



**Part no.: 50129534**  
**ODS10L1.8/LAK,200-M12**  
**Optical distance sensor**



 **IO-Link**

Figure can vary

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## Technical data

<b>Basic data</b>	
Series	10
Application	Collision protection for transport vehicles Fill-level monitoring
Type of scanning system	Against object
<b>Special design</b>	
Special design	Activation input Deactivation input Teach input
<b>Characteristic parameters</b>	
MTTF	29 years
<b>Optical data</b>	
Beam profile	Collimated
Light source	Laser , Red
Laser light wavelength	658 nm
Laser class	1 , IEC/EN 60825-1:2007
Transmitted-signal shape	Pulsed
Light-spot size [at sensor distance]	7 mm x 7 mm [8,000 mm]
Type of light-spot geometry	Rectangular
<b>Measurement data</b>	
Measurement range	50 ... 8,000 mm
Resolution	1.0 mm
Accuracy	15 mm
Measurement time, measure mode	"Fast": response time = 15 ms/output time = 3.4 ms "Fast": response time = 50 ms/output time = 3.4 ms "High precision": response time = 1000 ms/output time = 3.4 ms "Individual": response time = 3.4 ... 1020 ms/output time = 3.4 ms "Outlier suppression": response time = 17 ... 1020 ms/output time = 17 ... 1020 ms "Precision": response time = 200 ms/output time = 3.4 ms Individual measure modes, see diagram
Reproducibility (1 sigma)	4 mm
Temperature drift	2 mm/K
Referencing	No
Black/white behavior	10 mm
Standard measurement object	50 x 50 mm <sup>2</sup>
Optical distance measurement principle	Time of flight
<b>Electrical data</b>	
Protective circuit	Polarity reversal protection Short circuit protected Transient protection
<b>Performance data</b>	
Supply voltage $U_B$	18 ... 30 V , DC
Residual ripple	0 ... 15 % , From $U_B$
Open-circuit current	0 ... 150 mA

**Inputs**

Number of digital switching inputs 1 Piece(s)

**Switching inputs**

Voltage type DC

 Switching voltage  $U_B$ 
**Digital switching input 1**

Assignment Connection 1, pin 5

 Function Activation input  
Deactivation input  
Teach input

**Outputs**

Number of analog outputs 1 Piece(s)

Number of digital switching outputs 1 Piece(s)

**Analog outputs**
**Analog output 1**

Type Configurable, factory setting: current

Assignment Connection 1, pin 2

**Switching outputs**

Voltage type DC

 Switching voltage High:  $\geq(U_B-2V)$   
Low:  $\leq 2V$ 
**Switching output 1**

Assignment Connection 1, pin 4

Switching element Transistor , Push-pull

Switching principle IO-Link / light switching (PNP)/dark switching (NPN)

**Timing**

Readiness delay 300 ms

**Interface**

Type IO-Link

**IO-Link**

COM mode COM2

Frame type 2.V

Port type A

Specification V1.1

SIO-mode support Yes

Process data IN 3 byte

Process data OUT 0 byte

Dual-core operating mode Yes

Min. cycle time COM2 = 2.3 ms

**Connection**

Number of connections 1 Piece(s)

**Connection 1**

Type of connection	Cable with connector , Turning, 90°
Function	Signal IN Signal OUT Voltage supply
Cable length	200 mm
Sheathing material	PUR
Cable color	Black
Wire cross section	0.14 mm <sup>2</sup>
Thread size	M12
Type	Male
Material	Plastic
No. of pins	5 -pin
Encoding	A-coded

**Mechanical data**

Design	Cubic
Dimension (W x H x L)	25 mm x 65 mm x 55 mm
Lens cover material	Glass
Net weight	90 g
Housing color	Red
Type of fastening	Through-hole mounting Via optional mounting device

**Operation and display**

Type of display	LED OLED display
Number of LEDs	5 Piece(s)
Operational controls	Control buttons PC software

**Environmental data**

Ambient temperature, operation	-40 ... 50 °C
Ambient temperature, storage	-40 ... 70 °C

