# RK 93

## Energetic diffuse reflection light scanner

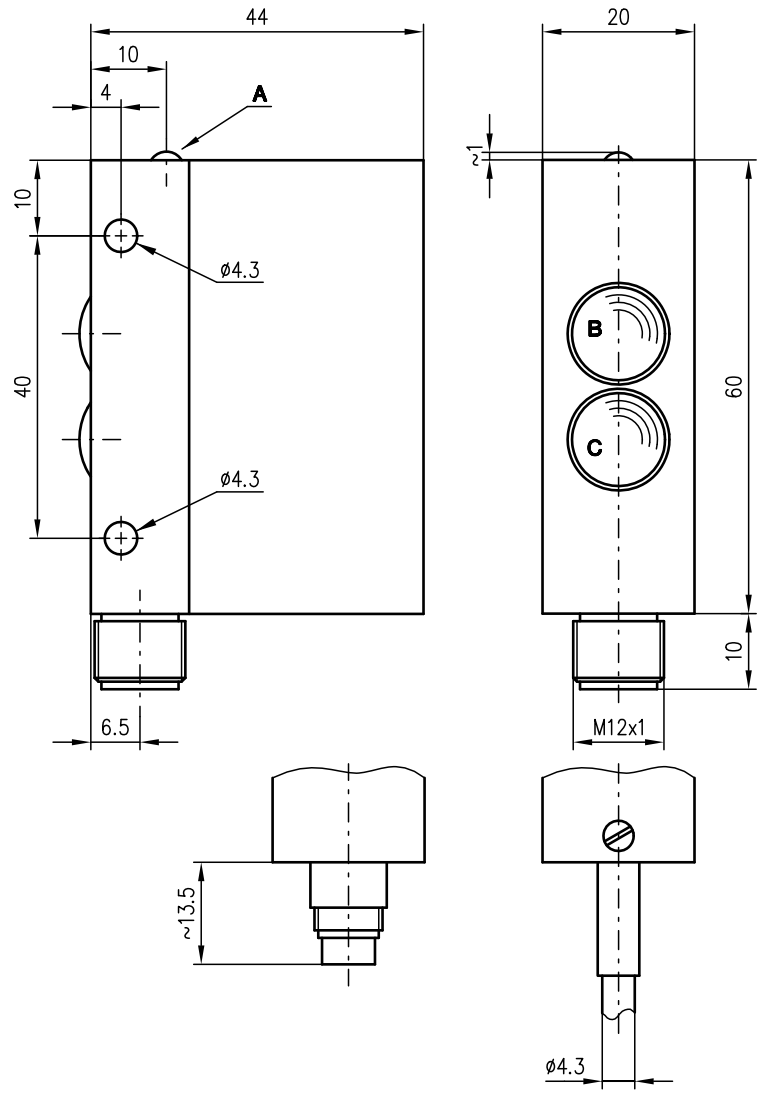
Part No. 501 11608

**5 ... 170mm**
**2 ... 210mm**

10 - 30 V DC

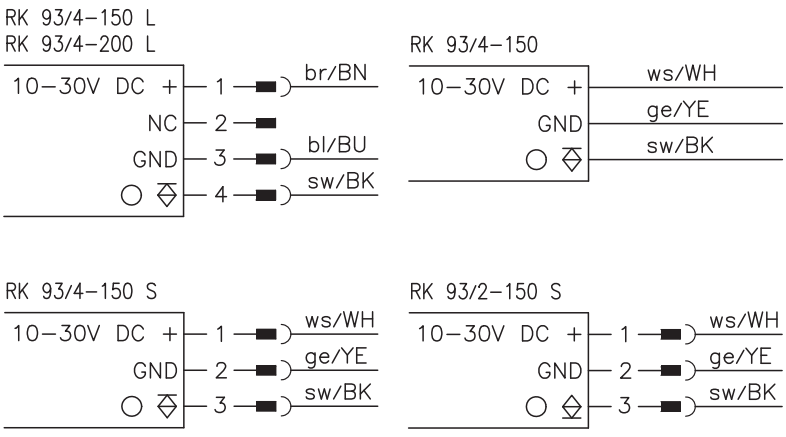
- Infrared light
- Background suppression through appropriate optical geometry
- Mounting holes for fast installation
- Connection via M12 connector, standard plug or cable (2m)

