

Detailed technical data

Features

	GRTB18S	GRTE18S	GRL18S	GRL18SG	GRSE18S
Sensor principle	Photoelectric proximity sensor		Photoelectric retro-reflective sensor	Through-beam photoelectric sensor	
Detection principle	Background suppression	Energetic	Dual lens	-	
Housing design (light emission)	Cylindrical, straight Cylindrical, straight, fully flush (depending on type)	Cylindrical, straight Cylindrical, straight, fully flush Cylindrical, angled Cylindrical, angled, fully flush (depending on type)			
Thread diameter (housing)	M18 x 1				
Sensing range max.	3 mm ... 300 mm ¹⁾	3 mm ... 115 mm ¹⁾ 5 mm ... 550 mm ¹⁾ 5 mm ... 1.000 mm ¹⁾ (depending on type)	0.03 m ... 7.2 m ²⁾		0 m ... 15 m
Sensing range	20 mm ... 150 mm ¹⁾	5 mm ... 100 mm ¹⁾ 10 mm ... 400 mm ¹⁾ 10 mm ... 800 mm ¹⁾ (depending on type)	0.06 m ... 6 m ²⁾		0 m ... 10 m
Type of light	Visible red light	Visible red light / Infrared light (depending on type)	Visible red light		Visible red light / Infrared light (depending on type)
Light source	PinPoint LED ³⁾	PinPoint LED ³⁾ LED ³⁾ (depending on type)	PinPoint LED ³⁾		PinPoint LED ³⁾ LED ³⁾ (depending on type)
Light spot size (distance)					
Visible red light	Ø 7 mm (100 mm)	Ø 8 mm (100 mm) Ø 9 mm (400 mm) Ø 45 mm (800 mm) (depending on type)	Ø 175 mm (7 m)		Ø 250 mm (10 m)
Infrared light	-	Ø 26 mm (400 mm)	-		Ø 420 mm (10 m)
Wave length					
Visible red light	650 nm				
Infrared light	-				850 nm
Adjustment	Potentiometer, 270°		None	None Potentiometer, 270° (depending on type)	
Special feature	-			Detecting transparent objects	-

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

²⁾ PL80A.

³⁾ Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

	GRTB18S	GRTE18S	GRL18S	GRL18SG	GRSE18S
Supply voltage ¹⁾	10 V DC ... 30 V DC				
Ripple ²⁾	$\pm 5 V_{pp}$				
Power consumption	$\leq 30 \text{ mA}$				
Output type	PNP / NPN (depending on type)				
Output function	Complementary				
Switching mode	Light switching Dark switching Light/dark switching (depending on type)				
Signal voltage	PNP HIGH/LOW	$V_S - (\leq 3 \text{ V}) / \text{approx. } 0 \text{ V}$			
	NPN HIGH/LOW	Approx. $V_S / \leq 3 \text{ V}$			
Switching frequency ⁵⁾	1,000 Hz	500 Hz	$\pm 1,000 \text{ Hz}$	1,000 Hz	
Connection type	Cable, 2 m ⁶⁾ Cable, 5 m ⁶⁾ Male connector, M12 (depending on type)	Cable, 2 m ⁶⁾ Male connector, M12 (depending on type)	Cable, 5 m ⁶⁾ Cable, 2 m ⁶⁾ Male connector, M12 Cable with male connector, M8, 300 mm ⁶⁾ (depending on type)	Cable, 2 m Male connector, M12 (depending on type)	Cable, 2 m ⁶⁾ Male connector, M12 (depending on type)
Circuit protection	A ⁷⁾ B ⁸⁾ D ⁹⁾				
Protection class	III				
Polarisation filter	-			✓	-
Housing material	Plastic	ABS			
	Metal	Nickel-plated brass and ABS			
Optics material	Plastic, PMMA				
Enclosure rating	IP 67				
Items supplied	Fastening nuts (2 x)		Fastening nuts (2 x), Reflector P250 (depending on type)		Fastening nuts (4 x)
EMC	EN 60947-5-2				
Test input	-				Sender OFF at "Test" 0 V
Ambient operating temperature ¹⁰⁾	-25 °C ... +55 °C			-25 °C ... +55 °C ¹¹⁾	-25 °C ... +55 °C
Ambient storage temperature	-40 °C ... +70 °C				

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not exceed or fall below U_V tolerances.

³⁾ At $U_V > 24 \text{ V}$ or ambient temperature $> 49 \text{ °C}$, $I_A \text{ max.} = 50 \text{ mA}$.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ Do not bend below 0 °C.

⁷⁾ A = V_S connections reverse-polarity protected.

⁸⁾ B = inputs and output reverse-polarity protected.

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

¹⁰⁾ At $U_V \leq 24 \text{ V}$ and $I_A < 50 \text{ mA}$.


¹¹⁾ Temperature stability following adjustment +/-10 °C.

Ordering information

Other models → www.mysick.com/en/GR18S

GRTB18S, metal, axial


- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Light spot size (distance):** Ø 7 mm (100 mm)
- **Switching mode:** Light/dark switching
- **Adjustment:** Potentiometer, 270°
- **Items supplied:** fastening nuts (2 x)

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Output type	Connection	Con-nection diagram	Type	Part no.
	3 mm ... 300 mm	20 mm ... 150 mm	Visible red light	PinPoint LED	NPN	Cable, 4-wire, 2 m, PVC	Cd-094	GRTB18S-N1112	1076105
						M12, 4-pin male connector	Cd-084	GRTB18S-N2412	1076108
					PNP	Cable, 4-wire, 2 m, PVC	Cd-094	GRTB18S-P1112	1076099
						M12, 4-pin male connector	Cd-084	GRTB18S-P2412	1076102

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

GRTB18S, metal, axial, fully flush


- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Light spot size (distance):** Ø 7 mm (100 mm)
- **Switching mode:** Light/dark switching
- **Adjustment:** Potentiometer, 270°
- **Items supplied:** fastening nuts (2 x)

