



Figure can vary

Part no.: 50129533  
ODS10L1-25M.8/LAK  
Optical distance sensor



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## Technical data

<b>Basic data</b>	
Series	10
Application	Collision protection for transport vehicles Collision protection of cranes / gantry cranes Fill-level monitoring
Type of scanning system	Against reflector
<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]	25 mm x 25 mm [25,000 mm]
Type of light-spot geometry	Rectangular
<b>Measurement data</b>	
Measurement range	100 ... 25,000 mm
Resolution	1.0 mm
Accuracy	25 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)	16 mm
Temperature drift	2 mm/K
Referencing	No
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 <sub>B</sub>	18 ... 30 V , DC
Residual ripple	0 ... 15 % , From U <sub>B</sub>
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, conductor 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, conductor 2

**Switching outputs**

Voltage type DC

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)

**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)

**Part no.: 50129533 – ODS10L1-25M.8/LAK – Optical distance sensor**
**Connection 1**

Type of connection	Cable
Function	Signal IN Signal OUT Voltage supply
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**

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

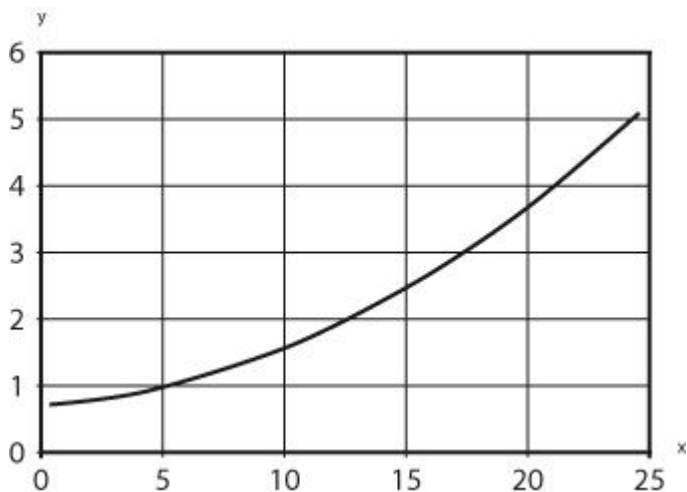
<b>Connection 1</b>	
Type of connection	Cable
Function	Signal IN Signal OUT Voltage supply

Connection 1	
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	IN 1

## Diagrams

Typ. reproducibility



x Measurement distance [m]  
y Reproducibility [mm]  
Typical reproducibility on HighGain film ("Standard" measure mode, 50 ms)

## 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 no.: 50129533 – ODS10L1-25M.8/LAK – Optical distance sensor

## 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

### Reflective tapes for distance sensors

	Part no.	Designation	Article	Description
	50111527	REF 7-A-100x100	Reflective tape	Design: Rectangular Reflective surface: 100 mm x 100 mm Material: Plastic Fastening: Self-adhesive