EXPERIENCE HYGIENIC DESIGN

SENSORS FOR THE
FOOD AND BEVERAGE
INDUSTRY

PEPPERL+FUCHS

SENSING YOUR NEEDS

Pepperl+Fuchs GmbH, headquartered in Mannheim, is a leading developer and manufacturer of electronic sensors and components for the global automation market. A global presence with more than 4,000 employees, continuous innovation and steady growth over 60 years have formed the basis of international success.

Pepperl+Fuchs – Your Specialist for the Food and Beverage Industry

The requirements for the food and beverage industry are varied. So too, is our product portfolio. We offer solutions for every step in your automation process – from sensors for fill level measuring, presence checking, dose measurement, to quality control, and position sensing.

Continuous innovations
Pepperl+Fuchs continuously sets new standards in quality and innovative technologies. We now offer hygienically designed ultrasonic, photoelectric, and inductive senors for the food and beverage industry:
- Ultrasonic sensors
- Photoelectric sensors
- Inductive sensors

Our specialist will be glad to help you.

Phone: 0049 (0)621 776-4411
Fax: 0049 (0)621 776-27-4411
E-Mail: fa-info@pepperl-fuchs.com
Internet: **www.pepperl-fuchs.com/food-beverage**

Three steps to hygiene

PRODUCT CONTACT ZONE

All areas where food is processed, transported or stored, and all surfaces which come into contact with food

SPLASH ZONE

All areas outside the product zone where food may splash and accumulate, but there is no direct contact with food

PRODUCT-FREE ZONE

All areas that are neither contacted by the product nor the product parts

Sensors for the food and beverage industry

- Standard photoelectric sensors
- Photoelectric safety sensors
- RFID Identification
- Rotary encoders
- Inductive sensors
- Ultrasonic sensors
- Optical identification
- Positioning system
- Inclination and acceleration sensors

The food and beverage industry sets high standards for machines and components. Pepperl+Fuchs' hygienically designed sensors are especially adapted for this industry. Our sensors meet internationally accepted standards and guidelines such as EHEDG and the FDA for the food and beverage industry.

Pepperl+Fuchs standards and guidelines

■ European Hygienic Engineering Design Group, design criteria for hygienic machines, apparatus and components
■ EHEDG certification of sensors, including accessories
■ Pepperl+Fuchs is member of EHEDG and is involved in the design and improvement of the guidelines.

■ Sensor housings and accessories are resistant to aggressive cleaning agent

■ The FDA (Food and Drug Administration) is a US supervisory authority for food and drugs. This authority gives appovals for products and materials applying to the food and beverage industry.

■ Sensors and accessories are FDA approved

■ Guaranteed tightness of sensors and accessories in applications with steam jet and also after ongoing temperature shocks

Your benefits

■ Faster and efficient cleaning
■ Shorter cleaning times
■ Microbiological safety
■ Higher machine availability

PRODUCT CONTACT ZONE

All areas where food is processed, transported or stored, and all surfaces that come into contact with food.

Cleaning: Aggressive cleaning with chemicals, hot water and high pressure

EHEDG — EUROPEAN HYGIENIC ENGINEERING & DESIGN GROUP · COMPANY MEMBER 2011

ECOLAB®   FDA   IP69K

Our solutions for the product contact zone:
3 technologies with hygienic design

Ultrasonic, photoelectric and inductive sensors

- EHEDG-certified sensors with hygienic design
- Unique sensor and mounting solutions minimize the contamination risk
- Easy-to-clean sensor design for microbiological safety
- Shorter cleaning times for higher machine availability

The unique Pepperl+Fuchs hygienic concept – your benefit

A total solution that includes the sensor and the installation hardware guarantees a hygienic design

- Mounting solutions are part of the EHEDG certificate
- Food-safe seals ensure no metal on metal connections

A smooth, sleek, and durable surface design free of cracks and crevices enables food particles, water, and cleaning agents to run off, guaranteeing maximum cleaning efficiency

- High-grade steel housing 316L, 1,4404 - rust and acid-proof high-grade steel (V4A)
- Self-cleaning housing surfaces, maximal surface roughness R_a < 0.8 µm
- All internal angles are rounded with a minimum radii of 6 mm; edges and corners are ground smooth

No crevices permits the best results during cleaing process

- The highest degree of protection against ingress of water even with steam cleaners at high pressure with hot water

PRODUCT CONTACT ZONE

First hygienically designed ultrasonic metal face sensors

These sensors are produced according to EHEDG standards especially for the food and beverage industries. As a complete solution, the hygienically designed sensor and mounting hardware guarantee the lowest risk of contamination, best possible cleaning, and the elimination of bacteria.

