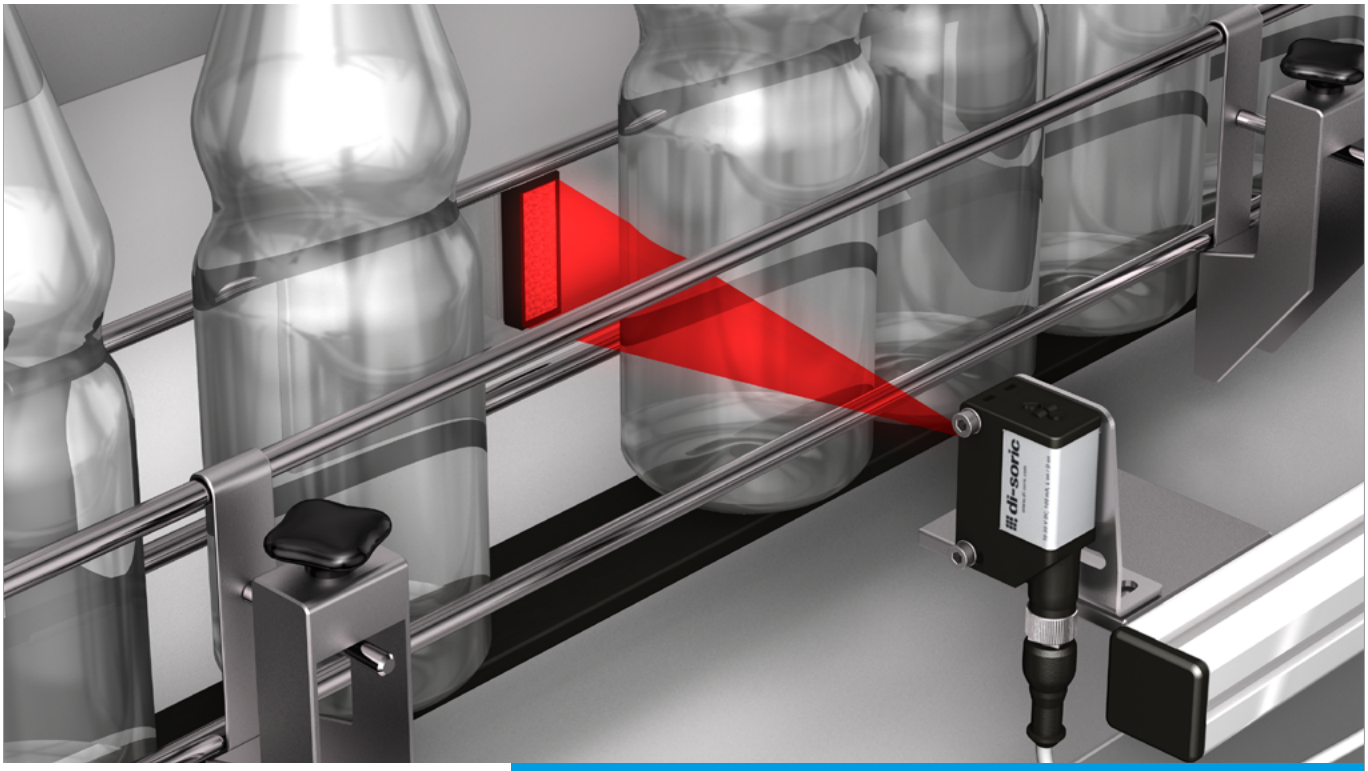

# CATALOG
# 2023
# Photoelectric sensors

di-soric

# Light barriers and diffuse sensors




The light barriers and light sensors from di-soric have been developed in several models and functional principles for many task areas in automation technology. The products are suited for fast, secure object detection and are distinguished by the highest functional safety. Various operating principles, sensors, reflection or through-beam sensors are available.

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# O-20 MINIATURE

The very small, powerful light barriers and sensors in the O-20 series can be easily integrated. The devices, which are available as sensors, reflective or through-beam sensors, detect the smallest parts in the entire active zone.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| For more information, visit | www.di-soric.com |

CE

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-20 Miniature** Reflection energetic light sensors | | | | | | | | | | | | | |
|  | 20 to 50 | 22 x 13 x 8.5 | Potenti-ometer | – | Laser, red | 1 | pnp, 50 mA NO/NC | -10 to +55 | 1,000 | Plastic | 2.0 m | – | LT 21 K 50 P3 |
| | | | | | | | | | | | M8 | TK ... /4 | LT 21 K 50 P3-K-T4 |
|  | 20 to 70 | 22 x 13 x 8.5 | Potenti-ometer | – | Laser, red | 1 | pnp, 50 mA NO/NC | -10 to +55 | 1,000 | Plastic | 2.0 m | – | LLT 21 K 70 P3 |
| | | | | | | | | | | | M8 | TK ... /4 | LLT 21 K 70 P3-K-T4 |
|  | 45 to 300 | 22 x 13 x 8.5 | Potenti-ometer | – | Laser, red | 1 | pnp, 50 mA NO/NC | -10 to +55 | 1,000 | Plastic | 2.0 m | – | LT 21 K 300 P3 |
| | | | | | | | | | | | M8 | TK ... /4 | LT 21 K 300 P3-K-T4 |
| **O-20 Miniature** Reflection light barriers | | | | | | | | | | | | | |
|  | 0 to 4,000 | 22 x 13 x 8.5 | Potenti-ometer | – | Laser, red | 1 | pnp, 50 mA NO/NC | -10 to +55 | 1,000 | Plastic | 2.0 m | – | LT 21 K 4000 P3 |
| | | | | | | | | | | | M8 | TK ... /4 | LT 21 K 4000 P3-K-T4 |
| **O-20 Miniature** through-beam barriers | | | | | | | | | | | | | |
|  | 0 to 1,000 | 19 x 12 x 8.5 | – | T/R | Laser, red | 1 | pnp, 50 mA NO/NC | -10 to +55 | 1,000 | Plastic | 2.0 m | – | LES 21 K 1000 P3 |
| | | | | | | | | | | | M8 | TK ... /4 | LES 21 K 1000 P3-K-T4 |

# O-21 MINIATURE

The very small and efficient light barriers and sensors in the O-21 miniature series with IO-Link can be easily integrated. The reflection sensors with background suppression are suited for detecting small and flat objects. The reflection sensors feature a high functional reserve.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| For more information, visit | www.di-soric.com |

IO-Link CE

| Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-21 Miniature** Reflection energetic light sensors | | | | | | | | | | | | |
| 0 to 180 | 28.1 x 8.1 x 14.4 | IO-Link | – | Red | | pnp, 100 mA NO | -25 to +60 | 1,000 | Plastic | PVC, 2.0 m | – | OT21-PS-2C |
| | | – | | | | npn, 100 mA, NO | | | | | | OT21-NS-2C |
| 0 to 180 | 28.1 x 8.1 x 14.4 | IO-Link | – | Red | | pnp, 100 mA NO | -25 to +60 | 1,000 | Plastic | – | – | OT21-PS-0.3T3 |
| | | – | | | | npn, 100 mA, NO | | | | | | OT21-NS-0.3T3 |
| **O-21 Miniature** Reflection light sensors background suppression | | | | | | | | | | | | |
| 15 (10 to 80) | 28.1 x 8.1 x 14.4 | IO-Link | – | Red | | pnp, 100 mA NO/NC | -25 to +60 | 1,000 | Plastic | PVC, 2.0 m | – | OH21-15PS-2C |
| 15 | | – | | | | npn, 100 mA, NO | | | | | | OH21-15NS-2C |
| 15 (10 to 80) | 28.1 x 8.1 x 14.4 | IO-Link | – | Red | | pnp, 100 mA NO/NC | -25 to +60 | 1,000 | Plastic | – | – | OH21-15PS-0.3-T3 |
| 15 | | – | | | | npn, 100 mA, NO | | | | | | OH21-15NS-0.3T3 |
| 50 (10 to 80) | 28.1 x 8.1 x 14.4 | IO-Link | – | Red | | pnp, 100 mA NO/NC | -25 to +60 | 1,000 | Plastic | PVC, 2.0 m | – | OH21-50PS-2C |
| 50 | | – | | | | npn, 100 mA, NO | | | | | | OH21-50NS-2C |
| 50 (10 to 80) | 28.1 x 8.1 x 14.4 | IO-Link | – | Red | | pnp, 100 mA NO/NC | -25 to +60 | 1,000 | Plastic | – | – | OH21-50PS-0.3T3 |
| 50 | | – | | | | npn, 100 mA, NO | | | | | | OH21-50NS-0.3T3 |
| 80 (10 to 80) | 28.1 x 8.1 x 14.4 | IO-Link | – | Red | | pnp, 100 mA NO/NC | -25 to +60 | 1,000 | Plastic | PVC, 2.0 m | – | OH21-80PS-2C |
| 80 | | – | | | | npn, 100 mA, NO | | | | | | OH21-80NS-2C |
| 80 (10 to 80) | 28.1 x 8.1 x 14.4 | IO-Link | – | Red | | pnp, 100 mA NO/NC | -25 to +60 | 1,000 | Plastic | – | – | OH21-80PS-0.3T3 |
| 80 | | – | | | | npn, 100 mA, NO | | | | | | OH21-80NS-0.3T3 |

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-21 Miniature** Reflection light barriers | | | | | | | | | | | | | |
|  | 20 to 1,800 | 28.1 x 8.1 x 14.4 | IO-Link | – | Red | | pnp, 100 mA NO | -25 to +60 | 1,000 | Plastic | PVC, 2.0 m | – | OR21-PS-2C |
| | | | – | | | | npn, 100 mA, NO | | | | | | OR21-NS-2C |
| | 20 to 1,800 | 28.1 x 8.1 x 14.4 | IO-Link | – | Red | | pnp, 100 mA NO | -25 to +60 | 1,000 | Plastic | – | – | OR21-PS-0.3T3 |
| | | | – | | | | npn, 100 mA, NO | | | | | | OR21-NS-0.3T3 |
| **O-21 Miniature** through-beam barriers | | | | | | | | | | | | | |
|  | 0 to 3,000 | 28.1 x 8.1 x 14.4 | IO-Link | S | Red | | pnp, 100 mA NO | -25 to +60 | 1,000 | Plastic | PVC. 2.0 | – | OS21-2C |
| | | | – | | | | npn, 100 mA, NO | | | | – | | OS21-0.3T3 |
| | 0 to 3,000 | 28.1 x 8.1 x 14.4 | IO-Link | E | Red | | pnp, 100 mA NO | -25 to +60 | 1,000 | Plastic | PVC, 2.0 m | – | OE21-PS-2C |
| | | | – | | | | npn, 100 mA, NO | | | | | | OE21-NS-2C |
| | 0 to 3,000 | 28.1 x 8.1 x 14.4 | IO-Link | E | Red | | pnp, 100 mA NO | -25 to +60 | 1,000 | Plastic | – | – | OE21-PS-0.3T3 |
| | | | – | | | | npn, 100 mA, NO | | | | | | OE21-NS-0.3T3 |

# O-30 UNIVERSAL

The efficient light barriers and sensors in the O-30 Universal series are versatile. With their compact design and mounting hole spacing of 25.4 mm, the sensors can be integrated quickly and easily. The user-friendly and robust devices with short response times and good functional reserves are suited for many applications in packaging technology and assembly and handling technology.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| For more information, visit | www.di-soric.com |

CE

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-30 Miniature** Reflection energetic light sensors | | | | | | | | | | | | | |
|  | 10 to 100 | 31 x 21 x 13 | Potenti-ometer | – | Red | | pnp, 100 mA NO/NC | -25 to +70 | 1,000 | Plastic | M8 | TK … /4 | OT 31 K 100 P3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK … | OT 31 K 100 P3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OT 31 K 100 P3-3 |
|  | 10 to 100 | 31 x 21 x 13 | Potenti-ometer | – | Red | | npn, 100 mA NO/NC | -25 to +70 | 1,000 | Plastic | M8 | TK … /4 | OT 31 K 100 N3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK … | OT 31 K 100 N3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OT 31 K 100 N3-3 |
|  | 0 to 400 | 31 x 21 x 13 | Potenti-ometer | – | Red | | pnp, 100 mA NO/NC | -25 to +70 | 2,000 | Plastic | M8 | TK … /4 | OT 31 K 400 P3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK … | OT 31 K 400 P3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OT 31 K 400 P3-3 |
|  | 0 to 400 | 31 x 21 x 13 | Potenti-ometer | – | Red | | npn, 100 mA NO/NC | -25 to +70 | 2,000 | Plastic | M8 | TK … /4 | OT 31 K 400 N3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK … | OT 31 K 400 N3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OT 31 K 400 N3-3 |
|  | 0 to 1,000 | 31 x 21 x 13 | Potenti-ometer | – | Red | | pnp, 100 mA NO/NC | -25 to +70 | 1,000 | Plastic | M8 | TK … /4 | OT 31 K 1000 P3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK … | OT 31 K 1000 P3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OT 31 K 1000 P3-3 |
|  | 0 to 1,000 | 31 x 21 x 13 | Potenti-ometer | – | Red | | npn, 100 mA NO/NC | -25 to +70 | 1,000 | Plastic | M8 | TK … /4 | OT 31 K 1000 N3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK … | OT 31 K 1000 N3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OT 31 K 1000 N3-3 |
| **O-30 Miniature** Reflection light sensors background suppression | | | | | | | | | | | | | |
|  | 30 to 200 | 31 x 21 x 13 | Potenti-ometer | – | Red | | pnp, 100 mA NO/NC | -25 to +70 | 1,000 | Plastic | M8 | TK … /4 | OH 31 K 200 P3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK … | OH 31 K 200 P3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OH 31 K 200 P3-3 |
|  | 30 to 200 | 31 x 21 x 13 | Potenti-ometer | – | Red | | npn, 100 mA NO/NC | -25 to +70 | 1,000 | Plastic | M8 | TK … /4 | OH 31 K 200 N3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK … | OH 31 K 200 N3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OH 31 K 200 N3-3 |
|  | 30 to 400 | 31 x 21 x 13 | Potenti-ometer | – | Infrared | | pnp, 100 mA NO/NC | -25 to +70 | 1,000 | Plastic | M8 | TK … /4 | OH 30 K 400 P3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK … | OH 30 K 400 P3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OH 30 K 400 P3-3 |
|  | 30 to 400 | 31 x 21 x 13 | Potenti-ometer | – | Infrared | | npn, 100 mA NO/NC | -25 to +70 | 1,000 | Plastic | M8 | TK … /4 | OH 30 K 400 N3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK … | OH 30 K 400 N3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OH 30 K 400 N3-3 |

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-30 Miniature** Reflection light barriers | | | | | | | | | | | | | |
|  | 50 to 1,500 | 31 x 21 x 13 | Potenti-ometer | – | Red | | pnp, 100 mA NO/NC | -25 to +70 | 2,000 | Plastic | M8 | TK ... /4 | OR 31 K 1500 P3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK ... | OR 31 K 1500 P3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OR 31 K 1500 P3-3 |
| | 50 to 1,500 | 31 x 21 x 13 | Potenti-ometer | – | Red | | npn, 100 mA NO/NC | -25 to +70 | 2,000 | Plastic | M8 | TK ... /4 | OR 31 K 1500 N3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK ... | OR 31 K 1500 N3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OR 31 K 1500 N3-3 |
|  | 400 to 4,000 | 31 x 21 x 13 | Potenti-ometer | – | Red | | pnp, 100 mA NO/NC | -25 to +70 | 2,000 | Plastic | M8 | TK ... /4 | OR 31 K 4000 P3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK ... | OR 31 K 4000 P3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OR 31 K 4000 P3-3 |
| | 400 to 4,000 | 31 x 21 x 13 | Potenti-ometer | – | Red | | npn, 100 mA NO/NC | -25 to +70 | 2,000 | Plastic | M8 | TK ... /4 | OR 31 K 4000 N3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK ... | OR 31 K 4000 N3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OR 31 K 4000 N3-3 |
|  | 20 to 5,000 | 31 x 21 x 13 | Potenti-ometer | – | Red | | pnp, 100 mA NO/NC | -25 to +70 | 2,000 | Plastic | M8 | TK ... /4 | OR 31 K 5000 P3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK ... | OR 31 K 5000 P3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OR 31 K 5000 P3-3 |
|  | 20 to 5,000 | 31 x 21 x 13 | Potenti-ometer | – | Red | | npn, 100 mA NO/NC | -25 to +70 | 2,000 | Plastic | M8 | TK ... /4 | OR 31 K 5000 N3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK ... | OR 31 K 5000 N3-K-T3 |
| | | | | | | | | | | | 2 m | – | OR 31 K 5000 N3-3 |
| **O-30 Universal** Reflection light barriers | | | | | | | | | | | | | |
|  | 0 to 20,000 | 31 x 21 x 13 | Potenti-ometer | – | Red | | pnp, 100 mA NO/NC | -25 to +70 | 2,000 | Plastic | M8 | TK ... /4 | OES 31 K 20000 P3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK ... | OES 31 K 20000 P3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OES 31 K 20000 P3-3 |
| | 0 to 20,000 | 31 x 21 x 13 | Potenti-ometer | – | Red | | npn, 100 mA NO/NC | -25 to +70 | 2,000 | Plastic | M8 | TK ... /4 | OES 31 K 20000 N3-T4 |
| | | | | | | | | | | | 0.2 m / M8 | TK ... | OES 31 K 20000 N3-K-T3 |
| | | | | | | | | | | | 2.0 m | – | OES 31 K 20000 N3-3 |

# O-40 STANDARD

The compact light barriers and sensors in the O-40 Standard series are suited for medium ranges in a broad field of application. The sensors are reliable, economic and cost-efficient. The universal slotted-hole fastening makes flexible mounting possible.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| For more information, visit | www.di-soric.com |

CE

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-40 Standard** Reflection energetic light sensors | | | | | | | | | | | | | |
|  | 10 to 600 | 38 x 27 x 15 | Potenti-ometer | – | Red | | pnp, 100 mA NO<br>pnp, 100 mA NC | -25 to +60 | 500 | Plastic | M8 | TK … | OT 6-41 K 0.6 P1-T3<br>OT 6-41 K 0.6 P2-T3 |
|  | 100 to 1,000 | 41 x 31.5 x 16 | Teach | – | Red | | Push-pull, 200 mA NO/NC | -25 to +60 | 1,000 | Metal | M8 | TK … | OTT 41 M 1 G3-T3 |
| **O-40 Standard** Reflection light barriers | | | | | | | | | | | | | |
|  | 400 to 4,000 | 38 x 27 x 15 | Potenti-ometer | – | Red | | pnp, 100 mA NC<br>pnp, 100 mA NO | -25 to +60 | 500 | Plastic | M8 | TK … | OR 6-41 K 4 P1-T3<br>OR 6-41 K 4 P2-T3 |

# O-40E EXTENDED

The devices in the O-40E Extended series for medium ranges have a robust metallic housing with a metallic plug and are used in the detection of standard or small parts. These light barriers detect with LED or with laser variants (laser class 1) that are safe for the eye.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| For more information, visit | www.di-soric.com |

CE

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-40E Extended** Reflection light sensors background suppression | | | | | | | | | | | | | |
|  | 30 to 350 | 40 x 30 x 15 | Potenti-ometer | – | Laser, red | 1 | Push-pull, 200 mA NO/NC antivalent | -10 to +50 | 1,000 | Metal | M8 | TK … /4 | LH 41 M 350 G4L-T4 |

# O-50 METAL

The robust and highly efficient light barriers in the O-50 Metal series work with visible red light LEDs or with laser light that is safe for the eye (laser class 1). They are robust and have a metallic housing and metallic plug. The sensors have maximum functional reserve and are used for long ranges.

| Technical data (typ.) | +20 °C, 24 VDC |
|---|---|
| For more information, visit | www.di-soric.com |

CE

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-50 Metal** Reflection energetic light sensors | | | | | | | | | | | | | |
|  | 15 to 150 | 50 x 40 x 15 | Potenti-ometer | – | Red | | pnp, 200 mA NO/NC | -10 to +60 | 1,000 | Metal | M12 | VK ... | OTV 51 M 150 P3K-IBS |
| | 100 to 500 | | | | | | | | | | | | OTV 51 M 500 P3K-IBS |
| | 100 to 600 | 50 x 40 x 15 | Potenti-ometer | – | Infrared | | pnp, 200 mA NO/NC | -10 to +60 | 1,000 | Metal | M12 | VK ... | OTV 50 M 600 P3K-IBS |
| | 50 to 1,200 | | | | | | | | | | | | OTV 50 M 1200 P3K-IBS |
| | 75 to 200 | 50 x 40 x 15 | Potenti-ometer | – | Laser, red | 1 | pnp, 200 mA NO/NC | -10 to +50 | 2,000 | Metal | M12 | VK ... | LTV 51 M 200 P3K-IBS |
| | 100 to 600 | | | | | | | | 500 | | | | LTV 51 M 600 P3K-IBS |
| **O-50 Metal** Reflection light sensors background suppression | | | | | | | | | | | | | |
|  | 50 to 200 | 50 x 40 x 15 | Potenti-ometer | – | Laser, red | 1 | Push-pull, 200 mA NO/NC | -10 to +50 | 500 | Metal | M12 | VK ... | LHT 51 M 200 G3-B4 1) |
|  | 50 to 200 | 50 x 40 x 15 | Potenti-ometer | – | Laser, red | 1 | Push-pull, 200 mA NO/NC | -10 to +50 | 500 | Metal | M12 | VK ... | LLH 51 M 200 G3-B4 |
| **O-50 Metal** Reflection light barriers | | | | | | | | | | | | | |
|  | 40 to 2,000 | 50 x 40 x 15 | Potenti-ometer | – | Red | | pnp, 200 mA NO/NC | -10 to +60 | 1,000 | Metal | M12 | VK ... | ORV 51 M 2000 P3K-IBS |
| | 300 to 5,000 | 50 x 40 x 15 | Potenti-ometer | – | Red | | pnp, 200 mA NO/NC | -10 to +60 | 1,000 | Metal | M12 | VK ... | ORV 51 M 5000 P3K-IBS |
| | 100 to 1,000 | 50 x 40 x 15 | Potenti-ometer | – | Laser, red | 1 | pnp, 200 mA NO/NC | 0 to +50 | 2,000 | Metal | M12 | VK ... | LRV 51 M 1000 P3K-IBS |
| | 200 to 2,000 | | | | | | | | | | | | LRV 51 M 2000 P3K-IBS |
| | 1,000 to 10,000 | | | | | | | | | | | | LRV 51 M 10000 P3K-IBS |
|  | 50 to 500 | 50 x 40 x 15 | Potenti-ometer | – | Laser, red | 1 | pnp, 200 mA NO/NC | 5 to +50 | 750 | Metal | M12 | VK ... | LLRV 51 M 500 P3K-IBS |
| **O-50 Metal** Reflection light barriers | | | | | | | | | | | | | |
|  | 0 to 10,000 | 50 x 40 x 15 | Potenti-ometer | T | Red | | – | -25 to +60 | | Metal | M12 | VK ... | OSV 51 M 10000-IBS |
| | | | | E | Red | | pnp, 200 mA NO/NC | -25 to +60 | 100/200 | Metal | M12 | VK ... | OEV 51 M 10000-P3K-IBS |

## O-81 LASER

The laser light sensors in the O-81 Laser series are used for precise detection of objects using red light lasers. The sensors can be adjusted precisely and distinguished by their high resolution and functional reserve. The robust devices with a metallic housing and metallic plug can be operated intuitively by way of potentiometers and NO-NC switches.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| For more information, visit | www.di-soric.com |

CE

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-81 Metal** Reflection light sensors background suppression | | | | | | | | | | | | | |
|  | 40 to 400 | 76 x 30 x 18 | Potenti-ometer | – | Laser, red | 1 | Antivalent, 200 mA NO/NC | -10 to +60 | 1,000 | Metal | M12 | VK ... /4 | LHT 81 M 300 G4L-IBS |
| | | | | | | | 200 mA, NO switching output NC alarm output | | | | | | LHT 81 M 300 G6L-IBS |
| | 40 to 400 | 76 x 30 x 18 | Potenti-ometer | – | Laser, red | 1 | Antivalent, 200 mA NO/NC | -20 to +60 | 1,000 | Metal | M12 | VK ... /4 | LHT 81 M 400 G4L-IBS |
| | | | | | | | 200 mA, NO switching output NC alarm output | | | | | | LHT 81 M 400 G6L-IBS |

## O-Q10 MINIATURE

The devices in O-Q10 Miniature series are the first choice for applications that require compact laser through-beam barriers for small parts detection. The robust devices with a metallic housing and metallic plug consistently satisfy the safe laser protection class 1.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| For more information, visit | www.di-soric.com |

CE

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-Q10 Miniature** through-beam barriers | | | | | | | | | | | | | |
|  | 0 to 500 | 10 x 10 x 60 | – | T | Laser, red | 1 | – | 0 to +50 | 2,000 | Metal | M8 | TK ... | OLSQ 10 M 500-TSSL |
| | | | | E | | | pnp, 200 mA NC | | | | | | OLEQ 10 M 500 P1K-TSSL |
| | | | | E | | | pnp, 200 mA NO | | | | | | OLEQ 10 M 500 P2K-TSSL |
| | 0 to 2,000 | 10 x 10 x 60 | – | T | Laser, red | 1 | – | 0 to +50 | 2,000 | Metal | M8 | TK ... | OLSQ 10 M 2000-TSSL |
| | | | | E | | | pnp, 200 mA NC | | | | | | OLEQ 10 M 2000 P1K-TSSL |
| | | | | E | | | pnp, 200 mA NO | | | | | | OLEQ 10 M 2000 P2K-TSSL |

## O-M5

The devices in the O-M5 series are the smallest diffuse sensors from di-soric in a threaded model. The sensors are distinguished by their precise detection of objects and are ideal for mounting in confined space conditions.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| For more information, visit | www.di-soric.com |

