	Outside installation
TCP-LBF-IA1.36.IE.0	Surge Protector for Plugging onto the Trunk, Ex ia		■	
TCP-LBF-IA1.36.IE.1	Surge Protector for Plugging onto the Trunk, Ex ia with Integrated Diagnostics	■	■	
SCP-LBF-IA1.36.IE.0	Surge Protector, Pluggable onto the device coupler for the Spur, Ex ia		■	
SCP-LBF-IA1.36.IE.1	Surge Protector, Pluggable onto the device coupler for the Spur, Ex ia with Integrated Diagnostics	■	■	
TPH-LBF-IA1.36.DE.0	Surge Protector, Pluggable onto the Power Hub for the Trunk, Ex ia		■	
TPH-LBF-IA1.36.DE.1	Surge Protector, Pluggable onto the Power Hub for the Trunk, Ex ia with Integrated Diagnostics	■	■	
ACC-LBF-EB.8	8x Grounding Rail for Surge Protection, TPH-LBF* and MBHC-FB*			
DB-LBF-I1	Fieldbus Surge Protector for Cabinet Installation, Ex ia		■	
DB-LBF-I1.I	Fieldbus Surge Protector for Cabinet Installation, Ex ia		■	
DP-LBF-I1.36.DE	Fieldbus Surge Protector for Cabinet Installation, Ex ia, for double-sided grounding		■	
DP-LBF-I1.36.IE	Fieldbus Surge Protector for Cabinet Installation, Ex ia, for Single-Point Grounding, Indirect Shield Grounding for Entity, FISCO, DART		■	
FN-LBF-D1.32	Surge Protector for Field Mounting, Ex d, 1/2" NPT Thread			■
FN-LBF-I1.32	Surge Protector for Field Mounting, Ex ia, 1/2" NPT Thread			■
FS-LBF-D1.32	Surge Protector for Field Mounting, Ex d, ISO 20 mm Thread			■
FS-LBF-I1.32	Surge Protector for Field Mounting, Ex ia, ISO 20 mm Thread			■

## Terminator



Model Number	Description	Design / Mounting
		Outside installation
<b>FN-FT-EX1</b>	Fieldbus terminating resistor, field mounted, Ex ia, thread: 1/2 NPT	■
<b>FP-FT-EX1</b>	Fieldbus Terminator, Field Mounting, Ex ia, PG 13.5 thread	■
<b>FS-FT-EX1</b>	Fieldbus Terminator, Field Mounting, Ex ia, ISO 20 mm thread	■
<b>M-FT</b>	Fieldbus terminator	

## Additional accessories



Model Number	Description
<b>ACC-LBF-EB.6</b>	6x Grounding Rail for Surge Protection, SCP-LBF*, R2-SP*, and R4D0-FB*
<b>ACC-LBF-EB.8</b>	8x Grounding Rail for Surge Protection, TPH-LBF* and MBHC-FB*
<b>ACC-LBF-SW.3</b>	Separation Wall for Installation on the Surge Protector TCP-LBF*, 3 pcs., Ex ic Applications
<b>ACC-MB-CC</b>	Cover for Power Supply Connector of Motherboards with Screw Terminals, Ex ic applications
<b>ACC-MB-CC.1</b>	Cover for Power Supply Connector of Motherboards with Spring Terminals, Ex ic applications
<b>ACC-MB-HSK</b>	Grounding Rail including 4 Cable Clamps
<b>ACC-MB-SW</b>	Separation Wall for MBHC, Ex ic Applications
<b>ACC-R2-SW.3</b>	Separation Wall for Ex ic Applications
<b>MFT-2L.1600</b>	Multifunction terminal, 4-pin, 2 x bridges
<b>MFT-BASE.4P</b>	Multifunction terminal socket, 4-pin
<b>TP-CON.3</b>	Fieldbus Plug Sockets with Test Points, 4 pcs.
<b>T-CON.3</b>	T-Connector as Accessory, 3 pcs.

# Enclosure Solutions for Segment Protectors and Field Barriers

## Cable glands for enclosures F.SP\* and F.FB\*

### Cable gland versions

Type	Cable gland					Stopping plug		
	GP2	GB2	GS2	GN2	GA2	H02	H03	H04
<b>Mechanical specifications</b>								
Protection degree	IP66	IP66	IP66	IP66	IP66	IP66	IP66	IP66
Material	polyamide	nickel-plated brass	stainless steel	nickel plated brass	stainless steel	polyamide	nickel-plated brass	stainless steel
Thread	M20	M20	M20	M20	M20	M20	M20	M20
Inner sheath (mm)	–	–	–	7 ... 12	7 ... 12	–	–	–
Outer sheath (mm)	5.5 ... 13	3 ... 12	3 ... 12	10 ... 16	10 ... 16	–	–	–
<b>Cable</b>								
Suitable for armored cable	no	no	no	yes	yes	–	–	–
<b>Data for application in conjunction with hazardous areas</b>								
Type of protection	Ex e	Ex de	Ex de	Ex de	Ex de	Ex e	Ex de	Ex de

