

**RK 93**

**Energetic diffuse reflection light scanner**

Part No. 501 11606

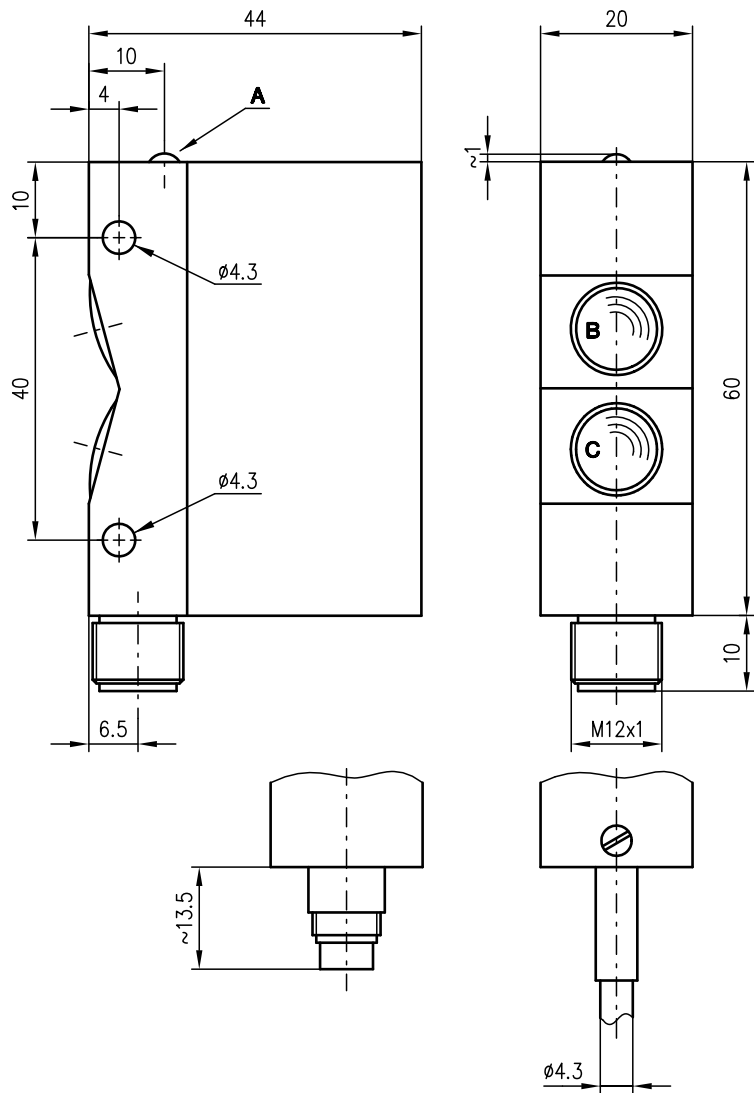


**0 ... 65mm**



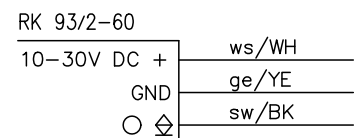
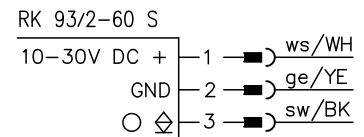
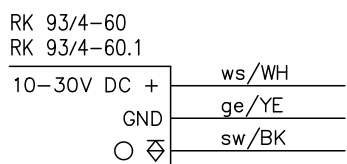
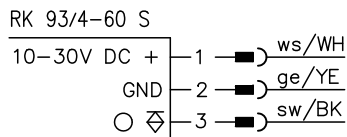
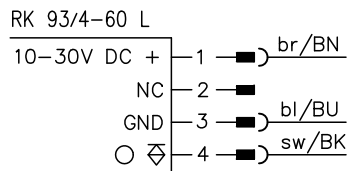
- Background suppression through V-shaped optical system
- Infrared light
- Small light profile for slot scanning (RK 93/4-60.1)
- Mounting holes for fast installation
- Connection via M12 connector, standard plug or cable (2m)

**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%) <sup>1)</sup>	0 ... 65mm
Scanning range <sup>2)</sup>	see tables
Light source	LED (modulated light)
Wavelength	880nm (infrared)

### Timing

Switching frequency	250Hz
Response time	2ms

### Electrical data

Operating voltage $U_B$ <sup>3) 4)</sup>	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 <sup>5)</sup>	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 <sup>6)</sup>	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 4x0.25mm<sup>2</sup>
- 6) 2=polarity reversal protection, 3=short-circuit protection for all outputs

## Order guide

	Designation	Part No.
<b>With M12 connector</b>		
PNP transistor output	RK 93/4-60 L	500 22192
<b>With standard plug</b>		
NPN transistor output	RK 93/2-60 S	500 00546
PNP transistor output	RK 93/4-60 S	500 00553
<b>With cable connection 2m</b>		
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

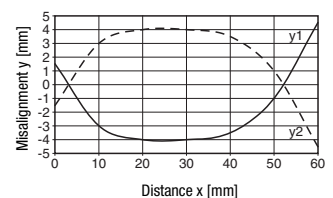
1	white 90%
2	grey 18%
3	black 6%

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

## Diagrams

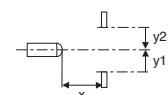
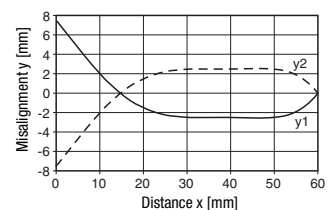
RK 93...60[L][S]

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)