

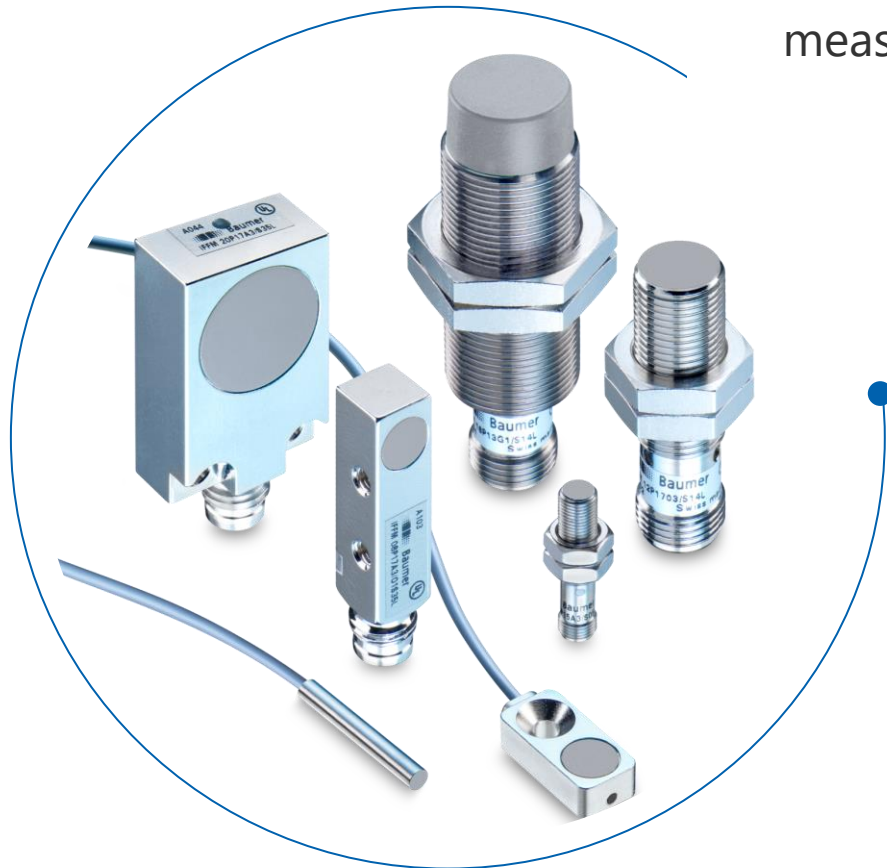


# Baumer Inductive Sensors

Reliable. Precise. Miniaturized.



# Baumer – The Inductive Specialist



Position detection and distance measurement in perfection

Guaranteed reliability through over 50 years of experience

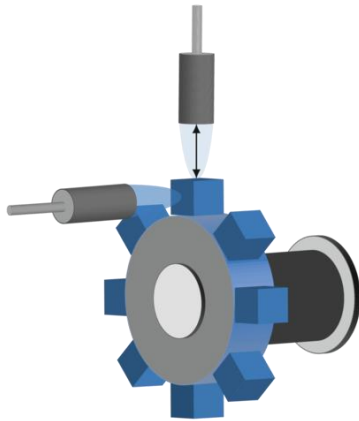
From miniature to rugged inductive proximity sensors for demanding environments

Unique designs and form factors

Smart & connected with IO-Link for more efficiency

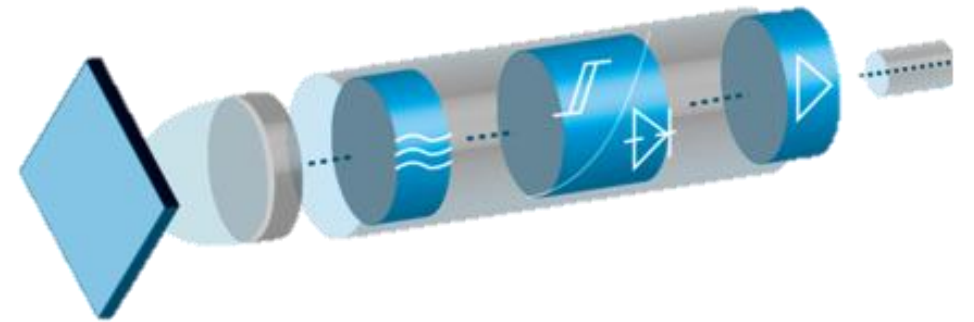


# Contactless Position Detection and Distance Measurement



## Preferred for machine part detection

- Contactless detection of any conducting metal (ferrous & non-ferrous)
- Position detection of machine parts, work parts, process items, etc.

