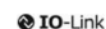




Figure can vary

Part no.: 50129528
ODS10L1.8/L6X-M12
Optical distance sensor



Contents

- Technical data
- Electrical connection
- Diagrams
- Operation and display
- Part number code
- Accessories

Technical data

Basic data	
Series	10
Application	Collision protection for transport vehicles Fill-level monitoring
Type of scanning system	Against object
Characteristic parameters	
MTTF	29 years
Optical data	
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
Measurement data	
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
Electrical data	
Protective circuit	Polarity reversal protection Short circuit protected Transient protection
Performance data	
Supply voltage U_B	18 ... 30 V , DC
Residual ripple	0 ... 15 % , From U_B
Open-circuit current	0 ... 150 mA

Outputs

Number of digital switching outputs 2 Piece(s)

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, pin 4

Switching element Transistor , Push-pull

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

Switching output 2

Assignment Connection 1, pin 2

Switching element Transistor , Push-pull

Switching principle 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 Connector , Turning, 90°

 Function Signal OUT
Voltage supply

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 70 g

Housing color Red

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Type of fastening	Through-hole mounting Via optional mounting device
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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

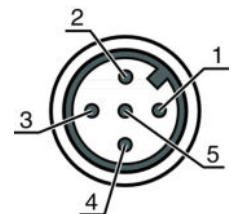
Classification

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

Electrical connection

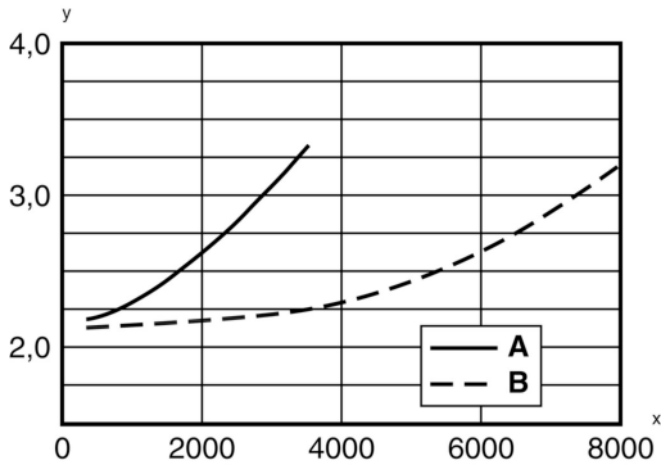
Connection 1	
Type of connection	Connector
Function	Signal OUT Voltage supply
Thread size	M12
Type	Male
Material	Plastic
No. of pins	5 -pin
Encoding	A-coded

