

Global sensor – the economic way to business class performance



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### Product description

The G6 Global photoelectric sensor is enclosed in a miniature housing and provides an optimal price-performance ratio. This sensor provides outstanding sensing performance using a standard 1-inch hole distance. With PinPoint LEDs,

metal inserts for mounting, large indicator LEDs, large user-friendly adjustment potentiometers, an IP 67 enclosure rating and the very latest SICK ASIC technology, this is truly a high performance sensor in a small package.

### At a glance

- PinPoint LED for a bright, precise light spot
- Durable metal threaded inserts
- SICK ASIC technology – the result of decades of experience in photoelectric sensors
- Large, user-friendly potentiometer
- Large, bright indicator LEDs
- IP 67 enclosure rating

### Your benefits

- Easy alignment and precise object detection due to a highly visible PinPoint LED
- Quick and easy mounting and high durability due to threaded metal inserts
- SICK ASIC technology provides high performance and excellent reliability
- Easy to adjust due to large, user-friendly potentiometers
- Easy to monitor due to large, bright indicator LEDs
- Easy installation with SICK accessories

→ [www.mysick.com/en/G6](http://www.mysick.com/en/G6)

For more information, just 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.



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## Detailed technical data

### Features

	GTE6	GTB6	GL6	GL6G	GSE6
<b>Sensor principle</b>	Photoelectric proximity sensor		Photoelectric retro-reflective sensor		Through-beam photoelectric sensor
<b>Detection principle</b>	Energetic	Background suppression	Standard optics		-
<b>Dimensions (W x H x D)</b>	12 mm x 31.5 mm x 21 mm				
<b>Housing design (light emission)</b>	Rectangular				
<b>Sensing range max.</b>	≤ 300 mm <sup>1)</sup>	5 mm ... 250 mm <sup>1)</sup>	≤ 6 m <sup>2)</sup>		0 m ... 15 m
<b>Sensing range</b>	≤ 250 mm	35 mm ... 140 mm	≤ 5 m <sup>2)</sup>		0 m ... 10 m
<b>Type of light</b>	Visible red light				
<b>Light source <sup>3)</sup></b>	PinPoint LED				
<b>Wave length</b>	650 nm				
<b>Adjustment</b>	Mechanical spindle, 5 turns		Potentiometer, 270 °		
<b>Special feature</b>	-			Detection of transparent objects	-

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

<sup>2)</sup> PL80A.

<sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C.

### Mechanics/electronics

	GTE6	GTB6	GL6	GL6G	GSE6
<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				
<b>Output type</b>	PNP, open collector / NPN, open collector				
<b>Switching mode</b>	Light/dark-switching (selectable via light/dark selector)				
<b>Signal voltage PNP HIGH/LOW</b>	V <sub>S</sub> - (<=3 V) / approx. 0 V				
<b>Signal voltage NPN HIGH/LOW</b>	Approx. V <sub>S</sub> / <= 3 V				
<b>Output current I<sub>max.</sub> <sup>4)</sup></b>	≤ 100 mA				
<b>Response time <sup>5)</sup></b>	< 1,250 ms	< 625 μs			< 500 μs
<b>Switching frequency <sup>6)</sup></b>	500 Hz	1,000 Hz			
<b>Attenuation along light beam</b>	-			> 20 %	-
<b>Connection type</b>	Cable, 2 m <sup>7)</sup> Male connector, M8 Cable with connector, M8, 300 mm <sup>7)</sup> Cable with connector, M12, 300 mm <sup>7)</sup> (depending on type)				
<b>Circuit protection</b>	A <sup>8)</sup> , B <sup>9)</sup> , D <sup>10)</sup>				
<b>Protection class</b>	III				
<b>Weight</b>					
Connector	20 g			40 g	
Cable/Cable with connector	60 g			170 g	
<b>Polarisation filter</b>	-		✓	-	
<b>Housing material</b>	ABS/PC				

	GTE6	GTB6	GL6	GL6G	GSE6
Optics material	PMMA				
Enclosure rating	IP 67				
Items supplied	Stainless steel mounting bracket (1.4301/304) BEF-W100-A		Stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250		Stainless steel mounting bracket (1.4301/304) BEF-W100-A
Ambient operating temperature <sup>11)</sup>	-25 °C ... +55 °C				
Ambient storage temperature	-40 °C ... +70 °C				

<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A.

<sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances.

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

<sup>4)</sup> At  $V_S > 24$  V,  $I_A$  max = 50 mA.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> With light/dark ratio 1:1.

<sup>7)</sup> Do not bend below 0 °C.

<sup>8)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>9)</sup> B = inputs and output reverse-polarity protected.

<sup>10)</sup> D = outputs overcurrent and short-circuit protected.

<sup>11)</sup> Temperature stability after adjustment +/-10 °C.

## Ordering information

Other models available at [www.mysick.com/en/G6](http://www.mysick.com/en/G6)

### GTE6

- **Sensor principle:** photoelectric proximity sensor
- **Detection principle:** energetic
- **Light spot size (distance):** Ø 7 mm (90 mm)
- **Switching mode:** light/dark-switching

Sensing range max. <sup>1)</sup>	Output type	Adjustment	Connection	Connection diagram	Items supplied	Model name	Part no.
≤ 300 mm	PNP	Mechanical spindle, 5 turns	Cable, 3-wire, 2 m, PVC	Cd-043	-	GTE6-P1211	1050712
					Stainless steel mounting bracket BEF-W100-A	GTE6-P1212	1051783
			Connector M8, 4-pin	Cd-066	-	GTE6-P4211	1050710
					Stainless steel mounting bracket BEF-W100-A	GTE6-P4212	1051781
			Cable with connector M12, 4-pin, 300 mm, PVC	Cd-066	-	GTE6-P7211	1053589
					Stainless steel mounting bracket BEF-W100-A	GTE6-P7212	1053628
	NPN	Mechanical spindle, 5 turns	Cable, 3-wire, 2 m, PVC	Cd-043	-	GTE6-N1211	1050713
					Stainless steel mounting bracket BEF-W100-A	GTE6-N1212	1051784
			Connector M8, 4-pin	Cd-066	-	GTE6-N4211	1050711
					Stainless steel mounting bracket BEF-W100-A	GTE6-N4212	1051782

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

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GTB6

- **Sensor principle:** photoelectric proximity sensor
- **Detection principle:** background suppression
- **Light spot size (distance):** Ø 6 mm (100 mm)
- **Switching mode:** light/dark-switching

Sensing range max. <sup>1)</sup>	Output type	Adjustment	Connection	Connection diagram	Items supplied	Model name	Part no.
5 mm ... 250 mm	PNP	Mechanical spindle, 5 turns	Cable, 3-wire, 2 m, PVC	Cd-043	-	GTB6-P1211	1052440
					Stainless steel mounting bracket BEF-W100-A	GTB6-P1212	1052444
			Connector M8, 4-pin	Cd-066	-	GTB6-P4211	1052438
					Stainless steel mounting bracket BEF-W100-A	GTB6-P4212	1052442
			Cable with connector M8, 3-pin, 300 mm	Cd-043	-	GTB6-P5211	1059333
			Cable with connector M8, 4-pin, 300 mm	Cd-066	-	GTB6-P6211	1059320
	Cable with connector M12, 4-pin, 300 mm		Cd-066	-	GTB6-P7211	1057705	
	NPN		Cable, 3-wire, 2 m, PVC	Cd-043	-	GTB6-N1211	1052441
					Stainless steel mounting bracket BEF-W100-A	GTB6-N1212	1052445
			Connector M8, 4-pin	Cd-066	-	GTB6-N4211	1052439
					Stainless steel mounting bracket BEF-W100-A	GTB6-N4212	1052443
			Cable with connector M8, 4-pin, 300 mm	Cd-066	-	GTB6-N6211	1058774
Stainless steel mounting bracket BEF-W100-A		GTB6-N6212			1058769		