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Output type	Connection	Con-nection diagram	Type	Part no.
	3 mm ... 300 mm	20 mm ... 150 mm	Visible red light	PinPoint LED	NPN	Cable, 4-wire, 2 m, PVC	Cd-094	GRTB18S-N111Z	1076106
						M12, 4-pin male connector	Cd-084	GRTB18S-N241Z	1076109
					PNP	Cable, 4-wire, 2 m, PVC	Cd-094	GRTB18S-P111Z	1076100
						M12, 4-pin male connector	Cd-084	GRTB18S-P241Z	1076103

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

GRTB18S, plastic, axial

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Light spot size (distance):** Ø 7 mm (100 mm)
- **Adjustment:** Potentiometer, 270°
- **Items supplied:** fastening nuts (2 x)

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Output type	Switching mode	Connection	Con-nection diagram	Type	Part no.	
	3 mm ... 300 mm	20 mm ... 150 mm	Visible red light	PinPoint LED	NPN	Dark switching	Cable, 3-wire, 2 m, PVC	Cd-044	GRTB18S-E1317	1076112	
							Connector M12, 3-pin	Cd-045	GRTB18S-E2317	1076113	
						Light/dark switching	Cable, 4-wire, 2 m, PVC	Cd-094	GRTB18S-N1117	1076104	
							M12, 4-pin male connector	Cd-084	GRTB18S-N2417	1076107	
						Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	GRTB18S-N1317	1076096	
							Cable, 3-wire, 5 m, PVC	Cd-044	GRTB18S-N1417	1077894	
							Connector M12, 3-pin	Cd-045	GRTB18S-N2317	1076097	
						PNP	Dark switching	Cable, 3-wire, 2 m, PVC	Cd-044	GRTB18S-F1317	1076110
								Connector M12, 3-pin	Cd-045	GRTB18S-F2317	1076111
					Light/dark switching		Cable, 4-wire, 2 m, PVC	Cd-094	GRTB18S-P1117	1076098	
							M12, 4-pin male connector	Cd-084	GRTB18S-P2417	1076101	
					Light switching		Cable, 3-wire, 2 m, PVC	Cd-044	GRTB18S-P1317	1076094	
							Cable, 3-wire, 5 m, PVC	Cd-044	GRTB18S-P1417	1077893	
					Connector M12, 3-pin	Cd-045	GRTB18S-P2317	1076095			

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

GRTE18S, metal, axial


- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** energetic
- **Adjustment:** Potentiometer, 270°
- **Items supplied:** fastening nuts (2 x)
- **Type of light:** visible red light

	Sensing range max. ¹⁾	Sensing range ¹⁾	Light source	Light spot size (distance)	Output type	Switching mode	Connection	Con-nection diagram	Type	Part no.
	3 mm ... 115 mm	5 mm ... 100 mm	PinPoint LED	Ø 8 mm (100 mm)	NPN	Light/dark switching	Cable, 4-wire, 2 m, PVC	Cd-094	GRTE18S-N1112	1069584
						Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	GRTE18S-N1312	1058201
							Connector M12, 3-pin	Cd-045	GRTE18S-N2312	1059408
					PNP	Light/dark switching	M12, 4-pin male connector	Cd-084	GRTE18S-P2412	1069583
						Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	GRTE18S-P1312	1058203
							Connector M12, 3-pin	Cd-045	GRTE18S-P2312	1058204
	5 mm ... 550 mm	10 mm ... 400 mm	PinPoint LED	Ø 9 mm (400 mm)	NPN	Light/dark switching	Cable, 4-wire, 2 m, PVC	Cd-094	GRTE18S-N1142	1069580
						Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	GRTE18S-N1342	1058202
							Connector M12, 3-pin	Cd-045	GRTE18S-N2342	1059482
					PNP	Light/dark switching	M12, 4-pin male connector	Cd-084	GRTE18S-P2442	1069579
						Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	GRTE18S-P1342	1058205
							Connector M12, 3-pin	Cd-045	GRTE18S-P2342	1058200
5 mm ... 1,000 mm	10 mm ... 800 mm	LED	Ø 45 mm (800 mm)	NPN	Light/dark switching	Cable, 4-wire, 2 m, PVC	Cd-094	GRTE18S-N1162	1069578	
					Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	GRTE18S-N1362	1069500	
						Connector M12, 3-pin	Cd-045	GRTE18S-N2362	1069501	
				PNP	Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	GRTE18S-P1362	1069503	
						Connector M12, 3-pin	Cd-045	GRTE18S-P2362	1069504	

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

GRTE18S, metal, axial, fully flush


- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** energetic
- **Adjustment:** Potentiometer, 270°
- **Items supplied:** fastening nuts (2 x)

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Light spot size (distance)	Output type	Switching mode	Connection	Connection diagram	Type	Part no.
	3 mm ... 115 mm	5 mm ... 100 mm	Visible red light	Pin-Point LED	Ø 8 mm (100 mm)	NPN	Dark switching	Connector M12, 3-pin	Cd-045	GRTE18S-E231Z	1059409
							Light switching	Connector M12, 3-pin	Cd-045	GRTE18S-N231Z	1059432
						PNP	Dark switching	Connector M12, 3-pin	Cd-045	GRTE18S-F231Z	1059435
							Light switching	Connector M12, 3-pin	Cd-045	GRTE18S-P231Z	1059436
	5 mm ... 550 mm	10 mm ... 400 mm	Infrared light	LED	Ø 26 mm (400 mm)	PNP	Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	GRTE18S-P135ZS01	1065711
							NPN	Dark switching	Connector M12, 3-pin	Cd-045	GRTE18S-E234Z
			Light switching	Connector M12, 3-pin	Cd-045	GRTE18S-N234Z		1059484			
			Visible red light	Pin-Point LED	Ø 9 mm (400 mm)	PNP	Dark switching	Cable, 3-wire, 2 m	Cd-044	GRTE18S-F134Z	1062423
							Light switching	Connector M12, 3-pin	Cd-045	GRTE18S-F234Z	1059486
						NPN	Dark switching	Cable, 3-wire, 2 m	Cd-044	GRTE18S-P134Z	1064171
							Light switching	Connector M12, 3-pin	Cd-045	GRTE18S-P234Z	1059487
			5 mm ... 1,000 mm	10 mm ... 800 mm	Visible red light	LED	Ø 45 mm (800 mm)	NPN	Dark switching	Connector M12, 3-pin	Cd-045
	Light switching	Connector M12, 3-pin							Cd-045	GRTE18S-N236Z	1069555
	PNP	Dark switching						Connector M12, 3-pin	Cd-045	GRTE18S-F236Z	1069556
		Light/dark switching						M12, 4-pin male connector	Cd-084	GRTE18S-P246Z	1069123
Light switching		Connector M12, 3-pin						Cd-045	GRTE18S-P236Z	1069557	

