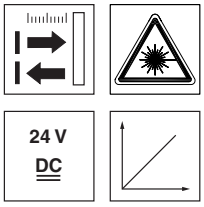
rotoScan ROD 4-3...

Optical Distance Sensors

Part No. 501 50110694



0 ... 65m

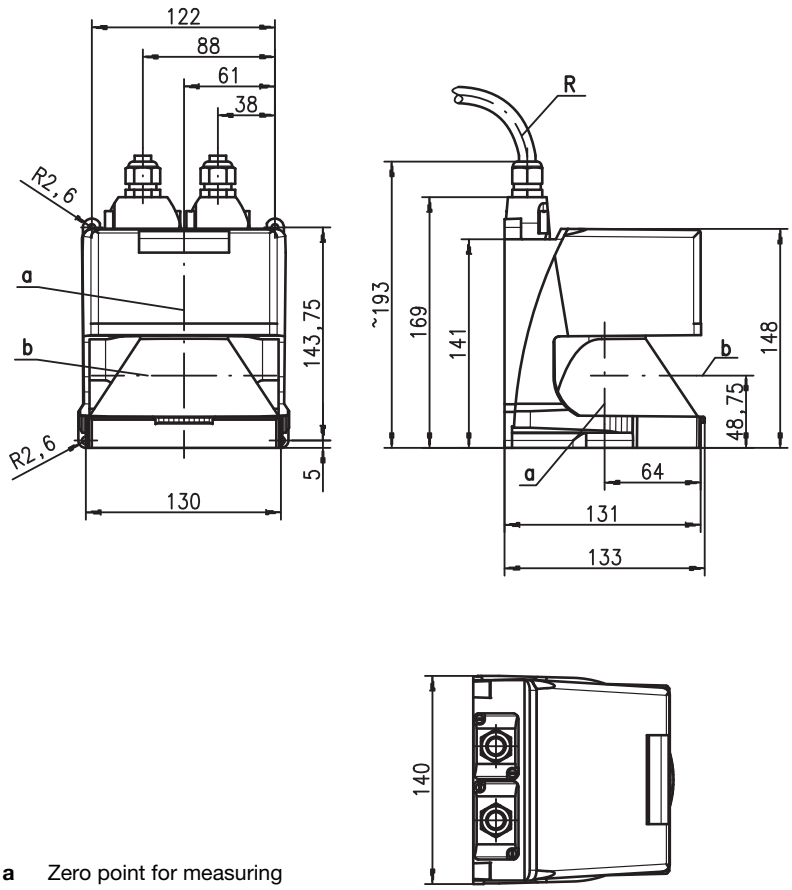
- The rotoScan ROD 4 is an area scanning distance sensor for object detection. The light beam is deflected via a rotating mirror and spread across a semicircular area (190°).
- Max. radius of detection field 50m
- Measurement range 0 ... 65m
- 7 configurable detection field pairs (near and far detection fields) for object detection
- Changeover of detection field pairs via inputs
- Simple device exchange without PC by means of config. connector
- Reference contour for presence/absence checks of objects
- Independent, simultaneous monitoring of 4 detection fields
- Interference suppression in the event of particles in the air
- ROD 4-36 with heating and ROD 4-38 with heating, dust-insensitive version.

Accessories:

(available separately)

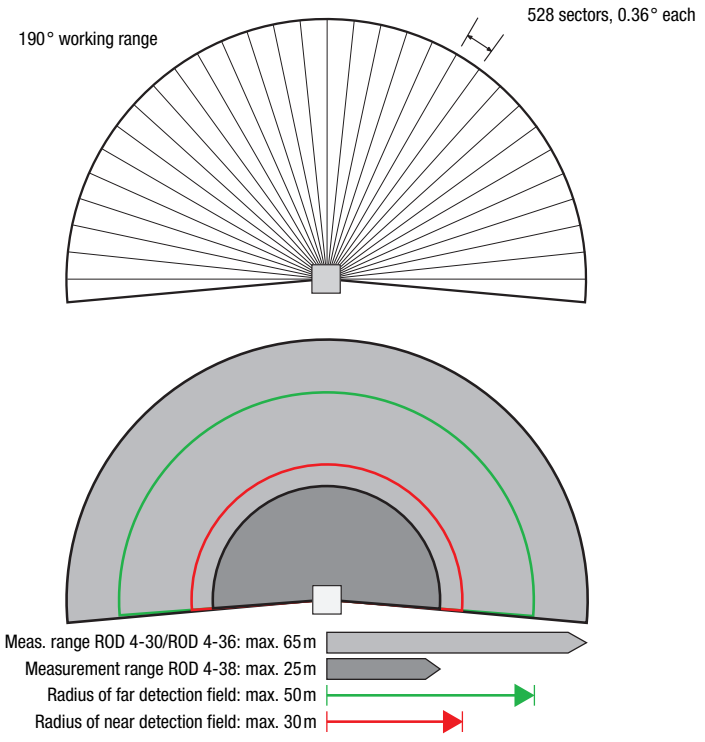
- Mounting systems
- RODsoft configuration software (free download from *www.leuze.de*)
- Various connection cables