CE

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-M5** Reflection energetic light sensors | | | | | | | | | | | | | |
|  | ... 10 | M5 | – | – | Red light | | pnp, 100 mA NO | -25 to +65 | 1000 | Stainless steel V2A | 2.0 m | – | OTM05-10PS-2R |
| | | | | | | | | | | | M8 | TK ... | OTM05-10PS-T3 |
| | ... 20 | M5 | – | – | Red light | | pnp, 100 mA NO | -25 to +65 | 1000 | Stainless steel V2A | 2.0 m | – | OTM05-20PS-2R |
| | | | | | | | | | | | M8 | TK ... | OTM05-20PS-T3 |
| | ... 50 | M5 | – | – | Red light | | pnp, 100 mA NO | -25 to +65 | 1000 | Stainless steel V2A | 2.0 m | – | OTM05-50PS-2R |
| | | | | | | | | | | | M8 | TK ... | OTM05-50PS-T3 |

## O-M8

The compact laser light sensors are used for the detection of small parts and are designed for the safe laser class 1. This avoids injuries to the human eye.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| For more information, visit | www.di-soric.com |

CE

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-M8** Through-beam sensors | | | | | | | | | | | | | |
|  | 0 to 2,000 | M8 x 70 | – | T |  | 1 | – | 0 to +50 | 2,000 | Stainless steel | M8 | TK ... | OLS 08 V 2000-TSSL |
| | | | | E | Laser, red | | pnp, 200 mA NO | | | | | | OLE 08 V 2000 P2K-TSSL |

# O-M18 STANDARD

The light barriers and light sensors in the O-M18 Standard series are ideal devices for economical and cost-efficient applications. The sensors are alternatively available in a straight model or with 90° angled optics. The plastic or metallic housing is distinguished by its short construction.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| For more information, visit | www.di-soric.com |

CE

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-M18 Standard** Diffuse reflective sensors | | | | | | | | | | | | | |
|  | 320 | M18 x 68 | Potentiometer | – | Infrared | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OT 18 FKR 320 P3-B4 |
| | | | | | | | | | | Metal | | | OT 18 FMR 320 P3-B4 |
| | 320 | M18 x 68 | Potentiometer | – | Infrared | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OT 18 FKR 320 N3-B4 |
| | | | | | | | | | | Metal | | | OT 18 FMR 320 N3-B4 |
|  | 320 | M18 x 58 | Potentiometer | – | Infrared | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OT 18 FKR 320 P3 |
| | | | | | | | | | | Metal | | | OT 18 FMR 320 P3 |
| | 320 | M18 x 58 | Potentiometer | – | Infrared | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OT 18 FKR 320 N3 |
| | | | | | | | | | | Metal | | | OT 18 FMR 320 N3 |
|  | 400 | M18 x 55 | Potentiometer | – | Infrared | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OT 18 FK 400 P3-B4 |
| | | | | | | | | | | Metal | | | OT 18 FM 400 P3-B4 |
| | 400 | M18 x 55 | Potentiometer | – | Infrared | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OT 18 FK 400 N3-B4 |
| | | | | | | | | | | Metal | | | OT 18 FM 400 N3-B4 |
|  | 400 | M18 x 45 | Potentiometer | – | Infrared | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OT 18 FK 400 P3 |
| | | | | | | | | | | Metal | | | OT 18 FM 400 P3 |
| | 400 | M18 x 45 | Potentiometer | – | Infrared | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OT 18 FK 400 N3 |
| | | | | | | | | | | Metal | | | OT 18 FM 400 N3 |
| **O-M18 Standard** Retroreflective sensors | | | | | | | | | | | | | |
|  | 3,000 | M18 x 83 | Potentiometer | – | Red | | pnp, 100 mA NO/NC | -25 to +70 | 250 | Metal | M12 | VK… /4 | OR 18-1 M 3000 P4-B4 |
| | | | | | | | npn, 100 mA NO/NC | | | | | | OR 18-1 M 3000 N4-B4 |
|  | 3,600 | M18 x 68 | Potentiometer | – | Red | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OR 18-1 FKR 3600 P3-B4 |
| | | | | | | | | | | Metal | | | OR 18-1 FMR 3600 P3-B4 |
| | 3,600 | M18 x 68 | Potentiometer | – | Red | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OR 18-1 FKR 3600 N3-B4 |
| | | | | | | | | | | Metal | | | OR 18-1 FMR 3600 N3-B4 |
|  | 3,600 | M18 x 58 | Potentiometer | – | Red | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OR 18-1 FKR 3600 P3 |
| | | | | | | | | | | Metal | | | OR 18-1 FMR 3600 P3 |
| | 3,600 | M18 x 58 | Potentiometer | – | Red | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OR 18-1 FKR 3600 N3 |
| | | | | | | | | | | Metal | | | OR 18-1 FMR 3600 N3 |
|  | 5,700 | M18 x 55 | Potentiometer | – | Red | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OR 18-1 FK 5700 P3-B4 |
| | | | | | | | | | | Metal | | | OR 18-1 FM 5700 P3-B4 |
| | 5,700 | M18 x 55 | Potentiometer | – | Red | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OR 18-1 FK 5700 N3-B4 |
| | | | | | | | | | | Metal | | | OR 18-1 FM 5700 N3-B4 |

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-M18 Standard** Retroreflective sensors | | | | | | | | | | | | | |
|  | 5,700 | M18 x 45 | Potenti-ometer | – | Red | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OR 18-1 FK 5700 P3 |
| | | | | | | | | | | Metal | | | OR 18-1 FM 5700 P3 |
| | 5,700 | M18 x 45 | Potenti-ometer | – | Red | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OR 18-1 FK 5700 N3 |
| | | | | | | | | | | Metal | | | OR 18-1 FM 5700 N3 |
| **O-M18 Standard** Diffuse reflective sensors | | | | | | | | | | | | | |
|  | 600 | M18 x 68 | Potenti-ometer | – | Infrared | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OT 18 FKR 600 P3-B4 |
| | | | | | | | | | | Metal | | | OT 18 FMR 600 P3-B4 |
| | 600 | M18 x 68 | Potenti-ometer | – | Infrared | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OT 18 FKR 600 N3-B4 |
| | | | | | | | | | | Metal | | | OT 18 FMR 600 N3-B4 |
|  | 600 | M18 x 58 | Potenti-ometer | – | Infrared | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OT 18 FKR 600 P3 |
| | | | | | | | | | | Metal | | | OT 18 FMR 600 P3 |
| | 600 | M18 x 58 | Potenti-ometer | – | Infrared | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OT 18 FKR 600 N3 |
| | | | | | | | | | | Metal | | | OT 18 FMR 600 N3 |
|  | 800 | M18 x 55 | Potenti-ometer | – | Infrared | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OT 18 FK 800 P3-B4 |
| | | | | | | | | | | Metal | | | OT 18 FM 800 P3-B4 |
| | 800 | M18 x 55 | Potenti-ometer | – | Infrared | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OT 18 FK 800 N3-B4 |
| | | | | | | | | | | Metal | | | OT 18 FM 800 N3-B4 |
|  | 800 | M18 x 45 | Potenti-ometer | – | Infrared | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OT 18 FK 800 P3 |
| | | | | | | | | | | Metal | | | OT 18 FM 800 P3 |
| | 800 | M18 x 45 | Potenti-ometer | – | Infrared | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OT 18 FK 800 N3 |
| | | | | | | | | | | Metal | | | OT 18 FM 800 N3 |
| **O-M18 Miniature** Through-beam sensors | | | | | | | | | | | | | |
|  | 8,000 | M18 x 68 | Potenti-ometer | – | Infrared | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OES 18 FKR 8000 P3-B4 |
| | | | | | | | | | | Metal | | | OES 18 FMR 8000 P3-B4 |
| | 8,000 | M18 x 68 | Potenti-ometer | – | Infrared | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | M12 | VK… /4 | OES 18 FKR 8000 N3-B4 |
| | | | | | | | | | | Metal | | | OES 18 FMR 8000 N3-B4 |
|  | 8,000 | M18 x 58 | Potenti-ometer | – | Infrared | | pnp, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OES 18 FKR 8000 P3 |
| | | | | | | | | | | Metal | | | OES 18 FMR 8000 P3 |
| | 8,000 | M18 x 58 | Potenti-ometer | – | Infrared | | npn, 100 mA NO/NC | -25 to +55 | 1,000 | Plastic | PVC, 2.0 m | – | OES 18 FKR 8000 N3 |
| | | | | | | | | | | Metal | | | OES 18 FMR 8000 N3 |
|  | 10,000 | M18 x 55 | Potenti-ometer | – | Infrared | | pnp, 100 mA NO/NC | -25 to +55 | 333 | Plastic | M12 | VK… /4 | OES 18 FK 10000 P3-B4 |
| | | | | | | | | | | Metal | | | OES 18 FM 10000 P3-B4 |
| | 10,000 | M18 x 55 | Potenti-ometer | – | Infrared | | npn, 100 mA NO/NC | -25 to +55 | 333 | Plastic | M12 | VK… /4 | OES 18 FK 10000 N3-B4 |
| | | | | | | | | | | Metal | | | OES 18 FM 10000 N3-B4 |
|  | 10,000 | M18 x 45 | Potenti-ometer | – | Infrared | | pnp, 100 mA NO/NC | -25 to +55 | 333 | Plastic | PVC, 2.0 m | – | OES 18 FK 10000 P3 |
| | | | | | | | | | | Metal | | | OES 18 FM 10000 P3 |
| | 10,000 | M18 x 45 | Potenti-ometer | – | Infrared | | npn, 100 mA NO/NC | -25 to +55 | 333 | Plastic | PVC, 2.0 m | – | OES 18 FK 10000 N3 |
| | | | | | | | | | | Metal | | | OES 18 FM 10000 N3 |

## O-M18E EXTENDED

The light sensors in the O-M18E Extended series can be used universally and are the first choice in challenging applications. The devices have a robust metallic housing and score points with their high functional reserve and efficient background suppression.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| For more information, visit | www.di-soric.com |

CE

| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-M18E Extended** Reflection light sensors background suppression | | | | | | | | | | | | | |
|  | 30 to 130 | M18 x 80 | Potentiometer | – | Red | | pnp, 100 mA NO/NC | -25 to +70 | 1,000 | Metal | M12 | VK … /4 | OH 18-1 M 130 P4-B4 |
| | | | | | | | npn, 100 mA NO/NC | | | | | | OH 18-1 M 130 N4-B4 |

## O-D4

The devices in the O-D4 series are the smallest light sensors that di-soric offers in a cylindrical model. They guarantee the precise detection of objects and are ideal for mounting anywhere space is scarce.

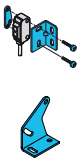
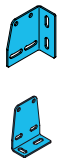
| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| For more information, visit | www.di-soric.com |

CE

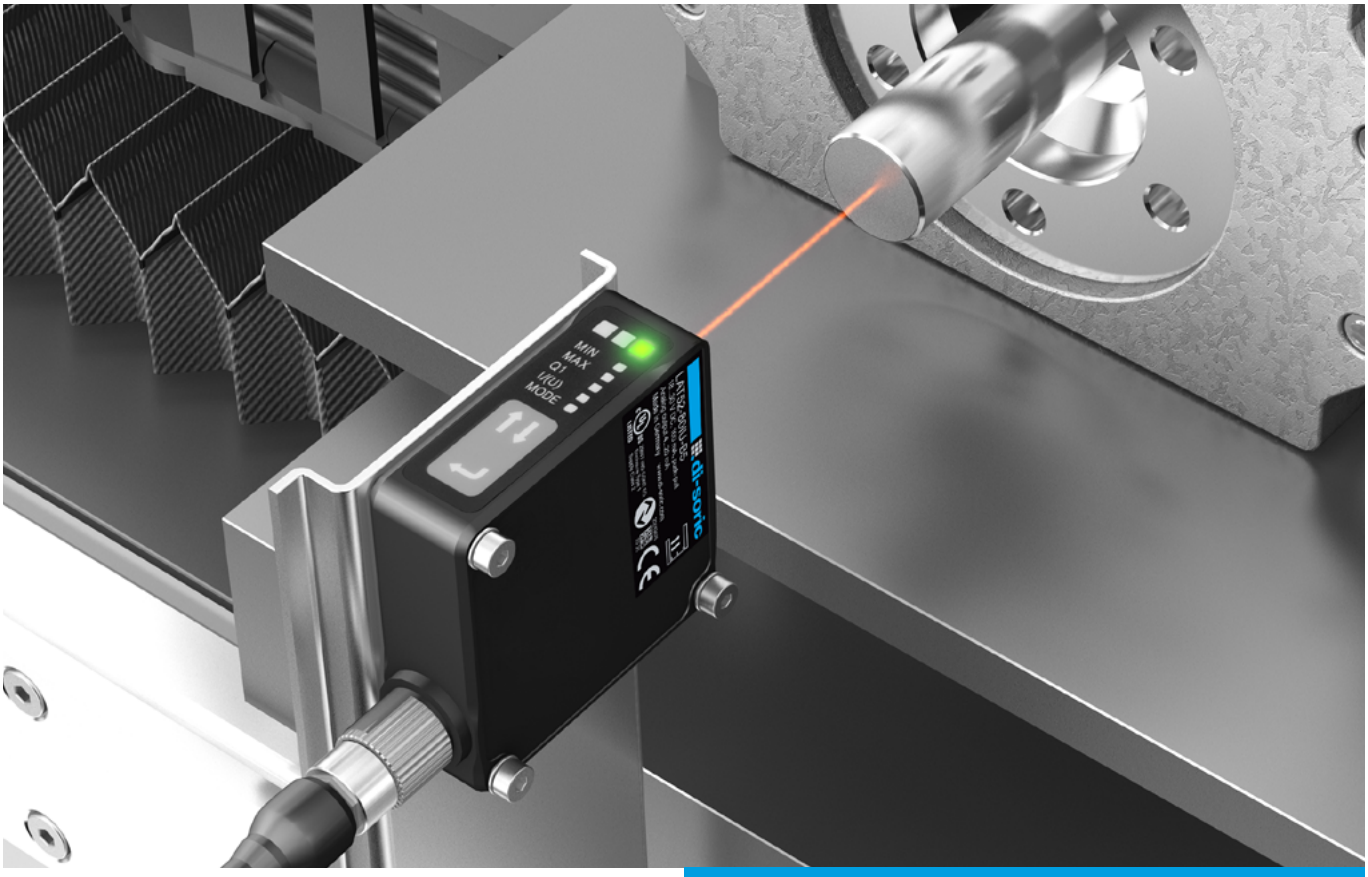
| | Scan width / range, setting range (mm) | Housing design Size (mm) | Sensitivity setting by means of | Transmitter (T) / Receiver (R) | Transmission light (clocked) | Laser class | Switching output | Ambient temperature (°C) | Switching frequency (Hz) | Housing material | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O-D4** Reflection energetic light sensors | | | | | | | | | | | | | |
|  | ... 10 | Ø4.0 | – | – | Red light | | pnp, 100 mA NO | -25 to +65 | 1000 | Stainless steel V2A | 2.0 m | – | OTD04-10PS-2R |
| | | | | | | | | | | | M8 | TK … | OTD04-10PS-T3 |
| | ... 20 | Ø4.0 | – | – | Red light | | pnp, 100 mA NO | -25 to +65 | 1000 | Stainless steel V2A | 2.0 m | – | OTD04-20PS-2R |
| | | | | | | | | | | | M8 | TK … | OTD04-20PS-T3 |
| | ... 50 | Ø4.0 | – | – | Red light | | pnp, 100 mA NO | -25 to +65 | 1000 | Stainless steel V2A | 2.0 m | – | OTD04-50PS-2R |
| | | | | | | | | | | | M8 | TK … | OTD04-50PS-T3 |

# O-Z-M MECHANICAL ACCESSORIES FOR LIGHT BARRIERS AND LIGHT SENSORS

Specific fastening angles, sensor brackets and wobble plates make adjustment and assembly of optical sensors easy.

| | To be used for | Product description |
|---|---|---|
| **Fastening angles** for light barriers and light sensors | | |
|  | O-20 Miniature | BW 22/22 |
| | | BW 30 |
|  | O-30 Universal | BW 31-36 |
|  | | BW 31-39 |
|  | | BW 31-41 |
|  | | BW 31-56 |
|  | O-40E Extended | BW 41 |
|  | | BW 41-80 |
|  | O-50 Metal | BW 50 |
|  | O-81 Laser | BW LHT 81 |
|  | | SHB-LHT-81 |
| **Sensor brackets** for light barriers and light sensors | | |
|  | O-20 Miniature | SH-S20 |
|  | O-40 | SH-S41-SN |
| **Wobble plates** for light barriers and light sensors | | |
|  | O-Q10<br>O-Q15 | TP-Q |
|  | O-Q10<br>O-Q15 | TP-Q90 |

# Optical distance sensors




The optical distance sensors measure distances quickly and precisely with red light laser. Thanks to the metallic housing, all sensors are very robust. They offer a wide bandwidth of measuring ranges and ranges of up to 10 m, and resolutions into the micrometer range.

# LAT-45 LONG RANGE

The LAT-45 features a long range of up to 10 m. The sensor is equally well suited for measuring and switching applications. The LAT-45 is operated alternatively via keypad or IO-Link, its easily legible display is used to display measured values. A good color and surface independence makes distance measurement possible on many surfaces.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Emitted light | Red-light laser, 650nm |
| Switching output 1 | pnp, 200 mA, NO/NC switchable |
| Switching output 2 | pnp or analog output |
| Switching output 3 | – |
| Analog output | 4 to 20 mA |
| | 0 to 10 V |
| Measuring frequency | 1 to 33 Hz |
| No-load current | < 150 mA |
| Interface | IO-Link V1.1, COM2 |
| Ambient temperature | -10 to +60 °C |
| Protection type | IP 67 |
| Housing material | Die-cast zinc, black varnished |

| | Laser distance sensors | Laser diffuse sensors with background suppression | Analog output (4 to 20 mA) | Analog output (0 to 10 V) | Detection range (mm) | Housing design Size (mm) | Digital display | Service voltage (V DC) | Resolution (mm) | Measuring frequency (Hz) | Switching frequency (Hz) | Laser class | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LAT-45 Long range** | | | | | | | | | | | | | | | |
|  | ■ | | ■ | ■ | 300 to 6,000 | 59 x 42 x 52 | ■ | 18 to 30 | 1 mm | 1 to 33 | | 1 | M12 | VK…/5 | LHT 45-6 M IU-B5 |
| | ■ | | ■ | ■ | 20 to 10,000 | | | | | 1 to 33 | | 2 | | | LHT 45-10 M IU-B5 |
| | ■ | ■ | | | 200 to 10,000 | | | | | | 5 | 2 | | | LHT 45-10 M P3-B5 |

# LAT-52 COMPACT

The LAT-52 with IO-Link is suited for distances up to 500 mm, is used in applications in the mm and sub-mm range and is available for three different measuring ranges. The small laser light spot enables the detection of small changes in distance.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Emitted light | Red-light laser, 650 nm |
| Switching output 1 | Push-pull, 100 mA, short-circuit proof |
| Analog output | 4 to 20 mA |
| | 0 to 10 V |
| Service voltage | 18 to 30 V DC |
| No-load current | 60 mA |
| Ambient temperature | 0 to +50 °C |
| Protection type | IP 67 |
| Protection class | III, operation on protective low voltage |
| Housing material | Die-cast zinc, black powder-coated |

| | Laser distance sensors | Laser class | Analog output (4 to 20 mA) | Analog output (0 to 10 V) | Detection range (mm) | Housing design Size (mm) | Resolution (mm) Measuring range 1 / measuring range 2 | Measuring frequency (Hz) | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **LAT-52 Compact** | | | | | | | | | | | |
|  | ■ | 1 | ■ | ■ | 30 to 80 | 51 x 51 x 17 | 0.01 | 100 to 1200 | M12 | VK…/5 | LAT52-80IU-B5 |
| | ■ | 1 | ■ | ■ | 50 to 200 | 51 x 51 x 17 | 0.02 / 0.05 | 100 to 1200 | M12 | VK…/5 | LAT52-200IU-B5 |
| | ■ | 1 | ■ | ■ | 50 to 500 | 51 x 51 x 17 | 0.3 / 0.5 | 100 to 1200 | M12 | VK…/5 | LAT52-500IU-B5 |
|  | ■ | 1 | ■ | ■ | 30 to 80 | 51 x 51 x 17 | 0.01 | 1000 | M12 | VK…/5 | LAT52-80IU-RB5 |
| | ■ | 1 | ■ | ■ | 50 to 200 | 51 x 51 x 17 | 0.02 / 0.05 | 750 | M12 | VK…/5 | LAT52-200IU-RB5 |
| | ■ | 1 | ■ | ■ | 50 to 500 | 51 x 51 x 17 | 0.3 / 0.5 | 500 | M12 | VK…/5 | LAT52-500IU-RB5 |

# LVHT-52 COMPACT

The LVHT-52 is suited for applications that are meant to have a high degree of precision in switching but not measuring. With a detection range of 50 to 500 mm and a precisely adjustable window mode, it is a very efficient solution.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Emitted light | Red-light laser, 650 nm |
| Switching output 1 | Push-pull, 100 mA, short-circuit proof |
| Service voltage | 18 to 30 V DC |
| No-load current | 60 mA |
| Ambient temperature | 0 to +50 °C |
| Protection type | IP 67 |
| Protection class | III, operation on protective low voltage |
| Housing material | Die-cast zinc, black powder-coated |

| | Laser distance sensors | Laser class | Analog output (4 to 20 mA) | Analog output (0 to 10 V) | Detection range (mm) | Housing design Size (mm) | Resolution (mm) Measuring range 1 / measuring range 2 | Switching frequency (Hz) | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **LVHT-52 Compact** | | | | | | | | | | | |
|  | ■ | 1 | | | 50 to 500 | 51 x 51 x 17 | 0.3 / 0.5 | 20 to 600 | M12 | VK .../4 | LVHT52-500G3-B4 |
|  | ■ | 1 | | | 50 to 500 | 51 x 51 x 17 | 0.3 / 0.5 | 100 | M12 | VK .../5 | LVHT52-500G3-RB4 |

# LAT-61 PRECISE

Highly precise, quick distance measurements in a range up to 180 mm are the area of application for the LAT-61 optical distance sensor. Its small and precise laser spot makes it possible to determine distances with a resolution into the micrometer range. The integrated display serves to display measured values and to configure the sensor.

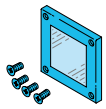
CE

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Emitted light | Red-light laser, 665 nm |
| Switching output 1 | pnp/npn, 50 mA |
| Switching output 2 | pnp/npn, 50 mA |
| Switching output 3 | pnp/npn, 50 mA |
| Analog output | 4 to 20 mA |
| | 0 to 10 V |
| No-load current | < 100 mA |
| Ambient temperature | -10 to +45 °C |
| Protection type | IP 67 |
| Protection class | III, operation on protective low voltage |
| Housing material | Plastic (PBT) |

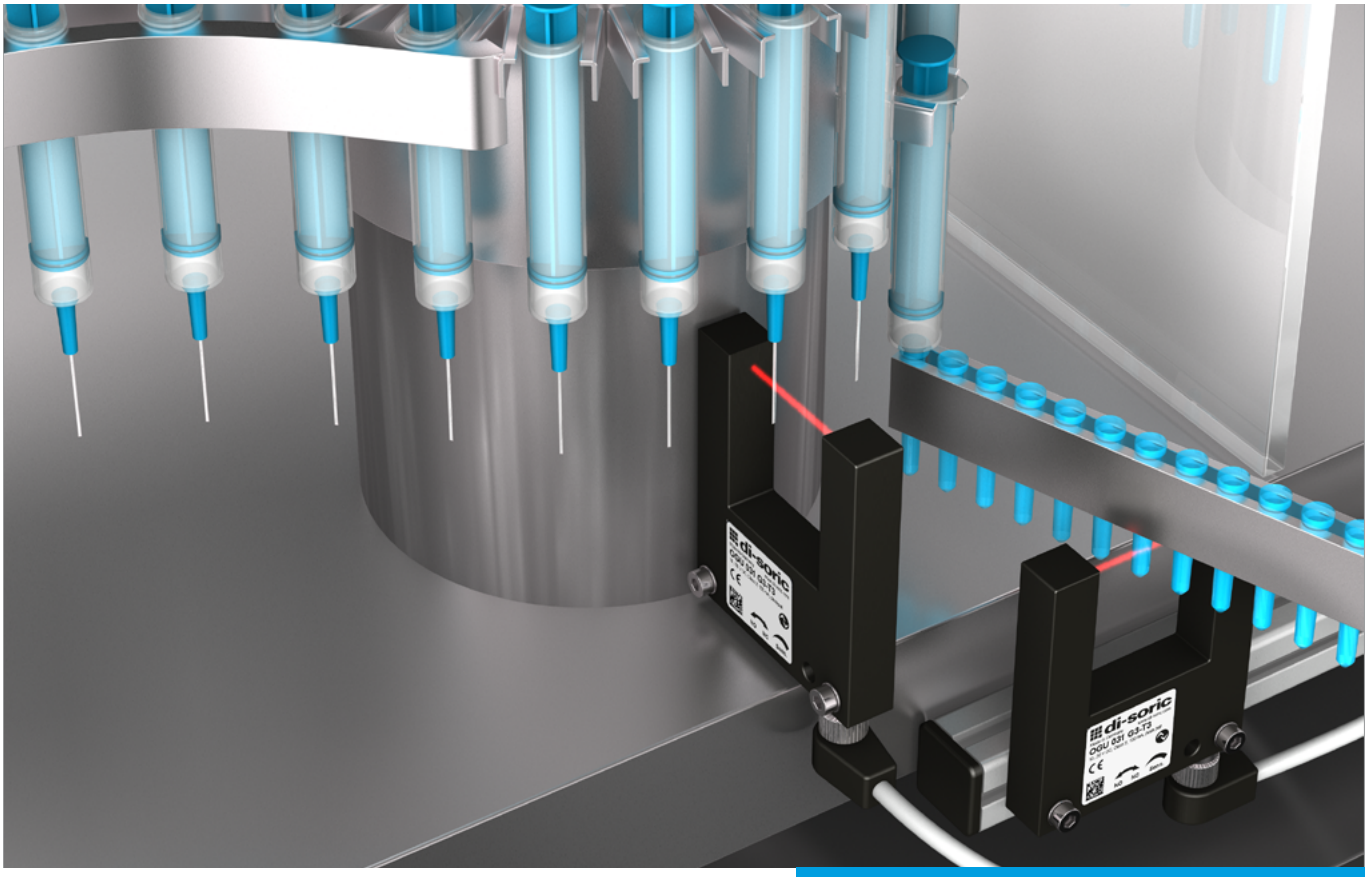
| | Laser distance sensors | Laser class | Analog output (4 to 20 mA) | Analog output (0 to 10 V) | Detection range (mm) | Housing design Size (mm) | Digital display | Service voltage (V DC) | Resolution (mm) | Measuring frequency (Hz) | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LAT-61 Precise** | | | | | | | | | | | | | |
|  | ■ | 2 | ■ | ■ | 30 ± 4 | 60 x 57 x 20 | ■ | 21.6 to 26.4 | 0.5 µm | 500 to 5000 | 5.0 m | – | LAT 61 K 30/8 IUPN |
| | | | | | 50 ± 10 | | | | 1.5 µm | 500 to 5000 | | | LAT 61 K 50/20 IUPN |
| | | | | | 85 ± 20 | | | | 2.5 µm | 500 to 5000 | | | LAT 61 K 85/40 IUPN |
| | | | | | 120 ± 60 | | | | 8.0 µm | 500 to 5000 | | | LAT 61 K 120/120 IUPN |

# LAT-Z ACCESSORIES FOR OPTICAL DISTANCE SENSORS

This scratch-resistant glass disk protects the front panel of the LAT-45 from damage in harsh ambient conditions.

| **Protective frame** with glass insert for LAT 45 … | | |
|---|---|---|
|  | | LHT9-45-SRG |

# Fork light barriers



di-soric fork light barriers operate based on the operating principle of through-beam sensors. They are delivered ready to install and do not have to be adjusted afterward. Fork light barriers are used wherever small objects or object positions, regardless of what type of surface they have, must be detected quickly and precisely.