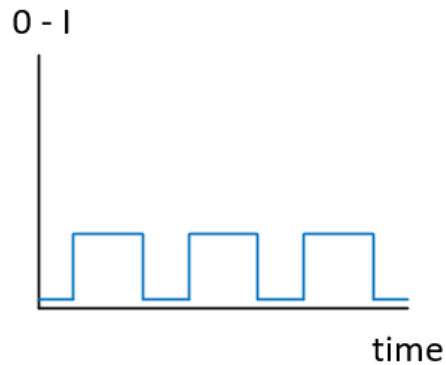


## The Inductive Operating Principle

- Generation of an electromagnetic field
- Change of the sensor's state by a metal object
- Different metals have different effects on the electromagnetic field

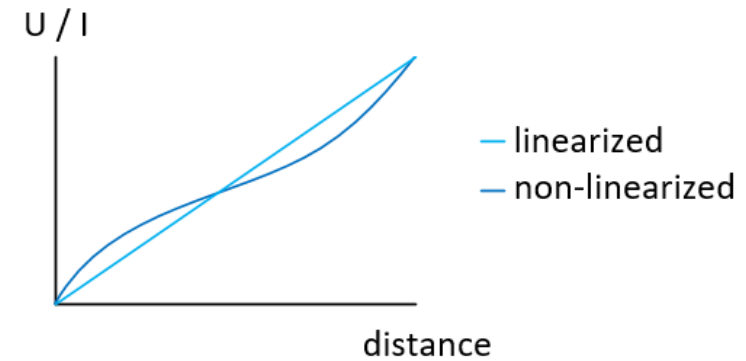


# Two Different Operating Principles



- Digital sensors
- Object detection (target presence)
- Output: PNP or NPN
  - Normally Open (NO) or Normally Closed (NC)