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

GRTE18S, metal, radial, fully flush

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** energetic
- **Output type:** PNP
- **Adjustment:** Potentiometer, 270°
- **Items supplied:** fastening nuts (2 x)

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Light spot size (distance)	Switching mode	Connection	Connection diagram	Type	Part no.
	3 mm ... 115 mm	5 mm ... 100 mm	Visible red light	PinPoint LED	Ø 8 mm (100 mm)	Dark switching	Connector M12, 3-pin	Cd-045	GRTE18S-F231X	1059438
						Light switching	Connector M12, 3-pin	Cd-045	GRTE18S-P231X	1059440
	5 mm ... 550 mm	10 mm ... 400 mm	Visible red light	PinPoint LED	Ø 9 mm (400 mm)	Dark switching	Connector M12, 3-pin	Cd-045	GRTE18S-F234X	1059488
						Light switching	Connector M12, 3-pin	Cd-045	GRTE18S-P234X	1059489
	5 mm ... 1,000 mm	10 mm ... 800 mm	Visible red light	LED	Ø 45 mm (800 mm)	Dark switching	Connector M12, 3-pin	Cd-045	GRTE18S-F236X	1069558
						Light switching	Connector M12, 3-pin	Cd-045	GRTE18S-P236X	1069559

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

GRTE18S, plastic, axial


- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** energetic
- **Adjustment:** Potentiometer, 270°
- **Items supplied:** fastening nuts (2 x)

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Light spot size (distance)	Output type	Switching mode	Connection	Connection diagram	Type	Part no.
	3 mm ... 115 mm	5 mm ... 100 mm	Visible red light	Pin-Point LED	Ø 8 mm (100 mm)	NPN	Light/dark switching	Cable, 4-wire, 2 m, PVC	Cd-094	GRTE18S-N1117	1069581
							Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	GRTE18S-N1317	1058194
								Connector M12, 3-pin	Cd-045	GRTE18S-N2317	1059378
								M12, 4-pin male connector	Cd-084	GRTE18S-P2417	1069582
							Light switching		Cable, 3-wire, 2 m, PVC	Cd-044	GRTE18S-P1317
								Connector M12, 3-pin	Cd-045	GRTE18S-P2317	1058196
	5 mm ... 550 mm	10 mm ... 400 mm	Visible red light	Pin-Point LED	Ø 9 mm (400 mm)	NPN	Light/dark switching	Cable, 4-wire, 2 m, PVC	Cd-094	GRTE18S-N1147	1062024
							Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	GRTE18S-N1347	1058393
								Connector M12, 3-pin	Cd-045	GRTE18S-N2347	1059441
								M12, 4-pin male connector	Cd-084	GRTE18S-P2447	1069073
							Light switching		Cable, 3-wire, 2 m, PVC	Cd-044	GRTE18S-P1347
								Connector M12, 3-pin	Cd-045	GRTE18S-P2347	1058193
5 mm ... 1,000 mm	10 mm ... 800 mm	Visible red light	LED	Ø 45 mm (800 mm)	NPN	Light/dark switching	Cable, 4-wire, 2 m, PVC	Cd-094	GRTE18S-N1167	1069121	
						Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	GRTE18S-N1367	1069494	
							Connector M12, 3-pin	Cd-045	GRTE18S-N2367	1069495	
							M12, 4-pin male connector	Cd-084	GRTE18S-P2467	1069122	
						Light switching		Cable, 3-wire, 2 m, PVC	Cd-044	GRTE18S-P1367	1069496
							Connector M12, 3-pin	Cd-045	GRTE18S-P2367	1069497	

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

GRTE18S, plastic, radial

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** energetic
- **Output type:** PNP
- **Adjustment:** Potentiometer, 270°
- **Items supplied:** fastening nuts (2 x)

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Light spot size (distance)	Switching mode	Connection	Connection diagram	Type	Part no.
	3 mm ... 115 mm	5 mm ... 100 mm	Visible red light	PinPoint LED	Ø 8 mm (100 mm)	Dark switching	Connector M12, 3-pin	Cd-045	GRTE18S-F2319	1059406
						Light switching	Connector M12, 3-pin	Cd-045	GRTE18S-P2319	1059407
	5 mm ... 550 mm	10 mm ... 400 mm	Visible red light	PinPoint LED	Ø 9 mm (400 mm)	Dark switching	Connector M12, 3-pin	Cd-045	GRTE18S-F2349	1059480
						Light/dark switching	M12, 4-pin male connector	Cd-084	GRTE18S-P2449	1069074
						Light switching	Connector M12, 3-pin	Cd-045	GRTE18S-P2349	1059481
	5 mm ... 1,000 mm	10 mm ... 800 mm	Visible red light	LED	Ø 45 mm (800 mm)	Dark switching	Connector M12, 3-pin	Cd-045	GRTE18S-F2369	1069498
						Light switching	Connector M12, 3-pin	Cd-045	GRTE18S-P2369	1069499