# OGU

The OGU series with an LED light source is the standard among fork light barriers. The largest range of fork light barriers on the market includes devices with fork openings from 5 mm to 250 mm. OGU fork light barriers offer high resolution and reproducibility with formidable speed. They are operated intuitively using potentiometers, auto-teach or IO-Link. Four preset operation modes provide the option for ideal adaptation to the application. At the same time, IO-Link offers important advantages in configuration and diagnosis.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Service voltage | 10 to 30 V DC |
| No-load current | 40 mA |
| Switching output | Push-pull (pnp/npn can be adjusted by IO-Link) |
| | 100 mA, NO/NC (can be switched by potentiometer) |
| Sensitivity adjustment | Adjustable (potentiometer) |
| Ambient temperature | -25 to 60 °C |
| Degree of protection | IP 67 |
| Operation modes | **Standard** (general applications) |
| | **High Resolution** (for detecting very small objects) |
| | **Power** (increased function reserve) |
| | **Speed** (reliable detection of fast-moving parts) |
| Plug connector | M8, 3-pin |
| Connection cable | TK… (optionally available) |

## Operation modes

**Standard** – General applications
- 5 kHz
- Reproducibility: 0.02 mm

**Power** – Increased function reserve
- Increased transmitting power,

**High Resolution** – For detecting very small objects
- Resolution improved by 30%

**Speed** – Reliable detection of fast-moving parts
- 30% higher switching frequency

| | Fork width (mm) | Housing design Size (mm) | Red light, 660 nm, clocked | Infrared light, 880 nm | Resolution, smallest detectable part (mm) | Standard factory settings | Adjustable switching frequency (Hz) | IO-Link interface | Reproducibility (mm) | Die-cast zinc, powder-coated | Aluminum, black varnished/anodized | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OGU** | | | | | | | | | | | | |
|  | 05 | 25 x 45 x 10 | | ■ | Ø0.2 (min. Ø0.1) | ■ | 10,000 (max. 14,000) | ■ | 0.02 | | ■ | OGU 005 G3-T3 |
| | 10 | 25 x 45 x 10 | | ■ | Ø0.3 (min. Ø0.2) | ■ | 10,000 (max. 14,000) | ■ | 0.02 | ■ | | OGU 010 G3-T3 |
| | 20 | 40 x 50 x 10 | | ■ | Ø0.3 (min. Ø0.2) | ■ | 5,000 (max. 8,000) | ■ | 0.02 | ■ | | OGU 020 G3-T3 |
| | | | ■ | | | | | | | | | OGU 021 G3-T3 |
| | 30 | 50 x 60 x 10 | | ■ | Ø0.3 (min. Ø0.2) | ■ | 5,000 (max. 8,000) | ■ | 0.02 | ■ | | OGU 030 G3-T3 |
| | | | ■ | | | | | | | | | OGU 031 G3-T3 |
| | 40 | 60 x 70 x 10 | ■ | | Ø0.3 (min. Ø0.2) | ■ | 5,000 (max. 8,000) | ■ | 0.02 | ■ | | OGU 041 G3-T3 |
| | 50 | 70 x 80 x 10 | | ■ | Ø0.3 (min. Ø0.2) | ■ | 5,000 (max. 8,000) | ■ | 0.02 | ■ | | OGU 050 G3-T3 |
| | | | ■ | | | | | | | | | OGU 051 G3-T3 |
| | 60 | 80 x 80 x 10 | ■ | | Ø0.3 (min. Ø0.2) | ■ | 5,000 (max. 8,000) | ■ | 0.02 | | ■ | OGU 061 G3-T3 |

| | Fork width (mm) | Housing design Size (mm) | Red light, 660 nm, clocked | Infrared light, 880 nm | Resolution, smallest detectable part (mm) | Standard factory settings | Adjustable switching frequency (Hz) | IO-Link interface | Reproducibility (mm) | Die-cast zinc, powder-coated | Aluminum, black varnished/anodized | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OGU** | | | | | | | | | | | | |
|  | 70 | 90 x 80 x 10 | ■ | | Ø0.3 (min. Ø0.2) | ■ | 5,000 (max. 8,000) | ■ | 0.02 | | ■ | OGU 071 G3-T3 |
| | 80 | 100 x 80 x 10 | ■ | ■ | Ø0.3 (min. Ø0.2) | ■ | 5,000 (max. 8,000) | ■ | 0.02 | ■ | | OGU 080 G3-T3 |
| | | | | | | | | | | | | OGU 081 G3-T3 |
| | 90 | 110 x 80 x 10 | ■ | | Ø0.3 (min. Ø0.2) | ■ | 5,000 (max. 8,000) | ■ | 0.02 | | ■ | OGU 91 G3-T3 |
| | 100 | 120 x 80 x 10 | ■ | | Ø0.3 (min. Ø0.2) | ■ | 5,000 (max. 8,000) | ■ | 0.02 | ■ | | OGU 101 G3-T3 |
| | 120 | 144 x 155 x 12 | ■ | ■ | Ø0.5 (min. Ø0.3) | ■ | 5,000 (max. 8,000) | ■ | 0.02 | ■ | | OGU 120 G3-T3 |
| | | | | | | | | | | | | OGU 121 G3-T3 |
| | 170 | 194 x 140 x 12 | ■ | | Ø0.5 (min. Ø0.4) | ■ | 5,000 (max. 8,000) | ■ | 0.03 | ■ | | OGU 171 G3-T3 |
| | 220 | 244 x 140 x 12 | ■ | | Ø1.0 (min. Ø0.8) | ■ | 5,000 (max. 6,500) | ■ | 0.03 | ■ | | OGU 221 G3-T3 |
| | 250 | 274 x 140 x 12 | ■ | | Ø1.0 (min. Ø0.8) | ■ | 5,000 (max. 6,500) | ■ | 0.03 | | ■ | OGU 251 G3-T3 |

# OGUP DIRT-RESISTANT

These high-performance fork light barriers have an increased functional reserve, which means that cleaning cycles are reduced to a minimum. They are operated intuitively using potentiometers or IO-Link. Four preset operating modes make ideal adaptation to the application possible, while IO-Link offers important advantages in configuration and diagnosis.

| Technical data (typ.) | +20 °C, 24 VDC |
|---|---|
| Service voltage | 10 to 30 VDC (Supply class 2) |
| Switching output | Push-pull (pnp/npn can be adjusted by IO-Link) |
| | 100 mA, NO/NC (can be switched by potentiometer) |
| Sensitivity adjustment | Adjustable (potentiometer) |
| Ambient temperature | -25 to 60 °C |
| Degree of protection | IP 67 |
| Operation modes | **Power** (increased function reserve) Factory settings |
| | **Standard** (general applications) |
| | **High Resolution** (for detecting very small objects) |
| | **Speed** (reliable detection of fast-moving parts) |
| | |
| Plug connector | M8, 3-pin |
| Connection cable | TK… (optionally available) |

## Operation modes

**Standard** – General applications
- 5 kHz
- Reproducibility: 0.02 mm

**Power** – Increased function reserve
- Increased transmitting power,

**High Resolution** – For detecting very small objects
- Resolution improved by 30%

**Speed** – Reliable detection of fast-moving parts
- 30% higher switching frequency

| | Fork width (mm) | Housing design Size (mm) | Infrared light, 860 nm | No-load current (mA) | Resolution, smallest detectable part (mm) | Power factory settings | Switching frequency (Hz) | | Reproducibility (mm) | Die-cast zinc, black, powder-coated | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **OGUP Dirt-resistant** | | | | | | | | | | | |
|  | 20 | 40 x 50 x 10 | ■ | 30 | Ø2.0 (min. Ø0,2) | ■ | 200 (max 8,000) | | 0.03 | ■ | OGUP 020 G3-T3 |
| | 30 | 50 x 60 x 10 | | | | | | | 0.03 | | OGUP 030 G3-T3 |
| | 50 | 70 x 80 x 10 | | | | | | | 0.03 | | OGUP 050 G3-T3 |
| | 80 | 100 x 80 x 10 | | | | | | | 0.03 | | OGUP 080 G3-T3 |

# OGUL LASER

The OGUL series is particularly suited for detecting small parts down to 0.05 mm. Using collimated laser red light achieves a high degree of precision of the switching point between transmitter and receiver across the entire fork width. The devices work with a clocked red light laser in the eye-safe laser class 1. The easily visible, small laser point makes quick adjustment to the object possible even with a large amount of ambient light.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Emitted light | Red-light laser, 655 nm, clocked |
| Service voltage | 10 to 30 V DC (Supply class 2) |
| Switching output | Push-pull (pnp/npn can be adjusted by IO-Link) |
| | 100 mA, NO/NC (can be switched by potentiometer) |
| Sensitivity adjustment | Adjustable (potentiometer) |
| Ambient temperature | -25 to 60 °C |
| Degree of protection | IP 67 |
| Operation modes | **Standard** (general applications) |
| | **High Resolution** (for detecting very small objects) |
| | **Power** (increased function reserve) |
| | **Speed** (reliable detection of fast-moving parts) |
| Plug connector | M8, 3-pin |
| Connection cable | TK… (optionally available) |

## Operation modes

**Standard** – General applications
- 5 kHz
- Reproducibility: 0.01 mm

**Power** – Increased function reserve
- Increased transmitting power,

**High Resolution** – For detecting very small objects
- Resolution improved by 30%

**Speed** – Reliable detection of fast-moving parts
- 100% higher switching frequency

| | Fork width (mm) | Housing design Size (mm) | Transmission light (clocked) | No-load current (mA) | Resolution, smallest detectable part (mm) | Standard factory settings | Switching frequency (Hz) | Reproducibility (mm) | Die-cast zinc, black, powder-coated | Stainless steel V4A (1.4404 / 1.4571) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **OGUL Laser** | | | | | | | | | | | |
|  | 30 | 50 x 60 x 10 | Laser, red | < 30 | Ø 0.05 (min. Ø 0,03) | ■ | 5000 (max 10,000) | 0.01 | ■ | | OGUL 031 G3-T3 |
| | 50 | 70 x 80 x 10 | | | Ø 0.05 (min. Ø 0,03) | | | | | | OGUL 051 G3-T3 |
| | 80 | 100 x 80 x 10 | | | Ø 0.05 (min. Ø 0,04) | | | | | | OGUL 081 G3-T3 |
| | 120 | 144 x 90 x 12 | | | Ø 0.10 (min. Ø 0,05) | | | | | | OGUL 121 G3-T3 |
|  | 30 | 50 x 60 x 10 | Laser, red | < 30 | Ø 0.05 (min. Ø 0,03) | ■ | 5000 (max 10,000) | 0.01 | | ■ | OGUL 031 G3-T3/V4A |
| | 50 | 70 x 80 x 10 | | | Ø 0.05 (min. Ø 0,03) | | | | | | OGUL 051 G3-T3/V4A |
| | 80 | 100 x 80 x 10 | | | Ø 0.05 (min. Ø 0,04) | | | | | | OGUL 081 G3-T3/V4A |
| | 120 | 144 x 90 x 12 | | | Ø 0.10 (min. Ø 0,05) | | | | | | OGUL 121 G3-T3/V4a |

# OGU STAINLESS STEEL

The OGU fork light barriers with V4A stainless steel housing are mechanically and electrically compatible with standard fork light barriers. These devices are used particularly in the pharmaceuticals, beverage and food industries, because they satisfy the particular requirements for easy and reliable cleaning using aggressive media.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Service voltage | 10 to 30 V DC (Supply class 2) |
| Switching output | Push-pull (pnp/npn can be adjusted by IO-Link) |
| | 100 mA, NO/NC (can be switched by potentiometer) |
| Sensitivity adjustment | Adjustable (potentiometer) |
| Ambient temperature | -25 to 60 °C |
| Degree of protection | IP 67 |
| Operation modes | **Standard** (general applications) |
| | **High Resolution** (for detecting very small objects) |
| | **Power** (increased function reserve) |
| | **Speed** (reliable detection of fast-moving parts) |
| | |
| Plug connector | M8, 3-pin |
| Connection cable | TK… (optionally available) |

## Operation modes

**Standard** – General applications
- 5 kHz OGU 03x – 12x
- Reproducibility: 0.02 mm

**Power** – Increased function reserve
- Increased transmitting power,

**High Resolution** – For detecting very small objects
- Resolution improved by 30%

**Speed** – Reliable detection of fast-moving parts
- 30% higher switching frequency

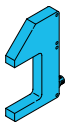
| | Fork width (mm) | Housing design Size (mm) | Red light, 660 nm, clocked | No-load current (mA) | Resolution, smallest detectable part (mm) | Standard factory settings | Switching frequency (Hz) | | Reproducibility (mm) | Stainless steel V4A (1.4404 / 1.4571) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **OGU Stainless steel** | | | | | | | | | | | |
|  | 10 | 25 x 45 x 10 | ■ | 30 | Ø0.2 (min. Ø0.1) | ■ | 5,000 (10,000) | | 0.02 | ■ | OGU 010 G3-T3/V4A |
| | 30 | 50 x 60 x 10 | ■ | 30 | Ø0.3 (min. Ø0.2) | ■ | 5,000 (10,000) | | 0.02 | ■ | OGU 031 G3-T3/V4A |
| | 50 | 70 x 80 x 10 | ■ | 30 | Ø0.3 (min. Ø0.2) | ■ | 5,000 (10,000) | | 0.02 | ■ | OGU 051 G3-T3/V4A |
| | 80 | 100 x 80 x 10 | ■ | 30 | Ø0.3 (min. Ø0.2) | ■ | 5,000 (10,000) | | 0.02 | ■ | OGU 081 G3-T3/V4A |
| | 120 | 144 x 90 x 12 | ■ | 45 | Ø0.5 (min. Ø0.2) | ■ | 5,000 (10,000) | | 0.02 | ■ | OGU 121 G3-T3/V4A |

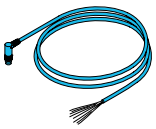
# LLGT MEASURING

The LLGT line laser fork light barrier with analog output is used for precise edge measurement and for determining diameters. This measuring, high-resolution fork light barrier can be used to reliably capture and analyze even the smallest differences in dimensions.

| **Technical data (typ.)** | **+20 °C, 24 V DC** |
|---|---|
| Service voltage | 18 to 30 V DC |
| Resolution | > 20 µm (analog output) |
| Measuring range | 25 mm |
| Switching output | Push-pull, 150 mA (2x) |
| Switching hysteresis | 0.1 mm |
| Analog output | 4 to 20 mA / 0 to 10 V switchable |
| Analog output linearity | ± 0.3% |
| Admissible impedance | ≤ 500 ohm / ≥ 1 kohm |
| Frequency of measuring sequence | 200 Hz |
| Characteristics | Trigger input |
| Display | LED green (operation) |
| | LED yellow (switching outputs) |
| Ambient temperature | +5 to 45 °C |
| Ambient light immunity | 5 kLx |
| Insulation voltage endurance | 500 V |
| Protection type | IP 67 |
| Protection optics | PMMA |
| Plug connector | M12 connector, 8-pin |

CE

| | *Fork width (mm)* | *Housing design Size (mm)* | *Red-light laser line, 650 nm* | *Laser class (EN60825-1)* | *No-load current (mA/24 V DC)* | *Resolution, smallest detectable part (mm)* | *Switching frequency (Hz)* | | *Aluminum, black anodized* | *Product description* |
|---|---|---|---|---|---|---|---|---|---|---|
| **LLGT Measuring** | | | | | | | | | | |
|  | 80 | 150 x 90 x 18 | ■ | 1 | 70 | Ø 0.5 | | | ■ | LLGT 081 M 25 IUG8-B8 |



**Accessories** for LLGT 081

see "Connection technology," page 194

# OGUZ SPECIAL DESIGNS

Fork light barriers in specific designs complete the extensive range that di-soric offers. Differential fork light barriers detect even minimal remission differences (diffuse reflection) for the detection of films that are very thin and as clear as glass. Fork light barriers for flow monitoring provide a continuous switching signal in case of the flow of a preset minimum quantity.

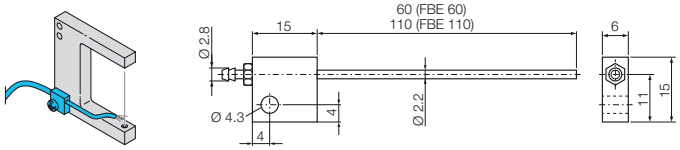
| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Service voltage | 10 to 35 V DC |
| Switching output | pnp, 200 mA, NO/NC switchable |
| Sensitivity adjustment | 4-turn potentiometer |
| Ambient temperature | -10 to 60 °C |
| Protection type | IP 67 |
| Plug connector | M8, 3-pin |
| Connection cable | TK… (optionally available) |

CE

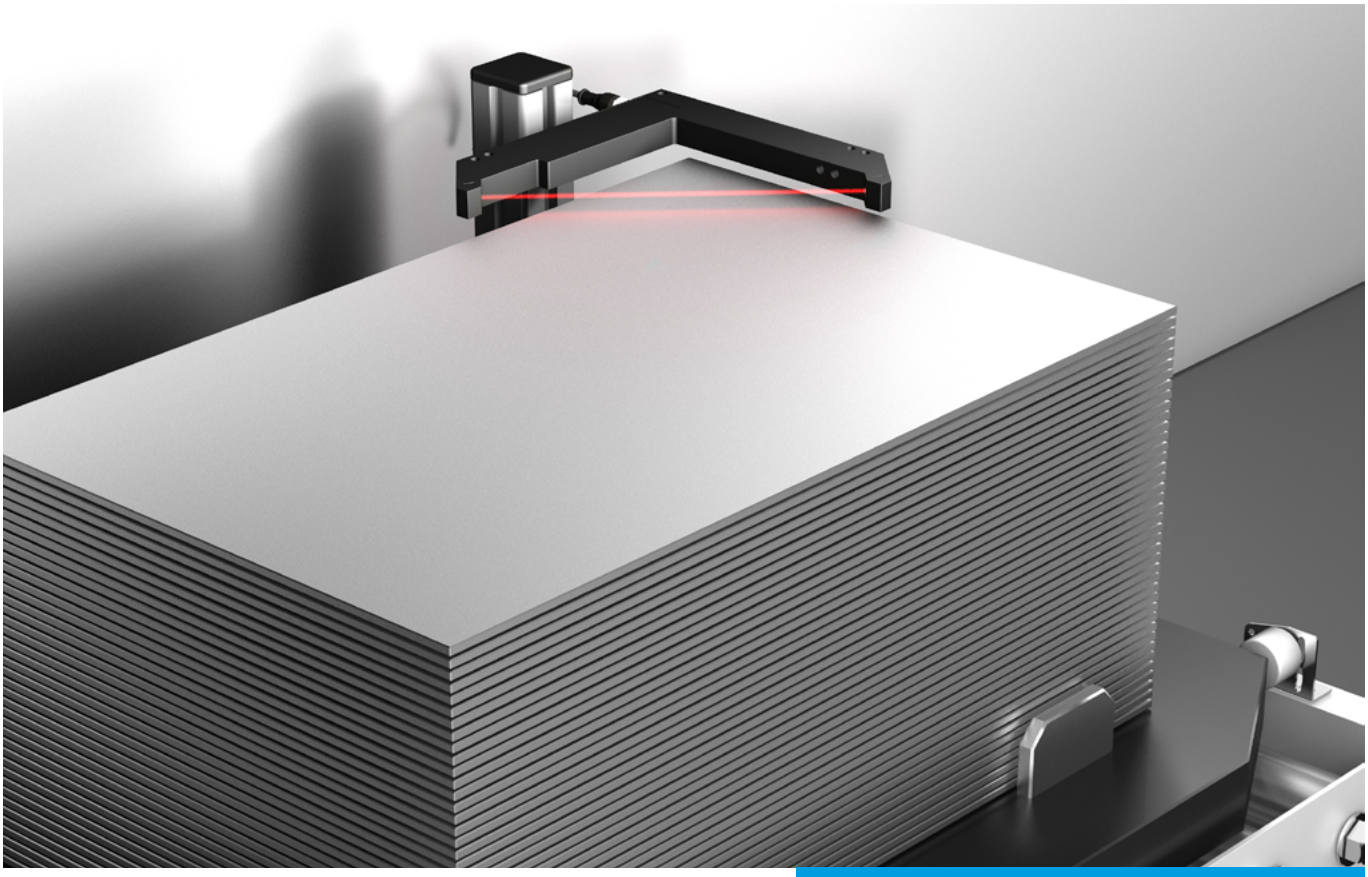
| | Fork width (mm) | Housing design Size (mm) | Infrared light, 880 nm | No-load current (mA) | Resolution, smallest detectable part (mm) | | Switching frequency (Hz) | Reproducibility (mm) | Aluminum, black anodized | Product description |
|---|---|---|---|---|---|---|---|---|---|---|
| **Differential fork light barriers** | | | | | | | | | | |
|  | 30 | 50 x 70 x 10 | ■ | 35 | Ø 0.07 | | 5,000 | 0.01 | ■ | ODG 30 P3K-TSSL |
| | 50 | 70 x 90 x 10 | | | Ø 0.1 | | | | | ODG 50 P3K-TSSL |
| | 90 | 110 x 115 x 10 | | | Ø 0.25 | | | | | ODG 90 P3K-TSSL |

# OG-Z ACCESSORIES FOR FORK LIGHT BARRIERS

These air blast devices are used to purge dirt and deposits from the front panel. Assembly is done on the assembly bore of the angled / fork light barrier.

| Air nozzles (FBE) | | | |
|---|---|---|---|
|  | | | |
| | Flexible | Length 60 mm | FBE 60 |
| | Flexible | Length 110 mm | FBE 110 |

# Angled light barriers



Angled light barriers from di-soric work according to the through-beam principle. They are used, preferably in tight spaces, for fast, surface-independent detection of objects. Since transmitter, receiver and the electronics are located in one housing, they can be mounted quickly. Costly brackets and time-consuming adjustments can be avoided.