**Certifications**

Degree of protection	IP 67
Protection class	III
Certifications	c UL US

**Classification**

Customs tariff number	90318020
eCl@ss 8.0	27270801
eCl@ss 9.0	27270801
ETIM 5.0	EC001825
ETIM 6.0	EC001825

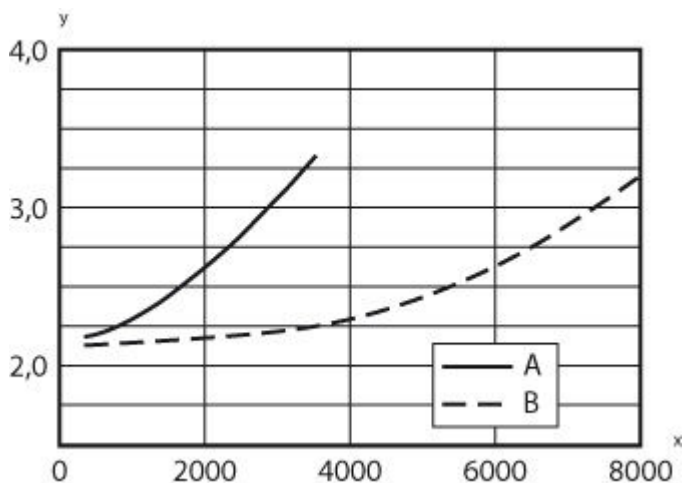
## Electrical connection

Connection 1	
Type of connection	Cable with connector
Function	Signal IN Signal OUT Voltage supply
Cable length	200 mm
Sheathing material	PUR
Cable color	Black
Wire cross section	0.14 mm <sup>2</sup>
Thread size	M12
Type	Male
Material	Plastic
No. of pins	5 -pin
Encoding	A-coded

Pin	Pin assignment
1	18 ... 30 V DC +
2	OUT mA / V
3	GND
4	IO-Link / OUT 1
5	IN 1

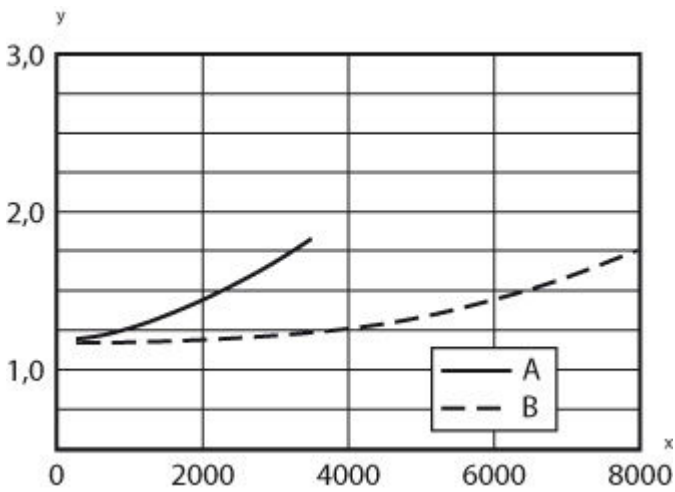
## Diagrams

Typical reproducibility: "Fast" measure mode



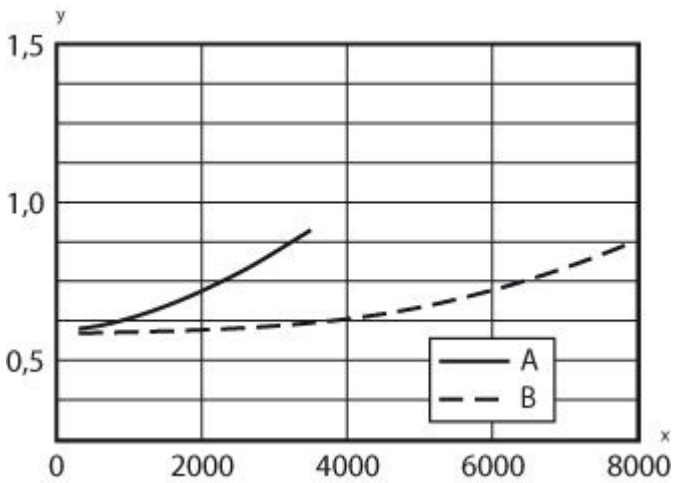
x Distance [mm]  
y Reproducibility [mm]  
A At 6% diffuse reflection  
B At 90% diffuse reflection