EHEDG — EUROPEAN HYGIENIC ENGINEERING & DESIGN GROUP — COMPANY MEMBER 2011

ECOLAB®

FDA

IP69K

Easy to clean, stainless steel surface V4A (1.4404/316L)
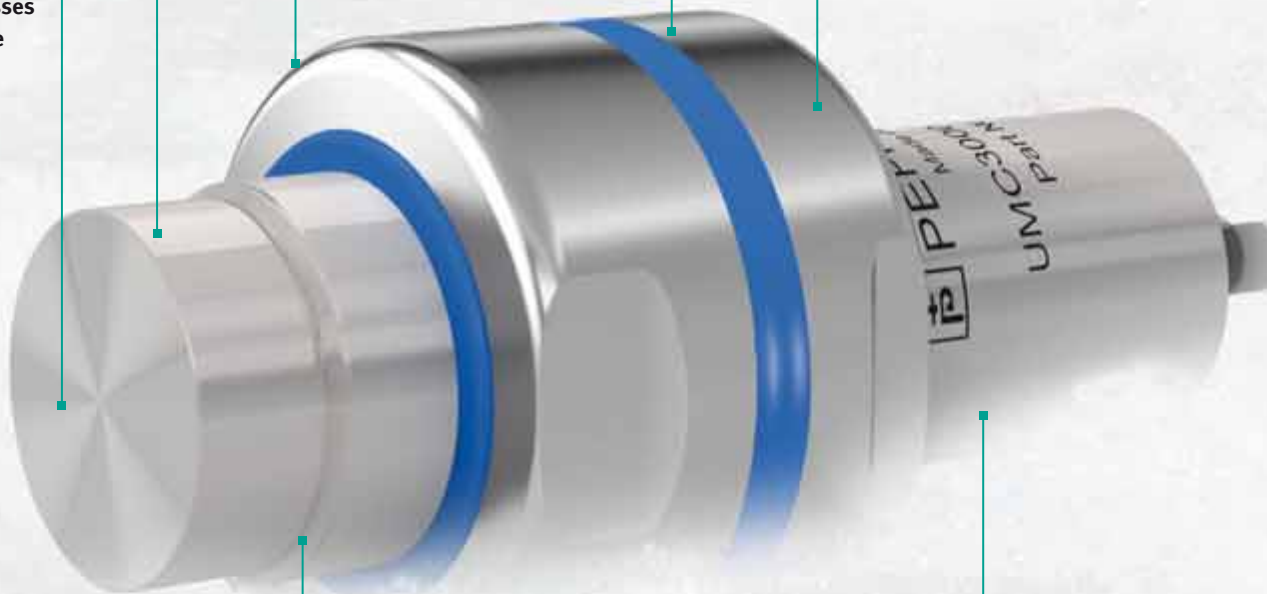
No gaps and crevices

Highest cleaning efficiency, maximal surface roughness R_a < 0.8 µm

Materials are food industry approved

Capable of withstanding vigorous cleaning processes and extreme temperature variations

No dirt or food particle build-up

Withstands washdown, IP69K

UMC3000 METAL FACE SENSOR WITH HYGIENIC MOUNTING SOLUTION

Model number sensor including hygienic mounting solution	UMC3000-30H-E5-5M-FA UMC3000-30H-I-5M-FA
Model number hygienic mounting solution	MH-30H-01-FA
Technical data	
Sensing range	200 mm … 3000 mm
Output type	Switching or votage output
Connection type	cable TPE, 5 m
Operating voltage	10 V DC … 30 V DC
Dimensions	ø 30 mm, lenght 100 mm

UNIQUE HYGIENICALLY DESIGNED SENSOR AND MOUNTING SOLUTION

YOUR BENEFITS

- Machine cleaning without removing the sensor
- Faster and safe machine cleaning
- Higher machine availability