# OGL

The OGL angled light barrier offers unsurpassed performance and can be operated with a potentiometer. The OGL offers high resolution and reproducibility with outstanding speed. It is operated intuitively using potentiometers or IO-Link. Four preset operation modes provide the option for ideal adaptation to the application. At the same time, IO-Link offers important advantages in configuration and diagnosis.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Service voltage | 10 to 30 V DC (Supply Class 2) |
| Switching output | Push-pull (pnp/npn can be adjusted by IO-Link) |
| | 100 mA, NO/NC (can be switched by potentiometer) |
| Sensitivity adjustment | Adjustable (potentiometer) |
| Ambient temperature | -25 to +60 °C |
| Protection type | IP 67 |
| Operation modes | **Standard** (general applications) |
| | **High Resolution** (for detecting very small objects) |
| | **Power** (increased function reserve) |
| | **Speed** (reliable detection of fast-moving parts) |
| Plug connector | M8, 3-pin |
| Connection cable | TK … (optionally available) |

IO-Link

c UL us LISTED

CE

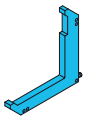
## Operation modes

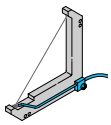
**Standard** – General applications
- 5 kHz
- Reproducibility: 0.02 mm

**Power** – Increased function reserve
- Increased transmitting power,

**High Resolution** – For detecting very small objects
- Resolution improved by 30%

**Speed** – Reliable detection of fast-moving parts
- 30% higher switching frequency

| | Length of the optical axis (mm) | Housing design Size (mm) | Red light, 660 nm | Infrared light, 880 nm | No-load current (mA) | Resolution (mm) | Standard factory settings | Switching frequency (Hz) | Reproducibility (mm) | | Die-cast zinc, black powder-coated | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OGL** | | | | | | | | | | | | |
|  | 50 | 75 x 75 x 10 | | ■ | < 30 | Ø0.3 (min. Ø0.2) | ■ | 5,000 (max. 10,000) | 0.02 | | ■ | OGL 050 G3-T3 [1] |
| | | | ■ | | | | | | | | | OGL 051 G3-T3 [1] |
| | 80 | 105 x 105 x 10 | | ■ | < 30 | Ø0.3 (min. Ø0.2) | ■ | 5,000 (max. 10,000) | 0.02 | | ■ | OGL 080 G3-T3 [1] |
| | | | ■ | | | | | | | | | OGL 081 G3-T3 [1] |
| | 120 | 150 x 150 x 12 | | ■ | < 30 | Ø0.5 (min. Ø0.4) | ■ | 5,000 (max. 10,000) | 0.02 | | ■ | OGL 120 G3-T3 [1] |
| | | | ■ | | | | | | | | | OGL 121 G3-T3 [1] |



**Air nozzle devices FBE** for OGLP xx G3-T3

see "OG-Z Accessories for fork light barriers," page 73

# OGLP DIRT-RESISTANT

The high-performance angled light barriers from di-soric have an increased functional reserve. In the devices with contamination indicator, the cleaning cycles are reduced to a minimum.

| Technical data (typ.) +20 °C, 24 VDC | OGLP xx G3-T3 | OGL xx/xx P6L-IBS |
|---|---|---|
| Service voltage | 10 to 30 VDC (Supply Class 2) | 10 to 35 V DC |
| Switching output | Push-pull (pnp/npn can be adjusted by IO-Link) | pnp, 200 mA, NO |
| | 100 mA, NO/NC (can be switched by potentiometer) | |
| Sensitivity adjustment | Adjustable (potentiometer) | |
| Ambient temperature | -25 to +60 °C | -10 to +60 °C |
| Protection type | IP 67 | IP 67 |
| Operation modes | **Standard** (general applications) | |
| | **High Resolution** (for detecting very small objects) | |
| | **Power** (increased function reserve) | |
| | **Speed** (reliable detection of fast-moving parts) | |
| Plug connector | M8, 3-pin | M12, 4-pin |
| Connection cable | TK … (optionally available) | VK …/4 (optionally available) |

IO-Link

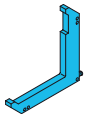
### Operation modes OGLP xx G3-T3

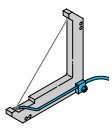
**Standard** – General applications
- 5 kHz
- Reproducibility: 0.02 mm

**Power** – Increased function reserve
- Increased transmitting power,

**High Resolution** – For detecting very small objects
- Resolution improved by 30%

**Speed** – Reliable detection of fast-moving parts
- 30% higher switching frequency

| | Length of the optical axis (mm) | Housing design Size (mm) | Infrared light, 860 nm | Red light, 660 nm | No-load current (mA) | Resolution (mm) | Power factory settings | Switching frequency (Hz) | Reproducibility (mm) | Contamination indicator / output | IO-Link | Die-cast zinc, black powder-coated | Die-cast zinc, natural | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OGLP Dirt-resistant** | | | | | | | | | | | | | | |
|  | 50 | 75 x 75 x 10 | ■ | | < 30 | Ø0.3 (min. Ø0.2) | ■ | 5,000 (max. 8,000) | 0.02 | – | ■ | ■ | – | OGLP 050 G3-T3 |
| | 80 | 105 x 105 x 10 | ■ | | < 30 | Ø0.3 (min. Ø0.2) | ■ | 5,000 (max. 8,000) | 0.02 | – | ■ | ■ | – | OGLP 080 G3-T3 |
| | 120 | 150 x 150 x 12 | ■ | | < 30 | Ø0.5 (min. Ø0.4) | ■ | 5,000 (max. 8,000) | 0.03 | – | ■ | ■ | – | OGLP 120 G3-T3 |
|  | 40 | 60 x 83 x 10 | | ■ | 45 | – | ■ | 200 | – | ■ | – | – | ■ | OGL 50/31 P6L-IBS |
| | 60 | 65 x 106 x 10 | | ■ | 45 | – | ■ | 200 | – | ■ | – | – | ■ | OGL 55/54 P6L-IBS |



**Air nozzle devices FBE** for OGLP xx G3-T3

see "OG-Z Accessories for fork light barriers," page 73

# OGLL LASER

The OGLL laser angled light barrier is particularly suited for detecting small parts down to 0.05 mm. Using collimated laser red light achieves a high degree of precision of the switching point between transmitter and receiver across the entire fork width. The devices work with a clocked red light laser in the eye-safe laser class 1. The easily visible, small laser point makes quick adjustment to the object possible even with a large amount of ambient light.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Service voltage | 10 to 30 V DC (Supply Class 2) |
| Switching output | Push-pull (pnp/npn can be adjusted by IO-Link) |
| | 100 mA, NO/NC (can be switched by potentiometer) |
| Sensitivity adjustment | Adjustable (potentiometer) |
| Ambient temperature | -25 to +60 °C |
| Protection type | IP 67 |
| Operation modes | **Standard** (general applications) |
| | **High Resolution** (for detecting very small objects) |
| | **Power** (increased function reserve) |
| | **Speed** (reliable detection of fast-moving parts) |
| Plug connector | M8, 3-pin |
| Connection cable | TK … (optionally available) |

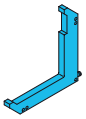
## Operation modes

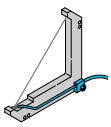
**Standard** – General applications
- 5 kHz
- Reproducibility: 0.01 mm

**Power** – Increased function reserve
- Increased transmitting power,

**High Resolution** – For detecting very small objects
- Resolution improved by 30%

**Speed** – Reliable detection of fast-moving parts
- 100% higher switching frequency

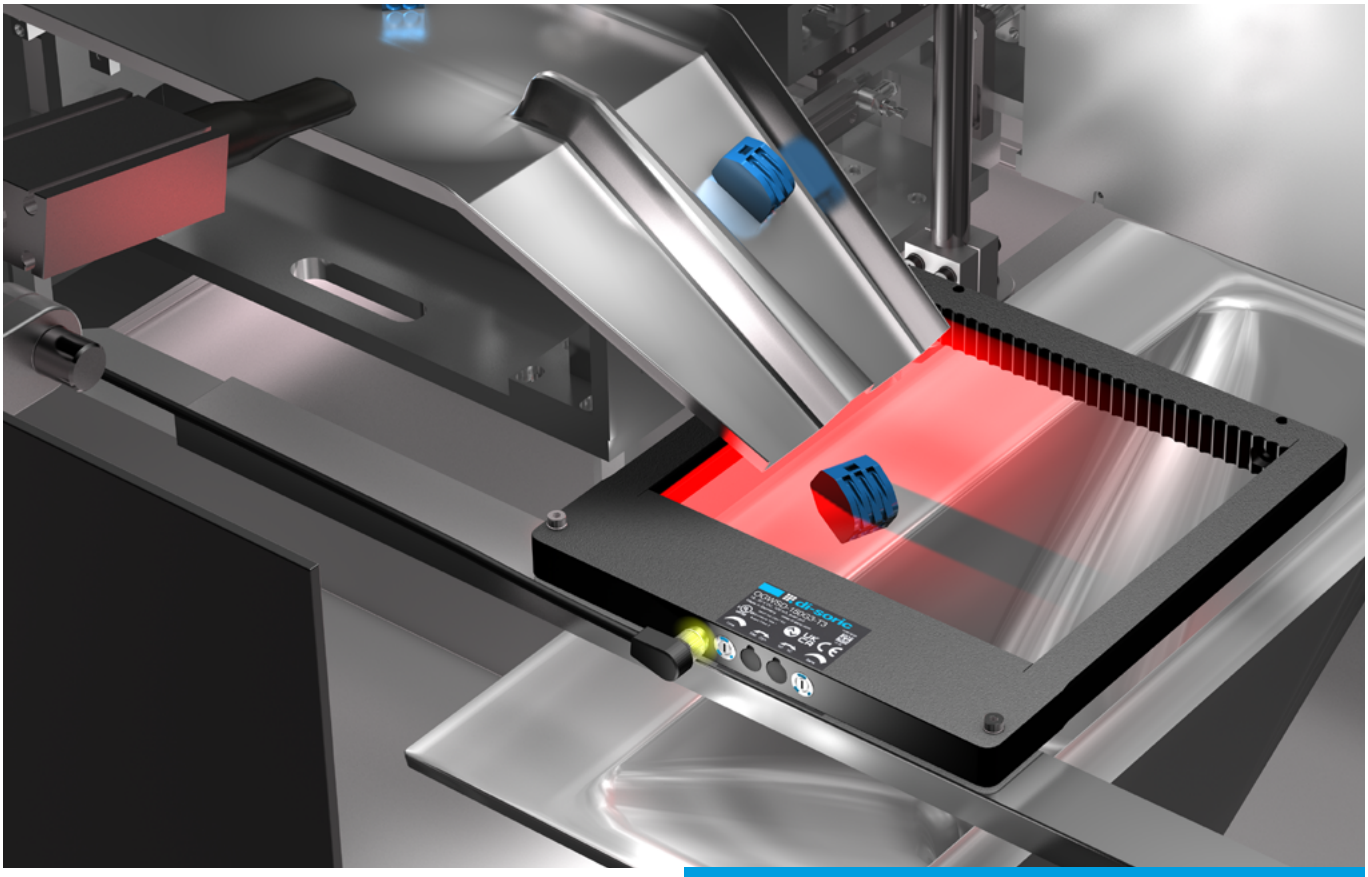
| | Length of the optical axis (mm) | Housing design Size (mm) | Transmission light (clocked) | Red-light laser, 670 nm | No-load current (mA) | Resolution (mm) | Standard factory settings | Switching frequency (Hz) | Reproducibility (mm) | Die-cast zinc, black powder-coated | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **OGLL Laser** | | | | | | | | | | | |
|  | 50 | 75 x 75 x 10 | Laser, red | ■ | < 30 | Ø0.05 (min. Ø0.03) | ■ | 5000 (10,000) | 0.01 | ■ | OGLL 051 G3-T3 |
| | 80 | 105 x 105 x 10 | | ■ | < 30 | Ø0.05 (min. Ø0.04) | ■ | 5000 (10,000) | 0.01 | ■ | OGLL 081 G3-T3 |
| | 120 | 150 x 150 x 12 | | ■ | < 30 | Ø0.10 (min. Ø0.05) | ■ | 5000 (10,000) | 0.01 | ■ | OGLL 121 G3-T3 |



**Air nozzles (FBE)**

see "OG-Z Accessories for fork light barriers," page 73

# Frame light barriers



Our frame light barriers detect very quickly moving and static objects independent of the object position and across the entire detection range. Frame light barriers are ready for installation and immediately operational and are used wherever metallic or non-metallic objects are to be detected not only at one position, but across a range, quickly and independent of the surface.

# OGWSD FRAME DESIGN

Frame light barriers of the OGWSD series have a frame design and detect objects in a range of up to 300 x 397 mm. The devices are ideal for harsh machine environments with heavy mechanical stresses. The OGWSD has a robust metal housing with impact protection and crossbar and can quickly be set via potentiometers. IO-Link offers advantages in configuration and diagnosis and enables Industry 4.0 system designs.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Emitted light | LED infrared |
| Response time | 0.05 ms |
| Release time | 0.05 to 10000 ms |
| Pulse stretching | 0 to 150 ms |
| Ambient temperature | -10 to 60 °C |
| Protection type | IP 67 |
| Housing material | Aluminum, anodized |

| | Detection range | Size (mm) | Functional principle S = static / D = dynamic | Switching output | No-load current (mA) | Resolution, dynamic operation (mm) | Resolution, static operation (mm) | Service voltage (VDC) | Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **OGWSD Frame design** | | | | | | | | | | | |
|  | 25 x 22 | 65.5 x 55 x 15 | S/D | 100 mA NO/NC | 45 | 0.7 | 1.0 | 18 to 30 | M8 | TK … | OGWSD-25G3-T3 |
| | 40 x 49 | 108.5 x 70 x 15 | | | | 0.7 | 1.0 | | | | OGWSD-40G3-T3 |
| | 70 x 62 | 121.5 x 100 x 15 | | | | 1.5 | 2.0 | | | | OGWSD-70G3-T3 |
| | 100 x 92 | 151.5 x 130 x 15 | | | | 2.5 | 3.0 | | | | OGWSD-100G3-T3 |
| | 150 x 142 | 201.5 x 180 x 15 | | | | 3.0 | 5.0 | | | | OGWSD-150G3-T3 |
| | 250 x 242 | 301.5 x 280 x 15 | | | | 5.0 | 8.0 | | | | OGWSD-250G3-T3 |
| | 300 x 398 | 457 x 330 x 15 | | | | 5.0 | 10.0 | | | | OGWSD-300G3-T3 |

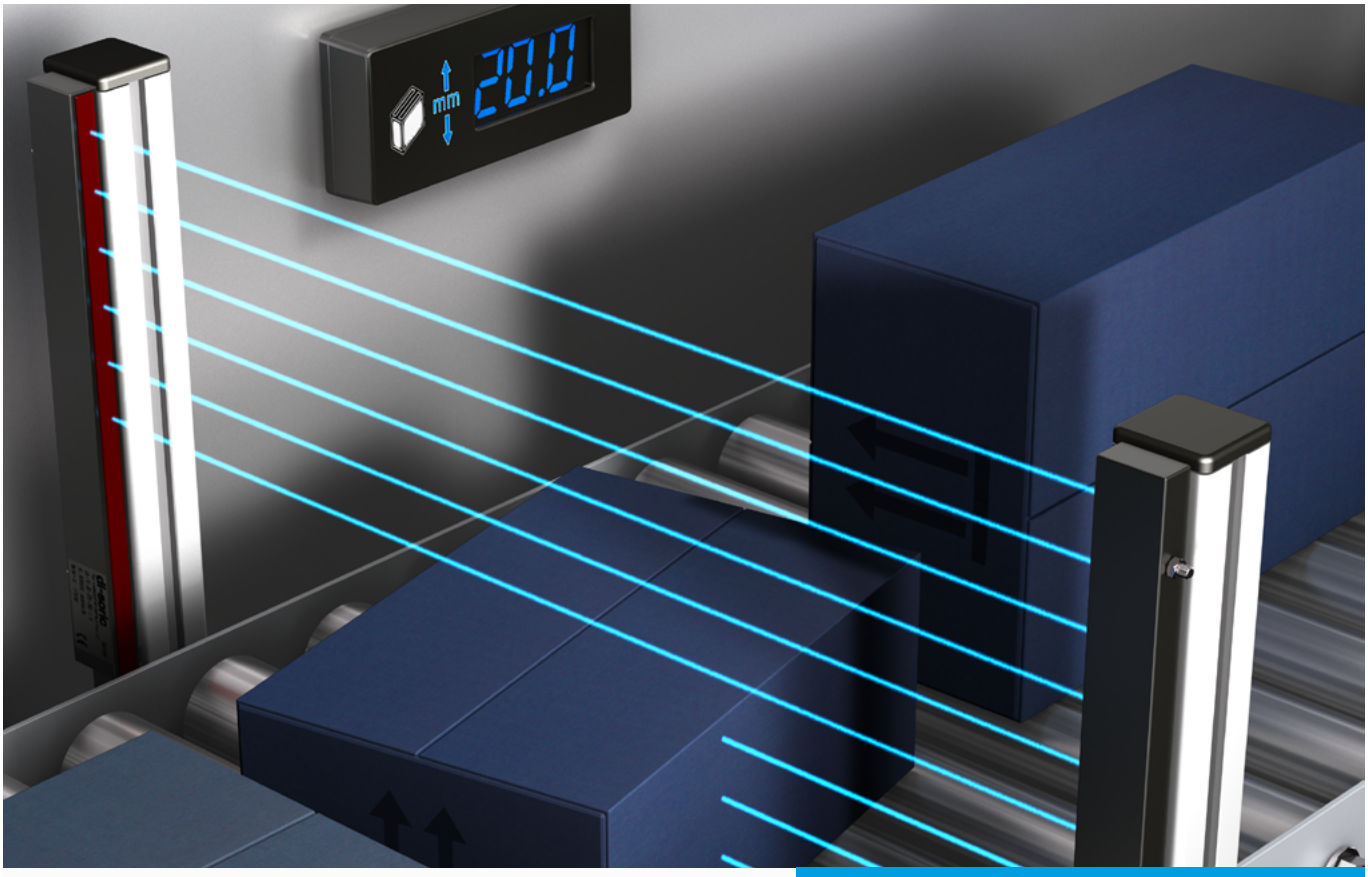
# OGWTI OPEN FORK DESIGN

Frame light barriers of the OGWTI series have an open fork design and detect objects in a range of up to 100 x 100 mm. With their compact design, the devices are ideal for integration in machinery. OGWTI has a robust metal housing and can be operated intuitively via a keypad. IO-Link offers advantages in configuration and diagnosis and enables Industry 4.0 system designs.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Emitted light | LED infrared |
| Response time | 0.5 ms |
| Release time | 0.05 to 10000 ms |
| Pulse stretching | 20 ms, adjustable |
| Ambient temperature | -10 to 60 °C |
| Protection type | IP 67 |
| Housing material | Die-cast zinc, powder-coated |

| | Detection range | Size (mm) | Functional principle S = static / D = dynamic | Switching output | No-load current (mA) | Resolution, dynamic operation (mm) | Resolution, static operation (mm) | Service voltage (VDC) | Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **OGWTI Open fork design** | | | | | | | | | | | |
|  | 30 x 30 | 66 x 54 x 12 | S/D | 100 mA NO/NC | 45 | 0.7 | 1.0 | 18 to 30 | M8 | TK to /4 | OGWTI-30G3-T4 |
| | 50 x 50 | 86 x 74 x 12 | | | | 1.0 | 1.5 | | | | OGWTI-50G3-T4 |
| | 80 x 80 | 116 x 104 x 12 | | | | 1.5 | 2.0 | | | | OGWTI-80G3-T4 |
| | 100 x 100 | 136 x 124 x 12 | | | | 2.5 | 3.0 | | | | OGWTI-100G3-T4 |

# Light curtains




Our light curtains detect and measure objects in a large detection or measuring field. The light curtain systems operate on the principle of multiple through-beam sensors whose output signals are either interlinked (switching light curtains) or evaluated individually (measuring light curtains). Through different resolutions and elevations, they can be used in many applications.

# LA SWITCHING

The area of application of the LA switching light curtains is object detection. The devices were designed in a cost-optimized manner for simple applications. Slim construction, integrated switching outputs and quick commissioning are their distinguishing features.

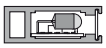
| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Operating distance | 0.7 to 4.0 m / set to 4.0 m at the factory |
| Number of beams | 8 to 112 |
| Beam separation | 12.5 / 25 / 50 / 112 mm |
| Monitoring height | 88 to 2571 mm |
| Emitted light | Infrared light, 880 nm, clocked |
| Service voltage | 20.4 to 28.8 V DC |
| Outputs | Transistor pnp (switching output and alarm output) |
| Current-carrying capacity | 200 mA, short-circuit proof |
| Ambient temperature | -10 to +45 °C |
| Degree of protection | IP 54, optionally IP 65 |
| EMC directives | EN 61000-6-3:2001/EN 61000-6-1:2001 |
| Housing material | Aluminum bar profile |

CE

| Beam separation (mm) | Number of beams | Monitoring height H (mm) | Profile length L ca. (mm) | Design | Number of threaded bolts | Dimension A (mm) | Dimension B (mm) | Dimension X (mm) | Dimension Y (mm) | Light switching | Dark switching | Product description | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LA Switching | | | | | | | | | | | | Horizontal beam evaluation | Diagonal beam evaluation |
| 12.5 | 8 | 88 | 260 | I | 2 | 30 | 200 | 13.5 | 153.5 | ■ | | LA 8-12.5-88-260 I-H | LA-D 8-12.5-88-260 I-H |
| | | | | | | | | | | | ■ | LA 8-12.5-88-260 I-D | LA-D 8-12.5-88-260 I-D |
| | 16 | 188 | 360 | | 2 | 30 | 300 | | | ■ | | LA 16-12.5-188-360 I-H | LA-D 16-12.5-188-360 I-H |
| | | | | | | | | | | | ■ | LA 16-12.5-188-360 I-D | LA-D 16-12.5-188-360 I-D |
| | 24 | 288 | 460 | | 2 | 80 | 300 | | | ■ | | LA 24-12.5-288-460 I-H | LA-D 24-12.5-288-460 I-H |
| | | | | | | | | | | | ■ | LA 24-12.5-288-460 I-D | LA-D 24-12.5-288-460 I-D |
| | 32 | 388 | 560 | | 2 | 80 | 400 | | | ■ | | LA 32-12.5-388-560 I-H | LA-D 32-12.5-388-560 I-H |
| | | | | | | | | | | | ■ | LA 32-12.5-388-560 I-D | LA-D 32-12.5-388-560 I-D |
| | 40 | 488 | 660 | | 2 | 80 | 500 | | | ■ | | LA 40-12.5-488-660 I-H | LA-D 40-12.5-488-660 I-H |
| | | | | | | | | | | | ■ | LA 40-12.5-488-660 I-D | LA-D 40-12.5-488-660 I-D |
| | 48 | 588 | 760 | | 2 | 30 | 700 | | | ■ | | LA 48-12.5-588-760 I-H | LA-D 48-12.5-588-760 I-H |
| | | | | | | | | | | | ■ | LA 48-12.5-588-760 I-D | LA-D 48-12.5-588-760 I-D |
| | 56 | 688 | 860 | | 2 | 80 | 700 | | | ■ | | LA 56-12.5-688-860 I-H | LA-D 56-12.5-688-860 I-H |
| | | | | | | | | | | | ■ | LA 56-12.5-688-860 I-D | LA-D 56-12.5-688-860 I-D |
| | 64 | 788 | 960 | | 3 | 80 | 400 | | | ■ | | LA 64-12.5-788-960 I-H | LA-D 64-12.5-788-960 I-H |
| | | | | | | | | | | | ■ | LA 64-12.5-788-960 I-D | LA-D 64-12.5-788-960 I-D |
| | 72 | 888 | 1,060 | | 3 | 130 | 400 | | | ■ | | LA 72-12.5-888-1060 I-H | |
| | | | | | | | | | | | ■ | LA 72-12.5-888-1060 I-D | |
| | 80 | 988 | 1,160 | | 3 | 80 | 500 | | | ■ | | LA 80-12.5-988-1160 I-H | |
| | | | | | | | | | | | ■ | LA 80-12.5-988-1160 I-D | |
| | 88 | 1,088 | 1,260 | | 3 | 30 | 600 | | | ■ | | LA 88-12.5-1088-1260 I-H | |
| | | | | | | | | | | | ■ | LA 88-12.5-1088-1260 I-D | |

| Beam separation (mm) | Number of beams | Monitoring height H (mm) | Profile length L ca. (mm) | Design | Number of threaded bolts | Dimension **A** (mm) | Dimension **B** (mm) | Dimension **X** (mm) | Dimension **Y** (mm) | Light switching | Dark switching | Product description | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LA Switching** | | | | | | | | | | | | **Horizontal beam evaluation** | **Diagonal beam evaluation** |
| 12.5 | 96 | 1,188 | 1,360 | I | 3 | 80 | 600 | 13.5 | 13.5 | ■ | | LA 96-12.5-1188-1360 I-H | |
| | | | | | | | | | | | ■ | LA 96-12.5-1188-1360 I-D | |
| | 104 | 1,288 | 1,460 | | 3 | 130 | 400 | | | ■ | | LA 104-12.5-1288-1460 I-H | |
| | | | | | | | | | | | ■ | LA 104-12.5-1288-1460 I-D | |
| | 112 | 1,388 | 1,560 | | 4 | 30 | 500 | | | ■ | | LA 112-12.5-1388-1560 I-H | |
| | | | | | | | | | | | ■ | LA 112-12.5-1388-1560 I-D | |
| 25 | 8 | 175 | 360 | I | 2 | 30 | 300 | 20 | 160 | ■ | | LA 8-25-175-360 I-H | LA-D 8-25-175-360 I-H |
| | | | | | | | | | | | ■ | LA 8-25-175-360 I-D | LA-D 8-25-175-360 I-D |
| | 16 | 375 | 560 | | 2 | 80 | 400 | | | ■ | | LA 16-25-375-560 I-H | LA-D 16-25-375-560 I-H |
| | | | | | | | | | | | ■ | LA 16-25-375-560 I-D | LA-D 16-25-375-560 I-D |
| | 24 | 575 | 760 | | 2 | 30 | 700 | | | ■ | | LA 24-25-575-760 I-H | LA-D 24-25-575-760 I-H |
| | | | | | | | | | | | ■ | LA 24-25-575-760 I-D | LA-D 24-25-575-760 I-D |
| | 32 | 775 | 960 | | 3 | 80 | 400 | | | ■ | | LA 32-25-775-960 I-H | LA-D 32-25-775-960 I-H |
| | | | | | | | | | | | ■ | LA 32-25-775-960 I-D | LA-D 32-25-775-960 I-D |
| | 40 | 975 | 1,160 | | 3 | 80 | 500 | | | ■ | | LA 40-25-975-1160 I-H | LA-D 40-25-975-1160 I-H |
| | | | | | | | | | | | ■ | LA 40-25-975-1160 I-D | LA-D 40-25-975-1160 I-D |
| | 48 | 1,175 | 1,360 | | 3 | 80 | 600 | | | ■ | | LA 48-25-1175-1360 I-H | LA-D 48-25-1175-1360 I-H |
| | | | | | | | | | | | ■ | LA 48-25-1175-1360 I-D | LA-D 48-25-1175-1360 I-D |
| | 56 | 1,375 | 1,560 | | 4 | 80 | 500 | | | ■ | | LA 56-25-1375-1560 I-H | LA-D 56-25-1375-1560 I-H |
| | | | | | | | | | | | ■ | LA 56-25-1375-1560 I-D | LA-D 56-25-1375-1560 I-D |
| | 64 | 1,575 | 1,760 | | 4 | 130 | 500 | | | ■ | | LA 64-25-1575-1760 I-H | LA-D 64-25-1575-1760 I-H |
| | | | | | | | | | | | ■ | LA 64-25-1575-1760 I-D | LA-D 64-25-1575-1760 I-D |
| | 72 | 1,775 | 1,960 | | 4 | 80 | 600 | | | ■ | | LA 72-25-1775-1960 I-H | |
| | | | | | | | | | | | ■ | LA 72-25-1775-1960 I-D | |
| | 80 | 1,975 | 2,160 | | 5 | 80 | 500 | | | ■ | | LA 80-25-1975-2160 I-H | |
| | | | | | | | | | | | ■ | LA 80-25-1975-2160 I-D | |
| | 88 | 2,175 | 2,360 | | 5 | 140 | 520 | | | ■ | | LA 88-25-2175-2360 I-H | |
| | | | | | | | | | | | ■ | LA 88-25-2175-2360 I-D | |

