



Baumer
Passion for Sensors

Innovative Sensor Solutions

Product Overview



Partnership.
Precise.
Pioneering.

Visibly better: Baumer sensors.

The Baumer Group is leading at international level in the development and production of sensors, shaft encoders, measuring instruments as well as components for automatic image processing. As an owner-managed family business, we employ about 2400 workers worldwide in 38 subsidiaries and 19 countries. With marked customer orientation, consistently high quality and vast innovation capability, Baumer develops specific solutions for many industries and applications worldwide.

Our standards – your benefits.

- Passion coupled with expertise – both have made us a sensor pioneer and technology leader
- Our range of services is hard to beat – we have the right product, developed by our own team, for every task
- Inspiring through innovation – a challenge Baumer employees take on every day
- Reliability, precision and quality – our customers' requirements are what drives us
- Partnership from the start – together with our customers we develop suitable solutions
- Always a step ahead – thanks to our production depth, our flexibility and our delivery reliability
- Available worldwide – Baumer is Baumer everywhere





Baumer sensors – precise, compacte, and reliable

- Broad sensor portfolio of sensors for object detection and distance measurement from a single source
- Competence in technology - inductive, photoelectric, ultrasonic, radar, capacitive, magnetic and mechanical
- Compact, calibrated measuring units with integrated measuring functions
- Customer-specific versions



Learn more.
Detailed technical information, data sheets, tutorials and
the Baumer product finder can be found at:
www.baumer.com



Content.

Inductive sensors

Inductive proximity sensors

Cylindrical housings	6
<i>DuroProx</i> Full metal housing	8
Rectangular housings	9
Hygienic and washdown design	10
Distance measuring inductive proximity sensors <i>AlphaProx</i>	
Cylindrical housings	12
Rectangular housings	14

Capacitive sensors

Cylindrical & rectangular housings	16
------------------------------------	----

Photoelectric sensors

Light barriers and diffuse sensors	18
OR18	22
OR18 in stainless steel housing	26
O300	28
O300 in washdown design	30
O300 in hygienic design	32
O500	34
O500 in washdown design	36
O500 in hygienic design	38
Hygienic and washdown design	40
Fork and angle sensors	42
Plastic fiber optics and fiber optic sensors	44
Glass fiber optics and fiber optic sensors	46
Distance measuring sensors	
Laser distance sensors <i>MESAX</i>	48
Distance sensors	50

Hygienic and washdown design	51
Light-section sensors <i>PosCon</i> ®	52
Edge sensors	54
Copy counters <i>SCATEC</i> ®	55
Level monitoring and leak detecting sensors	56
Contrast sensor	58
Color sensor <i>LOGIPAL</i>	59
Vision sensors <i>VeriSens</i> ®	60

Ultrasonic sensors

Ultrasonic proximity switches

Cylindrical housings	62
Rectangular housings	64
Distance measuring ultrasonic proximity sensors	
Cylindrical housings	66
Rectangular housings	68

Magnetic sensors

Speed and angle sensors	70
Position and cylinder sensors	71

Mechanical precision switches

<i>MY-COM</i> ® precision switches	72
------------------------------------	----

Accessories

Cables & adapters, mounting accessories	74
Testing and parameterization, network components	75
Reflectors & beam columnators	76
Magnets	77

O300, O500 Light barriers and diffuse sensors – The ideal platform for tailor-made solutions.

The O300 and O500 photoelectric sensors stand for maximum precision, reliability and speed and set new benchmarks with respect to safety and comfort.

- Solve applications simply and properly
- Process safety through extended performance reserves
- Simple implementation and operation
- Industry 4.0-ready



Standard LED – diffuse light spot, especially suited for object detection during parts feeding



Baumer PinPoint LED – small, homogenous light spot with a sharp focus

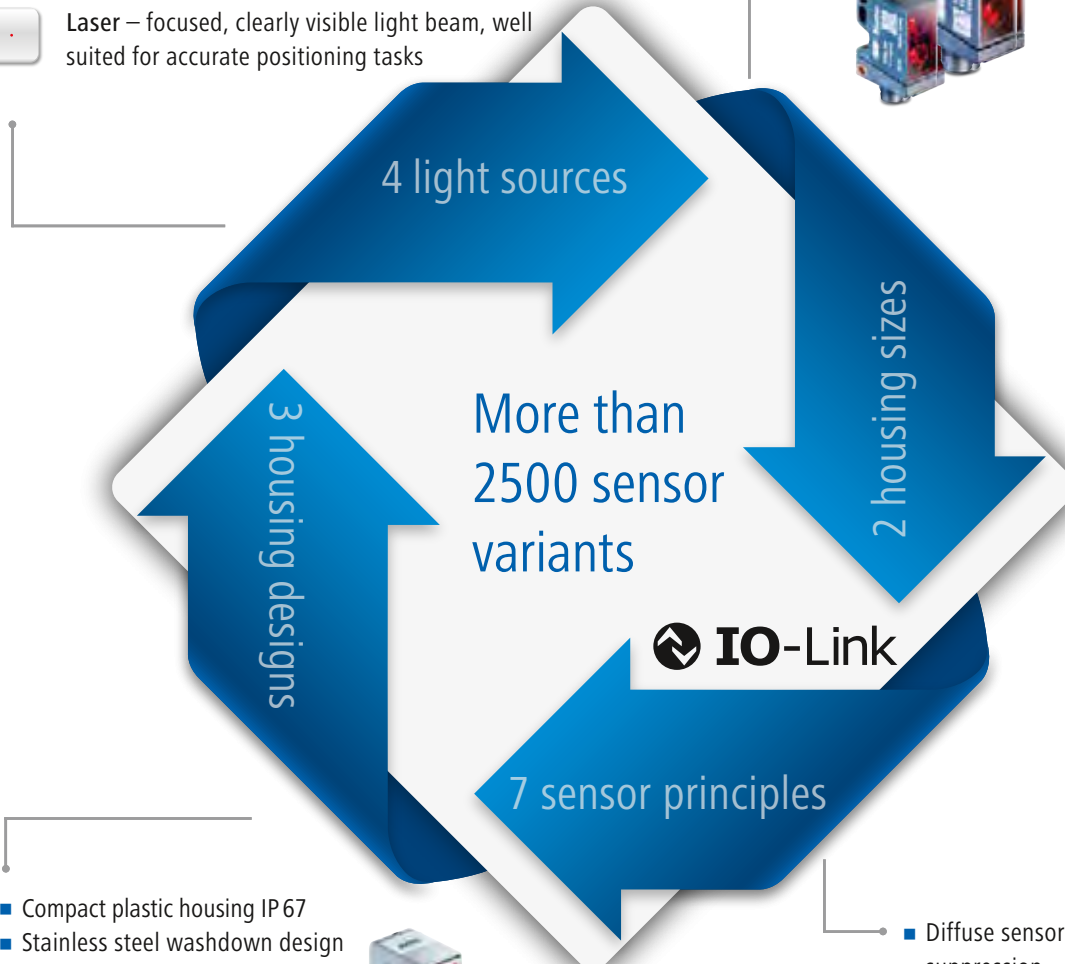


Infrared LED – invisible light spot e.g. used for light barriers



Laser – focused, clearly visible light beam, well suited for accurate positioning tasks

- **O300** – for tight spaces (12.9 × 32.3 × 23 mm)
- **O500** – for larger ranges (18 × 45 × 32 mm)



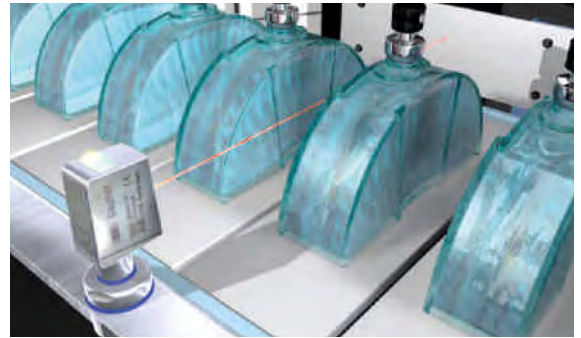
- Compact plastic housing IP 67
- Stainless steel washdown design IP 68/69K, Ecolab and *proTect+*
- Stainless steel hygienic design with Ecolab and *proTect+* conforms to EHEDG and FDA



- Diffuse sensor with background suppression
- Diffuse sensor with intensity difference
- *SmartReflect*® – light barrier without reflector
- *SmartReflect*® Transparent
- Retro-Reflexive sensor
- Retro-Reflexive sensor for transparent objects
- Through beam barrier

The perfect sensor for every application

- The appropriate sensor technology: ultrasonic, inductive, photo-electric, magnetic and capacitive object detection and distance measurement.
- Comprehensive evaluation functions already integrated in a compact housing design.
- Application-specific sensors for quality assurance and control tasks.
- Extensive industry know-how for optimum support in selecting and integrating the right sensors. e.g. for factory and process automation, food and beverage industry, graphical and textile industry as well as agricultural machinery and mobile equipment.



Customized solutions Baumer – a competent partner

Serving our customers means:

- To generate competitive advantages for our customers

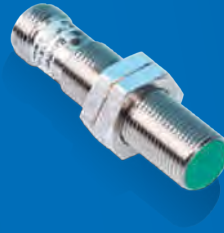
The base therefore:

- Decades of experience in tailor-made OEM products
- Reliable project management complying with budgets and schedules

Inductive sensors

Inductive proximity sensors – cylindrical

- Small deviation from sensor to sensor
- High switching frequency
- Enhanced distance
- High repeat accuracy



**IFRM 03
Subminiatur**



**IFRM 04
Subminiatur**



**IFRM 05
Subminiatur**



**IR06.P / IFRM 06
Subminiatur**

characteristics	<ul style="list-style-type: none"> ■ Robust stainless steel housing ■ Cable connection ■ Fully integrated electronics 	<ul style="list-style-type: none"> ■ Robust stainless steel housing ■ With M5 connector ■ Fully integrated electronics 	<ul style="list-style-type: none"> ■ Robust stainless steel housing ■ With M5 connector ■ Fully integrated electronics 	<ul style="list-style-type: none"> ■ Robust stainless steel housing ■ Fully integrated electronics
dimensions	ø 3 mm	ø 4 mm M4	M5	ø 6,5 mm
nominal sensing distance S_n	0,8 ... 1 mm	0,8 ... 1,6 mm	1 ... 1,6 mm	1,5 ... 6 mm
switching frequency	4 kHz	5 kHz	5 kHz	5 kHz
output signal	PNP NPN	PNP NPN	PNP NPN	PNP NPN
connection types	cable 2 m flylead connector M8 wires	connector M5 connector M8 cable 2 m flylead connector M8 wires	connector M5 connector M8 cable 2 m flylead connector M8 wires	connector M8 cable 2 m flylead connector M8
housing material	stainless steel	stainless steel	stainless steel	stainless steel
operating temperature	-25 ... +75 °C -10 ... +70 °C	-25 ... +75 °C	-25 ... +75 °C	-25 ... +75 °C
protection class	IP 67	IP 67	IP 67	IP 67
specific features	<ul style="list-style-type: none"> ■ Short design from 22 mm 	<ul style="list-style-type: none"> ■ NAMUR sensors ■ Short design from 15 mm 	<ul style="list-style-type: none"> ■ NAMUR sensors ■ Short housing with wire output ■ Short design from 15 mm 	<ul style="list-style-type: none"> ■ <i>GammaProx</i> for large sensing distances ■ Factor 1 IR sensors (same sensing distance one any metal) ■ High temperature resistant sensors up to +100 °C ■ NAMUR/ATEX sensors ■ Short design from 22 mm



IR08.P / IFRM 08
Subminiatur

- Robust stainless steel housing
- Fully integrated electronics



IR12.P / IFRM 12
Compact

- Metal housing brass nickel plated
- High tightening torque



IR18.P / IFRM 18
Compact

- Metal housing brass nickel plated
- High tightening torque



IR30.P / IFRM 30
Compact

- Metal housing brass nickel plated
- Voltage supply range up to 50 VDC
- High tightening torque

M8

M12

M18

M30

1,5 ... 6 mm

2 ... 10 mm

5 ... 15 mm

10 ... 24 mm

5 kHz

2 kHz

500 Hz

500 Hz

PNP
NPN

PNP
NPN

PNP
NPN

PNP
NPN

connector M8
connector M12
cable 2 m
flylead connector M8

connector M8
connector M12
cable 2 m

connector M12
cable 2 m

connector M12
cable 2 m

stainless steel

brass nickel plated

brass nickel plated

brass nickel plated

–25 ... +75 °C

–25 ... +75 °C
–40 ... +80 °C

–25 ... +75 °C
0 ... +65 °C

–25 ... +75 °C

IP 67

IP 67

IP 67

IP 67

- *GammaProx* for large sensing distances
- Factor 1 IR sensors (same sensing distance towards any metal)
- High temperature resistant sensors up to +180 °C
- NAMUR/ATEX sensors
- Short design from 22 mm

- *GammaProx* for large sensing distances
- Factor 1 IR sensors (same sensing distance towards any metal)
- High temperature resistant sensors up to +180 °C
- High pressure sensors up to 500 bar
- Immune to welding and magnet fields
- NAMUR/ATEX sensors

- *GammaProx* for large sensing distances
- Factor 1 IR sensors (same sensing distance towards any metal)
- High temperature resistant sensors up to +180 °C
- High pressure sensors up to 500 bar
- Immune to welding and magnet fields
- NAMUR/ATEX sensors

Inductive proximity sensors – *DuroProx* full metal housing

- Stainless steel housing 1.4404 (V4A)
- Compact and extremely robust versions
- Protection class IP 69K
- Expanded temperature ranges



IFRD 06
DuroProx



IFRD 08
DuroProx



IFRD 12
DuroProx



IFRD 18
DuroProx

characteristics	<ul style="list-style-type: none"> ■ Sealed stainless steel housing ■ Expanded temperature range up to +100 °C 	<ul style="list-style-type: none"> ■ Sealed stainless steel housing ■ Expanded temperature range up to +100 °C 	<ul style="list-style-type: none"> ■ Sealed stainless steel housing ■ Expanded temperature range up to +100 °C 	<ul style="list-style-type: none"> ■ Sealed stainless steel housing ■ Expanded temperature range up to +100 °C
dimensions	ø 6,5 mm	M8	M12	M18
nominal sensing distance S_n	2 mm	2 mm	4 mm	6 mm
response time	< 150 Hz	< 150 Hz	< 100 Hz	< 100 Hz
output signal	PNP NPN	PNP NPN	PNP NPN	PNP NPN
connection types	connector M8	connector M8	connector M12	connector M12
housing material	stainless steel 1.4404 (V4A)	stainless steel 1.4404 (V4A)	stainless steel 1.4404 (V4A)	stainless steel 1.4404 (V4A)
operating temperature	–25 ... +75 °C –25 ... +100 °C	–25 ... +75 °C –25 ... +100 °C	–25 ... +75 °C –25 ... +100 °C	–25 ... +75 °C –25 ... +100 °C
protection class	IP 69K IP 68/67	IP 69K IP 68/67	IP 69K IP 68/67	IP 69K IP 68/67
specific features	■ M8 connector (PVC) with stainless steel cap nut as an accessory	■ M8 connector (PVC) with stainless steel cap nut as an accessory	■ M12 connector (PVC) with stainless steel cap nut as an accessory	■ M12 connector (PVC) with stainless steel cap nut as an accessory

Inductive proximity sensors – rectangular

- High switching frequency
- Small deviation from sensor to sensor
- Extremely temperature-stable
- High switching point accuracy