Dimensioned drawing



a Zero point for measuring
b Scanning plane
R Smallest bending radius = 50mm

Measurement principle



We reserve the right to make changes • DB_ROD_4-3x_gb.fm

Specifications

Optical data

Measurement range	0 … 65m (ROD 4-38: 0 … 25m)
Radius of detection field	near: 0 … 30m far: 0 … 50m
Angular range	max. 190°
Angular resolution	0.36°
Scanning rate	25scans/s or 40ms/scan
Transmitter	infrared laser diode, laser class 1 (EN 60815-1), wavelength = 905nm, P_{max} = 15W, pulse duration: 3ns, average output power: 12µW

Detection fields

Reflectivity	from min. 1.8% (matte black), ROD 4-38 from 6% (dark grey)
Object size	> 20mm at distance of 4m, > 100mm at distance of 15m
Response time	at least 40ms (corresponds to 1 scan)
Number of detection field pairs	7 (selectable via switching inputs)
Output	4 x PNP transistor outputs, 24V/250mA
Measur. value resolution	5mm
Repeatability	10 … 90% diffuse reflection at operating range of 4m: 15mm

Electrical data

Voltage supply[1)]	+24VDC +20% / -30%
Overcurrent protection	fuse 2A (4A with heating) semi time-lag in the switch cabinet
Current consumption	approx. 400mA (use power supply with 2.5A), approx. 2.5A with heating
Power consumption	< 60W at 24V including the outputs
Overvoltage protection	overvoltage protection with protected limit stop

Mechanical data

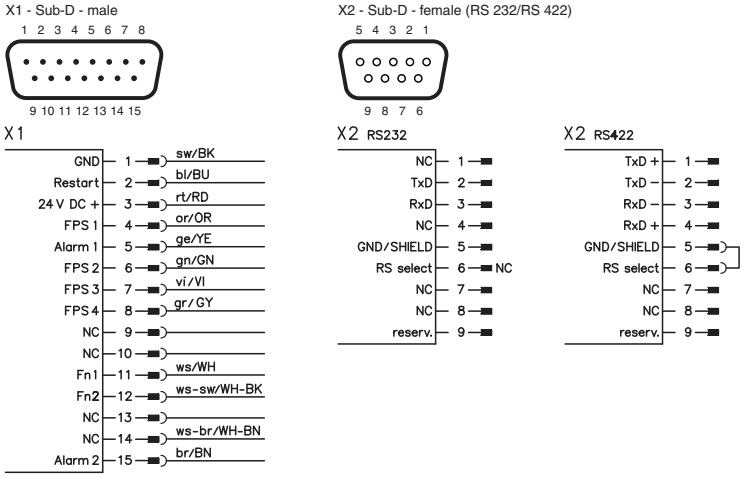
Housing	diecast aluminium, plastic
Weight	2.0kg
Connection type	2 connectors (can be plugged from above, solder connection)

Environmental data

Ambient temp. (operation/storage)	-0°C … +50°C / -20°C … +50 C -20°C … +50°C / -20°C … +50 C (ROD 4-36, ROD 4-38)
VDE safety class	III
Protection class	IP 65
Laser class	1 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2

1) Protective Extra Low Voltage (PELV) - protective extra-low voltage with reliable disconnection.
For UL applications: only for use in class 2 circuits according to NEC.

Electrical connection



Order guide

	Designation	Part No.
	ROD 4-30	501 10238
With heating	ROD 4-36	501 10666
With heating/dust-insensitive	ROD 4-38	501 10667

Tables

Notices

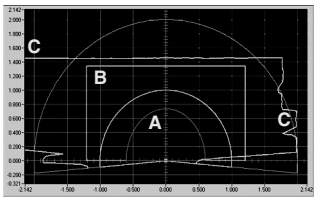
"RODsoft" Configuration Software

The configuration software runs under Windows 95/98/NT/2000/XP and offers the following features:

- Definition of the detection fields
- Configuration of the scanner parameters
- Visualisation of the detection fields and measurement values
- Display of status/diagnostic information
- Support of various languages

There are a variety of options available for defining detection fields. These include e.g.:

- "Teach-In" function
- Numeric and graphical input of the detection fields
- "Edit" function



A Near detection field
B Far detection field
C Current measurement values

- **Approved purpose:**
The ROD 4 distance sensors are optoelectronic sensors for the optical, contactless measurement of distance to objects.