SMART
SENSOR
BUSINESS

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Figure can vary

Part no.: 50129536
ODS10L1-25M.8/LAK,200-M12
Optical distance sensor

Contents

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 design	
Special design	Activation input Deactivation input Teach input
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]	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 mm²
Optical distance measurement principle	Time of flight
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

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: ≥(U_B-2V) Low: ≤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)

Part no.: 50129536 – ODS10L1-25M.8/LAK,200-M12 – Optical distance sensor

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 mm²
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

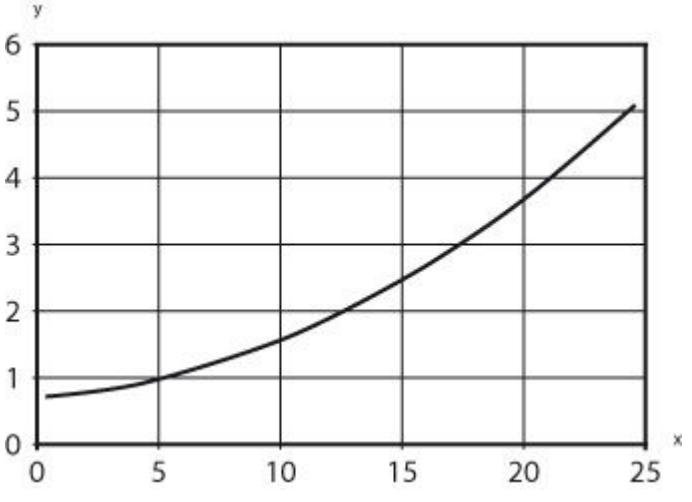
Electrical connection

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 mm²
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

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 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

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