IFFM 04
Subminiatur

- Robust stainless steel housing
- Cable connection
- Smallest rectangular type



IFFM 06
Miniatur

- Metal housing brass nickel plated
- With M5 connector
- Smallest rectangular type in connector version



IFFM 08
Miniatur

- Metal housing brass nickel plated
- Extremely low-profile-version in die-cast zinc housing with front-side single-hole installation
- With M5 connector



IFFM 12
Compact

- Metal housing brass nickel plated
- With M5 connector
- Flat version



IFFM 20
Compact

- Metal housing brass nickel plated
- With M8 connector
- Voltage supply range 10 ... 50 VDC

4 × 22 × 4 mm

6 × 20 (30) × 6 mm

8 × 20 (30/40/60) × 8 mm
8 × 16 × 4,7 mm

12 × 28 × 8 mm

20 × 41 × 10 mm

0,8 mm

1 mm

2 mm

4 mm

5 ... 8 mm

< 3 kHz

< 5 kHz

< 5 kHz

< 2 kHz

< 1 kHz

PNP
NPN

PNP
NPN

PNP
NPN

PNP
NPN

PNP
NPN

cable 2 m

connector M5
cable 2 m

connector M8
cable 2 m
flylead connector M8

connector M5

connector M8

stainless steel

brass nickel plated

brass nickel plated
die-cast zinc nickel plated

brass nickel plated

brass nickel plated

–25 ... +75 °C

–25 ... +75 °C

–25 ... +75 °C

–25 ... +75 °C

–25 ... +75 °C

IP 67

IP 67

IP 67

IP 67

IP 67

■ NAMUR sensors

Inductive sensors

Inductive proximity sensors – hygienic and washdown design

- EHEDG-certified / Ecolab tested / FDA compliant
- Robust stainless steel housing 1.4404 (V4A)
- *proTect*+ sealing concept
- Protection class IP 68 / IP 69K
- Enhanced sensing distance



IFBR 06
Hygienic design



IFBR 11
Hygienic design



IFBR 17
Hygienic design

characteristics	<ul style="list-style-type: none"> ■ Robust stainless steel housing ■ IP 68 / IP 69K ■ EHEDG-certified ■ Ecolab-tested ■ FDA-compliant ■ Purging up to +100 °C 	<ul style="list-style-type: none"> ■ Robust stainless steel housing ■ IP 68 / IP 69K ■ EHEDG-certified ■ Ecolab-tested ■ FDA-compliant ■ Purging up to +100 °C 	<ul style="list-style-type: none"> ■ Robust stainless steel housing ■ IP 68 / IP 69K ■ EHEDG-certified ■ Ecolab-tested ■ FDA-compliant ■ Purging up to +100 °C
dimensions	ø 6,5 mm	ø 11 mm	ø 17 mm
nominal sensing distance S_n / measuring distance S_d	3 mm	4 ... 6 mm	8 ... 12 mm
switching frequency / response time	< 3 kHz	< 1 kHz	< 0,5 kHz
output signal	PNP NPN	PNP NPN	PNP NPN
connection types	connector M12	connector M12 cable 2 m	connector M12 cable 2 m
housing material	stainless steel 1.4404 (V4A)	stainless steel 1.4404 (V4A)	stainless steel 1.4404 (V4A)
operating temperature	–40 ... +80 °C	–40 ... +80 °C	–40 ... +80 °C
protection class	IP 68/69K & proTect+	IP 68/69K & proTect+	IP 68/69K & proTect+
versions	■ plug connection	■ cable and plug connection	■ cable and plug connection

Inductive proximity sensors – hygienic and washdown design



IFRR 08
Washdown design



IFRR 12
Washdown design



IFRR 18
Washdown design

characteristics	<ul style="list-style-type: none"> ■ Robust stainless steel housing ■ IP 68 / IP 69K ■ Ecolab-tested ■ FDA-compliant ■ Purging up to +100 °C 	<ul style="list-style-type: none"> ■ Robust stainless steel housing ■ IP 68 / IP 69K ■ Ecolab-tested ■ FDA-compliant ■ Purging up to +100 °C 	<ul style="list-style-type: none"> ■ Robust stainless steel housing ■ IP 68 / IP 69K ■ Ecolab-tested ■ FDA-compliant ■ Purging up to +100 °C
dimensions	M8	M12	M18
nominal sensing distance S_n / measuring distance S_d	3 mm	4 ... 6 mm	8 ... 12 mm
switching frequency / response time	< 3 kHz	< 1 kHz	< 0,5 kHz
output signal	PNP NPN	PNP NPN	PNP NPN
connection types	connector M12	connector M12 cable 2 m	connector M12 cable 2 m
housing material	stainless steel 1.4404 (V4A)	stainless steel 1.4404 (V4A)	stainless steel 1.4404 (V4A)
operating temperature	–40 ... +80 °C	–40 ... +80 °C	–40 ... +80 °C
protection class	IP 68/69K & proTect+	IP 68/69K & proTect+	IP 68/69K & proTect+
versions	■ plug connection	■ cable and plug connection	■ cable and plug connection

Inductive sensors

Distance measuring inductive proximity sensors *AlphaProx* – cylindrical

- High repeat accuracy
- Low temperature drift
- Teach-in functions
- Linearized output calibration curves



**IWRM 04
Subminiatur**



**IR06.D / IWRM 06
Sub-/Miniatur**



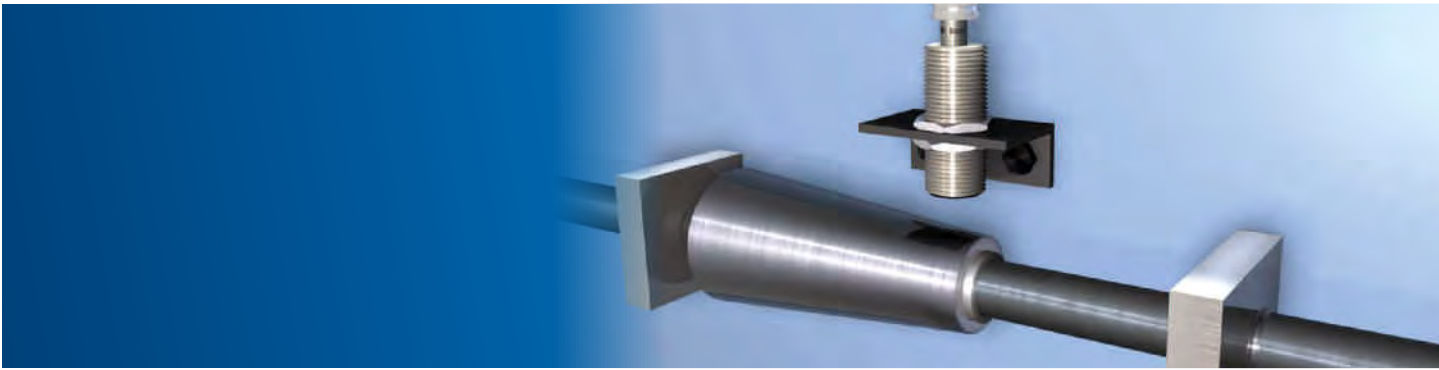
**IR08.D / IWRM 08
Sub-/Miniatur**








**IR12.D / IWRM 12
Compact**

characteristics	<ul style="list-style-type: none"> ■ Very high resolution ■ Quick response time ■ Fully integrated electronics ■ With M5 connector 	<ul style="list-style-type: none"> ■ Large measuring distance ■ Very high resolution ■ Quick response time ■ Fully integrated electronics 	<ul style="list-style-type: none"> ■ Large measuring distance ■ Very high resolution ■ Quick response time ■ Fully integrated electronics ■ Linearized output calibration curves ■ Short design 	<ul style="list-style-type: none"> ■ Adjustable measuring range ■ Linearized output calibration curves ■ External Teach-in
dimensions	ø 4 mm	ø 6,5 mm	M8	M12
measuring distance S_d	0 ... 1 mm	0 ... 3 mm	0 ... 3 mm	0 ... 6 mm
resolution	< 1 µm	< 1 µm	< 1 µm	< 1 µm
repeat accuracy	< 5 µm	< 10 µm	< 10 µm	< 10 µm
response time	< 0,5 ms	< 0,5 ms	< 0,5 ms	< 2 ms
output signal	0 ... 10 VDC	0 ... 10 mA 0 ... 10 VDC	0 ... 10 mA 0 ... 10 VDC	4 ... 20 mA 0 ... 10 VDC
connection types	connector M5	connector M8 cable	connector M8 cable	connector M12 cable
housing material	stainless steel	stainless steel	stainless steel	brass nickel plated
operating temperature	10 ... +60 °C	-10 ... +70 °C -25 ... +75 °C	-10 ... +70 °C -25 ... +75 °C	-10 ... +50 °C -25 ... +75 °C
protection class	IP 67	IP 67	IP 67	IP 67
specific features	<ul style="list-style-type: none"> ■ Short design 30 mm 	<ul style="list-style-type: none"> ■ Short designs up to 22 mm 	<ul style="list-style-type: none"> ■ Short designs up to 22 mm 	<ul style="list-style-type: none"> ■ ATEX sensors ■ Additional digital PNP output with programmable window function ■ External Teach-in adapter as an accessory ■ High sensitivity sensors

Distance measuring inductive proximity sensors *AlphaProx* – cylindrical



				
IR18.D / IWRM 18 Compact	IR30.D / IWRM 30 Compact	IPRM 12 HighPrecision	IR12.D / IR18.D HighSensitivity	IWRR 18 Washdown design
<ul style="list-style-type: none"> Adjustable measuring range Linearized output calibration curves External Teach-in 	<ul style="list-style-type: none"> Adjustable measuring range Linearized output calibration curves External Teach-in 	<ul style="list-style-type: none"> Very high resolution Very small temperature drift 	<ul style="list-style-type: none"> Very high measurement sensitivity Linearized output calibration curves External Teach-in 	<ul style="list-style-type: none"> Robust stainless steel housing Ecolab-tested FDA-compliant Extended operating temperature range –40 ... +70 °C
M18	M30	M12	M12 M18	M18
0 ... 8 mm	0 ... 24 mm	0 ... 3 mm	0 ... 3 mm	0 ... 7 mm
< 5 µm	< 5 µm	< 0,01 µm	< 0,25 µm	< 5 µm
< 15 µm	< 15 µm	< 1 µm	< 1 µm	< 10 µm
< 2 ms	< 2 ms	< 2 ms	< 3 ms	< 2 ms
4 ... 20 mA 0 ... 10 VDC	4 ... 20 mA 0 ... 10 VDC	0 ... 20 mA	4 ... 20 mA 0 ... 10 VDC	4 ... 20 mA
connector M12 cable	connector M12	connector M12	connector M12	connector M12
brass nickel plated	brass nickel plated	brass nickel plated	brass nickel plated	stainless steel 1.4404 (V4A)
–25 ... +75 °C	–25 ... +75 °C	0 ... +60 °C	–10 ... +60 °C	–40 ... +70 °C
IP 67	IP 67	IP 67	IP 67	IP 68/69K & proTect+
<ul style="list-style-type: none"> Additional digital PNP output with programmable window function External Teach-in adapter as an accessory Factor 1 sensor (same measuring range with all metals) 	<ul style="list-style-type: none"> Additional digital PNP output with programmable window function External Teach-in adapter as an accessory 		<ul style="list-style-type: none"> Measuring range 0.25 mm adjustable between 0 ... 3 mm Measuring sensitivity 40 V/mm or 64 mA/mm 	

Inductive sensors

Distance measuring inductive proximity sensors *AlphaProx* – rectangular

- High repeat accuracy
- Low temperature drift
- Teach-in functions
- Linearized output calibration curves



**IWFM 05
Subminiature**



**IF08.D / IWFM 08
Subminiature**



**IWFM 12
Compact**



**IWFM 18 / 20
Compact**

characteristics	<ul style="list-style-type: none"> ■ Very high resolution ■ Quick response time ■ Fully integrated electronics ■ With M5 connector 	<ul style="list-style-type: none"> ■ Very high resolution ■ Compact model ■ Fully integrated electronics ■ Through-hole for M3 bolt 	<ul style="list-style-type: none"> ■ Integrated current and voltage output ■ Fully integrated electronics 	<ul style="list-style-type: none"> ■ Integrated current and voltage output ■ Fully integrated electronics
dimensions	5 × 5 × 32 mm	8 × 16 × 4,7 mm	12 × 60 × 12 mm	18 × 30 × 10 mm 20 × 35 × 12 mm
measuring distance Sd	0 ... 1 mm	0 ... 2 mm	0 ... 4 mm	0 ... 4 mm
resolution	< 1 µm	< 1 µm	< 1 µm	< 1 µm
repeat accuracy	< 10 µm	< 20 µm	< 5 µm	< 5 µm
response time	< 0,5 ms	< 1 ms	< 2 ms	< 2 ms
output signal	0 ... 10 VDC	0 ... 10 VDC	0 ... 10 VDC 4 ... 20 mA	0 ... 10 VDC 4 ... 20 mA
connection types	connector M5	cable flylead connector M8	connector M8	connector M8
housing material	brass nickel plated	die-cast zinc nickel plated	brass nickel plated	brass nickel plated
operating temperature	10 ... +60 °C	10 ... +60 °C	–10 ... +70 °C	–10 ... +70 °C
protection class	IP 67	IP 67	IP 67	IP 67
specific features	<ul style="list-style-type: none"> ■ Smallest inductive sensor with analog output 	<ul style="list-style-type: none"> ■ Extremely low-profile version for front-side single-hole installation 		<ul style="list-style-type: none"> ■ Standard and linearized variants



**IWFK 20
Compact**

- Adjustable measuring range
- Teach-in button housing-integrated
- Large measuring range
- Plastic housing

20 × 42 × 15 mm

0 ... 10 mm

< 10 µm

< 15 µm

< 3 ms

0 ... 10 VDC

connector M8

polyester

–10 ... +70 °C

IP 67

- Additional programmable switching output (PNP)
- Linearized output curve

Capacitive sensors

Capacitive proximity sensors – cylindrical & rectangular

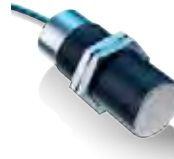
- Material-independent detection
- Detection possible even through container wall
- Reduced susceptibility to contamination using compensation electrode
- Expanded temperature ranges
- Active area made of PTFE
- No blind region



CFAK 12



CFAK 12/18/30



CFAK 18/30



CFAM 12/18/30

characteristics	<ul style="list-style-type: none"> ■ For applications in contaminated, water-based media ■ Level control, in contact with medium ■ Sealed housing ■ Compact, smooth surface ■ Suppression of dirt and cleaning agents 	<ul style="list-style-type: none"> ■ Unshielded ■ Fix sensing distance ■ Sealed housing ■ Level control, in contact with medium ■ Reliable detection via suppression of mist and contamination 	<ul style="list-style-type: none"> ■ Unshielded ■ Sensing distance adjustable ■ Sealed housing ■ Level control, in contact with medium ■ Reliable detection via suppression of mist and contamination 	<ul style="list-style-type: none"> ■ Shielded ■ Housing material brass nickel plated ■ Sensitivity adjustment using potentiometer ■ Cable and connector versions
dimensions	M12 × 1	M12 × 1 M18 × 1 M30 × 1,5	M18 × 1 M30 × 1,5	M12 × 1 M18 × 1 M30 × 1,5
nominal sensing distance S_n	0,1 mm	0,5 ... 8 mm	2 ... 30 mm	0,5 ... 15 mm
switching frequency	< 15 Hz	< 15 Hz	< 50 Hz	< 50 Hz
output signal	PNP NPN	PNP NPN	PNP NPN	PNP NPN
connection types	cable 2 m flylead connector M8	cable 2 m	cable 2 m	cable 2 m connector M12
housing material	POM EPDM50	PBT	PBT	brass nickel plated
operating temperature	0 ... +50 °C	–25 ... +75 °C 0 ... +70 °C	–25 ... +75 °C	–25 ... +75 °C
protection class	IP 67	IP 67/65	IP 67/65	IP 65
specific features			<ul style="list-style-type: none"> ■ Sensitivity adjustment using potentiometer 	<ul style="list-style-type: none"> ■ Sensitivity adjustment using potentiometer

