

OVERVIEW



Bottle cleaning

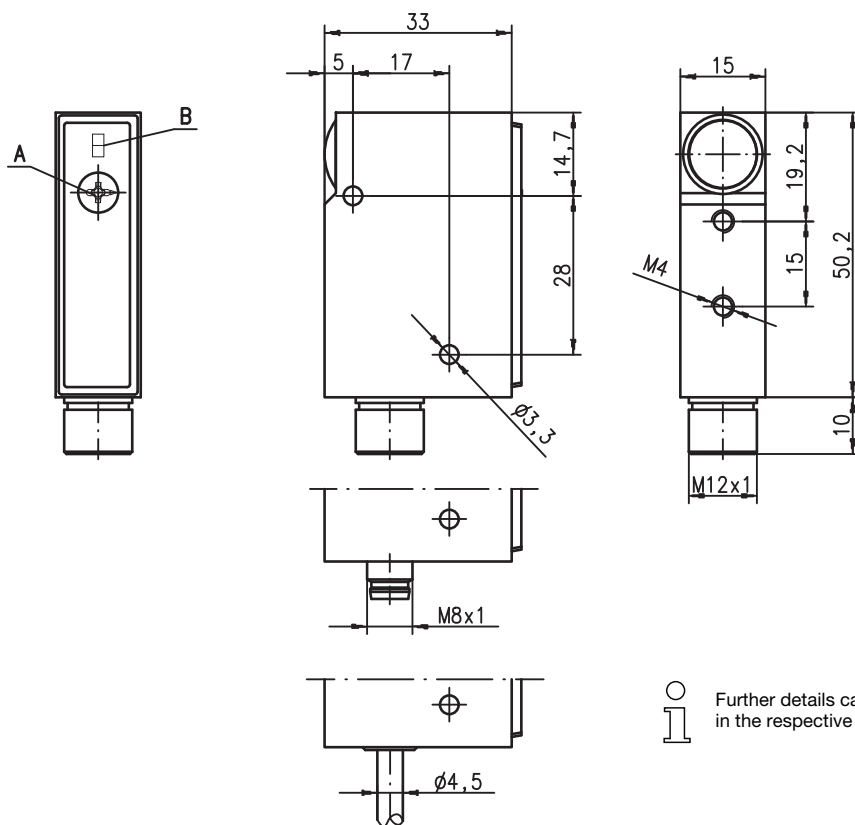



Suspended bottle transport



Bottle inspection


Dimensioned drawing



 Further details can be found in the respective data sheet.

- A** Sensitivity adjustment
- B** Indicator diode

18 SERIES

Operating principle	Typ. operating range limits	Page
 Retro-reflective sensors	0 ... 5 m	72

Other 18 Series products:

 Ultrasonic sensors	LSU 18	294
 AS-interface sensors	IPRK 18	454



Common technical data

Electrical data	Operating voltage U_B	10 ... 30VDC
	Residual ripple	$\leq 15\%$ of U_B
	Open-circuit current	$\leq 35\text{mA}$
	Signal voltage high/low	$\geq (U_B - 2\text{V}) / \leq 2\text{V}$
Indicators	Yellow LED	Switching output
Mechanical data	Housing	Diecast zinc
	Optics cover	Glass
	Weight (connector/cable)	90g/150g
Environmental data	Ambient temperature (operation)	$-25^\circ\text{C} \dots +55^\circ\text{C}$
	VDE safety class	III
	Protection class	IP 67, IP 69K
	Standards applied	IEC 60947-5-2, UL 508

Mounting systems for this series can be found from page 460 onwards

Features

- Stainless steel and metal housing
- Glass optics
- IP 67 and IP 69K
- Detection of PET, foil, and glass



Optical Sensor ABCs

- | | |
|--|----------|
| ● Retro-reflective sensors | Page 505 |
| ● Retro-reflective sensor with polarization filter | Page 505 |
| ● A ² LS | Page 513 |

RETRO-REFLECTIVE SENSORS

Part description Part No.:	Operating range ¹⁾ [m] Typ. op. range limit ¹⁾ [m]	<input type="checkbox"/> <input type="checkbox"/>	Switching frequency	Light source	Output	Switching
Retro-reflective sensors						
RKR 18 / 4 L 50102731	0 <input type="text" value="4"/> 4 0 <input type="text" value="5"/> 5	<input type="checkbox"/>	1000Hz	Red light	PNP/DC	Light/dark reversible
RKR 18 / 4, 6000 50102730	0 <input type="text" value="4"/> 4 0 <input type="text" value="5"/> 5	<input type="checkbox"/>	1000Hz	Red light	PNP/DC	Light/dark reversible
RKR 18 / 4 DL8.45.1 50041448	0 <input type="text" value="2,4"/> 2,4 0 <input type="text" value="3"/> 3	<input type="checkbox"/>	1500Hz	Red light	PNP/DC	Light/dark reversible
RKR 18 / 4 DL8.45 50041446	0 <input type="text" value="2,4"/> 2,4 0 <input type="text" value="3"/> 3	<input type="checkbox"/>	1500Hz	Red light	PNP/DC	Light/dark reversible
RK 18 / 4 DL.45 50081364	0 <input type="text" value="2,4"/> 2,4 0 <input type="text" value="3"/> 3	<input type="checkbox"/>	1500Hz	Red light	PNP/DC	Light/dark reversible

1) The specified values apply in combination with reflectors TK(S) 100 x 100, additional reflectors with range specifications can be found on page 495

We reserve the right to make changes • BR18_PRK1_en.fm

Accessories / connection cables		More accessories can be found from page 458 onwards	
Part No.	Designation	Features	
a 50104523	K - D M8W - 3P - 5m - PVC	Connection cable 5000mm, M8 angular, 3-pin, PVC	
b 50104522	K - D M8A - 3P - 5m - PVC	Connection cable 5000mm, M8 axial, 3-pin, PVC	
c 50104543	K - D M12W - 4P - 2m - PVC	Connection cable 2000mm, M12 angular, 4-pin, PVC	
d 50104542	K - D M12A - 4P - 2m - PVC	Connection cable 2000mm, M12 axial, 4-pin, PVC	
e 50104545	K - D M12W - 4P - 5m - PVC	Connection cable 5000mm, M12 angular, 4-pin, PVC	
f 50104544	K - D M12A - 4P - 5m - PVC	Connection cable 5000mm, M12 axial, 4-pin, PVC	

18 SERIES
Retro-reflective sensors



Standard Sensors

Connection	Option	Accessories	Typ. light spot
M12 connector	4, 6	c, d, e, f	
Cable, 6 m	4, 6		
M8 connector	1, 2, 3, 4, 5, 6	a, b	
M8 connector	1, 2, 3, 4, 6	a, b	
M12 connector	1, 2, 3, 4, 6	c, d, e, f	



Measuring Sensors

Ultrasonic Sensors

Inductive Switches

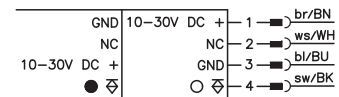
Optical Sensor ABCs

- Retro-reflective sensors Page 505
- Connection types Page 510
- Outputs Page 510

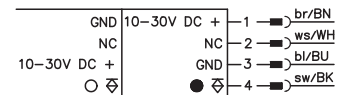
Forked Sensors

Electrical connection

RKR 18/4, 6000
RKR 18/4 L

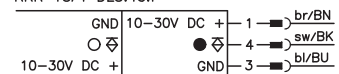


RK 18/4 DL.45



RKR 18/4 DL8.45

RKR 18/4 DL8.45.1



Special Sensors

Fiber Optic Sensors

Light Curtains

Protective Sensors

Options

- 1 Sensitivity adjustment via multiturn potentiometer
- 2 Transparent media (foil < 20µm and bottles)
- 3 Green LED for precise adjustment of the operating point
- 4 Autocollimation principle
- 5 Stainless steel housing
- 6 UL approval

RETRO-REFLECTIVE SENSORS

Part description Part No.:	Operating range [m] Typ. op. range limit [m]	<input type="checkbox"/> <input type="checkbox"/>	Switching frequency	Light source	Output	Switching
Retro-reflective sensors with polarization filter						
PRK 18 / 4 L 50081254	0 <input type="text" value="4"/> ¹⁾ 0 <input type="text" value="5"/> ¹⁾	<input type="checkbox"/>	1000Hz	Red light	PNP/DC	Light/dark reversible
PRK 18 / 4, 6000 50033244	0 <input type="text" value="4"/> ¹⁾ 0 <input type="text" value="5"/> ¹⁾	<input type="checkbox"/>	1000Hz	Red light	PNP/DC	Light/dark reversible
IPRK 18 / 4 DL.41 50033552	0 <input type="text" value="3"/> ¹⁾ 0 <input type="text" value="4"/> ¹⁾	<input type="checkbox"/>	1000Hz	Red light	PNP/DC	Light/dark reversible
PRK 18 / 24 DL.42 50033554	0 <input type="text" value="3"/> ¹⁾ 0 <input type="text" value="4"/> ¹⁾	<input type="checkbox"/>	1000Hz	Red light	PNP/DC NPN/DC	Dark
PRK 18 / 24 DL.46 50032798	0 <input type="text" value="3"/> ¹⁾ 0 <input type="text" value="4"/> ¹⁾	<input type="checkbox"/>	1000Hz	Red light	PNP/DC NPN/DC	Light/dark reversible
PRK 18 / 6.001 - S12 50109493	0 <input type="text" value="3"/> ¹⁾ 0 <input type="text" value="4"/> ¹⁾	<input type="checkbox"/>	1000Hz	Red light	1 x push-pull/DC, 1 x PNP/DC	Configurable via IO-Link

1) The specified values apply in combination with reflectors TK(S) 100 x 100, additional reflectors with range specifications can be found on page 495

Accessories / connection cables		More accessories can be found from page 458 onwards	
Part No.	Designation	Features	
a 50104543	K - D M12W - 4P - 2m - PVC	Connection cable 2000mm, M12 angular, 4-pin, PVC	
b 50104542	K - D M12A - 4P - 2m - PVC	Connection cable 2000mm, M12 axial, 4-pin, PVC	
c 50104545	K - D M12W - 4P - 5m - PVC	Connection cable 5000mm, M12 angular, 4-pin, PVC	
d 50104544	K - D M12A - 4P - 5m - PVC	Connection cable 5000mm, M12 axial, 4-pin, PVC	
e 50104558	K - D M12W - 5P - 5m - PVC	Connection cable 5000mm, M12 angular, 5-pin, PVC	
f 50104557	K - D M12A - 5P - 5m - PVC	Connection cable 5000mm, M12 axial, 5-pin, PVC	

18 SERIES
Retro-reflective sensors



Standard Sensors

Measuring Sensors

Ultrasonic Sensors

Inductive Switches

Forked Sensors

Special Sensors

Fiber Optic Sensors

Light Curtains

Protective Sensors

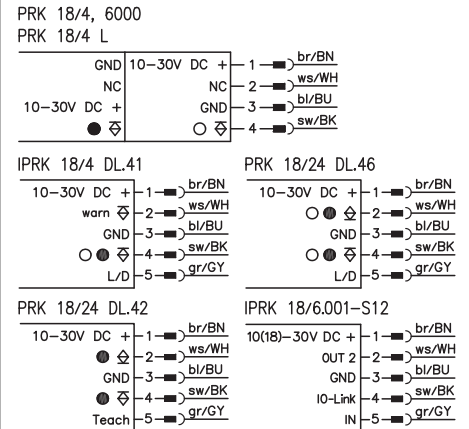
Connection	Option	Accessories	Typ. light spot
M12 connector	4, 9	a, b, c, d	
Cable, 6 m	4, 9		
M12 connector	2, 3, 5, 7, 8, 9	e, f	
M12 connector	2, 3, 5, 6, 7, 9	e, f	
M12 connector	2, 3, 5, 7, 9	e, f	
M12 connector	1, 2, 3, 5, 6, 7, 8, 9	e, f	



Optical Sensor ABCs

- Retro-reflective sensors with polarization filter Page 505
- Connection types Page 510
- Outputs Page 510

Electrical connection



Options

- 1 Extensive configuration of input and outputs via IO-Link
- 2 Transparent media (foil < 20µm and bottles)
- 3 LEDs for the operating mode/setting the operating point
- 4 Autocollimation principle
- 5 Teach-in via step switch
- 6 Teach-in via control line
- 7 Dirt/cleaning compensation (step/peak tracking)
- 8 Warning output
- 9 UL approval

RETRO-REFLECTIVE SENSORS

Part description Part No.:	Operating range [m] Typ. op. range limit [m]	<input type="checkbox"/> <input type="checkbox"/>	Switching frequency	Light source	Output	Switching						
Retro-reflective sensors with polarization filter												
PRK 18 / 4 L.4 50104415	<table border="1"> <tr><td>0</td><td>2,4</td><td>¹⁾</td></tr> <tr><td>0</td><td>3</td><td>¹⁾</td></tr> </table>	0	2,4	¹⁾	0	3	¹⁾	<input type="checkbox"/>	1500Hz	Red light	PNP/DC	Light/dark reversible
0	2,4	¹⁾										
0	3	¹⁾										
PRK 18 / 4 DL.4 50080153	<table border="1"> <tr><td>0</td><td>2,4</td><td>¹⁾</td></tr> <tr><td>0</td><td>3</td><td>¹⁾</td></tr> </table>	0	2,4	¹⁾	0	3	¹⁾	<input type="checkbox"/>	1500Hz	Red light	PNP/DC	Dark/light reversible
0	2,4	¹⁾										
0	3	¹⁾										
PRK 18 / 2 DL.4 50081153	<table border="1"> <tr><td>0</td><td>2,4</td><td>¹⁾</td></tr> <tr><td>0</td><td>3</td><td>¹⁾</td></tr> </table>	0	2,4	¹⁾	0	3	¹⁾	<input type="checkbox"/>	1500Hz	Red light	NPN/DC	Dark/light reversible
0	2,4	¹⁾										
0	3	¹⁾										
IPRK 18 / V L.03 50106974	<table border="1"> <tr><td>0</td><td>1</td><td>²⁾</td></tr> <tr><td>0</td><td>1,2</td><td>²⁾</td></tr> </table>	0	1	²⁾	0	1,2	²⁾	<input type="checkbox"/>	–	Red light	Analog/mA, 1 x PNP/DC	–
0	1	²⁾										
0	1,2	²⁾										

1) The specified values apply in combination with reflectors TK(S) 100 x 100, additional reflectors with range specifications can be found on page 495
 2) The specified values apply in combination with reflectors MTKS 50 x 50, additional reflectors with range specifications can be found on page 495

We reserve the right to make changes • BR18_PRK3_en.fm

Accessories / connection cables		More accessories can be found from page 458 onwards	
Part No.	Designation	Features	
a 50104543	K - D M12W - 4P - 2m - PVC	Connection cable 2000mm, M12 angular, 4-pin, PVC	
b 50104542	K - D M12A - 4P - 2m - PVC	Connection cable 2000mm, M12 axial, 4-pin, PVC	
c 50104545	K - D M12W - 4P - 5m - PVC	Connection cable 5000mm, M12 angular, 4-pin, PVC	
d 50104544	K - D M12A - 4P - 5m - PVC	Connection cable 5000mm, M12 axial, 4-pin, PVC	
e 50104558	K - D M12W - 5P - 5m - PVC	Connection cable 5000mm, M12 angular, 5-pin, PVC	
f 50104557	K - D M12A - 5P - 5m - PVC	Connection cable 5000mm, M12 axial, 5-pin, PVC	

18 SERIES
Retro-reflective sensors



Standard Sensors

Connection	Option	Accessories	Typ. light spot
M12 connector	1, 2, 3, 4, 7	a, b, c, d	
M12 connector	1, 2, 3, 4, 7	a, b, c, d	
M12 connector	1, 2, 3, 4, 7	a, b, c, d	
M12 connector	3, 5, 6, 7	e, f	



Measuring Sensors

Ultrasonic Sensors

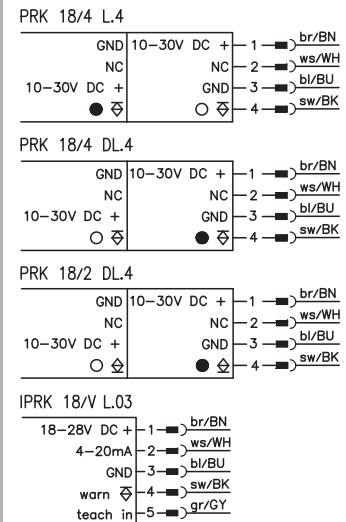
Inductive Switches

Optical Sensor ABCs

- Retro-reflective sensors with polarization filter Page 505
- Connection types Page 510
- Outputs Page 510

Forked Sensors

Electrical connection



Special Sensors

Fiber Optic Sensors

Light Curtains

Protective Sensors

Options

- 1 Sensitivity adjustment via multiturn potentiometer
- 2 Transparent media (foil < 20µm and bottles)
- 3 LEDs for the operating mode/setting the operating point
- 4 Autocollimation principle
- 5 Teach-in via control line
- 6 Warning output
- 7 UL approval