



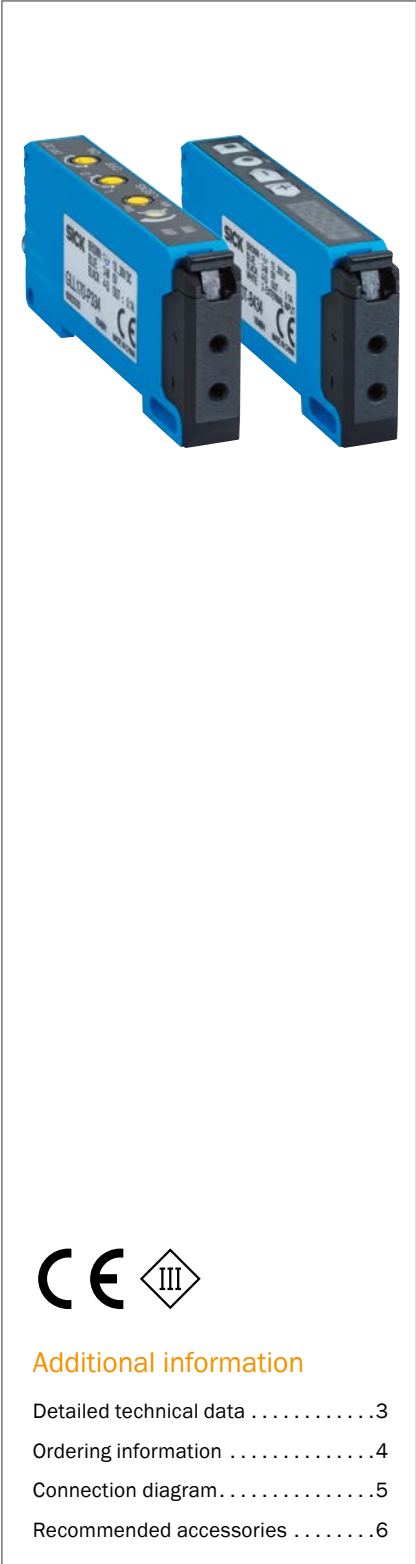
# GLL170

## FIBER-OPTIC SENSORS AND FIBERS

Photoelectric sensors

**SICK**  
Sensor Intelligence.

# SIMPLE, FLEXIBLE DETECTION



## Product description

The GLL170 fiber-optic sensor is the reliable solution for all detection tasks in combination with the fibers in the LL3 product family. With its simple operating concept, the sensor is ideal for applications in harsh environments as well as when rapid response times are crucial. Different variants are available to suit all requirements: The GLL170 variant with potentiometer enables quick and easy

commissioning thanks to its intuitive operation. The GLL170T variant with teach-in function features a display for direct sensor feedback and provides solutions for numerous applications with its range of adjustments. With a switching frequency of up to 10 kHz, this sensor can even handle rapid processes with ease.

## At a glance

- Intuitive operating concept
- Rapid response time of 50 μs
- Switching threshold adjustment via potentiometer, or teach-in via push-button or cable
- IP 66 enclosure rating for high degree of ruggedness
- PNP/NPN switchover (teach-in variant)
- 4-digit digital display (teach-in variant)
- Variable fixing concept
- Various connection types available

## Your benefits

- User-friendly handling enables fast commissioning
- Reliable detection even in rapid processes
- Easy to adjust with intuitive potentiometer or teach-in button
- Rugged sensor housing enables mounting outside the control cabinet
- Sensor parameters can be flexibly adapted to a diverse range of applications (teach-in variant)
- Easy monitoring of process parameters (teach-in variant)
- Quick and easy mounting on a mounting rail or using the fixing holes on the sensor
- Can be combined with fibers from the extensive SICK portfolio to form solutions for numerous applications



## Additional information

Detailed technical data .....3  
 Ordering information .....4  
 Connection diagram.....5  
 Recommended accessories .....6

→ [www.sick.com/GLL170](http://www.sick.com/GLL170)

For more information, simply enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.



