

Laser distance sensors

Laser distance sensors

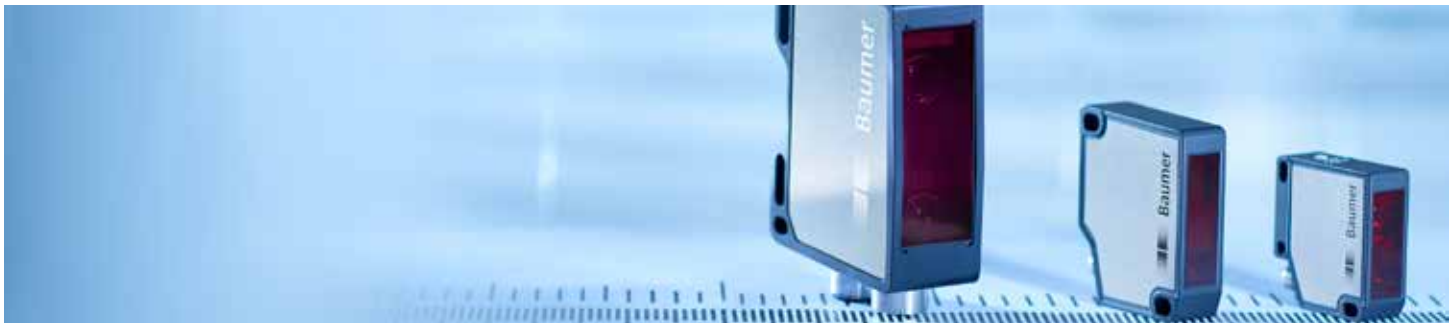
Precise distance, spacing and position measurements

- Best-in-class measurement performance for greater system availability
- Intuitive operating concept ensures shorter application development
- On-the-fly parameterization and additional data about all available digital interfaces



	O500.DI / DP	O300.DI / DP / DL	FADK 14 LED distanz sensor	OM20	OM30
category	standard sensors			performance sensors - miniature	
features	<ul style="list-style-type: none"> ■ Distance measurement value via IO-Link ■ Switching output ■ Red light, infrared LED 	<ul style="list-style-type: none"> ■ Distance measurement value via IO-Link in a miniature housing ■ Switching output ■ PinPoint LED, infrared LED or laser 	<ul style="list-style-type: none"> ■ Compact housing ■ LED light source 	<ul style="list-style-type: none"> ■ Measurement speed up to 5 kHz ■ Laser-point variations ■ Laser class 1 ■ Easy integration via IO-Link or RS485 with Modbus RTU protocol 	<ul style="list-style-type: none"> ■ Measurement speed up to 5 kHz ■ Laser-point variations & Laser-line variations ■ Laser class 2 ■ Easy integration via IO-Link or RS485 with Modbus RTU protocol
dimensions	18 × 45 × 32 mm	12,9 × 32,3 × 23 mm	14,8 × 43 × 31 mm	34,5 × 37 × 13 mm	40,3 × 49 × 13,6 mm
measuring distance	60 ... 550 mm	30 ... 300 mm (Infrared, PinPoint) 30 ... 250 mm (Laser)	50 ... 400 mm	16 ... 120 mm	50 ... 550 mm
linearity error	> ±5,9 MR	> ±5,7% MR	±1,15% MR	> ±0,08% MR	> ±0,08% MR
response time	< 0,49 ms	< 0,25 ms	< 3 ms	0,4 ms	0,4 ms
output signal	push-pull / IO-Link	push-pull / IO-Link	4 ... 20 mA 0 ... 10 V IO-Link	4 ... 20 mA / 2 ... 10 mA 0 ... 10 V / 0 ... 5 V IO-Link RS485	4 ... 20 mA / 2 ... 10 mA 0 ... 10 V / 0 ... 5 V IO-Link RS485
connection types	cable 2 m connector M12	cable 2 m connector M8	cable 2 m connector M12	connector M8 4-pin	connector M8 4-pin
housing material	plastic (ASA, PMMA)	plastic (ASA, PMMA)	plastic (ASA, MABS)	die-cast zinc	die-cast zinc
operating temperature	-25 ... +60 °C	-25 ... +60 °C -10 ... +60 °C (laser)	0 ... +50 °C	-10 ... +50 °C	-10 ... +50 °C
protection class	IP 67	IP 67	IP 67	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 	<ul style="list-style-type: none"> ■ cost-effective solution for simpler measuring tasks 	<ul style="list-style-type: none"> ■ Automatic adjustment of exposure time for precise measurements on changing materials ■ High immunity to ambient light for reliable measurements ■ Point beam shape for a precise measurement 	<ul style="list-style-type: none"> ■ Automatic adjustment of exposure time for precise measurements on changing materials ■ High immunity to ambient light for reliable measurements ■ Line beam shape for particularly robust measurement results on structured surfaces