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

GRL18S, metal, axial


- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Light spot size (distance):** Ø 175 mm (7 m)
- **Adjustment:** none
- **Type of light:** visible red light
- **Light source:** PinPoint LED

	Sensing range max. ¹⁾	Sensing range ¹⁾	Output type	Switching mode	Connection	Con-nection diagram	Items supplied	Type	Part no.
	0.03 m ... 7.2 m	0.06 m ... 6 m	NPN	Dark switching	Cable, 3-wire, 2 m, PVC	Cd-044	Fastening nuts (2 x)	GRL18S-E1331	1059537
							Fastening nuts (2 x), Reflector P250	GRL18S-E1351	1064153
				Light/dark switching	Cable, 4-wire, 2 m, PVC	Cd-094	Fastening nuts (2 x)	GRL18S-N1131	1069588
				Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	Fastening nuts (2 x)	GRL18S-N1331	1059538
							Fastening nuts (2 x), Reflector P250	GRL18S-N1351	1064154
				PNP	Dark switching	Cable, 3-wire, 2 m, PVC	Cd-044	Fastening nuts (2 x)	GRL18S-F1331
			Fastening nuts (2 x), Reflector P250					GRL18S-F1351	1064155
			Dark switching		Cable, 3-wire, 5 m, PVC	Cd-044	Fastening nuts (2 x)	GRL18S-P1431	1078580
							Fastening nuts (2 x)	GRL18S-F2331	1058198
			Light/dark switching		M12, 4-pin male connector	Cd-045	Fastening nuts (2 x), Reflector P250	GRL18S-F2351	1064156
							Fastening nuts (2 x)	GRL18S-P2431	1069586
			Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	Fastening nuts (2 x)	GRL18S-P1331	1059542	
						Fastening nuts (2 x), Reflector P250	GRL18S-P1351	1064157	
				Connector M12, 3-pin	Cd-045	Fastening nuts (2 x)	GRL18S-P2331	1058199	
						Fastening nuts (2 x), Reflector P250	GRL18S-P2351	1064158	

¹⁾ PL80A.

GRL18S, metal, axial, fully flush


- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Light spot size (distance):** Ø 175 mm (7 m)
- **Output type:** PNP
- **Adjustment:** none

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Switching mode	Connection	Connection diagram	Items supplied	Type	Part no.
	0.03 m ... 7.2 m	0.06 m ... 6 m	Visible red light	PinPoint LED	Dark switching	Connector M12, 3-pin	Cd-045	Fastening nuts (2 x)	GRL18S-F233Y	1058206
								Fastening nuts (2 x), Reflector P250	GRL18S-F235Y	1064159
					Light switching	Cable, 3-wire, 2 m	Cd-043	Fastening nuts (2 x)	GRL18S-P133Y	1072117
						Connector M12, 3-pin	Cd-045	Fastening nuts (2 x)	GRL18S-P233Y	1058207
								Fastening nuts (2 x), Reflector P250	GRL18S-P235Y	1064160

¹⁾ PL80A.

GRL18S, metal, radial, fully flush


- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Light spot size (distance):** Ø 175 mm (7 m)
- **Output type:** PNP
- **Adjustment:** none

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Switching mode	Connection	Connection diagram	Items supplied	Type	Part no.
	0.03 m ... 7.2 m	0.06 m ... 6 m	Visible red light	PinPoint LED	Dark switching	Connector M12, 3-pin	Cd-045	Fastening nuts (2 x)	GRL18S-F233W	1058209
								Fastening nuts (2 x), Reflector P250	GRL18S-F235W	1064161
					Light switching	Connector M12, 3-pin	Cd-045	Fastening nuts (2 x)	GRL18S-P233W	1058210
								Fastening nuts (2 x), Reflector P250	GRL18S-P235W	1064162

¹⁾ PL80A.

GRL18S, plastic, axial


- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Light spot size (distance):** Ø 175 mm (7 m)
- **Adjustment:** none
- **Type of light:** visible red light
- **Light source:** PinPoint LED

	Sensing range max. ¹⁾	Sensing range ¹⁾	Output type	Switching mode	Connection	Con-nection diagram	Items sup-plied	Type	Part no.	
	0.03 m ... 7.2 m	0.06 m ... 6 m	NPN	Dark switch- ing	Cable with M8 male con- nector, 4-pin, 300 mm, PVC	Cd-066	Fastening nuts (2 x)	GRL18S-E3036S01	1065604	
					Cable, 3-wire, 2 m, PVC	Cd-044	Fastening nuts (2 x)	GRL18S-E1336	1059530	
							Fastening nuts (2 x), Reflector P250	GRL18S-E1356	1064143	
				Light/dark switching	Cable, 4-wire, 2 m, PVC	Cd-094	Fastening nuts (2 x)	GRL18S-N1136	1069585	
					M12, 4-pin male connector	Cd-084	Fastening nuts (2 x)	GRL18S-N2436	1077674	
				Light switch- ing	Cable, 3-wire, 2 m, PVC	Cd-044	Fastening nuts (2 x)	GRL18S-N1336	1059531	
							Fastening nuts (2 x), Reflector P250	GRL18S-N1356	1064144	
				PNP	Dark switch- ing	Cable with M8 male con- nector, 4-pin, 300 mm, PVC	Cd-066	Fastening nuts (2 x)	GRL18S-F3036S02	1067943
			Cable, 3-wire, 2 m, PVC			Cd-044	Fastening nuts (2 x)	GRL18S-F1336	1059532	
							Fastening nuts (2 x), Reflector P250	GRL18S-F1356	1064145	
			Light/dark switching		Connector M12, 3-pin	Cd-045	Fastening nuts (2 x)	GRL18S-F2336	1059533	
							Fastening nuts (2 x), Reflector P250	GRL18S-F2356	1064146	
			Light switch- ing		M12, 4-pin male connector	Cd-101	Fastening nuts (2 x)	GRL18S-K2436	1069997	
							Cd-084	Fastening nuts (2 x)	GRL18S-P2436	1069072
			Light switch- ing	Cable, 3-wire, 2 m, PVC	Cd-044	Fastening nuts (2 x)	GRL18S-P1336	1059534		
Fastening nuts (2 x), Reflector P250	GRL18S-P1356	1064147								
Cd-045	Fastening nuts (2 x)	GRL18S-P2336				1058192				
	Fastening nuts (2 x), Reflector P250	GRL18S-P2356	1064148							

¹⁾ PL80A.