Capacitive proximity sensors – cylindrical & rectangular



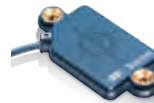
CFBM 20



CFAH 30



CFDM 20



CFDK 25



CFDK 30

- Shielded
- Unthreaded metal housing
- Sensitivity adjustment using potentiometer

- Unshielded
- Sensitivity adjustment via potentiometer
- Expanded temperature range -40 °C to $+200\text{ °C}$
- Anti-stick sensor head made of PTFE and V2A stainless steel
- Highly resistant to aggressive media

- Shielded
- Fix sensing distance
- Robust and compact metal housing
- M8 connector

- Shielded
- Fix sensing distance
- For filling levels and object identification
- Flexible installation options thanks to innovative mounting frame
- Extra flat design

- Shielded
- Sensitivity adjustment using potentiometer
- Cable and connector versions

ø 20 mm

M30 × 1,5

20 × 35 × 12 mm

25 × 53 × 6 mm

30 × 65 × 18,5 mm

2 ... 10 mm

4 ... 15 mm

5 mm

2 / 3 / 4 / 8 / 12 / 15 mm

4 ... 15 mm

< 50 Hz

< 50 Hz

< 50 Hz

< 35 Hz

< 50 Hz

PNP
NPN

PNP

PNP
NPN

push-pull

PNP
NPN

cable 2 m

cable M12

connector M8

cable 2 m
flylead connector M8

cable 2 m
connector M12

brass nickel plated

V2A/PTFE

brass nickel plated

PA 12

PBT

$-25\text{ ... }+75\text{ °C}$

$-40\text{ ... }+200\text{ °C}$

$-25\text{ ... }+75\text{ °C}$

$-25\text{ ... }+75\text{ °C}$

$-25\text{ ... }+75\text{ °C}$

IP 65

IP 67

IP 65

IP 65

IP 65

- Sensitivity adjustment using potentiometer

Photoelectric sensors

Light barriers and diffuse sensors – cylindrical & rectangular

- Extremely small housings
- *SmartReflect*® – the first light barrier without a reflector
- Precise background suppression
- Response time up to 50 µs
- Sensing distance up to 8 m
- Laser beams with diameters up to 0,1 mm
- Sensors for transparent objects



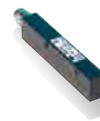
FHDK 04
IO-Link



FxxK 07
MINOS



FxAM 08



FxDM 08

characteristics	<ul style="list-style-type: none"> ■ Diffuse sensor with background suppression ■ Mounting in rails ■ Fix sensing distance 	<ul style="list-style-type: none"> ■ World's smallest adjustable sensor family ■ <i>SmartReflect</i>® light barriers without a reflector 	<ul style="list-style-type: none"> ■ Fix sensing distance 	<ul style="list-style-type: none"> ■ Robust metal housing ■ Fix sensing distance
dimensions	4 × 44,8 × 6,2 mm	8 × 16,2 × 10,8 mm	8 × 58 × 12 mm	M8 × 56 mm
function principle / ranges				
diffuse sensors	30 mm / 50 mm	10 ... 60 mm		
background suppression				
<i>SmartReflect</i> ™ light barriers without a reflector		17 ... 45 mm		
diffuse sensors		20 ... 150 mm	40 mm / 80 mm	
retro-reflective sensors		0,6 m		
through beam sensors		2 m		1 m / 3 m
response time	< 0,5 ms	< 0,5 ms	< 1 ms	< 1 ms
output	push-pull	PNP NPN	PNP	PNP
connection types	cable 2 m flylead connector	cable 2 m flylead connector	cable 2 m connector M8	cable 2 m connector M8
housing material	plastic (ASA)	plastic (PMMA, MABS, PA)	brass nickel plated	aluminum
operating temperature	–10 ... +50 °C	–20 ... +50 °C	–25 ... +65 °C	–25 ... +65 °C
protection class	IP 65	IP 65	IP 65	IP 65
specific features				

Light barriers and diffuse sensors – cylindrical & rectangular



FxDK 10, OxDK 10



FxDM 12, OxDM 12

characteristics	<ul style="list-style-type: none"> ■ Different beam cones optimized for the application ■ Compact and high-performance sensor family ■ Red light and laser versions 	<ul style="list-style-type: none"> ■ Robust metal housing ■ Diffuse laser sensors with negligible black/white shift
dimensions	10,4 × 27 × 14 mm	12,4 × 35 × 35 mm
function principle / ranges		
diffuse sensors	20 ... 130 mm	15 ... 300 mm
background suppression		
diffuse sensors	3 ... 200 mm	
retro-reflective sensors	3,5 m	7 m
through beam sensors	8 m	6 m
response time	< 1 ms	< 1 ms
output	push-pull PNP NPN	push-pull PNP NPN
connection types	cable 2 m connector M8 flylead connector	cable 2 m connector M8
housing material	plastic (ASA)	die-cast zinc
operating temperature	–25 ... +65 °C –10 ... +50 °C	–25 ... +65 °C –20 ... +50 °C
protection class	IP 65 / IP 67	IP 67
specific features	<ul style="list-style-type: none"> ■ Sensors with laser light source ■ Sensors for transparent objects 	<ul style="list-style-type: none"> ■ Sensors with single lens optics

Photoelectric sensors

Light barriers and diffuse sensors – cylindrical & rectangular

- *SmartReflect*® – the first light barrier without a reflector
- Precise background suppression
- Response time up to 50 µs
- Sensing distance up to 12 m
- Laser beams with diameters up to 0,1 mm
- Sensors in robust metal housing
- Sensors for transparent objects



FxDK 14, OxDK 14

IO-Link



FxDM 16, OxDM 16



FxAM 18



OxDK 25

characteristics

- The sensor family for a wide range of applications
- *SmartReflect*® light barrier without a reflector

- Robust metal housing
- Red light and laser versions

- Robust metal housing
- Doubling lenses to double the range

- *qTeach*®
- *SmartReflect*® light barrier without a reflector

dimensions

14,8 × 43 × 31 mm

15,4 × 50 × 50 mm

M18 × 50 mm

23,4 × 63 × 45 mm

function principle / ranges

diffuse sensors background suppression

20 ... 500 mm

20 ... 600 mm

100 ... 1750 mm

SmartReflect™ light barriers without a reflector

50 ... 800 mm

1900 mm

diffuse sensors

5 ... 600 mm

0 ... 400 mm

60 ... 430 mm

retro-reflective sensors

10 m

11 m

3,2 m

through beam sensors

12 m

response time

< 1 ms

< 1 ms

< 1 ms

< 10 ms

output

push-pull
PNP
NPN

PNP
NPN

PNP
NPN

push-pull

connection types

cable 2 m
connector M12

cable 2 m
connector M12

cable 2 m
connector M12

cable 2 m
connector M12

housing material

plastic (ASA, MABS)

die-cast zinc

brass nickel plated

plastic (SAN LURAN 378P)

operating temperature

–25 ... +65 °C
–10 ... +50 °C

–25 ... +65 °C
–10 ... +50 °C

–25 ... +55 °C

0 ... +50 °C

protection class

IP 67

IP 67

IP 67

IP 67

specific features

- Sensors for transparent objects
- Laser sensors in laser class 1

- Sensors with laser light source
- Laser sensors for wafer detection

- Sensor can be used with glass fiber optics

- Laser sensors in laser class 1
- Sensors with two outputs

Light barriers and diffuse sensors – cylindrical & rectangular



Photoelectric sensors

OR18 light barriers and diffuse sensors

- Robust, cylindrical M18 sensor
- Ranges up to 55 m
- Laser class 1 sensors for detection of small objects
- Detection of semi-transparent and shiny objects with fixed focus types
- Short response time <0,34 ms
- *SmartReflect®* – light barrier without a reflector in M18 housing



OR18.GP



OR18.GR



OR18.GR.F



OR18.SP

OR18.XY

X = function principle

Y = light source

function principle	Diffuse sensors with background suppression	Diffuse sensors with background suppression	Diffuse sensors with background suppression	<i>SmartReflect®</i> – light barrier without a reflector
specific features	■ Wear-free <i>qTeach®</i>		■ Fixed Focus	■ Wear-free <i>qTeach®</i>
dimensions	M18 × 65 mm	M18 × 71,9 mm	M18 × 48,3 mm	M18 × 65 mm
light sources / ranges				
Baumer PinPoint LED	45 ... 200 mm			55 ... 300 mm
standard LED		40 ... 120 mm	50 mm	
infrared LED				
laser				
response time	< 0,49 ms	< 1 ms	< 0,5 ms	< 0,49 ms
output	push-pull PNP NPN	PNP NPN	PNP NPN	push-pull PNP NPN
connection types	connector M12	connector M12	cable 2 m flylead connector M12	connector M12
setting	<i>qTeach®</i> external teach-in	potentiometer		<i>qTeach®</i> external teach-in
housing material	brass nickel plated	plastic (ABS)	plastic (ABS)	brass nickel plated
operating temperature	–25 ... +60 °C	–25 ... +55 °C	–25 ... +55 °C	–25 ... +60 °C
protection class	IP 67	IP 67	IP 67	IP 67

OR18 Light barriers and diffuse sensors



OR18.ZI



OR18.ZL



OR18.RR



OR18.RL

OR18.XY
X = function principle
Y = light source

function principle	Diffuse sensors with intensity difference	Diffuse sensors with intensity difference	Retro-reflective sensors	Retro-reflective sensors
specific features	■ Laser class 1		■ Laser class 1	
dimensions	M18 × 44,8 mm M18 × 67,2 mm	M18 × 77 mm M18 × 81,5 mm	M18 × 44,8 mm M18 × 67,2 mm	M18 × 77 mm M18 × 81,5 mm
light sources / ranges				
Baumer PinPoint LED				
standard LED	3,5 m			
infrared LED	0 ... 80 mm 0 ... 300 mm 0 ... 800 mm			
laser	10 ... 300 mm		15 m	
response time	< 1 ms	< 0,34 ms	< 1 ms	< 0,34 ms
output	PNP NPN	PNP NPN	PNP NPN	PNP NPN
connection types	cable 2 m flylead connector M12 connector M12	cable 2 m connector M12	cable 2 m flylead connector M12 connector M12	cable 2 m connector M12
setting	potentiometer	potentiometer	potentiometer	potentiometer
housing material	plastic (ABS)	brass nickel plated	plastic (ABS)	brass nickel plated
operating temperature	−25 ... +55 °C	−10 ... +55 °C	−25 ... +55 °C	−10 ... +55 °C
protection class	IP 67	IP 67	IP 67	IP 67

Photoelectric sensors

OR18 light barriers and diffuse sensors

- Robust, cylindrical M18 sensor
- Ranges up to 55 m
- Laser class 1 sensors for detection of small objects
- Detection of semi-transparent and shiny objects with fixed focus types
- Short response time <0,34 ms
- *SmartReflect®* – light barrier without a reflector in M18 housing



OR18.RR.T



OR18.EI
OR18.TI



OR18.TL (emitter)
OR18.EL (receiver)

OR18.XY

X = function principle

Y = light source

function principle	Retro-reflective sensors for transparent objects	Through beam sensors	Through beam sensors
specific features	■ Laser class 1		
dimensions	M18 × 67,2 mm	M18 × 44,8 mm M18 × 67,2 mm	M18 × 77 mm M18 × 81,5 mm
light sources / ranges			
Baumer PinPoint LED			
standard LED	500 mm		
infrared LED		13 m	
laser			55 m
response time	< 1 ms	< 2 ms	< 0,34 ms
output	PNP NPN	PNP NPN	PNP NPN
connection types	connector M12	cable 2 m flylead connector M12 connector M12	cable 2 m connector M12
setting	potentiometer	potentiometer	potentiometer
housing material	plastic (ABS)	plastic (ABS)	brass nickel plated
operating temperature	–25 ... +55 °C	–25 ... +55 °C	–10 ... +55 °C
protection class	IP 67	IP 67	IP 67



Photoelectric sensors

OR18 light barriers and diffuse sensors in stainless steel housing

- Robust, cylindrical M18 sensor in stainless steel
- IP 69K washdown design
- Ranges up to 13 m
- Short response time <1 ms



OR18.XY

X = function principle

Y = light source

OR18W.GR

OR18W.ZI

OR18W.RR

OR18W.RR.T

function principle	Diffuse sensors with background suppression	Diffuse sensors with intensity difference	Retro-reflective sensors	Retro-reflective sensors for transparent objects
dimensions	M18 × 71,9 mm	M18 × 67,2 mm	M18 × 67,2 mm	M18 × 67,2 mm
light sources / ranges				
Baumer PinPoint LED				
standard LED	40 ... 120 mm		3,5 m	500 mm
infrared LED		0 ... 300 mm 0 ... 800 mm		
laser				
response time	< 1 ms	< 1 ms	< 1 ms	< 1 ms
output	PNP NPN	PNP NPN	PNP NPN	PNP NPN
connection types	connector M12	connector M12	connector M12	connector M12
setting	potentiometer	potentiometer	potentiometer	potentiometer
housing material	stainless steel	stainless steel	stainless steel	stainless steel
operating temperature	−25 ... +55 °C	−25 ... +55 °C	−25 ... +55 °C	−25 ... +55 °C
protection class	IP 67/69K	IP 67/69K	IP 67/69K	IP 67/69K

OR18 Light barriers and diffuse sensors in stainless steel housing



OR18.XY

X = function principle

Y = light source

OR18W.TI (emitter)

OR18W.EI (receiver)

function principle Through beam sensors

dimensions M18 × 67,2 mm

light sources / ranges

Baumer PinPoint LED

standard LED

infrared LED 13 m

laser

response time < 2 ms

output PNP
NPN

connection types connector M12

setting potentiometer

housing material stainless steel

operating temperature −25 ... +55 °C





protection class IP 67/69K

Photoelectric sensors

O300 light barriers and diffuse sensors

- One inch design for tight spots
- 7 sensor principles
- Fast response times of <0.1 ms
- Laser variant with 0.1 mm fine light beam



				
O300.XY X = principal sensor Y = light source	O300.GP, O300.GI, O300.GR, O300.GL IO-Link	O300.RP, O300.RR, O300.RL IO-Link	O300.RPT IO-Link	O300.SP O300.SL IO-Link
principal sensor	Diffuse sensor with back-ground suppression	Retro-reflective sensor	Diffuse sensor for transparency detection	■ SmartReflect® Light barriers without reflectors
characteristics	■ small beam diameter ■ Laser beam <0,1 mm	■ Polarization filter for detection of reflective objects ■ small beam diameter	■ short response time ■ 1 sensor for bowls, bottles and foils	■ SmartReflect® Light barriers without reflectors
dimensions	12,9 × 32,3 × 23 mm	12,9 × 32,3 × 23 mm	12,9 × 32,3 × 23 mm	12,9 × 32,3 × 23 mm
light source / ranges				
Standard LED (R)	30 ... 300 mm	4 m		
PinPoint (P)	30 ... 200 mm	5 m	3,5 m	30 ... 300 mm
Inf rared LED (I)	30 ... 300 mm			
Laser (L)	30 ... 250 mm	5 m		30 ... 250 mm
response time	< 0,49 ms < 0,25 ms (Laser)	< 0,49 ms < 0,1 ms (Laser)	< 0,25 ms	< 0,49 ms < 0,25 ms (Laser)
output	push-pull PNP NPN	push-pull PNP NPN	push-pull	push-pull PNP NPN
connection types	cable 2 m connector M8 flylead connector M12	cable 2 m connector M8 flylead connector M12	cable 2 m connector M8	cable 2 m connector M8 flylead connector M12
housing material	plastic (ASA, PMMA)	plastic (ASA, PMMA)	plastic (ASA, PMMA)	plastic (ASA, PMMA)
operating temperature	-25 ... +60 °C -10 ... +60 °C	-25 ... +60 °C -10 ... +60 °C	-25 ... +60 °C	-25 ... +60 °C -10 ... +60 °C
protection class	IP 67	IP 67	IP 67	IP 67
specific features			■ Sensors for transparent objects ■ Adjustable signal attenuation	