# Enclosure Solutions for Segment Protectors

## Type Code/Order Designation

<b>Type of housing</b>										
F2	Field housing, aluminum, IP66									
<b>Function</b>										
SP	Segment Protector									
<b>Type of protection</b>										
IC	Ex ic, non-incendive field wiring rated spur outputs									
<b>Number of outputs</b>										
04	4 spurs									
06	6 spurs									
08	8 spurs									
10	10 spurs									
<b>Terminal options</b>										
0	Screw terminal, non-pluggable									
1	Screw terminal, pluggable									
2	Spring terminal									
<b>Trunk entry options<sup>3</sup></b>										
00	M20 stopping plug, plastic									
02	M20 cable gland, plastic									
03	M20 cable gland, nickel plated brass									
04	M20 cable gland, stainless steel									
05	M20 cable gland, nickel plated brass for armored cable									
06	M20 cable gland, stainless steel for armored cable									
09	M12 plug connection, nickel plated brass FOUNDATION Fieldbus <sup>2</sup>									
10	M12 plug connection, nickel plated brass PROFIBUS PA <sup>2</sup>									
11	M12 plug connection, stainless steel FOUNDATION Fieldbus <sup>1</sup>									
12	M12 plug connection, stainless steel PROFIBUS PA <sup>1</sup>									
<b>Spur cable entry options<sup>3</sup></b>										
00	M20 stopping plug, plastic									
02	M20 cable gland, plastic									
03	M20 cable gland, nickel plated brass									
04	M20 cable gland, stainless steel									
05	M20 cable gland, nickel plated brass for armored cable									
06	M20 cable gland, stainless steel for armored cable									
09	M12 plug connection, nickel plated brass FOUNDATION Fieldbus									
10	M12 plug connection, nickel plated brass PROFIBUS PA									
11	M12 plug connection, stainless steel FOUNDATION Fieldbus									
12	M12 plug connection, stainless steel PROFIBUS PA									
<b>Accessory options</b>										
0	No tag plate									
1	Tag plate stainless steel incl. printing									
2	Tag plate stainless steel excl. printing									
0	No trunk surge protector									
1	Trunk surge protector									
F2	-	SP	-	IC	.	.	.	.	.	.
A	-	B	-	C	D	E	F	G	H	I

**Note:**

<sup>1</sup> If no surge protector is selected, one trunk entry is closed with a stainless steel stopping plug.  
<sup>2</sup> If no surge protector is selected, one trunk entry is closed with a plastic stopping plug.  
<sup>3</sup> Only options with cable glands are permitted for dust hazardous areas.





**Type Code/Model Number**

**Electronic type**

**F.SP5** Enclosure solution for R2-SP-IC\*\*

**Enclosure material**

**S** Stainless steel, 1.4404 (AISI 316L), IP66

**Number of installed devices**

- 13.B04** 1 x R2-SP-IC4
- 13.B06** 1 x R2-SP-IC6
- 13.B08** 1 x R2-SP-IC8
- 13.B10** 1 x R2-SP-IC10
- 13.B12** 1 x R2-SP-IC12
- 20.B16** 2 x R2-SP-IC8
- 20.B20** 2 x R2-SP-IC10
- 20.B24** 2 x R2-SP-IC12

**Fieldbus type**

**1** Suitable for FOUNDATION Fieldbus H1 and PROFIBUS PA

**Terminals**

- 0** Screw terminals
- 3** Spring terminals

**Trunk entries**

**Spur entries**

- H02 H02** Stopping plug M20, polyamide, Ex e, IP66
- H03 H03** Stopping plug M20, nickel plated brass, Ex e, IP66
- H04 H04** Stopping plug M20, stainless steel, Ex e, IP66
- GP2 GP2** Cable gland M20, polyamide, Ex de, IP66
- GB2 GB2** Cable gland M20, nickel plated brass, Ex de, IP66
- GS2 GS2** Cable gland M20, stainless steel, Ex e, IP66
- GN2 GN2** Cable gland M20, nickel plated brass, Ex de, IP66, for armoured cables
- GA2 GA2** Cable gland M20, stainless steel, Ex de, IP66, for armoured cables

**Tag plate**

- D** Stainless steel, 95 x 20 mm
- C** Plastic, 95 x 20 mm
- 0** No tag plate

**Grounding bar**

- 2** Grounding bar, isolated
- 1** Grounding bar, connected to PA
- 0** No grounding bar

**Surge protection**

- D** Surge protection trunk with diagnostics (TCP-LBF-IA1.36.IE.1) and spurs with diagnostics (SCP-LBF-IA1.36.IE.1)
- C** Surge protection trunk (TCP-LBF-IA1.36.IE.0) and spurs with diagnostics (SCP-LBF-IA1.36.IE.1)
- B** Surge protection trunk with diagnostics (TCP-LBF-IA1.36.IE.1) and spurs (SCP-LBF-IA1.36.IE.0)
- 9** Surge protection trunk (TCP-LBF-IA1.36.IE.0) and spurs (SCP-LBF-IA1.36.IE.0)
- 7** Surge protection spurs with diagnostics (SCP-LBF-IA1.36.IE.1)
- 6** Surge protection trunk with diagnostics (TCP-LBF-IA1.36.IE.1)
- 5** Surge protection spurs (SCP-LBF-IA1.36.IE.0)
- 4** Surge protection trunk (TCP-LBF-IA1.36.IE.0)
- 0** No surge protection

**Additional accessories**

- 5** Enclosure leakage sensor (ELS-1) + document pocket (A4)
- D** Document pocket (A4)
- L** Enclosure leakage sensor (ELS-1)
- 0** No accessory

<b>F.SP5</b>	.	<b>S</b>		.	<b>1</b>	.		.		.		.		.		.		.		.	
--------------	---	----------	--	---	----------	---	--	---	--	---	--	---	--	---	--	---	--	---	--	---	--

Predefined characters indicate pre-set attributes.



**Type code/model number**

**Electronic type**

<b>F.SPE</b>	Enclosure solution for R-SP-E12
<b>S</b>	Enclosure material Stainless steel 316, electropolished, IP66
<b>12.A12</b>	Number of installed devices 1 x R-SP-E12 <sup>1</sup>
<b>20.A24</b>	2 x R-SP-E12
<b>1</b>	Fieldbus type Suitable for FOUNDATION Fieldbus H1 and PROFIBUS PA
<b>0</b>	Spur terminals Spurs directly wired to R-SP-E12
<b>GP2</b>	Trunk entries Spur entries Cable gland M20, polyamide, Ex e, IP66
<b>GB2</b>	Cable gland M20, nickel plated brass, Ex e, IP66
<b>GS2</b>	Cable gland, M20, stainless steel, Ex e, IP66
<b>GN2</b>	Cable gland M20, nickel plated brass, Ex de, IP66, for armoured cable
<b>GA2</b>	Cable gland M20, stainless steel, Ex de, IP66, for armoured cable
<b>H02</b>	Stopping plug M20, polyamide, Ex e, IP66
<b>H03</b>	Stopping plug M20, nickel plated brass, Ex de, IP66
<b>H04</b>	Stopping plug M20, stainless steel, Ex de, IP66
<b>A</b>	Tag plate Tag plate, traffolyte, 120 x 30 mm
<b>B</b>	Tag plate, stainless steel, 120 x 30 mm
<b>0</b>	No tag plate
<b>1</b>	Grounding bar Grounding bar 10 x 3 mm, equipped with grounding terminals
<b>0</b>	No grounding bar installed
<b>3</b>	Surge protection Trunk Surge protection for Trunk FS-LBF-D1.32 installed <sup>1</sup>
<b>0</b>	No surge protection
<b>1</b>	External terminator Fieldbus terminator FS-FT-Ex1.D.IEC installed <sup>1</sup>
<b>0</b>	No terminator installed

<sup>1</sup> In conjunction with version 12.A12 surge protection and external terminator are available on request.