## Switching Sensors

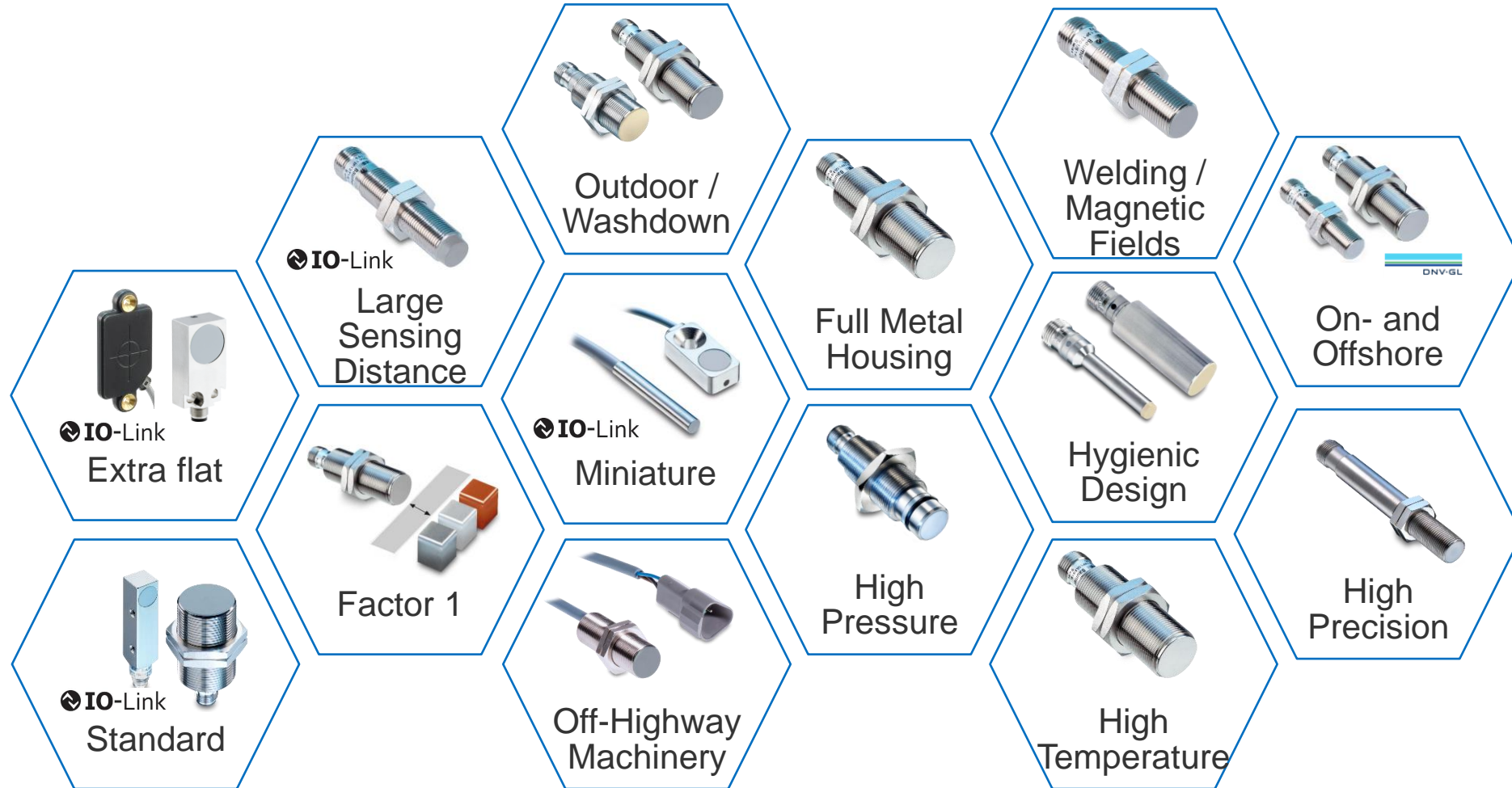


- Analog sensors
- Distance measurement
- Output: Current (mA), Voltage (V) or IO-Link (digits)
  - 0 ... 10 V
  - 4 ... 20 mA
  - 0 ... 32759 digits (IO-Link)

## Distance Measuring Sensors



# Baumer - Extensive Portfolio for any Need





# Baumer – The Inductive Specialist



## Miniaturized.

- Smallest sensors with e. g. diameter of only 3 mm, 12 mm short or 6 mm flat
- Compact designs with fully integrated signal processing



## Precise.

- High-precision measurements down to the nanometer range
- High resolution and repeat accuracy up to a frequency of 5 kHz



 **IO-Link**

## Smart & Connected.

- Condition monitoring through diagnostic and process data
- Stable processes through additional functions and parameter settings



## Experienced.

- Guaranteed reliability through over 50 years of experience
- Comprehensive portfolio & in-depth application know-how



# Baumer Sensor Suite – Plug & Work



Designed for the need of application engineers and service personnel



Fast & easy connection of IO-Link devices to the PC



See what the sensor sees



Precise parametrization and visual feedback



Vendor independent





# Portfolio Overview



- Miniaturized for use in confined spaces, complete evaluation electronics integrated
- Best-in-class performance and reliability
- As small as  $\text{Ø}3 \times 12 \text{ mm}$

## Miniature Sensors



- Robust, maintenance-free and durable
- For use in wide array of applications, including demanding environments
- Cost efficient thanks to highest quality & long service life

## Standard-Sized Sensors



- Extremely robust thanks to stainless steel housings (V4A)
- Various sturdy environments: High pressure, high temperature, ATEX, welding immune, off-highway
- DNV-GL certified for on- and offshore applications










## Sturdy Sensors





# Portfolio: Miniature Sensors











Size in mm	Style	Max. Distance	Sensor Function		Features			Specials	
			Switching	Measuring	Temperature	Protection Class	Housing Material	IO-Link	Factor 1
Ø 3		1 mm	●		-25 ... +75 °C	IP 67	Stainless steel		
Ø 4		1.6 mm	●	●	-25 ... +75 °C	IP 67	Stainless steel		
Ø 5		1.6 mm	●		-25 ... +75 °C	IP 67	Stainless steel		
Ø 6.5		6 mm	●	●	-25 ... +75 °C	IP 67	Stainless steel	●	●
4 x 4		0.8 mm	●		-25 ... +75 °C	IP 67	Stainless steel		
5 x 5		1 mm		●	-10 ... +60 °C	IP 67	Brass nickel plated		
6 x 6		1 mm	●		-25 ... +75 °C	IP 67	Brass nickel plated		
8 x 8		2 mm	●		-25 ... +75 °C	IP 67	Zinc/brass nickel plated		
12 x 12		4 mm		●	-10 ... +70 °C	IP 67	Brass nickel plated		



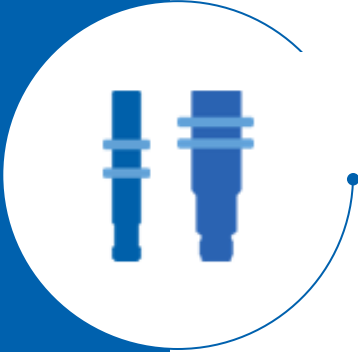
# Portfolio: Miniature Sensors







Size in mm	Style	Max. Distance	Sensor Function		Features			Specials	
			Switching	Measuring	Temperature	Protection Class	Housing Material	IO-Link	Factor 1
8 x 4.7 x 16		2 mm	●	●	-25 ... +75 °C	IP 67	Brass nickel plated		
12 x 8 x 23.5		4 mm	●		-25 ... +75 °C	IP 67	Brass nickel plated		
8.8 x 7.8 x 24.6		3 mm		●	-20 ... +70 °C	IP 67	Stainless steel	●	
18 x 10 x 30		4 mm		●	-10 ... +70 °C	IP 67	Brass nickel plated		
20 x 10 x 32		8 mm	●		-25 ... +75 °C	IP 67	Brass nickel plated		
20 x 12 x 35		3 mm		●	60 °C	IP 67	Brass nickel plated		
20.5 x 15 x 41		20 mm		●	-25 ... +75 °C	IP 67	SAN	●	
25 x 6 x 52.4		12 mm	●	●	-25 ... +75 °C	IP 67	PA	●	