## Detailed technical data

## Features

|  | GLL170   | GLL170T   |
|--|--|---|
| <b>Sensor principle</b>                | Fiber-optic photoelectric sensor   |   |
| <b>Device type</b>                     | Stand-alone  |   |
| <b>Dimensions (W x H x D)</b>          | 10 mm x 31.7 mm x 72.5 mm  |   |
| <b>Housing design (light emission)</b> | Rectangular  |   |
| <b>Sensing range max.</b>              | 0 mm ... 190 mm, Proximity system <sup>1) 2)</sup><br>0 mm ... 800 mm, Through-beam system <sup>3)</sup> | 0 mm ... 400 mm, Proximity system <sup>1) 2)</sup><br>0 mm ... 1,320 mm, Through-beam system <sup>3)</sup>                                      |
| <b>Sensing range</b>                   | 0 mm ... 160 mm, Proximity system <sup>1) 2)</sup><br>0 mm ... 700 mm, Through-beam system <sup>3)</sup> | 0 mm ... 350 mm, Proximity system <sup>1) 2)</sup><br>0 mm ... 1,100 mm, Through-beam system <sup>3)</sup>                                      |
| <b>Type of light</b>                   | Visible red light  |   |
| <b>Light source <sup>4)</sup></b>      | LED  |   |
| <b>Wave length</b>                     | 632 nm   |   |
| <b>Adjustment</b>                      | Potentiometer, 8 turns <sup>5)</sup>   | Teach-in button, Cable, Plus/minus button   |
| <b>Time type</b>                       | Without time delay, off delay  | On delay, off delay, one shot, Without time delay   |
| <b>Delay time</b>                      | Selectable via rotary switch, 0 ms, 40 ms  | Programmable, 0 ms, 9999 ms   |
| <b>Indication</b>                      | LED  | Display   |
| <b>Display</b>                         | Status LEDs  | Status LEDs, 4-digit digital display, display selectable between percentage value, absolute digit value and bar display / display of parameters |

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033).

<sup>2)</sup> LL3-DK06.

<sup>3)</sup> LL3-TB02.

<sup>4)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

<sup>5)</sup> Sensitivity scale 230°.

## Mechanics/electronics

|  | GLL170   | GLL170T   |      |
|--|--|---|------|
| <b>Supply voltage <sup>1)</sup></b>    | 10 V DC ... 30 V DC  |   |      |
| <b>Ripple <sup>2)</sup></b>            | ≤ 10 %   |   |      |
| <b>Power consumption <sup>3)</sup></b> | ≤ 30 mA  | ≤ 40 mA   |      |
| <b>Output type</b>                     | PNP, Open Collector/NPN, Open Collector (depending on type)  | PNP, Open Collector, NPN, Open Collector<br>Selectable via menu |      |
| <b>Number of switching outputs</b>     | 1  |   |      |
| <b>Input</b>                           | -  | Teach-in input  |      |
| <b>Switching mode</b>                  | Light/dark switching   |   |      |
| <b>Switching mode selector</b>         | Selectable via rotary switch   | Selectable via menu   |      |
| <b>Output current I<sub>max.</sub></b> | ≤ 100 mA   |   |      |
| <b>Response time <sup>4)</sup></b>     | ≤ 250 μs   | ≤ 250 μs, ≤ 50 μs (selectable via menu)                         |      |
| <b>Switching frequency</b>             | 2 kHz  | 2 kHz, 10 kHz   |      |
| <b>Connection type</b>                 | Cable, 2 m <sup>5)</sup> / Male connector, M8, 3-pin / Male connector, M8, 4-pin (depending on type) |   |      |
| <b>Circuit protection</b>              | A <sup>6)</sup> , B <sup>7)</sup> , C <sup>8)</sup> , D <sup>9)</sup>                                |   |      |
| <b>Protection class</b>                | III  |   |      |
| <b>Weight</b>                          |  |   |      |
|  | Cable, 3-wire  | 63 g  | 66 g |
|  | Connector M8, 4-pin  | 19 g  | 22 g |
|  | Connector M8, 3-pin  | 19 g  | 22 g |

|  | GLL170            | GLL170T |
|--|-------------------|---------|
| <b>Housing material</b>                | PC/POM            |         |
| <b>Tightening torque, max.</b>         | 0.5 Nm            |         |
| <b>Enclosure rating <sup>10)</sup></b> | IP 66             |         |
| <b>Ambient operating temperature</b>   | -25 °C ... +55 °C |         |
| <b>Ambient storage temperature</b>     | -40 °C ... +70 °C |         |

<sup>1)</sup> Limit values.

