

## Technical data sheet

### Polarized retro-reflective photoelectric

Part no.: 50116861

PRK318B.W/2N-M12

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- Dimensioned drawings
- Electrical connection
- Diagrams
- Operation and display
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- Part number code
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Figure can vary



## Technical data

### Basic data

Series	318B
Operating principle	Reflection principle

### Special version

Special version	90° - angular optics
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### Optical data

Operating range	Guaranteed operating range
Operating range	0.02 ... 4 m, With reflector TK(S) 100x100
Operating range limit	Typical operating range
Operating range limit	0.02 ... 5 m, With reflector TK(S) 100x100
Light source	LED, Red
LED light wavelength	620 nm
LED group	Exempt group (in acc. with EN 62471)
Transmitted-signal shape	Pulsed

### 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 ... 15 mA

### Outputs

Number of digital switching outputs	2 Piece(s)
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### Switching outputs

Voltage type	DC
Switching current, max.	100 mA
Switching voltage	high: $\geq(U_B-2.5V)$ low: $\leq 2.5V$

### Switching output 1

Assignment	Connection 1, pin 4
Switching element	Transistor, NPN
Switching principle	Light switching

### Switching output 2

Assignment	Connection 1, pin 2
Switching element	Transistor, NPN
Switching principle	Dark switching

### Timing

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

### Connection 1

Function	Signal OUT Voltage supply
Type of connection	Connector
Thread size	M12
Type	Male
Material	Plastic
No. of pins	4 -pin
Encoding	A-coded

### Mechanical data

Thread size	M18 x 1 mm
Dimension ( $\varnothing$ x L)	18 mm x 60.4 mm
Housing material	Plastic
Plastic housing	ABS
Lens cover material	Plastic
Net weight	20 g
Housing color	Black Red

### Operation and display

Type of display	LED
Number of LEDs	1 Piece(s)

### Environmental data

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

### Certifications

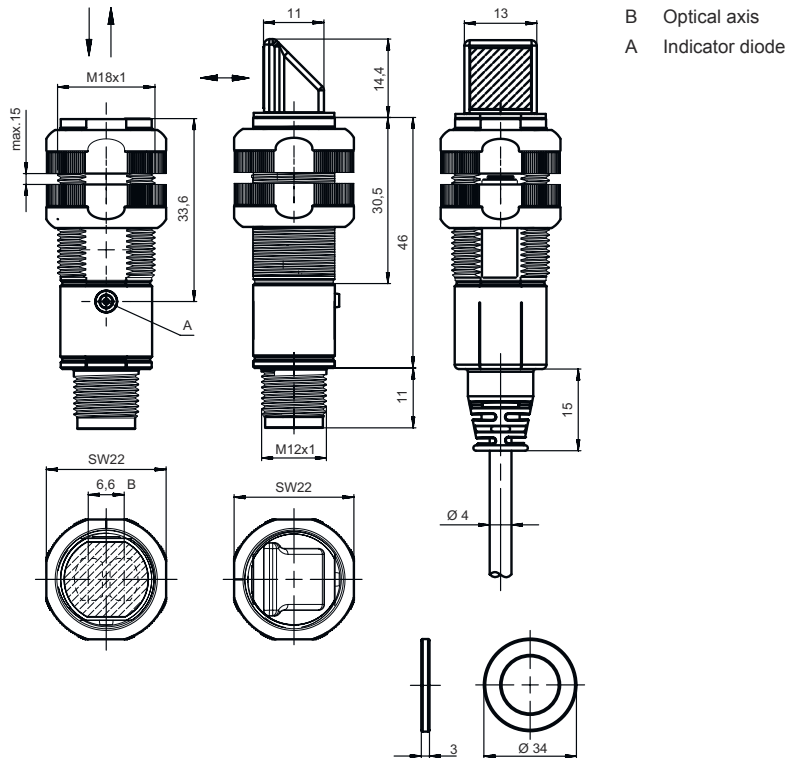
Degree of protection	IP 67
Protection class	III
Certifications	c UL US
Standards applied	IEC 60947-5-2

### Classification

Customs tariff number	85365019
eCl@ss 5.1.4	27270902
eCl@ss 8.0	27270902
eCl@ss 9.0	27270902
eCl@ss 10.0	27270902
eCl@ss 11.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717

# Dimensioned drawings

All dimensions in millimeters



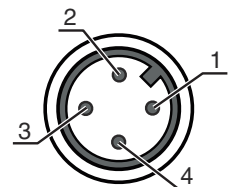
## Electrical connection

### Connection 1

Function	Signal OUT Voltage supply
Type of connection	Connector
Thread size	M12
Type	Male
Material	Plastic
No. of pins	4 -pin
Encoding	A-coded

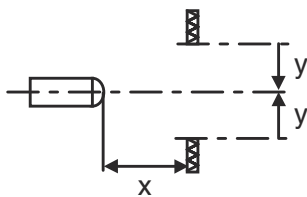
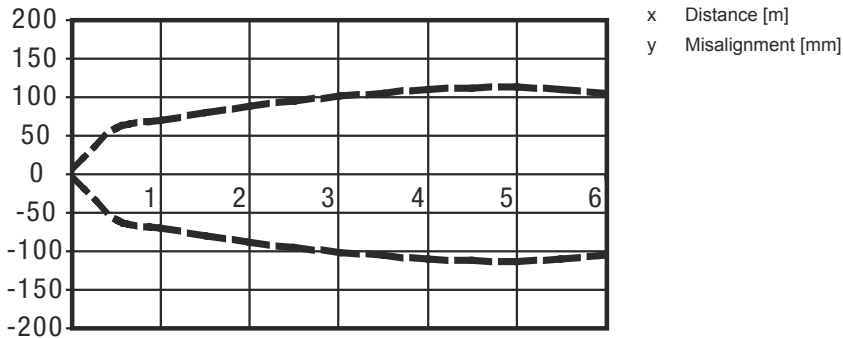
### Pin Pin assignment

