

## Technical data sheet

### Polarized retro-reflective photoelectric sensor set

Part no.: 50153175

SET PRK5B/4+TKS 40X60.A+BT205M



#### Contents

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- Electrical connection
- Diagrams
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## Set consists of

	Quantity	Part no.	Designation	Article	Description
	1	50139831	BT 205M	Mounting device	Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Metal
	1	50145245	PRK5B/4	Polarized retro-reflective photoelectric sensor	Operating range limit: 0.02 ... 6.5 m Light source: LED, Red Supply voltage: DC Digital switching outputs: 1 Piece(s) Switching output 1: Transistor, PNP, Light switching (dark switching by reversing polarity of UB) Switching frequency: 500 Hz Connection: Cable, 2,000 mm, 3 -wire

## Technical data

### Basic data

Series	5B
Operating principle	Reflection principle
Contains	1x BT 205M 1x TKS 40x60.A 4x M3 x 8 screw

### Special version

Special version	Article set
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### Optical data

Operating range	0.02 ... 2.8 m (guaranteed operating range), With reflector TKS 40x60.A
Operating range limit	0.02 ... 4.2 m (typical operating range), With reflector TKS 40x60.A
Light source	LED, Red
Wavelength	645 nm
Transmitted-signal shape	Pulsed
LED group	Exempt group (in acc. with EN 62471)

### Electrical data

Protective circuit	Polarity reversal protection Short circuit protected
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### Performance data

Supply voltage $U_B$	10 ... 30 V, DC, Incl. residual ripple
Residual ripple	0 ... 15 %, From $U_B$
Open-circuit current	0 ... 20 mA

### Outputs

Number of digital switching outputs	1 Piece(s)
<b>Switching outputs</b>	
Type	Digital switching output
Voltage type	DC
Switching current, max.	50 mA
Switching voltage	high: $\geq(U_B-2.5V)$ low: $\leq 2.5 V$

### Switching output 1

Switching element	Transistor, PNP
Switching principle	Light switching (dark switching by reversing polarity of $U_B$ )

### Time behavior

Switching frequency	500 Hz
Response time	1 ms
Readiness delay	300 ms

### Connection

Number of connections	1 Piece(s)
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### Connection 1

Function	Signal OUT Voltage supply
Type of connection	Cable
Cable length	2,000 mm
Sheathing material	PVC
Cable color	Black
Number of conductors	3 -wire
Wire cross section	0.14 mm <sup>2</sup>

### Mechanical data

Dimension (W x H x L)	11 mm x 32.4 mm x 20 mm
Housing material	Plastic
Plastic housing	PC-ABS
Lens cover material	Plastic
Net weight	43 g
Housing color	Black Red
Type of fastening	Two M3 threaded sleeves Via optional mounting device
Recommended tightening torque for M3 fastening	0.9 N·m
Compatibility of materials	ECOLAB

### Operation and display

Type of display	LED
Number of LEDs	2 Piece(s)

## Technical data

### Environmental data

Ambient temperature, operation	-40 ... 60 °C
Ambient temperature, storage	-40 ... 70 °C

### Certifications

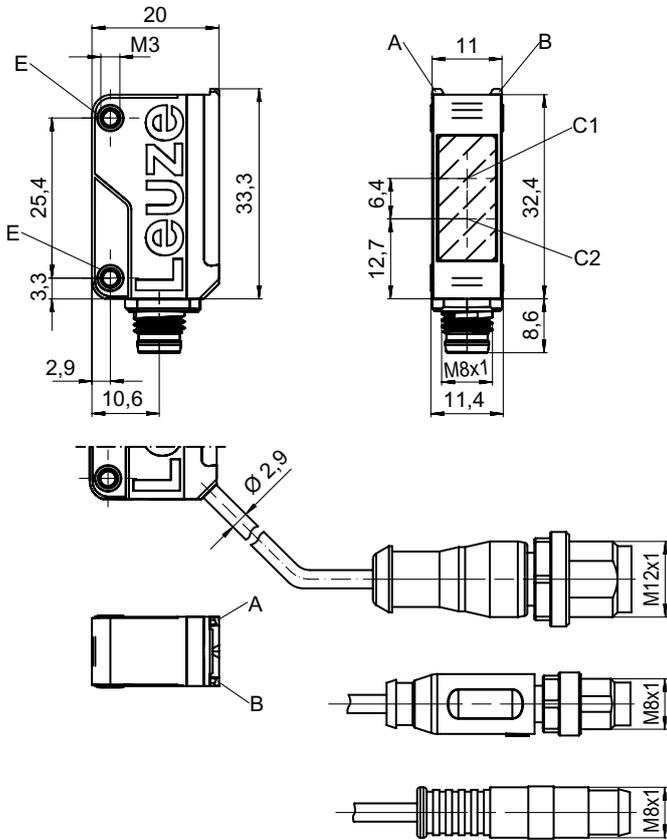
Degree of protection	IP 67
Protection class	III
Approvals	c UL US
Standards applied	IEC 60947-5-2

