

# //CONTRAST SENSORS

## THE CONTRAST MAKES THE DIFFERENCE

This sensor type can use various light sources – such as white light, laser-generated red light or RGB light – to very precisely detect and compare contrasts and report the results to the process with minimal signal jitter. Through the automatic selection of the right transmitter colors, various color or gray value combinations can be reliably detected.

### /// KRT 3B



The contrast sensors of the KRT 3B series distinguish between grayscale values, enabling them to detect minimal contrasts. As a result, a check can be performed for the presence of text or imprints or so-called marks detected.

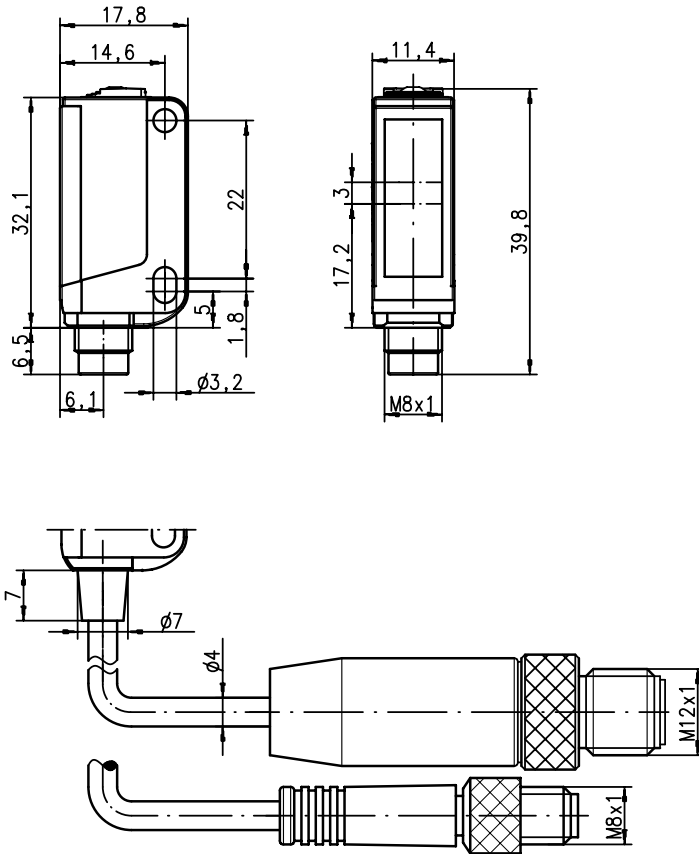


#### Benefits:

- Range 14.5 mm/ 60 mm (laser)
- Multicolor (RGB), white or laser light
- Various teach-in processes
- Switching-threshold correction via EasyTune
- Min. response time 50 µs
- Switching frequency up to 10 kHz
- Pulse stretching
- IO-Link interface

Part no.	Part description	Operating range	Switching frequency	Light source	Digital switching output	Connection	Description
50110592	KRTL 3B/4.3111-S8	0.04 ... 0.08 m	4,000 Hz	Laser, red	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110594	KRTL 3B/4.3111,200-S12	0.04 ... 0.08 m	4,000 Hz	Laser, red	Transistor, PNP, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110593	KRTL 3B/2.3111-S8	0.04 ... 0.08 m	4,000 Hz	Laser, red	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110595	KRTL 3B/2.3111,200-S12	0.04 ... 0.08 m	4,000 Hz	Laser, red	Transistor, NPN, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50111321	KRTL 3B/6.3111-S8	0.04 ... 0.08 m	4,000 Hz	Laser, red	Transistor, push-pull, IO-Link/light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, teach input, time function
50110572	KRTW 3B/4.1110-S8	0.0125 ... 0.0165 m	6,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110576	KRTW 3B/4.1121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110580	KRTW 3B/4.1321-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50111769	KRTW 3B/4.2121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110578	KRTW 3B/4.1121,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110582	KRTW 3B/4.1321,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110573	KRTW 3B/2.1110-S8	0.0125 ... 0.0165 m	6,000 Hz	LED, white	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110577	KRTW 3B/2.1121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110581	KRTW 3B/2.1321-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110579	KRTW 3B/2.1121,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110583	KRTW 3B/2.1321,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50111319	KRTW 3B/6.1121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, teach input, time function
50111320	KRTW 3B/6.1321-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, push-pull, IO-Link / light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, teach input, time function
50110584	KRTM 3B/4.1121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110588	KRTM 3B/4.1221-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50111768	KRTM 3B/4.2121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110586	KRTM 3B/4.1121,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110590	KRTM 3B/4.1221,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110585	KRTM 3B/2.1121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110589	KRTM 3B/2.1221-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Connector, M8, 4-pin	Teach input, time function
50110587	KRTM 3B/2.1121,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50110591	KRTM 3B/2.1221,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Cable with connector, 200 mm, M12, 4-pin	Teach input, time function
50111312	KRTM 3B/6.1121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, push-pull, IO-Link/light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, teach input, time function
50111313	KRTM 3B/6.1221-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, push-pull, IO-Link/light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, teach input, time function
50118393	KRTM 3B/6.2121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, push-pull, IO-Link/light switching (PNP)/dark switching (NPN)	Connector, M8, 4-pin	Interface: IO-Link, teach input, time function

## Dimensioned drawings: KRT 3B



KRT 3B contrast sensors

## ACCESSORIES: KRT 3B

## Connection technology

## Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

## Mounting systems

## Mounting brackets

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50105546	BT 3B	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

## Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117256	BTU 200M-D10	Mounting system, clampable, adjustable, turning, 360°	Screw type	For 10 mm rod, sheet-metal mounting	Metal
50117255	BTU 200M-D12	Mounting system, clampable, adjustable, turning, 360°	Screw type	For 12 mm rod, sheet-metal mounting	Metal
50117254	BTU 200M-D14	Mounting system, clampable, adjustable, turning, 360°	Screw type	For 14 mm rod, sheet-metal mounting	Metal

Further rod mounts can be found on our website

Switching sensors

Measuring sensors

Products for safety at work

Identification

Data transmission / Control components

Industrial image processing

Accessories