

RK 93

Energetic diffuse reflection light scanner

Part No. 501 11606

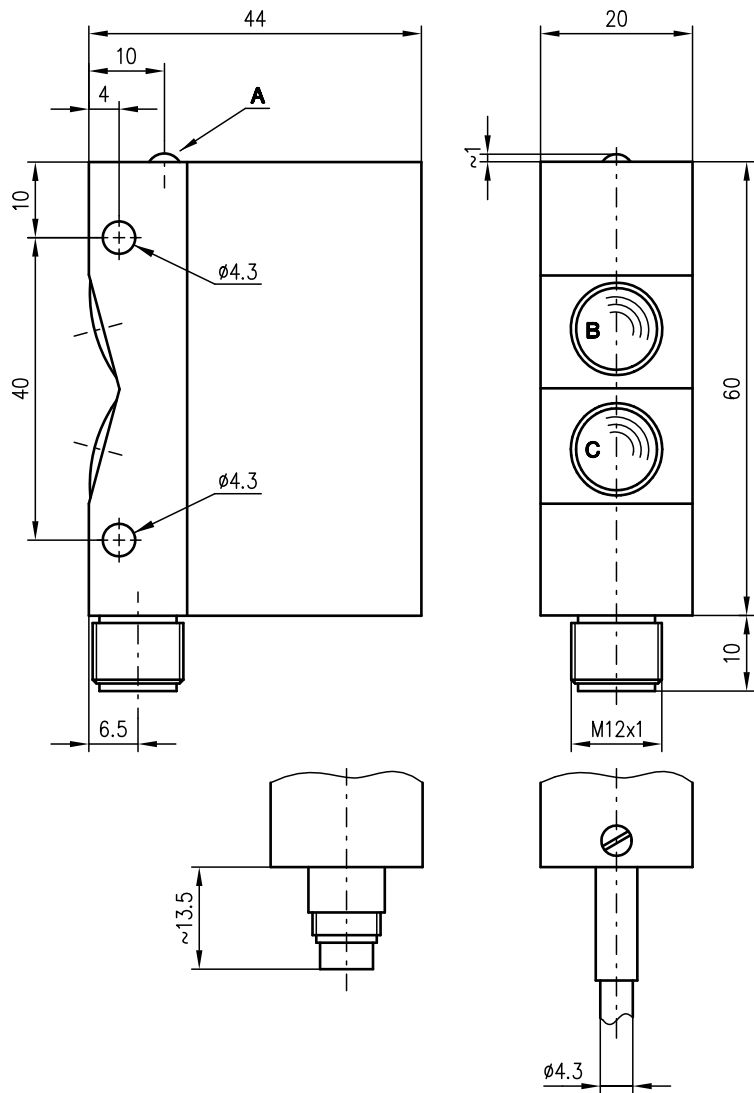


0 ... 65mm



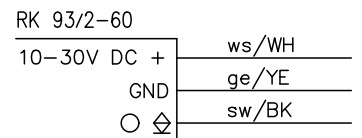
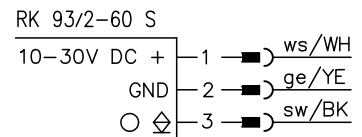
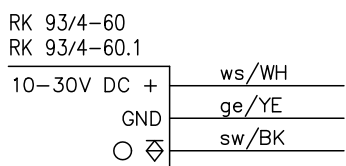
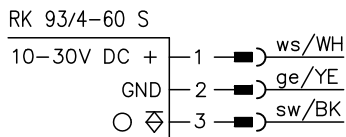
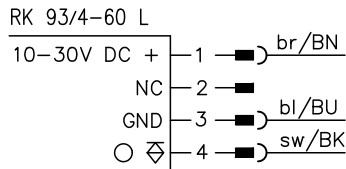
- Background suppression through V-shaped optical system
- Infrared light
- Small light profile for slot scanning (RK 93/4-60.1)
- Mounting holes for fast installation
- Connection via M12 connector, standard plug or cable (2m)

Dimensioned drawing



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

Electrical connection



Accessories:

(available separately)

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

We reserve the right to make changes • 93_c02.gb.fm

Specifications

Optical data

| | |
|---|-----------------------|
| Typ. scanning range limit (white 90%) ¹⁾ | 0 ... 65mm |
| Scanning range ²⁾ | see tables |
| Light source | LED (modulated light) |
| Wavelength | 880nm (infrared) |

Timing

| | |
|---------------------|-------|
| Switching frequency | 250Hz |
| Response time | 2ms |

Electrical data

| | |
|--|--------------------------------------|
| Operating voltage U_B ^{3) 4)} | 10 ... 30VDC (incl. residual ripple) |
| Residual ripple | $\leq 15\%$ of U_B |
| Power consumption | max. 0.6W |
| Switching output | PNP or NPN transistor output |
| Function characteristics | light switching |
| Signal voltage high/low | $\geq (U_B - 3V) \leq 2V$ |
| Output current | max. 100mA |

Indicators

| | |
|---------------------|------------------------------------|
| LED yellow on | reflection |
| LED yellow flashing | reflection, no performance reserve |

Mechanical data

| | |
|-------------------------------|--|
| Housing | metal |
| Optics cover | glass |
| Weight | 170g |
| Connection type ⁵⁾ | M12 connector 4-pin, standard plug 4-pin or cable 2000mm |

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 4x0.25mm²
- 6) 2=polarity reversal protection, 3=short-circuit protection for all outputs

Order guide

| | Designation | Part No. |
|---------------------------------|--------------|-----------|
| With M12 connector | | |
| PNP transistor output | RK 93/4-60 L | 500 22192 |
| With standard plug | | |
| NPN transistor output | RK 93/2-60 S | 500 00546 |
| PNP transistor output | RK 93/4-60 S | 500 00553 |
| With cable connection 2m | | |
| NPN transistor output | RK 93/2-60 | 500 00545 |
| PNP transistor output | RK 93/4-60 | 500 00552 |
| PNP transistor output | RK 93/4-60.1 | 500 82014 |

Tables

RK 93...60[L][S]

| | | | |
|---|---|----|----|
| 1 | 0 | 60 | 65 |
| 2 | 5 | 40 | 45 |
| 3 | 8 | 37 | 40 |

RK 93/4-60.1

| | | | |
|---|----|----|----|
| 1 | 0 | 60 | 65 |
| 2 | 15 | 50 | 55 |
| 3 | 20 | 45 | 50 |

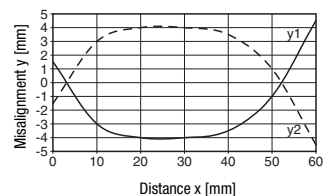
| | |
|---|-----------|
| 1 | white 90% |
| 2 | grey 18% |
| 3 | black 6% |

| | |
|---|--------------------------------|
| □ | Scanning range [mm] |
| ■ | Typ. scanning range limit [mm] |

Diagrams

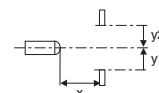
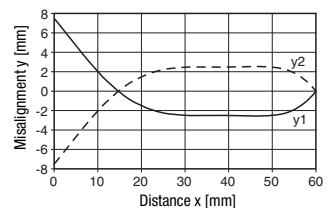
RK 93...60[L][S]

Typ. response behaviour (white 90%)



RK 93/4-60.1

Typ. response behaviour (white 90%)



Remarks

Approved purpose:

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

- Small light spot for slot scanning (RK 93/4-60.1)