## Dimensioned drawing




**A** Indicator diode
**B** Receiver
**C** Transmitter

## Electrical connection




IP 65

## Accessories:

**(available separately)**

- M12 connectors (KD ...)
- Ready-made cables (KB ...)
- Standard plug

## Specifications

| | RK 93/4-150… | RK 93/4-200… |
|---|---|---|
| **Optical data** | | |
| Typ. scanning range limit (white 90 %) [1] | 5 … 170 mm | 2 … 210 mm |
| Scanning range [2] | see tables | see tables |
| Light source | LED (modulated light) | |
| Wavelength | 880 nm (infrared) | |
| **Timing** | | |
| Switching frequency | 250 Hz | |
| Response time | 2 ms | |
| **Electrical data** | | |
| Operating voltage $U_B$ [3] [4] | 10 … 30 VDC (incl. residual ripple) | |
| Residual ripple | ≤ 15 % of $U_B$ | |
| Power consumption | max. 0.6 W | |
| Switching output | PNP or NPN transistor output | |
| Function characteristics | light switching | |
| Signal voltage high/low | ≥ ($U_B$-3V)/≤ 2V | |
| Output current | max. 100 mA | |
| **Indicators** | | |
| LED yellow on | reflection | reflection, output transistor activated |
| LED yellow flashing | reflection, no performance reserve | |
| **Mechanical data** | | |
| Housing | metal | |
| Optics cover | glass | |
| Weight | 170 g | |
| Connection type [5] | M12 connector 4-pin, standard plug 4-pin or cable 2000 mm | |
| **Environmental data** | | |
| Ambient temp. (operation/storage) | -20 °C … +60 °C/-30 °C … +70 °C | |
| Safety class | III (acc. to EN 61140) | |
| Protective circuit [6] | 2, 3 | |
| Protection class | IP 65 (acc. to EN 60529) | |
| LED class | 1 (acc. to EN 60825-1) | |
| Applied standards | EN 60947-5-2, UL 508 | |

1) Typ. scanning range limit: max. attainable range without performance reserve
2) Scanning range: recommended range with performance reserve
3) Functional extra-low voltage with reliable disconnection or protective extra-low voltage (VDE 0100/T 410)
4) Observe the safety regulations and installation instructions regarding power supply and wiring; for UL applications: only for use in "Class 2" circuits acc. to NEC
5) Cable cross-section 4 x 0.25 mm²
6) 2=polarity reversal protection, 3=short-circuit protection for all outputs

## Order guide

| | Designation | Part No. |
|---|---|---|
| **With M12 connector** | | |
| PNP transistor output | RK 93/4-150 L | 500 25513 |
| PNP transistor output | RK 93/4-200 L | 500 24851 |
| **With standard plug** | | |
| NPN transistor output | RK 93/2-150 S | 500 00549 |
| PNP transistor output | RK 93/4-150 S | 500 00555 |
| **With cable connection 2 m** | | |
| PNP transistor output | RK 93/4-150 | 500 00554 |

## Tables

RK 93/4-150

| | | | | |
|---|---|---|---|---|
| 1 | 5 | | 150 | 170 |
| 2 | 20 | 100 | 110 | |
| 3 | 25 | 70 | 80 | |

RK 93/4-200

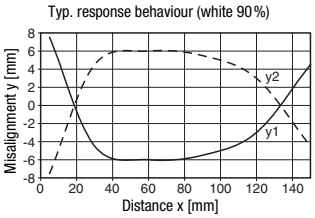
| | | | | |
|---|---|---|---|---|
| 1 | 2 | | 200 | 210 |
| 2 | 7 | 135 | 140 | |
| 3 | 15 | 105 | 110 | |

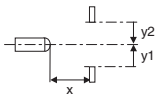
| | |
|---|---|
| 1 | white 90 % |
| 2 | grey 18 % |
| 3 | black 6 % |

Scanning range [mm]
Typ. scanning range limit [mm]

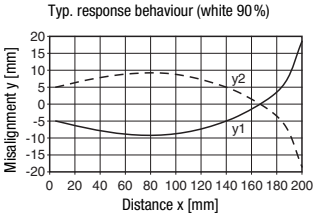
## Diagrams

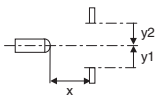
RK 93/4-150




RK 93/4-200




## Remarks

**Approved purpose:**
The diffuse reflection light scanners are optical electronic sensors for optical, contactless detection of objects.