O300.SPT

IO-Link



O300.ZR, O300.ZL

IO-Link



O300.TR/TL (emitter),
O300.ER/EL (receiver)





SmartReflect® transparent – Light barriers without reflectors	Diffuse sensor with intensity difference	Through Beam Sensor
<ul style="list-style-type: none"> ■ short response time ■ 1 sensor for bowls, bottles and foils 		<ul style="list-style-type: none"> ■ Wide range
12,9 × 32,3 × 23 mm	12,9 × 32,3 × 23 mm	12,9 × 32,3 × 23 mm
	10 ... 400 mm	10 m (TR)
30 ... 300 mm		
	10 ... 300 mm	10 m (TL)
< 0,25 ms	< 1 ms	< 0,49 ms
push-pull	push-pull PNP NPN	push-pull PNP NPN
cable 2 m connector M8	cable 2 m connector M8	cable 2 m connector M8
plastic (ASA, PMMA)	plastic (ASA, PMMA)	plastic (ASA, PMMA)
–25 ... +60 °C	–25 ... +60 °C –10 ... +60 °C	–25 ... +60 °C –10 ... +60 °C
IP 67	IP 67	IP 67
<ul style="list-style-type: none"> ■ Sensors for transparent objects ■ Adjustable signal attenuation 		

Photoelectric sensors

O300 light barriers and diffuse sensors in washdown design

- For cramped spaces
- Ecolab-tested and -certified
- FDA and EHEDG-compliant hygienic design
- Robust stainless steel housing
- IP69K
- Long-term seal thanks to *proTect+*®



				
O300.XY X = principal sensor Y = light source	O300W.GP O300W.GL IO-Link	O300W.RP O300W.RL IO-Link	O300W.RPT IO-Link	O300W.SP O300W.SL IO-Link
principal sensor	Diffuse sensor with background suppression	Retro-reflective sensor	Diffuse sensor for transparency detection	SmartReflect® Light barriers without reflectors
characteristics	<ul style="list-style-type: none"> ■ small beam diameter ■ Laser beam <0,1 mm 	<ul style="list-style-type: none"> ■ Polarization filter for detection of reflective objects ■ small beam diameter 	<ul style="list-style-type: none"> ■ short response time ■ 1 sensor for bowls, bottles and foils 	<ul style="list-style-type: none"> ■ SmartReflect® Light barriers without reflectors
dimensions	16,5 × 34,7 × 28,2 mm	16,5 × 34,7 × 28,2 mm	16,5 × 34,7 × 28,2 mm	16,5 × 34,7 × 28,2 mm
light source / ranges				
Standard LED (R)				
PinPoint (P)	30 ... 200 mm	5 m	3,5 m	30 ... 300 mm
Inf rarot LED (I)				
Laser (L)	30 ... 250 mm	5 m		30 ... 250 mm
response time	< 0,49 ms < 0,25 ms (Laser)	< 0,49 ms < 0,1 ms (Laser)	< 0,25 ms	< 0,49 ms < 0,25 ms (Laser)
output	push-pull	push-pull	push-pull	push-pull
connection types	connector M8	connector M8	connector M8	connector M8
housing material	stainless steel	stainless steel	stainless steel	stainless steel
operating temperature	-25 ... +60 °C -10 ... +60 °C	-25 ... +60 °C -10 ... +60 °C	-25 ... +60 °C	-25 ... +60 °C -10 ... +60 °C
protection class	IP 68 / IP 69K proTect+	IP 68 / IP 69K proTect+	IP 68 / IP 69K proTect+	IP 68 / IP 69K proTect+
specific features	<ul style="list-style-type: none"> ■ Sensors for transparent objects ■ Adjustable signal attenuation 			

O300 Light barriers and diffuse sensors in washdown design



O300W.SP.T



O300W.TR/TL (emitter)
O300W.ER/EL (receiver)

 IO-Link

SmartReflect® transparent – Light barriers without reflectors

Through Beam Sensor

- short response time
- 1 sensor for bowls, bottles and foils

- Wide range

16,5 × 34,7 × 28,2 mm

16,5 × 34,7 × 28,2 mm

10 m (TR)

30 ... 300 mm

10 m (TL)

< 0,25 ms

< 0,49 ms

push-pull

push-pull

connector M8

connector M8

stainless steel

stainless steel

–25 ... +60 °C

–25 ... +60 °C
–10 ... +60 °C

IP 68 / IP 69K
proTect+

IP 68 / IP 69K
proTect+





- Sensors for transparent objects
- Adjustable signal attenuation

Photoelectric sensors

O300 light barriers and diffuse sensors in hygienic design

- For cramped spaces
- Ecolab-tested and -certified
- FDA and EHEDG-compliant hygienic design
- Robust stainless steel housing
- IP69K
- Long-term seal thanks to *proTect+*®



				
O300.XY X = principal sensor Y = light source	O300H.GP O300H.GL IO-Link	O300H.RP O300H.RL IO-Link	O300H.RPT IO-Link	O300H.SP O300H.SL IO-Link
principal sensor	Diffuse sensor with back-ground suppression	Retro-reflective sensor	Diffuse sensor for transparency detection	SmartReflect® Light barriers without reflectors
characteristics	<ul style="list-style-type: none"> ■ small beam diameter ■ Laser beam <0,1 mm 	<ul style="list-style-type: none"> ■ Polarization filter for detection of reflective objects ■ small beam diameter 	<ul style="list-style-type: none"> ■ short response time ■ 1 sensor for bowls, bottles and foils 	SmartReflect® Light barriers without reflectors
dimensions	16,5 × 34,6 × 28,7 mm	16,5 × 34,6 × 28,7 mm	16,5 × 34,6 × 28,7 mm	16,5 × 34,6 × 28,7 mm
light source / ranges				
Standard LED (R)				
PinPoint (P)	30 ... 200 mm	5 m	3,5 m	30 ... 300 mm
Inf rarot LED (I)				
Laser (L)	30 ... 250 mm	5 m		30 ... 250 mm
response time	< 0,49 ms < 0,25 ms (Laser)	< 0,49 ms < 0,1 ms (Laser)	< 0,25 ms	< 0,49 ms < 0,25 ms (Laser)
output	push-pull	push-pull	push-pull	push-pull
connection types	cable 2 m flylead connector M8	cable 2 m flylead connector M8	cable 2 m flylead connector M8	cable 2 m flylead connector M8
housing material	stainless steel	stainless steel	stainless steel	stainless steel
operating temperature	-25 ... +60 °C -10 ... +60 °C	-25 ... +60 °C -10 ... +60 °C	-25 ... +60 °C	-25 ... +60 °C -10 ... +60 °C
protection class	IP 68 / IP 69K proTect+	IP 68 / IP 69K proTect+	IP 68 / IP 69K proTect+	IP 68 / IP 69K proTect+
specific features			<ul style="list-style-type: none"> ■ Sensors for transparent objects ■ Adjustable signal attenuation 	

O300 Light barriers and diffuse sensors in hygienic design



O300H.SPT



O300H.TR/TL (emitter)
O300H.ER/EL (receiver)

IO-Link

SmartReflect® transparent – Light barriers without reflectors

Through Beam Sensor

- short response time
- 1 sensor for bowls, bottles and foils

- Wide range

16,5 × 34,6 × 28,7 mm

16,5 × 34,6 × 28,7 mm

10 m (TR)

30 ... 300 mm

10 m (TL)

< 0,25 ms

< 0,49 ms

push-pull

push-pull

cable 2 m
flylead connector M8

cable 2 m
flylead connector M8

stainless steel

stainless steel

–25 ... +60 °C

–25 ... +60 °C
–10 ... +60 °C

IP 68 / IP 69K
proTect+

IP 68 / IP 69K
proTect+





- Sensors for transparent objects
- Adjustable signal attenuation

Photoelectric sensors

O500 light barriers and diffuse sensors

- Ranges up to 25 m
- Compact design
- Fast response times
- 7 sensor principles



				
O500.XY X = principal sensor Y = light source	O500.GP, O500.GI, O500.GR IO-Link	O500.RP, O500.RR IO-Link	O500.RPT IO-Link	O500.SP IO-Link
principal sensor	Diffuse sensor with back-ground suppression	Retro-reflective sensor	Diffuse sensor for transparency detection	■ SmartReflect® Light barriers without reflectors
characteristics	■ small beam diameter	■ Polarization filter for detection of reflective objects ■ small beam diameter	■ short response time ■ 1 sensor for bowls, bottles and foils	■ short response time ■ SmartReflect® Light barriers without reflectors
dimensions	18 × 45 × 32 mm	18 × 45 × 32 mm	18 × 45 × 32 mm	18 × 45 × 32 mm
light source / ranges				
Standard LED (R)	60 ... 550 mm	7,5 m		
PinPoint (P)	60 ... 400 mm	7,5 m	5,5 m	60 ... 600 mm
Infrarot LED (I)	60 ... 550 mm			
response time	< 0,49 ms	< 0,49 ms	< 0,25 ms	< 0,49 ms
output	push-pull PNP NPN	push-pull PNP NPN	push-pull	push-pull PNP NPN
connection types	cable 2 m connector M12	cable 2 m connector M12	cable 2 m connector M12	cable 2 m connector M12
housing material	plastic (ASA, PMMA)	plastic (ASA, PMMA)	plastic (ASA, PMMA)	plastic (ASA, PMMA)
operating temperature	–25 ... +60 °C	–25 ... +60 °C	–25 ... +60 °C	–25 ... +60 °C
protection class	IP 67	IP 67	IP 67	IP 67
specific features			■ Sensors for transparent objects ■ Adjustable signal attenuation	



O500.SPT



O500.ZR



O500.TR (emitter)
O500.ER (receiver)

IO-Link

SmartReflect® transparent – Light barriers without reflectors

- short response time
- 1000 mm range
- 1 sensor for bowls, bottles and foils

18 × 45 × 32 mm

Diffuse sensor with intensity difference

- 600 mm range

18 × 45 × 32 mm

20 ... 600 mm

Through Beam Sensor

- Wide range

18 × 45 × 32 mm

0 ... 25 m (TR)

60 ... 1000 mm

< 0,25 ms

< 1 ms

< 0,49 ms

push-pull

push-pull

push-pull
PNP
NPN

cable 2 m
connector M12

cable 2 m
connector M12

cable 2 m
connector M12

plastic (ASA, PMMA)

plastic (ASA, PMMA)

plastic (ASA, PMMA)

–25 ... +60 °C

–25 ... +60 °C

–25 ... +60 °C

IP 67

IP 67

IP 67









- Sensors for transparent objects
- Adjustable signal attenuation

Photoelectric sensors

O500 light barriers and diffuse sensors in washdown design

- O500 Hygienic and washdown
- Ranges of up to 25 m
- Hygiene design conforming to FDA and EHEDG
- Robust stainless steel housing
- IP69K
- Long-term seal thanks to *proTect+*®



				
O500.XY X = principal sensor Y = light source	O500W.GP	O500W.RP	O500W.RPT	O500W.SP
principal sensor	 IO-Link Diffuse sensor with back-ground suppression	 IO-Link Retro-reflective sensor	 IO-Link Diffuse sensor for transparency detection	 IO-Link ■ <i>SmartReflect</i> ® Light barriers without reflectors
characteristics	■ small beam diameter	■ Polarization filter for detection of reflective objects ■ small beam diameter	■ short response time ■ 1 sensor for bowls, bottles and foils	■ short response time ■ <i>SmartReflect</i> ® Light barriers without reflectors
dimensions	18 × 45 × 32 mm	18 × 45 × 32 mm	18 × 45 × 32 mm	18 × 45 × 32 mm
light source / ranges				
Standard LED (R)				
PinPoint (P)	60 ... 400 mm	7,5 m	5,5 m	60 ... 600 mm
Infrarot LED (I)				
response time	< 0,49 ms	< 0,49 ms	< 0,25 ms	< 0,49 ms
output	push-pull	push-pull	push-pull	push-pull
connection types	connector M12	connector M12	connector M12	connector M12
housing material	stainless steel	stainless steel	stainless steel	stainless steel
operating temperature	–25 ... +60 °C	–25 ... +60 °C	–25 ... +60 °C	–25 ... +60 °C
protection class	IP 68 / IP 69K <i>proTect+</i>	IP 68 / IP 69K <i>proTect+</i>	IP 68 / IP 69K <i>proTect+</i>	IP 68 / IP 69K <i>proTect+</i>
specific features	■ Sensors for transparent objects ■ Adjustable signal attenuation			

O500 Light barriers and diffuse sensors in washdown design



O500W.S.P.T



O500W.TR (emitter)
O500W.ER (receiver)

IO-Link

SmartReflect® transparent – Light barriers without reflectors

Through Beam Sensor

- short response time
- 1000 mm range
- 1 sensor for bowls, bottles and foils

- Wide range

18 × 45 × 32 mm

18 × 45 × 32 mm

25 m (TR)

60 ... 1000 mm

< 0,25 ms

< 0,49 ms

push-pull

push-pull

connector M12

connector M12

stainless steel

stainless steel

–25 ... +60 °C

–25 ... +60 °C

IP 68 / IP 69K &
proTect+

IP 68 / IP 69K
proTect+

- Sensors for transparent objects
- Adjustable signal attenuation





* additional variants on request

Photoelectric sensors

O500 light barriers and diffuse sensors in hygienic design

- O500 Hygienic design
- Ranges of up to 25 m
- Hygiene design conforming to FDA and EHEDG
- Robust stainless steel housing
- IP69K
- Long-term seal thanks to *proTect+*®



				
O500H.XY X = principal sensor Y = light source	O500H.GP, O500H.GI, O500H.GR	O500H.RP, O500H.RR	O500H.RPT	O500H.SP
principal sensor	Diffuse sensor with back-ground suppression	Retro-reflective sensor	Diffuse sensor for transparency detection	SmartReflect® Light barriers without reflectors
characteristics	■ small beam diameter	■ Polarization filter for detection of reflective objects ■ small beam diameter	■ short response time ■ 1 sensor for bowls, bottles and foils	■ short response time ■ SmartReflect® Light barriers without reflectors
dimensions	20,2 × 124 × 36,4 mm	20,2 × 124 × 36,4 mm	20,2 × 124 × 36,4 mm	20,2 × 124 × 36,4 mm
light source / ranges				
Standard LED (R)				
PinPoint (P)	60 ... 400 mm	7,5 m	5,5 m	60 ... 600 mm
Infrarot LED (I)				
response time	< 0,49 ms	< 0,49 ms	< 0,25 ms	< 0,49 ms
output	push-pull	push-pull	push-pull	push-pull
connection types	cable 2 m flylead connector M12	cable 2 m flylead connector M12	cable 2 m flylead connector M12	cable 2 m flylead connector M12
housing material	stainless steel	stainless steel	stainless steel	stainless steel
operating temperature	–25 ... +60 °C	–25 ... +60 °C	–25 ... +60 °C	–25 ... +60 °C
protection class	IP 68 / IP 69K proTect+	IP 68 / IP 69K proTect+	IP 68 / IP 69K proTect+	IP 68 / IP 69K proTect+
specific features			■ Sensors for transparent objects ■ Adjustable signal attenuation	

