



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 μ s
- 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

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

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

²⁾ LL3-DK06.

³⁾ LL3-TB02.

⁴⁾ Average service life: 100,000 h at T_U = +25 °C.

⁵⁾ Sensitivity scale 230°.

Mechanics/electronics

	GLL170	GLL170T
Supply voltage ¹⁾	10 V DC ... 30 V DC	
Ripple ²⁾	≤ 10 %	
Power consumption ³⁾	≤ 30 mA	≤ 40 mA
Output type	PNP, Open Collector/NPN, Open Collector (depending on type)	PNP, Open Collector, NPN, Open Collector Selectable via menu
Number of switching outputs	1	
Input	–	Teach-in input
Switching mode	Light/dark switching	
Switching mode selector	Selectable via rotary switch	Selectable via menu
Output current I_{max}.	≤ 100 mA	
Response time ⁴⁾	≤ 250 µs	≤ 250 µs, ≤ 50 µs (selectable via menu)
Switching frequency	2 kHz	2 kHz, 10 kHz
Connection type	Cable, 2 m ⁵⁾ / Male connector, M8, 3-pin / Male connector, M8, 4-pin (depending on type)	
Circuit protection	A ⁶⁾ , B ⁷⁾ , C ⁸⁾ , D ⁹⁾	
Protection class	III	
Weight		
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
Housing material	PC/POM	
Tightening torque, max.	0.5 Nm	
Enclosure rating ¹⁰⁾	IP 66	
Ambient operating temperature	-25 °C ... +55 °C	
Ambient storage temperature	-40 °C ... +70 °C	

¹⁾ Limit values.

²⁾ May not exceed or fall below U, tolerances.

³⁾ Without load.

⁴⁾ Signal transit time with resistive load.

⁵⁾ Do not bend below 0 °C.

⁶⁾ A = V_s connections reverse-polarity protected.

⁷⁾ B = inputs and output reverse-polarity protected.

⁸⁾ C = interference suppression.

⁹⁾ D = outputs overcurrent and short-circuit protected.

¹⁰⁾ With correctly attached fibre-optic cable LL3.

Ordering information

Other models → 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, Proximity system ^{1) 2)}	PNP	Potentiometer, 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, Through-beam system ³⁾	NPN	Potentiometer, 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

¹⁾ Object with 90 % reflectance (referred to standard white, DIN 5033)

²⁾ LL3-DK06.

³⁾ LL3-TB02.

