

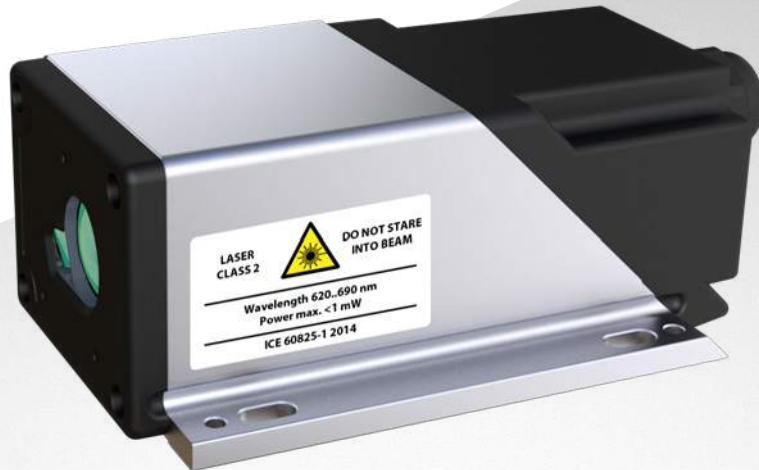
# LASER DISPLACEMENT SENSOR

Links to further documents for this series:

[Manual](#)

[Manual ProfiNET, EtherNET, EtherCAT](#)

[Manual LKG-LDI](#)



## LDI SERIES

### Key-Features:

- Laser distance sensor for long ranges
- Measurement range up to 500 m
- Linearity up to  $\pm 1$  mm
- Repeatability up to  $\pm 0.3$  mm
- Analog output: 0...20 mA, 4...20 mA
- Digital outputs: RS232, RS422, RS485, SSI,
- Optional: ProfiNet, EtherNet/IP, EtherCAT
- Protection class IP65
- Temperature range -40...+60 °C

### Content

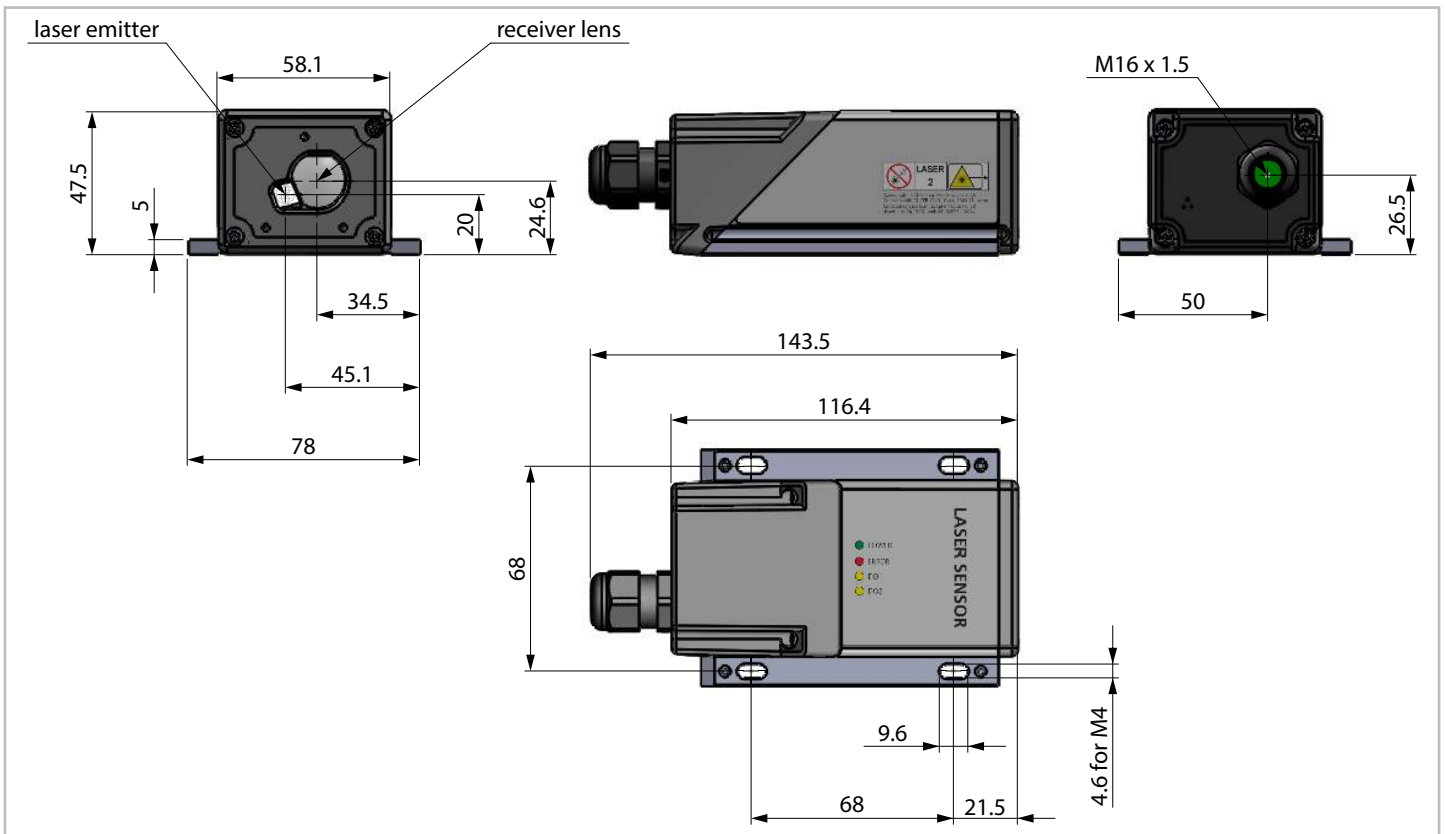
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## TECHNICAL DATA