O500 Light barriers and diffuse sensors in hygienic design



O500H.S.P.T



O500H.TR (emitter)
O500H.ER (receiver)

IO-Link

SmartReflect® transparent – Light barriers without reflectors

Through Beam Sensor

- short response time
- 1000 mm range
- 1 sensor for bowls, bottles and foils

- Wide range

20,2 × 124 × 36,4 mm

20,2 × 124 × 36,4 mm

25 m (TR)

60 ... 1000 mm

< 0,25 ms

< 0,49 ms

push-pull

push-pull

cable 2 m
flylead connector M12

cable 2 m
flylead connector M12

stainless steel

stainless steel

–25 ... +60 °C

–25 ... +60 °C

IP 68 / IP 69K
proTect+

IP 68 / IP 69K
proTect+

- Sensors for transparent objects
- Adjustable signal attenuation

* additional variants on request

Photoelectric sensors

Light barriers and diffuse sensors in hygienic and washdown design

- Stainless steel housing V4A
- *proTect+*® sealing concept
- Ecolab-tested and -certified
- FDA and EHEDG-compliant hygienic design
- Washdown design for challenging environments



FxDR 14
IO-Link



FxDH 14
IO-Link

characteristics	<ul style="list-style-type: none"> ■ Washdown-design ■ PinPoint Source LED 	<ul style="list-style-type: none"> ■ Hygienic design ■ PinPoint Source LED
dimensions	19,6 × 62,4 × 33,8 mm	19,6 × 99,5 × 33,6 mm
function principle / ranges		
diffuse sensors with background suppression	50 ... 400 mm	50 ... 400 mm
<i>SmartReflect</i> ® Light barriers	50 ... 800 mm	50 ... 800 mm
Retro-reflective sensors	3 m	3 m
response time	< 1,8 ms	< 1,8 ms
output	push-pull	push-pull
connection types	connector M12	cable 2 m flylead connector M12
housing material	stainless steel 1.4404 (V4A)	stainless steel 1.4404 (V4A)
operating temperature	–30 ... +60 °C	–30 ... +60 °C
protection class	IP 68 / IP 69K & <i>proTect+</i>	IP 68 / IP 69K & <i>proTect+</i>
specific features	<ul style="list-style-type: none"> ■ Level of sensitivity adjustable by external teach input 	<ul style="list-style-type: none"> ■ Level of sensitivity adjustable by external teach input



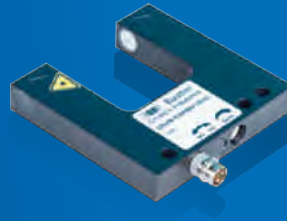
FKDR 14, FKDH 14

characteristics	<ul style="list-style-type: none"> ■ Contrast sensor ■ Washdown / hygienic design ■ short response time ■ White light
dimensions	19,6 × 62,4 × 33,8 mm
sensing distance Tw	12,5 mm
response time	50 µs
output	push-pull
connection types	cable 2 m connector M12 flylead connector M12
housing material	stainless steel 1.4404 (V4A)
operating temperature	–25 ... +60 °C
protection class	IP 68 / IP 69K & proTect+
specific features	<ul style="list-style-type: none"> ■ Level of sensitivity adjustable by external teach input

Photoelectric sensors

Fork and angle sensors

- Quick response times up to 0,125 ms
- High repeat accuracy
- Robust metal housing
- Narrow parallel light beam
- Smallest detectable object 0,05 mm
- Different gap widths 20 ... 158 mm
- Output PNP/NPN



FGUM



FGLM

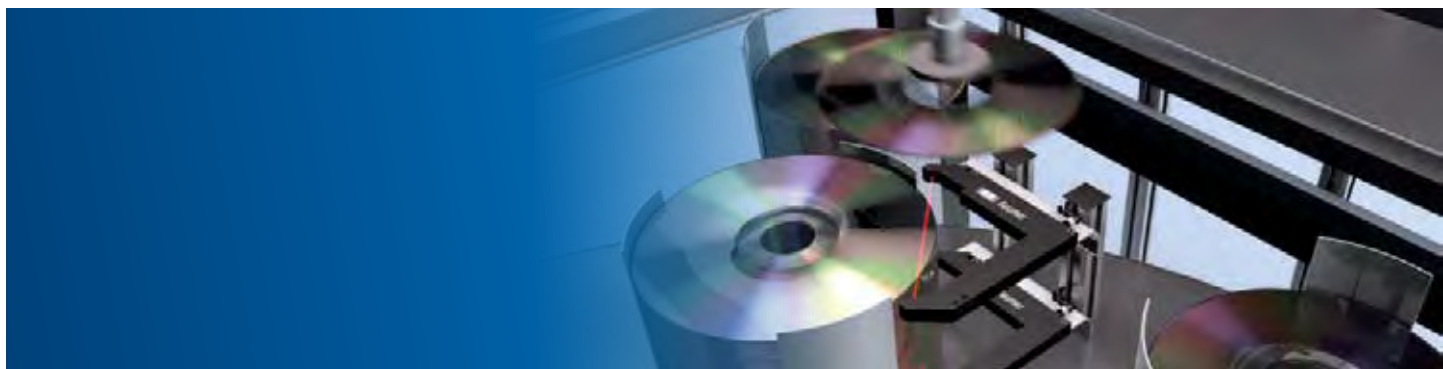


OGUM



OGUM

characteristics	<ul style="list-style-type: none"> ■ Potentiometer or Teach-in version ■ Narrow, virtually parallel light beam ■ Sensors can be mounted side-by-side 	<ul style="list-style-type: none"> ■ Special L-type ■ Narrow, virtually parallel light beam ■ Sensors can be mounted side-by-side 	<ul style="list-style-type: none"> ■ Very high resolution ■ Extremely narrow laser light beam ■ Sensors can be mounted side-by-side ■ High repeat accuracy 	<ul style="list-style-type: none"> ■ High resolution ■ Short response time ■ Sensors can be mounted side-by-side
fork widths	20 mm 30 mm 50 mm 80 mm 120 mm	60 mm 100 mm 158 mm	30 mm 50 mm 80 mm 120 mm	30 mm 50 mm 80 mm 120 mm
object size	> 0,4 mm	> 0,5 mm	> 0,05 mm	> 0,1 mm
repeat accuracy	< 0,02 mm	< 0,06 mm	< 0,01 mm	< 0,02 mm
response / release time	< 0,125 ms	< 0,125 ms	< 0,166 ms	< 0,166 ms
connection types	connector M8	connector M8	connector M12	connector M8
housing material	die-cast zinc	die-cast zinc	anodized aluminum	anodized aluminum
operating temperature	-10 ... +60 °C	-10 ... +60 °C	+5 ... +45 °C	+5 ... +45 °C
protection class	IP 67	IP 67	IP 67	IP 67
specific features			■ Sensors in laser class 1	■ Sensors in laser class 1



Photoelectric sensors

Plastic fiber optics and fiber optic sensors

- Outstanding variety of fiber optic heads
- Very compact housings
- Level of sensitivity adjustable by Teach-in or potentiometer
- Quick response times up to 0,05 ms
- Adjustable on / off delay
- Master-Slave systems (minimized wiring effort)



Plastic fiber optic



FVDK 10



FWDK 84



FVDK 66

version		Plastic	Plastic	Plastic
characteristics	<ul style="list-style-type: none"> ■ Extremely varied beam geometries: spot, coaxial, focused, line ■ Fiber optics resistant to chemicals ■ High temperature fiber ■ Lateral beam emission 	<ul style="list-style-type: none"> ■ Smallest fiber optic sensor ■ Sensitivity adjustable with potentiometer 	<ul style="list-style-type: none"> ■ Sensitivity adjustable with potentiometer ■ Analog output 	<ul style="list-style-type: none"> ■ Sensitivity adjustable with Teach-in ■ Minimized installation effort (master slave) ■ Logical output linking available (Duplex version) ■ Timer functions
dimensions		10,4 × 27 × 19,5 mm	10 × 29,7 × 60 mm	10 × 33,8 × 70,2 mm
ranges (optical fiber dependent)				
with through beam (max.)		600 mm	90 mm	1500 mm
with reflective (max.)		70 mm	45 mm	130 mm
response time		< 1 ms	1 ... 5 ms	0,25 ... 1 ms
output		NPN PNP	1 ... 5 VDC	NPN PNP
connection types		cable 2 m flylead connector M8	cable 2 m	cable 2 m connector M8
housing material		plastic (ASA)	polycarbonate / ABS	polycarbonate / ABS
operating temperature		–25 ... +55 °C	–20 ... +60 °C	–20 ... +55 °C
protection class		IP 40	IP 40	IP 40
additional functions			<ul style="list-style-type: none"> ■ Off delay 	<ul style="list-style-type: none"> ■ Alarm output ■ External Teach-in
specific features			<ul style="list-style-type: none"> ■ Version with analog output 	<ul style="list-style-type: none"> ■ Master slave



FVDK 67

Plastic fiber

- Multi-functional device
- Sensitivity adjustable with Teach-in
- Minimized installation effort (master slave)
- Timer functions

10 × 33,8 × 70,2 mm

4000 mm

550 mm

0,05 ... 5 ms

NPN
PNP

cable 2 m
connector M8

polycarbonate / ABS

−20 ... +55 °C

IP 40

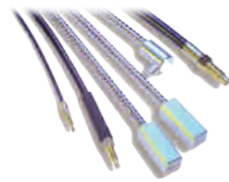
- Response / release time adjustable
- Adjustable minimum pulse length

- Version with 2 switching points
- Master slave

Photoelectric sensors

Glass fiber optics and fiber optic sensors

- Outstanding variety of fiber optic heads
- Very compact housings
- Level of sensitivity adjustable by Teach-in or potentiometer
- Quick response times up to 0,1 ms



Glass fiber optic



FZAM 18



FZAM 30



FVDM 15

version		Glass	Glass	Glass
characteristics	<ul style="list-style-type: none"> ■ Different beam geometries: spot, line ■ Fiber optics with robust metal sheath ■ High temperature fiber ■ Lateral beam emission 	<ul style="list-style-type: none"> ■ Sensitivity adjustable with Teach-in or potentiometer ■ Robust metal housing 	<ul style="list-style-type: none"> ■ Sensitivity adjustable with Teach-in or potentiometer ■ Robust metal housing ■ For large ranges 	<ul style="list-style-type: none"> ■ Sensitivity adjustable with potentiometer ■ Robust metal housing ■ Quick response and release times
dimensions		M18 × 50 mm	M30 × 50 mm	15 × 60 × 45 mm
ranges (optical fiber dependent)				
with through beam (max.)		800 mm	1400 mm	500 mm
with reflective (max.)		150 mm	230 mm	240 mm
response time		< 0,5 ms / < 1 ms	< 0,25 ms / < 2,5 ms	< 0,1 ms / < 1 ms
output		NPN PNP	NPN PNP	NPN PNP
connection types		cable 2 m connector M12	cable 2 m	cable 2 m connector M12
housing material		brass nickel plated / PC	brass nickel plated	die-cast aluminum
operating temperature		−25 ... +55 °C	0 ... +65 °C	−25 ... +55 °C
protection class		IP 67	IP 65	IP 65
specific features		<ul style="list-style-type: none"> ■ Infrared 	<ul style="list-style-type: none"> ■ Fast version ■ Infrared 	<ul style="list-style-type: none"> ■ Fast version ■ Infrared



Photoelectric sensors

Laser distance sensors *MESAX*

- High ambient light immunity
- Maximum resolution up to 2 µm
- Suitable for high-speed processes
- Measuring range programmable by Teach-in
- Fully integrated evaluation electronics
- High temperature stability



OADM 12
Laser-Point



OADM 13
Laser-Point, Laser-Line



OADM 20
Laser-Point, Laser-Line



OADM 20
Laser-Point

characteristics	<ul style="list-style-type: none"> ■ Smallest laser distance sensor ■ Adjustable measuring range ■ Highest resolution ■ Also as laser class 1 	<ul style="list-style-type: none"> ■ Large measuring distance in a small housing ■ Adjustable measuring range ■ Also as laser class 1 	<ul style="list-style-type: none"> ■ The allrounder ■ High vibration resistance ■ Different measuring ranges teachable ■ High measuring rates 	<ul style="list-style-type: none"> ■ Increased vibration immunity ■ Increased ambient light immunity 100K lux ■ Suitable for outdoor applications
dimensions	12,4 × 37 × 34,5 mm	13,4 × 48,2 × 40 mm	20,6 × 65 × 50 mm	20,6 × 65 × 50 mm
measuring distance	16 ... 120 mm	50 ... 550 mm	30 ... 1000 mm	50 ... 1000 mm
resolution	2 µm	10 µm	4 µm	10 µm
response time	< 0,9 ms	< 0,9 ms	< 0,9 ms	< 2,5 ms
output signal	4 ... 20 mA 0 ... 10 V	4 ... 20 mA 0 ... 10 V RS 485 / RS 232	4 ... 20 mA 0 ... 10 V RS 485	4 ... 20 mA 0 ... 10 V
connection types	connector M8	connector M8	connector M12	cable 2 m
housing material	die-cast zinc	aluminum	die-cast zinc	die-cast zinc
operating temperature	0 ... +50 °C	0 ... +50 °C	0 ... +50 °C	0 ... +50 °C
protection class	IP 67	IP 67	IP 67	IP 67
specific features	<ul style="list-style-type: none"> ■ Suppression of incorrect measuring operations, the last measured value is retained at the output for up to 30 ms 	<ul style="list-style-type: none"> ■ Suppression of incorrect measuring operations, the last measured value is retained at the output for up to 30 ms 	<ul style="list-style-type: none"> ■ Alarm output to signalize any incorrect measuring operation or out-of-range object ■ Input for synchronizing measurements ■ Laser diode can be switched on/off 	<ul style="list-style-type: none"> ■ Missing measurement signals or incorrect measurements are suppressed



OADM 21
Laser-Point, Laser-Line

- High resolution at large measuring distance
- Adjustable measuring range



OM70
multi-spot

- Very high resolution
- Stable measurements even on shiny and very rough surfaces
- High ambient light immunity
- Laser class 1



OM70
multi-spot

- Very high resolution
- Stable measurements even on shiny and very rough surfaces
- High ambient light immunity



OADM 250
Time-of-Flight

- High resolution
- Measurement up to 4 m independent of colors
- Alarm output
- Adjustable measuring range



OADM 260
Time-of-Flight

- Large measuring range up to 13 m
- Alarm output
- Adjustable measuring range

20,4 × 135 × 45 mm

26 × 74 × 55 mm

26 × 74 × 55 mm

25,4 × 66 × 51 mm

25,4 × 66 × 51 mm

100 ... 1000 mm

100 ... 150 mm

100 ... 500 mm

0,5 ... 4 m

0,5 ... 13 m

10 µm

2 µm

4 µm

1,2 mm

5 mm

< 5 ms

< 11 ms

< 6 ms

< 10 ms

< 10 ms

4 ... 20 mA
0 ... 10 V

4 ... 20 mA
0 ... 10 V
RS 485

4 ... 20 mA
0 ... 10 V
RS 485

4 ... 20 mA
0 ... 10 V

4 ... 20 mA
0 ... 10 V

connector M12

connector M12

connector M12

connector M12

connector M12

aluminum

aluminum

aluminum

aluminum

aluminum

0 ... +50 °C

−10 ... +50 °C

−10 ... +50 °C

−25 ... +50 °C

−25 ... +50 °C

IP 67

IP 67

IP 67

IP 67

IP 67

- Alarm output to signalize any incorrect measuring operation or out-of-range object
- Input for synchronizing measurements
- Laser diode can be switched on/off

