



Part no.: 50141602
PRK318B/2N-5000
Polarized retro-reflective photoelectric sensor



Figure can vary

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- Dimensioned drawings
- Electrical connection
- Diagrams
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Technical data

Basic data	
Series	318B
Operating principle	Reflection principle

Optical data	
Operating range	Guaranteed operating range
Operating range	0.02 ... 4.5 m, With reflector TK(S) 100x100
Operating range limit	Typical operating range
Operating range limit	0.02 ... 6 m, With reflector TK(S) 100x100
Light source	LED, Red
LED light wavelength	620 nm
Transmitted-signal shape	Pulsed
LED group	Exempt group (in acc. with EN 62471)

Electrical data	
Protective circuit	Short circuit protected Polarity reversal protection

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)

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

Switching output 1	
Switching element	Transistor, NPN
Switching principle	Light switching

Switching output 2	
Switching element	Transistor, NPN
Switching principle	Dark switching

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

Connection	
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Connection 1

Type of connection	Cable
Function	Signal OUT Voltage supply
Cable length	5,000 mm
Sheathing material	PUR
Cable color	Black
Number of conductors	4 -wire
Wire cross section	0.2 mm ²

Mechanical data

Thread size	M18 x 1 mm
Dimension (Ø x L)	18 mm x 46 mm
Housing material	Plastic, ABS
Lens cover material	Plastic
Net weight	120 g
Housing color	Red Black

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

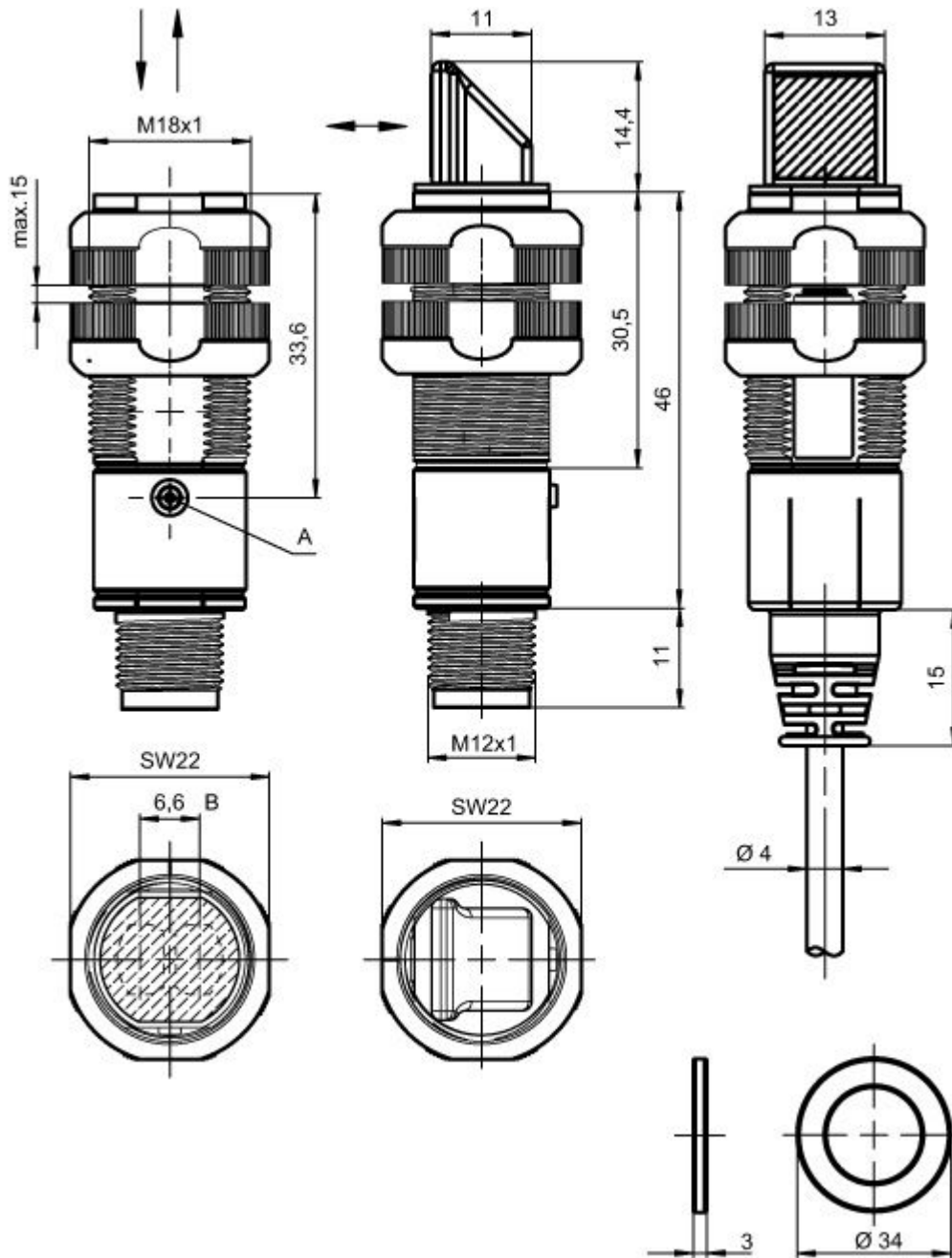
Degree of protection	IP 67
Protection class	III
Certifications	c UL US
Standards applied	IEC 60947-5-2

Classification

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	Cable
Function	Signal OUT Voltage supply
Cable length	5,000 mm
Sheathing material	PUR
Cable color	Black
Number of conductors	4 -wire

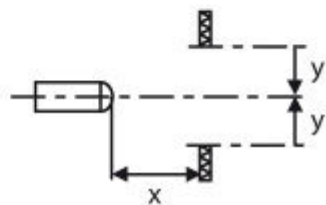
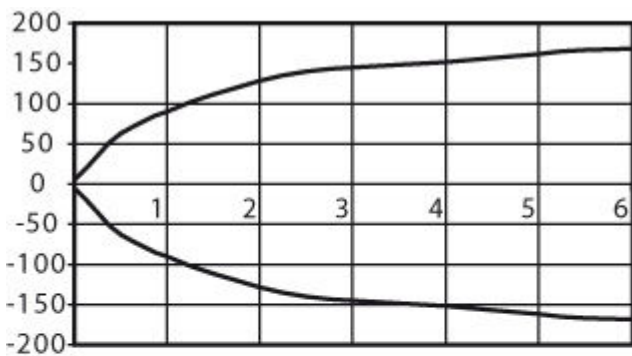
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Connection 1	
Wire cross section	0.2 mm ²

Conductor color	Conductor assignment
Brown	V+
White	OUT 2
Blue	GND
Black	OUT 1

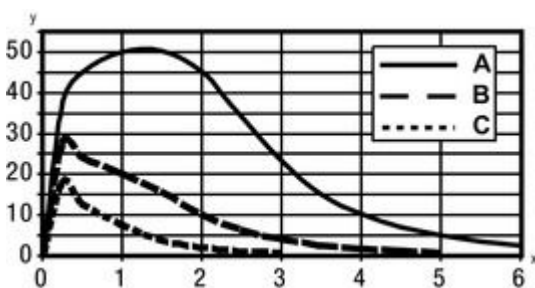
Diagrams

Typ. response behavior (TK 100x100)



x Distance [m]
y Misalignment [mm]

Typ. function reserve (axial model)



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	0.08 ... 1.4 m 0.08 ... 2 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 ... 4.5 m 0.02 ... 6 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	0.03 ... 1.9 m 0.03 ... 2.5 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 ... 3.6 m 0.05 ... 4.5 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 ... 4.5 m 0.02 ... 6 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 ... 1.6 m 0.04 ... 2.2 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
	50023525	TKS 30X50	0.03 ... 1.9 m 0.03 ... 2.5 m	Design: Rectangular Reflective surface: 27 mm x 44 mm Triple reflector size: 3 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive
	50040820	TKS 40X60	0.02 ... 3 m 0.02 ... 4 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	Pre-set range (optional): n/a: operating range acc. to data sheet XXXX: pre-set range [mm]
BB	Equipment: n/a: axial optics W: 90° angular optics 3: teach-in via button X: reinforced fading
CC	Switching output / function (OUT1 = pin 4, OUT2 = pin 2):: 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	Electrical connection: n/a: cable, PVC, standard length 2000 mm, 4-wire M12: M12 connector, 4-pin (plug) 5000: cable, PVC, standard length 5000 mm, 4-wire

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

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
	50117257	BT D21M	Mounting bracket	Diameter, inner: 21 mm Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Adjustable Material: Metal

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





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Mounting technology - Other





	Part no.	Designation	Article	Description
	50132729	AC D18M-CS	Clamp	Contains: 2x M24 mounting nut Diameter, inner: 18 mm Design of mounting device: Mounting clamp Fastening, at system: Screw type, Through-hole mounting Mounting bracket, at device: insertable, Clampable with limit stop Type of mounting device: Clampable, With limit stop Material: Metal
	50083189	BT 318-ARH	Adjustment fastening part	Design of mounting device: Mounting plate Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Swiveling, Adjustable Material: Metal
	50117258	BT 318P-LS	Fastening	Contains: 10x Design of mounting device: Mounting clamp Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Rigid Material: Plastic
	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
	50134985	MTKS 20x30.1	Reflector	Design: Rectangular Reflective surface: 18.5 mm x 28.5 mm Triple reflector size: 1 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA Fastening: Through-hole mounting, Adhesive
	50003192	TK 100x100	Reflector	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	Reflector	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	Reflector	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

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	Part no.	Designation	Article	Description
	50022816	TKS 100X100	Reflector	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	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
	50023525	TKS 30X50	Reflector	Design: Rectangular Reflective surface: 27 mm x 44 mm Triple reflector size: 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