F.SPE	.	S		.	1	.	0	.		.											
-------	---	---	--	---	---	---	---	---	--	---	--	--	--	--	--	--	--	--	--	--	--

Predefined characters indicate pre-set attributes.

# Enclosure Solutions for Segment Protectors, with North American certification only

**Type code/model number**

**Electronic type**

**SPJB** Enclosure solution for R2-SP-IC\*\*

**Number of spurs**

- 4 4 spurs
- 6 6 spurs
- 8 8 spurs
- 10 10 spurs
- 12 12 spurs

**Enclosure material**

- AL** Aluminum, anodized, IP67

**Connection type**

- NF** No fitting
- CGP** Cable gland M16, polyamide
- CGB** Cable gland M16, nickel-plated brass
- CGS** Cable gland M16, stainless steel
- 7/8S** Plug connection M16, stainless steel, 7/8" thread
- M12S** Plug connection M16, stainless steel, M12 thread
- 1/2CB** Conduit connection M16, nickel-plated brass, 1/2" NPT conduit adapter

<b>SPJB</b>	-		-	<b>AL</b>	-	
-------------	---	--	---	-----------	---	--

Predefined characters indicate pre-set attributes.

**Type code/model number**

**Electronic type**

**SPJB** Enclosure solution for R2-SP-IC\*\*

**Number of spurs**

- 4 4 spurs
- 6 6 spurs
- 8 8 spurs
- 10 10 spurs
- 12 12 spurs

**Enclosure material**

- FB** Glass-fiber reinforced polyester, NEMA 4X, NEMA 6P, NEMA 12

**Window**

- No window
- W** With window

**Connection type**

- NF** No fitting
- CGP** Cable gland M16, polyamide
- CGB** Cable gland M16, nickel-plated brass
- CGS** Cable gland M16, stainless steel
- 7/8S** Plug connection M16, stainless steel, 7/8" thread
- M12S** Plug connection M16, stainless steel, M12 thread
- 1/2CB** Conduit connection M16, nickel-plated brass, 1/2" NPT conduit adapter

<b>SPJB</b>	-		-	<b>FB</b>	-	
-------------	---	--	---	-----------	---	--

Predefined characters indicate pre-set attributes.

**Type code/model number**

**Electronic type**

**SPJB** Enclosure solution for R2-SP-IC\*\*

**Number of spurs**

- 4 4 spurs
- 6 6 spurs
- 8 8 spurs
- 10 10 spurs
- 12 12 spurs

**Enclosure material**

- PC** Polycarbonate, painted, IP67, NEMA 4, NEMA 4x, NEMA 6, NEMA 12, NEMA 13

**Window**

- W** With window

**Connection type**

- NF** No fitting
- CGP** Cable gland M16, polyamide
- CGB** Cable gland M16, nickel-plated brass
- CGS** Cable gland M16, stainless steel
- 7/8S** Plug connection M16, stainless steel, 7/8" thread
- M12S** Plug connection M16, stainless steel, M12 thread
- 1/2CB** Conduit connection M16, nickel-plated brass, 1/2" NPT conduit adapter

<b>SPJB</b>	-		-	<b>PC</b>	<b>W</b>	-	
-------------	---	--	---	-----------	----------	---	--

Predefined characters indicate pre-set attributes.

**Type code/model number**

**Electronic type**

**SPJB** Enclosure solution for R2-SP-IC\*\*

**Number of spurs**

- 4 4 spurs
- 6 6 spurs
- 8 8 spurs
- 10 10 spurs
- 12 12 spurs

**Enclosure material**

- SS** Stainless steel, brushed, IP66, NEMA 4, NEMA 4X, NEMA 12

**Window**

- No window
- W** With window

**Connection type**

- NF** No fitting
- CGP** Cable gland M16, polyamide
- CGB** Cable gland M16, nickel-plated brass
- CGS** Cable gland M16, stainless steel
- 7/8S** Plug connection M16, stainless steel, 7/8" thread
- M12S** Plug connection M16, stainless steel, M12 thread
- 1/2CB** Conduit connection M16, nickel-plated brass, 1/2" NPT conduit adapter

<b>SPJB</b>	-		-	<b>SS</b>		-	
-------------	---	--	---	-----------	--	---	--

Predefined characters indicate pre-set attributes.

