LDM41E und LDM42E

Network-compatible laser distance sensors

The LDM41E is an optoelectronic distance measuring device for industrial applications with an integrated Ethernet interface.

It works contact-free on the principle of comparative phase measurement (amplitude modulation) and facilitates precisely accurate measurement of distances.

Both, the LDM41E and the LDM42E distinguish themselves through high precision as well as high independence from the surface of the measuring object. The red, well visible laser beam allows for easy alignment. The LDM42E has been developed for fast distance measurements on white surfaces. Through the integrated Ethernet interface it is possible to retrieve the measured data in the network via Telnet protocol or to change parameters.

Key Features

- **Millimeter precise measurement on various surfaces**
- **High range reflector-less distance measurement, with additional reflectors on the target object measurements over 100 m**
- **Operation in extreme ambient temperatures with high precision and range**
- **High supply voltage range between 10 V and 30 V DC with low power consumption**
- **Safe operation through laser class 2**
- **Easy targeting through visible laser beam**
- **Interface cable for supply voltage, switching output and trigger input**
- **Ethernet interface, protocols, Telnet, UDP**
- **Customized parameterization and display of measured values via PC**
- **Display of measured values in meters, feet, inches or freely scalable**
- **Robust, compact housing, easy to install, protection standard IP 65**

Applications

- Distance measurement and determination of position
- Diameter measurement of rolls / coils
- Fill level measurement
- Position control
- Monitoring of safety-relevant parts
- Monitoring of lifting plants / lifting height measurement and positioning of elevators
- Monitoring and positioning of cranes and conveyor systems

Options and accessory

- Grey filter for signal attenuation
- Optional temperature controlled heating
- Mounting bracket
- Digital display for analog signals
- Protective housing
- Protective housing with water cooling
- Protective tube with purge air connector
- Protective window

Technical Data

Measuring range [1]	0.2 m … 30 m on almost all natural surfaces, over 100 m achievable depending on the degree of reflection of surfaces
Measuring uncertainty [2]	±2 mm under defined measuring conditions [3] ±3 mm (+15 °C … +30 °C) ±5 mm (-10 °C … +50 °C)
Resolution	0.1 mm, freely scalable
Reproducibility [4]	0.5 mm
Measuring time	0.24 s … 6 s adjustable or automatically in mode DT 0.1 s in mode DW on white surface 20 ms in mode DX on white surface (only LDM42E)
Laser divergence [5]	0.6 mrad
Laser class	Laser class 2 acc. to DIN EN 60825-1:2001-11 (650 nm, red)
Operating temperature	-10 °C … +50 °C -40 °C … +50 °C (with optional heating) [6]
Storage temperature	-40 °C … +70 °C
Supply voltage	10 V … 30 V DC
Power consumption	Ca. 3.5 W Ca. 24 W (with optional heating)
Serial interface	RS232, Max. Baud rate 38400, ASCII, Setting of measuring functions, scaling, measuring time via commands, Display of measured values, internal temperature of the device and error code
Switching output	Programmable threshold and hysteresis, "High-Side" switch, maximum load 0.5 A
Digital input	External trigger, 3 V – 24 V, programmable delay
Fieldbus	FastEthernet, max. 100 MBit/s, Telnet-protocol, ASCII
Housing material	Aluminum, powder-coated
Size	187 mm × 96 mm × 50 mm
Weight	850 g
Protection standard	IP 65
Shock resistance	10 g / 6 ms (DIN ISO 9022-3-31-01-1)
MTBF	30,000 at 25 °C
Mounting	4 drill holes for M6 screws, 100 mm x 85 mm

[1] Dependent on target reflectance, influence of extraneous light and atmospheric
[2] Statistical spread 95 %
[3] Measurement on planar, vertical white surface at standstill or in continuous, + 15 °C … +30 °C
[4] Dependent on target reflectance, influence of extraneous light and atmospheric
[5] At a distance of 10 m the beam diameter is 6 mm, at 100 m it is 6 cm
[6] Please specify optional heating when placing the order (-h)

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