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	OM70 Very high measuring accuracy	OM70 Large measuring distances	OM70 Tolerance measurement	OM70 Ethernet Very high measuring accuracy	OM70 Ethernet Large measuring distances
	high performance sensors				
	<ul style="list-style-type: none"> Selectable focus ranges Resolutions up to 0,7 μm Maximum measuring distances up to 250 mm Linearity deviations $\pm 0,06\%$ 	<ul style="list-style-type: none"> Selectable focus ranges Resolutions up to 1,4 μm Maximum measuring distances up to 1500 mm 	<ul style="list-style-type: none"> Selectable focus ranges Resolutions up to 0,7 μm Maximum measuring distances up to 250 mm Linearity deviations $\pm 0,06\%$ 	<ul style="list-style-type: none"> Configurable via web interface Selectable focus ranges Resolution up to 0.7 μm Max. measuring distance up to 250 mm Ethernet interface, OPC UA, Modbus TCP and Profinet 	<ul style="list-style-type: none"> Configurable via web interface Selectable focus ranges Resolution up to 0.7 μm Max. measuring distance up to 250 mm Ethernet interface, OPC UA, Modbus TCP and Profinet
	26 x 74 x 55 mm	26 x 74 x 55 mm	26 x 74 x 55 mm	26 x 74 x 55 mm	26 x 74 x 55 mm
	30 ... 250 mm	100 ... 1500 mm	30 ... 250 mm	30 ... 250 mm	100 ... 1500 mm
	> $\pm 0,06\%$ MR	> $\pm 0,12\%$ MR	> $\pm 0,06\%$ MR	> $\pm 0,06\%$ MR	> $\pm 0,12\%$ MR
	< 0,8 ms	< 0,8 ms	< 6 ms	< 0,8 ms	< 0,8 ms
	4 ... 20 mA 0 ... 10 V RS485	4 ... 20 mA 0 ... 10 V RS485	4 ... 20 mA 0 ... 10 V RS485	2 ... 10 mA 4 ... 20 mA 0 ... 5 V 0 ... 10 V Ethernet TCP/IP	2 ... 10 mA 4 ... 20 mA 0 ... 5 V 0 ... 10 V Ethernet TCP/IP
	connector M12	connector M12	connector M12	connector M12 connector M8	connector M12 connector M8
	aluminum	aluminum	aluminum	aluminum	aluminum
	-10 ... +50 °C	-10 ... +50 °C	-10 ... +50 °C	-10 ... +50 °C	-10 ... +50 °C
	IP 67	IP 67	IP 67	IP 67	IP 67
	<ul style="list-style-type: none"> selectable filtering configurable, digital switching output with adjustable hysteresis in millimeters various trigger modes, touch display changeover between current or voltage output 3 memory slots for parameter settings 	<ul style="list-style-type: none"> selectable filtering configurable, digital switching output with adjustable hysteresis in millimeters various trigger modes, touch display changeover between current or voltage output 3 memory slots for parameter settings 	<ul style="list-style-type: none"> selectable filtering configurable, digital switching output with adjustable hysteresis in millimeters various trigger modes, touch display changeover between current or voltage output 3 memory slots for parameter settings 	<ul style="list-style-type: none"> Beyond the Standard: Connectivity Easy system integration thanks to standardized interfaces Flexible parameterization via web interface Precise measurement of structured and smallest objects thanks to line and spot beam shapes 	<ul style="list-style-type: none"> Beyond the Standard: Connectivity Easy system integration thanks to standardized interfaces Flexible parameterization via web interface Precise measurement of structured and smallest objects thanks to line and spot beam shapes