## Type code/model number

### Electronic type

**SPJB** Enclosure solution for R2-SP-IC\*\*

#### Number of spurs

- 4 4 spurs
- 6 6 spurs
- 8 8 spurs
- 10 10 spurs
- 12 12 spurs

#### Enclosure material

**CS** Carbon steel, painted, IP66, NEMA 4, NEMA 4X, NEMA 12

#### Window

- No window
- W** With window

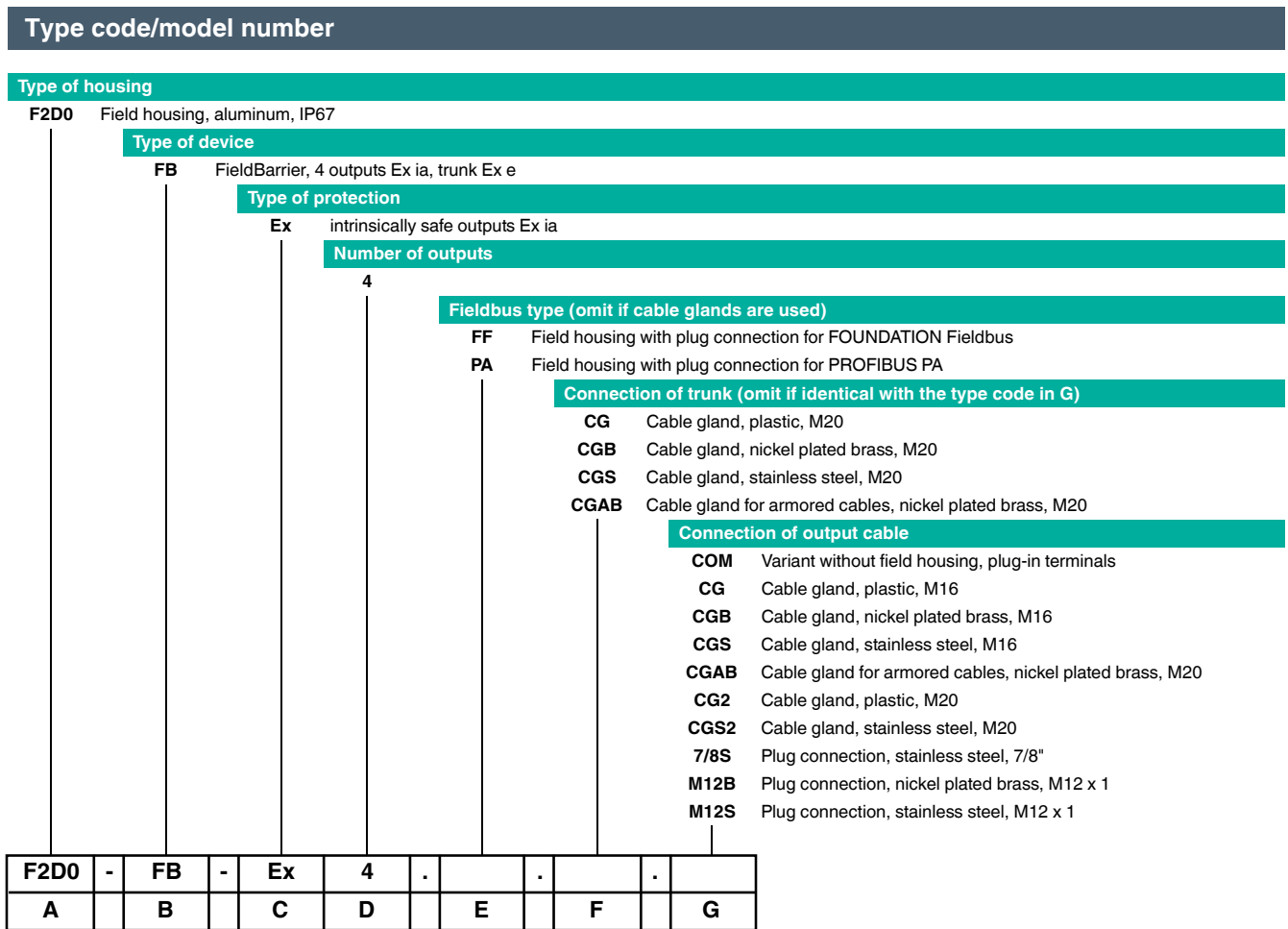
#### Connection type

- NF** No fitting
- CGP** Cable gland M16, polyamide
- CGB** Cable gland M16, nickel-plated brass
- CGS** Cable gland M16, stainless steel
- 7/8S** Plug connection M16, stainless steel, 7/8" thread
- M12S** Plug connection M16, stainless steel, M12 thread
- 1/2CB** Conduit connection M16, nickel-plated brass, 1/2" NPT conduit adapter

<b>SPJB</b>	-		-	<b>CS</b>		-	
-------------	---	--	---	-----------	--	---	--

Predefined characters indicate pre-set attributes.

# Enclosure Solutions for Field Barriers



**Example:**

F2D0-FB-EX4.PA.CG.M12B: FieldBarrier with aluminum housing, connection of trunk, cable gland plastic M20, 4 intrinsically safe outputs, plug connection nickel plated brass M12, pinout for PROFIBUS PA.

Type code/model number

Electronic type

**F.FB0** Enclosure solution for RD0-FB-Ex4.COM

Enclosure material

**P** Impact-resistant, glass-fiber reinforced polyester, IP66

Number of installed devices

- 11.A04** 1 x RD0-FB-Ex4.COM <sup>1</sup>
- 20.A08** 2 x RD0-FB-Ex4.COM
- 30.A12** 3 x RD0-FB-Ex4.COM

Fieldbus type

**1** Suitable for FOUNDATION Fieldbus H1 and PROFIBUS PA

Spur terminals

**0** Spurs directly wired to RD0-FB-Ex4.COM

Trunk entries

Spur entries

- GP2 GP2** Cable gland M20, polyamide, Ex e, IP66
- GB2 GB2** Cable gland M20, nickel plated brass, Ex e, IP66
- GS2 GS2** Cable gland, M20, stainless steel, Ex e, IP66
- GN2 GN2** Cable gland M20, nickel plated brass, Ex de, IP66, for armoured cable
- GA2 GA2** Cable gland M20, stainless steel, Ex de, IP66, for armoured cable
- H02 H02** Stopping plug M20, polyamide, Ex e, IP66
- H03 H03** Stopping plug M20, nickel plated brass, Ex de, IP66
- H04 H04** Stopping plug M20, stainless steel, Ex de, IP66

Tag plate

- A** Tag plate, traffolyte, 120 x 30 mm
- B** Tag plate, stainless steel, 120 x 30 mm
- 0** No tag plate

Grounding bar

- 1** Grounding bar 10 x 3 mm, equipped with grounding terminals
- 0** No grounding bar installed

Surge protection trunk

- 3** Surge protection for trunk FS-LBF-D1.32 installed <sup>1</sup>
- 0** No surge protection

External terminator

- T** Fieldbus terminator FS-FT-Ex1.D.IEC installed <sup>1</sup>
- 0** No terminator installed

<sup>1</sup> In conjunction with version 11.A04 surge protection and external terminator are available on request.

F.FB0	.	P	.	1	.	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
-------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Predefined characters indicate pre-set attributes.