Pin	Pin assignment
1	V+
2	OUT 2
3	GND
4	OUT 1

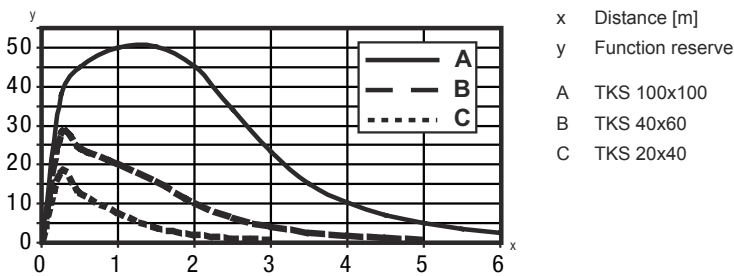


# Diagrams

Typ. response behavior (TK 100x100)



Typ. function reserve



## Operation and display

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

## Reflectors & reflective tapes

Part no.	Designation	Operating range Operating range	Description
50108300	REF 4-A-50x50	0.1 ... 1.3 m 0.1 ... 1.8 m	Design: Rectangular Reflective surface: 50 mm x 50 mm Material: Plastic Chemical designation of the material: PMMA Fastening: Self-adhesive



## Reflectors & reflective tapes

	Part no.	Designation	Operating range Operating range	Description
	50003192	TK 100x100	0.02 ... 4 m 0.02 ... 5 m	Design: Rectangular Reflective surface: 96 mm x 96 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Adhesive
	50003189	TK 30x50	0.05 ... 1.6 m 0.05 ... 2 m	Design: Rectangular Reflective surface: 29 mm x 45 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Adhesive
	50024127	TK 82.2	0.05 ... 3.3 m 0.05 ... 4 m	Design: Round Triple reflector size: 4 mm Reflection surface diameter: 79 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive
	50022816	TKS 100X100	0.02 ... 4 m 0.02 ... 5 m	Design: Rectangular Reflective surface: 96 mm x 96 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive
	50081283	TKS 20X40	0.04 ... 1.5 m 0.04 ... 2 m	Design: Rectangular Reflective surface: 16 mm x 38 mm Triple reflector size: 2.3 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive
	50040820	TKS 40X60	0.02 ... 2.6 m 0.02 ... 3.5 m	Design: Rectangular Reflective surface: 37 mm x 56 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive

## Part number code

Part designation: XXX318BY-AAAF.BB/CC-DDD

### XXX318B

#### Operating principle

PRK: retro-reflective photoelectric sensor with polarization filter  
 ET: energetic diffuse reflection sensor  
 FT: diffuse reflection sensor with fading  
 LE: throughbeam photoelectric sensor receiver  
 LS: throughbeam photoelectric sensor transmitter

### Y

#### Light type

n/a: red light  
 I: infrared light

### AAAF


#### Preset range (optional)

n/a: operating range acc. to data sheet  
 xxxF: preset range [mm]



## Part number code

<b>BB</b>	<b>Equipment</b> n/a: axial optics W: 90° angular optics 3: teach-in via button X: reinforced fading
<b>CC</b>	<b>Switching output / function (OUT1 = pin 4, OUT2 = pin 2):</b> 4: PNP transistor output, light switching P: PNP transistor output, dark switching 2: NPN transistor output, light switching N: NPN transistor output, dark switching 9: input for transmitter deactivation (deactivation with HIGH signal) D: input for transmitter deactivation (deactivation with LOW signal) X: pin not used
<b>DDD</b>	<b>Electrical connection</b> n/a: cable, standard length 2000 mm, 4-wire M12: M12 connector, 4-pin (plug) 5000: cable, standard length 5000 mm, 4-wire 200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug)


### Note

	<ul style="list-style-type: none"> <li>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>.</li> </ul>
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## 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:

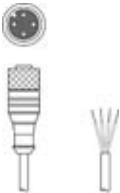

	<ul style="list-style-type: none"> <li>For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).</li> <li>These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/ CYJV7 or PVVA/PVVA7)</li> </ul>
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## Further information


- Sum of the output currents for both outputs, 50 mA for ambient temperatures > 40 °C

## Accessories


### Connection technology - Connection cables

	Part no.	Designation	Article	Description
	50130652	KD U-M12-4A-V1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC
	50130690	KD U-M12-4W-V1-050	Connection cable	Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC


### Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	50113548	BT D18M.5	Mounting bracket	Diameter, inner: 18 mm 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: Stainless steel

### Mounting technology - Rod mounts

	Part no.	Designation	Article	Description
	50117490	BTU D18M-D12	Mounting system	Design of mounting device: Mounting system Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal



### Mounting technology - Other

	Part no.	Designation	Article	Description
	50121904 **	BT318B-OM	Fastening	Design of mounting device: Mounting clamp Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Swiveling, Adjustable, Turning Material: Plastic


\*\* Included in delivery contents

## Accessories

### Standard reflectors

	Part no.	Designation	Article	Description
	50081283	TKS 20X40	Reflector	Design: Rectangular Reflective surface: 16 mm x 38 mm Triple reflector size: 2.3 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive
	50040820	TKS 40X60	Reflector	Design: Rectangular Reflective surface: 37 mm x 56 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive

### Reflective tapes for standard applications

	Part no.	Designation	Article	Description
	50108300	REF 4-A-50x50	Reflective tape	Design: Rectangular Reflective surface: 50 mm x 50 mm Material: Plastic Chemical designation of the material: PMMA Fastening: Self-adhesive

#### Note



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