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



## GL6

- **Sensor principle:** photoelectric retro-reflective sensor
- **Light spot size (distance):** Ø 8 mm (350 mm)
- **Switching mode:** light/dark-switching

Sensing range max. <sup>1)</sup>	Output type	Adjustment	Connection	Connection diagram	Items supplied	Model name	Part no.	
≤ 6 m	PNP	-	Cable, 3-wire, 2 m, PVC	Cd-043	-	GL6-P1111	1050708	
					Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6-P1112	1051779	
			Connector M8, 4-pin	Cd-066	-	GL6-P4111	1050706	
					Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6-P4112	1051777	
			Cable with connector M8, 4-pin, 300 mm, PVC	Cd-066	-	GL6-P6111	1060234	
					Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6-P6112	1060235	
		Connector M12, 4-pin, 300 mm, PVC	Cd-066	-	GL6-P7111	1052966		
				Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6-P7112	1053590		
		Potentiometer, 270 °	Cable, 3-wire, 2 m, PVC	Cd-043	Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6-P1212	1060815	
						Connector M8, 4-pin	Cd-066	-
			Cable with connector M8, 4-pin, 300 mm, PVC	Cd-066	Stainless steel mounting bracket BEF-W100-A, Reflector P250	-	GL6-P6211	1058851
						Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6-P6212	1062753
	NPN		-	Cable, 3-wire, 2 m, PVC	Cd-043	-	GL6-N1111	1050709
						Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6-N1112	1051780
		Connector M8, 4-pin		Cd-066	Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6-N4112	1051778	
		Potentiometer, 270 °	Cable, 3-wire, 2 m, PVC	Cd-043	Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6-N1212	1060814	
						Connector M8, 4-pin	Cd-066	-
			Cable with connector M8, 4-pin, 300 mm, PVC	Cd-066	Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6-N6212	1062588	

<sup>1)</sup> PL80A.

## GL6G, clear material detection

- **Sensor principle:** photoelectric retro-reflective sensor
- **Light spot size (distance):** Ø 8 mm (350 mm)
- **Switching mode:** light/dark-switching

Sensing range max. <sup>1)</sup>	Output type	Adjustment	Connection	Connection diagram	Items supplied	Model name	Part no.
≤ 6 m	PNP	Potentiometer, 270 °	Cable, 3-wire, 2 m, PVC	Cd-043	-	GL6G-P1211	1059924
					Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6G-P1212	1060812
			Connector M8, 4-pin	Cd-066	-	GL6G-P4211	1059632
					Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6G-P4212	1060810
	NPN	Potentiometer, 270 °	Cable, 3-wire, 2 m, PVC	Cd-043	-	GL6G-N1211	1059925
					Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6G-N1212	1060811
			Connector M8, 4-pin	Cd-066	-	GL6G-N4211	1059633
					Stainless steel mounting bracket BEF-W100-A, Reflector P250	GL6G-N4212	1060809

<sup>1)</sup> PL80A.

GSE6

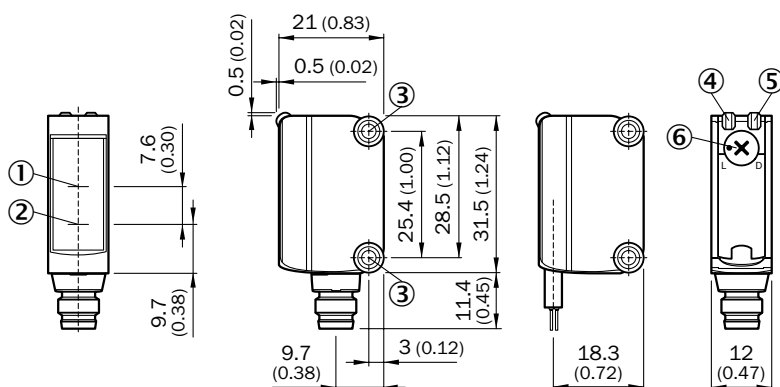
- **Sensor principle:** through-beam photoelectric sensor
- **Light spot size (distance):** Ø 375 mm (12 m)
- **Switching mode:** light/dark-switching