<sup>2)</sup> May not exceed or fall below U, tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> Do not bend below 0 °C.

<sup>6)</sup> A = V<sub>s</sub> connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

<sup>10)</sup> With correctly attached fibre-optic cable LL3.

## Ordering information

Other models → [www.sick.com/GLL170](http://www.sick.com/GLL170)

### GLL170

| Response time | Sensing range max.                                    | Switching mode | Adjustment                | Connection                | Connection diagram | Type        | Part no. |
|---------------|---|----------------|---------------------------|---------------------------|--------------------|-------------|----------|
| ≤ 250 µs      | 0 mm ... 190 mm,<br>Proximity system <sup>1) 2)</sup> | PNP            | Potentiometer,<br>8 turns | Cable, 3-pin, 2 m         | cd-043             | GLL170-P332 | 6063334  |
|               |   |                |                           | Male connector, M8, 4-pin | cd-066             | GLL170-P334 | 6063335  |
|               |   |                |                           | Male connector, M8, 3-pin | cd-045             | GLL170-P333 | 6063336  |
|               | 0 mm ... 800 mm,<br>Through-beam system <sup>3)</sup> | NPN            | Potentiometer,<br>8 turns | Cable, 3-pin, 2 m         | cd-043             | GLL170-N332 | 6063337  |
|               |   |                |                           | Male connector, M8, 4-pin | cd-066             | GLL170-N334 | 6063338  |
|               |   |                |                           | Male connector, M8, 3-pin | cd-045             | GLL170-N333 | 6063339  |

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033)

<sup>2)</sup> LL3-DK06.

<sup>3)</sup> LL3-TB02.