UME1000 ULTRASONIC METAL FACE THROUGH BEAM BARRIER

Model number sensor	UME1000-18H-SE2-FA
Model number hygienic mounting solution	MH-18H-01-FA
Technical data	
Sensing range	1000 mm
Output type	switching output
Switching frequency	>100 Hz
Operating voltage	10 V DC … 30 V DC
Dimensions	ø 18 mm, lenght 55 mm
Protection class	IP67
Connection type	cable PUR, 2 m
Ambient temperature	-25 °C … +85 °C

PRODUCT CONTACT ZONE

MLE76 series – Perfect merging of sensor and mounting with hygienic design

Stainless steel sensors with hygienic design for safe food and processing industry, in brewery and creamery applications.
Specially designed surfaces, unique joining geometry with press in procedure of the front cover for residue-free cleaning.

EHEDG · EUROPEAN HYGIENIC ENGINEERING & DESIGN GROUP · COMPANY MEMBER 2011

ECOLAB®

FDA

IP69K

Easy to clean, stainless steel housing V4A (1.4404/316L

Easy to clean housing surfaces, as all internal angles are rounded and seamless welded

No controls, indicator LEDs behind the front cover

PEPPERL+FUCHS
Made in Germany
Part No. 224432
MLE76100-54-G
/25/110/115/123
U$_B$=10-30V DC Class 2
cULus CE
Type 1 enclosure

Compression fit eliminates gluing

Highest cleaning efficiency, surface roughness R$_a$ < 0.8 µm

Special coating provides maximum chemical resistance and excellent scratch resistance

Withstands washdown, IP69K

No gaps and crevices, no dirt or food particle build-up

Integrated mounting solutions are part of the EHEDG certificate

Materials are food industry approved

Capable of withstanding vigorous cleaning processes and extreme temperature variations ECOLAB

MLE76XXX-54-G – RETROREFLECTIVE SENSOR FOR TRANSPARENT OBJECTS

Model number	MLE76XXX-54-G
Technical data	
Sensing range	5.1 m
Light type	Red light
Diameter of the light spot	approx. 40 mm at 1 m
Operating voltage	10 V DC … 30 V DC
Output type	One or double push-pull output
Switching type	light/dark on
Response time	500 µs
Dimensions W x H x D	12.9 mm x 44.9 mm x 25.1 mm

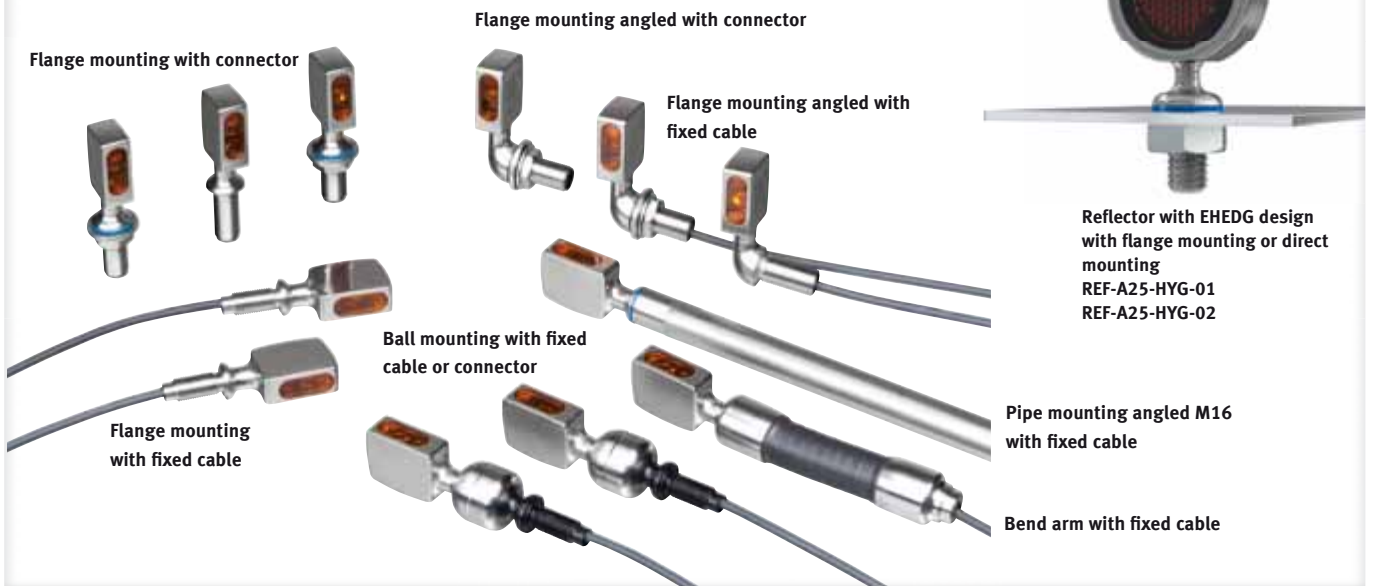## MLE76XXX-8-H – BACKGROUND SUPPRESSION SENSOR AND PERMANENTLY TRIGGERED DETECTION RANGE