Sensing range max.	Output type	Adjustment	Connection	Connection diagram	Items supplied	Model name	Part no.	
0 m ... 15 m	PNP	-	Cable, 3-wire, 2 m, PVC	Cd-049	-	GSE6-P1111	1052448	
					Stainless steel mounting bracket BEF-W100-A	GSE6-P1112	1052452	
			Connector M8, 4-pin	Cd-057	-	GSE6-P4111	1052446	
					Stainless steel mounting bracket BEF-W100-A	GSE6-P4112	1052450	
			Cable with connector M12, 4-pin, 300 mm, PVC	Cd-057	-	GSE6-P7111	1054830	
					Stainless steel mounting bracket BEF-W100-A	GSE6-P7112	1054831	
		Cable with connector M8, 4-pin, 300 mm, PVC	Cd-057	-	GSE6-P6111	1054848		
				Stainless steel mounting bracket BEF-W100-A	GSE6-P6112	1054850		
		Potentiometer, 270 °	Cable, 3-wire, 2 m, PVC	Cd-049	-	GSE6-P1211	1060792	
					Stainless steel mounting bracket BEF-W100-A	GSE6-P1212	1061398	
			Connector M8, 4-pin, PVC	Cd-057	-	GSE6-P4211	1061394	
					Stainless steel mounting bracket BEF-W100-A	GSE6-P4212	1061396	
0 m ... 15 m	NPN		-	Cable, 3-wire, 2 m, PVC	Cd-049	-	GSE6-N1111	1052449
						Stainless steel mounting bracket BEF-W100-A	GSE6-N1112	1052453
		Connector M8, 4-pin		Cd-057	-	GSE6-N4111	1052447	
					Stainless steel mounting bracket BEF-W100-A	GSE6-N4112	1052451	
		Cable with connector M12, 4-pin, 300 mm, PVC		Cd-057	-	GSE6-N7111	1054833	
					Stainless steel mounting bracket BEF-W100-A	GSE6-N7112	1054835	
Cable with connector M8, 4-pin, 300 mm, PVC	Cd-057	-	GSE6-N6111	1054849				
		Stainless steel mounting bracket BEF-W100-A	GSE6-N6112	1054852				
Potentiometer, 270 °	Cable, 3-wire, 2 m, PVC	Cd-049	-	GSE6-N1211	1060791			



## Dimensional drawings

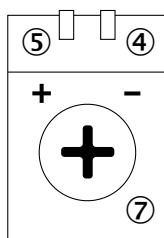
Dimensions in mm (inch)



- ① Optical axis, receiver
- ② Optical axis, sender
- ③ Mounting holes M3
- ④ Status indicator LED green: power on
- ⑤ Status indicator LED, yellow: Status of received light beam
- ⑥ Light/ dark rotary switch:  
L = light switching, D = dark switching

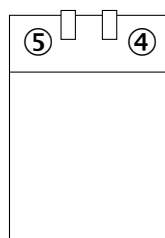
## Adjustments

## Adjustment possibility



- ④ Status indicator LED green: power on
- ⑤ Status indicator LED, yellow: status of received light beam
- ⑦ Sensitivity adjustment: poti

## No adjustment possibility



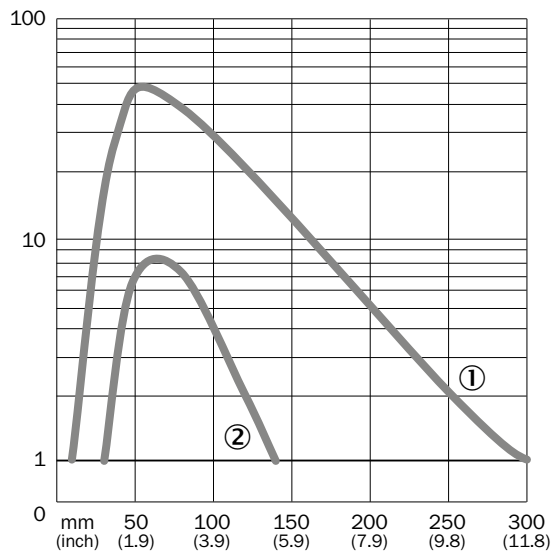
- ④ Status indicator LED green: power on
- ⑤ Status indicator LED, yellow: status of received light beam