LDI-...		50-5	50-1	150-3	150-1	500-3	500-1	500-3-250	500-1-250
Measurement range on natural surface	[m]	0.05...50		0.05...100		0.05...100			
Measurement range on reflective foil	[m]	40...50		40...150		0.5...500			
Linearity typical	[mm]	±5	±1	±3	±1	±3	±1	±3	±1
Linearity max.		±2.5	±0.5	±1.5	±0.5	±1.5	±0.5	±1.5	±0.5
Repeatability typical	[mm]	±1.8	±0.3	±0.7	±0.3	±0.7	±0.3	±0.7	±0.3
Repeatability max.		±0.9	±0.15	±0.35	±0.15	±0.35	±0.15	±0.35	±0.15
Light source		Laser diode, red							
Wave length	[nm]	620...690 (typical 650)							
Laser power max.	[mW]	1							
Beam divergence	[mrad]	0.16 x 0.6							
Laser class		class 2 (IEC/EN 60825-2014)							
Beam diameter (elliptical) typical		at 10 m: 7 x 3 mm / at 50 m: 28 x 13 mm / at 100 m: 55 x 30 mm							
Measurement frequency max.	[Hz]	10	50					250	
Response frequency max.	[Hz]	10	50					250	
Analog output (configurable)		0...20 mA / 4...20 mA				-	0...20 mA / 4...20 mA		
Tolerance analog output	[%]	±0.2	±0.1			-	±0.1		
Digital input (configurable)		1							
Digital output (configurable) / error output (NPN, PNP, Push-Pull)		2/1				-/1	2/1		
Interfaces		RS232, USB <sup>1)</sup>	RS232, RS422, RS485, SSI, USB <sup>1)</sup>						
Optional interfaces		-	ProfiNet, EtherNet/IP, EtherCAT						
Supply	[VDC]	12...30							
Current consumption max. (at 24 VDC)	[A]	0.15	0.5	0.15			0.5		
Protection class		IP65							
Humidity		max. 85 % relative, not condensing							
Operating temperature	[°C]	-10...+50	-40...+60	-10...+50	-10...+60	-10...+50	-40...+60		
Storage temperature	[°C]	-40...+70							
Shock resistance		IEC 60068-2-27							
Vibration resistance		IEC 60068-2-6							
EMC		IEC/EN 61000-6-4 / 61000-6-3; IEC/EN 61000-6-2 / 61000-6-1							
Connection		internal screw terminals							
Housing		Aluminium alloy (EN-AW 6060, anodized 20 µm) / Mineral reinforced nylon resin							
Weight	[g]	350							