GLL170T

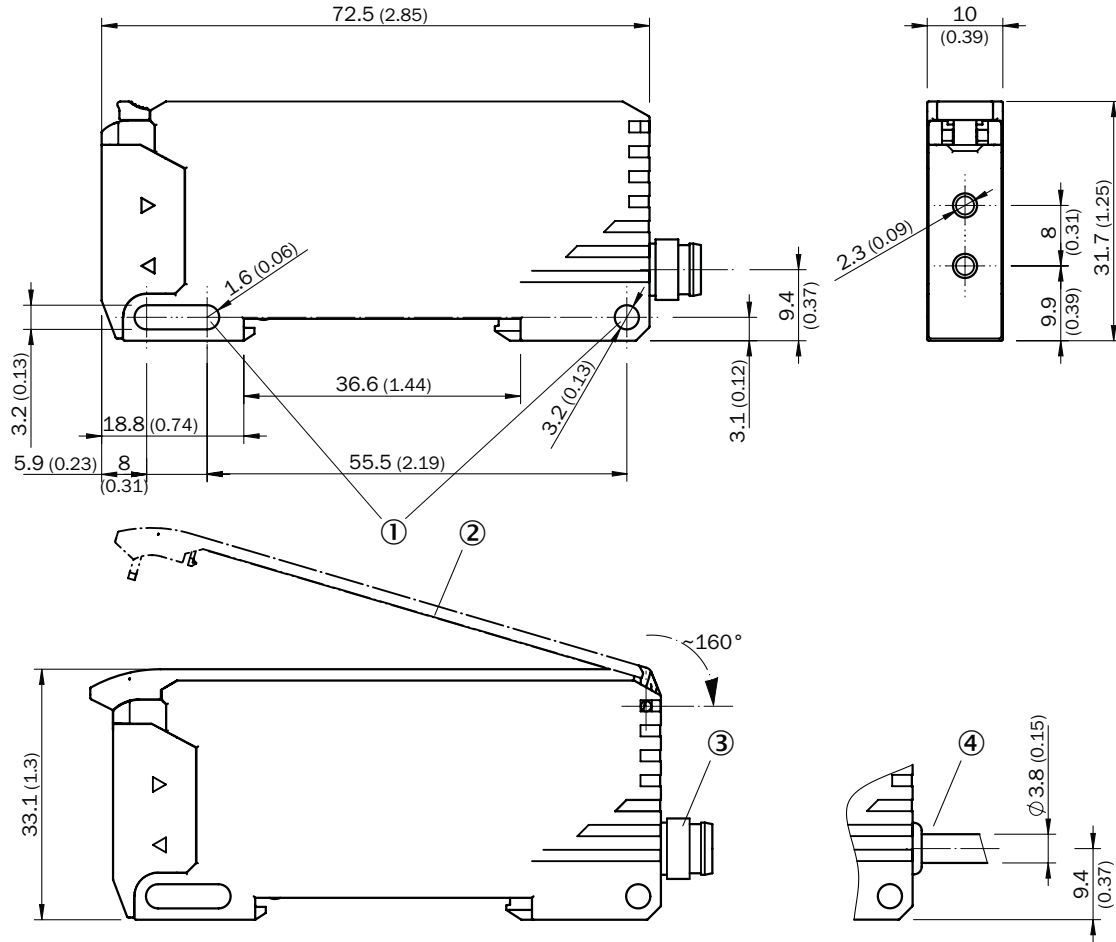
Response time	Sensing range max.	Switching mode	Adjustment	Connection	Connection diagram	Type	Part no.		
≤ 250 μs, ≤ 50 μs	0 mm ... 400 mm, Proximity system ^{1) 2)}	PNP, NPN	Teach-in button Cable Plus/minus buttons	Cable, 4-pin, 2 m	cd-093	GLL170T-B432	6063340		
	0 mm ... 1,320 mm, Through-beam system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

¹⁾ Object with 90 % reflectance (referred to standard white, DIN 5033)

²⁾ LL3-DK06.

³⁾ LL3-TB02.

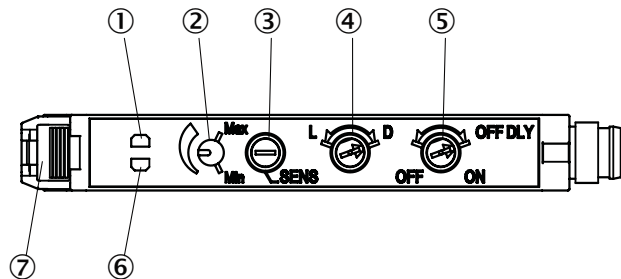
Dimensional drawings (Dimensions in mm (inch))



