SMART
SENSOR
BUSINESS

ROD 4, ROD 4*plus*

Area-scanning
laser distance sensors
for object detection
and measurement

*power*reserve.

BROADER VISION
FOR OBJECT DETECTIO

ROD 4 and ROD 4*plus* laser distance sensors.

*power*reserve.

FAST, PRECISE, LIGHT AND SIMPLE

ROD 4 and ROD 4*plus* are contactless laser distance sensors for area-scanning object detection and measurement. A light beam produced by laser diodes is deflected by a rotating mirror and covers 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 RODsoft configuration software and excellent handling properties, ROD 4 leads its class.

ROD 4*plus* is specially designed for measurement technology. With integrated FAST Ethernet and decoupled data transmission and data collection, ROD 4plus is the system with the fastest data transmission on the market. This offers considerable performance advantages for measuring applications.

N AND MEASUREMENT

AREAS OF APPLICATION

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

ROD 4

Maximum power for the detection of objects.

PROPERTIES

- Lightweight – total weight of just 2 kg
- High availability due to short boot time of 6 s and extended cleaning intervals
- Extremely simple device exchange with ConfigPlug configuration memory
- Convenient configuration software RODsoft permits 8 detection field pairs and 4 detection fields, simultaneously
- Detection fields up to 50 m
- Scanning angle 190°
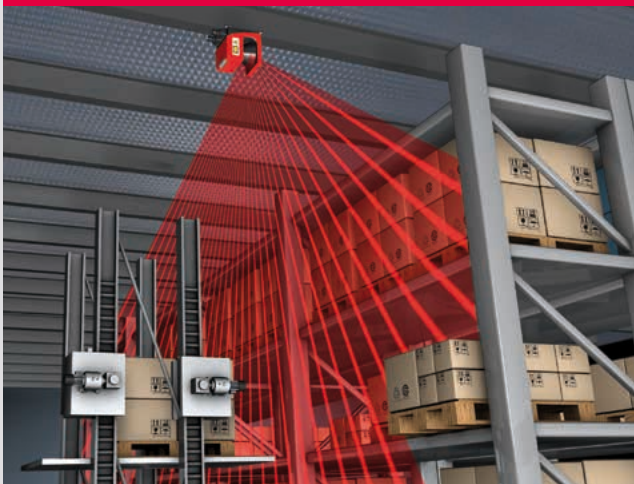- Angular resolution 0.36°
- Scanning rate 25 scans/s

With the intelligent ConfigPlug device plug, device exchange is child's play
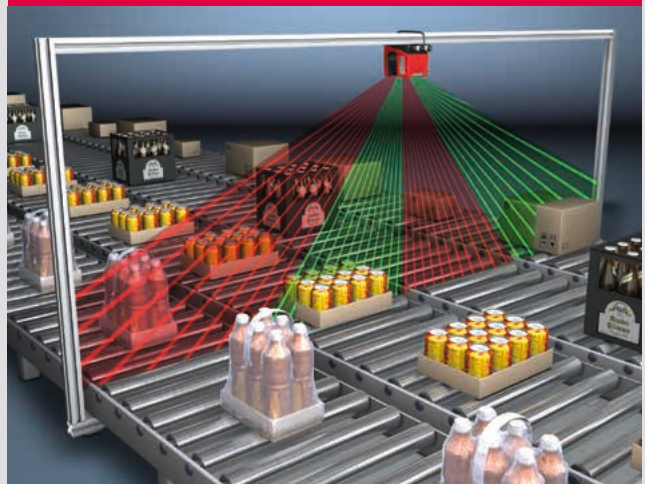
AREAS OF APPLICATION

ROD 4 area-scanning laser distance sensors.

Detection field up to 50 m

Projection monitoring in high-bay warehouse

4 independent detection fields

Presence monitoring on conveyor systems

Just one sensor

Height and position detection of objects for collision prevention

Integrated heating

Projection monitoring in parking systems under changing environmental conditions

ROD *4plus*

High operating ranges with large viewing angles.

PROPERTIES

- Unbeatably fast through integrated 100 Mbit Fast Ethernet
- Data transmission and data collection are decoupled, thereby up to 10 x faster
- Configuration during operation via online commands
- Integrated measurement data processing (e.g., x-, y-coordinates) without additional hardware
- Range: 65 m
- Scanning angle 190°
- Angular resolution 0.36°
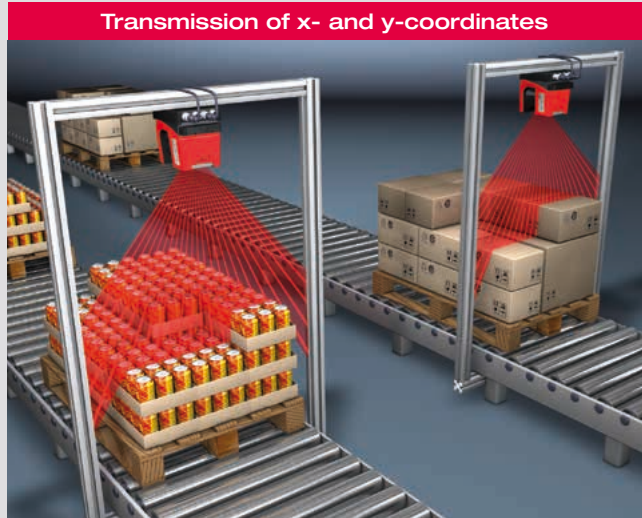- Scanning rate 25 scans/s