### GLL170T

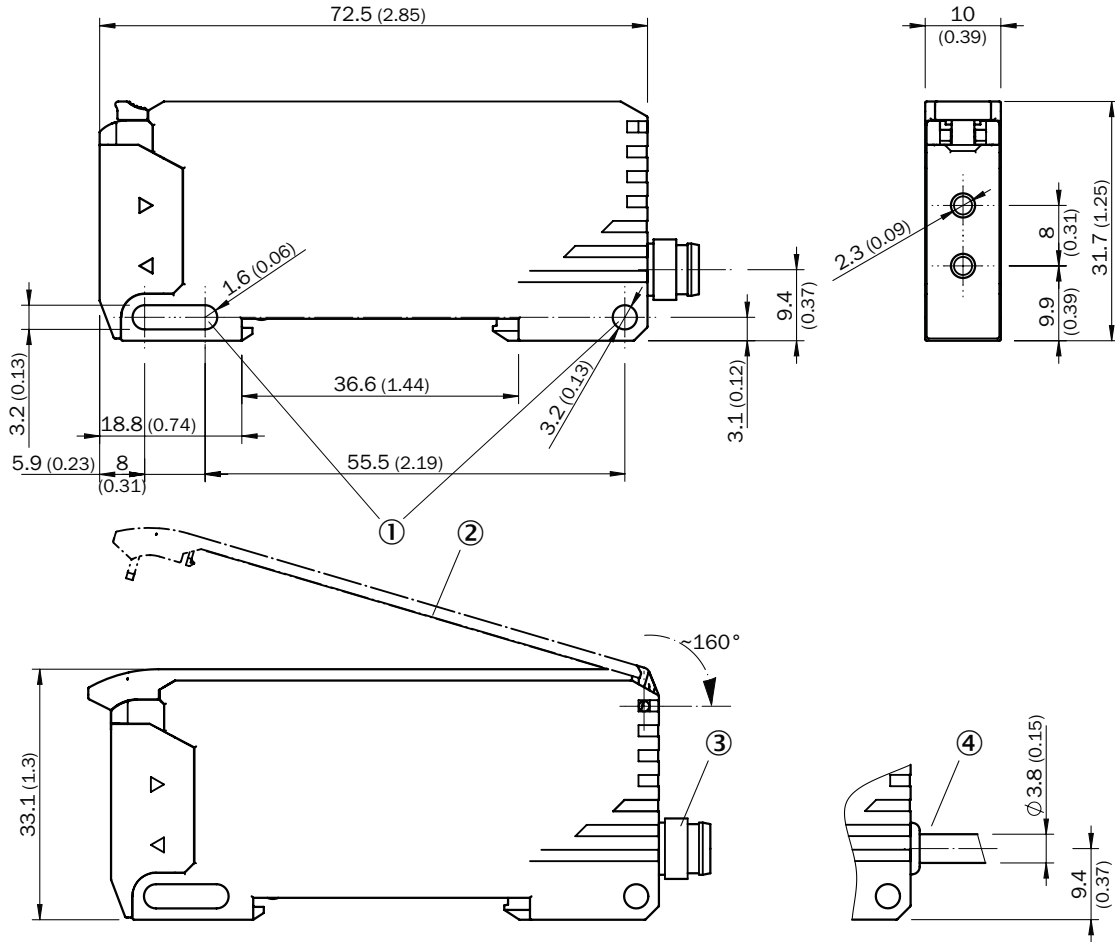
| Response time        | Sensing range max.                                      | Switching mode | Adjustment  | Connection                | Connection diagram | Type         | Part no. |
|----------------------|---|----------------|---|---------------------------|--------------------|--------------|----------|
| ≤ 250 µs,<br>≤ 50 µs | 0 mm ... 400 mm,<br>Proximity system <sup>1) 2)</sup>   | PNP, NPN       | Teach-in button<br>Cable<br>Plus/minus<br>buttons | Cable, 4-pin, 2 m         | cd-093             | GLL170T-B432 | 6063340  |
|                      | 0 mm ... 1,320 mm,<br>Through-beam system <sup>3)</sup> |                |   | Male connector, M8, 4-pin | cd-092             | GLL170T-B434 | 6063341  |
|                      |   |                |   | Male connector, M8, 3-pin | cd-045             | GLL170T-B333 | 6063342  |

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033)

<sup>2)</sup> LL3-DK06.

<sup>3)</sup> LL3-TB02.

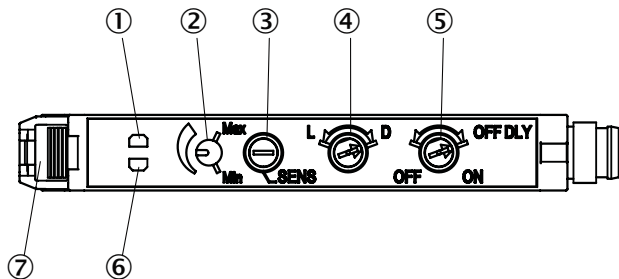
**Dimensional drawings** (Dimensions in mm (inch))



- ① Mounting holes
- ② Protective hood (optional), opens approx. 160°
- ③ Connector M8
- ④ Cable

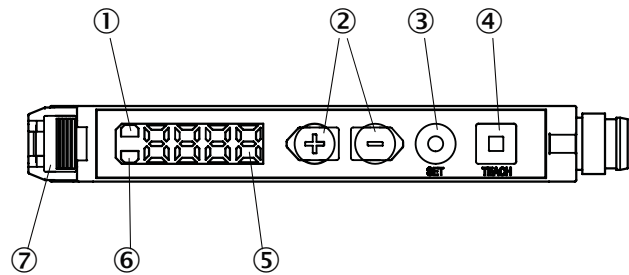
**Adjustments**

**GLL170**



- ① LED indicator orange, lights up when switching output is active
- ② Sensitivity scale 230°
- ③ Sensitivity control: potentiometer, 8 turns
- ④ Selector switch: "L.ON" (light switching) / "D.ON" (dark switching)
- ⑤ OFF delay selector switch: "ON" (on) / "OFF" (off), 40 ms fixed
- ⑥ LED signal strength indicator green, lights up, when light received < 0.9 or > 1.1 (switching threshold = 1)
- ⑦ Locking the fiber-optic cables