**Type code/model number**

**Electronic type**

**F.FB0** Enclosure solution for RD0-FB-Ex4.COM

**Enclosure material**

**S** Stainless steel 316, electropolished, IP66

**Number of installed devices**

- 11.A04** 1 x RD0-FB-Ex4.COM <sup>1</sup>
- 20.A08** 2 x RD0-FB-Ex4.COM
- 30.A12** 3 x RD0-FB-Ex4.COM

**Fieldbus type**

**1** Suitable for FOUNDATION Fieldbus H1 and PROFIBUS PA

**Spur terminals**

**0** Spurs directly wired to RD0-FB-Ex4.COM

**Trunk entries**

**Spur entries**

- GP2 GP2** Cable gland M20, polyamide, Ex e, IP66
- GB2 GB2** Cable gland M20, nickel plated brass, Ex e, IP66
- GS2 GS2** Cable gland, M20, stainless steel, Ex e, IP66
- GN2 GN2** Cable gland M20, nickel plated brass, Ex de, IP66, for armoured cable
- GA2 GA2** Cable gland M20, stainless steel, Ex de, IP66, for armoured cable
- H02 H02** Stopping plug M20, polyamide, Ex e, IP66
- H03 H03** Stopping plug M20, nickel plated brass, Ex de, IP66
- H04 H04** Stopping plug M20, stainless steel, Ex de, IP66

**Tag plate**

- A** Tag plate, traffolyte, 120 x 30 mm
- B** Tag plate, stainless steel, 120 x 30 mm
- 0** No tag plate

**Grounding bar**

- 1** Grounding bar 10 x 3 mm, equipped with grounding terminals
- 0** No grounding bar installed

**Surge protection Trunk**

- 3** Surge protection for Trunk FS-LBF-D1.32 installed <sup>1</sup>
- 0** No surge protection

**External terminator**

- T** Fieldbus terminator FS-FT-Ex1.D.IEC installed <sup>1</sup>
- 0** No terminator installed

<sup>1</sup> In conjunction with version 11.A04 surge protection and external terminator are available on request.

F.FB0	.	S	.	1	.	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
-------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Predefined characters indicate pre-set attributes.

**Type code/model number**

**Electronic type**

**F.FB1** Enclosure solution for R4D0-FB-IAxx.x

**Enclosure material**

- S** Stainless steel 316 electropolished, IP66
- P** Glass-fiber reinforced polyester, IP66

**Installed device with number of outputs**

- 14.A08** 1 x R4D0-FB-IA08.x
- 14.A10** 1 x R4D0-FB-IA10.x
- 14.A12** 1 x R4D0-FB-IA12.x

**Fieldbus type**

- 1** Suitable for FOUNDATION Fieldbus H1 and PROFIBUS PA

**Terminals + trunk options**

- 0** Screw terminals (R4D0-FB-IAxx.0)
- 3** Spring terminals (R4D0-FB-IAxx.1)
- 6** Screw terminals + multi function terminal (MFT) for trunk disconnection
- 8** Screw terminals + multi function terminal (MFT) for trunk disconnection + spare terminals
- A** Spring terminals + multi function terminal (MFT) for trunk disconnection
- C** Spring terminals + multi function terminal (MFT) for trunk disconnection + spare terminals

**Trunk entries**

**Spur entries**

- GP2** **GP2** Cable gland M20, polyamide
- GB2** **GB2** Cable gland M20, nickel plated brass
- GS2** **GS2** Cable gland M20, stainless steel
- GN2** **GN2** Cable gland M20, nickel plated brass for armored cable
- GA2** **GA2** Cable gland M20, stainless steel for armored cable
- H02** **H02** Stopping plug M20, polyamide
- H03** **H03** Stopping plug M20, nickel plated brass
- H04** **H04** Stopping plug M20, stainless steel

**Tag plate**

- A** Tag plate, traffolyte
- B** Tag plate, stainless steel
- 0** No tag plate

**Grounding bar**

- 0** No grounding bar installed

**Surge protection**

- 0** No surge protection
- 3** Surge protection on the trunk
- 5** Surge protection on spurs
- 7** Surge protection on spurs with diagnosis
- 8** Surge protection on the trunk and spurs
- A** Surge protection for trunk and spurs with diagnosis

**Additional accessories**

- 0** No additional accessories
- L** Enclosure Leakage Sensor
- D** Document pocket (A4)
- 5** Enclosure Leakage Sensor + document pocket (A4)

F.FB1	.	.	.	1	.	.	.	.	.	0	.	.	.	.
-------	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Predefined characters indicate preset attributes.

# Enclosure Solutions for Process Interfaces

## Cable glands

Cable gland versions								
Type	Cable gland					Stopping plug		
	GP2	GB2	GS2	GN2	GA2	H02	H03	H04
<b>Mechanical specifications</b>								
Protection degree	IP66	IP66	IP66	IP66	IP66	IP66	IP66	IP66
Material	polyamide	nickel-plated brass	stainless steel	nickel plated brass	stainless steel	polyamide	nickel-plated brass	stainless steel
Thread	M20	M20	M20	M20	M20	M20	M20	M20
Inner sheath (mm)	–	–	–	7 ... 12	7 ... 12	–	–	–
Outer sheath (mm)	5.5 ... 13	3 ... 12	3 ... 12	10 ... 16	10 ... 16	–	–	–
Cable								
Suitable for armored cable	no	no	no	yes	yes	–	–	–
<b>Data for application in conjunction with hazardous areas</b>								
Type of protection	Ex e	Ex de	Ex de	Ex de	Ex de	Ex e	Ex de	Ex de

# Enclosure Solutions for Foundation Fieldbus H1

Type code/model number										
Housing type										
F2	Field housing, aluminum, IP66									
Function										
MIO	Multiple inputs and outputs									
Hazardous area protection										
Ex	Intrinsically safe (Ex ia) rated inputs and outputs									
Number of channels										
12	12 inputs and outputs									
Fieldbus type										
FF	FOUNDATION Fieldbus									
PA	PROFIBUS PA									
Terminal options										
1	Screw terminals, pluggable									
2	Spring terminals, pluggable									
Cable entry options										
00	1 x M20, 8 x M16 stopping plugs, plastic									
01	n/a									
02	1 x M20, 8 x M16 cable glands, plastic									
03	1 x M20, 8 x M16 cable glands, nickel-plated brass									
04	1 x M20, 8 x M16 cable glands, stainless steel									
05	5 x M20 cable glands, plastic									
F2	-	D0-MIO	-	Ex	12	.	.	.	.	.
A	-	B	-	C	D	.	E	.	F	G

**Example:**

F2D0-MIO-Ex12.FF.1.02: Multi-input/output in aluminum housing with cable glands made of plastic and 12 inputs/outputs with pluggable screw terminals.