Model number	MLE76XXX-8-H
Technical data	
Max. detection range	50 mm, 100 mm, 140 mm
Light type	Red light
Diameter of the light spot	approx. 5 mm at 100 mm
Operating voltage	10 V DC … 30 V DC
Output type	One or double push-pull output
Switching type	light/dark on
Response time	500 µs
Dimensions W x H x D	12.9 mm x 44.9 mm x 25.1 mm

COMPLETE UNIQUE SENSOR, MOUNTING AND ACCESSORIES SOLUTION WITH HYGIENIC DESIGN

YOUR BENEFITS

- Machine cleaning without dismounting the sensors
- Faster and safe machine cleaning
- Higher machine availability
- Different hygienically designed mounting solutions
- Reflectors with safe hygienic design for various application solutions

Flange mounting angled with connector

Flange mounting with connector

Flange mounting angled with fixed cable

Reflector with EHEDG design with flange mounting or direct mounting
REF-A25-HYG-01
REF-A25-HYG-02

Ball mounting with fixed cable or connector

Flange mounting with fixed cable

Pipe mounting angled M16 with fixed cable

Bend arm with fixed cable

INDUCTIVE SENSORS FOR THE PRODUCT CONTACT ZONE

PRODUCT CONTACT ZONE

Inductive metal face sensors with hygienic design for higher machine efficiency

Increase machine productivity with sensors especially developed according to EHEDG standards. Intelligent sensor and mounting solutions with hygienic design and self-cleaning surfaces enable higher cleaning efficiency.

EHEDG · COMPANY MEMBER 2011

ECOLAB®   FDA   IP69K

Easy to clean, stainless steel surface V4A (1.4404/316L)

No gaps and crevices

Highest cleaning efficiency, maximal surface roughness R_a ‹ 0,8 μm

Materials are food industry approved

Capable of withstanding vigorous cleaning processes and extreme temperature variations

No dirt or food particle build-up

Withstands washdown, IP69K
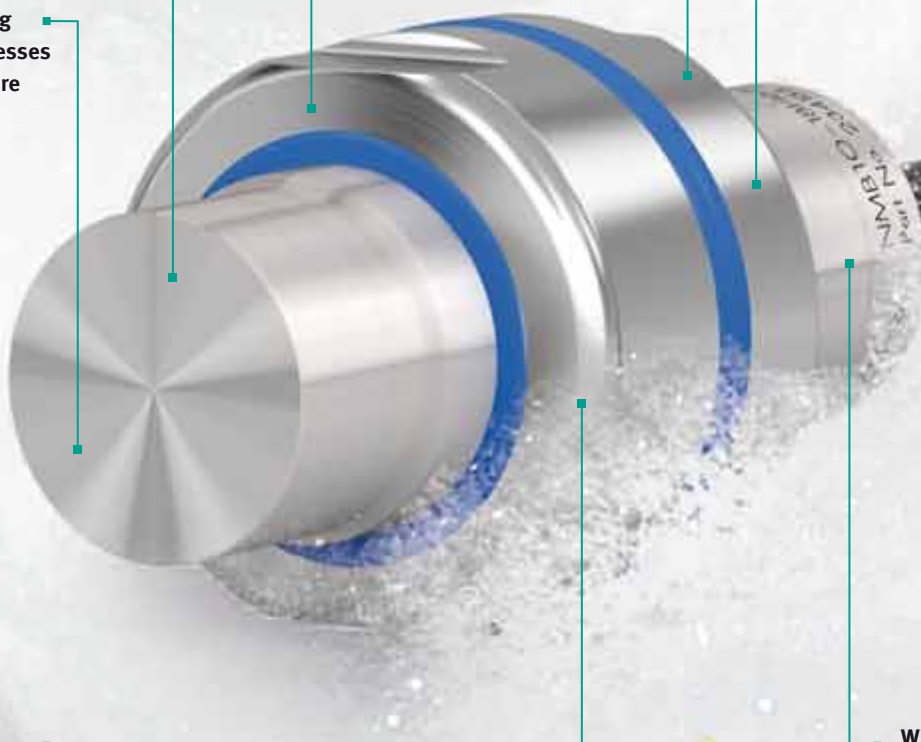
M12 INDUCTIVE METAL FACE SENSOR