| Beam separation (mm) | Number of beams | Monitoring height H (mm) | Profile length L ca. (mm) | Design | Number of threaded bolts | Dimension **A** (mm) | Dimension **B** (mm) | Dimension **X** (mm) | Dimension **Y** (mm) | Light switching | Dark switching | Product description | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LA Switching** | | | | | | | | | | | | **Horizontal beam evaluation** | **Diagonal beam evaluation** |
| 50 | 8 | 350 | 560 | I | 2 | 80 | 400 | 20 | 185 | ■ | | LA 8-50-350-560 I-H | LA-D 8-50-350-560 I-H |
| | | | | | | | | | | | ■ | LA 8-50-350-560 I-D | LA-D 8-50-350-560 I-D |
| | 16 | 750 | 960 | | 3 | 80 | 400 | | | ■ | | LA 16-50-750-960 I-H | LA-D 16-50-750-960 I-H |
| | | | | | | | | | | | ■ | LA 16-50-750-960 I-D | LA-D 16-50-750-960 I-D |
| | 24 | 1,150 | 1,360 | | 3 | 80 | 600 | | | ■ | | LA 24-50-1150-1360 I-H | LA-D 24-50-1150-1360 I-H |
| | | | | | | | | | | | ■ | LA 24-50-1150-1360 I-D | LA-D 24-50-1150-1360 I-D |
| | 32 | 1,550 | 1,760 | | 4 | 130 | 500 | | | ■ | | LA 32-50-1550-1760 I-H | LA-D 32-50-1550-1760 I-H |
| | | | | | | | | | | | ■ | LA 32-50-1550-1760 I-D | LA-D 32-50-1550-1760 I-D |
| | 40 | 1,950 | 2,160 | | 5 | 130 | 500 | | | ■ | | LA 40-50-1950-2160 I-H | LA-D 40-50-1950-2160 I-H |
| | | | | | | | | | | | ■ | LA 40-50-1950-2160 I-D | LA-D 40-50-1950-2160 I-D |
| | 48 | 2,350 | 2,560 | | 5 | 80 | 600 | | | ■ | | LA 48-50-2350-2560 I-H | LA-D 48-50-2350-2560 I-H |
| | | | | | | | | | | | ■ | LA 48-50-2350-2560 I-D | LA-D 48-50-2350-2560 I-D |
| 112 | 8 | 783 | 1,050 | I | 3 | 125 | 400 | 20 | 245 | ■ | | LA 8-112-783-1050 I-H | LA-D 8-112-783-1050 I-H |
| | | | | | | | | | | | ■ | LA 8-112-783-1050 I-D | LA-D 8-112-783-1050 I-D |
| | 16 | 1,677 | 1,950 | | 4 | 75 | 600 | | | ■ | | LA 16-112-1677-1950 I-H | LA-D 16-112-1677-1950 I-H |
| | | | | | | | | | | | ■ | LA 16-112-1677-1950 I-D | LA-D 16-112-1677-1950 I-D |



10x27 mm

**LA ... Q**

Light curtains in housing design LA ... Q are optionally available upon request

# LI MEASURING

The LI measuring light curtains are used in object measurement and for challenging measuring and detection tasks. The most important features are high resolution and a short response time, as well as their slim construction for simple integration. An additional evaluation unit is required to use them.

CE

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Operating distance | 0.25 to 6.0 m can be adjusted using the evaluation electronics |
| Number of beams | 8 to 344 |
| Beam separation | 5 / 10 / 12.5 / 25 / 50 / 112 mm |
| Monitoring height | 35 to 2375 mm |
| Emitted light | Infrared light, 880 nm |
| | 200 mA, short-circuit proof |
| Ambient temperature | -10 to +45 °C |
| Degree of protection | IP 54, optionally IP 65 (EN 61000-6-3:2001/EN 61000-6-1:2001) |
| Housing material | Aluminum bar profile |

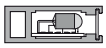
| LI Measuring | Beam separation (mm) | Number of beams | Monitoring height H (mm) | Profile length L ca. (mm) | Design | Dimension X (mm) | Dimension Y (mm) | Product description |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Horizontal or diagonal beam evaluation |
| | 5 | 8 | 35 | 70 | T | 17.5 | 17.5 | LI 8-5-35-70 T |
| | | 16 | 75 | 110 | | | | LI 16-5-75-110 T |
| | | 24 | 115 | 150 | | | | LI 24-5-115-150 T |
| | | 32 | 155 | 190 | | | | LI 32-5-155-190 T |
| | | 40 | 195 | 230 | | | | LI 40-5-195-230 T |
| | | 48 | 235 | 270 | | | | LI 48-5-235-270 T |
| | | 56 | 275 | 310 | | | | LI 56-5-275-310 T |
| | | 64 | 315 | 350 | | | | LI 64-5-315-350 T |
| | | 72 | 355 | 390 | | | | LI 72-5-355-390 T |
| | | 80 | 395 | 430 | | | | LI 80-5-395-430 T |
| | | 88 | 435 | 470 | | | | LI 88-5-435-470 T |
| | | 96 | 475 | 510 | | | | LI 96-5-475-510 T |
| | | 104 | 515 | 550 | | | | LI 104-5-515-550 T |
| | | 112 | 555 | 590 | | | | LI 112-5-555-590 T |
| | | 120 | 595 | 630 | | | | LI 120-5-595-630 T |
| | | 128 | 635 | 670 | | | | LI 128-5-635-670 T |
| | | 136 | 675 | 710 | | | | LI 136-5-675-710 T |
| | | 144 | 715 | 750 | | | | LI 144-5-715-750 T |
| | | 152 | 755 | 790 | | | | LI 152-5-755-790 T |
| | | 160 | 795 | 830 | | | | LI 160-5-795-830 T |
| | | 168 | 835 | 870 | | | | LI 168-5-835-870 T |
| | | 176 | 875 | 910 | | | | LI 176-5-875-910 T |
| | | 184 | 915 | 950 | | | | LI 184-5-915-950 T |
| | | 192 | 955 | 990 | | | | LI 192-5-955-990 T |
| | | 200 | 995 | 1,030 | | | | LI 200-5-995-1030 T |
| | | 208 | 1,035 | 1,070 | | | | LI 208-5-1035-1070 T |
| | | 216 | 1,075 | 1,110 | | | | LI 216-5-1075-1110 T |
| | | 224 | 1,115 | 1,150 | | | | LI 224-5-1115-1150 T |
| | | 232 | 1,155 | 1,190 | | | | LI 232-5-1155-1190 T |
| | | 240 | 1,195 | 1,230 | | | | LI 240-5-1195-1230 T |
| | | 248 | 1,235 | 1,270 | | | | LI 248-5-1235-1270 T |
| | | 256 | 1,275 | 1,310 | | | | LI 256-5-1275-1310 T |
| | | 264 | 1,315 | 1,350 | | | | LI 264-5-1315-1350 T |
| | | 272 | 1,355 | 1,390 | | | | LI 272-5-1355-1390 T |
| | | 280 | 1,395 | 1,430 | | | | LI 280-5-1395-1430 T |
| | | 288 | 1,435 | 1,470 | | | | LI 288-5-1435-1470 T |
| | | 296 | 1,475 | 1,510 | | | | LI 296-5-1475-1510 T |
| | | 344 | 1,715 | 1,750 | | | | LI 344-5-1715-1750 T |

| Beam separation (mm) | Number of beams | Monitoring height H (mm) | Profile length L ca. (mm) | Design | Number of threaded bolts | Dimension A (mm) | Dimension B (mm) | Dimension X (mm) | Dimension Y (mm) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|
| **LI Measuring** | | | | | | | | | | **Horizontal or diagonal beam evaluation** |
| 10 | 8 | 70 | 130 | I | 2 | 20 | 90 | 13.5 | 38.5 | LI 8-10-70-130 I |
| | 16 | 150 | 210 | | 2 | 55 | 100 | | | LI 16-10-150-210 I |
| | 24 | 230 | 290 | | 2 | 45 | 200 | | | LI 24-10-230-290 I |
| | 32 | 310 | 370 | | 2 | 35 | 300 | | | LI 32-10-310-370 I |
| | 40 | 390 | 450 | | 2 | 75 | 300 | | | LI 40-10-390-450 I |
| | 48 | 470 | 530 | | 2 | 65 | 400 | | | LI 48-10-470-530 I |
| | 56 | 550 | 610 | | 2 | 105 | 400 | | | LI 56-10-550-610 I |
| | 64 | 630 | 690 | | 2 | 45 | 600 | | | LI 64-10-630-690 I |
| | 72 | 710 | 770 | | 2 | 35 | 700 | | | LI 72-10-710-770 I |
| | 80 | 790 | 850 | | 2 | 75 | 700 | | | LI 80-10-790-850 I |
| | 88 | 870 | 930 | | 2 | 65 | 800 | | | LI 88-10-870-930 I |
| | 96 | 950 | 1,010 | | 3 | 105 | 400 | | | LI 96-10-950-1010 I |
| | 104 | 1,030 | 1,090 | | 3 | 145 | 400 | | | LI 104-10-1030-1090 I |
| | 112 | 1,110 | 1,170 | | 3 | 85 | 500 | | | LI 112–10-1110-1170 I |
| | 120 | 1,190 | 1,250 | | 3 | 125 | 500 | | | LI 120-10-1190-1250 I |
| | 128 | 1,270 | 1,330 | | 3 | 65 | 600 | | | LI 128-10-1270-1330 I |
| | 136 | 1,350 | 1,410 | | 3 | 105 | 600 | | | LI 136-10-1350-1410 I |
| | 144 | 1,430 | 1,490 | | 4 | 145 | 400 | | | LI 144-10-1430-1490 I |
| | 152 | 1,510 | 1,570 | | 4 | 35 | 500 | | | LI 152-10-1510-1570 I |
| | 160 | 1,590 | 1,650 | | 4 | 75 | 500 | | | LI 160-10-1590-1650 I |
| 12.5 | 8 | 88 | 140 | I | 2 | 25 | 90 | 13.5 | 38.5 | LI 8-12.5-88-140 I |
| | 16 | 188 | 240 | | 2 | 70 | 100 | | | LI 16 – 12.5-188-240 I |
| | 24 | 288 | 340 | | 2 | 70 | 200 | | | LI 24-12.5-288-340 I |
| | 32 | 388 | 440 | | 2 | 70 | 300 | | | LI 32-12.5-388-440 I |
| | 40 | 488 | 540 | | 2 | 70 | 400 | | | LI 40-12.5-488-540 I |
| | 48 | 588 | 640 | | 2 | 70 | 500 | | | LI 48-12.5-588-640 I |
| | 56 | 688 | 740 | | 2 | 70 | 600 | | | LI 56-12.5-688-740 I |
| | 64 | 788 | 840 | | 2 | 70 | 700 | | | LI 64-12.5-788-840 I |
| | 72 | 888 | 940 | | 2 | 70 | 800 | | | LI 72-12.5-888-940 I |
| | 80 | 988 | 1,040 | | 3 | 120 | 400 | | | LI 80-12.5-988-1040 I |
| | 88 | 1,088 | 1,140 | | 3 | 70 | 500 | | | LI 88-12.5-1088-1140 I |
| | 96 | 1,188 | 1,240 | | 3 | 120 | 500 | | | LI 96-12.5-1188-1240 I |
| | 104 | 1,288 | 1,340 | | 3 | 70 | 600 | | | LI 104-12.5-1288-1340 I |
| | 112 | 1,388 | 1,440 | | 3 | 120 | 600 | | | LI 112-12.5-1388-1440 I |
| | 120 | 1,488 | 1,540 | | 4 | 170 | 400 | | | LI 120-12.5-1488-1540 I |
| | 128 | 1,588 | 1,640 | | 4 | 70 | 500 | | | LI 128-12.5-1588-1640 I |
| | 136 | 1,688 | 1,740 | | 4 | 120 | 500 | | | LI 136-12.5-1688-1740 I |
| | 144 | 1,788 | 1,840 | | 4 | 170 | 500 | | | LI 144-12.5-1788-1840 I |

**Light curtains with greater monitoring height H (max. 196 beams)**

Available on request!

| LI Measuring | Beam separation (mm) | Number of beams | Monitoring height H (mm) | Profile length L ca. (mm) | Design | Number of threaded bolts | Dimension A (mm) | Dimension B (mm) | Dimension X (mm) | Dimension Y (mm) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Horizontal or diagonal beam evaluation |
|  | 25 | 8 | 175 | 240 | I | 2 | 70 | 100 | 20 | 45 | LI 8-25-175-240 I |
| | | 16 | 375 | 440 | | 2 | 70 | 300 | | | LI 16-25-375-440 I |
| | | 24 | 575 | 640 | | 2 | 70 | 500 | | | LI 24-25-575-640 I |
| | | 32 | 775 | 840 | | 2 | 70 | 700 | | | LI 32-25-775-840 I |
| | | 40 | 975 | 1,040 | | 3 | 120 | 400 | | | LI 40-25-975-1040 I |
| | | 48 | 1,175 | 1,240 | | 3 | 125 | 500 | | | LI 48-25-1175-1240 I |
| | | 56 | 1,375 | 1,440 | | 3 | 120 | 600 | | | LI 56-25-1375-1440 I |
| | | 64 | 1,575 | 1,640 | | 4 | 70 | 500 | | | LI 64-25-1575-1640 I |
| | | 72 | 1,775 | 1,840 | | 4 | 170 | 500 | | | LI 72-25-1775-1840 I |
| | | 80 | 1,975 | 2,040 | | 4 | 120 | 600 | | | LI 80-25-1975-2040 I |
| | | 88 | 2,175 | 2,240 | | 5 | 120 | 500 | | | LI 88-25-2175-2240 I |
| | | 96 | 2,375 | 2,440 | | 5 | 165 | 520 | | | LI 96-25-2375-2440 I |
| | 50 | 8 | 350 | 440 | I | 2 | 70 | 300 | 20 | 70 | LI 8-50-350-440 I |
| | | 16 | 750 | 840 | | 2 | 70 | 700 | | | LI 16-50-750-840 I |
| | | 24 | 1,150 | 1,240 | | 3 | 120 | 500 | | | LI 24-50-1150-1240 I |
| | | 32 | 1,550 | 1,640 | | 4 | 70 | 500 | | | LI 32-50-1550-1640 I |
| | | 40 | 1,950 | 2,040 | | 4 | 120 | 600 | | | LI 40-50-1950-2040 I |
| | | 48 | 2,350 | 2,440 | | 5 | 180 | 520 | | | LI 48-50-2350-2440 I |
| | 112 | 4 | 336 | 490 | I | 2 | 95 | 300 | 20 | 130 | LI 4-112-336-490 I |
| | | 8 | 783 | 940 | | 2 | 70 | 800 | | | LI 8-112-783-940 I |
| | | 12 | 1,230 | 1,380 | | 3 | 90 | 600 | | | LI 12-112-1230-1380 I |
| | | 16 | 1,677 | 1,830 | | 4 | 165 | 500 | | | LI 16-112-1677-1830 I |
| | | 20 | 2,124 | 2,280 | | 5 | 175 | 500 | | | LI 20-112-2124-2280 I |



10x27 mm

**LI…Q**

Light curtains in housing design LI…Q are optionally available upon request

# LI-A EVALUATION ELECTRONICS FOR LI SERIES

| Technical data (typ.) | at +20 °C, 24 V DC | | |
|---|---|---|---|
| Operating distance | 0.4 to 6.0 m, autocalibration | LED display | Status indicator/ error indicator |
| Number of beams | See Light curtains LL… | Ambient temperature | 0 to +40 °C |
| Switching frequency | 10 Hz | Protection type | IP 54 |
| Switching capacity | 250 V DC, 250 W 400 V AC, 2000 VA | Protection class | III, operation on protective low voltage |
| Output function | Light switching | EMC directives | EN 61000-6-1: 2001 |
| beam evaluation | Multiplexing | | EN 61000-6-3: 2001 |
| Cycle time per light beam | down to 0.08 ms/beam | Housing material | ABS gray |
| | (Depending on range) | | |

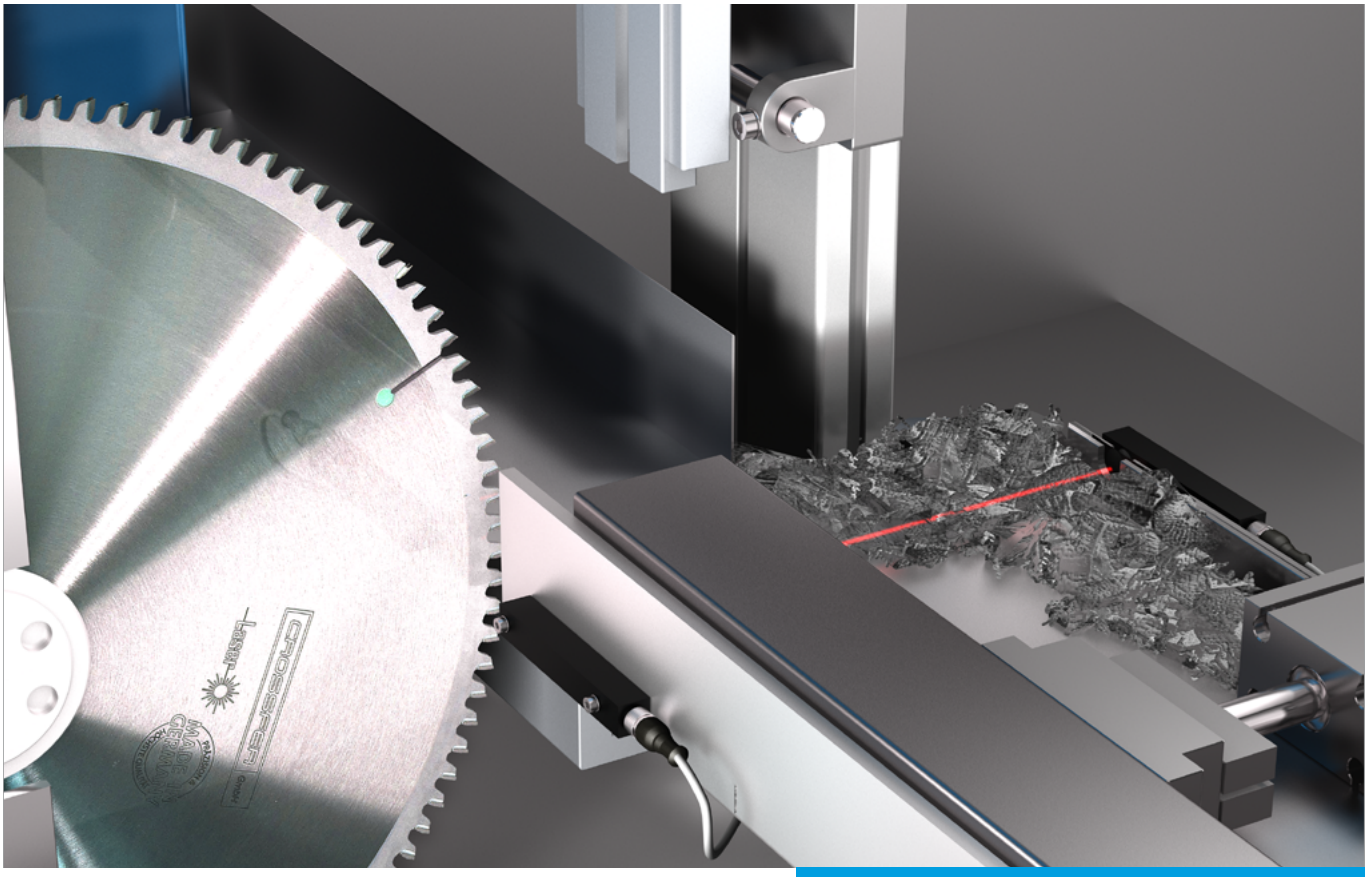
| | Number of light curtains being operated | Switching output (relay 10 Hz) | Analog outputs | Service voltage (VDC) | Profibus interface D-Sub, 9-pin (address adjustable) | Ethernet / IP | Profinet | Dimensions L x W x H (mm) | Product description |
|---|---|---|---|---|---|---|---|---|---|
| **Evaluation electronics LVB…, switching** | | | | | | | | | |
|  | 1 | 1 | | 19 to 30 | | | | 57.5 x 120 x 200 | LVB-24VDC |
| | 1 | 1 | | 230 (+5/-10%) | | | | 57.5 x 120 x 200 | LVB-230VAC |

| Technical data (typ.) | at +20 °C, 24 V DC | | |
|---|---|---|---|
| Operating distance | 0.25 to 6.0 m, adjustable | LED display | Error indicator |
| Number of beams | max. 500 | Ambient temperature | 0 to +40 °C |
| Service voltage | 20 to 26 V DC | Protection type | IP 00 |
| Outputs | See the graphic above | | IP 65 with optional outer housing |
| Switching capacity | 250 mA | Protection class | III, operation on protective low voltage |
| Output function | Configurable | EMC directives | EN 61000-6-1: 2001 |
| beam evaluation | Parameters can be configured horizontally / diagonally | | EN 61000-6-3: 2001 |
| Cycle time per light beam | 0.05 ms (depends on configuration | Housing material | Plastic |
| | and range of light curtain) | | |

| | Number of light curtains being operated | Configurable inputs (24 VDC, 12 mA, 3,000 Hz) | Outputs (24 VDC, 0.25 A, PNP) | Analog outputs (0 to 10 V) | 3 combined IOs | RS 232 | Configuration by means of DIP series | CANopen interface | Profibus interface D-Sub, 9-pin (address adjustable) | Ethernet / IP | Profinet | Dimensions L x W x H (mm) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Evaluation electronics LVE… / LVX…, measuring** | | | | | | | | | | | | | |
|  | 1 | 1 | 1 | | ■ | ■ | ■ | | | | | 88 x 126 x 60 | LVE [1] |
| | | | 1 | | | | | | ■ | | | 163 x 126 x 60 | LVE-PBI [1] |
| | | | 1 | | | | | | | ■ | | 130 x 126 x 60 | LVE-ENI [1] |
| | | | 1 | | | | | | | | ■ | 163 x 126 x 60 | LVE-PNI [1] |
| | | | 1 | 2 | | | | | | | | 124 x 126 x 60 | LVE-ALX [1] |
| | | | 17 | | | | | | | | | 147 x 126 x 60 | LVE-016 [1] |
| | 2 | 1 | 3 | | ■ | ■ | ■ | ■ | | | | 125 x 126 x 60 | LVX [1] |
| | | | 3 | | | | | | ■ | | | 200 x 126 x 60 | LVX-PBI [1] |
| | | | 3 | | | | | | | | ■ | 200 x 126 x 60 | LVX-PNI [1] |
| | | | 3 | 2 | | | | | | | | 161 x 126 x 60 | LVX-ALX [1] |
| | | | 19 | | | | | | | | | 184 x 126 x 60 | LVX-016 [1] |

[1] The evaluation electronics are configured at the factory using the customer's application.

# High performance light barriers



Our high-performance light barriers are available as threaded and rectangular models, which can be combined with one another. These products penetrate even heavy contamination, such as dust, oil and dirty water. They are optimized for the highest functionality and have a range of up to 50 m.