- Sensor settings via touch display
- Compact measuring unit without external software
- Values displayed in mm

- Sensor settings via touch display
- Compact measuring unit without external software
- Values displayed in mm

- Alarm output to signalize any incorrect measuring operation or out-of-range object

- Alarm output to signalize any incorrect measuring operation or out-of-range object

Photoelectric sensors

Distance sensors

- Red light distance sensors with very good price / performance ratio



OADK 25
Laser distanz sensor



FADK 14
LED distanz sensor
IO-Link

characteristics	<ul style="list-style-type: none"> ■ <i>qTeach</i>® ■ Alarm output ■ Laser class 1 	<ul style="list-style-type: none"> ■ Compact housing ■ Measuring distance 50 ... 400 mm ■ Resolution up to 0,1 mm
dimensions	23,4 × 63 × 45 mm	14,8 x 43 x 31 mm
measuring distance	100 ... 1000 mm	50 ... 400 mm
resolution	0,3 mm	0,1 ... 1 mm
response time	< 12,8 ms	< 3 ms
output signal	4 ... 20 mA 0 ... 10 V	4 ... 20 mA 0 ... 10 V
connection types	cable 2 m connector M12	cable 2 m connector M12
housing material	plastic (SAN LURAN 378P)	plastic (ASA, MABS)
operating temperature	0 ... +50 °C	0 ... +50 °C
protection class	IP 67	IP 67
specific features	<ul style="list-style-type: none"> ■ Cost-effective solution for simpler measuring tasks 	<ul style="list-style-type: none"> ■ Cost-effective solution for simpler measuring tasks

Distance measuring – hygienic and washdown design

- Stainless steel housing V4A
- *proTect+*® sealing concept
- Ecolab-tested and -certified
- EHEDG-compliant
- FDA-compliant materials
- Washdown design for wet zone applications
- FDA and EHEDG-compliant hygienic design



FADR 14

IO-Link



FADH 14

IO-Link



OADR 20

MESAX

characteristics	<ul style="list-style-type: none"> ■ Washdown design ■ Adjustable measuring range ■ Point source LED 	<ul style="list-style-type: none"> ■ Hygienic design ■ Adjustable measuring range ■ Point source LED 	<ul style="list-style-type: none"> ■ Washdown design ■ Adjustable measuring range ■ Laser beam ■ Laser Point / Laser line
dimensions	19,6 × 62,4 × 33,8 mm	19,6 × 99,5 × 33,6 mm	20,3 × 65 × 50 mm
sensing distance	50 ... 400 mm	50 ... 400 mm	30 ... 600 mm
resolution	0,1 mm	0,1 mm	5 µm
response time	< 3 ms	< 3 ms	< 0,9 ms
output	4 ... 20 mA 0 ... 10 V	4 ... 20 mA 0 ... 10 V	4 ... 20 mA 0 ... 10 V
connection types	connector M12	cable 2 m flylead connector M12	connector M12
housing material	stainless steel 1.4404 (V4A)	stainless steel 1.4404 (V4A)	stainless steel 1.4404 (V4A)
operating temperature	0 ... +50 °C	0 ... +50 °C	0 ... +50 °C
protection class	IP 68 / IP 69K & proTect+	IP 68 / IP 69K & proTect+	IP 68 / IP 69K & proTect+
specific features	<ul style="list-style-type: none"> ■ Alarm output to signalize any incorrect measuring operation or out-of-range object ■ Service status indicator when soiled 	<ul style="list-style-type: none"> ■ Alarm output to signalize any incorrect measuring operation or out-of-range object ■ Service status indicator when soiled 	<ul style="list-style-type: none"> ■ Alarm output to signalize any incorrect measuring operation or out-of-range object ■ Input for synchronizing measurements ■ Laser diode can be switched on/off

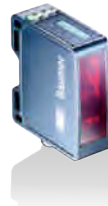
Photoelectric sensors

Light-section sensors *PosCon*®

- Factory-calibrated
- Complex functions integrated in one compact sensor
- Uniform and simple operating principle
- Measured values displayed in millimeter
- No external software required



OXE7.E15T-11148276
PosCon 3D



OXE7.E15T-11177353
PosCon 3D



OXE7.E25T-11111452
PosCon 3D



OXE7.E25T-11174280
PosCon 3D

characteristics	<ul style="list-style-type: none"> ■ Measurement of edge positions, gaps and widths ■ 72 mm measuring range ■ For very precise measurements 	<ul style="list-style-type: none"> ■ Measurement of edge positions, gaps and widths ■ 72 mm measuring range ■ For very precise measurements ■ For very dark objects 	<ul style="list-style-type: none"> ■ Measurement of edge positions, gaps and widths ■ 125 mm measuring range 	<ul style="list-style-type: none"> ■ Measurement of edge positions, gaps and widths ■ 125 mm measuring range ■ For very dark objects
dimensions	26 × 74 × 55 mm	26 × 74 × 55 mm	26 × 74 × 55 mm	26 × 74 × 55 mm
measuring distance to object	100 ... 150 mm	100 ... 150 mm	150 ... 250 mm	150 ... 250 mm
measuring field size	48 ... 72 mm	48 ... 72 mm	75 ... 125 mm	75 ... 125 mm
resolution	> 20 µm	> 20 µm	> 30 µm	> 30 µm
linearity error	± 50 ... ± 75 µm	± 50 ... ± 75 µm	± 80 ... ± 120 µm	± 80 ... ± 120 µm
repeat accuracy	> 10 µm	> 10 µm	> 15 µm	> 15 µm
measurement frequency	160 ... 550 Hz	115 ... 320 Hz	125 ... 500 Hz	90 ... 250 Hz
ambient light immunity	≤ 35 kLux	≤ 35 kLux	≤ 25 kLux	≤ 35 kLux
output	4 ... 20 mA 0 ... 10 VDC RS 485	4 ... 20 mA 0 ... 10 VDC RS 485	4 ... 20 mA 0 ... 10 VDC RS 485	4 ... 20 mA 0 ... 10 VDC RS 485
connection types	connector M12	connector M12	connector M12	connector M12
housing material	aluminum	aluminum	aluminum	aluminum
operating temperature	−20 ... +50 °C	−20 ... +50 °C	−20 ... +50 °C	−20 ... +50 °C
protection class	IP 67	IP 67	IP 67	IP 67
additional functions	<ul style="list-style-type: none"> ■ Adjustable edge height ■ Precision mode selectable ■ Measuring field can be narrowed ■ Adjustable thresholds 	<ul style="list-style-type: none"> ■ Adjustable edge height ■ Precision mode selectable ■ Measuring field can be narrowed ■ Adjustable thresholds 	<ul style="list-style-type: none"> ■ Adjustable edge height ■ Precision mode selectable ■ Measuring field can be narrowed ■ Adjustable thresholds 	<ul style="list-style-type: none"> ■ Adjustable edge height ■ Precision mode selectable ■ Measuring field can be narrowed ■ Adjustable thresholds



OXH7-11159406
PosCon HM



OXH7-11161809
PosCon HM



OXC7-11170024
PosCon CM

- Measurement of object heights
- Measuring height 50 mm
- For very precise measurements

- Measurement of object heights
- Measuring height 400 mm
- Fast moving objects

- Measurement of round objects
- Diameters from 30 to 130 mm

26 × 74 × 55 mm

26 × 74 × 55 mm

26 × 74 × 55 mm

100 ... 150 mm

100 ... 500 mm

150 ... 250 mm

48 ... 72 mm

13 mm ... 66 mm

75 ... 125 mm

> 2 µm

> 4 µm

> 10 µm

± 20 µm

± 100 µm

± 35 ... ± 60 µm

> 2 µm

> 4 µm

> 10 µm

192 ... 570 Hz

340 ... 1540 Hz

170 ... 450 Hz

≤ 35 kLux

≤ 35 kLux

≤ 25 kLux

4 ... 20 mA
0 ... 10 VDC
RS 485

4 ... 20 mA
0 ... 10 VDC
RS 485

4 ... 20 mA
0 ... 10 VDC
RS 485

connector M12

connector M12

connector M12

aluminum

aluminum

aluminum

−10 ... +50 °C

−10 ... +50 °C

−10 ... +50 °C

IP 67

IP 67

IP 67

- Measuring field can be narrowed
- Adjustable thresholds
- Scalable analog output
- Synch-In/trigger

- Measuring field can be narrowed
- Adjustable thresholds
- Scalable analog output
- Synch-In/trigger

- Measuring field can be narrowed
- Adjustable thresholds
- Precision mode selectable
- Automatic object recognition

Edge sensors

- High resolution up to 0,03 mm
- Measuring frequency up to 1 kHz
- Measuring range of 24 mm to 875 mm
- Robust metal housing
- Simple operation at the sensor
- Integrated evaluation electronics
- Measuring or digital version



ZADM 034P



ZADM 034I



ZADM 034I



ZADM 023

characteristics	<ul style="list-style-type: none"> ■ Detecting small parts ■ Quick response time ■ Parallel light beams 	<ul style="list-style-type: none"> ■ Measurement of edge positions and object widths ■ Quick response time ■ Parallel light beams 	<ul style="list-style-type: none"> ■ Measurement of edge positions and object widths ■ Quick response time ■ Parallel light beams ■ For large distances 	<ul style="list-style-type: none"> ■ Measurement of edge positions, object widths and object center positions ■ Integrated filter for detecting transparent objects ■ Interface: RS 485
dimensions	34 × 67 × 16,5 mm	34 × 67 × 16,5 mm	34 × 67 × 16,5 mm	22,9 × 50 × 50 mm
measuring distance to object	0 ... 40 mm	0 ... 40 mm	0 ... 200 mm	50 ... 1400 mm
measuring field size	24 mm	24 mm	22 mm	30 ... 875 mm
resolution	< 0,1 mm	< 0,05 mm	< 0,2 mm	< 0,03 mm
smallest object recognizable	0,5 mm	1 mm	3 mm	0,3 mm
response time	< 0,25 ms	< 0,6 ms	< 0,9 ms	< 2 ms
output	PNP	4 ... 20 mA	4 ... 20 mA	4 ... 20 mA
connection types	connector M8	connector M8	connector M8	connector M12
housing material	aluminum	aluminum	aluminum	die-cast zinc
operating temperature	0 ... +55 °C	0 ... +55 °C	0 ... +55 °C	0 ... +55 °C
protection class	IP 67	IP 67	IP 67	IP 67
functions	<ul style="list-style-type: none"> ■ minimum detectable object size can be set using Teach-in 			<ul style="list-style-type: none"> ■ alarm output ■ up to 2 adjustable thresholds
specific features	■ lateral or front optics	■ lateral or front optics	■ lateral or front optics	

Copy counters SCATEC®

- Counting rate up to 3 million copies/h
- Large operating range 0 ... 120 mm
- Detects single object up to 0,1 mm
- False pulse suppression
- Trailing edge suppression and direct gap detection
- Synchronized input
- Diagnostic software available
- Output push-pull



SCATEC-J



SCATEC-2



SCATEC-10



SCATEC-15

characteristics	<ul style="list-style-type: none"> ■ Compact type ■ Plug & Play 	<ul style="list-style-type: none"> ■ ScaDiag diagnostic and programming software available ■ Compact type ■ Adjustable output pulse length 	<ul style="list-style-type: none"> ■ Integrated copy counters ■ ScaDiag diagnostic and programming software available ■ Trailing edge suppression ■ Adjustable output pulse length 	<ul style="list-style-type: none"> ■ Integrated copy counters ■ CAN interface ■ ScaDiag diagnostic and programming software available ■ Trailing edge suppression ■ Adjustable output pulse length
dimensions	33 × 110 × 50 mm	33 × 110 × 50 mm	30 × 170 × 70 mm	30 × 170 × 70 mm
measuring distance	0 ... 55 mm	0 ... 120 mm	0 ... 90 mm	0 ... 120 mm
sensitivity	single sheet/edge thickness 1,5 mm	single sheet/edge thickness 0,2 mm	single sheet/edge thickness 0,1 mm	single sheet/edge thickness 0,15 mm
counting rate	280'000 copies/h	600'000 copies/h	3'000'000 copies/h	3'000'000 copies/h
false pulse suppression		on/off switchable	4 program options	4 program options
connection types	connector M12	connector M12	DIN 45322 (main connector) DIN 45326 (interface)	DIN 45322 (main connector) DIN 45326 (interface)
housing material	PA 6	PA 6	die-cast zinc	die-cast zinc
operating temperature	0 ... +50 °C	0 ... +50 °C	0 ... +50 °C	0 ... +50 °C
protection class	IP 54	IP 54	IP 54	IP 54
specific features		<ul style="list-style-type: none"> ■ Opto isolated output ■ Version for copy counting on conveying chains 	<ul style="list-style-type: none"> ■ Opto isolated output 	<ul style="list-style-type: none"> ■ Opto isolated output

Photoelectric sensors

Level monitoring and leak detecting sensors

- Liquid level sensors up to 40 bar nominal pressure
- Liquid level sensors for installation on risers
- Chemically resistant
- Sensors for leak monitoring
- Fiber optic versions (FOC / FSL)
- Output PNP/NPN



FFAK



FFAM

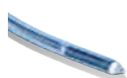


FODK



FFDK

functions	Liquid level sensor	Liquid level sensor	Leakage sensor	Liquid level sensor
characteristics	<ul style="list-style-type: none"> ■ Sensitivity adjustable ■ Chemically resistant ■ Up to 10 bar nominal pressure 	<ul style="list-style-type: none"> ■ Sensitivity adjustable ■ Stainless steel housing ■ Chemically resistant ■ Up to 40 bar nominal pressure 	<ul style="list-style-type: none"> ■ Holder for quick installation and simple cleaning ■ Detects liquid amounts of typ. 1 ml 	<ul style="list-style-type: none"> ■ Level monitoring sensor for installation in riser/ hose ■ For pipe diameters of 3 ... 7 mm / 8 ... 13 mm
dimensions	thread: G3/8" or M16 × 1 mm	thread: G3/8" or M16 × 1 mm	23 × 40 × 10,5 mm	26 × 28 × 16 mm
connection types	cable 2 m	cable 2 m	cable 2 m	cable 2 m
material (sensing device)	polysulphone	glass (borosilicate)	PFA	
housing material	polysulphone	stainless steel DIN 1.4305/ AISI 303	PFA / PVC	PC
operating temperature	0 ... +65 °C	0 ... +65 °C	–25 ... +50 °C	–10 ... +50 °C
protection class	IP 67	IP 67	IP 67	IP 50
specific features				



FUL



FOC



FSL

functions	Liquid level sensor	Leakage sensor	Liquid level sensor
characteristics	<ul style="list-style-type: none"> ■ Fiber optic level sensor ■ Special sensor tip prevents drop formation ■ High chemical resistance 	<ul style="list-style-type: none"> ■ Liquid level diffuse sensor ■ Suitable for constrained conditions ■ High chemical resistance 	<ul style="list-style-type: none"> ■ Liquid level through beam sensor ■ Detects liquids in (semi-) transparent stand pipes/hoses with \varnothing 3 - 13 mm diameter
dimensions (fiber optic cable)	2 / 5 m	5 m	5 m
min. bending radius	15 mm	20 mm	4 mm
tensile strength	5 N	-	-
material (head)	PFA	PFA	PC
material (cable jacket)	PFA (chemically resistant)	PFA (chemically resistant)	PFI
operating temperature	-30 ... +105 °C	-30 ... +70 °C	-30 ... +70 °C
specific features	<ul style="list-style-type: none"> ■ For use with fiber optic amplifier FVDK 66/67 	<ul style="list-style-type: none"> ■ For use with fiber optic amplifier FVDK 66/67 	<ul style="list-style-type: none"> ■ For use with fiber optic amplifier FVDK 66/67