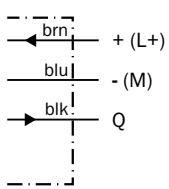
**GLL170T**



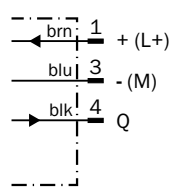
- ① LED indicator orange, lights up when switching output is active
- ② Plus/minus button
- ③ SET button
- ④ Teach-in button
- ⑤ Display
- ⑥ LED indicator green: Supply voltage active
- ⑦ Locking the fiber-optic cables

Connection diagram

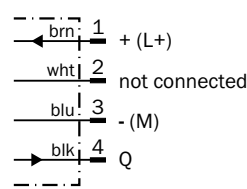
Cd-043



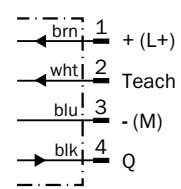
Cd-045



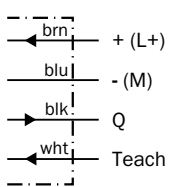
Cd-066



Cd-092



Cd-093



Recommended accessories

Mounting systems

| Figure | Brief description   | Type       | Part no. |
|--------|---|------------|----------|
|        | Mounting bracket, steel, zinc coated, without mounting hardware | BEF-WLL170 | 5306574  |
|        | Protective Hood for GLL170                                      | BF-GLL170  | 5336263  |

Other mounting accessories

| Figure | Brief description                    | Type | Part no. |
|--------|--------------------------------------|------|----------|
|        | Cutter for fibers, supplied with LL3 | FC   | 5304141  |

Connection systems

Connecting cables with female connector

| Figure | Brief description  | Cable length | Type          | Part no. |
|--------|--|--------------|---------------|----------|
|        | Head A: female connector, M8, 3-pin, straight<br>Head B: cable<br>Cable: PVC, unshielded, Ø 5 mm | 2 m          | DOL-0803-G02M | 6010785  |
|        |  | 5 m          | DOL-0803-G05M | 6022009  |
|        |  | 10 m         | DOL-0803-G10M | 6022011  |
|        | Head A: female connector, M8, 3-pin, angled<br>Head B: cable<br>Cable: PVC, unshielded, Ø 5 mm   | 2 m          | DOL-0803-W02M | 6008489  |
|        |  | 5 m          | DOL-0803-W05M | 6022010  |
|        |  | 10 m         | DOL-0803-W10M | 6022012  |
|        | Head A: female connector, M8, 4-pin, straight<br>Head B: cable<br>Cable: PVC, unshielded, Ø 5 mm | 2 m          | DOL-0804-G02M | 6009870  |
|        |  | 5 m          | DOL-0804-G05M | 6009872  |
|        |  | 10 m         | DOL-0804-G10M | 6010754  |
|        | Head A: female connector, M8, 4-pin, angled<br>Head B: cable<br>Cable: PVC, unshielded, Ø 5 mm   | 2 m          | DOL-0804-W02M | 6009871  |
|        |  | 5 m          | DOL-0804-W05M | 6009873  |
|        |  | 10 m         | DOL-0804-W10M | 6010755  |

Female connectors (ready to assemble)

| Figure  | Brief description   | Type       | Part no. |
|---|---|------------|----------|
|  | Head A: female connector, M8, 3-pin, straight<br>Head B: -<br>Cable: unshielded | DOS-0803-G | 7902077  |
|  | Head A: female connector, M8, 3-pin, angled<br>Head B: -<br>Cable: unshielded   | DOS-0803-W | 7902078  |
|  | Head A: female connector, M8, 4-pin, straight<br>Head B: -<br>Cable: unshielded | DOS-0804-G | 6009974  |
|  | Head A: female connector, M8, 4-pin, angled<br>Head B: -<br>Cable: unshielded   | DOS-0804-W | 6009975  |