# OP-M12

The threaded M12 model consists of a transmitter and receiver in a compact construction and simple threaded mounting. Thanks to the robust stainless steel housing, the systems are resistant to vibrations and shaking and therefore do not have to be continually readjusted.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Emitted light | Infrared light, clocked |
| Service voltage | 10 to 35 V DC |
| Ambient temperature | -20 to +60 °C |

CE

| | Range (opening angle 15°) when operating with OSP 12 MLFL … / OSPQ 12 MLFL … (m) | Operating distance (opening angle 6°) When operating with OSP 12 VHF … / OSPQ 12 MHFL … (m) | Housing design Size (mm) | Transmitter (T) / Receiver (R) | Dispersion angle / opening angle | Switching output | NC (pnp) / NO (npn) | NO (pnp) / NC (npn) | NO/NC | Switching frequency (Hz) | Protection type | Housing material | integrated heating function | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OP-M12** Through-beam sensors | | | | | | | | | | | | | | | | |
| | – | – | M12 x 60 | T | 15 °<br>6 ° | – | | | | – | IP 67, IP 68, IP 69K | Stainless steel V2A | | PVC, 5 m | | OSP 12 VLFL-5M<br>OSP 12 VHFL-5M |
|  | 1 | 5 | M12 x 60 | E | | Push-pull 200 mA | ■ | | | 500 | IP 67, IP 68, IP 69K | Stainless steel V2A | | PVC, 5 m | | OEP 12 V 5000 G1L-5M |
| | | | | | | | | ■ | | | | | | | | OEP 12 V 5000 G2L-5M |
| | 6 | 20 | | | | | ■ | | | 150 | | | | | | OEP 12 V 20000 G1L-5M |
| | | | | | | | | ■ | | | | | | | | OEP 12 V 20000 G2L-5M |
| | 20 | 50 | | | | | ■ | | | 20 | | | | | | OEP 12 V 50000 G1L-5M |
| | | | | | | | | ■ | | | | | | | | OEP 12 V 50000 G2L-5M |
| | – | – | M12 x 75 | T | 15 °<br>6 ° | – | | | | – | IP 67, IP 68, IP 69K | Stainless steel V2A | | M12 | VK … | OSP 12 VLF-IBSL<br>OSP 12 VHF-IBSL |
|  | 1 | 5 | M12 x 75 | E | | Push-pull 200 mA | ■ | | | 500 | IP 67, IP 68, IP 69K | Stainless steel V2A | | M12 | VK … | OEP 12 V 5000 G1-IBSL |
| | | | | | | | | ■ | | | | | | | | OEP 12 V 5000 G2-IBSL |
| | 6 | 20 | | | | | ■ | | | 150 | | | | | | OEP 12 V 20000 G1-IBSL |
| | | | | | | | | ■ | | | | | | | | OEP 12 V 20000 G2-IBSL |
| | 20 | 50 | | | | | ■ | | | 20 | | | | | | OEP 12 V 50000 G1-IBSL |
| | | | | | | | | ■ | | | | | | | | OEP 12 V 50000 G2-IBSL |

# OP-Q12

The rectangular 12 x12 model consists of a transmitter and receiver in a compact design with a low installation depth. Thanks to the robust metal housing, the systems are resistant to vibrations and shaking and therefore do not have to be continually readjusted.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Emitted light | Infrared light, clocked |
| Service voltage | 10 to 35 V DC |
| Ambient temperature | -20 to +60 °C |

CE

| | Range (opening angle 15°) when operating with OSP 12 VLF … / OSPQ 12 MLFL … (m) | Operating distance (opening angle 6°) When operating with OSP 12 VHF … / OSPQ 12 MHFL … (m) | Housing design Size (mm) | Transmitter (T) / Receiver (R) | Dispersion angle / opening angle | Switching output | NC (pnp) / NO (npn) | NO (pnp) / NC (npn) | NO/NC | Switching frequency (Hz) | Protection type | Housing material | integrated heating function | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OP-Q12** Through-beam sensors | | | | | | | | | | | | | | | | |
| | – | – | 12 x 12 x 82 | T | 15 ° | – | | | | – | IP 67 | Aluminum, anodized | | PVC, 5 m | | OSPQ 12 MLFL-5M |
| | | | | | 6 ° | | | | | | | | | | | OSPQ 12 MHFL-5M |
| | 1 | 5 | 12 x 12 x 82 | E | | Push-pull 200 mA | ■ | | | 500 | IP 67 | Aluminum, anodized | | PVC, 5 m | | OEPQ 12 M 5000 G1L-5M |
| | | | | | | | | ■ | | | | | | | | OEPQ 12 M 5000 G2L-5M |
| | 6 | 20 | | | | | ■ | | | 150 | | | | | | OEPQ 12 M 20000 G1-5M |
| | | | | | | | | ■ | | | | | | | | OEPQ 12 M 20000 G2L-5M |
| | 20 | 50 | | | | | ■ | | | 20 | | | | | | OEPQ 12 M 50000 G1L-5M |
| | | | | | | | | ■ | | | | | | | | OEPQ 12 M 50000 G2L-5M |
| | – | – | 12 x 12 x 82 | T | 15 ° | – | | | | – | IP 67 | Aluminum, anodized | | M8 | TK … | OSPQ 12 MLF-TSSL |
| | | | | | 6 ° | | | | | | | | | | | OSPQ 12 MHF-TSSL |
| | 1 | 5 | 12 x 12 x 82 | E | | Push-pull 200 mA | ■ | | | 500 | IP 67 | Aluminum, anodized | | M8 | TK … | OEPQ 12 M 5000 G1-TSSL |
| | | | | | | | | ■ | | | | | | | | OEPQ 12 M 5000 G2-TSSL |
| | 6 | 20 | | | | | ■ | | | 150 | | | | | | OEPQ 12 M 20000 G1-TSSL |
| | | | | | | | | ■ | | | | | | | | OEPQ 12 M 20000 G2-TSSL |
| | 20 | 50 | | | | | ■ | | | 20 | | | | | | OEPQ 12 M 50000 G1-TSSL |
| | | | | | | | | ■ | | | | | | | | OEPQ 12 M 50000 G2-TSSL |

# OP-50

The high-performance light barriers in the OP-50 series have a robust metallic housing. The systems in rectangular design have special functions such as a switchable reflected beam angle, adjustable transmitting power and variants with a heating function.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Emitted light | Infrared light, clocked |
| Service voltage | 10 to 35 V DC |
| Ambient temperature | -10 to +60 °C |
| | –40 to +50 °C (…/H) |

CE

| | Range (opening angle 15°) when operating with OSP 12 MLFL … / OSPQ 12 MLFL … (m) | Operating distance (opening angle 6°) When operating with OSP 12 VHF … / OSPQ 12 MHFL … (m) | Housing design Size (mm) | Transmitter (T) / Receiver (R) | Dispersion angle / opening angle | Switching output | NC (pnp) / NO (npn) | NO (pnp) / NC (npn) | NO/NC | Switching frequency (Hz) | Protection type | Housing material | integrated heating function | Cable material/length, Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OP-50** Through-beam sensors | | | | | | | | | | | | | | | | |
|  | 50 | 50 | 50 x 40 x 15 | T | | – | | | | – | IP 67 | Die-cast zinc | | M12 | VK … | OSP 50 M 50000-IBS |
| | | | | E | | Push-pull, 200 mA | | | ■ | 20 | | | | | | OEVP 50 M 50000 G3LK-IBS |
|  | 50 | 50 | 50 x 40 x 15 | T | | – | | | | – | IP 67 | Die-cast zinc | ■ | M12 | VK … | OSP 50 M 50000-IBS/H |
| | | | | E | | Push-pull 200 mA | | | ■ | 20 | | | | | | OEVP 50 M 50000 G3LK-IBS/H |

# Plastic fiber-optic sensors


Our plastic fiber optic sensors are used wherever small objects must be detected and mounting space is limited. Through a range of modular fiber optics and accessories, they can be adapted to the respective application. For tophat rail mounting, the fiber-optic amplifiers can be arranged in series as desired.

# OLV-K AMPLIFIER

di-soric fiber optic amplifiers can be easily operated and simultaneously offer maximum control. The very high-performance and efficient amplifiers stand out for their very long ranges, time functions and simple operation. Alternatively, amplifiers with two digital LED displays or potentiometers are available.

| **Technical data (typ.)** | **+20 °C, 24 V DC** | |
|---|---|---|
| | **OLVK 61 …** | **OLK 71 …** |
| Emitted light | Red light, clocked | Red light, clocked |
| Switching output | Transistor, 200 mA, NO/NC, switchable | 100 mA, NO/NC, programmable |
| Ambient temperature | -25 to +55 °C | -10 to +55 °C |
| Protection type | IP 64 | IP 54 |
| Housing material | PBTP (Crastin) | ABS / PC |

CE

| | Housing design Size (mm) | Sensitivity adjustment by means of | Service voltage (V) | Activation time (ms) | Polarity | Digital LED display | Switching hysteresis (%) | Temperature drift (%/K) | No-load current (mA) | Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OLV-K amplifiers** for glass fiber optic cables | | | | | | | | | | | | |
|  | 60 x 31 x 10 | Potenti-ometer | 10 to 30 | 0.33 | pnp | | 10 | 0.2 | 15 | M8 | TK … | OLVK 61 P3K-TSSL/3 |
| | | | | | pnp | | 10 | 0.2 | | | TK … /4 | OLVK 61 P3FK-TSSL |
|  | 69 x 33 x 10.5 | Teach | 12 to 24 | 0.25 to 1.25 | pnp | ■ | | | 40 | M8 | TK … /4 | OLK 71 P3-T4 |
| | | | | | npn | ■ | | | | | | OLK 71 N3-T4 |
|  | 69 x 33 x 10.5 | Teach | 12 to 24 | 0.25 to 1.25 | pnp | ■ | | | 40 | | Cable 2.0 m | OLK 71 P3-3 |
| | | | | | npn | ■ | | | | | | OLK 71 N3-3 |

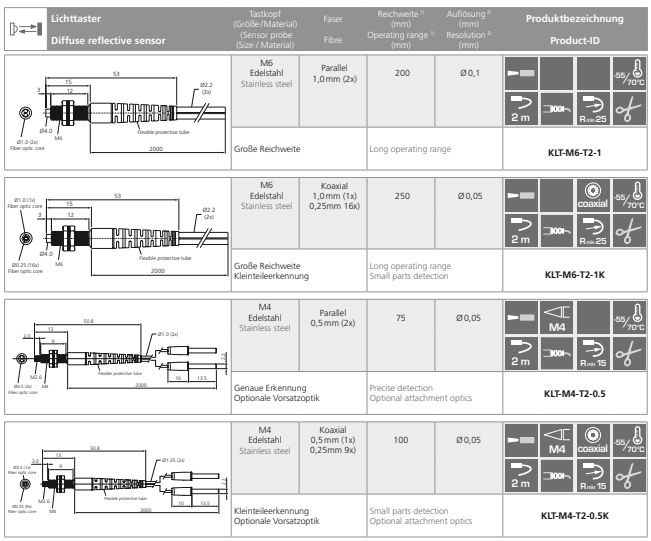
**Operating distance specifications for plastic fiber-optic cables**

The maximum operating distance specification for fiber-optic cables refers to measurements using the reference amplifier OLK 71 … with a light intensity of 200% and a standard target of 100 x 100 mm, white. When using another amplifier or a different amplifier setting, determine the expected range based on the calculation factor.

| **Fiber-optic amplifier** | Calculation factor compared to the reference amplifier OLK 71 … [1] (typ.) |
|---|---|
| **OLK 71 … [1]** | **100 %** |
| OLVK 61 P3K-TSSL/3 | 100 % |
| OLVK 61 P3FK-TSSL | 100 % |

| Light intensity | Range factor [1] | Activation time |
|---|---|---|
| 200 % | 100 % | 1.25 ms |
| 100 % | 75 % | 0.63 ms |
| 50 % | 70 % | 0.42 ms |
| 25 % | 40 % | 0.31 ms |
| 12 % | 25 % | 0.25 ms |

[1] OLK71 … with light intensity 12 to 200%



# KL PLASTIC FIBER-OPTICS

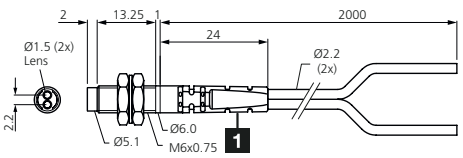
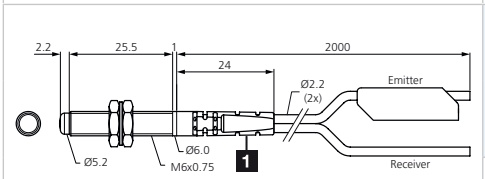
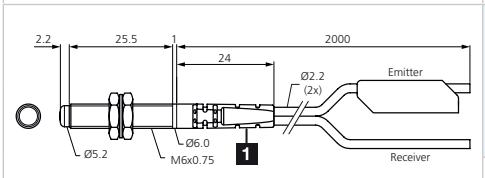
di-soric offers a wide range of fiber optic products with accessories. The portfolio includes, among others, sensor probes made of stainless steel with bend protection, sensor probes with light bands for range monitoring and fiber optics for detection of the smallest parts.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| For more information, visit | www.di-soric.com |

CE

## Order information

| | | |
|---|---|---|
| Axial light aperture | Optional attachment optics | Minimum permitted bending radius of the fiber-optic cable |
| Radial light aperture | Coaxial fiber arrangement | Fiber-optic cable can be cut to size, cutting knife included |
| Flexible sensor probe | Ambient temperature | Fiber-optic cable cannot be cut to size |
| Area detection | Length of the fiber-optic cable | Integrated optics |
| Fixed-focus detection | Cable grommet | |

| | Sensor probe (size / material) | Fiber | Operating distance (mm) | Resolution (mm) | Product description |
|---|---|---|---|---|---|
| **KL plastic fiber-optic cable light sensor** | | | | | |
|  | M6 Stainless steel | Parallel 0.5 mm (2x) | 400 [1] | Ø0,3 [2] | |
| Integrated optics for a narrow light beam Long range | | | | | **KLT-M6-T2-1.5NB** |
|  | M6 Stainless steel | Parallel 0.5 mm (2x) | 20 [1] | Ø0,05 [2] | |
| Integrated optics for focusing Small parts detection | | | | | **KLT-M6-T2-0.5-L20** |
|  | M6 Stainless steel | Parallel 0.5 mm (2x) | 35 [1] | Ø0,1 [2] | |
| Integrated optics for focusing Small parts detection | | | | | **KLT-M6-T2-0.5-L35** |

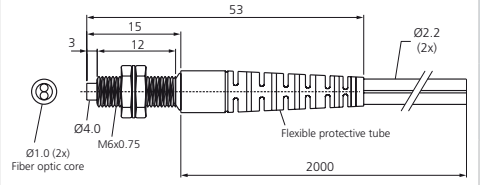
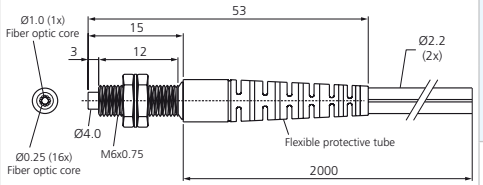
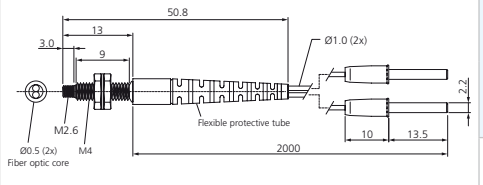
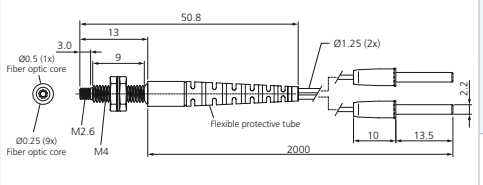
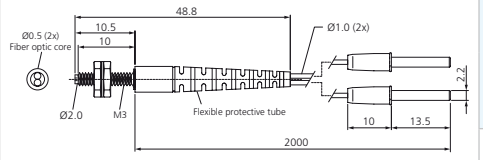
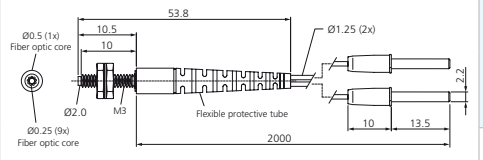
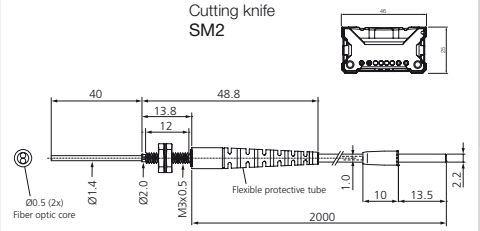






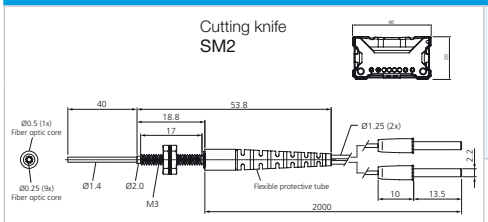
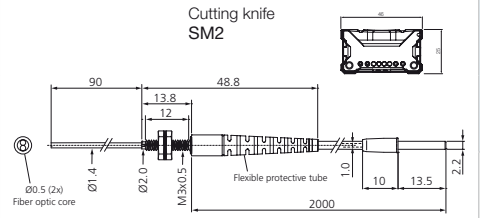
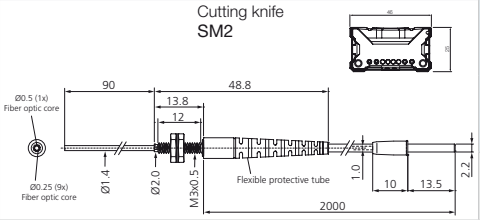
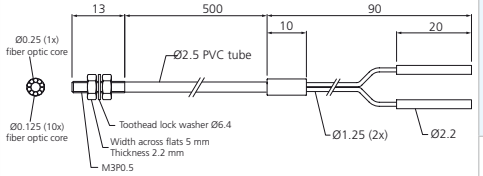
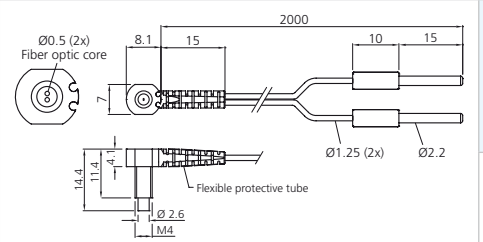
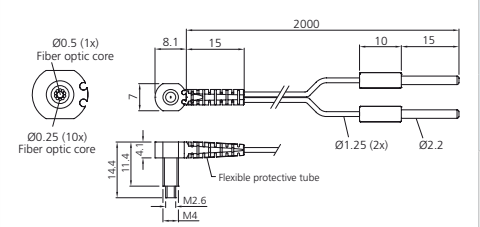
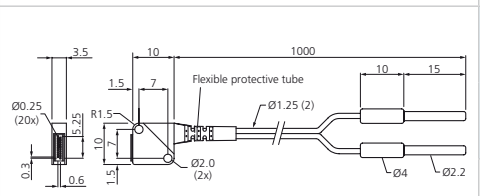
**1** Cable protective casing

[1] Maximum values (typ.) for a standard target 100 x 100 mm, white.
[2] Resolution (typ.) for optimal settings and measuring distances (sensor approx. 5 mm, one-way: approx. 100 mm).

| | Sensor probe (size / material) | Fiber | Operating distance (mm) | Resolution (mm) | Product description |
|---|---|---|---|---|---|
| **KL plastic fiber-optic cable light sensor** | | | | | |
|  | M6<br>Stainless steel | Parallel<br>1.0 mm (2x) | 200 [1] | Ø0,1 [2] | -55/70°C, 2 m, Rmin 25 |
| Large operating distance | | | | | **KLT-M6-T2-1** |
|  | M6<br>Stainless steel | Coaxial<br>1.0 mm (1x)<br>0.25 mm (16x) | 250 [1] | Ø0,05 [2] | coaxial, -55/70°C, 2 m, Rmin 25 |
| Large operating distance<br>Small parts detection | | | | | **KLT-M6-T2-1K** |
|  | M4<br>Stainless steel | Parallel<br>0.5 mm (2x) | 75 [1] | Ø0,05 [2] | M4, -55/70°C, 2 m, Rmin 15 |
| Accurate detection<br>Optional attachment optics | | | | | **KLT-M4-T2-0.5** |
|  | M4<br>Stainless steel | Coaxial<br>0.5 mm (1x)<br>0.25 mm (9x) | 100 [1] | Ø0,05 [2] | M4, coaxial, -55/70°C, 2 m, Rmin 15 |
| Small parts detection<br>Optional attachment optics | | | | | **KLT-M4-T2-0.5K** |
|  | M3<br>Stainless steel | Parallel<br>0.5 mm (2x) | 75 [1] | Ø0,05 [2] | M3, -55/70°C, 2 m, Rmin 15 |
| Accurate detection<br>Optional attachment optics | | | | | **KLT-M3-T2-0.5** |
|  | M3<br>Stainless steel | Coaxial<br>0.5 mm (1x)<br>0.25 mm (9x) | 100 [1] | Ø0,05 [2] | M3, coaxial, -25/70°C, 2 m, Rmin 15 |
| Small parts detection<br>Optional attachment optics | | | | | **KLT-M3-T2-0.5K** |
|  | M3 / Ø1.4<br>Stainless steel | Parallel<br>0.5 mm (2x) | 75 [1] | Ø0,1 [2] | -55/70°C, 2 m, Rmin 15 |
| Flexible sensor probe / R min. > 10 mm<br>Accurate detection | | | | | **KLT-M3-B40-T2-0.5** |

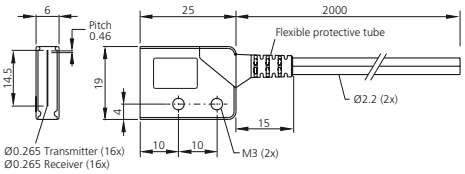
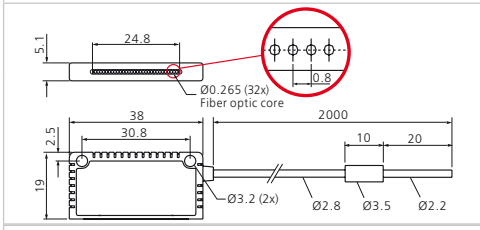
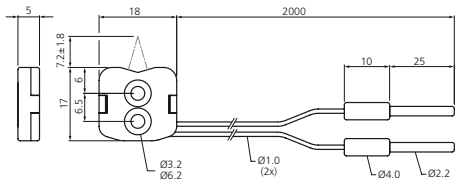
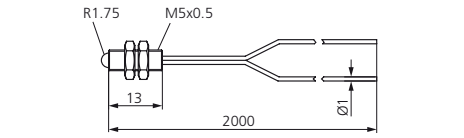
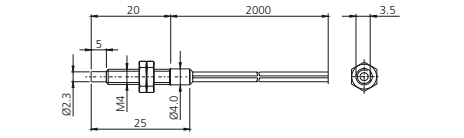
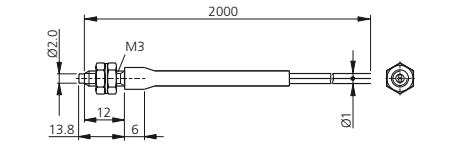
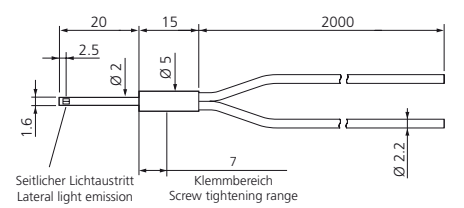
[1] Maximum values (typ.) for a standard target 100 x 100 mm, white.

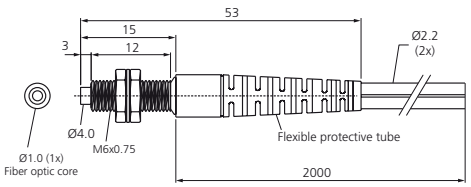
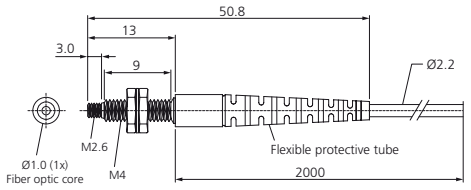
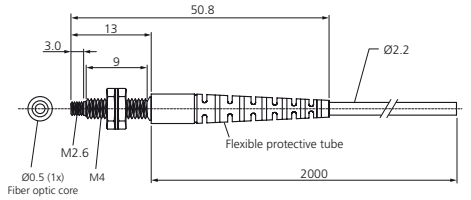
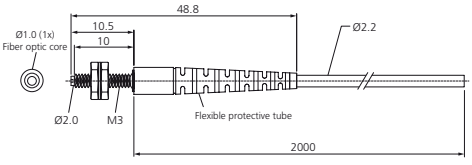
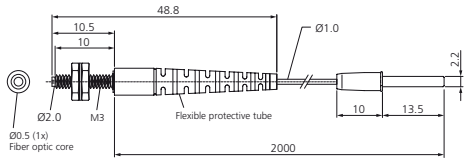
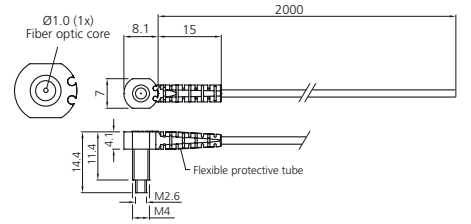
[2] Resolution (typ.) for optimal settings and measuring distances (sensor approx. 5 mm, one-way: approx. 100 mm).

| | Sensor probe (size / material) | Fiber | Operating distance (mm) | Resolution (mm) | Product description |
|---|---|---|---|---|---|
| **KL plastic fiber-optic cable light sensor** | | | | | |
|  | M3 / Ø1.4<br>Stainless steel | Coaxial<br>0.5 mm (1x)<br>0.25 mm (9x) | 100 [1] | Ø0,05 [2] | coaxial, -55/70°C, 2 m, Rmin 15 |
| Flexible sensor probe / R min. > 10 mm<br>Small parts detection | | | | | **KLT-M3-B40-T2-0.5K** |
|  | M3 / Ø1.4<br>Stainless steel | Parallel<br>0.5 mm (1x) | 75 [1] | Ø0,1 [2] | -55/70°C, 2 m, Rmin 15 |
| Flexible sensor probe / R min. > 10 mm<br>Accurate detection | | | | | **KLT-M3-B90-T2-0.5** |
|  | M3 / Ø1.4<br>Stainless steel | Coaxial<br>0.5 mm (1x)<br>0.25 mm (9x) | 100 [1] | Ø0,05 [2] | coaxial, -55/70°C, 2 m, Rmin 15 |
| Flexible sensor probe / R min. > 10 mm<br>Small parts detection | | | | | **KLT-M3-B90-T2-0.5K** |
|  | M3<br>Stainless steel | Coaxial<br>Ø0.25 (1x)<br>Ø0.125 (10x) | 40 [1] | Ø0.02 [2] | M3, coaxial, -55/70°C, 0.5 m, Rmin 5 |
| Highly accurate detection<br>Optional attachment optics | | | | | **KLT-M3-S0.5-0.25K** |
|  | M4<br>Stainless steel | Parallel<br>0.5 mm (2x) | 60 [1] | Ø0,1 [2] | M4, -55/70°C, 2 m, Rmin 15 |
| Low installation depth<br>90° deflection<br>Accurate detection<br>Optional attachment optics | | | | | **KLTR-M4-T2-0.5** |
|  | M4<br>Stainless steel | Coaxial<br>0.5 mm (1x)<br>0.25 mm (10x) | 90 [1] | Ø0,05 [2] | M4, coaxial, -55/70°C, 2 m, Rmin 15 |
| Low installation depth<br>90° deflection<br>Small parts detection<br>Optional attachment optics | | | | | **KLTR-M4-T2-0.5K** |
|  | 10 x 10 x 3.5 mm<br>Stainless steel | 5.25 mm<br>Transmitter<br>0.265 mm (16x)<br>Receiver | 100 [1] | Ø0,1 [2] | -55/70°C, 1 m, Rmin 25 |
| Area detection without gaps<br>Accurate detection | | | | | **KLTM-Q10-T1-5** |

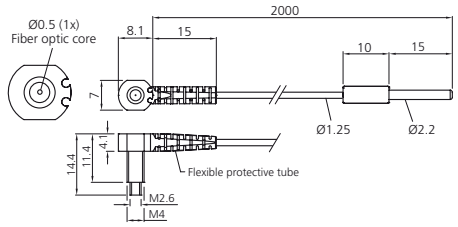
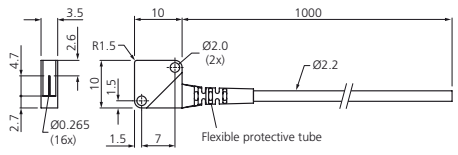
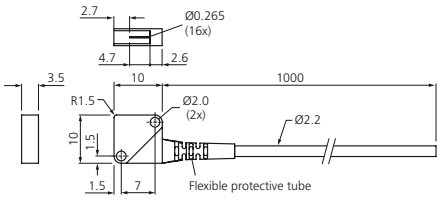
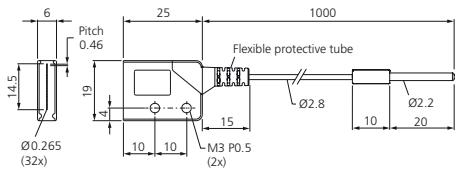
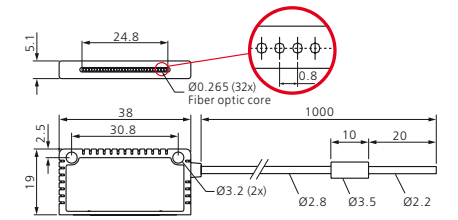
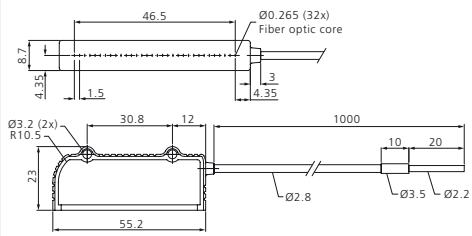
[1] Maximum values (typ.) for a standard target 100 x 100 mm, white.