**Note:**

Contact your Pepperl+Fuchs representative to check the availability of individual variants.

**Type code/model number**

**Electronic type**

**F.MIO** Enclosure solution for R8D0-MIO-Ex12.FF\*

**Enclosure material**

**S** Stainless steel 316L, electropolished, IP66

**Number of installed devices**

**12.A12** 1 x R8D0-MIO-Ex12.FF\* for installation in Zone 1

**12.B12** 1 x R8D0-MIO-Ex12.FF\* for installation in Zone 2

**Fieldbus type**

**F** Suitable for FOUNDATION Fieldbus

**Terminals**

**0** Screw terminals

**3** Spring terminals

**Bus line entries**

**Field signal line entries**

- GP2 GP2** Cable gland M20, polyamide, Ex e, IP66
- GB2 GB2** Cable gland M20, nickel plated brass, Ex e, IP66
- GS2 GS2** Cable gland, M20, stainless steel, Ex e, IP66
- GN2 GN2** Cable gland M20, nickel plated brass, Ex de, IP66, for armored cable
- GA2 GA2** Cable gland M20, stainless steel, Ex de, IP66, for armored cable
- H02 H02** Stopping plug M20, polyamide, Ex e, IP66
- H03 H03** Stopping plug M20, nickel plated brass, Ex de, IP66
- H04 H04** Stopping plug M20, stainless steel, Ex de, IP66

**Tag plate**

**D** Tag plate, stainless steel, 95 mm x 20 mm

**C** Tag plate, plastic, 95 mm x 20 mm

**0** No tag plate

**Grounding bar**

**2** With isolated grounding bar

**1** With grounding bar connected to potential equalization

**0** No grounding bar installed

F	MIO	.	S	.		.	F	.		.		.		.		.			0	0
---	-----	---	---	---	--	---	---	---	--	---	--	---	--	---	--	---	--	--	---	---

Predefined characters indicate pre-set attributes.

**Type code/model number**

**Electronic type**

**F.MIO** Enclosure solution for R8D0-MIO-Ex12.FF\*

**Enclosure material**

**P** Glass fiber reinforced polyester, IP66

**Number of installed devices**

**12.A12** 1 x R8D0-MIO-Ex12.FF\* for installation in Zone 1

**12.B12** 1 x R8D0-MIO-Ex12.FF\* for installation in Zone 2

**Fieldbus type**

**F** Suitable for FOUNDATION Fieldbus

**Terminals**

**0** Screw terminals

**3** Spring terminals

**Bus line entries**

**Field signal line entries**

**GP2 GP2** Cable gland M20, polyamide, Ex e, IP66

**GB2 GB2** Cable gland M20, nickel plated brass, Ex e, IP66

**GS2 GS2** Cable gland, M20, stainless steel, Ex e, IP66

**GN2 GN2** Cable gland M20, nickel plated brass, Ex de, IP66, for armored cable

**GA2 GA2** Cable gland M20, stainless steel, Ex de, IP66, for armored cable

**H02 H02** Stopping plug M20, polyamide, Ex e, IP66

**H03 H03** Stopping plug M20, nickel plated brass, Ex de, IP66

**H04 H04** Stopping plug M20, stainless steel, Ex de, IP66

**Tag plate**

**D** Tag plate, stainless steel, 95 mm x 20 mm

**C** Tag plate, plastic, 95 mm x 20 mm

**0** No tag plate

**Grounding bar**

**2** With isolated grounding bar

**1** With grounding bar connected to potential equalization

**0** No grounding bar installed

<b>F.MIO</b>	.	<b>P</b>		.	<b>F</b>	.		.		.		.			<b>0</b>	<b>0</b>
--------------	---	----------	--	---	----------	---	--	---	--	---	--	---	--	--	----------	----------

Predefined characters indicate pre-set attributes.

**Type code/model number**

**Housing type**

**F2** Field housing, aluminum, IP66

**Function**

**MIO** Multiple inputs and outputs

**Hazardous area protection**

**Ex** Intrinsically safe (Ex ia) rated inputs and outputs

**Number of channels**

**12** 12 inputs and outputs

**Fieldbus type**

**FF** FOUNDATION Fieldbus

**PA** PROFIBUS PA

**Terminal options**

**1** Screw terminals, pluggable

**2** Spring terminals, pluggable

**Cable entry options**

**00** 1 x M20, 8 x M16 stopping plugs, plastic

**01** n/a

**02** 1 x M20, 8 x M16 cable glands, plastic

**03** 1 x M20, 8 x M16 cable glands, nickel-plated brass

**04** 1 x M20, 8 x M16 cable glands, stainless steel

**05** 5 x M20 cable glands, plastic

F2	-	D0-MIO	-	Ex	12	.		.		.	
A	-	B	-	C	D	.	E	.	F	.	G

**Example:**

F2D0-MIO-Ex12.FF.1.02: Multi-input/output in aluminum housing with cable glands made of plastic and 12 inputs/outputs with pluggable screw terminals.

**Note:**

Contact your Pepperl+Fuchs representative to check the availability of individual variants.