AREAS OF APPLICATION

ROD 4*plus* area scanning laser distance sensors.
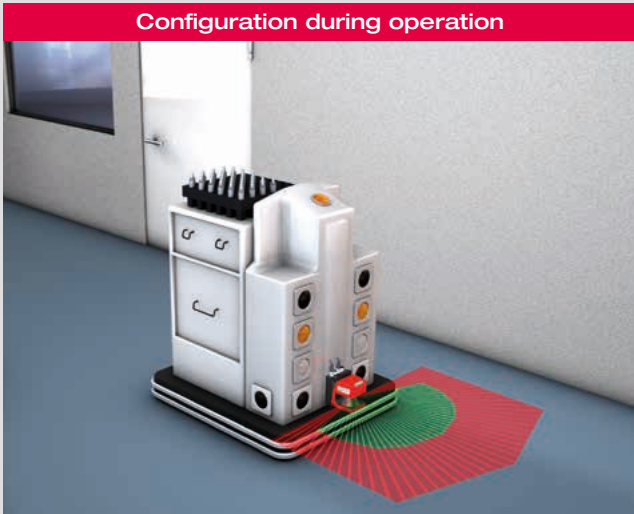
Compact design, low weight

Gripper positioning

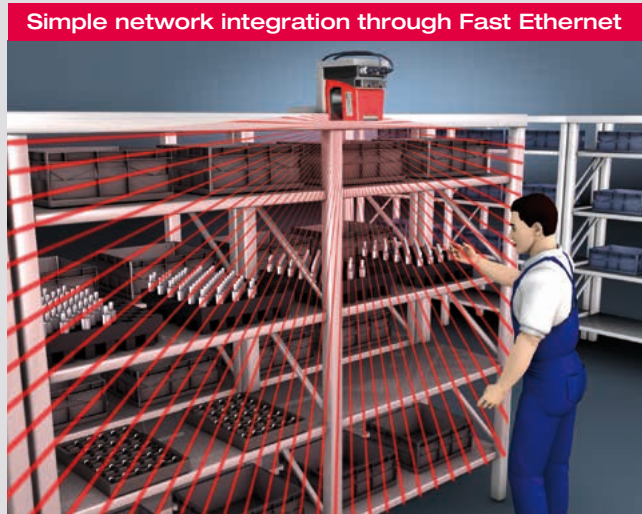## Transmission of x- and y-coordinates

Object measurement

Configuration during operation

Collision protection of driverless transportation systems

Simple network integration through Fast Ethernet

Access control

TECHNICAL DATA

ROD 4 and ROD 4*plus*.

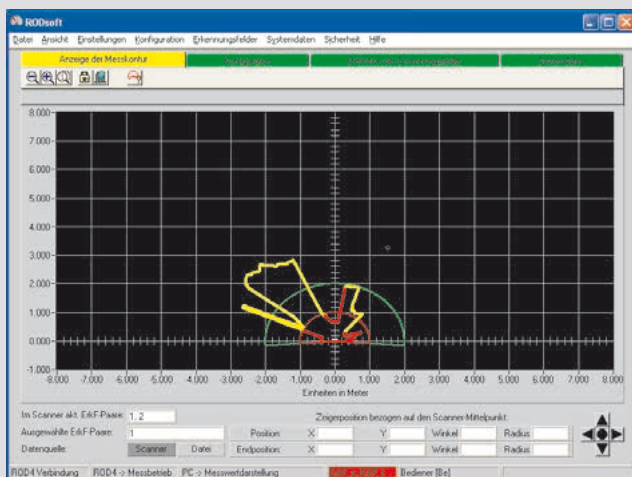| Technical data	ROD4-3x
Function	Distance measurement, scanner, optical
Dimensions without connector, W x H x D	140 x 170 x 135 mm
Voltage supply	24 V DC
Scanning angle	190°
Scanning rate	25 scans / sec
Angular resolution	0.36 °
Outputs	Ethernet/RS 232/RS 422 4x PNP
Connection type	Sub-D
Degree of protection	IP 65
Certifications	
Operating range*	Up to 65,000 mm
Detection field pairs (reversible)	8
Measurement principle	Optical, laser – 905 nm
Resolution	5 mm
Repeatability	10 – 90 % diffuse reflection ± 15 mm at operating range of 4 m
Operation	WIN 98/2000/NT/XP configuration software
Detection area	
Scanning range	Max. 50,000 mm
Reflectivity	From 1.8%
Response time	From 40 ms
Object size	> 70 mm at distance of 6 m > 250 mm at 22 m
Output	2/4 x PNP transistor
Ambient temperature	–20 °C … +50 °C
Features	
	– Optional: heating – Powerful dust suppression of particles in the air – Zone pair changeover possible during operation – Compact design and easy-to-use software – Automatic configuration on device exchange with intelligent ConfigPlug – Open data interface