[2] Resolution (typ.) for optimal settings and measuring distances (sensor approx. 5 mm, one-way: approx. 100 mm).

| | Sensor probe (size / material) | Fiber | Operating distance (mm) | Resolution (mm) | Product description |
|---|---|---|---|---|---|
| **KL plastic fiber-optic cable light sensor** | | | | | |
|  | 19 x 25 x 6 mm<br>Plastic | 14.5 mm<br>Transmitter<br>0.265 mm (16x)<br>Receiver<br>0.265 mm (16x) | 240 [1] | Ø0,5 [2] |  |
| Area detection<br>Large operating distance | | | | | **KLTM-Q25K-T1-14** |
|  | 38 x 19 x 5 mm<br>Plastic | 24.8 mm<br>Transmitter<br>0.265 mm (32x)<br>Receiver | 200 [1] | Ø1,0 [2] |  |
| Area detection<br>90° deflection<br>Large operating distance | | | | | **KLTMR-Q38K-1-24** |
|  | 18 x 17 x 5 mm<br>Plastic | A: 7.2 mm<br>parallel<br>Ø0.5 (2x) | 5 to 10 [1] | Ø0,1 [2] |  |
| Fixed-focus detection<br>90° deflection<br>Low installation depth | | | | | **KLTVR-Q18-2-10** |
|  | M5<br>Edelstahl | 0.5 mm | 200 [1] | Ø0,1 [2] |  |
| Ball-shaped optics for cylindrical beam Ø 8 mm | | | | | **WRBT 2000 K-M5-Z8** |
|  | M4<br>Stainless steel | Parallel<br>0.5 mm (2x) | 75 [1] | Ø0,05 [2] |  |
| Accurate detection<br>Optional attachment optics | | | | | **WRBT 2000 K-M4-1.0** |
|  | M3<br>Stainless steel | Parallel<br>0.5 mm (2x) | 75 [1] | Ø0,05 [2] |  |
| Accurate detection<br>Optional attachment optics | | | | | **WRBT 2000 K-M3-0.5** |
|  | Ø5<br>Stainless steel | Ø 0.8 mm | 100 [1] | Ø0,2 [2] |  |
| Low installation depth<br>Small sensor probe | | | | | **WRBT 2000 KR-5.0-2.0** |

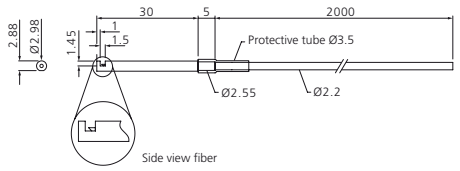
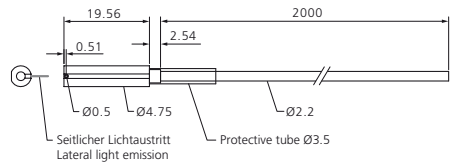
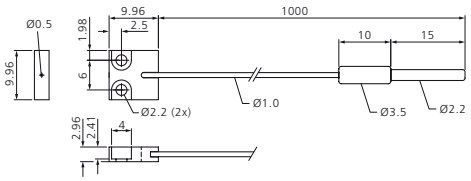
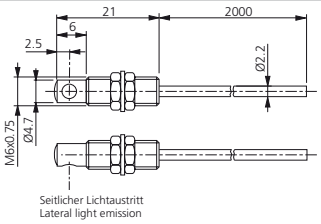
| | Sensor probe (size / material) | Fiber | Operating distance (mm) | Resolution (mm) | Product description |
|---|---|---|---|---|---|
| **KL plastic fiber-optic cable through-beam sensor** | | | | | |
|  | M6<br>Stainless steel | 1.0 mm | 1,000 [1] | Ø0,2 [2] | -55/70°C<br>2 m<br>R min 25 |
| Large operating distance | | | | | **KLE-M6-T2-1** |
|  | M6<br>Stainless steel | 1.0 mm | 1,000 [1] | Ø0,2 [2] | -55/70°C<br>2 m<br>R min 25 |
| Large operating distance | | | | | **KLE-M4-T2-1** |
|  | M4<br>Stainless steel | 0.5 mm | 250 [1] | Ø0,1 [2] | M2.6<br>-55/70°C<br>2 m<br>R min 15 |
| Accurate detection<br>Optional attachment optics | | | | | **KLE-M4-T2-0.5** |
|  | M3<br>Stainless steel | 1.0 mm | 1,000 [1] | Ø0,2 [2] | -55/70°C<br>2 m<br>R min 25 |
| Large operating distance | | | | | **KLE-M3-T2-1** |
|  | M3<br>Stainless steel | 0.5 mm | 250 [1] | Ø0,1 [2] | -55/70°C<br>2 m<br>R min 15 |
| Accurate detection | | | | | **KLE-M3-T2-0.5** |
|  | M4<br>Stainless steel | 1.0 mm | 400 [1] | Ø0,2 [2] | M2.6<br>-55/70°C<br>2 m<br>R min 25 |
| Low installation depth<br>90° deflection<br>Large operating distance<br>Optional attachment optics | | | | | **KLER-M4-T2-1** |

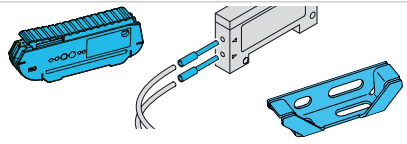
[1] Maximum values (typ.) for a standard target 100 x 100 mm, white.
[2] Resolution (typ.) for optimal settings and measuring distances (sensor approx. 5 mm, one-way: approx. 100 mm).

| | Sensor probe (size / material) | Fiber | Operating distance (mm) | Resolution (mm) | Product description |
|---|---|---|---|---|---|
| **KL plastic fiber-optic cable through-beam sensor** | | | | | |
|  | M4<br>Stainless steel | 0.5 mm | 200 [1] | Ø0,1 [2] |  |
| | Low installation depth<br>90° deflection<br>Accurate detection<br>Optional attachment optics | | | | **KLER-M4-T2-0.5** |
|  | 10 x 10 x<br>3.5 mm<br>Stainless steel | 4.24 mm<br>0.265 mm (16x) | 200 [1] | Ø0,1 [2] |  |
| | Area detection without gaps<br>Large operating distance<br>Accurate detection | | | | **KLEM-Q10-T1-4** |
|  | 10 x 10 x<br>3.5 mm<br>Stainless steel | 4.24 mm<br>0.265 mm (16x) | 200 [1] | Ø0,1 [2] |  |
| | Area detection without gaps<br>90° deflection<br>Large operating distance<br>Accurate detection | | | | **KLEMR-Q10-T1-4** |
|  | 19 x 25 x 6 mm<br>Plastic | 14.5 mm<br>0.265 (32x) | 1,000 [1] | Ø0,5 [2] |  |
| | Area detection<br>Large operating distance | | | | **KLEM-Q25K-T1-14** |
|  | 38 x 19 x 5 mm<br>Plastic | 24.8 mm<br>0.265 (32x) | 800 [1] | Ø1,0 [2] |  |
| | Area detection<br>90° deflection<br>Large operating distance | | | | **KLEMR-Q38K-1-24** |
|  | 55 x 23 x 9 mm<br>Plastic | 46.5 mm<br>0.265 (32x) | 800 [1] | Ø2,0 [2] |  |
| | Area detection<br>90° deflection<br>Large operating distance | | | | **KLEMR-Q55K-1-46** |

[1] Maximum values (typ.) for a standard target 100 x 100 mm, white.

[2] Resolution (typ.) for optimal settings and measuring distances (sensor approx. 5 mm, one-way: approx. 100 mm).

| | Sensor probe (size / material) | Fiber | Operating distance (mm) | Resolution (mm) | Product description |
|---|---|---|---|---|---|
| **KL plastic fiber-optic cable through-beam sensor** | | | | | |
|  | Ø 2.98 mm<br>Stainless steel | 1.0 mm | 600 [1] | Ø0,2 [2] | -55/70°C<br>2 m<br>R min 25 |
| | Low installation depth<br>90° deflection<br>Large operating distance | | | | **KLER-D3-30-S2-1** |
|  | Ø 4.75 mm<br>Stainless steel | Ø0.5 mm | 200 [1] | Ø0,05 [2] | -55/70°C<br>2 m<br>R min 1 |
| | Low installation depth<br>90° deflection<br>Highly accurate object detection | | | | **KLER-D4.75-19-S2-0.5** |
|  | 10 x 10 x 3 mm<br>Metal | Ø0.5 mm | 200 [1] | Ø0,05 [2] | -40/70°C<br>1 m<br>R min 1 |
| | Accurate detection<br>Flat design | | | | **KLE-Q10M-1-0.5** |
|  | M6<br>Brass | Ø 1.0 mm | 1,200 [1] | Ø0,2 [2] | -25/70°C<br>2 m<br>R min 25 |
| | Low installation depth<br>Large operating distance | | | | **WRBE 2000 KR-M6-1.0** |



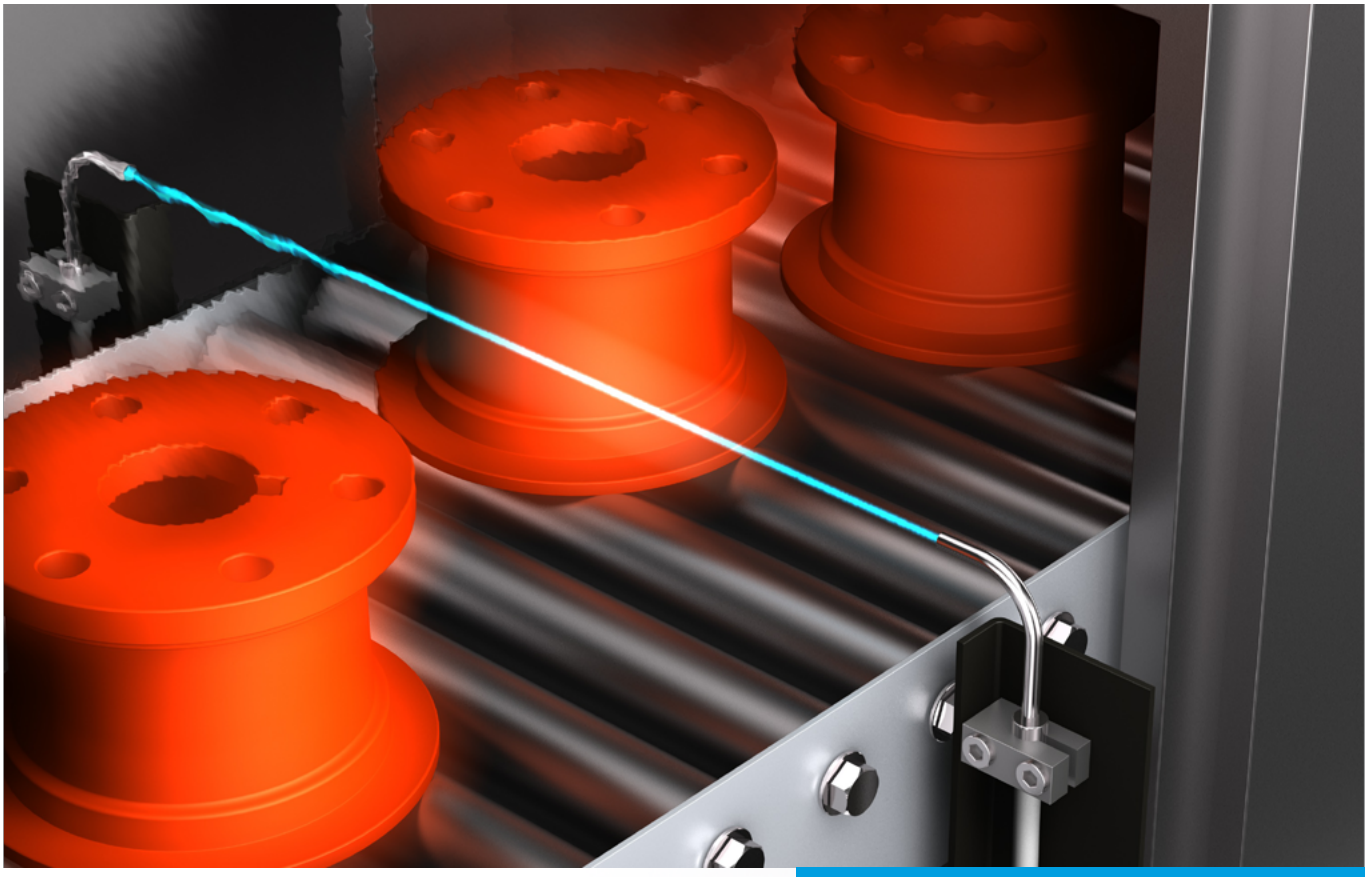
**Accessories for plastic fiber-optic cables**

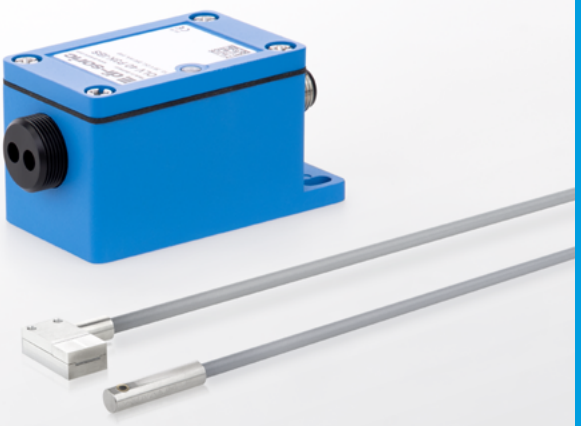
"KLS-Z Plastic fiber-optic sensor accessories" on page 226

[1] Maximum values (typ.) for a standard target 100 x 100 mm, white.

[2] Resolution (typ.) for optimal settings and measuring distances (sensor approx. 5 mm, one-way: approx. 100 mm).

# Glass fiber-optic sensors





Challenging applications with little installation space are the area of application of the fiber optic sensors from di-soric. The robust devices stand the test with oil just as reliably as with high mechanical loads and at high temperatures. Their large range is another important advantage.

# OLV-G AMPLIFIER

Thanks to their stable metallic housing and the high protection class, the amplifiers in the OLV-G series are - ideal for handling challenging individual applications. The devices are operated through simple auto-teach.

CE

| Technical data (typ.) | +20 °C, 24 VDC |
|---|---|
| Switching output | Transistor, pnp, 200 mA, NO/NC, switchable |
| Ambient temperature | -10 to +60 °C |
| Housing material | Die-cast zinc |
| Protection type | IP 65 |

| | Housing design Size (mm) | Sensitivity adjustment by means of | Service voltage (V) | Switching frequency (kHz) | Infrared light, clocked | Red light, clocked | Green light, clocked | Switching hysteresis (%) | Temperature drift (%/K) | Ambient light immunity (kLx) | No-load current (mA) | Plug connector | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OLV-G amplifiers** for glass fiber optic cables | | | | | | | | | | | | | | |
|  | 40 x 41 x 75 | Potenti-ometer | 12 to 35 | 1.5 | ■ | | | 10 | 0.3 | 20 | 55 | M12 | VK… /4 | OLV 40 P3K-IBS |
| | | | | 1.5 | | ■ | | | | | | | | OLV 41 P3K-IBS |
| | | | | 0.5 | | | ■ | | | | | | | OLV 42 P3K-IBS |
|  | 40 x 41 x 75 | Potenti-ometer | 12 to 35 | 1.5 | ■ | | | 10 | 0.3 | 20 | 55 | Clamps | | OLV 40 P4K |
| | | | | | | ■ | | | | | | | | OLV 41 P4K |
| | 40 x 41 x 75 | Teach | 10 to 35 | 1.5 | ■ | | | 12 | 0.1 | 50 | 45 | M12 | VK… /4 | OLVTI 40 P3K-IBS |
| | | | | | | ■ | | | 0.25 | | | | | OLVTI 41 P3K-IBS |

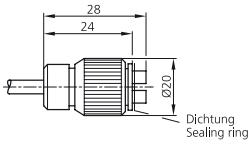
# WRB GLASS FIBER OPTICS

Our product portfolio of fiber optics includes high-quality fibers for large ranges, a high mechanical load and high temperatures.

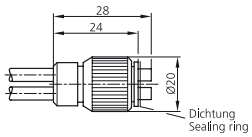
CE

| Technical data (typ.) | +20 °C, 24 VDC |
|---|---|
| Housing material | V2A |
| | Aluminum (…SQ… / … MQ… / WRB 220 SW) |
| Single fiber | 50 µm |
| Opening angle | 67° |
| Temperature resistance | -40 to +180 °C, for short periods up to +250 °C (silicone-metal sleeve) |
| | -40 to +180 °C, for short periods up to +300 °C (metal sleeve) |

## Diffuse sensors




## Through-beam sensors

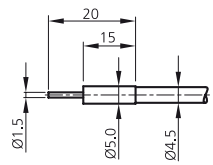
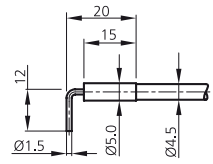
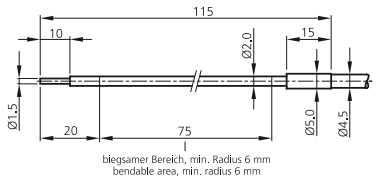
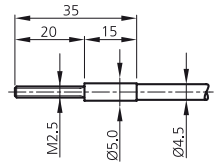
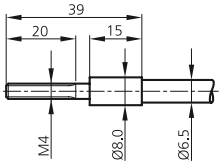
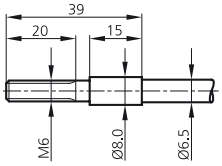
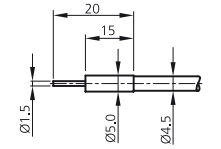
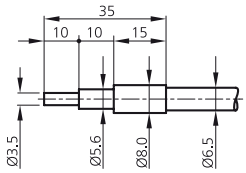


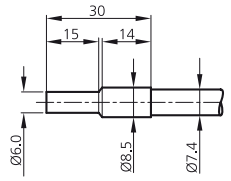
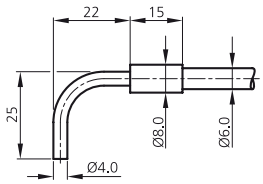
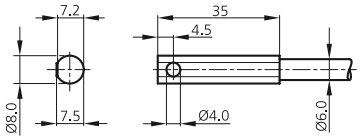
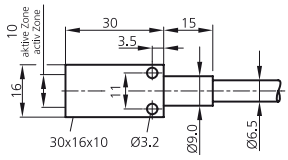
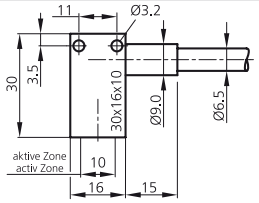
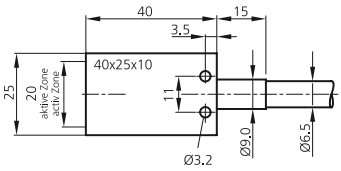
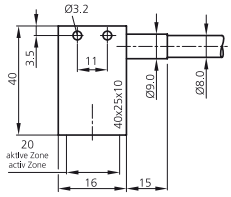
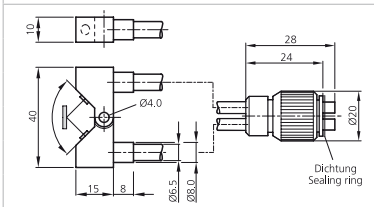

## Installation instructions for glass fiber-optic cables

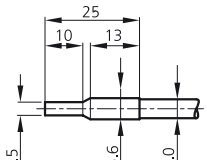
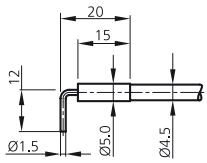
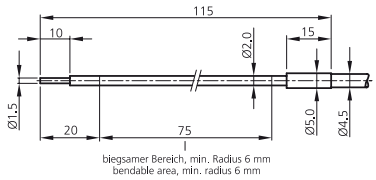
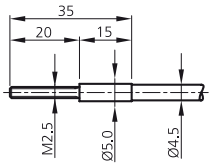
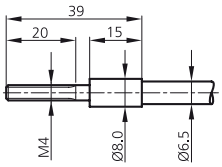
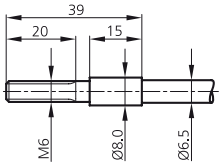
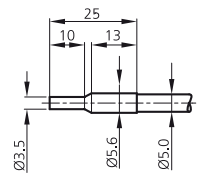
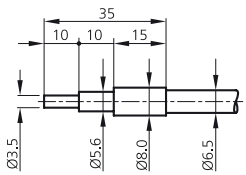
[1] For permanently installed fiber optic cables.

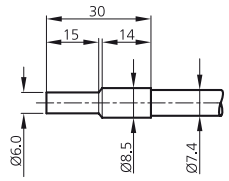
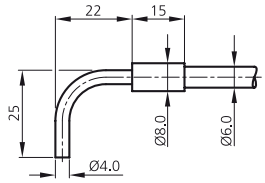
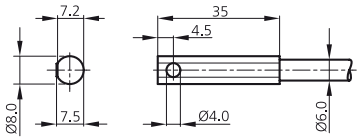
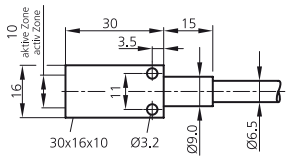
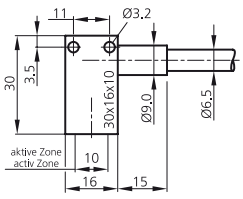
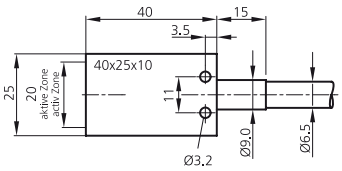
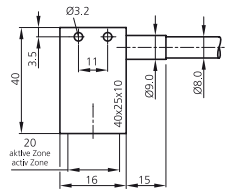
[2] All specified scan widths and ranges are average values associated with the fiber-optic amplifier in infrared light. If necessary, adjust the sensitivity range using the basic sensitivity potentiometer P2. The specified scan widths and ranges are reduced to about 80% in red light and to about 30% in green light. The values also depend on the fiber-optic cable and on the object being scanned (size, shape, surface, color, etc.).