GRL18S, plastic, radial


- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Light spot size (distance):** Ø 175 mm (7 m)
- **Output type:** PNP
- **Adjustment:** none

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Switching mode	Connection	Connection diagram	Items supplied	Type	Part no.
	0.03 m ... 7.2 m	0.06 m ... 6 m	Visible red light	PinPoint LED	Dark switching	Cable, 3-wire, 2 m, PVC	Cd-044	Fastening nuts (2 x)	GRL18S-F1338	1059535
								Fastening nuts (2 x), Reflector P250	GRL18S-F1358	1064149
						Connector M12, 3-pin	Cd-045	Fastening nuts (2 x)	GRL18S-F2338	1058211
								Fastening nuts (2 x), Reflector P250	GRL18S-F2358	1064150
						M12, 4-pin male connector	Cd-101	Fastening nuts (2 x)	GRL18S-K2438	1069996
								Cd-084	Fastening nuts (2 x)	GRL18S-P2438
					Light switching	Cable, 3-wire, 2 m, PVC	Cd-044	Fastening nuts (2 x)	GRL18S-P1338	1059536
								Fastening nuts (2 x), Reflector P250	GRL18S-P1358	1064151
						Connector M12, 3-pin	Cd-045	Fastening nuts (2 x)	GRL18S-P2338	1058212
								Fastening nuts (2 x), Reflector P250	GRL18S-P2358	1064152

¹⁾ PL80A.

GRL18SG, metal, axial, detecting transparent objects


- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Light spot size (distance):** Ø 175 mm (7 m)
- **Output type:** PNP
- **Adjustment:** Potentiometer, 270°
- **Items supplied:** fastening nuts (2 x)

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Switching mode	Connection	Connection diagram	Type	Part no.
	0.03 m ... 7.2 m	0.06 m ... 6 m	Visible red light	PinPoint LED	Dark switching	Connector M12, 3-pin	Cd-045	GRL18SG-F233Z	1059555
					Light switching	Connector M12, 3-pin	Cd-045	GRL18SG-P233Z	1060323

¹⁾ PL80A.

GRL18SG, metal, axial, fully flush, detecting transparent objects


- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Light spot size (distance):** Ø 175 mm (7 m)
- **Adjustment:** none
- **Items supplied:** fastening nuts (2 x)

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Output type	Switching mode	Connection	Connection diagram	Type	Part no.
	0.03 m ... 7.2 m	0.06 m ... 6 m	Visible red light	PinPoint LED	NPN	Dark switching	Connector M12, 3-pin	Cd-045	GRL18SG-E233Z	1061927
						Light switching	Connector M12, 3-pin	Cd-045	GRL18SG-N233Z	1061928
					PNP	Dark switching	Connector M12, 3-pin	Cd-045	GRL18SG-F233Z	1059556
						Light switching	Connector M12, 3-pin	Cd-045	GRL18SG-P233Z	1068113

¹⁾ PL80A.

GRL18SG, metal, radial, fully flush, detecting transparent objects


- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Light spot size (distance):** Ø 175 mm (7 m)
- **Output type:** PNP
- **Switching mode:** Dark switching

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Adjustment	Connection	Connection diagram	Items supplied	Type	Part no.
	0.03 m ... 7.2 m	0.06 m ... 6 m	Visible red light	PinPoint LED	None	Connector M12, 3-pin	Cd-045	Fastening nuts (2 x)	GRL18SG-F233X	1059557

¹⁾ PL80A.

GRL18SG, plastic, axial, detecting transparent objects


- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Light spot size (distance):** Ø 175 mm (7 m)
- **Adjustment:** none

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Output type	Switching mode	Con-nection	Con-nection dia-gram	Items supplied	Type	Part no.
	0.03 m ... 7.2 m	0.06 m ... 6 m	Visible red light	PinPoint LED	NPN	Light/dark switching	Cable, 4-wire, 2 m	Cd-094	Fastening nuts (2 x)	GRL18SG-N1137	1062031
										Fastening nuts (2 x), Reflector P250	GRL18SG-N1157
					PNP	Dark switching	Cable, 3-wire, 2 m	Cd-044	Fastening nuts (2 x)	GRL18SG-F1337	1062231
							Connector M12, 3-pin	Cd-045	Fastening nuts (2 x)	GRL18SG-F2337	1059553
						Light/dark switching	Cable, 4-wire, 2 m	Cd-094	Fastening nuts (2 x)	GRL18SG-P1137	1066421
									Fastening nuts (2 x), Reflector P250	GRL18SG-P1157	1066940

¹⁾ PL80A.

GRL18SG, plastic, radial, detecting transparent objects

- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Light spot size (distance):** Ø 175 mm (7 m)
- **Output type:** PNP
- **Switching mode:** Dark switching

	Sensing range max. ¹⁾	Sensing range ¹⁾	Type of light	Light source	Adjust-ment	Con-nection	Con-nection dia-gram	Items supplied	Type	Part no.
	0.03 m ... 7.2 m	0.06 m ... 6 m	Visible red light	PinPoint LED	None	Connector M12, 3-pin	Cd-045	Fastening nuts (2 x)	GRL18SG-F2339	1059554

¹⁾ PL80A.


