



Figure can vary

**Part no.: 50116861**  
**PRK318B.W/2N-M12**  
**Polarized retro-reflective photoelectric sensor**



## Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Diagrams
- Operation and display
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## Technical data

<b>Basic data</b>	
Series	318B
Operating principle	Reflection principle
<b>Special design</b>	
Special design	90° - angular optics
<b>Optical data</b>	
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
<b>Electrical data</b>	
Protective circuit	Polarity reversal protection Short circuit protected
<b>Performance data</b>	
Supply voltage $U_B$	10 ... 30 V , DC , Incl. residual ripple
Residual ripple	0 ... 15 % , From $U_B$
Open-circuit current	0 ... 15 mA
<b>Outputs</b>	
Number of digital switching outputs	2 Piece(s)
<b>Switching outputs</b>	
Voltage type	DC
Switching current, max.	100 mA
Switching voltage	high: $\geq(U_B-2.5V)$ low: $\leq 2.5V$
<b>Switching output 1</b>	
Assignment	Connection 1, pin 4
Switching element	Transistor , NPN
Switching principle	Light switching
<b>Switching output 2</b>	
Assignment	Connection 1, pin 2
Switching element	Transistor , NPN
Switching principle	Dark switching
<b>Timing</b>	
Switching frequency	500 Hz
Response time	1 ms
Readiness delay	300 ms
<b>Connection</b>	

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#### Connection 1

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

#### Mechanical data

Thread size	M18 x 1 mm
Dimension (Ø x L)	18 mm x 60.4 mm
Housing material	Plastic , 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

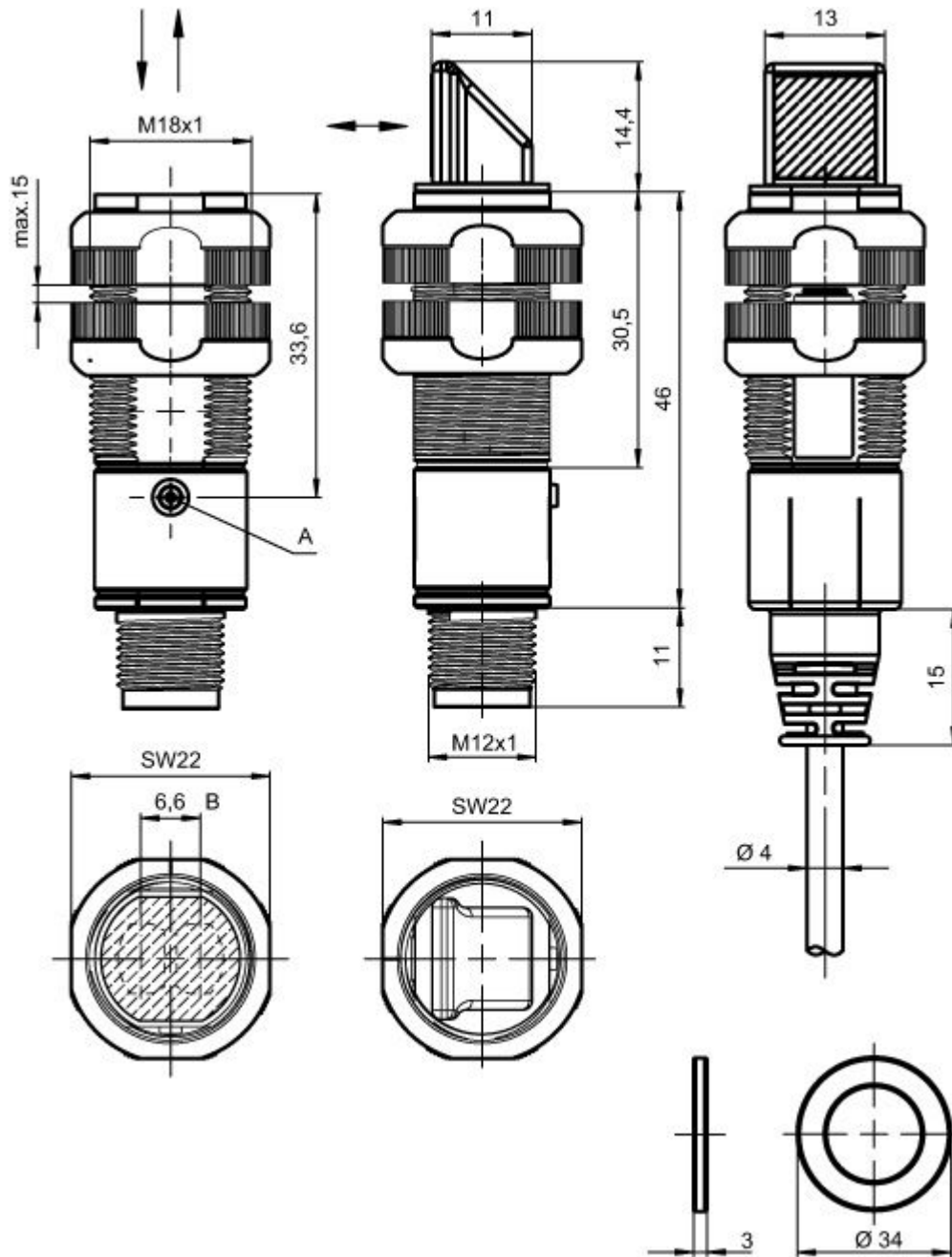
Degree of protection	IP 67
Protection class	III
Certifications	c UL US
Standards applied	IEC 60947-5-2

#### Classification

Customs tariff number	85365019
eCl@ss 8.0	27270902
eCl@ss 9.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717

## Dimensioned drawings

All dimensions in millimeters



B Optical axis  
A Indicator diode

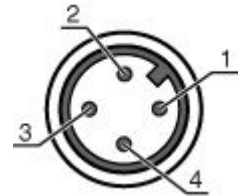
## Electrical connection

Connection 1	
Type of connection	Connector
Function	Signal OUT Voltage supply
Thread size	M12
Type	Male
Material	Plastic
No. of pins	4 -pin

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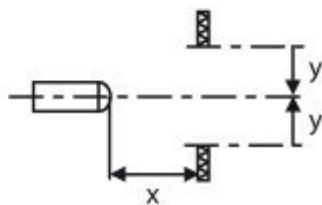
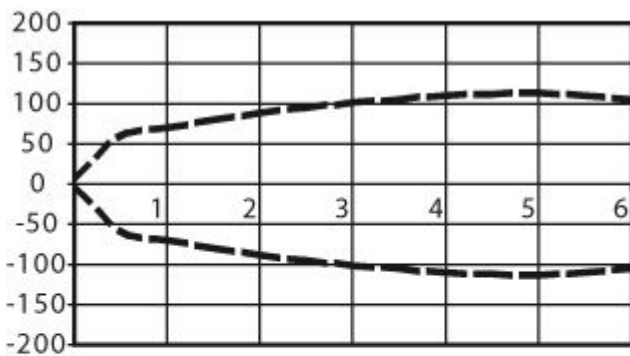
<b>Connection 1</b>	
Encoding	A-coded

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



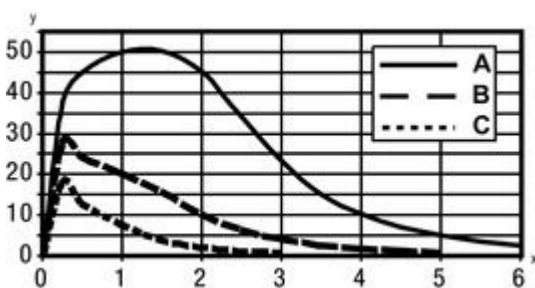
**Diagrams**

Typ. response behavior (TK 100x100)



x Distance [m]  
y Misalignment [mm]

Typ. function reserve



x Distance [m]  
y Function reserve  
A TKS 100x100






B TKS 40x60  
C TKS 20x40

## Operation and display



### LEDs

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 limit	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
	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

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	Part no.	Designation	Operating range/ Operating range limit	Description
	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	<b>Operating principle:</b> 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	<b>Light type:</b> n/a: red light I: infrared light
AAAF	<b>Pre-set range (optional):</b> n/a: operating range acc. to data sheet XXXX: pre-set range [mm]
BB	<b>Equipment:</b> n/a: axial optics W: 90° angular optics 3: teach-in via button X: reinforced fading
CC	<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
DDD	<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

### Note

A list with all available device types can be found on the Leuze electronic website at [www.leuze.com](http://www.leuze.com).

## Notes

### Observe intended use!

- This product is not a safety sensor and is not intended as personnel protection.
- The product may only be put into operation by competent persons.
- Only use the product in accordance with its intended use.





### For UL applications:

- For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).
- 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)


- 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

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## 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

## 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