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## Characteristic curves

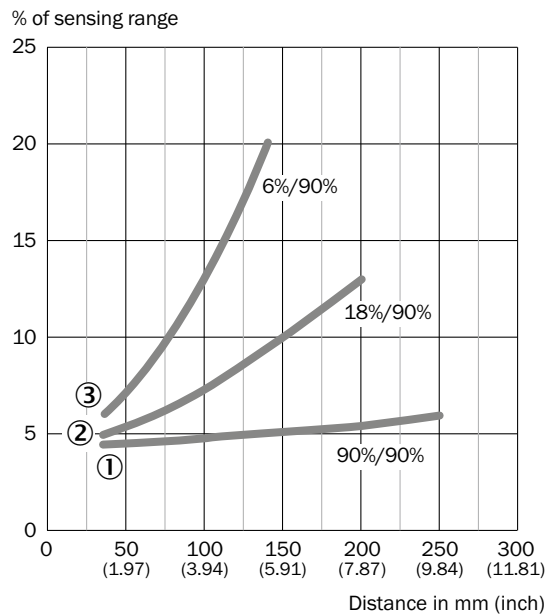
### Black-white shift

#### GTE6



- ① Object with 90% remission (referred to standard white DIN 5033)
- ② Sensing range on gray, 18 % remission

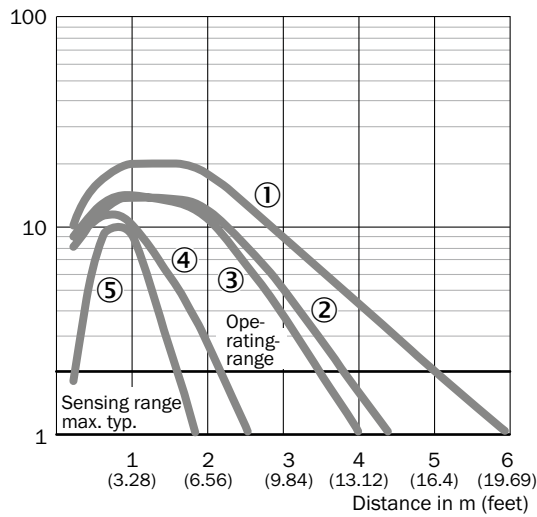
#### GTB6



- ① Object with 90% remission (referred to standard white DIN 5033)
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on black, 6 % remission

