

 **Leuze electronic**

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the **sensor** people

ROD 4 and ROD 4plus

Area scanning
Laser distance sensors
for object detection
and measurement



Increased vision for object detection and measurement. Laser distance sensors **ROD 4** and **ROD 4plus**.

Fast, precise, lightweight, and easy

ROD 4 and ROD 4plus are laser distance sensors designed for contactless area scanning for object detection and measurement. Via a rotating mirror, a light beam generated by laser diodes is deflected and captures an area of 190° with a radius of up to 65 m. Up to 4 mutually independent detection fields can be defined and up to 8 detection field pairs can be stored in the sensor.

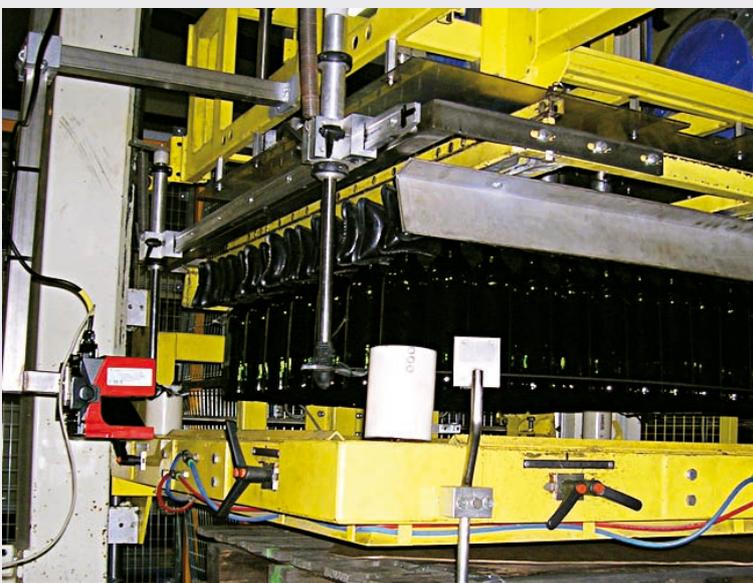
ROD 4 is designed for object detection. With the Config-Plug configuration memory, even more efficient functions of the configuration software RODsoft, and excellent handling properties, ROD 4 is leading in its class.

ROD 4plus is designed in particular for the measurement technology. With integrated FAST Ethernet and decoupled data transmission and data acquisition, the ROD 4plus is the system with the fastest data transmission on the market. This offers definite performance advantages for measuring applications.



Areas of application

- Position detection
- Protrusion detection
- Load monitoring
- Fill level measurement
- Access control
- Object and volume detection
- Contour measurement
- Manipulator control
- Control of driverless transportation systems (DTS)



ROD 4.

Maximum performance for the detection of objects.



Lightweight—Only 2 kg gross weight.

High availability due to short boot time of 6 sec. and extended cleaning intervals.

Simplest device exchange via configuration memory ConfigPlug.

Convenient configuration software RODsoft permits 8 detection field pairs and 4 detection fields, simultaneously.

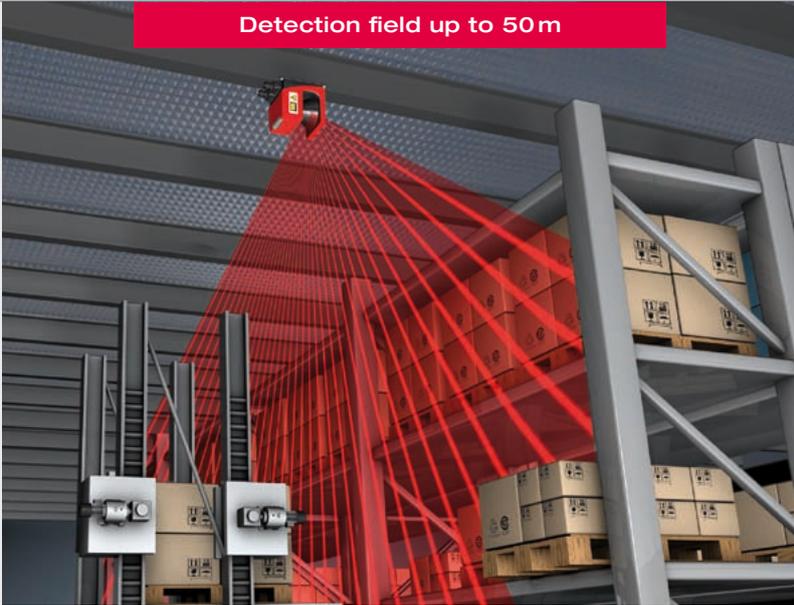
Detection fields up to 50 m
Angular range 190°.
Angular resolution 0.36°.
Scanning rate 25 scans/s.