GRSE18S, metal, axial

- **Sensor principle:** Through-beam photoelectric sensor
- **Light spot size infrared light (distance):** Ø 420 mm (10 m)
- **Light spot size visible red light (distance):** Ø 250 mm (10 m)
- **Items supplied:** fastening nuts (4 x)

	Sensing range max.	Sensing range	Type of light	Light source	Output type	Switching mode	Adjustment	Connection	Con- nection diagram	Type	Part no.
	0 m ... 15 m	0 m ... 10 m	Infrared light	LED	NPN	Light/dark switching	Potentiometer, 270°	Cable, 4-wire, 2 m, PVC	Cd-088	GRSE18S-N1122	1069638
								M12, 4-pin male connector	Cd-072	GRSE18S-N2422	1069635
					PNP	Light/dark switching	Potentiometer, 270°	Cable, 4-wire, 2 m, PVC	Cd-088	GRSE18S-P1122	1069637
								M12, 4-pin male connector	Cd-072	GRSE18S-P2422	1069636
			Visible red light	PinPoint LED	NPN	Dark switching	None	Cable, 3-wire, 2 m, PVC	Cd-049	GRSE18S-E1331	1059548
						Light/dark switching	Potentiometer, 270°	Cable, 4-wire, 2 m, PVC	Cd-088	GRSE18S-N1142	1069630
					PNP	Dark switching	None	Connector M12, 3-pin	Cd-051	GRSE18S-F2331	1059549
							Potentiometer, 270°	Cable, 4-wire, 2 m, PVC	Cd-088	GRSE18S-P1142	1069629
						Light/dark switching	Potentiometer, 270°	M12, 4-pin male connector	Cd-072	GRSE18S-P2442	1069125
								Light switching	None	Connector M12, 3-pin	Cd-051


GRSE18S, metal, axial, fully flush

- **Sensor principle:** Through-beam photoelectric sensor
- **Light spot size (distance):** Ø 250 mm (10 m)
- **Output type:** PNP
- **Switching mode:** Light switching
- **Adjustment:** none
- **Items supplied:** fastening nuts (4 x)

	Sensing range max.	Sensing range	Type of light	Light source	Connection	Connection diagram	Type	Part no.
	0 m ... 15 m	0 m ... 10 m	Visible red light	PinPoint LED	Cable, 3-wire, 2 m	Cd-044	GRSE18S-P133Y	1062422
					Connector M12, 3-pin	Cd-045	GRSE18S-P233Y	1062420

GRSE18S, metal, radial, fully flush

- **Sensor principle:** Through-beam photoelectric sensor
- **Light spot size (distance):** Ø 250 mm (10 m)
- **Output type:** PNP
- **Adjustment:** none
- **Items supplied:** fastening nuts (4 x)

	Sensing range max.	Sensing range	Type of light	Light source	Switching mode	Connection	Con-nection diagram	Type	Part no.
	0 m ... 15 m	0 m ... 10 m	Visible red light	PinPoint LED	Dark switching	Connector M12, 3-pin	Cd-051	GRSE18S-F233W	1059551
					Light switching	Connector M12, 3-pin	Cd-051	GRSE18S-P233W	1059552


GRSE18S, plastic, axial

- **Sensor principle:** Through-beam photoelectric sensor
- **Light spot size infrared light (distance):** Ø 420 mm (10 m)
- **Light spot size visible red light (distance):** Ø 250 mm (10 m)
- **Items supplied:** fastening nuts (4 x)

	Sensing range max.	Sensing range	Type of light	Light source	Output type	Switching mode	Adjustment	Connection	Con-nection diagram	Type	Part no.
	0 m ... 15 m	0 m ... 10 m	Infrared light	LED	NPN	Light/dark switching	Potentiometer, 270°	Cable, 4-wire, 2 m, PVC	Cd-088	GRSE18S-N1127	1069634
								M12, 4-pin male connector	Cd-072	GRSE18S-N2427	1069631
								Cable, 4-wire, 2 m, PVC	Cd-088	GRSE18S-P1127	1069632
					PNP	Light/dark switching	Potentiometer, 270°	M12, 4-pin male connector	Cd-072	GRSE18S-P2427	1069633
								Cable, 3-wire, 2 m, PVC	Cd-049	GRSE18S-E1336	1059543
								Cable, 4-wire, 2 m, PVC	Cd-088	GRSE18S-N1136	1062122
			Visible red light	Pin-Point LED	NPN	Light/dark switching	Potentiometer, 270°	Cable, 4-wire, 2 m, PVC	Cd-088	GRSE18S-N1147	1069124
								M12, 4-pin male connector	Cd-072	GRSE18S-N2447	1069625
								Cable, 3-wire, 2 m, PVC	Cd-049	GRSE18S-F1336	1059544
								Connector M12, 3-pin	Cd-051	GRSE18S-F2336	1058214
					PNP	Light/dark switching	Potentiometer, 270°	Cable, 4-wire, 2 m, PVC	Cd-088	GRSE18S-P1147	1069626
								M12, 4-pin male connector	Cd-072	GRSE18S-P2447	1069627
								Cable, 3-wire, 2 m, PVC	Cd-049	GRSE18S-P1336	1059545
								Connector M12, 3-pin	Cd-051	GRSE18S-P2336	1058215

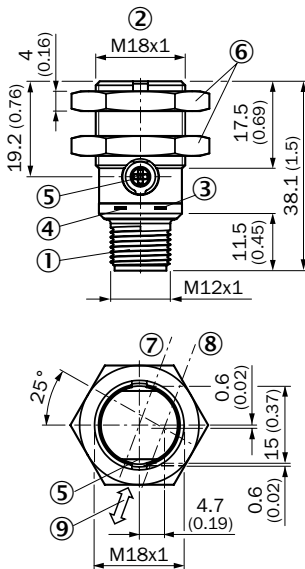
GRSE18S, plastic, radial

- **Sensor principle:** Through-beam photoelectric sensor
- **Light spot size (distance):** Ø 250 mm (10 m)
- **Output type:** PNP
- **Adjustment:** none
- **Items supplied:** fastening nuts (4 x)

