

Sensors in hygienic design for the food-handling area

For filling honey packets, the carrier trays for the tubs are positioned beneath the filler nozzles using inductive sensors. Even cleaning the system with hot water does not impair the product life of the sensors.



In filling systems, yogurt cups are positioned for the filling process using photoelectric sensors. The sensors meet the hygiene regulations of the food industry and can simply be integrated into the system.



Sensors in washdown design for the splash zone

In beverage filling systems, inductive sensors check the position of valve levers on conduit pipes. While doing this, the sensors defy the toughest water jet cleaning.



A retro-reflective sensor counts the correct number of filled beverage bottles for the following packing process. The retro-reflective sensors in a stainless steel housing ensure a quick and reliable process.



Additional applications

- Profile measurement for determining volume
- Detecting covers and caps
- Creating buffer areas
- Monitoring sorting gates
- Recognizing print marks

Baumer products are used in many areas of the food and beverage industry

Production areas

- Processing
- Storage
- Filling and bottling
- Packing
- Quality control
- Materials handling

The range of products

- Pressure sensors
- Temperature sensors
- Level monitoring sensors
- Conductivity sensors
- Force and strain sensors
- Photoelectric sensors
- Inductive and capacitive sensors
- Ultrasonic sensors
- Vision sensors
- Encoders
- Actuators and positioning drives
- Industrial cameras



www.baumer.com/food-beverage

You will find additional information and data sheets for our new photoelectric and inductive sensors in hygienic and washdown designs on the Internet at www.baumer.com/news/457

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Sensors in hygienic and washdown design
Certified for the food and beverage industry

Passion for Sensors

Smart sensor solutions for the food-handling area and splash zone

	Unique <i>proTect+</i> impermeability design guarantees a complete seal even after many temperature cycles, a long product life and consequently high reliability
	Stainless steel V4A housing with protection class IP 69K makes for great mechanical strength and long product life
	ECOLAB tested and FDA compliant for reliable resistance to cleaning agents and consistent use of food-grade materials
	Consistent hygienic design of the sensors and mounting hardware complies with the design guidelines for hygienic applications, permits use in the immediate vicinity of food, and simplifies machine certification
	Wide temperature range allows versatile use and results in long product life, even in the face of high temperatures, e.g., CIP processes
	Laser inscription ensures that the sensor can always be identified

Unique *proTect+* impermeability design for maximum product life

Baumer hygienic sensors have a unique impermeability design. It ensures that these sensors meet the protection classes IP 68 / IP 69K, even after many temperature cycles.

Long-term seal
Temperature shock test in water and air over the entire temperature range



Excellent resistance
Selected materials with high resistance to materials such as cleaning agents and oils

Impermeability by design
Optimized mechanical interfaces and manufacturing processes

Hose-proof and withstands high-pressure cleaning
Meets the highest IP requirements for the areas of application

proTect+
■ increased process reliability
■ minimum maintenance effort
■ longer product life than conventional sensors

Photoelectric sensors

SmartReflect – background-reflective sensor FNDx

- Prevents machine downtimes for replacing destroyed reflectors
- Eliminates complicated integration of a reflector into the hygienic design of the system
- Most reliable form of object detection using beam interruption
- Reflects off stainless steel and can use parts of the machine as reference
- Special stainless steel reflector, EHEDG certified, available as an option

Hygienic design Series FxDH



Washdown design Series FxDR



Technical features

Ambient temperature	-30 ... +60 °C
Setting	Remote Teach-in
Connection type	Cable (PVC), M12-plug, M12 cable plug
Communication	IO-Link (optional)
Protection class	IP 68 / IP 69K <i>proTect+</i>

Type	Diffuse sensors with BGS*		SmartReflect NEW		Retro-reflective sensor		Contrast sensor		Distance sensor	
	FHDH	FHDR	FNDH	FNDR	FPDH	FPDR	FKDH	FKDR	FADH	FADR
Sensing distance	400 mm		800 mm		3500 mm		12,5 mm		400 mm	
Response time	< 1,8 ms		< 1,8 ms		< 1 ms		50 µs		< 5 ms	
Light source	Red light		Red light		Red light		White light		Red light	

*Background suppression

Inductive sensors

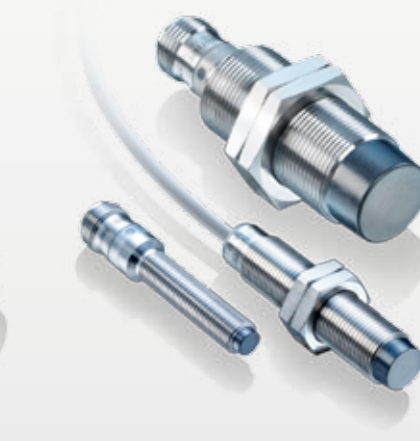
How they excel

- Long-term sealing properties at temperatures from -40 to +100 °C (*proTect+*)
- Hygienic design allows for food-grade cleaning
- Resists contaminants and cleaning agents

Hygienic design Series IFBR



Washdown design Series IFRR



Technical features

Ambient temperature	-40 to +80 °C (for brief periods up to +100 °C)
Connection type	Cable (PVC), M12 plug
Function display	LED
Protection class	IP 68 / IP 69K <i>proTect+</i>

Type	IFBR	IFRR	IFBR	IFRR	IFBR	IFRR
Diameter / thread	ø 6,5 mm	M8 x 1	ø 11 mm	M12 x 1	ø 17 mm	M18 x 1
Rated sensing distance	shielded: –		4 mm		8 mm	
	unshielded: 3 mm		6 mm		12 mm	
Switching frequency	3 kHz		1 kHz		500 Hz	

Reflector FTDR 051E051



Stainless steel reflector FTDR 050R060



Stainless steel reflector FTDR 017W035



Mounting hardware in hygienic design H1xx-1H



- For all hygienic sensors
- Backward compatible with M8, M12, M18 sensors
- Self-locking, mounting hardware cannot come loose by itself



Connectors ESW 33AF (right angle)/ESG 34AF (straight)



- M12 plug
- PVC sheathing
- Length: 2 m, prefabricated at one end