Model number sensor	NMB5-12H65-E2-FA
Model number hygienic mounting solution	MH-30H-01-FA
Technical data	
Rated operating distance	5 mm, embeddabl
Output type	switching output
Switching frequency	300 Hz
Connection type	cable PUR, 2 m
Operating voltage	10 V DC … 30 V DC
Dimensions	ø 12 mm, lenght 65 mm
Ambient temperature	-25 °C … +85 °C

UNIQUE HYGIENICALLY DESIGNED SENSOR AND MOUNTING SOLUTION

YOUR BENEFITS

- Machine cleaning without removing the sensor
- Faster and safe machine cleaning
- Higher machine availability

M18 INDUCTIVE METAL FACE SENSOR

Model number Sensor	NMB10-18H65-E2-FA
Model number hygienic mounting solution	MH-18H-01-FA
Technical data	
Rated operating distance	10 mm, embeddabl
Output type	switching output
Switching frequency	200 Hz
Connection type	cable PUR, 2 m
Operating voltage	10 V DC … 30 V DC
Dimensions	ø 18 mm, lenght 67 mm
Ambient temperature	-25 °C … +85 °C

SPLASH ZONE

All areas outside the product zone where food may splash and accumulate, but there is no direct contact with food

Cleaning: Chemical and hot water cleaning

Metal Face Sensors for hard continuous operation

With their washdown design, these sensors are absolutely robust and reliable even when using aggressive cleaning agents.
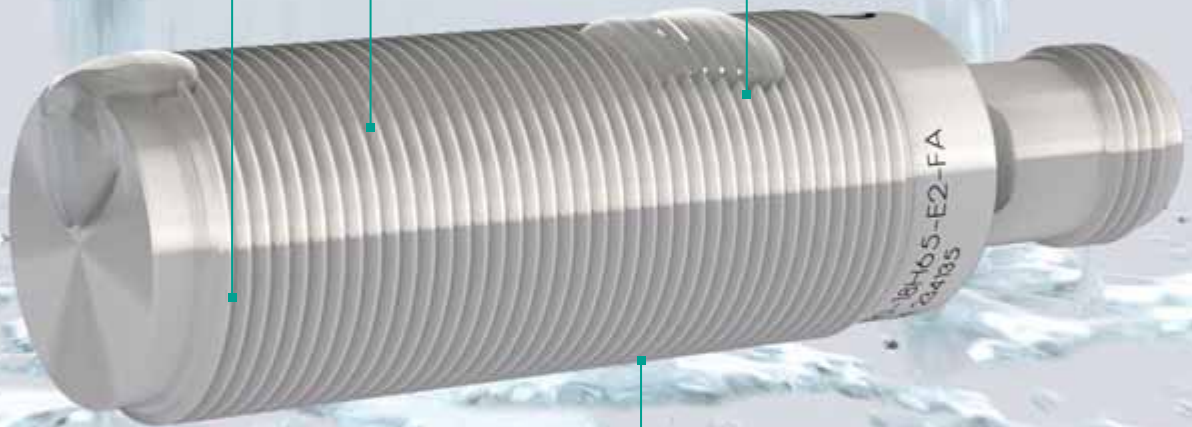
ECOLAB®   FDA   IP69K

Withstands washdown, IP69K

Capable of withstanding vigorous cleaning processes and extreme temperature variations ECOLAB

Stainless steel surface V4A (1.4404) for easy cleaning

Materials are approved for the food industry

ULTRASONIC METAL FACE SENSORS

Model number	UME1000-18GH-SE2-FB
Technical data	
Sensing range	1000 mm
Output type	Frequency output
Switching frequency	>100 Hz
Connection type	cable PVC, 2 m
Operating voltage	10 V DC … 30 V DC
Dimensions	ø 18 mm, lenght 67 mm
Ambient temperature	-25 °C … +85 °C