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

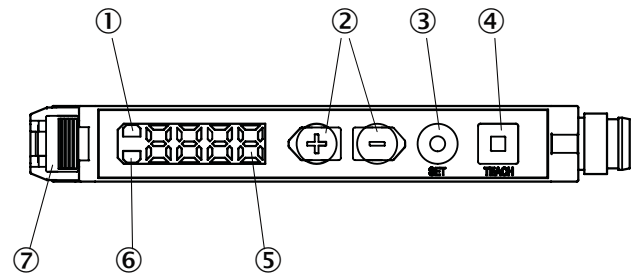
Adjustments

GLL170



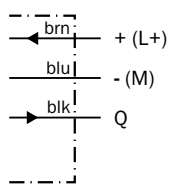
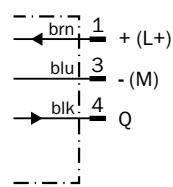
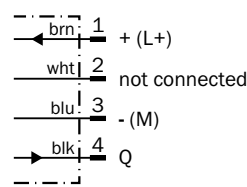
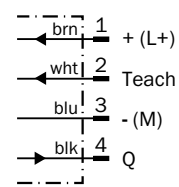
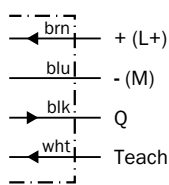
- ① LED indicator orange, lights up when switching output is active
- ② Sensitivity scale 230°
- ③ Sensitivity control: potentiometer, 8 turns
- ④ Selector switch: "L.ON" (light switching) / "D.ON" (dark switching)
- ⑤ OFF delay selector switch: "ON" (on) / "OFF" (off), 40 ms fixed
- ⑥ LED signal strength 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 Head B: cable 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 Head B: cable 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 Head B: cable 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 Head B: cable 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 Head B: - Cable: unshielded	DOS-0803-G	7902077
	Head A: female connector, M8, 3-pin, angled Head B: - Cable: unshielded	DOS-0803-W	7902078
	Head A: female connector, M8, 4-pin, straight Head B: - Cable: unshielded	DOS-0804-G	6009974
	Head A: female connector, M8, 4-pin, angled Head B: - Cable: unshielded	DOS-0804-W	6009975

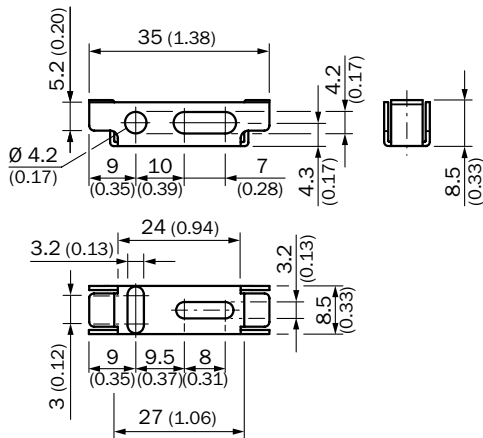
Male connectors (ready to assemble)

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

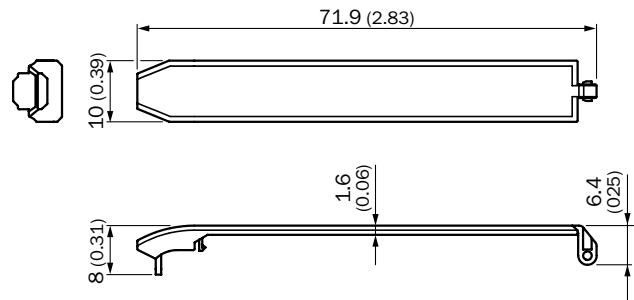
Dimensional drawings for accessories (Dimensions in mm (inch))

Mounting systems

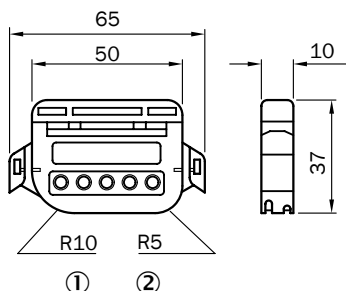
BEF-WLL170



BF-GLL170



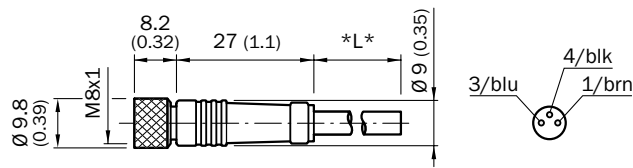
FC



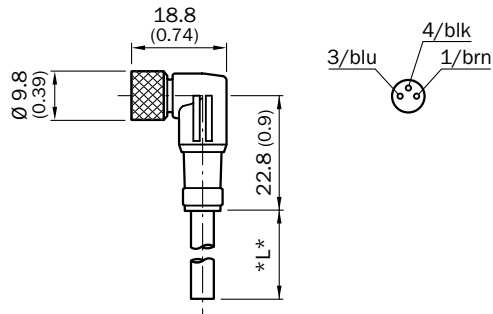
- ① Template for R10 mm bend radius
② Template for R5 mm bend radius