Contrast sensor

- Basic print mark recognition
- Compact size



FKDK 14

characteristics	<ul style="list-style-type: none"> ■ Contrast sensor ■ White light ■ Small differences in contrast detectable ■ Adjustable during process
dimension	14,8 × 43 × 31 mm
sensing distance Tw	12,5 mm
response time	50 µs
size of measuring spot	1 mm x 2,2 mm
output	push-pull
connection types	cable 2 m connector M12 connector M8
housing material	plastic (ASA, MABS)
operating temperature	–25 ... +65 °C
protection class	IP 67
specific features	

Color sensor *LOGIPAL*

- 4 color channels
- Adjustable color tolerance
- Quick response time of 0,34 ms
- Different spot sizes
- Output PNP/NPN



FKDM 22
LOGIPAL

characteristics	<ul style="list-style-type: none"> ■ Can differentiate 4 finely nuanced colors ■ Robust metal housing ■ Adjustable color tolerance
dimension	22,9 × 50 × 50 mm / 22,9 × 50 × 68,7 mm
sensing distance Tw	40 mm / 25 mm
response / release time	< 0,34 ms
size of measuring spot	3 mm x 5 mm / 0,7 mm x 1,3 mm
output	PNP NPN
connection types	connector M12 connector M8
housing material	die-cast zinc
operating temperature	−10 ... +55 °C
protection class	IP 67
specific features	

Photoelectric sensors

Vision sensors *VeriSens*®

- Intuitive configuration in just four steps
- Contour-based image processing for higher process stability (patented *FEX*® image processor)
- *FEXLoc*® 360° part location saves the efforts to guide objects
- *Color FEX*® for reliable color differentiation for everybody
- Configurable web interface allows for creating a turnkey user interface within a few minutes



VeriSens® CS100



VeriSens® ID100



VeriSens® ID510



VeriSens® XF700 / 800

feature checks	<ul style="list-style-type: none"> ■ Presence and completeness check ■ Part recognition and part sorting ■ Checking part geometries ■ <i>FEXLoc</i>® 360° part location 	<ul style="list-style-type: none"> ■ Multi-code reader for 1D and 2D codes ■ Determines quality according to ISO / AIM 	<ul style="list-style-type: none"> ■ Multi reader for text and 1D / 2D codes (incl. GS1) ■ Reads different fonts without font training ■ Verifies text (OCR / OCV), quality control of codes 	<ul style="list-style-type: none"> ■ Presence and completeness check ■ Acquisition of part location and correct position ■ Identification (XF800 only) ■ <i>FEXLoc</i>® 360° part location
dimensions	53 × 99,5 × 38 mm	53 × 99,5 × 38 mm	53 × 99,5 × 38 mm	53 × 99,5 × 38 mm
protection class	IP 67	IP 67	IP 67	IP 67
resolution	752 × 480 px	752 × 480 px	752 × 480 px	752 × 480 px
lens	10 mm / 16 mm	10 mm / 16 mm	12 mm	12 mm / 16 mm
illumination	white / infrared	white	white / infrared	white / infrared
speed	max. 50 inspections / s	max. 50 inspections / s	max. 50 inspections / s	max. 100 inspections / s
communication: digital inputs digital outputs setup process interface	5 5 Ethernet	5 3 Ethernet TCP/UDP (Ethernet), RS485, PROFINET / EtherNet/IP™ (via gateway)	5 5 Ethernet TCP/UDP (Ethernet), PROFINET / EtherNet/IP™ ¹⁾	5 5 Ethernet TCP/UDP (Ethernet), PROFINET / EtherNet/IP™ ¹⁾
special features	<ul style="list-style-type: none"> ■ Configurable web interface 	<ul style="list-style-type: none"> ■ Password protection ■ Configurable web interface 	<ul style="list-style-type: none"> ■ Password protection ■ Configurable web interface 	<ul style="list-style-type: none"> ■ Coordinate conversion ■ Password protection ■ Configurable web interface

¹⁾ after software update Q2/2017



VeriSens® XC700 / 800,
also color*



VeriSens® XF105 / 205

- | | |
|---|--|
| <ul style="list-style-type: none"> ■ Presence and completeness check ■ Acquisition of part location and correct position ■ Identification (XC800 only) ■ <i>FEXLoc</i>® 360° part location ■ Special color functions | <ul style="list-style-type: none"> ■ Presence and completeness check ■ Acquisition of part location and correct position ■ Identification (XF205 only) ■ <i>FEXLoc</i>® 360° part location |
|---|--|

53 × 99,5 × 49,8 mm
(without lens / tube)

53 × 107,5 × 38 mm

IP 67

IP 69K

640 × 480 px (1/4")*
1280 × 960 px (1/3")*
1600 × 1200 px (1/1.8")

752 × 480 px

changeable lens (C-mount)

10 mm / 16 mm

VeriFlash® flash controller

white / infrared

max. 118 inspections / s
(VGA)

max. 100 inspections / s

5
5
Ethernet
TCP/UDP (Ethernet),
PROFINET / EtherNet/IP™ 1)

5
5
Ethernet
TCP/UDP (Ethernet)

- Integrated *VeriFlash*® flash controller for external illumination
- Free choice of lenses due to C-mount and modular tube system
- CCD sensor with resolution of 0,3 MP* / 1,2 MP* / 2 MP
- Configurable web interface

- Coordinate conversion
- Password protection
- Configurable web interface

Ultrasonic sensors

Ultrasonic proximity switches – cylindrical

- Sensing range up to 6000 mm
- Reliable detection of high-reflective and transparent objects
- Tolerant of dust and dirt
- Versions with two separate switching outputs
- Adjustable reaction times ton/toff for through beam sensors



**UNAM 12
with columnator**



**UxAM 12
Highspeed**



UNAM 18, UxAR 18



UR18

characteristics	<ul style="list-style-type: none"> ■ Beam columnator (2 II) for very narrow sonic cone profile ■ Narrow and wide sonic beam angles ■ External Teach-in ■ M12 connector 	<ul style="list-style-type: none"> ■ Fastest ultrasonic sensor ■ External Teach-in 	<ul style="list-style-type: none"> ■ Stainless steel housing V4A ■ Chemically resistant sensor front ■ FDA-compliant materials ■ Internal and external Teach-in ■ M12 connector 	<ul style="list-style-type: none"> ■ <i>qTeach</i>® – easy to operate, safe and wear-free ■ Short design
dimensions	M12 × 1	M12 × 1	M18 × 1	M18 × 1
sensing range Sd / sensor principle				
proximity switch	5 ... 400 mm	0 ... 70 mm	60 ... 1000 mm	100 ... 1000 mm
2 point proximity switch				
retro-reflective sensors		0 ... 70 mm	0 ... 400 mm	0 ... 1000 mm
through beam sensors				
response time	< 10 ms	< 1,3 ms	< 50 ms	< 50 ms
output	NPN PNP	NPN PNP	NPN PNP	push-pull
connection types	connector M12	connector M12	connector M12	connector M12
housing material	brass nickel plated	brass nickel plated	brass nickel plated stainless steel 1.4435 (V4A)	brass nickel plated
operating temperature	–10 ... +60 °C	–10 ... +60 °C	–10 ... +60 °C	–25 ... +70 °C
protection class	IP 67	IP 67	IP 67	IP 67
specific features		<ul style="list-style-type: none"> ■ version with and without beam columnator 	<ul style="list-style-type: none"> ■ sensors with MUX and Sync input 	<ul style="list-style-type: none"> ■ window teach function ■ reflector position tolerance selectable from ±2,5% to ±10%



UxAM 30



UxAM 50



UZAM 70

- Internal and external Teach-in
- Cable and connector versions
- Potentiometer versions

- Large sensing range
- Internal and external Teach-in
- Cable and connector versions
- Potentiometer version

- Large sensing range
- Internal and external Teach-in
- M12 connector

M30 × 1,5

M30 × 1,5

M30 × 1,5

200 ... 1500 mm

350 ... 2500 mm

100 ... 1000 mm

350 ... 2500 mm

600 ... 6000 mm

0 ... 3000 mm

< 100 ms

< 160 ms

< 640 ms

NPN
PNP

NPN
PNP

NPN
PNP

connector M12
cable 2 m

connector M12
cable 2 m

connector M12

brass nickel plated

brass nickel plated

brass nickel plated

–10 ... +60 °C

–10 ... +60 °C

–25 ... +60 °C

IP 67

IP 67

IP 67

- sensors with two separate outputs

- sensors with MUX and Sync input
- sensors with two separate outputs

- sensors with two separate outputs

Ultrasonic sensors

Ultrasonic proximity switches – rectangular

- Sensing range up to 2000 mm
- Reliable detection of high-reflective and transparent objects
- Tolerant of dust and dirt
- Versions with two separate switching outputs
- Adjustable reaction times ton/toff for through beam sensors



UNxK 09
IO-Link



UNDK 10
SONUS



UNDK 20



UNDK 30

characteristics	<ul style="list-style-type: none"> ■ High resolution ■ Minimal blind region ■ RS 232 ■ Various mounting options ■ Very flat housing ■ Beam columnator for detection in openings of up to 3 mm 	<ul style="list-style-type: none"> ■ Smallest ultrasonic sensor ■ Internal and external Teach-in ■ Very low weight: 4 g ■ Narrow sonic beam angles ■ Cable and connector versions 	<ul style="list-style-type: none"> ■ Flat housing ■ Internal and external Teach-in ■ Narrow and wide sonic beam angles ■ M8 connector 	<ul style="list-style-type: none"> ■ Compact design ■ Large sensing range ■ Internal Teach-in ■ Potentiometer version ■ Narrow and wide sonic beam angles ■ Cable and connector versions
dimensions	8,6 × 82 × 24,5 mm	10,4 × 27 × 14 mm	20 × 42 × 15 mm	30 × 65 × 31 mm
sensing range Sd / sensor principle				
proximity switch	3 ... 200 mm	10 ... 200 mm	10 ... 1000 mm	30 ... 1000 mm
2 point proximity switch				30 ... 2000 mm
retro-reflective sensors	0 ... 200 mm	0 ... 200 mm	0 ... 1000 mm	0 ... 2000 mm
through beam sensors			0 ... 1000 mm	0 ... 700 mm
response time	< 7 ms	< 15 ms	< 10 ms	< 10 ms
output	push-pull RS 232	NPN PNP	NPN PNP	NPN PNP
connection types	cable 2 m flylead connector M8	connector M8 cable 2 m flylead connector M8	connector M8	connector M12 cable 2 m
housing material	PA 12	plastic (ASA)	polyester	polyester / die-cast zinc
operating temperature	0 ... +60 °C	−10 ... +60 °C	−10 ... +60 °C	−10 ... +60 °C
protection class	IP 67	IP 67	IP 67	IP 67
specific features	<ul style="list-style-type: none"> ■ with or w/o beam columnator ■ cascable in 9 mm grid 	<ul style="list-style-type: none"> ■ wide range of accessories and installation options 	<ul style="list-style-type: none"> ■ sensor with adjustable ton/toff ■ optional sonic deflection bracket 	<ul style="list-style-type: none"> ■ sensors with MUX and Sync input ■ sensors with two separate outputs



U500

- *OneBoxDesign* – flexibility in planning
- *qTarget*® – time savings during installation
- *qTeach*® – easy to operate, safe and wear-free
- Cable and connector versions

18 × 45,1 × 32,2 mm

100 ... 1000 mm

0 ... 1000 mm

< 50 ms

push-pull

connector M12
cable 2 m

plastic (ASA, PMMA)

–25 ... +65 °C

IP 67

- window teach function
- reflector position tolerance selectable from $\pm 2,5\%$ to $\pm 10\%$

Ultrasonic sensors

Distance measuring ultrasonic proximity sensors – cylindrical

- Measuring range up to 6000 mm
- Individual measuring range adjustable
- Reliable detection of high-reflective and high-transparent objects
- Tolerant of dust and dirt
- For level measurement in liquids, granulates and pasty media
- Narrow and wide sonic beam angles



UNAM 12



UNAM 12
with beam columnator



UNAM 18, UNAR 18



UR18

characteristics	<ul style="list-style-type: none"> ■ Narrow and wide sonic beam angles ■ External Teach-in ■ M12 connector 	<ul style="list-style-type: none"> ■ External Teach-in ■ M12 connector ■ Beam columnator for very narrow sonic cone profile 	<ul style="list-style-type: none"> ■ Stainless steel housing V4A ■ Chemically resistant sensor front ■ FDA-compliant materials ■ Internal and external Teach-in ■ M12 connector 	<ul style="list-style-type: none"> ■ <i>qTeach</i>® – easy to operate, safe and wear-free ■ Short design
dimensions	M12 × 1	M12 × 1	M18 × 1	M18 × 1
measuring distance	20 ... 400 mm	2 ... 82 mm	60 ... 1000 mm	100 ... 1000 mm
resolution	< 0,3 mm	< 0,3 mm	< 0,3 mm	< 0,3 mm
response time	< 30 ms	< 30 ms	< 60 ms	< 80 ms
output	0 ... 10 mA / 10 ... 0 mA 0 ... 10 V / 10 ... 0 V	0 ... 10 mA / 10 ... 0 mA 0 ... 10 V / 10 ... 0 V	4 ... 20 mA / 20 ... 4 mA 0 ... 10 V / 10 ... 0 V	4 ... 20 mA / 20 ... 4 mA 0 ... 10 V / 10 ... 0 V
connection types	connector M12	connector M12	connector M12	connector M12
housing material	brass nickel plated	brass nickel plated	brass nickel plated stainless steel 1.4435 (V4A)	brass nickel plated
operating temperature	–10 ... +60 °C	–10 ... +60 °C	–10 ... +60 °C	–25 ... +70 °C (+60 °C in current mode)
protection class	IP 67	IP 67	IP 67	IP 67
specific features	<ul style="list-style-type: none"> ■ with or w/o beam columnator 		<ul style="list-style-type: none"> ■ optional sonic deflection bracket 	

Distance measuring ultrasonic proximity sensors – cylindrical



UNAM 30



UNAM 50



UNAM 70

- Internal and external Teach-in
- Cable and connector versions
- Potentiometer versions

- Large sensing range
- Internal and external Teach-in
- Cable and connector versions
- Potentiometer versions

- Large sensing range
- Internal and external Teach-in
- M12 connector

M30 × 1,5

M30 × 1,5

M30 × 1,5

100 ... 1000 mm

400 ... 2500 mm

600 ... 6000 mm

< 0,3 mm

< 0,3 mm

< 2 mm

< 80 ms

< 160 ms

< 640 ms

4 ... 20 mA / 20 ... 4 mA
0 ... 10 V / 10 ... 0 V

4 ... 20 mA / 20 ... 4 mA
0 ... 10 V / 10 ... 0 V

4 ... 20 mA / 20 ... 4 mA
0 ... 10 V / 10 ... 0 V

connector M12
cable 2 m

connector M12
cable 2 m

connector M12

brass nickel plated

brass nickel plated

brass nickel plated

–10 ... +60 °C

–10 ... +60 °C

–25 ... +60 °C

IP 67

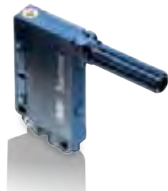
IP 67

IP 67

Ultrasonic sensors

Distance measuring ultrasonic proximity sensors – rectangular

- Measuring range up to 2000 mm
- Individual measuring range adjustable
- Reliable detection of high-reflective and transparent objects
- Tolerant of dust and dirt
- For level measurement in liquids, granulates and pasty media
- Narrow and wide sonic beam angles