INDUCTIVE METAL FACE SENSORS

Model number	NMB5-12GH50-E2-V1-FB NMB5-12GH50-E2-FB
Technical data	
Rated operating distance	5 mm, embaddable
Output type	Frequency output
Switching frequency	300 Hz
Connection type	cable PVC, 2 m
Operating voltage	10 V DC … 30 V DC
Dimensions	ø 12 mm, lenght 65 mm
Ambient temperature	-25 °C … +85 °C

Model number	NMB10-18GH50-E2-V1-FB NMB10-18GH50-E2-FB
Technical data	
Rated operating distance	10 mm, embaddable
Output type	Frequency output
Switching frequency	200 Hz
Connection type	cable PVC, 2 m
Operating voltage	10 V DC … 30 V DC
Dimensions	ø 12 mm, lenght 65 mm
Ambient temperature	-25 °C … +85 °C

ACCESSORIES

Hygienical cable	Model number	V1-GV4A-2M-PP straight V1-WV4A-2M-PP angled

SPLASH ZONE

Series MLE75 in washdown design for clean solutions

This photoelectric series is designed for tough usage in the food and beverage industry. The stainless steel housing is reliable also in extreme environments.

ECOLAB®

FDA

IP69K

Sensitivity and sensing range adjuster

Stainless steel surface V4A (1.4404) for easy cleaning

Indicator LEDs behind the front cover

Compression fit eliminates gluing

Special coating provides maximum chemical resistance and excellent scratch resistance

PEPPERL+FUCHS

Made in Germany
Part No. 207386
MLE75-8-H-140-RT
/59/65/115/136 FB
U_B=10-30V DC Class 2

CE

cULus

Capable of withstanding vigorous cleaning processes and extreme temperature variations ECOLAB

Materials are approved for the food industry

Withstands washdown, IP69K

MLE75-54-G RETROREFLECTIVE SENSOR FOR TRANSPARENT OBJECTS

| Model number	MLE75-54-G
Technical data	
Sensing range	5.1 m
Light type	Red light
Diameter of the light spot	approx. 40 mm at 1 m
Operating voltage	10 V DC … 30 V DC
Output type	One or double push-pull output
Switching type	Light/dark on
Response time	500 µs
Dimensions W x H x D	12.9 mm x 44.9 mm x 25.1 mm

MLE75-8-H BACKGROUND SUPPRESSION SENSOR

Model number	MLE75-8-H
Technical data	
Max. detection range	0 mm ... 140 mm, adjustable
Light type	Red light
Diameter of the light spot	approx.. 5 mm at 100 mm
Operating voltage	10 V DC … 30 V DC
Output type	One or double push-pull output
Switching type	Light/dark on
Response time	500 µs
Dimensions W x H x D	12.9 mm x 44.9 mm x 25.1 mm

ACCESSORIES REFLECTORS FOR MLE75-54-G

Chemically stable reflectors with IP69K protection class and Ecolab certificate	
Model number	
REF-H20x40F	Reflector rectangular, 20 mm x 60 mm with mounting hole
REF-H60F	Reflector rectangular, 40.5 mm x 60 mm with mounting hole
REF-H100F	Reflector rectangular, 100 mm x 100 mm with mounting hole
REF-S20F	Reflector, diameter 20 mm with screw fastening M4
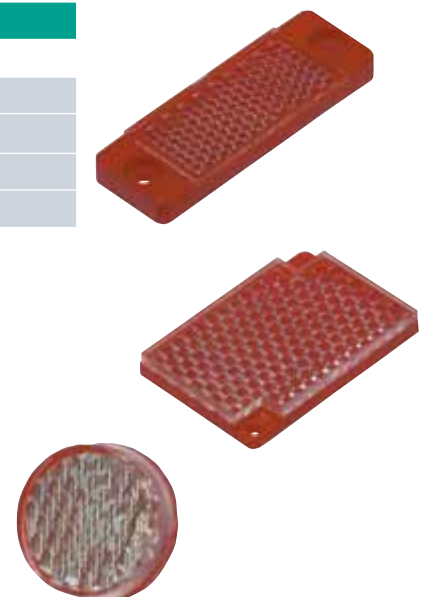
PRODUCT FREE ZONE

All areas that are neither contacted by the product nor the product part

Choose from the large Pepperl+Fuchs Portfolio

As a pioneer and innovator in industrial sensor systems, Pepperl+Fuchs is known for high-quality sensors in the food, beverage and packaging industry. Whether it's inductive, photoelectric and ultrasonic sensors, positioning or identification systems, Pepperl+Fuchs is always a reliable partner for customers around the world.