# Portfolio: Standard Sensors

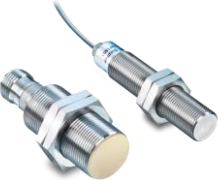












Size	Style	Max. Distance	Sensor Function		Features			Specials	
			Switching	Measuring	Temperature	Protection Class	Housing Material	IO-Link	Factor 1
M8		6 mm	●	●	-25 ... +75 °C	IP 67	Stainless steel	●	●
M12		10 mm	●	●	-25 ... +75 °C	IP 67	Brass nickel plated	●	●
M18		15 mm	●	●	-40 ... +80 °C	IP 67	Brass nickel plated	●	●
M30		24 mm	●	●	-25 ... +75 °C	IP 67	Brass nickel plated	●	



# Portfolio: Sturdy Sensors














Special Area	Size	Style	Max. Distance	Sensor Function		Temperature	Features	
				Switching	Measuring		Protection Class	Housing Material
Outdoor & Washdown 	M8		3 mm	●		-40 ... +85 °C	IP 68/69 & ProTect+	V4A
	M12		6 mm	●	●	-40 ... +85 °C	IP 68/69 & ProTect+	V4A
	M18		10 mm	●	●	-40 ... +85 °C	IP 68/69 & ProTect+	V4A
	M30		16 mm	●	●	-40 ... +85 °C	IP 68/69 & ProTect+	V4A
Full Metal 	Ø6.5 mm		2 mm	●		-40 ... +85 °C	IP 68/69 & ProTect+	V4A
	M8		2 mm	●		-40 ... +85 °C	IP 68/69 & ProTect+	V4A
	M12		5 mm	●	●	-40 ... +85 °C	IP 68/69 & ProTect+	V4A
	M18		7 mm	●	●	-40 ... +85 °C	IP 68/69 & ProTect+	V4A
	M30		14 mm	●	●	-40 ... +85 °C	IP 68/69 & ProTect+	V4A



# Portfolio: Sturdy Sensors












Special Area	Size	Style	Max. Distance	Sensor Function		Features		
				Switching	Measuring	Temperature	Protection Class	Housing Material
High pressure resistant 	M12		2 mm	●		-25 ... +80 °C	IP 68 / IP 67 (sensing face)	Stainless steel
	M16		2 mm	●	●	-25 ... +80 °	IP 68 / IP 67 (sensing face)	Stainless steel
	M18		2 mm	●		-25 ... +80 °	IP 68 / IP 67 (sensing face)	Stainless steel
Welding immune	M12		2 mm	●		-25 ... +75 °	IP 67	Brass chrom. plated
ATEX – for potentially explosive areas  	Ø6.5 mm		1.5 mm	●		-25 ... +75 °	IP 67	Brass nickel plated
	M8		2 mm	●		-25 ... +75 °	IP 67	Brass nickel plated
	M12		4 mm	●		-25 ... +75 °	IP 67	Brass nickel plated
	M18		8 mm	●		-25 ... +75 °	IP 67	Brass nickel plated



# Portfolio: Sturdy Sensors



Special Area	Size	Style	Max. Distance	Sensor Function		Features		
				Switching	Measuring	Temperature	Protection Class	Housing Material
High temperature 	Ø6.5 mm		2 mm	●		-25 ... +100 °C	IP 67 / IP 69K	V4A
	M8		2 mm	●		-25 ... +100 °C	IP 67 / IP 69K	V4A
	M12		4 mm	●		-25 ... +180 °C	IP 67 / IP 69K	V4A
	M18		6 mm	●		-25 ... +180 °C	IP 67 / IP 69K	V4A
Marine sensors On- & Offshore DNV certified	M12		4 mm	●		-40 ... +75 °C	IP 67	Brass chrom. plated
	M18		10 mm	●		-40 ... +75 °C	IP 67	Brass chrom. plated
Off-highway machinery	M12		4 mm	●		-40 ... +85 °C	IP 68 / IP 69K	Brass nickel plated
	M18		8 mm	●	●	-40 ... +85 °C	IP 68 / IP 69K	Brass nickel plated