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Part no.: 50129532  
ODS10L1.8/LA6  
Optical distance sensor



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Part no.: 50129532 – ODS10L1.8/LA6 – Optical distance sensor

## Technical data

<b>Basic data</b>	
Series	10
Application	Collision protection for transport vehicles Fill-level monitoring
Type of scanning system	Against object
<b>Characteristic parameters</b>	
MTTF	29 years
<b>Optical data</b>	
Beam path	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
<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

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**Outputs**

Number of analog outputs	1 Piece(s)
Number of digital switching outputs	2 Piece(s)

**Analog outputs**

**Analog output 1**

Type	Configurable, factory setting: current
Assignment	Connection 1, conductor 2

**Switching outputs**

Voltage type	DC
Setting for the switching outputs	Independently adjustable switching outputs
Switching voltage	High: $\geq(U_B-2V)$ Low: $\leq 2V$

**Switching output 1**

Assignment	Connection 1, conductor 4
Switching element	Transistor , Push-pull
Switching principle	IO-Link / light switching (PNP)/dark switching (NPN)

**Switching output 2**

Assignment	Connection 1, conductor 5
Switching element	Transistor , Push-pull
Switching principle	Light switching (PNP)/dark switching (NPN)

**Timing**

Readiness delay	300 ms
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**Interface**

Type	IO-Link
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**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)
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**Connection 1**

Function	Signal OUT Voltage supply
Type of connection	Cable
Cable length	2,000 mm
Sheathing material	PUR
Cable color	Black
Number of conductors	5 -wire
Wire cross section	0.14 mm <sup>2</sup>

**Mechanical data**

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Design	Cubic
Dimension (W x H x L)	25 mm x 65 mm x 55 mm
Lens cover material	Glass
Net weight	133 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

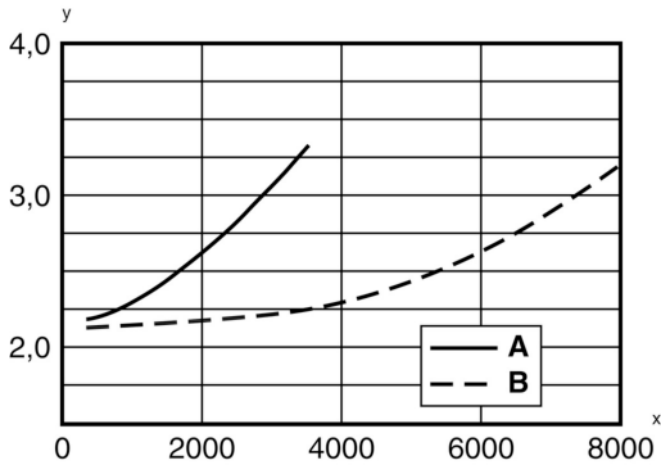
## Electrical connection

Connection 1	
Function	Signal OUT Voltage supply
Type of connection	Cable
Cable length	2,000 mm
Sheathing material	PUR
Cable color	Black
Number of conductors	5 -wire
Wire cross section	0.14 mm <sup>2</sup>

Conductor color	Conductor assignment
Brown	18 ... 30 V DC +
White	OUT mA / V
Blue	GND
Black	IO-Link / OUT 1
Gray	OUT 2

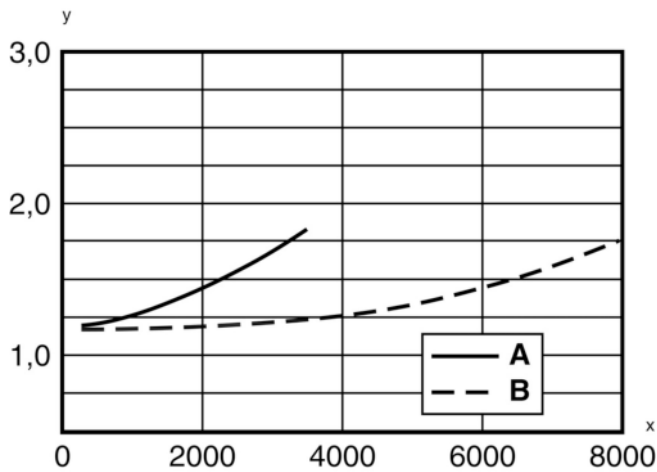
**Diagrams**

Typical reproducibility: "Fast" measure mode



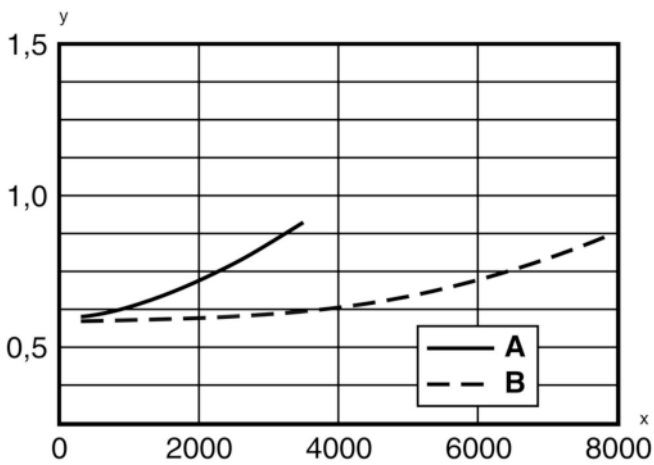
x Distance [mm]  
 y Reproducibility [mm]  
 A At 6% diffuse reflection  
 B At 90% diffuse reflection

Typical reproducibility: "Standard" measure mode



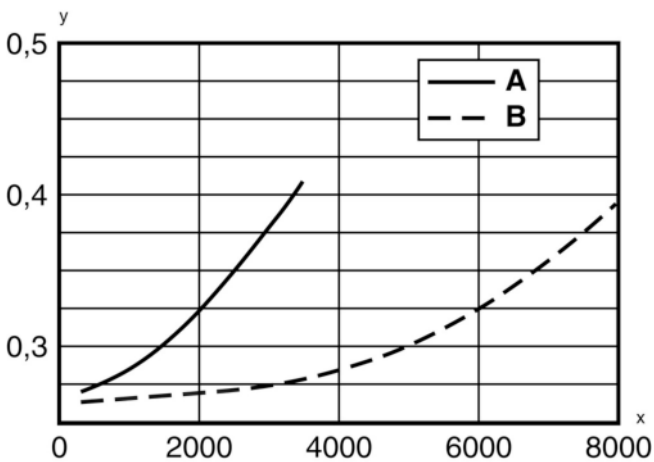
x Distance [mm]  
 y Reproducibility [mm]  
 A At 6% diffuse reflection  
 B At 90% diffuse reflection

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

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LED	Display	Meaning
2	Q1	Yellow, continuous light
3	Q2	Yellow, continuous light

## 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
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)

### Note

A list with all available device types can be found on the Leuze electronic website at [www.leuze.com](http://www.leuze.com).


## Accessories

### Connection technology - Connection cables


	Part no.	Designation	Article	Description
	50133855	KD S-M12-5A-V1-020	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: Yes Cable length: 2,000 mm Sheathing material: PVC
	50133856	KD S-M12-5A-V1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PVC


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## 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, Suited for M4 screws 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, Suited for M4 screws Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal

	Part no.	Designation	Article	Description
	50121098	SET MD12-US2-IL1.1 + Zub.	Diagnostics set	Interface: USB Connections: 2 Piece(s) Degree of protection: IP 20

### Note

A list with all available accessories can be found on the Leuze electronic website in the Download tab of the article detailed page.