With the intelligent ConfigPlug device plug, exchanging the device is a breeze.



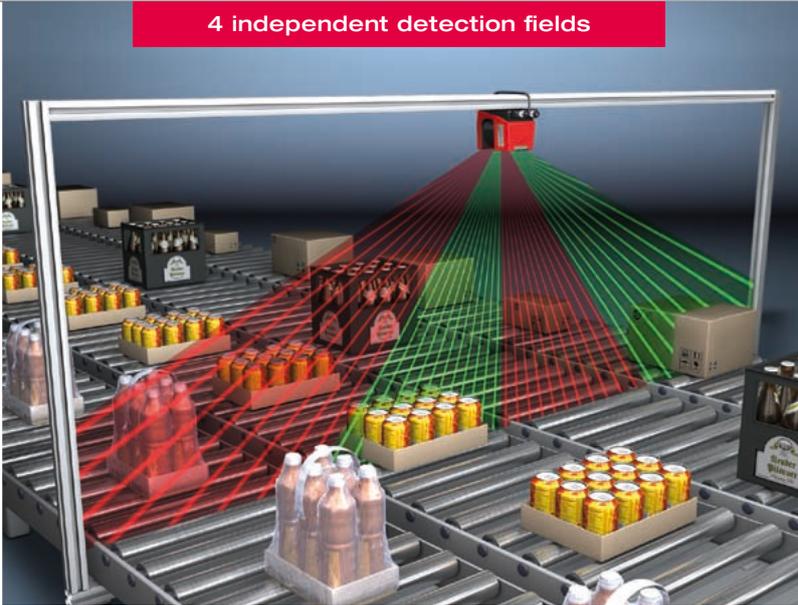
Application areas for area scanning laser distance sensors **ROD 4**.

Detection field up to 50 m



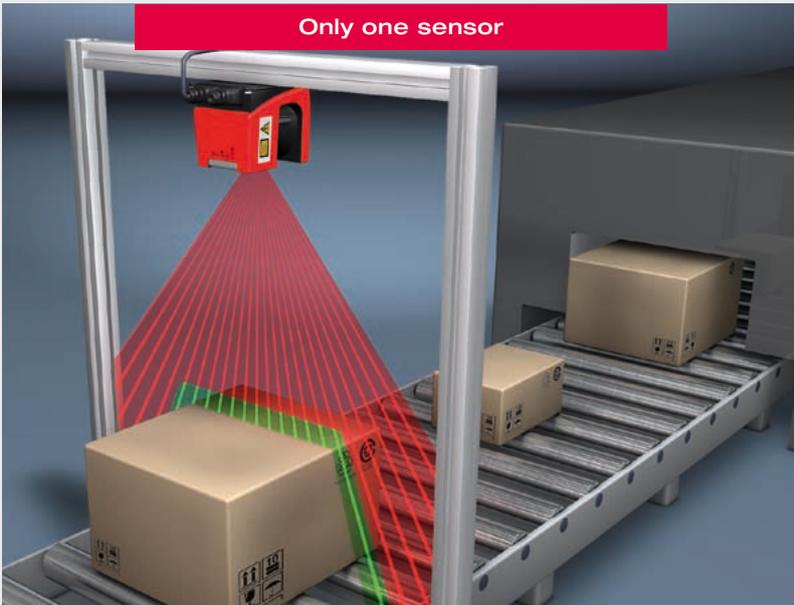
Protusion detection in high-bay warehouses

4 independent detection fields



Presence monitor in the materials handling

Only one sensor



Height and position detection of objects
for collision avoidance

Integrated heating



Protusion detection in parking systems under
change of the environmental conditions

ROD 4plus.

The fastest area scanning laser distance sensor
in its class.



Unmatched speed.
Thanks to an integrated Fast
Ethernet 100 Mbit.

Data transmission and data
acquisition are decoupled.
Increases speed by up to 10 times.