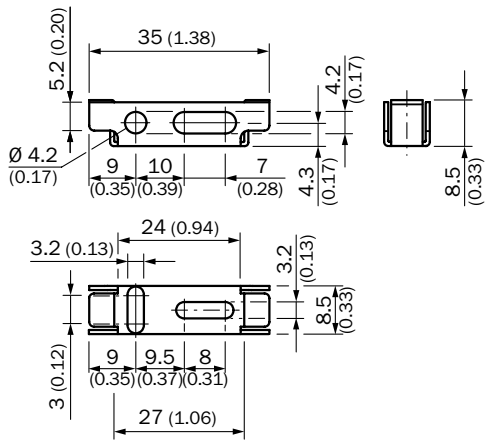
Male connectors (ready to assemble)

| Figure  | Brief description   | Type       | Part no. |
|---|---|------------|----------|
|  | Head A: male connector, M8, 3-pin, straight<br>Head B: -<br>Cable: unshielded | STE-0803-G | 6037322  |
|  | Head A: male connector, M8, 4-pin, straight<br>Head B: -<br>Cable: unshielded | STE-0804-G | 6037323  |

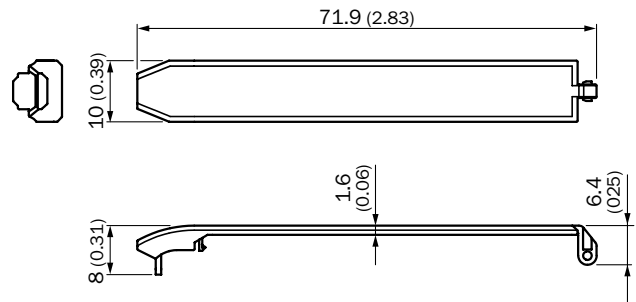
Dimensional drawings for accessories (Dimensions in mm (inch))

Mounting systems

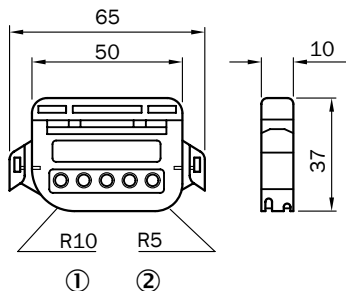
BEF-WLL170



BF-GLL170



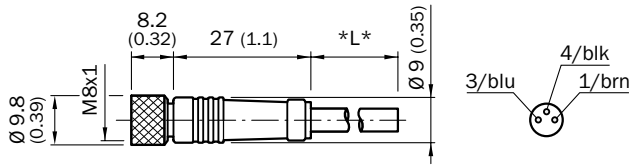
FC



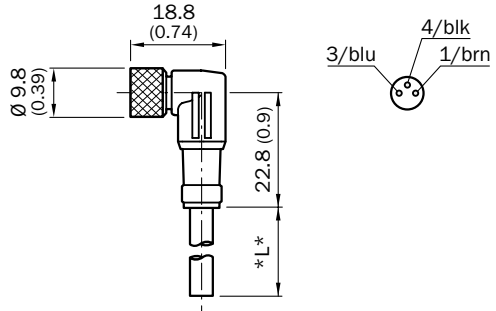
- ① Template for R10 mm bend radius
- ② Template for R5 mm bend radius

Connection systems

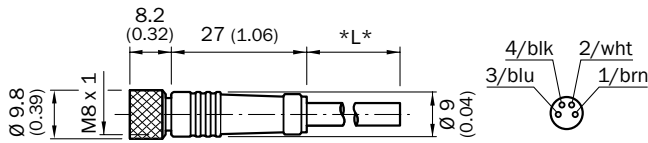
DOL-0803-G02M  
 DOL-0803-G05M  
 DOL-0803-G10M