Connection systems

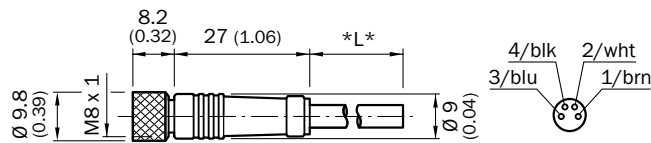
DOL-0803-G02M
DOL-0803-G05M
DOL-0803-G10M



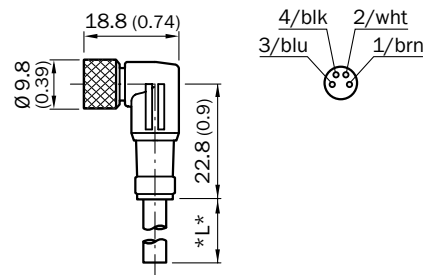
DOL-0803-W02M
DOL-0803-W05M
DOL-0803-W10M



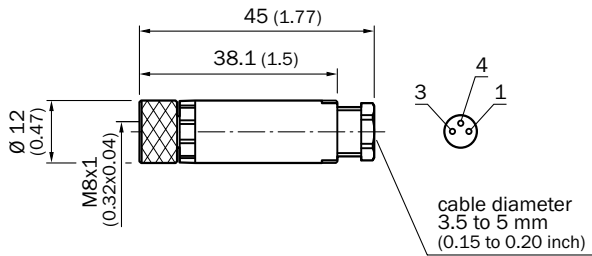
DOL-0804-G02M
DOL-0804-G05M
DOL-0804-G10M



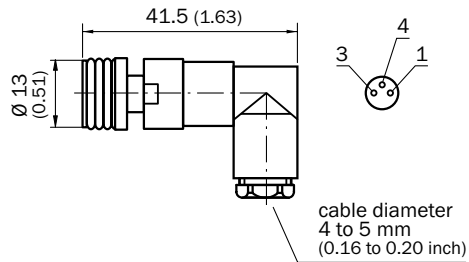
DOL-0804-W02M
DOL-0804-W05M
DOL-0804-W10M



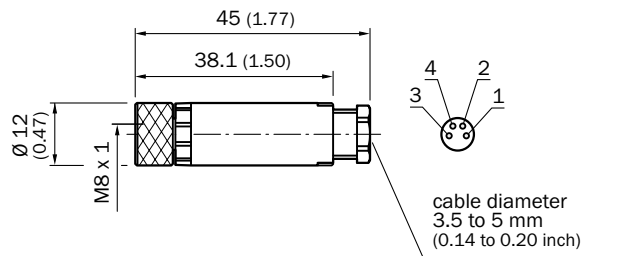
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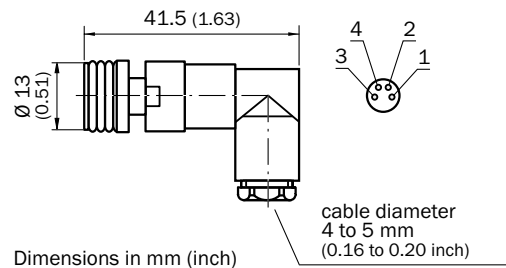
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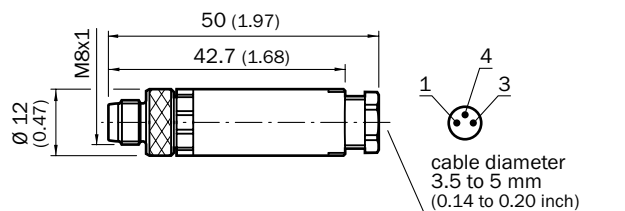
DOS-0804-G



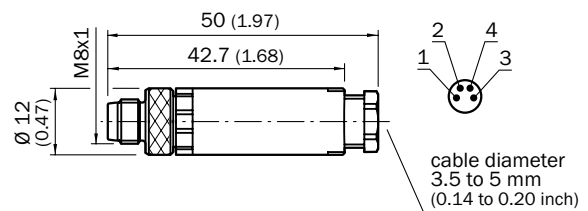
DOS-0804-W



STE-0803-G



STE-0804-G



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Training and education
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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.

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