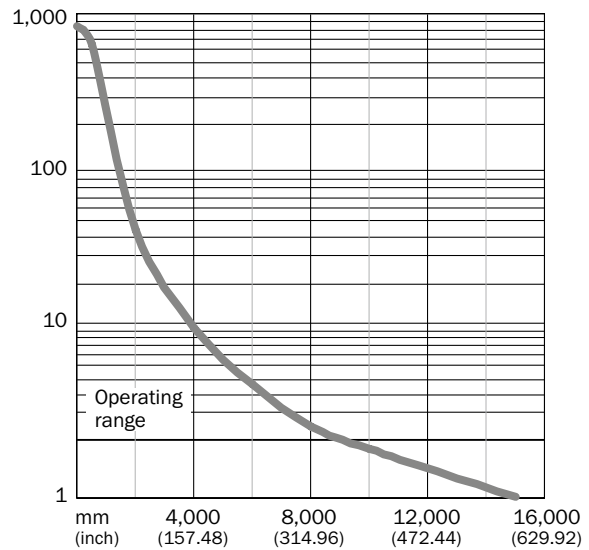
### Operating reserve

#### GL6



- ① PL80A
- ② PL40A
- ③ P250
- ④ PL20A
- ⑤ REF-IRF-56

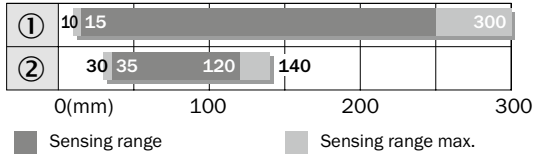
#### GSE6





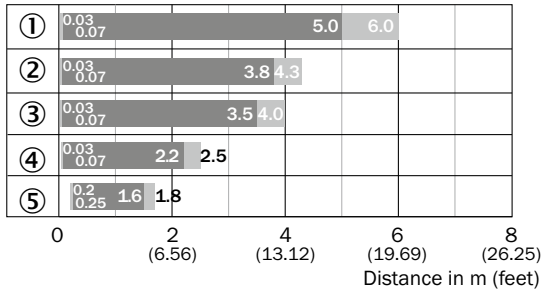
### Bar diagrams

#### GTE6



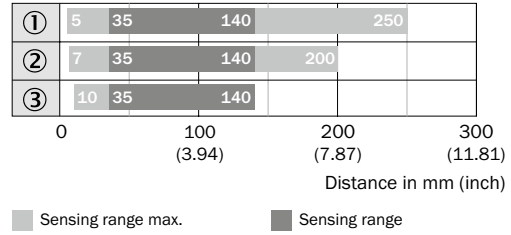
- ① Object with 90% remission (referred to standard white DIN 5033)
- ② Sensing range on gray, 18 % remission

#### GL6, GL6G



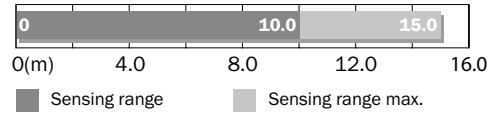
- ① PL80A
- ② PL40A
- ③ P250
- ④ PL20A
- ⑤ REF-IRF-56

#### GTB6



- ① Object with 90% remission (referred to standard white DIN 5033)
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on black, 6 % remission

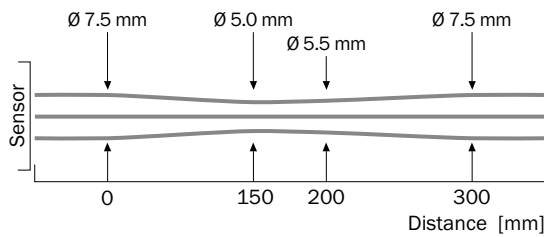
#### GSE6



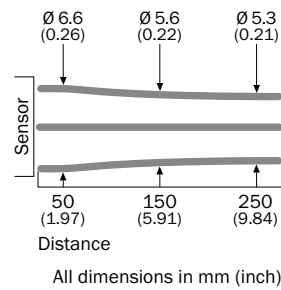
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### Light spot diameter