### Classification

Customs tariff number	85365019
ECLASS 5.1.4	27270902
ECLASS 8.0	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ECLASS 13.0	27270902
ECLASS 14.0	27270902
ECLASS 15.0	27270902
ECLASS 16.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
ETIM 9.0	EC002717
ETIM 10.0	EC002717

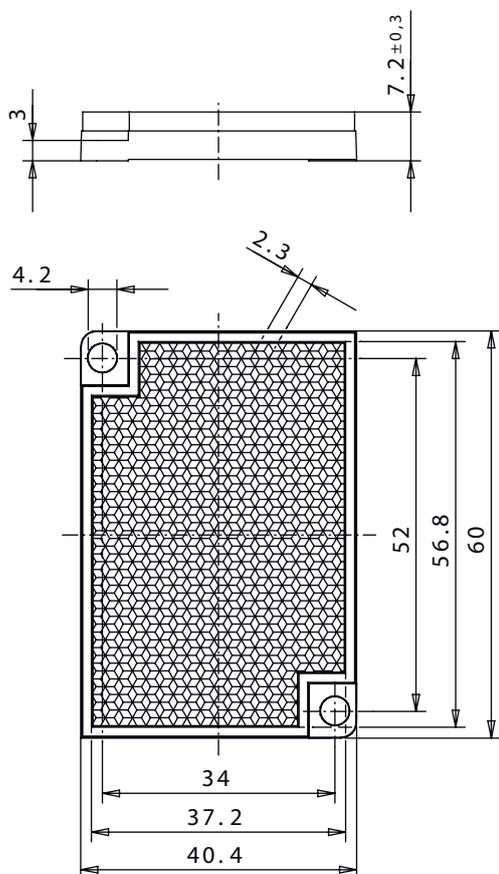
# Dimensioned drawings

All dimensions in millimeters

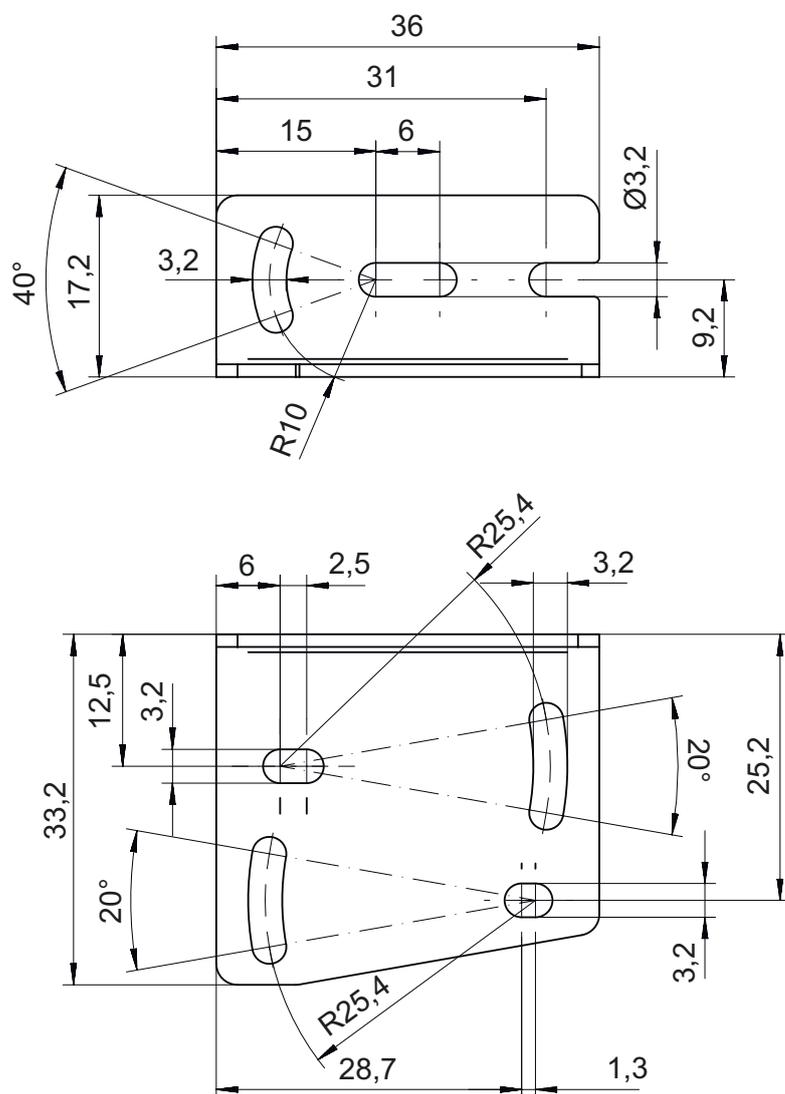


- A Green LED
- B Yellow LED
- C1 Receiver
- C2 Transmitter
- E Threaded sleeve

# Dimensioned drawings



## Dimensioned drawings



## Electrical connection

### Connection 1

Function	Signal OUT
	Voltage supply
Type of connection	Cable
Cable length	2,000 mm
Sheathing material	PVC
Cable color	Black
Number of conductors	3 -wire
Wire cross section	0.14 mm <sup>2</sup>