<sup>1)</sup> USB for configuration only

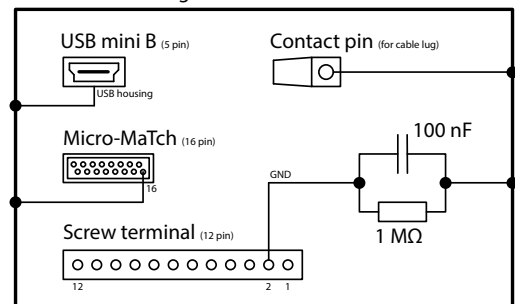
## TECHNICAL DRAWING



## ELECTRICAL CONNECTION

Screw terminal	Function	Abbreviation
1	Power supply	V+
2	Ground	GND
3	Digital input / Digital output 1	DO1
4	Digital output 2	DO2
5	Error output	DOE
6	Analog output	AO
7	Receiver Data (RS232)	RX
8	Transmitter Data (RS232)	TX
9	Transmitter Data - (RS422/RS485)	T-
10	Transmitter Data + (RS422/RS485)	T+
11	Receiver Data - (RS422/RS485)	R-
12	Receiver Data + (RS422/RS485)	R+

Aluminium housing (shield)



To reach the screw terminals of the LDI, remove the rear housing cover.



## ACCESSORIES

### Reflective plate RP210x297:

- for large measurement ranges
- dimensions: 210 x 297 mm



### Reflective foil RF600x1200:

- for large measurement ranges
- dimensions: 600 x 1200 mm



### Exchangeable covers for interfaces:

- **LDI-NET:** cover for Profinet interface
- **LDI-ENET:** cover for Ethernet/IP interface
- **LDI-CAT:** cover for EtherCAT interface



### Spare part set SET-LDI:

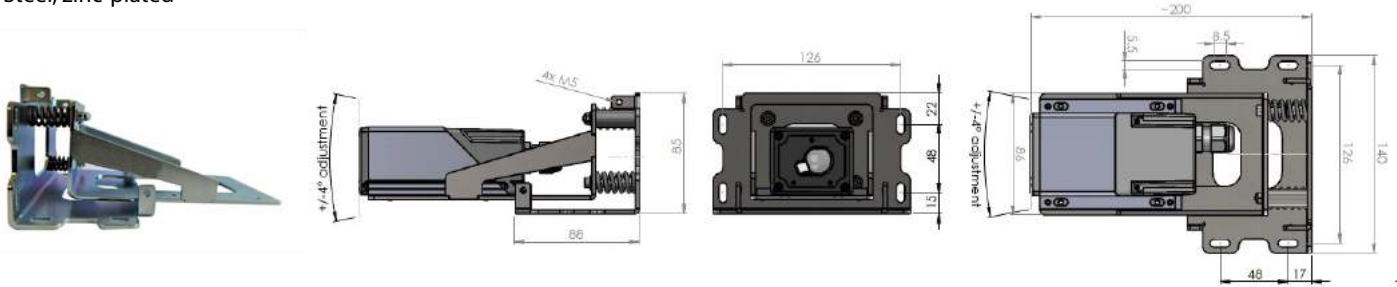
Includes 10 pcs. of:

- Cable glands M16x1.5, plastic (black)
- Hexagonal nuts M16x1.5, brass
- Terminal block 1 and 2, coded and printed
- Set screw M4x4 Tuflock
- Rear screw Freedriv M2.5x18.5 mm



### Alignment Unit LDI-Fixation:

- Allows +/-4° adjustment in two axis
- Ideal for distances up to about 300m
- Steel, zinc-plated



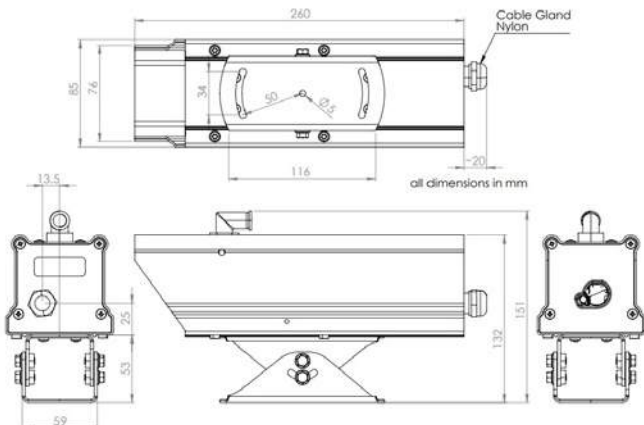
### Air cooling housing:

- Housing: Aluminium hard anodised
- air access for 8 mm pipe (via TP 1/8 Noppe); air cleaner, air dryer, air filter, pressure reduction and air regulator are not included in the delivery.