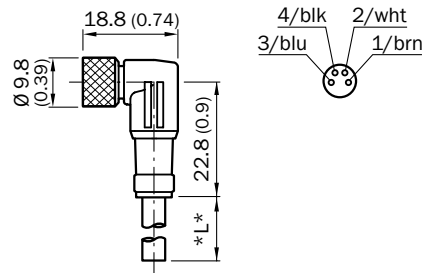
DOL-0803-W02M  
 DOL-0803-W05M  
 DOL-0803-W10M



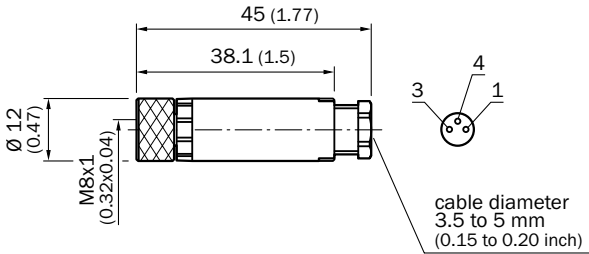
DOL-0804-G02M  
 DOL-0804-G05M  
 DOL-0804-G10M



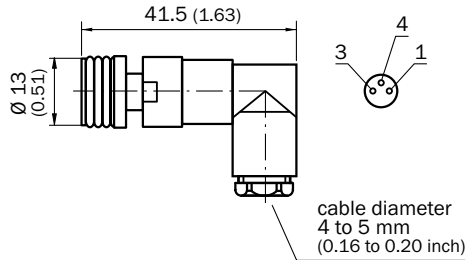
DOL-0804-W02M  
 DOL-0804-W05M  
 DOL-0804-W10M