	Sensing range max.	Sensing range	Type of light	Light source	Switching mode	Connection	Con-nection diagram	Type	Part no.
	0 m ... 15 m	0 m ... 10 m	Visible red light	PinPoint LED	Dark switching	Connector M12, 3-pin	Cd-051	GRSE18S-F2338	1059546
					Light switching	Connector M12, 3-pin	Cd-051	GRSE18S-P2338	1059547

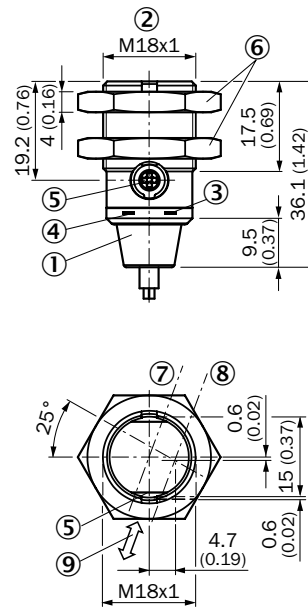
Dimensional drawings (Dimensions in mm (inch))

GRTB18S, metal, connector, straight, adjustable



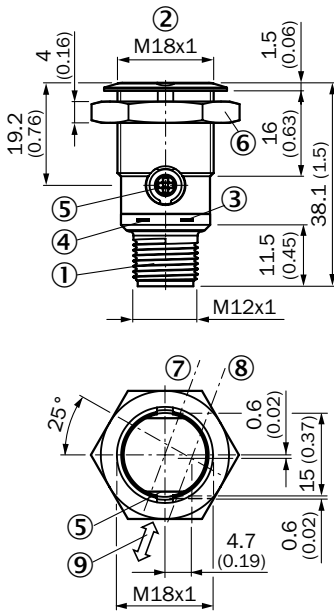
- ① M12, 4-pin male connector
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nuts (2x); width across 24, metal
- ⑦ Optical axis receiver
- ⑧ Optical axis sender
- ⑨ Standard direction of the material being detected

GRTB18S, metal, cable, straight, adjustable



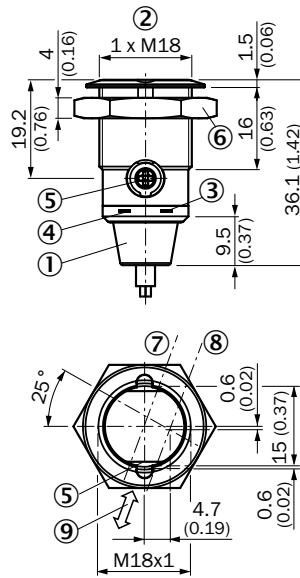
- ① Connection cable 2 m
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nuts (2x); width across 24, metal
- ⑦ Optical axis receiver
- ⑧ Optical axis sender
- ⑨ Standard direction of the material being detected

GRTB18S, metal, connector, straight, fully flush, adjustable



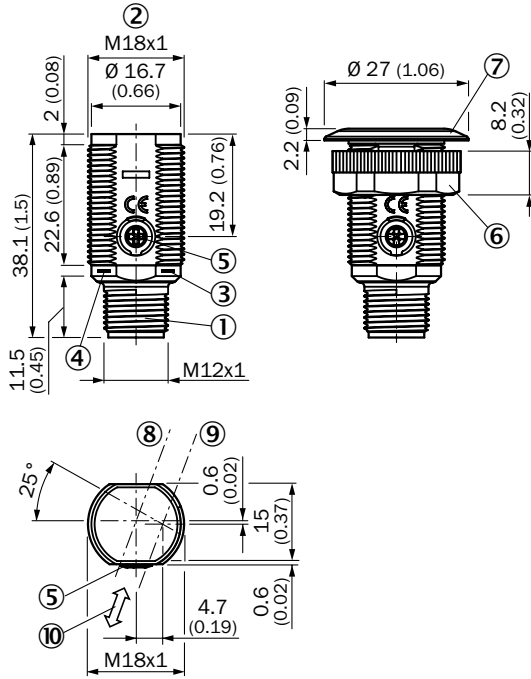
- ① M12, 4-pin male connector
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nut; 24 mm hex, metal
- ⑦ Optical axis receiver
- ⑧ Optical axis sender
- ⑨ Standard direction of the material being detected

GRTB18S, metal, cable, straight, fully flush, adjustable



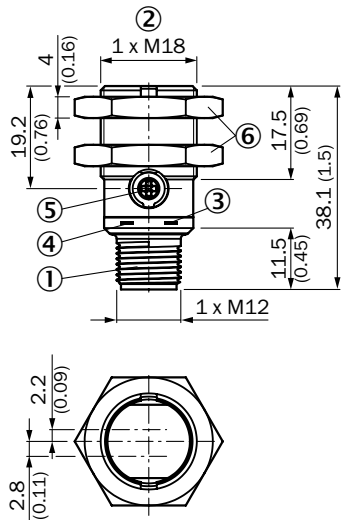
- ① Connection cable 2 m
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nut; 24 mm hex, metal
- ⑦ Optical axis receiver
- ⑧ Optical axis sender
- ⑨ Standard direction of the material being detected