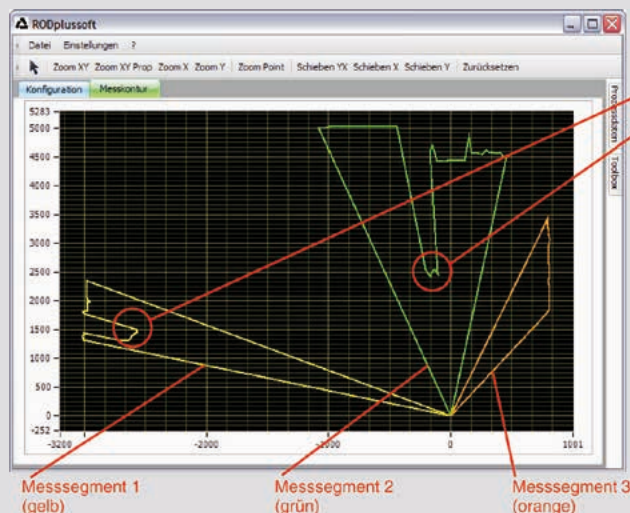| Technical data	ROD4*plus*
Function	Distance measurement, scanner, optical
Dimensions without connector, W x H x D	140 x 170 x 168 mm
Voltage supply	24 V DC
Scanning angle	190°
Scanning rate	25 scans / sec
Angular resolution	0.36 °
Outputs	Ethernet/RS 232/RS 422 4x PNP
Connection type	M12, M16
Degree of protection	IP 65
Certifications	
Operating range*	Up to 65,000 mm
Detection field pairs (reversible)	8
Measurement principle	Optical, laser – 905 nm
Resolution	5 mm
Repeatability	10 – 90 % diffuse reflection ± 15 mm at operating range of 4 m
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Detection area	
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CONFIGURATION MADE EASY

The RODsoft and ROD*plus*soft configuration softwares.

RODsoft

ROD*plus*soft

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

- Display of measurement contours and measurement values
- Configuration of interfaces
- Configuration of measurement segments
- Up to 12 measurement segments
- Binary or ASCII-Remote measurement data protocol
- Polar or Cartesian (x, y) measurement value output
- Measurement data preprocessing (extreme values, filtering)
- Start of RODsoft integrated

OUR
PROMISE
TO YOU

SMARTER **PRODUCT USABILITY**

With regard to our product developments, we systematically place emphasis on the especially good usability of all devices. To this end, simple mounting and alignment are taken into account – just as the uncomplicated integrability of the sensors in existing field bus systems and easy configuration, e.g. via a web browser, are.

SMARTER **APPLICATION KNOW-HOW**

Whoever can do it all, can do nothing right. Which is why we concentrate on selected target sectors and applications. There, we are specialists and know all aspects inside out. For this purpose, we optimize our solutions and offer a comprehensive product range that makes it possible for our customers to obtain the absolute best solutions from a single source.

SMARTER **CUSTOMER SERVICE**

The technical and personal proximity to our customers, and a skilled, straightforward handling of queries and problems, are among our strengths – and will remain so. Consequently, we will continue to expand our service offerings and, indeed, also forge ahead in new directions to persistently redefine the utmost in customer service. Whether on the phone, on the Internet or on-site with our customers – regardless of when and where the expertise of the sensor people is needed at any time.

Info at: **www.leuze.com**

Katrin Rieker,
Sales Methods, Processes, Tools

Switching Sensors
Optical Sensors
Ultrasonic Sensors
Fiber Optic Sensors
Inductive Switches
Forked Sensors
Light Curtains
Special Sensors

Measuring Sensors
Distance Sensors
Sensors for Positioning
3D Sensors
Light Curtains
Forked Sensors

Products for Safety at Work
Optoelectronic Safety Sensors
Safe Locking Devices, Switches and Proximity Sensors
Safe Control Components
Machine Safety Services

Identification
Bar Code Identification
2D-Code Identification
RF Identification

**Data Transmission/
Control Components**
MA Modular Connection Units
Data Transmission
Safe Control Components
Signaling Devices
Connection Technology and Passive Distribution Boxes

Industrial Image Processing
Light Section Sensors
Smart Camera