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



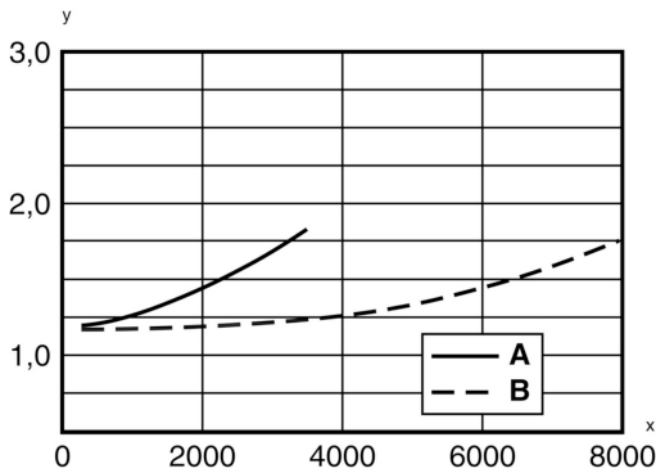
Diagrams

Typical reproducibility: "Fast" measure mode



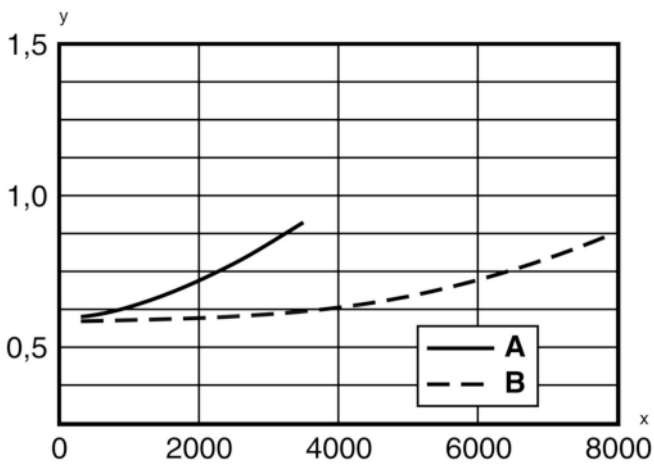
x Distance [mm]
y Reproducibility [mm]
A At 6% diffuse reflection
B At 90% diffuse reflection

Typical reproducibility: "Standard" measure mode



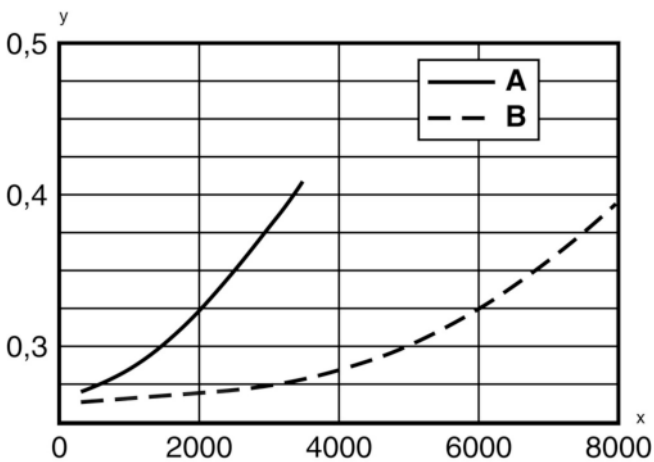
x Distance [mm]
y Reproducibility [mm]
A At 6% diffuse reflection
B At 90% diffuse reflection

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
		Object detected

Part number code

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



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


Accessories

Connection technology - Connection cables


	Part no.	Designation	Article	Description
	50132077	KD U-M12-5A-V1-020	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PVC
	50132079	KD U-M12-5A-V1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: No 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
	50131483	MD 248i-12-8K/ L4-2R2K	Distribution box	Type: IO-Link master Supply voltage: 18 ... 30 V Switching outputs for each sensor connection: 1 Piece(s) Switching output: Transistor, PNP / NPN reversible Interface: PROFINET, IO-Link Connections: 14 Piece(s) Sensor connections: 8 Piece(s) Connections for voltage supply: 4 Piece(s) Interface connections: 2 Piece(s) Degree of protection: IP 67
	50131485	MD 258i-12-8K/ L4-2R2K	Distribution box	Type: IO-Link master Supply voltage: 18 ... 30 V Switching outputs for each sensor connection: 1 Piece(s) Switching output: Transistor, PNP / NPN reversible Interface: EtherNet IP, IO-Link, Modbus TCP Connections: 14 Piece(s) Sensor connections: 8 Piece(s) Connections for voltage supply: 4 Piece(s) Interface connections: 2 Piece(s) Degree of protection: IP 67
	50131482	MD 748i-11-42/ L5-2222	Distribution box	Type: IO-Link master Supply voltage: 18 ... 30 V Switching outputs for each sensor connection: 1 Piece(s) Switching output: Transistor, PNP / NPN reversible Interface: PROFINET, IO-Link Connections: 8 Piece(s) Sensor connections: 4 Piece(s) Connections for voltage supply: 2 Piece(s) Interface connections: 2 Piece(s) Degree of protection: IP 67
	50131484	MD 758i-11-42/ L5-2222	Distribution box	Type: IO-Link master Supply voltage: 18 ... 30 V Switching outputs for each sensor connection: 1 Piece(s) Switching output: Transistor, PNP / NPN reversible Interface: EtherNet IP, IO-Link, Modbus TCP Connections: 8 Piece(s) Sensor connections: 4 Piece(s) Connections for voltage supply: 2 Piece(s) Interface connections: 2 Piece(s) Degree of protection: IP 67
	50121098	SET MD12-US2-IL1.1 + Zub.	Diagnostics set	Interface: USB Connections: 2 Piece(s) Degree of protection: IP 20

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Note

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