[3] With attachment optics and axial light aperture.
Only possible for fiber-optic cables of corresponding length.

| | Fiber bundle | Scan width[2] (mm) | Cable jacket | Cable length (mm) | Bending radius | Protection type | Product description |
|---|---|---|---|---|---|---|---|
| **WRB glass fiber-optic cable light sensor** | | | | | | | |
|  | Ø1.0 | up to 20 | Silicone metal sleeve | 300<br>600<br>1,000 | >3x tube Ø | IP 67 | WRB 110 S-1.5-1.0<br>WRB 120 S-1.5-1.0<br>WRB 130 S-1.5-1.0 |
| | Ø1.0 | up to 20 | metal sleeve | 300<br>600<br>1,000 | >10x tube Ø | IP 60 | WRB 110 M-1.5-1.0<br>WRB 120 M-1.5-1.0<br>WRB 130 M-1.5-1.0 |
|  | Ø1.0 | up to 15 | Silicone metal sleeve | 300<br>600<br>1,000 | >3x tube Ø | IP 67 | WRB 110 S-90-1.5-1.0<br>WRB 120 S-90-1.5-1.0<br>WRB 130 S-90-1.5-1.0 |
| | Ø1.0 | up to 15 | metal sleeve | 300<br>600<br>1,000 | >10x tube Ø | IP 60 | WRB 110 M-90-1.5-1.0<br>WRB 120 M-90-1.5-1.0<br>WRB 130 M-90-1.5-1.0 |
|  | Ø1.0 | up to 20 | Silicone metal sleeve | 300<br>600<br>1,000 | >3x tube Ø | IP 67 | WRB 110 SB-2.0-1.0<br>WRB 120 SB-2.0-1.0<br>WRB 130 SB-2.0-1.0 |
| | Ø1.0 | up to 20 | metal sleeve | 300<br>600<br>1,000 | >10x tube Ø | IP 60 | WRB 110 MB-2.0-1.0<br>WRB 120 MB-2.0-1.0<br>WRB 130 MB-2.0-1.0 |
|  | Ø1.5 | up to 30 | Silicone metal sleeve | 300<br>600<br>1,000 | >3x tube Ø | IP 67 | WRB 110 S-M2.5-1.5<br>WRB 120 S-M2.5-1.5<br>WRB 130 S-M2.5-1.5 |
| | Ø1.5 | up to 30 | metal sleeve | 300<br>600<br>1,000 | >10x tube Ø | IP 60 | WRB 110 M-M2.5-1.5<br>WRB 120 M-M2.5-1.5<br>WRB 130 M-M2.5-1.5 |
|  | Ø2.5 | up to 85 | Silicone metal sleeve | 300<br>600<br>1,000 | >3x tube Ø | IP 67 | WRB 110 S-M4-2.5<br>WRB 120 S-M4-2.5<br>WRB 130 S-M4-2.5 |
| | Ø2.5 | up to 85 | metal sleeve | 300<br>600<br>1,000 | >10x tube Ø | IP 60 | WRB 110 M-M4-2.5<br>WRB 120 M-M4-2.5<br>WRB 130 M-M4-2.5 |
|  | Ø2.5 | up to 85 | Silicone metal sleeve | 300<br>600<br>1,000 | >3x tube Ø | IP 67 | WRB 110 S-M6-2.5<br>WRB 120 S-M6-2.5<br>WRB 130 S-M6-2.5 |
| | Ø2.5 | up to 85 | metal sleeve | 300<br>600<br>1,000 | >10x tube Ø | IP 60 | WRB 110 M-M6-2.5<br>WRB 120 M-M6-2.5<br>WRB 130 M-M6-2.5 |
|  | Ø2.5 | up to 85 | Polyurethane metal sleeve | 300<br>600<br>1,000 | >5x tube Ø | IP 67 | WRB 110 P-5.6-2.5<br>WRB 120 P-5.6-2.5<br>WRB 130 P-5.6-2.5 |
| | | | | | | | |
|  | Ø2.5 | up to 85 | Silicone metal sleeve | 300<br>600<br>1,000 | >3x tube Ø | IP 67 | WRB 110 S-8.0-2.5<br>WRB 120 S-8.0-2.5<br>WRB 130 S-8.0-2.5 |
| | Ø2.5 | up to 85 | metal sleeve | 300<br>600<br>1,000 | >10x tube Ø | IP 60 | WRB 110 M-8.0-2.5<br>WRB 120 M-8.0-2.5<br>WRB 130 M-8.0-2.5 |

| | Fiber bundle | Scan width*) (mm) | Cable jacket | Cable length (mm) | Bending radius | Protection type | Product description |
|---|---|---|---|---|---|---|---|
| **WRB glass fiber-optic cable light sensor** | | | | | | | |
|  | Ø4.0 | up to 150 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 110 S-8.5-4.0 |
| | | | | 600 | | | WRB 120 S-8.5-4.0 |
| | | | | 1,000 | | | WRB 130 S-8.5-4.0 |
| | Ø4.0 | up to 150 | metal sleeve | 300 | >10x tube Ø | IP 60 | WRB 110 M-8.5-4.0 |
| | | | | 600 | | | WRB 120 M-8.5-4.0 |
| | | | | 1,000 | | | WRB 130 M-8.5-4.0 |
|  | Ø2.5 | up to 80 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 110 S-90-4.0-2.5 |
| | | | | 600 | | | WRB 120 S-90-4.0-2.5 |
| | | | | 1,000 | | | WRB 130 S-90-4.0-2.5 |
| | Ø2.5 | up to 80 | metal sleeve | 300 | >10x tube Ø | IP 60 | WRB 110 M-90-4.0-2.5 |
| | | | | 600 | | | WRB 120 M-90-4.0-2.5 |
| | | | | 1,000 | | | WRB 130 M-90-4.0-2.5 |
|  | Ø2.5 | up to 70 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 110 SR-8.0-2.5 |
| | | | | 600 | | | WRB 120 SR-8.0-2.5 |
| | | | | 1,000 | | | WRB 130 SR-8.0-2.5 |
| | Ø2.5 | up to 70 | metal sleeve | 300 | >10x tube Ø | IP 60 | WRB 110 MR-8.0-2.5 |
| | | | | 600 | | | WRB 120 MR-8.0-2.5 |
| | | | | 1,000 | | | WRB 130 MR-8.0-2.5 |
|  | Ø0.6 (10x) Ø0.3 (10x) | up to 90 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 110 SQ-10-0.6 |
| | | | | 600 | | | WRB 120 SQ-10-0.6 |
| | | | | 1,000 | | | WRB 130 SQ-10-0.6 |
| | Ø0.6 (10x) Ø0.3 (10x) | up to 90 | metal sleeve | 300 | >10x tube Ø | IP 60 | WRB 110 MQ-10-0.6 |
| | | | | 600 | | | WRB 120 MQ-10-0.6 |
| | | | | 1,000 | | | WRB 130 MQ-10-0.6 |
|  | Ø0.6 (10x) Ø0.3 (10x) | up to 85 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 110 SQ-90-10-0.6 |
| | | | | 600 | | | WRB 120 SQ-90-10-0.6 |
| | | | | 1,000 | | | WRB 130 SQ-90-10-0.6 |
| | Ø0.6 (10x) Ø0.3 (10x) | up to 85 | metal sleeve | 300 | >10x tube Ø | IP 60 | WRB 110 MQ-90-10-0.6 |
| | | | | 600 | | | WRB 120 MQ-90-10-0.6 |
| | | | | 1,000 | | | WRB 130 MQ-90-10-0.6 |
|  | Ø0.6 (20x) Ø0.3 (20x) | up to 210 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 110 SQ-20-0.6 |
| | | | | 600 | | | WRB 120 SQ-20-0.6 |
| | | | | 1,000 | | | WRB 130 SQ-20-0.6 |
| | Ø0.6 (20x) Ø0.3 (20x) | up to 210 | metal sleeve | 300 | >10x tube Ø | IP 60 | WRB 110 MQ-20-0.6 |
| | | | | 600 | | | WRB 120 MQ-20-0.6 |
| | | | | 1,000 | | | WRB 130 MQ-20-0.6 |
|  | Ø0.6 (20x) Ø0.3 (20x) | up to 200 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 110 SQ-90-20-0.6 |
| | | | | 600 | | | WRB 120 SQ-90-20-0.6 |
| | | | | 1,000 | | | WRB 130 SQ-90-20-0.6 |
| | Ø0.6 (20x) Ø0.3 (20x) | up to 200 | metal sleeve | 300 | >10x tube Ø | IP 60 | WRB 110 MQ-90-20-0.6 |
| | | | | 600 | | | WRB 120 MQ-90-20-0.6 |
| | | | | 1,000 | | | WRB 130 MQ-90-20-0.6 |
|  | Ø2.5 | 10 - 100 | Silicone metal sleeve | 600 | >3x tube Ø | IP 67 | WRB 220 SW |
| | | | | | | | |

| | Fiber bundle | Scan width[2] (mm) | Cable jacket | Cable length (mm) | Bending radius | Protection type | Product description |
|---|---|---|---|---|---|---|---|
| **WRB glass fiber-optic cable through-beam sensor** | | | | | | | |
|  | Ø1.0 | up to 150 | Silicone metal sleeve | 300 | >3x[1] tube Ø | IP 67 | WRB 210 S-1.5-1.0 |
| | | | | 600 | | | WRB 220 S-1.5-1.0 |
| | | | | 1,000 | | | WRB 230 S-1.5-1.0 |
| | Ø1.0 | up to 150 | metal sleeve | 300 | >10x[1] tube Ø | IP 60 | WRB 210 M-1.5-1.0 |
| | | | | 600 | | | WRB 220 M-1.5-1.0 |
| | | | | 1,000 | | | WRB 230 M-1.5-1.0 |
|  | Ø1.0 | up to 120 | Silicone metal sleeve | 300 | >3x[1] tube Ø | IP 67 | WRB 210 S-90-1.5-1.0 |
| | | | | 600 | | | WRB 220 S-90-1.5-1.0 |
| | | | | 1,000 | | | WRB 230 S-90-1.5-1.0 |
| | Ø1.0 | up to 120 | metal sleeve | 300 | >10x[1] tube Ø | IP 60 | WRB 210 M-90-1.5-1.0 |
| | | | | 600 | | | WRB 220 M-90-1.5-1.0 |
| | | | | 1,000 | | | WRB 230 M-90-1.5-1.0 |
|  | Ø1.0 | up to 150 | Silicone metal sleeve | 300 | >3x[1] tube Ø | IP 67 | WRB 210 SB-2.0-1.0 |
| | | | | 600 | | | WRB 220 SB-2.0-1.0 |
| | | | | 1,000 | | | WRB 230 SB-2.0-1.0 |
| | Ø1.0 | up to 150 | metal sleeve | 300 | >10x[1] tube Ø | IP 60 | WRB 210 MB-2.0-1.0 |
| | | | | 600 | | | WRB 220 MB-2.0-1.0 |
| | | | | 1,000 | | | WRB 230 MB-2.0-1.0 |
|  | Ø1.5 | up to 250 (500)[3] | Silicone metal sleeve | 300 | >3x[1] tube Ø | IP 67 | WRB 210 S-M2.5-1.5 |
| | | | | 600 | | | WRB 220 S-M2.5-1.5 |
| | | | | 1,000 | | | WRB 230 S-M2.5-1.5 |
| | Ø1.5 | up to 250 (500)[3] | metal sleeve | 300 | >10x[1] tube Ø | IP 60 | WRB 210 M-M2.5-1.5 |
| | | | | 600 | | | WRB 220 M-M2.5-1.5 |
| | | | | 1,000 | | | WRB 230 M-M2.5-1.5 |
|  | Ø2.5 | up to 900 (1,800)[3] | Silicone metal sleeve | 300 | >3x[1] tube Ø | IP 67 | WRB 210 S-M4-2.5 |
| | | | | 600 | | | WRB 220 S-M4-2.5 |
| | | | | 1,000 | | | WRB 230 S-M4-2.5 |
| | Ø2.5 | up to 900 (1,800)[3] | metal sleeve | 300 | >10x[1] tube Ø | IP 60 | WRB 210 M-M4-2.5 |
| | | | | 600 | | | WRB 220 M-M4-2.5 |
| | | | | 1,000 | | | WRB 230 M-M4-2.5 |
|  | Ø2.5 | up to 900 | Silicone metal sleeve | 300 | >3x[1] tube Ø | IP 67 | WRB 210 S-M6-2.5 |
| | | | | 600 | | | WRB 220 S-M6-2.5 |
| | | | | 1,000 | | | WRB 230 S-M6-2.5 |
| | Ø2.5 | up to 900 | metal sleeve | 300 | >10x[1] tube Ø | IP 60 | WRB 210 M-M6-2.5 |
| | | | | 600 | | | WRB 220 M-M6-2.5 |
| | | | | 1,000 | | | WRB 230 M-M6-2.5 |
|  | Ø2.5 | up to 85 | Polyurethane metal sleeve | 300 | >5x[1] tube Ø | IP 67 | WRB 210 P-5.6-2.5 |
| | | | | 600 | | | WRB 220 P-5.6-2.5 |
| | | | | 1,000 | | | WRB 230 P-5.6-2.5 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
|  | Ø2.5 | up to 85 | Silicone metal sleeve | 300 | >3x[1] tube Ø | IP 67 | WRB 210 S-8.0-2.5 |
| | | | | 600 | | | WRB 220 S-8.0-2.5 |
| | | | | 1,000 | | | WRB 230 S-8.0-2.5 |
| | Ø2.5 | up to 85 | metal sleeve | 300 | >10x[1] tube Ø | IP 60 | WRB 210 M-8.0-2.5 |
| | | | | 600 | | | WRB 220 M-8.0-2.5 |
| | | | | 1,000 | | | WRB 230 M-8.0-2.5 |

| | Fiber bundle | Scan width* (mm) | Cable jacket | Cable length (mm) | Bending radius | Protection type | Product description |
|---|---|---|---|---|---|---|---|
| **WRB glass fiber-optic cable through-beam sensor** | | | | | | | |
|  | Ø4.0 | up to 150 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 210 S-8.5-4.0 |
| | | | | 600 | | | WRB 220 S-8.5-4.0 |
| | | | | 1,000 | | | WRB 230 S-8.5-4.0 |
| | Ø4.0 | up to 150 | metal sleeve | 300 | >10x tube Ø | IP 60 | WRB 210 M-8.5-4.0 |
| | | | | 600 | | | WRB 220 M-8.5-4.0 |
| | | | | 1,000 | | | WRB 230 M-8.5-4.0 |
|  | Ø2.5 | up to 900 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 210 S-90-4.0-2.5 |
| | | | | 600 | | | WRB 220 S-90-4.0-2.5 |
| | | | | 1,000 | | | WRB 230 S-90-4.0-2.5 |
| | Ø2.5 | up to 900 | metal sleeve | 300 | >10x tube Ø | IP 60 | WRB 210 M-90-4.0-2.5 |
| | | | | 600 | | | WRB 220 M-90-4.0-2.5 |
| | | | | 1,000 | | | WRB 230 M-90-4.0-2.5 |
|  | Ø2.5 | up to 800 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 210 SR-8.0-2.5 |
| | | | | 600 | | | WRB 220 SR-8.0-2.5 |
| | | | | 1,000 | | | WRB 230 SR-8.0-2.5 |
| | Ø2.5 | up to 800 | metal sleeve | 300 | >10x tube Ø | IP 60 | WRB 210 MR-8.0-2.5 |
| | | | | 600 | | | WRB 220 MR-8.0-2.5 |
| | | | | 1,000 | | | WRB 230 MR-8.0-2.5 |
|  | Ø0.6 (10x) Ø0.3 (10x) | up to 700 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 210 SQ-10-0.3 |
| | | | | 600 | | | WRB 220 SQ-10-0.3 |
| | | | | 1,000 | | | WRB 230 SQ-10-0.3 |
| | Ø0.6 (10x) Ø0.3 (10x) | up to 700 | metal sleeve | 300 | >10x tube Ø | IP 60 | WRB 210 MQ-10-0.3 |
| | | | | 600 | | | WRB 220 MQ-10-0.3 |
| | | | | 1,000 | | | WRB 230 MQ-10-0.3 |
|  | Ø0.6 (10x) Ø0.3 (10x) | up to 650 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 210 SQ-90-10-0.3 |
| | | | | 600 | | | WRB 220 SQ-90-10-0.3 |
| | | | | 1,000 | | | WRB 230 SQ-90-10-0.3 |
| | Ø0.6 (10x) Ø0.3 (10x) | up to 650 | metal sleeve | 300 | >10x tube Ø | IP 60 | WRB 210 MQ-90-10-0.3 |
| | | | | 600 | | | WRB 220 MQ-90-10-0.3 |
| | | | | 1,000 | | | WRB 230 MQ-90-10-0.3 |
|  | Ø0.6 (20x) Ø0.3 (20x) | up to 1,200 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 210 SQ-20-0.3 |
| | | | | 600 | | | WRB 220 SQ-20-0.3 |
| | | | | 1,000 | | | WRB 230 SQ-20-0.3 |
| | Ø0.6 (20x) Ø0.3 (20x) | up to 1,200 | metal sleeve | | >10x tube Ø | IP 60 | |
| | | | | 600 | | | WRB 220 MQ-20-0.3 |
| | | | | 1,000 | | | WRB 230 MQ-20-0.3 |
|  | Ø0.6 (20x) Ø0.3 (20x) | up to 1,100 | Silicone metal sleeve | 300 | >3x tube Ø | IP 67 | WRB 210 SQ-90-20-0.3 |
| | | | | 600 | | | WRB 220 SQ-90-20-0.3 |
| | | | | 1,000 | | | WRB 230 SQ-90-20-0.3 |
| | Ø0.6 (20x) Ø0.3 (20x) | up to 1,100 | metal sleeve | 300 | >10x tube Ø | IP 60 | WRB 210 MQ-90-20-0.3 |
| | | | | 600 | | | WRB 220 MQ-90-20-0.3 |
| | | | | 1,000 | | | WRB 230 MQ-90-20-0.3 |

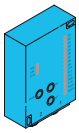
# Color sensors

The di-soric color sensors detect colors and compare them to 100 saved reference color values. Through their perceptive functioning, which is similar to the human eye, small differences can be detected precisely. This makes the use of the devices in the area of quality testing possible - even under industrial ambient conditions.

# FS-10 COMPACT, FS-50 EXTENDED, FS-100 ADVANCED

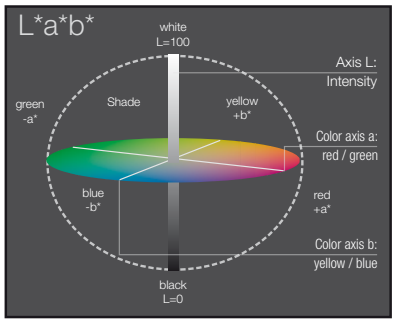
| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Emitting light source | White-light LED, can be turned off |
| Color resolution | DE Lab < 1 |
| Protection type | IP 54 |
| | IP 67 (FSB 10 …) |

CE

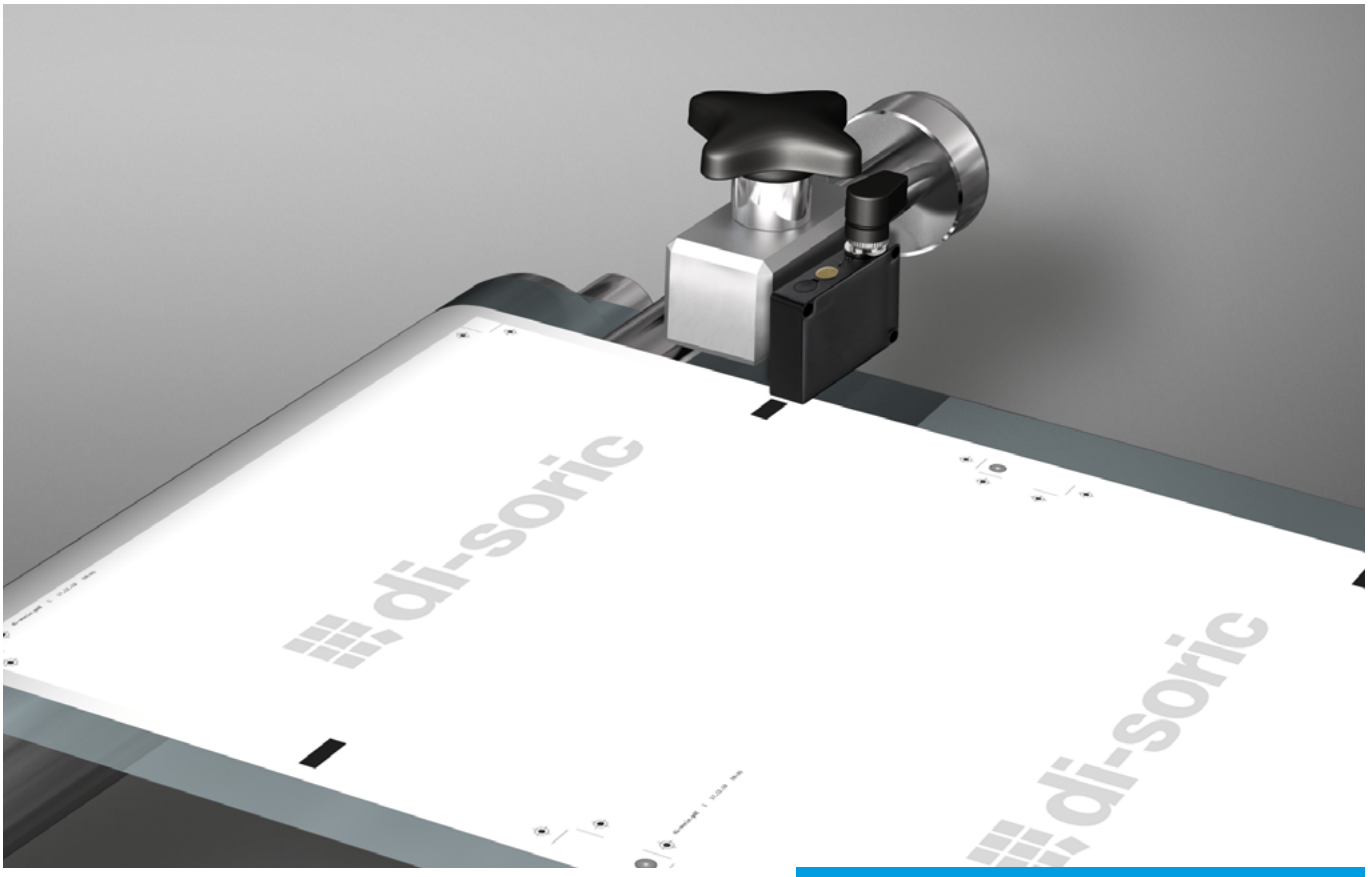
| | Operating distance (mm) | Measuring channels (number) | Number of color channels (Teach-in via button) | Number of outputs npn + pnp (push-pull) | Service voltage (VDC) | Color memory internal | Operation using software | Operation using buttons | Color channels with binary coding (number) | Fiber-optic cable adapter | Fixed optics | Lighting with aging-compensating white-light LED | Profibus | Ethernet | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **FS-10 Compact** | | | | | | | | | | | | | | | |
|  | See fiber-optic cables | 1 | 1 | 1 | 10 to 28 | 1 | | ■ | | ■ | | ■ | | | FSB 10 M G1-B8 |
| **FS-50 Extended** | | | | | | | | | | | | | | | |
|  | See fiber-optic cables | 1 | 4 | 4 | 18 to 28 | 100 | ■ | ■ | 15 | ■ | | ■ | | | FS 12-50 M G3-B8 |
| | 30 to 60 | | | | | | | | | | ■ | ■ | | | FS 50 M 60 G3-B8 |
|  | See fiber-optic cables | 1 | 4 | 4 | 18 to 28 | 4 | | ■ | | ■ | | ■ | | | FSB 50 M G3-B8 |
| | 30 to 60 | | | | | | | | | | ■ | ■ | | | FSB 50 M 60 G3-B8 |
| **FS-100 Advanced** | | | | | | | | | | | | | | | |
|  | See fiber-optic cables | 1 | 12 | 12 | 18 to 28 | 100 | ■ | ■ | 100 | ■ | | ■ | | | FS 12-100-1 M G8-B8 |
| | | | | | | | | | | ■ | | | | ■ | FS 12-100-1 M G8-B8-E |
| | See fiber-optic cables | 2 | 12 | 12 | 18 to 28 | 100 | ■ | ■ | 100 | ■ | | | | | FS 12-100-2 M G8-B8 |
| | | | | | | | | | | ■ | | ■ | ■ | | FS 12-100-2 M G8-B8-PB |

**Accessories for color sensors**

see "FS-Z Color sensor accessories," page 222

# Contrast sensors





Contrast sensors can detect and compare precise contrasts. The devices are used for reliable, precise detection of printed marks based on color and grayscale contrasts on an extremely wide range of carrier materials such as labels, films, banderoles, cartons or tubes. The devices are configured through intuitive teaching-in.

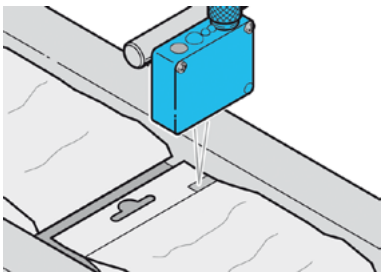
# OK-50

These contract sensors have a robust metallic housing in rectangular design with a high protection class. The sensors work with white-light (LED) and detect even the finest of contrasts. Their sensitivity can be adjusted in an easy and user-friendly manner with an auto-teach button.

| Technical data (typ.) | +20 °C, 24 V DC |
|---|---|
| Service voltage | 10 to 35 V DC |
| Switching output | Push-pull, 200 mA, NO/NC switchable |
| Ambient temperature | -10 to +60 °C |
| Degree of protection | IP 67 |
| Housing material | Die-cast zinc, varnished |
| Size | 50 x 40 x 15 mm (housing dimensions) |

| | Scanning range (mm) | Min. teach range (mm) | Transmission light, white, clocked | Resolution (mm) | Sensitivity adjustment by means of | No-load current (mA) | Switching frequency (Hz) | Light spot size (mm) | Plug connector length | Connection cable (optionally available) | Product description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **OK-50** | | | | | | | | | | | |
|  | 27 to 33 | 50 | ■ | Ø 0.7 | Teach key, remote teach | < 40 | 3000 | Ø 3 | M12 | VK … | OKTTI 55 M 30 FG3LK-IBS |

## Application example



- Contrast sensor with high resolution for detecting print marks
- Auto-teach key / remote teach option / lock function
- Auto-teach during a running process
- LED indicator for the teach procedure