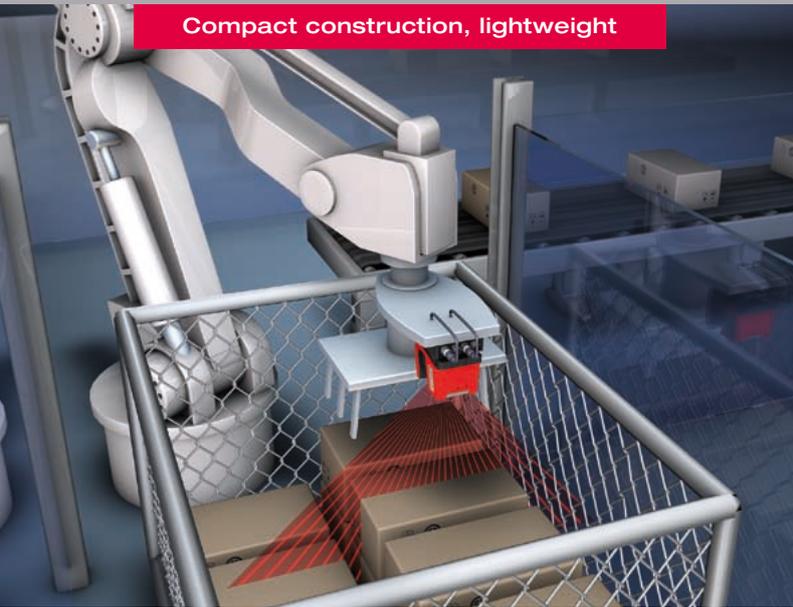
Configuration during operation
via online commands.

Integrated measurement data
processing (e.g. x and y-coordinates)
without additional hardware.

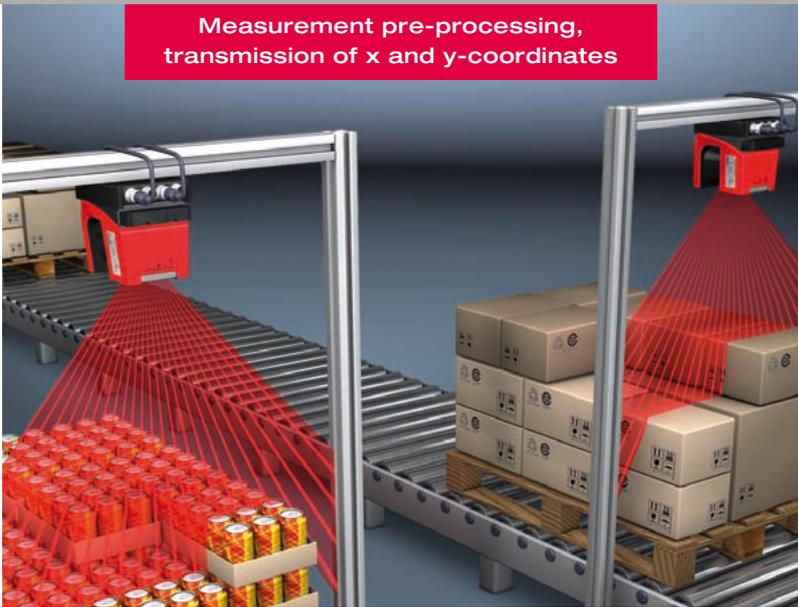
Operating range 65 m.
Angular range 190°.
Angular resolution 0.36°.
Scanning rate 25 scans/s.

Ethernet

Application areas for area scanning
laser distance sensors **ROD 4plus.**



Manipulator positioning



Object measurement



Collision protection of driverless
transportation systems



Access control

Technical Data

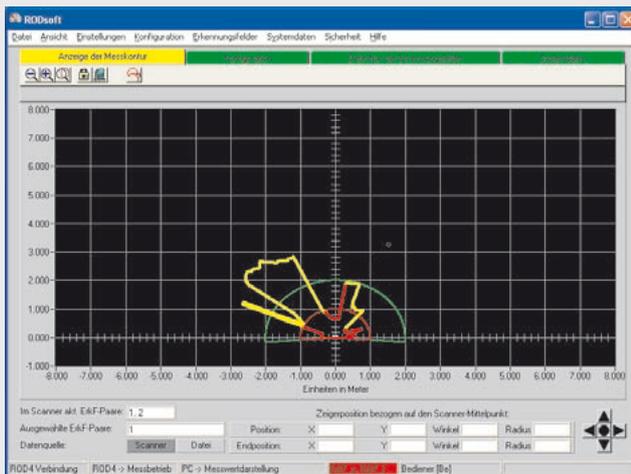
ROD 4 and ROD 4plus.