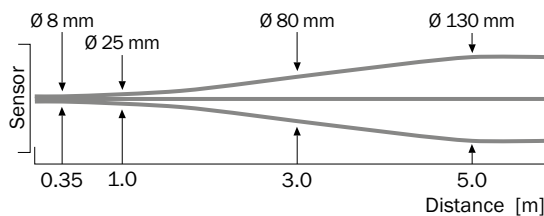
#### GTE6



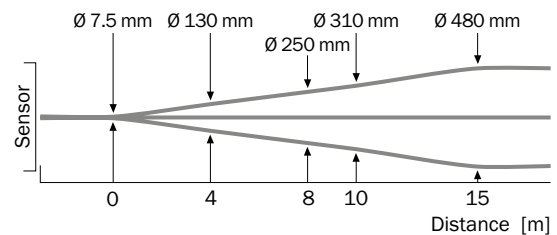
#### GTB6



#### GL6, GL6G

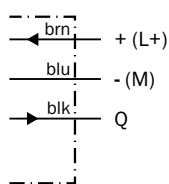


#### GSE6

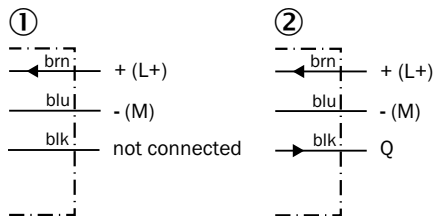


## Connection diagram

### Cd-043

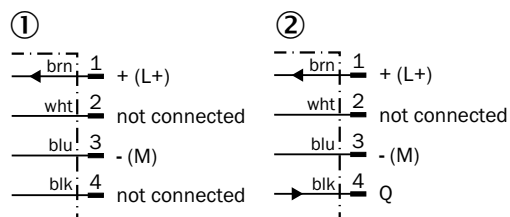


### Cd-049



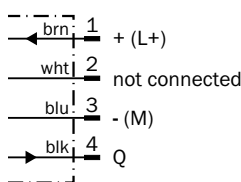
① Sender  
② Receiver

### Cd-057



① Sender  
② Receiver

### Cd-066



## Recommended accessories

### Mounting brackets/plates

#### Mounting brackets

Figure	Material	Description	Model name	Part no.
	Stainless steel	Mounting bracket for wall mounting	BEF-W100-A	5311520
	Steel, zinc coated	Mounting bracket for floor mounting	BEF-W100-B	5311521

### Plug connectors and cables


#### Connecting cable (female connector-open)

- Cable material: PVC

Figure	Connection type head A	Connection type head B	Connecting cable	Enclosure rating	Model name	Part no.
	Female connector, M8, 4-pin, straight	Cable, open conductor heads	2 m, 4-wire	IP 67	DOL-0804-G02M	6009870
			5 m, 4-wire	IP 67	DOL-0804-G05M	6009872
	Female connector, M8, 4-pin, angled	Cable, open conductor heads	2 m, 4-wire	IP 67	DOL-0804-W02M	6009871
			5 m, 4-wire	IP 67	DOL-0804-W05M	6009873
	Female connector, M12, 4-pin, straight	Cable, open conductor heads	2 m, 4-wire	IP 67	DOL-1204-G02M	6009382
			5 m, 4-wire	IP 67	DOL-1204-G05M	6009866
	Female connector, M12, 4-pin, angled	Cable, open conductor heads	2 m, 4-wire	IP 67	DOL-1204-W02M	6009383
			5 m, 4-wire	IP 67	DOL-1204-W05M	6009867




## Device protection (mechanical)

## Protective housing/tubes

Figure	Material	Description	Model name	Part no.
	Stainless steel 1.4571	Safety bracket for floor mounting	BEF-SW-W4S	2051497








## Reflectors

## Angular



Figure	Material	Description	Model name	Part no.
	PMMA/ABS	Rectangular, screw connection, 47 mm x 47 mm	P250	5304812
		Rectangular, screw connection, 56 mm x 28 mm	PL30A	1002314
		Rectangular, screw connection, 80 mm x 80 mm	PL80A	1003865

## Fine triple reflectors

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Figure	Material	Description	Model name	Part no.
	PMMA/ABS	Fine triple, screw connection, suitable for laser sensors, 47 mm x 47 mm	P250F	5308843
		Fine triple, screw connection, suitable for laser sensors, 18 mm x 18 mm	PL10F	5311210
	Plastic	Fine triple, chemically resistant, screw connection, 18 mm x 18 mm	PL10F CHEM	5321636
	PMMA/ABS	Fine triple, screw connection, suitable for laser sensors, 38 mm x 16 mm	PL20F	5308844
	Plastic	Fine triple, chemically resistant, screw connection, suitable for laser sensors, 16 mm x 38 mm	PL20F-CHEM	5326089
	PMMA/ABS	Fine triple, screw connection, suitable for laser sensors, 56 mm x 28 mm	PL30F	5326523
		Fine triple, screw connection, suitable for laser sensors, 76 mm x 45 mm	PL81-1F	5325060

## Reflective tape

Figure	Description	Model name	Part no.
	Suitable for laser sensors, self-adhesive, cut, see alignment note, 56.3 mm x 56.3 mm	REF-AC1000-56	4063030
	Self-adhesive, 50 mm x 60 mm	REF-IRF-56	5314244

**Round**

Figure	Material	Description	Model name	Part no.
	PMMA/ABS	Round, plugable for metal plates	PL22-3	1004488

→ For additional accessories, please see page L-861

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