Typical reproducibility: "Standard" measure mode



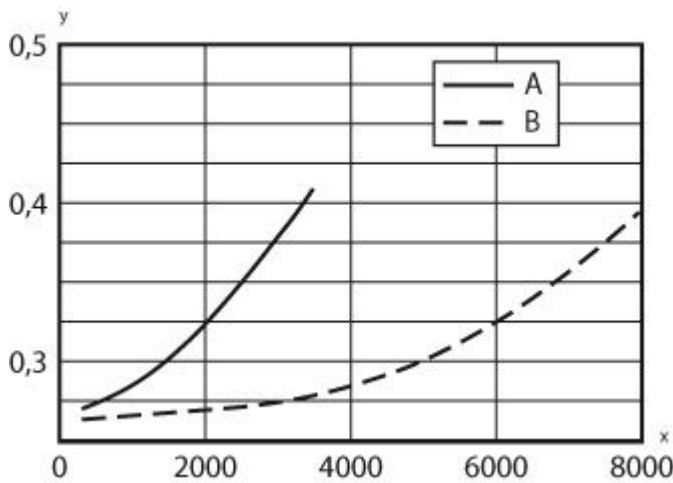
x Distance [mm]  
 y Reproducibility [mm]  
 A At 6% diffuse reflection  
 B At 90% diffuse reflection

Typical reproducibility: "Precision" measure mode



x Distance [mm]  
 y Reproducibility [mm]  
 A At 6% diffuse reflection  
 B At 90% diffuse reflection

Typical reproducibility: "High precision" measure mode



x Distance [mm]  
y Reproducibility [mm]  
A At 6% diffuse reflection  
B At 90% diffuse reflection

## Operation and display

### LEDs

LED	Display	Meaning	
1	PWR	Green, continuous light	Operational readiness
		Red, continuous light	Sensor error
		Orange, continuous light	No function reserve
		Off	No supply voltage
2	Q1	Yellow, continuous light	Object detected
3	Q2	Yellow, continuous light	Object detected

## Part number code

Part designation: ODS10XX-YYY.Z/ABC,DDD-EEE

ODS10	<b>Operating principle:</b> ODS10: Optical distance sensor
XX	<b>Light source:</b> L1: laser class 1
YYY	<b>Measurement range:</b> 25M: Extended measurement range 50 ... 25000 mm, measurement on HighGain tape REF 7-A-100x100
Z	<b>Equipment:</b> 8: OLED display and membrane keyboard for configuration
A	<b>Assignment pin 4:</b> L: IO-Link (with dual channel, also push/pull switching output)
B	<b>Assignment pin 2:</b> A: Analog output current (factory setting) and voltage 6: push-pull switching output, PNP light switching, NPN dark switching
C	<b>Assignment pin 5:</b> K: Multifunction input (factory setting: deactivation input) 6: push-pull switching output, PNP light switching, NPN dark switching X: pin not used


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DDD-EEE	<b>Electrical connection:</b> M12: M12 connector, 5-pin 200-M12: Cable, length 200 mm with M12 connector, 5-pin YYYY: Cable, length YYYY mm with wire-end sleeves, 5-wire (no information = standard length 2000 mm)
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<b>Note</b>
A list with all available device types can be found on the Leuze electronic website at <a href="http://www.leuze.com">www.leuze.com</a> .

## Accessories

### Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	50118543	BT 300M.5	Mounting bracket	Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Adjustable Material: Stainless steel

### Mounting technology - Rod mounts

	Part no.	Designation	Article	Description
	50117252	BTU 300M-D12	Mounting system	Contains: 2x M4 x 25 screw, 2x M4 x 20 screw, 4x position washers Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal