

OVERVIEW



Bottle cleaning

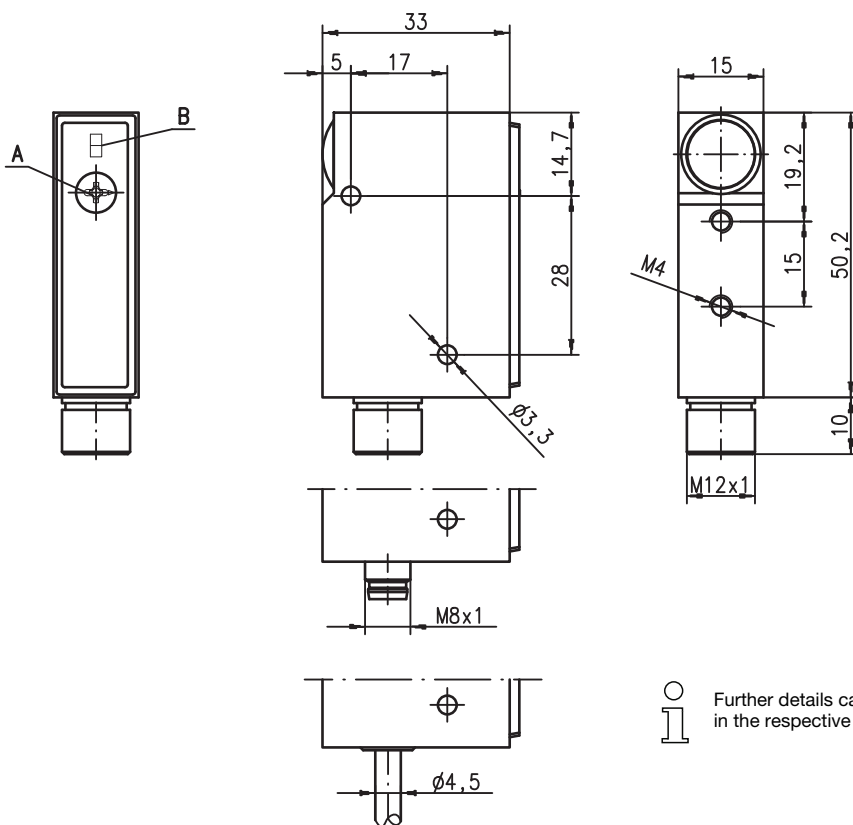



Suspended bottle transport



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 <input type="text"/> 5 m | 54 |

Other 18 Series products:

| | | |
|--|---------|-----|
|  Ultrasonic sensors | LSU 18 | 252 |
|  AS-interface sensors | IPRK 18 | 360 |



Measuring Sensors

Ultrasonic Sensors

Forked Sensors

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 | $\geq (U_B - 2V) / \leq 2V$ |
| Indicators | Yellow LED | Switching output |
| Mechanical data | Housing | Diecast zinc |
| | Optics cover | Glass |
| | Weight (plug/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 |
| | | |

Features

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



Special Sensors

Fibre Optic Sensors

Light Curtains

Optical Sensor ABCs

- | | |
|---|----------|
| ● Retro-reflective sensors | Page 409 |
| ● Retro-reflective sensors with polarisation filter | Page 409 |
| ● A ² LS | Page 417 |

Protective Sensors

Mounting systems for this series can be found from page 367 onwards

Ex Sensors

AS-interface Sensors

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 501 02731 | 0 4 0 5 | <input type="checkbox"/> <input type="checkbox"/> | 1000Hz | Red light | PNP/DC | Light/dark reversible |
| RKR 18 / 4, 6000 501 02730 | 0 4 0 5 | <input type="checkbox"/> <input type="checkbox"/> | 1000Hz | Red light | PNP/DC | Light/dark reversible |
| RKR 18 / 4 DL8.45.1 500 41448 | 0 2.4 0 3 | <input type="checkbox"/> <input type="checkbox"/> | 1500Hz | Red light | PNP/DC | Light/dark reversible |
| RKR 18 / 4 DL8.45 500 41446 | 0 2.4 0 3 | <input type="checkbox"/> <input type="checkbox"/> | 1500Hz | Red light | PNP/DC | Light/dark reversible |
| RK 18 / 4 DL.45 500 81364 | 0 2.4 0 3 | <input type="checkbox"/> <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 401

We reserve the right to make changes • BR18_PRK1_GB.fm

| Accessories / connection cables | | More accessories can be found from page 364 onwards | |
|---------------------------------|----------------------------|--|--|
| Part No. | Designation | Features | |
| a 501 04523 | K - D M8W - 3P - 5m - PVC | Connection cable 5000mm, M8 angular, 3-pin, PVC | |
| b 501 04522 | K - D M8A - 3P - 5m - PVC | Connection cable 5000mm, M8 axial, 3-pin, PVC | |
| c 501 04543 | K - D M12W - 4P - 2m - PVC | Connection cable 2000mm, M12 angular, 4-pin, PVC | |
| d 501 04542 | K - D M12A - 4P - 2m - PVC | Connection cable 2000mm, M12 axial, 4-pin, PVC | |
| e 501 04545 | K - D M12W - 4P - 5m - PVC | Connection cable 5000mm, M12 angular, 4-pin, PVC | |
| f 501 04544 | 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

Forked Sensors

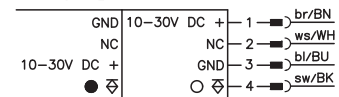
Optical Sensor ABCs

- Retro-reflective sensors Page 409
- Connection types Page 414
- Outputs Page 414

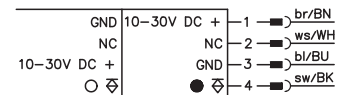
Special Sensors

Electrical connection

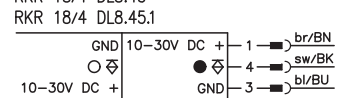
RKR 18/4, 6000
RKR 18/4 L



RK 18/4 DL.45



RKR 18/4 DL8.45



Fibre Optic Sensors

Light Curtains

Protective Sensors

Ex Sensors

AS-interface 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 polarisation filter | | | | | | |
| PRK 18 / 4 L 500 81254 | <input type="text" value="0"/> <input type="text" value="4"/> ¹⁾ <input type="text" value="0"/> <input type="text" value="5"/> ¹⁾ | <input type="checkbox"/> | 1000Hz | Red light | PNP/DC | Light/dark reversible |
| PRK 18 / 4, 6000 500 33244 | <input type="text" value="0"/> <input type="text" value="4"/> ¹⁾ <input type="text" value="0"/> <input type="text" value="5"/> ¹⁾ | <input type="checkbox"/> | 1000Hz | Red light | PNP/DC | Light/dark reversible |
| IPRK 18 / 4 DL.41 500 33552 | <input type="text" value="0"/> <input type="text" value="3"/> ¹⁾ <input type="text" value="0"/> <input type="text" value="4"/> ¹⁾ | <input type="checkbox"/> | 1000Hz | Red light | PNP/DC | Light/dark reversible |
| PRK 18 / 24 DL.42 500 33554 | <input type="text" value="0"/> <input type="text" value="3"/> ¹⁾ <input type="text" value="0"/> <input type="text" value="4"/> ¹⁾ | <input type="checkbox"/> | 1000Hz | Red light | PNP/DC NPN/DC | Dark |
| PRK 18 / 24 DL.46 500 32798 | <input type="text" value="0"/> <input type="text" value="3"/> ¹⁾ <input type="text" value="0"/> <input type="text" value="4"/> ¹⁾ | <input type="checkbox"/> | 1000Hz | Red light | PNP/DC NPN/DC | Light/dark reversible |
| PRK 18 / 4 L.4 501 04415 | <input type="text" value="0"/> <input type="text" value="2.4"/> ¹⁾ <input type="text" value="0"/> <input type="text" value="3"/> ¹⁾ | <input type="checkbox"/> | 1500Hz | Red light | PNP/DC | Light/dark reversible |
| PRK 18 / 4 DL.4 500 80153 | <input type="text" value="0"/> <input type="text" value="2.4"/> ¹⁾ <input type="text" value="0"/> <input type="text" value="3"/> ¹⁾ | <input type="checkbox"/> | 1500Hz | Red light | PNP/DC | Light/dark reversible |
| PRK 18 / 2 DL.4 500 81153 | <input type="text" value="0"/> <input type="text" value="2.4"/> ¹⁾ <input type="text" value="0"/> <input type="text" value="3"/> ¹⁾ | <input type="checkbox"/> | 1500Hz | Red light | NPN/DC | Light/dark reversible |
| IPRK 18 / V L.03 501 06974 | <input type="text" value="0"/> <input type="text" value="1"/> ²⁾ <input type="text" value="0"/> <input type="text" value="1.2"/> ²⁾ | <input type="checkbox"/> | – | Red light | Analog/mA, 1xPNP/DC | – |

- 1) The specified values apply in combination with reflectors TK(S) 100 x 100, additional reflectors with range specifications can be found on page 401
 2) The specified values apply in combination with reflectors MTKS 50 x 50, additional reflectors with range specifications can be found on page 401

Accessories / connection cables

More accessories can be found from **page 364** onwards

| Part No. | Designation | Features |
|-------------|----------------------------|--|
| a 501 04543 | K - D M12W - 4P - 2m - PVC | Connection cable 2000mm, M12 angular, 4-pin, PVC |
| b 501 04542 | K - D M12A - 4P - 2m - PVC | Connection cable 2000mm, M12 axial, 4-pin, PVC |
| c 501 04545 | K - D M12W - 4P - 5m - PVC | Connection cable 5000mm, M12 angular, 4-pin, PVC |
| d 501 04544 | K - D M12A - 4P - 5m - PVC | Connection cable 5000mm, M12 axial, 4-pin, PVC |
| e 501 04558 | K - D M12W - 5P - 5m - PVC | Connection cable 5000mm, M12 angular, 5-pin, PVC |
| f 501 04557 | 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

Forked Sensors

Special Sensors

Fibre Optic Sensors

Light Curtains

Protective Sensors

Ex Sensors

AS-interface 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, 4, 9 | a, b, c, d | |
| M12 connector | 1, 2, 3, 4, 9 | a, b, c, d | |
| M12 connector | 1, 2, 3, 4, 9 | a, b, c, d | |
| M12 connector | 3, 6, 8, 9 | e, f | |

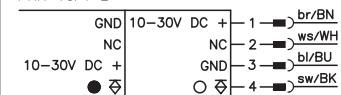


Optical Sensor ABCs

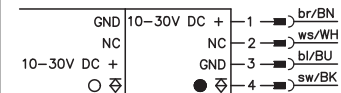
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- Connection types Page 414
- Outputs Page 414

Electrical connection

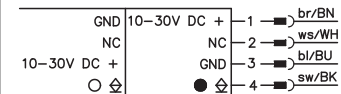
PRK 18/4, 6000
PRK 18/4 L.4
PRK 18/4 L



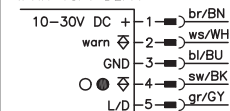
PRK 18/4 DL.4



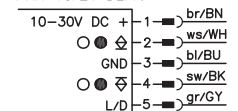
PRK 18/2 DL.4



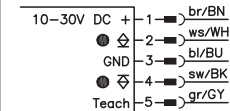
IPRK 18/4 DL.41



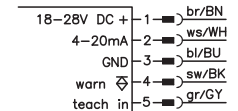
PRK 18/24 DL.46



PRK 18/24 DL.42



IPRK 18/V L.03



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 step switch
- 6 Teach-in via control line
- 7 Dirt/cleaning compensation (step/peak tracking)
- 8 Warning output
- 9 UL approval