STANDARD PHOTOELECTRIC SENSORS

- Precise and non-contact detection, acquisition and monitoring
- Retroreflective and thru-beam sensors
- Background suppression sensors
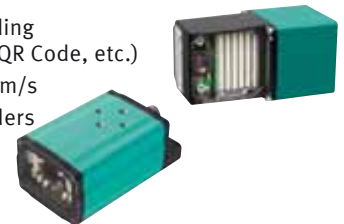- Wide range of designs and models

PHOTOELECTRIC SAFETY SENSORS

- From single-beam safety thru-beam sensors to multi-beam machine protection
- Finger protection, hand protection and body protection
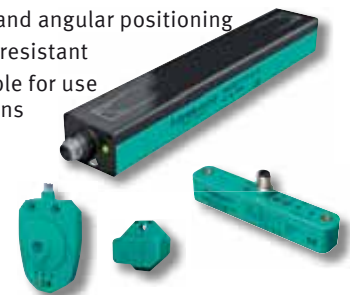- Integrated evaluation or evaluation using SafeBox

RFID IDENTIFICATION

- Read/write devices
- Large variety of tags
- Handheld readers
- Control interfaces IDENT Control, IDENT Control Compact
- Support for all RFID frequencies
- Interfaces for all common industrial bus systems

ROTARY ENCODERS

- Positioning tasks and detection of rotational movements
- Incremental and absolute rotary encoders
- Single-turn and multi-turn versions
- Certified functional safety for plants up to SIL3 and PLe

INDUCTIVE SENSOREN

- Robust design
- Protection class up to IP68 and IP69K
- Wide range of designs and models

ULTRASCHALLSENSOREN

- **Ultrasonics XL** – Diversity from the technology leader in ultrasonic sensors
- Non-contact distance measurement
- Robust design
- Immune to dirt
- Analog or switching outputs

OPTICAL IDENTIFICATION

- Reliable 1D and 2D code reading (e.g. Code 128, Data Matrix, QR Code, etc.)
- High-speed reading up to 10 m/s
- Stationary scanners and readers
- Handheld scanners

POSITIONING SYSTEM

- Non-contact inductive linear and angular positioning
- Wear free and contamination resistant
- Fully encapsulated and suitable for use under harsh ambient conditions
- Wide range of functions with programmable measurement range and switching range

INCLINATION AND ACCELERATION SENOSRS

- Extremely robust measuring principle and enclosure
- Measurement range: 0° … 360°
- High shock resistance: 100 g
- Temperature range: -40 °C … +85 °C
- Protection class: IP68 and IP69K

Food and beverage on the internet:
www.pepperl-fuchs.com/food-beverage

FACTORY AUTOMATION – SENSING YOUR NEEDS

Pepperl+Fuchs sets the standard in quality and innovative technology for the world of automation. Our expertise, dedication, and heritage of innovation have driven us to develop the largest and most versatile line of industrial sensor technologies and interface components in the world. With our global presence, reliable service, and flexible production facilities, Pepperl+Fuchs delivers complete solutions for your automation requirements – wherever you need us.

Contact
Pepperl+Fuchs GmbH
Lilienthalstraße 200
68307 Mannheim · Germany
Tel. +49 621 776-4411 · Fax +49 621 776-27-4411
E-mail: fa-info@pepperl-fuchs.com

Worldwide Headquarters
Pepperl+Fuchs GmbH · Mannheim · Germany
E-mail: fa-info@pepperl-fuchs.com

USA Headquarters
Pepperl+Fuchs Inc. · Twinsburg, OH · USA
E-mail: fa-info@us.pepperl-fuchs.com

Asia Pacific Headquarters
Pepperl+Fuchs Pte Ltd · Singapore
Company Registration No. 199003130E
E-mail: fa-info@sg.pepperl-fuchs.com

www.pepperl-fuchs.com

PEPPERL+FUCHS
SENSING YOUR NEEDS