# Enclosure Solutions for PROFIBUS PA

## Type code/model number

### Electronic type

**F.MIO** Enclosure solution for R8D0-MIO-Ex12.PA\*

### Enclosure material

**P** Glass fiber reinforced polyester, IP66

### Number of installed devices

**12.A12** 1 x R8D0-MIO-Ex12.PA\* for installation in Zone 1

**12.B12** 1 x R8D0-MIO-Ex12.PA\* for installation in Zone 2

### Fieldbus type

**P** Suitable for PROFIBUS PA

### Terminals

**0** Screw terminals

**3** Spring terminals

### Bus line entries

#### Field signal line entries

**GP2 GP2** Cable gland M20, polyamide, Ex e, IP66

**GB2 GB2** Cable gland M20, nickel plated brass, Ex e, IP66

**GS2 GS2** Cable gland, M20, stainless steel, Ex e, IP66

**GN2 GN2** Cable gland M20, nickel plated brass, Ex de, IP66, for armored cable

**GA2 GA2** Cable gland M20, stainless steel, Ex de, IP66, for armored cable

**H02 H02** Stopping plug M20, polyamide, Ex e, IP66

**H03 H03** Stopping plug M20, nickel plated brass, Ex de, IP66

**H04 H04** Stopping plug M20, stainless steel, Ex de, IP66

### Tag plate

**D** Tag plate, stainless steel, 95 mm x 20 mm

**C** Tag plate, plastic, 95 mm x 20 mm

**0** No tag plate

### Grounding bar

**2** With isolated grounding bar

**1** With grounding bar connected to potential equalization

**0** No grounding bar installed

**F.MIO . P . P . . . . . 0 0**

Predefined characters indicate pre-set attributes.



**Type code/model number**

**Electronic type**

**F.MIO** Enclosure solution for R8D0-MIO-Ex12.PA\*

**Enclosure material**

**S** Stainless steel 316L, electropolished, IP66

**Number of installed devices**

**12.A12** 1 x R8D0-MIO-Ex12.PA\* for installation in Zone 1

**12.B12** 1 x R8D0-MIO-Ex12.PA\* for installation in Zone 2

**Fieldbus type**

**P** Suitable for PROFIBUS PA

**Terminals**

**0** Screw terminals

**3** Spring terminals

**Bus line entries**

**Field signal line entries**

- GP2** Cable gland M20, polyamide, Ex e, IP66
- GB2** Cable gland M20, nickel plated brass, Ex e, IP66
- GS2** Cable gland, M20, stainless steel, Ex e, IP66
- GN2** Cable gland M20, nickel plated brass, Ex de, IP66, for armored cable
- GA2** Cable gland M20, stainless steel, Ex de, IP66, for armored cable
- H02** Stopping plug M20, polyamide, Ex e, IP66
- H03** Stopping plug M20, nickel plated brass, Ex de, IP66
- H04** Stopping plug M20, stainless steel, Ex de, IP66

**Tag plate**

- D** Tag plate, stainless steel, 95 mm x 20 mm
- C** Tag plate, plastic, 95 mm x 20 mm
- 0** No tag plate

**Grounding bar**

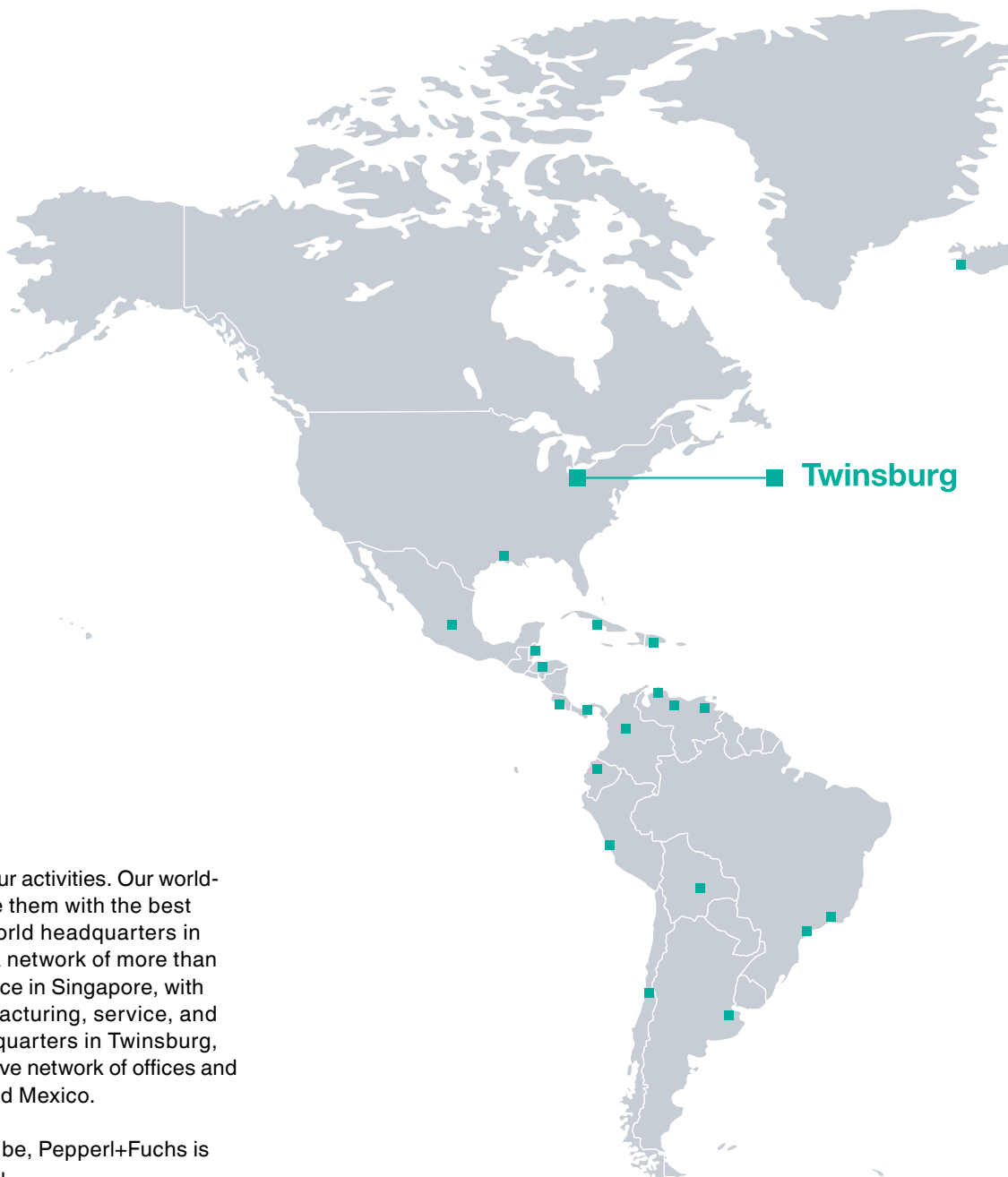
- 2** With isolated grounding bar
- 1** With grounding bar connected to potential equalization
- 0** No grounding bar installed

F.MIO	.	S	.	P	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0	0
-------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Predefined characters indicate pre-set attributes.