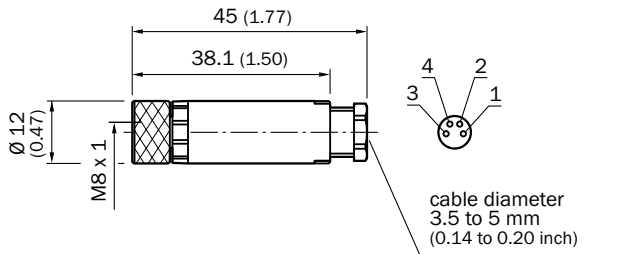
DOS-0803-G



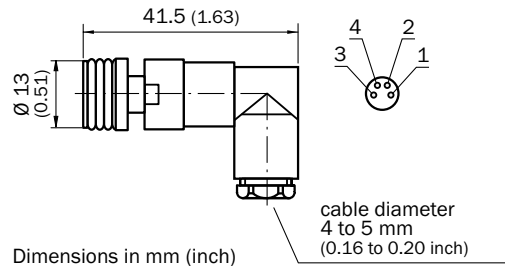
DOS-0803-W



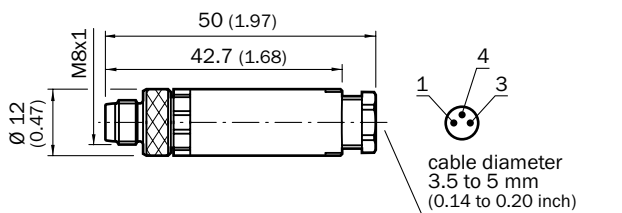
DOS-0804-G



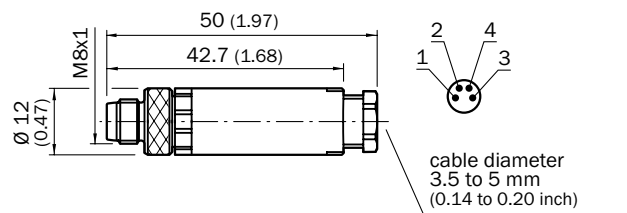
DOS-0804-W



STE-0803-G



STE-0804-G



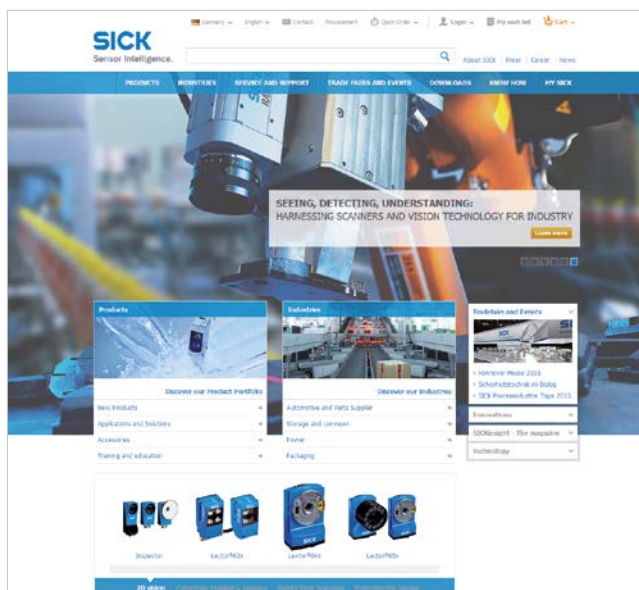






## REGISTER AT WWW.SICK.COM TODAY AND ENJOY ALL THE BENEFITS






- ✔ Select products, accessories, documentation and software quickly and easily.
- ✔ Create, save and share personalized wish lists.
- ✔ View the net price and date of delivery for every product.
- ✔ Requests for quotation, ordering and delivery tracking made easy.
- ✔ Overview of all quotations and orders.
- ✔ Direct ordering: submit even very complex orders in moments.
- ✔ View the status of quotations and orders at any time. Receive e-mail notifications of status changes.
- ✔ Easily repeat previous orders.
- ✔ Conveniently export quotations and orders to work with your systems.



## SERVICES FOR MACHINES AND SYSTEMS: SICK LifeTime Services

Our comprehensive and versatile LifeTime Services are the perfect addition to the comprehensive range of products from SICK. The services range from product-independent consulting to traditional product services.



- 
**Consulting and design**  
 Safe and professional
- 
**Product and system support**  
 Reliable, fast and on-site
- 
**Verification and optimization**  
 Safe and regularly inspected
- 
**Upgrade and retrofits**  
 Easy, safe and economical
- 
**Training and education**  
 Practical, focused and professional

## SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 7,400 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, we are always close to our customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in various industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services round out our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**For us, that is “Sensor Intelligence.”**

### **Worldwide presence:**

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations → [www.sick.com](http://www.sick.com)

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Fibre Optic Sensors](#) category:*

*Click to view products by [Sick](#) manufacturer:*

Other Similar products are found below :

[FX-501](#) [E32T12B2M](#) [BFX-D1-N](#) [BFX-D1-P](#) [NT-D35FZ](#) [NFT-310](#) [NFTE-310](#) [CN-14A-R-C2](#) [CN-73-C1](#) [ASBSV 8/LED 5](#) [AU-F03-PNP-](#)  
[NO](#) [LL3-TB01](#) [FD-31W](#) [FD-42G](#) [E32-D11L 2M](#) [E32-T11L 2M](#) [FS-04D-100](#) [FS-15T-100](#) [FX-101-CC2](#) [FX-101P](#) [FX-101P-CC2](#) [FX-101P-](#)  
[Z](#) [FX-102-CC2](#) [FD-31](#) [FD-62](#) [FX-502](#) [E3X-NA41 2M](#) [FT-F93](#) [FX-102P-CC2](#) [FX-502P](#) [FX-505P-C2](#) [CN-73-C2](#) [CN-24A-C5](#) [CN-24A-C2](#)  
[CN-14A-R-C5](#) [CN-14A-R-C1](#) [TEKT5400S](#) [FT-42](#) [FT-A11](#) [FX-301P](#) [HEDS-5540#A11](#) [SAIL-M8BW-4-10U](#) [YF2A15-100UB5XLEAX](#)  
[E32-T14L 2M](#) [LL3-DT01](#) [FD-S21](#) [FT-R43](#) [FX301](#) [FX311](#) [FX311P](#)