Technical Data	ROD4-3x	ROD4plus
Function	Distance measurement, optical scanner	Distance measurement, optical scanner
Dimensions excl. connector, W x H x D	140 x 170 x 135 mm	140 x 170 x 168 mm
Voltage supply	24VDC	24VDC
Angular range	190 °	190 °
Scanning rate	25 scans / sec	25 scans / sec
Angular resolution	0.36 °	0.36 °
Outputs	Ethernet/RS 232/RS 422 4 x PNP	Ethernet/RS 232/RS 422 4 x PNP
Connection type	Sub-D	M12, M16
Protection class	IP 65	IP 65
Approvals	CE	CE
Operating range*	up to 65000 mm	up to 65000 mm
Detection field pairs (selectable)	8	8
Measurement principle	optical, laser 905 nm	optical, laser 905 nm
Resolution	5 mm	5 mm
Repeatability	10 – 90% diffuse reflection at 4 m operating range ± 15 mm	10 – 90% diffuse reflection at 4 m operating range ± 15 mm
Operation	Configuration software WIN 98/2000/NT/XP	Configuration software WIN 2000/XP
Detection area		
Scanning range	max. 50000mm	max. 50000mm
Reflectivity	from 1.8%	from 1.8%
Response time	from 40 ms	from 40 ms
Object size	> 70 mm at a distance of 6 m > 250 mm at 22 m	> 70 mm at a distance of 6 m > 250 mm at 22 m
Output	2/4 x PNP transistor	2/4 x PNP transistor
Ambient temperature	-20°C ... +50°C	-20°C ... +50°C
Features		
	Optional: heating. Powerful dust suppression for particles in the air. Field pair switch during operation possible. Compact design and user-friendly software. Automatic configuration at device swap via the intelligent ConfigPlug. Open data interface.	Optional: heating. Powerful dust suppression for particles in the air. Field pair switch during operation possible. Compact design and user-friendly software. Open data interface.

* Typical operating range limit

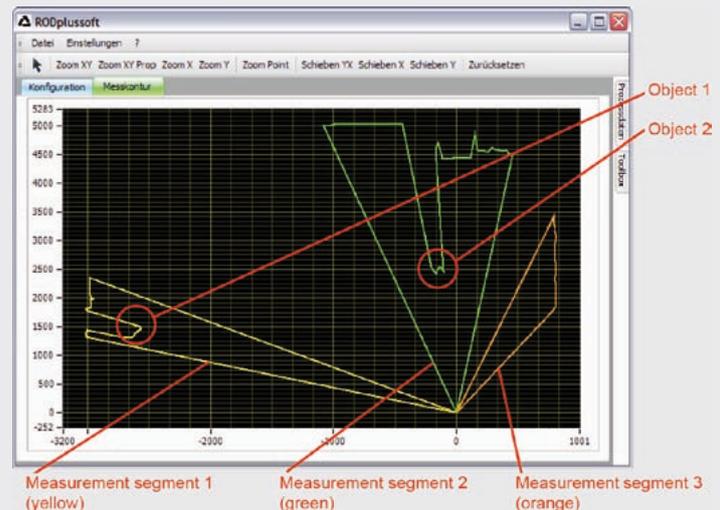
Configuration made easy.
 The configuration software
RODsoft and **RODplussoft**.

RODsoft



- Display of measurement contours and measurement values
- Configuration of detection fields
- 8 detection field pairs up to 50 m
- 4 detection fields, mutually independent
- Powerful dust suppression
- Configuration of device parameters
- Query of diagnostic information

RODplussoft



- Display of measurement contours and measurement values
- Configuration of the interfaces
- Configuration of measurement segments
- up to 12 measurement segments
- Measurement data protocol binary or ASCII remote
- Measurement value output polar or cartesian (x, y)
- Measurement data preprocessing (extreme values, filter)
- Start of RODsoft integrated