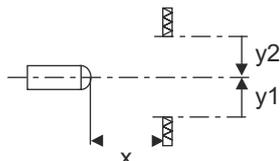
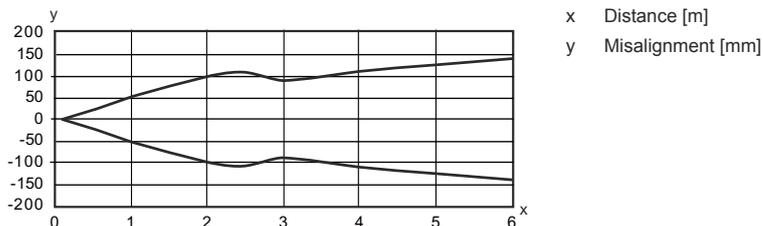
### Conductor color

### Conductor assignment

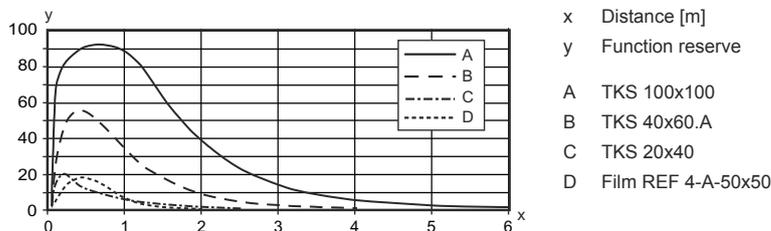
Brown	V+
Blue	GND
Black	OUT 1

# Diagrams

## Typ. response behavior (TKS100x100)



## Typ. function reserve



# Operation and display

LED	Display	Meaning
1	Yellow, continuous light	Light path free
	Yellow, flashing	Light path free, no function reserve
2	Green, continuous light	Operational readiness

# Part number code

Part designation: **AAA5B D-E.FF/GG.HH-JJ**

<b>AAA5B</b>	<p><b>Operating principle / construction</b>                      LS5B: Throughbeam photoelectric sensor transmitter                      LE5B: Throughbeam photoelectric sensor receiver                      PRK5B: Retro-reflective photoelectric sensor with polarization filter                      HT5B: Diffuse reflection sensor with background suppression                      ET5B: Energetic diffuse reflection sensor</p>
<b>D</b>	<p><b>Light type</b>                      n/a: red light                      I: infrared light                      PP: Power PinPoint® LED</p>
<b>E</b>	<p><b>Preset range (optional)</b>                      n/a: operating range acc. to data sheet                      xxxF: Preset range [mm]</p>
<b>FF</b>	<p><b>Equipment</b>                      1: 270° potentiometer                      D: Detection of stretch-wrapped objects                      M: Detection of semi-transparent media and transparent films                      XL: Extra long light spot                      n/a with retro-reflective photoelectric sensors (PRK): operating range not adjustable                      n/a with ET / HT: range adjustable via 8-turn potentiometer</p>

## Part number code

GG	<b>Switching output / Function</b> 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 9: deactivation input (deactivation with high signal) X: pin not used
HH	<b>Electrical connection</b> n/a: cable, standard length 2000 mm, 3-wire M8: M8 connector, 4-pin (plug) 200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug) 200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug) 200-M8.3: cable, length 200 mm with M8 connector, 3-pin, axial (plug) 200-M8.1: Cable, length 200 mm with snap-in M8 connector, 4-pin (plug) M8.3: M8 connector, 3-pin (plug)
JJ	<b>Version</b> Y1: mounting holes without threaded sleeve

Note	
	A list with all available device types can be found on the Leuze website at <a href="http://www.leuze.com">www.leuze.com</a> .

## Notes

<b>Observe intended use!</b>	
	<ul style="list-style-type: none"> <li>⌘ This product is not a safety sensor and is not intended as personnel protection.</li> <li>⌘ The product may only be put into operation by competent persons.</li> <li>⌘ Only use the product in accordance with its intended use.</li> </ul>

For UL applications:	
	<ul style="list-style-type: none"> <li>⌘ Only for use in "class 2" circuits</li> <li>⌘ These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/ CYJV7 or PVVA/PVVA7)</li> </ul>

## Accessories

### Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	50118542	BT 200M.5	Mounting bracket	Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type, Suited for M3 screws Type of mounting device: Adjustable Material: Stainless steel

## Accessories

	Part no.	Designation	Article	Description
	50124651	BT 205M-10SET	Mounting device set	Contains: 10x Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Metal

## Mounting technology - Rod mounts

	Part no.	Designation	Article	Description
	50117829	BTP 200M-D12	Mounting system	Design of mounting device: Protection hood Fastening, at system: For 12 mm rod Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal
	50117255	BTU 200M-D12	Mounting system	Contains: 2x M3 x 16 screw, 2 M3 x 20 screws, 2x position washers Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type, Suited for M3 screws Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal

### Note



A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.