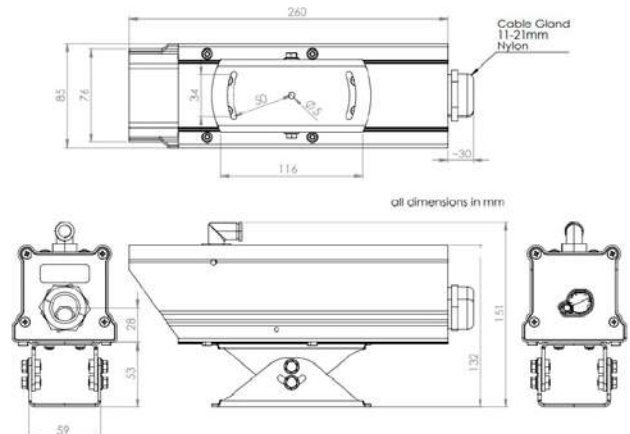
### LKG-LDI:

- Not for Profinet, EtherNet/IP and EtherCAT models.

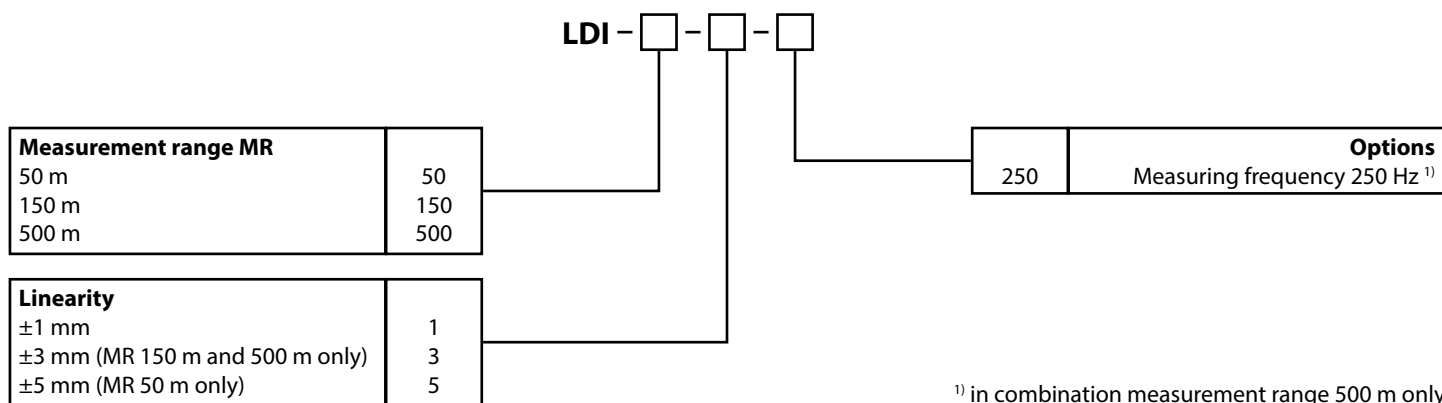


### LKG-LDI-ENET:

- Suitable for EtherNet/IP, EtherCAT, Profinet models.



## ORDER CODE



## ACCESSORIES

### Additional interfaces

LDI-NET cover with Profinet interface

LDI-ENET cover with EtherNet interface

LDI-CAT cover with EtherCAT interface

### Mounting accessories

RP210x297 Reflective plate for ranges >100 m

RF600x1200 Reflective foil for ranges >100 m

SET-LDI Spare part set

LDI-Fixation Alignment Unit

LKG-LDI Air cooling housing for standard cover

LKG-LDI-ENET Air cooling housing for LDI-NET, -ENET, -CAT

LDI-Configuration Pre-configuration for analog output

### Signal cable for Profinet, EtherNet and EtherCAT interfaces

K4P2M-S-M12-CAT 2 m, 4 poles, connector M12 (male), open ends

### Supply cable for Profinet, EtherNet and EtherCAT interfaces

K4P2M-S-M12 2 m, 4 poles, connector M12 (female), open ends

### Digital displays for sensors with analog output, 2 channel

WAY-AX-S touch screen, supply: 18...30 VDC

WAY-AX-AC touch screen, supply: 115...230 VAC

For more information and options please refer to the [WAY-AX data sheet](#).

### Digital displays for sensors with HTL or TTL output, 2 channel

WAY-DXM-S touch screen, supply: 18...30 VDC

WAY-DXM-AC touch screen, supply: 115...230 VAC

For more information and options please refer to the [WAY-DXM data sheet](#).

### Digital displays for sensors with SSI output, 2 channel

WAY-SX-S touch screen, supply: 18...30 VDC

WAY-SX-AC touch screen, supply: 115...230 VAC

For more information and options please refer to the [WAY-SX data sheet](#).

Subject to change without prior notice.

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