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Distance, spacing and position measurements for challenging requirements

- Large selection of performance classes, sizes, and beam shapes
- Reliable distance measurement even in rough ambient conditions
- Very large range with the help of the time-of-flight measurement principle



	OADM 20	OADM 20	OADM 21	OADM 250	OADM 250
category	performance sensors			long range sensors	
features	<ul style="list-style-type: none"> ■ High vibration resistance ■ Different measuring ranges teachable ■ High measuring rates 	<ul style="list-style-type: none"> ■ Extremely high mechanical robustness ■ Increased ambient light immunity 100K lux ■ Suitable for outdoor applications 	<ul style="list-style-type: none"> ■ High resolution at large measuring distance ■ Adjustable measuring range 	<ul style="list-style-type: none"> ■ High resolution ■ Measurement up to 4 m independent of colors ■ Alarm output ■ Adjustable measuring range 	<ul style="list-style-type: none"> ■ High resolution ■ Measurement up to 4 m independent of colors ■ Alarm output ■ Adjustable measuring range
dimensions	20,6 × 65 × 50 mm	20,6 × 65 × 50 mm	20,4 × 135 × 45 mm	25,4 × 66 × 51 mm	25,4 × 66 × 51 mm
measuring distance	30 ... 1000 mm	50 ... 1000 mm	100 ... 1000 mm	0,5 ... 4 m	0,5 ... 4 m
linearity error	> ±0,2% MR	> ±0,2% MR	> ±0,2% MR	> ±0,4% MR	> ±0,12% MR
resolution	≥ 4 μm	≥ 10 μm	≥ 10 μm	≥ 1,3 mm	≥ 1,3 mm
response time	< 0,9 ms	< 2,5 ms	< 5 ms	< 10 ms	< 10 ms
output	4 ... 20 mA 0 ... 10 V RS 485	4 ... 20 mA 0 ... 10 V	4 ... 20 mA 0 ... 10 V	4 ... 20 mA 0 ... 10 V	4 ... 20 mA 0 ... 10 V
connection types	connector M12	connector 2 m	connector M12	connector M12	connector M12
housing material	die-cast zinc	die-cast zinc	aluminum	aluminum	aluminum
operating temperature	0 ... +50 °C	0 ... +50 °C	0 ... +50 °C	-25 ... +50 °C	-25 ... +50 °C
protection class	IP 67	IP 67	IP 67	IP 67	IP 67
specific features	<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 	<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"> ■ alarm output to signalize any incorrect measuring operation or out-of-range object 	<ul style="list-style-type: none"> ■ alarm output to signalize any incorrect measuring operation or out-of-range object

Robust stainless steel distance sensors

Sensors in hygienic and washdown design

- Stainless steel housing V4A
- *proTect+*® sealing concept
- Ecolab-tested and -certified
- EHEDG-compliant hygienic design resp. FDA-compliant washdown design



IO-Link

IO-Link

	FADR 14	FADH 14	OADR 20
category	■ robust stainless steel distance sensors		
features	<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 ■ Vibration-resistant
dimensions	19,6 × 62,4 × 33,8 mm	19,6 × 99,5 × 33,6 mm	20,3 × 65 × 50 mm
measuring distance	50 ... 400 mm	50 ... 400 mm	30 ... 600 mm
linearity error	±1,15% MR	±1,15% MR	> ±0,2% MR
resolution	0,1 mm	0,1 mm	5 µm
response time	< 3 ms	< 3 ms	< 0,9 ms
output signal	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 & <i>proTect+</i>	IP 68 / IP 69K & <i>proTect+</i>	IP 68 / IP 69K & <i>proTect+</i>
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