# Staying in Touch. The World Over.

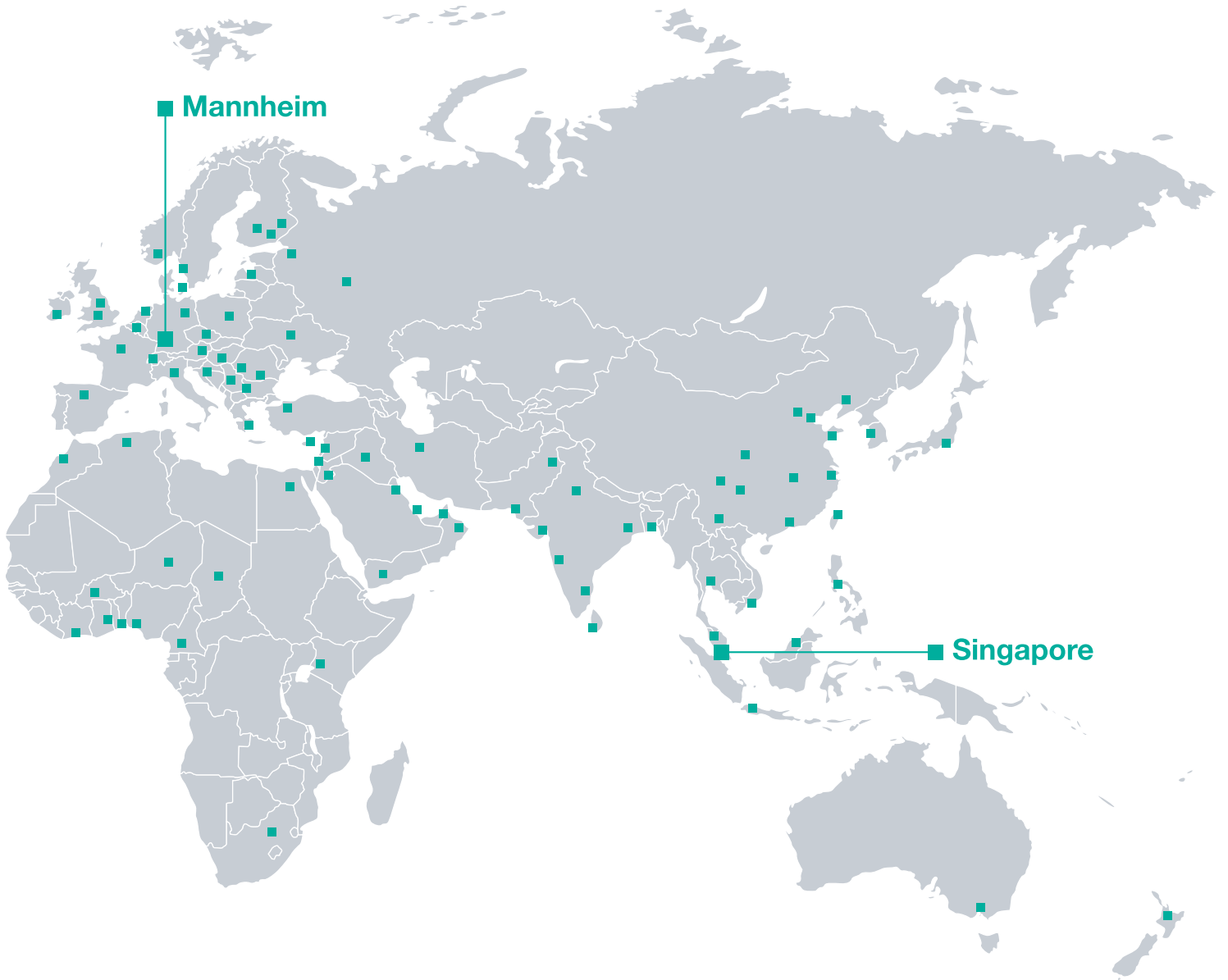
Good customer relationships need care and attention. They are an indication of genuine interest, trust, and a cooperative spirit: the foundation of Pepperl+Fuchs' strengths. No matter where you might be, we are always nearby. And we speak your language—in more than 140 countries across the globe.



## At Home on All Continents

Our customers are at the center of all our activities. Our world-wide network ensures that we provide them with the best possible service and support. Our world headquarters in Mannheim services Europe through a network of more than 40 affiliates. Asia is handled by our office in Singapore, with more than 1,000 employees in manufacturing, service, and sales. And our North American headquarters in Twinsburg, Ohio, is responsible for a comprehensive network of offices and sales partners in the USA, Canada, and Mexico.

No matter where in the world you may be, Pepperl+Fuchs is right nearby—and always there for you.



# Your automation, our passion.

## Explosion Protection

- Intrinsic Safety Barriers
- Signal Conditioners
- FieldConnex® Fieldbus
- Remote I/O Systems
- Electrical Ex Equipment
- Purge and Pressurization
- Industrial HMI
- Mobile Computing and Communications
- HART Interface Solutions
- Surge Protection
- Wireless Solutions
- Level Measurement

## Industrial Sensors

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- Fieldbus Modules
- AS-Interface
- Identification Systems
- Displays and Signal Processing
- Connectivity

### **ETA Process Instrumentation**

[www.etapii.com](http://www.etapii.com)  
[sales@etapii.com](mailto:sales@etapii.com)  
tel 978.532.1330

*New England*

### **Martech Controls**

[www.martechcontrols.com](http://www.martechcontrols.com)  
[sales@martechcontrols.com](mailto:sales@martechcontrols.com)  
tel: 315.876.9120

*Upstate New York*