

INDUSTRIAL DISTANCE SENSOR

LD90-450

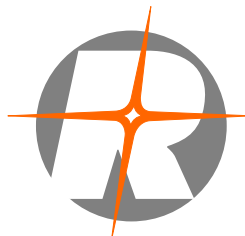
- **Industrial distance sensing**
- **Anti-Collision sensing on cranes**
- **Level measurement in silos**



The *RIEGL* LD90-4 is an economically priced, high-reliability distance sensor for industrial use "reflectorless" or with retroreflecting targets. The implemented "High Penetration" technology allows its use even under conditions of bad visibility, e.g. rain, dust, fog etc.

- **"High-Penetration" Technology**
- **Internal Fault-Detection**
- **Analog and serial data outputs**
- **PNP Transistor switching outputs**
- **Low power consumption**

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RIEGL
LASER MEASUREMENT SYSTEMS

Specifications LD90-450

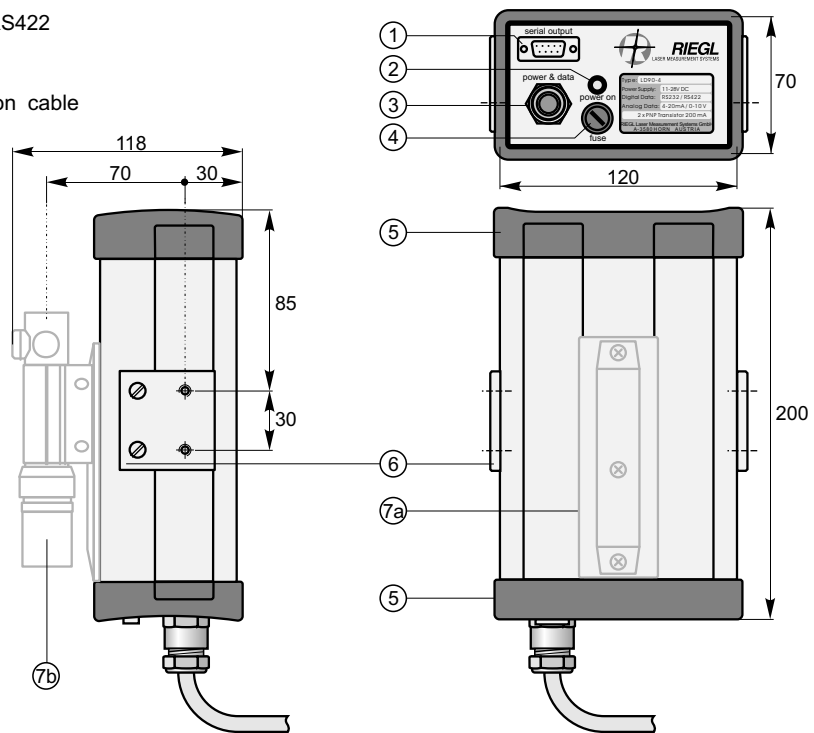
Measuring range

depending on the reflection coefficient ρ of the target					
good, diffusely reflecting targets, $\rho \geq 80\%$ ^{1) 2)}					up to 150 m
bad, diffusely reflecting targets, $\rho \geq 10\%$ ¹⁾					up to 50 m
Reflecting foil ³⁾					1000 m
Minimum distance ⁴⁾					1 m
Accuracy ^{5) 6)}					typically ± 25 mm
Resolution of digital data output					5 mm
Measuring time ⁷⁾	175ms	300ms	500ms	1s	2s
Reproducibility (mm) ⁸⁾	± 50	± 30	± 20	± 15	± 10
Divergence of the infrared measuring beam ⁹⁾					2 mrad

- 1) for measuring time 1 s; for shorter measuring time the maximum range is slightly lower.
- 2) target size $\geq 0.5 \times 0.5 \text{ m}^2$
- 3) reflecting foil 3M680, size $\geq 0.5 \times 0.5 \text{ m}^2$
- 4) minimum distance 2 m for full accuracy with reflecting foil
- 5) standard deviation, plus distance depending error ≤ 20 ppm
- 6) ≥ 10 min after power up
- 7) adjustable via RS232/RS422
- 8) depending on measuring time
- 9) 1 mrad corresponds to 100 mm increase of beamwidth per 100 m of distance

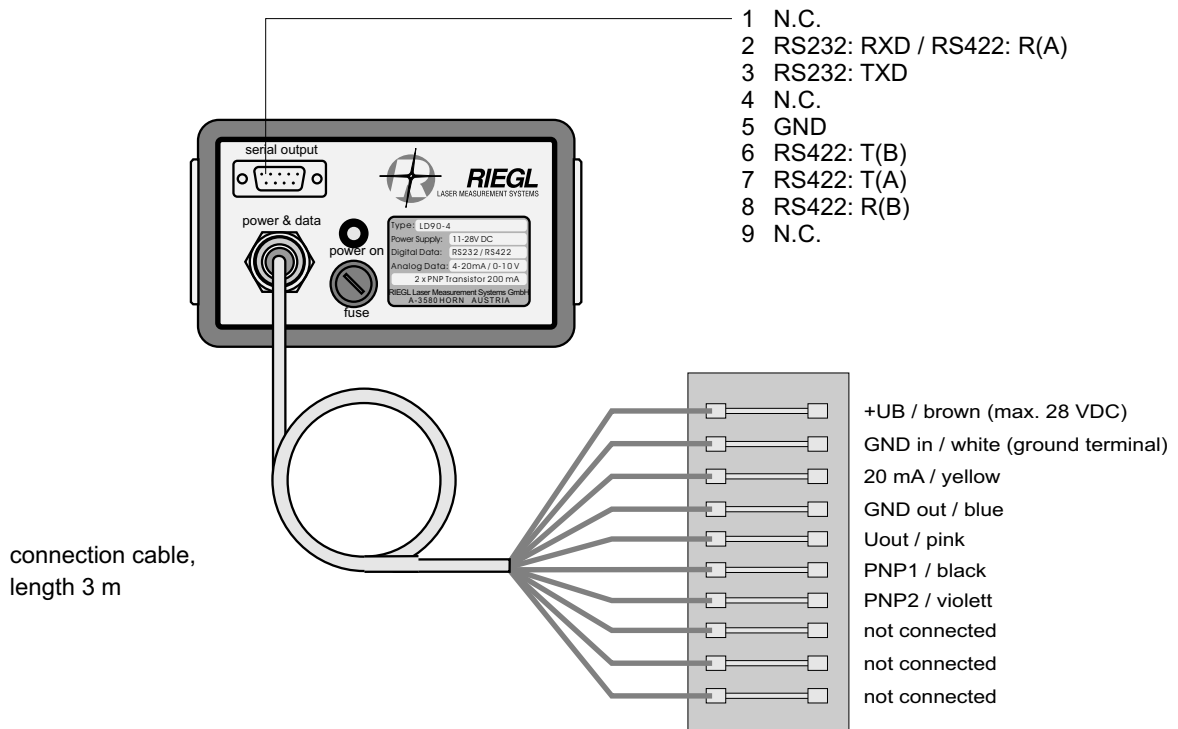
Elements of operation and dimensional drawings

- (1) 9pole socket for RS232/RS422 data interface
- (2) LED "POWER ON"
- (3) Cable gland for connection cable
- (4) Fuse holder

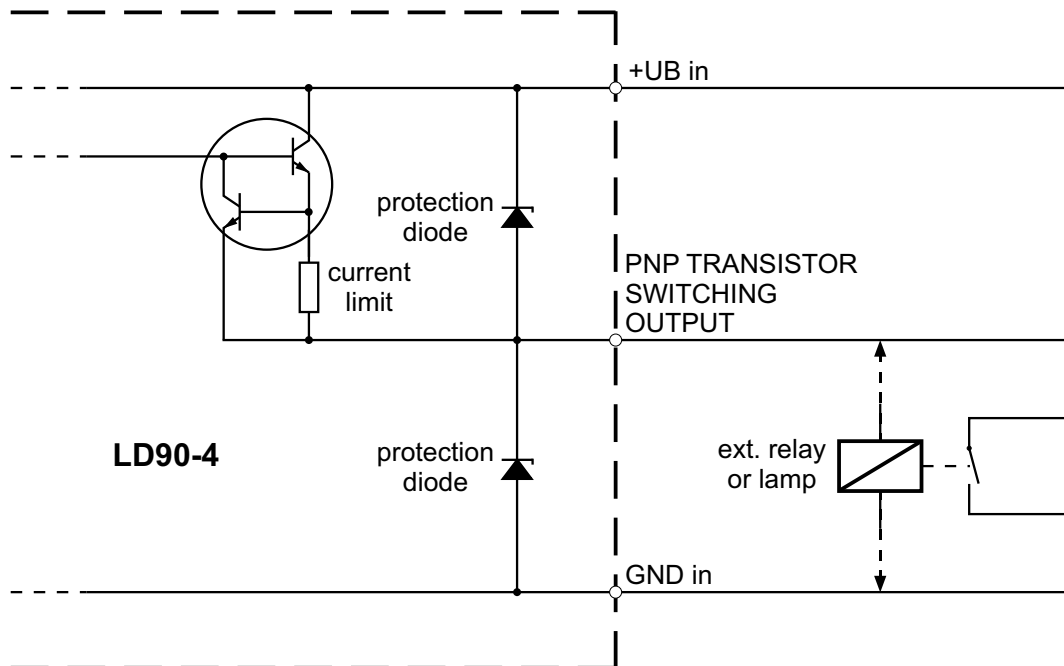


- (5) Rubber-armoured front and rear side
- (6) Mounting plates with 2xM6 threads on both sides of the instrument
- (7a) Mounting for telescope (optional)
- (7b) Telescope (optional)
- (8) Receiver lens
- (9) Transmitter lens

Pinning



2 x PNP Transistor switching output



General technical data LD90-450

Data interface

Serial interface	RS232 or RS422 ¹⁾ Baud rate 300 Bd ... 19200 Bd ¹⁾
Analog current	4-20 mA ²⁾ , not galvanically isolated resolution 16 Bit, linearity 0.5 ‰ of full scale
Analog voltage	0-10 V ²⁾ , source resistance 1 kOhm resolution 12 Bit, linearity 4 ‰ of full scale
Switching output	2 x PNP transistor driver ³⁾ built-in thermal and short-circuit protection switching current 200 mA max. switching voltage = supply voltage

Power supply	voltage range 11-28 Volts DC voltage ripple \leq 1 Vpp built-in protecting circuitry against over & under voltage and reverse polarity power consumption approx. 4 Watts
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Temperature range

Operation	-10°C to +50°C
Storage	-20°C to +60°C

Physical data

Case	Aluminium, colorless anodized, front and rear side rubber armoured
Dimensions	200 x 120 x 70 mm (L x W x H)
Weight	approx. 1.6 kg
Protection class	IP64

Eye safety class

according to IEC60825-1:1993+A1:1997+A2:2001

The following clause applies for instruments delivered into the United States:
Complies with 21 CFR 1040.10 and 1040.11 except for deviations
pursuant to Laser Notice No. 50, dated July 26, 2001.



CE This device conforms to the Council Directive 89/336/EEC concerning electromagnetic compatibility and is therefore marked with the **CE** sign.

- 1) Selectable via serial interface
 - 2) Operating range selectable via serial interface
 - 3) Switching points adjustable via serial interface
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Information contained herein is believed to be accurate and reliable. However, no responsibility is assumed by **RIEGL** for its use. Technical data are subject to change without notice. Data sheet LD90-450, 06/11/2006



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