

## Technical data sheet

### Optical distance sensor

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



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## Technical data

### Basic data

Series	10
Application	Collision protection for transport vehicles Collision protection of cranes / gantry cranes Fill-level monitoring
Type of scanning system	Against reflector

### Special version

Special version	Activation input Deactivation input Teach input
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### Characteristic parameters

MTTF	29 years
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### Optical data

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]	25 mm x 25 mm [25,000 mm]
Type of light spot geometry	Rectangular

### Measurement data

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

### Electrical data

Protective circuit	Polarity reversal protection Short circuit protected Transient protection
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### Performance data

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)
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### 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)
Function	Independently adjustable switching outputs

### 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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## Technical data

### Connection 1

Function	Signal IN
	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

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 5.1.4	27270801
eCl@ss 8.0	27270801
eCl@ss 9.0	27270801
eCl@ss 10.0	27270801
eCl@ss 11.0	27270801
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825

## Electrical connection

### Connection 1

Function	Signal IN
	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>

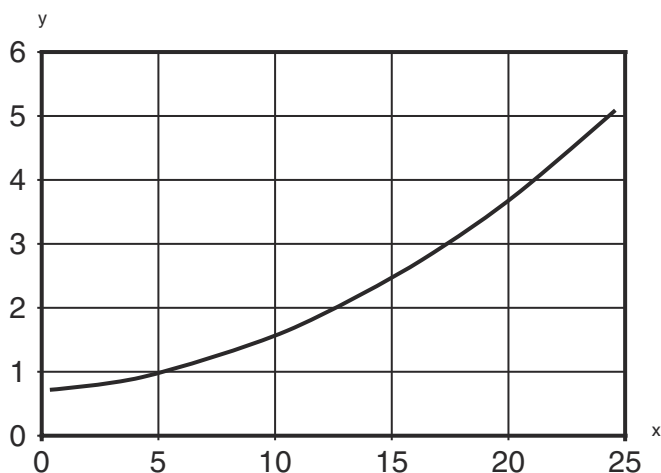
### Conductor color

Brown	18 ... 30 V DC +
White	OUT mA / V
Blue	GND
Black	IO-Link / OUT 1
Gray	IN 1

### Conductor assignment

## Diagrams

### Typ. reproducibility



x Measurement distance [m]

y Reproducibility [mm]

Typical reproducibility on HighGain tape ("Standard" measure mode, 50 ms)

## Operation and display

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
4	Yellow, continuous light (behind lens cover)	Object detected
5	Yellow, continuous light (behind lens cover)	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

## Part number code

C	<p><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</p>
DDD-EEE	<p><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)</p>
<b>Note</b>	
	<p>↪ A list with all available device types can be found on the Leuze website at <a href="http://www.leuze.com">www.leuze.com</a>.</p>

## Notes

<b>Observe intended use!</b>	
	<ul style="list-style-type: none"> <li>↪ This product is not a safety sensor and is not intended as personnel protection.</li> <li>↪ The product may only be put into operation by competent persons.</li> <li>↪ Only use the product in accordance with its intended use.</li> </ul>

<b>For UL applications:</b>	
	<ul style="list-style-type: none"> <li>↪ For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).</li> </ul>

<b>WARNING! LASER RADIATION – CLASS 1 LASER PRODUCT</b>	
	<p>The device satisfies the requirements of IEC 60825-1:2007 (EN 60825-1:2007) safety regulations for a product of <b>laser class 1 as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to "Laser Notice No. 50" from June 24, 2007.</b></p> <ul style="list-style-type: none"> <li>↪ Observe the applicable statutory and local laser protection regulations.</li> <li>↪ The device must not be tampered with and must not be changed in any way.                      There are no user-serviceable parts inside the device.                      Repairs must only be performed by Leuze electronic GmbH + Co. KG.</li> </ul>

## 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, Suited for M4 screws Type of mounting device: Adjustable Material: Stainless steel

## 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

#### Note



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