UNxK 09

IO-Link



UNDK 10
SONUS



UNDK 20



UNDK 30

characteristics	<ul style="list-style-type: none"> ■ High resolution ■ Minimal blind region ■ RS 232 ■ Various mounting options ■ Flat housing ■ Narrow sonic beam angle for detection in openings of up to 3 mm 	<ul style="list-style-type: none"> ■ Smallest ultrasonic sensor ■ Internal and external Teach-in ■ Very low weight: 4 g ■ Narrow sonic beam angle ■ Cable and flylead connector versions 	<ul style="list-style-type: none"> ■ Flat type ■ Internal and external Teach-in ■ Narrow and wide sonic beam angles ■ M8 connector 	<ul style="list-style-type: none"> ■ Compact type ■ Large sensing range ■ Teach-in on the sensor ■ Potentiometer version ■ Narrow and wide sonic beam angles ■ Cable and connector versions
dimensions	8,6 × 48,8 × 57,5 mm	10,4 × 27 × 14 mm	20 × 42 × 15 mm	30 × 65 × 31 mm
measuring distance	3 ... 200 mm	20 ... 200 mm	20 ... 1000 mm	30 ... 2000 mm
resolution	< 0,1 mm	< 0,3 mm	< 0,3 mm	< 0,3 mm
response time	< 7 ms	< 60 ms	< 30 ms	< 50 ms
output	0 ... 10 V / 10 ... 0 V RS 232	0 ... 10 V / 10 ... 0 V	4 ... 20 mA / 20 ... 4 mA 0 ... 10 V / 10 ... 0 V	4 ... 20 mA / 20 ... 4 mA 0 ... 10 V / 10 ... 0 V
connection types	cable 2 m flylead connector M8	connector M8 cable 2 m flylead connector M8	connector M8	connector M12 cable 2 m
housing material	PA 12	plastic (ASA)	polyester	polyester / die-cast zinc
operating temperature	0 ... +60 °C	–10 ... +60 °C	–10 ... +60 °C	–10 ... +60 °C
protection class	IP 67	IP 67	IP 67	IP 67
specific features	<ul style="list-style-type: none"> ■ with or w/o beam columnator ■ cascable in 9 mm grid 	<ul style="list-style-type: none"> ■ wide range of accessories and installation options 	<ul style="list-style-type: none"> ■ optional sonic deflection bracket 	

Distance measuring ultrasonic proximity sensors – rectangular



U500

- *OneBoxDesign* – flexibility in planning
- *qTarget®* – time savings during installation
- *qTeach®* – Easy to operate, safe and wear-free
- Cable and connector versions

18 × 45,1 × 32,2 mm

100 ... 1000 mm

< 0,3 mm

< 80 ms

4 ... 20 mA / 20 ... 4 mA
0 ... 10 V / 10 ... 0 V

connector M12
cable 2 m

plastic (ASA, PMMA)

–25 ... +65 °C
(+60 °C in current mode)

IP 67

- wide range of accessories and installation options

Speed and angle sensors

- Scanning of gears and racks starting with module 1
- Absolute position measurement up to 360° of rotation
- Tolerant of dust and dirt
- One-channel and two-channel version
- High resolution



MHRM 12 / 18



MTRM 16 / MTR



MDRM 18
MDFM 20

function	hall sensors	hall sensors	magnetic angle sensors
characteristics	<ul style="list-style-type: none"> ■ Detects gears and racks ■ Sealed metal housing ■ Operating temperature range –40 ... +120 °C 	<ul style="list-style-type: none"> ■ Detection of rpm speed and rotational direction of gear wheels ■ Completely sealed metal housing ■ Operating temperature range –40 ... +120 °C 	<ul style="list-style-type: none"> ■ Can be used as an electronic potentiometer ■ Absolute position feedback to 360° of rotation ■ Cylindrical and rectangular designs
dimensions	M12 × 1 M18 × 1	ø 16 mm	M18 × 1 20 × 30 × 8 mm
working distance max.	2 mm	2,5 mm	2 mm
switching frequency / response time	20 kHz	20 kHz	4 ms
resolution	starting from module 1	module 1 to 3	0,09°
output	push-pull	push-pull	analog current or voltage output
connection types	cable 2 m connector M12	cable 2 m	cable 2 m connector M12 flylead connector M8
housing material	brass nickel plated stainless steel	brass nickel plated stainless steel 1.4404	brass nickel plated
operating temperature	–40 ... +120 °C	–40 ... +120 °C	–40 ... +85 °C
protection class	IP 67 (sensor) IP 68 (sensing face)	IP 68 / IP 69K	IP 67
specific features	<ul style="list-style-type: none"> ■ Single and dual channel versions 	<ul style="list-style-type: none"> ■ Compliant to stringent railway standards: EN 50155 EN 61373 (cat. 3) EN 45545 	<ul style="list-style-type: none"> ■ suitable magnets available as an accessory

Position and cylinder sensors

- Acquisition of magnet location
- For detecting piston positions of pneumatic cylinders
- Distinctly higher life expectancy than sensors with reed contacts
- Sensors for T and C slot cylinders
- For universal use thanks to various accessories



MFRM 08
MFFM 08



MZCK 03x1011
MZCK 03x1012



MZTK 06x1011
MZTK 06x1012
MZTK 06x1013

function	magnetic proximity switches	magnetic proximity switches	magnetic proximity switches
characteristics	<ul style="list-style-type: none"> ■ Acquisition of magnet location ■ Large sensing range ■ Object detection through container walls possible 	<ul style="list-style-type: none"> ■ For C slot cylinders ■ Detecting piston positions ■ Acquisition of magnet location 	<ul style="list-style-type: none"> ■ For T slot cylinders ■ Detecting piston positions ■ Acquisition of magnet location
dimensions	M8 8 × 30 × 8 mm	3,7 × 23 × 4,6 mm 3,7 × 11 × 19,5 mm	6,2 × 31 × 4,3 mm 6,5 × 21 × 9,4 mm 6,2 × 31,5 × 4,5 mm
nominal operation point / working distance max.	to 60 mm	4 mT	4 mT 2 mT
switching frequency	5 kHz	200 kHz	200 kHz
voltage supply range +Vs	10 ... 30 VDC	6 ... 30 VDC	6 ... 30 VDC
output	PNP NPN	PNP NPN	PNP NPN
connection types	cable 2 m	cable 2,5 m flylead connector M8	cable 2,5 m flylead connector M8
housing material	brass nickel plated stainless steel	PA 66	PA 66
operating temperature	−25 ... +75 °C	−40 ... +70 °C	−40 ... +70 °C
protection class	IP 67	IP 67	IP 67
specific features	<ul style="list-style-type: none"> ■ suitable magnets available as an accessory 	<ul style="list-style-type: none"> ■ accessories for mounting on all available cylinders ■ Oil and marine environment resistant 	<ul style="list-style-type: none"> ■ accessories for mounting on all available cylinders ■ Oil and marine environment resistant

Mechanical precision switches

MY-COM® precision switches

- $\pm 1 \mu\text{m}$ repeat accuracy
- Activating pin made of unbreakable zirconium oxide
- 30 cN minimum activating force
- Pointed activating pins
- 2-wire normally closed contact (NC) and 3-wire normally open contact (NO)
- Lateral approach also possible to 30° (spherical activating pins)
- Also in protection class IP 67



MY-COM A



MY-COM B



MY-COM C



MY-COM D

characteristics	<ul style="list-style-type: none"> ■ Brass housing ■ Conical housing front ■ M8 fine pitch thread 	<ul style="list-style-type: none"> ■ Brass housing ■ Flat housing front ■ M8 fine pitch thread 	<ul style="list-style-type: none"> ■ Flat brass housing ■ 2-hole mounting 	<ul style="list-style-type: none"> ■ Robust burnished brass housing ■ Spherical metal tip ■ Protection class IP 67 ■ Lateral approach possible to 30°
dimensions	M8 × 0,5	M8 × 0,5	8 × 12 × 30 mm	M16 × 0,5
repeat accuracy	< 1 μm	< 1 μm	< 1 μm	< 1 μm
output	NC (mechanical)	NC (mechanical)	NC (mechanical)	NC (mechanical) NO (PNP/NPN)
connection types	cable 0,8 m connector M8	cable 0,8 m connector S30	cable 0,8 m connector M8	cable 0,8 m connector M8
activating pin	zirconium oxide ZrO2	zirconium oxide ZrO2	zirconium oxide ZrO2	hardened steel
housing material	brass nickel plated	brass nickel plated	brass nickel plated	burnished brass
operating temperature	-20 ... +75 °C	-20 ... +75 °C	-20 ... +75 °C	-20 ... +75 °C
protection class	IP 50	IP 50	IP 50	IP 67



MY-COM E



MY-COM F
MY-COM G



MY-COM H
MY-COM L



MY-COM M

- Brass housing
- M6 fine pitch thread
- Spherical hard metal tip
- Lateral approach possible to 30°

- Brass housing
- Long M8 fine pitch thread

- Brass housing
- M8 fine pitch thread
- Spherical ruby tip
- Protection class IP 67

- Brass housing
- M8 fine pitch thread
- Protection class IP 67

M6 × 0,5

M8 × 0,5

M8 × 0,5

M8 × 0,5

< 1 µm

< 1 µm

< 1 µm

< 1 µm

NC (mechanical)
NO (PNP/NPN)

NC (mechanical)
NO (PNP/NPN)

NC (mechanical)
NO (PNP/NPN)

NC (mechanical)
NO (PNP/NPN)

cable 0,8 m

cable 0,8 m
connector M8

cable 0,8 m
connector M8

cable 0,8 m
connector M8

hardened steel

zirconium oxide ZrO2

ruby

zirconium oxide ZrO2

brass nickel plated

brass nickel plated

brass nickel plated

brass nickel plated

–20 ... +75 °C

–20 ... +75 °C

–20 ... +75 °C

–20 ... +75 °C

IP 50

IP 50

IP 67

IP 67



Complete accessories under: www.baumer.com

Cables & adapters



Cable socket unassembled

- M8 and M12
- Straight or angled
- 3-, 4- and 5-pole versions



Cable socket

- M5, M8, M9, M12 or 8 mm snap-in
- 3- or 12-pole versions
- Straight or angled
- Screened or unscreened
- Various sheath materials
- Various lengths available up to 25 m



Male connector

- M8
- 3-pole versions
- Straight
- PUR sheath
- Various lengths available up to 3 m



Connecting cables

- M8 or M12
- 3- or 4-pole versions
- Straight or angled
- PUR sheath
- Various lengths available up to 10 m

Mounting accessories



Mounting kits

- Sensofix Mounting sets
- Robust metal version
- Mounting sets for various sensor types
- Easy, flexible alignment



Mounting bracket

- Matching mounting brackets available for various sensor types
- High quality metal
- Compatible with flexible Sensofix



Mounting bracket

- Easy, fast mounting of smooth and cylindrical sensors
- Available from \varnothing 6,5 mm to \varnothing 20 mm



Bracket for profiles

- Mounting adapter for diverse sensor types
- e.g. for mounting in profiles, slots, cylinders, etc.



Complete accessories under: www.baumer.com



Sensor test equipment



Teach-in Adapter



USB-I/O-Link Master

IO-Link

Testing and parameterization

characteristics

- Display (V or mA) or. LED (PNP/ NPN) reading
- Sensor programming using integrated teach key
- Connection option for plug-in power supply (available as accessory)

- Sensor programming with teach-in pin
- Teach-in using key
- For sensors with M12 connection

- Teach-in, parameterization and operation of IO-Link capable sensors



AS-i

Network components

characteristics

- Input/output modules
- Models for control cabinet installation
- Extra-compact miniature modules
- Various numbers of inputs and outputs
- S-slave or A/B slave types
- Various AS interface accessories such as cables, masters or branches



Reflectors
Lenses
Apertures
Glass



Reflectors



Reflective tapes



Apertures



Glass covers
Filter
Lens

characteristics

- | | | | |
|---|--|--|--|
| <ul style="list-style-type: none">■ Self-adhesive or screw-mount reflectors■ Circular or rectangular■ All-metal reflectors■ Ecolab certified types, resistant to cleaning agents | <ul style="list-style-type: none">■ Self-adhesive tapes■ Various widths and lengths | <ul style="list-style-type: none">■ Apertures for various sensor types | <ul style="list-style-type: none">■ For various sensor types |
|---|--|--|--|

Beam columnators
and deflector
(Ultrasonic)



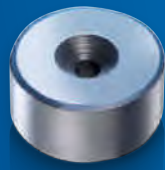
Beam columnators



Beam deflectors

characteristics

- | | |
|--|--|
| <ul style="list-style-type: none">■ Replacement nozzles for sensors with sonic nozzles | <ul style="list-style-type: none">■ Ideal for cramped spaces■ Bends the sound 90° |
|--|--|



Complete accessories under: www.baumer.com



Cylindrical magnets



Rectangular magnets and rotors

Magnets

characteristics

- | | |
|--|---|
| <ul style="list-style-type: none"> ■ For all magnetic proximity switches ■ Magnets in various sizes and strengths ■ Magnetization along the cylinder axis ■ For ambient temperatures up to +180 °C | <ul style="list-style-type: none"> ■ For magnetic rotary encoders ■ Magnets available individually or integrated in the rotor ■ Magnetization throughout the depth ■ For ambient temperatures up to +180 °C |
|--|---|

Worldwide presence
and supreme competence
in consulting, sales
and service.

Baumer – the strong partner.

We at Baumer are close to our customers, understand their needs and provide the best solution. Worldwide customer service for Baumer starts with on-the-spot personal discussions and qualified consultation. Our application engineers speak your language and strive from the start, through an interactive problem analysis, to offer comprehensive and user-compatible solutions.

We are close to you across the globe.

The worldwide Baumer sales organizations guarantee short delivery times and readiness to supply. Many of our customers are directly linked via our electronic order system with the JIT logistics process.

A worldwide network coupled with the most modern communication techniques enable us to deliver information quickly and transparently to decision makers in all Baumer locations.

Closeness to the customer for Baumer means being available for your needs anywhere and at any time.



Worldwide presence.



Africa
Algeria
Cameroon
Côte d'Ivoire
Egypt
Morocco
Reunion
South Africa

America
Brazil
Canada
Colombia
Mexico
United States
Venezuela

Asia
Bahrain
China
India
Indonesia
Israel
Japan
Kuwait
Malaysia
Oman
Philippines
Qatar
Saudi Arabia
Singapore
South Korea
Taiwan
Thailand
UAE

Europe
Austria
Belgium
Bulgaria
Croatia
Czech Republic
Denmark
Finland
France
Germany
Greece
Hungary
Italy
Malta
Martinique
Netherlands
Norway
Poland
Portugal
Romania
Russia
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Turkey
United Kingdom

Oceania
Australia
New Zealand



For more information
about our worldwide
locations go to:
www.baumer.com/worldwide



Baumer

Passion for Sensors

Baumer Group
International Sales
P.O. Box · Hummelstrasse 17 · CH-8501 Frauenfeld
Phone +41 (0)52 728 1122 · Fax +41 (0)52 728 1144
sales@baumer.com · www.baumer.com

Represented by: