

## Industrial Laser Distance Sensor

# LD90-4-GF

with Glass-Fibre coupled REMOTE OPTICAL HEAD

The new Laser device FERROTRON/RIEGL LD90-4-GF 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. The optical head contains no electronics and is therefore extremely small, lightweight, inexpensive, high-temperature resistant and insensitive against electromagnetic or ionizing radiation. The optical head can be operated in high-temperature areas, whereas the electronic box can be remotely installed in a protected area. Installation as well as replacement of parts of the system in case of servicing requirements is easy and cost-effective.

Two switching outputs can be used as limit switches for anti-collision protection.

The delivery will be complete together with Electronic box, Optical head and 10m Glass-Fibre cable.

- Industrial distance sensing
- Measuring of crane coordinates
- Anti-collision sensing on cranes
- Level measurement in silos
- Optical measuring head is separated from Electronic-Box
- 'High-Penetration' Technology
- Analog and digital data outputs
- PNP Transistor switching outputs
- Low power consumption

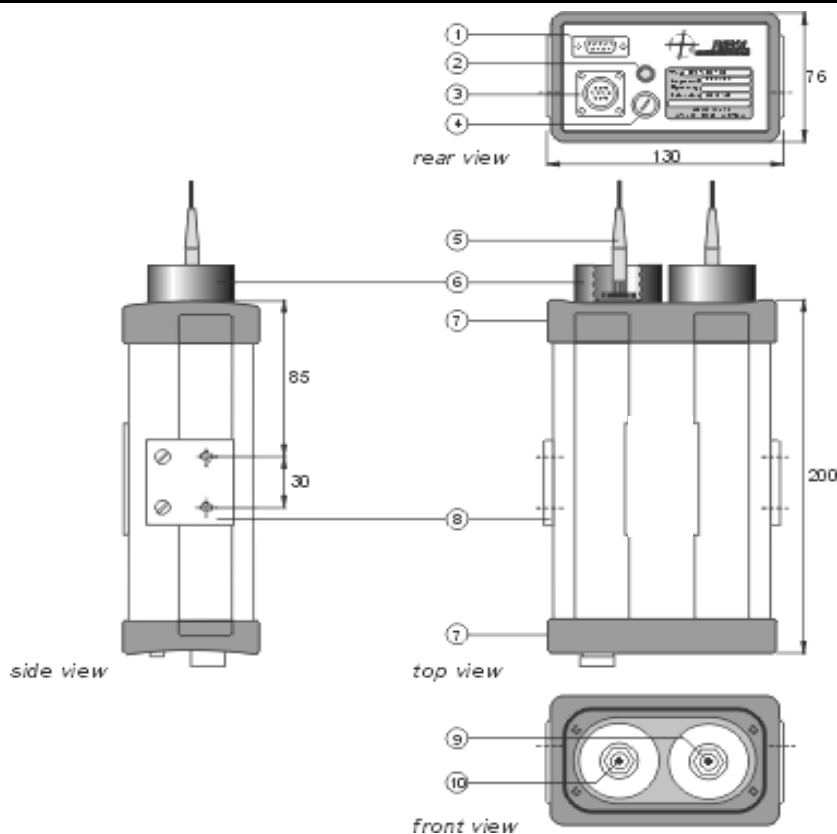
### Specificationen LD90-4-GF

	LD90-425-GF	LD90-450-GF
Optical measurement head	MK26	MK36
Measuring range		
depending on the reflection coefficient $\rho$ of the target		
good, diffusely reflecting targets, $\rho \geq 80\%$ <sup>1)2)</sup>	> 30 m	$\geq 100$ m
bad, diffusely reflecting targets, $\rho \geq 10\%$ <sup>1)</sup>	> 10 m	$\geq 30$ m
Reflecting foil <sup>3)</sup>	50 m	1000 m
Minimum distance <sup>4)</sup>	1 m	1 m
Accuracy <sup>5)6)</sup>	typ. $\pm 25$ mm	typ. $\pm 25$ mm
Divergence of the infrared measuring beam	35 cm auf 30 m 60 cm auf 50 m	10 cm auf 30 m 35 cm auf 100 m
Measuring time <sup>7)</sup>	0,15 s	0,3 s
Reproducibility (mm) <sup>8)</sup>	$\pm 50$	$\pm 30$
Resolution of digital data output		5 mm

- 1) for measuring time 1 s; for shorter measuring time the maximum range is slightly lower
- 2) dimension of the target, minimum  $0.5 \times 0.5 \text{ m}^2$
- 3) reflecting foil 3M 2000X or equivalent, minimum dimensions  $0.45\text{m} \times 0.45\text{m}$
- 4) minimum distance 2 m for full accuracy with reflecting foil target
- 5) standard deviation, plus distance depending error  $\leq 20$  ppm
- 6)  $\geq 10$  min after turning on
- 7) adjustable via RS232
- 8) depending on measuring time

### Electronic box LD90-4-GF

1. 9pole socket for RS232/RS422 data interface
2. LED "POWER ON"
3. Cable duct for connection cable
4. Fuse holder
5. SMA-Glass-Fibre plug
6. Protection tube
7. Rubber-armoured front and rear panel
8. Mounting plates with 2xM6 threads on both sides of the instrument
9. SMA Glass Fibre plug for Receiver lens
10. SMA-Glass Fibre plug for Transmitter lens



### General technical data LD90-4-GF

#### Data Interface

Serial interface	RS232 or RS422 <sup>1)</sup> Baud rate 300 Bd ... 19200 Bd <sup>1)</sup>
Data protocol	ASCII (optional 3964R for Siemens PLC)
Analog current	4-20 mA <sup>2)</sup> , not galvanically isolated resolution 16 Bit, linearity 0.5 ‰ of full scale
Analog voltage	0-10 V <sup>2)</sup> , source resistance 1 kOhm resolution 12 Bit, linearity 2 ‰ of full scale
Switching output	2 x PNP transistor driver <sup>3)</sup> built-in thermal and short-circuit protection switching current 250 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

#### Temperatur range

Operation  
Storage

##### Electronic box

-10°C bis +50°C  
-20°C bis +60°C

##### Optical head MK26 / MK36

- 20 bis + 80°C  
- 20 bis + 80°C

#### Physical data

Case

##### Electronic box

Aluminium, anodized  
Rubber-armoured  
front and rear panel

##### MK26

Aluminium  
anodized

##### MK36

Aluminium  
anodized

Dimensions (L x W x H)

200 x 120 x 70 mm

68 x 70 x 40mm

120 x 80 x 50mm

Weight

ca. 1,6 kg

ca. 0,4 kg

ca. 0,6 kg

Protection class (with GF-cable)

IP64

IP62

IP62

#### Eye safety class

according to CENELEC EN 60825-1:1997

Class 1  
Laser Product



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