GRTB18S, plastic, connector, straight, adjustable



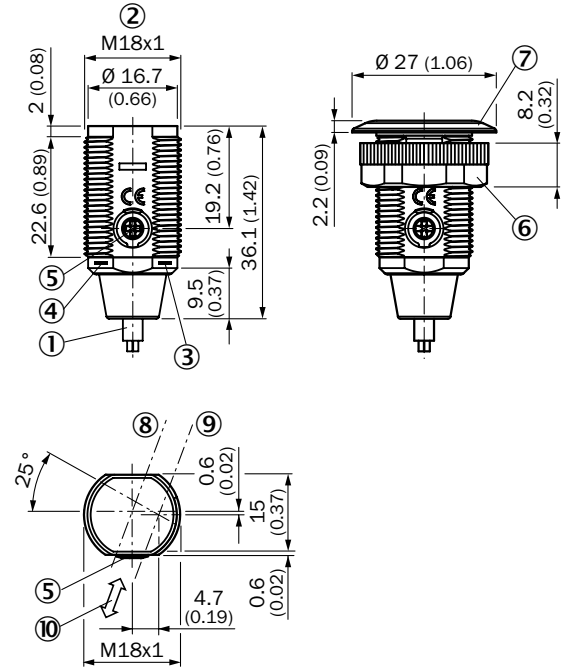
- ① Connector M12
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nut; 22 mm hex, plastic
- ⑦ Mounting ring
- ⑧ Optical axis receiver
- ⑨ Optical axis sender
- ⑩ Standard direction of the material being detected

GR18S, metal, connector, straight, adjustable



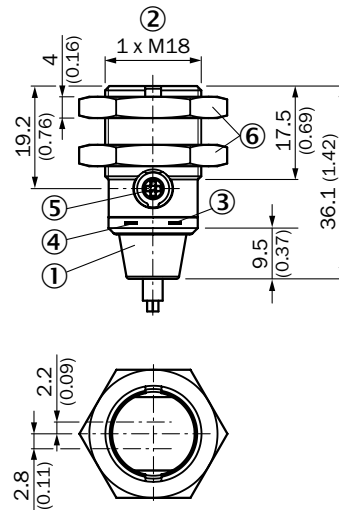
- ① Connector M12, 3-pin
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nuts (2x); width across 24, metal

GRTB18S, plastic, cable, straight, adjustable



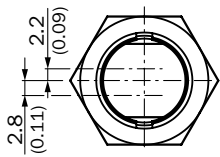
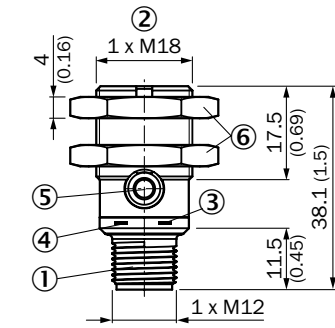
- ① Connection cable 2 m
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nut; 22 mm hex, plastic
- ⑦ Mounting ring
- ⑧ Optical axis receiver
- ⑨ Optical axis sender
- ⑩ Standard direction of the material being detected

GR18S, metal, cable, straight, adjustable



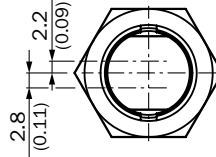
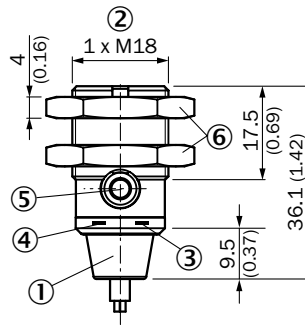
- ① Connection cable 2 m
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nuts (2x); width across 24, metal

GR18S, metal, connector, straight,
no adjustment possibility



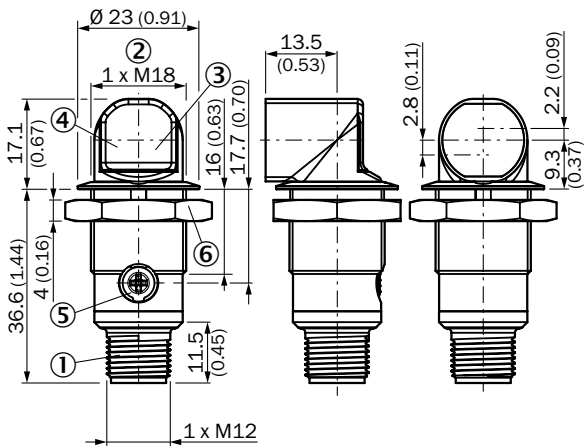
- ① Connector M12, 3-pin
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Dummy plug
- ⑥ Fastening nuts (2x); width across 24, metal

GR18S, metal, cable, straight,
no adjustment possibility



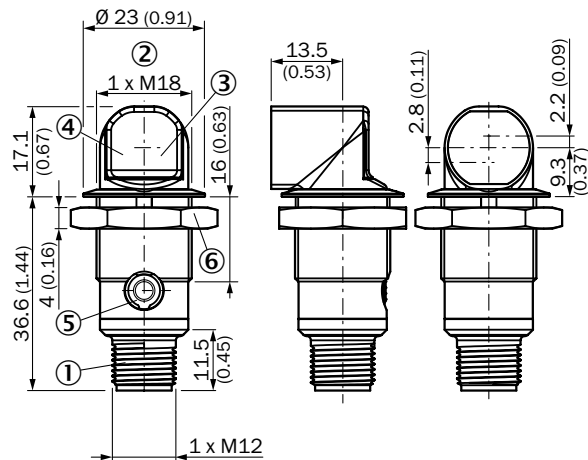
- ① Connection cable 2 m
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Dummy plug
- ⑥ Fastening nuts (2x); width across 24, metal

GR18S, metal, connector, angled, fully flush, adjustable



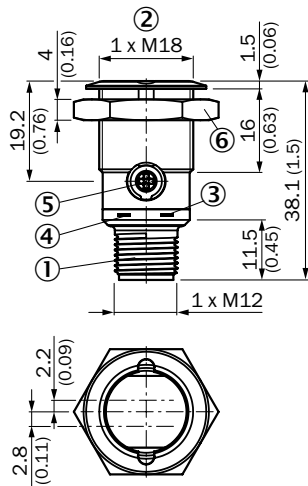
- ① Connector M12, 3-pin
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nut; 24 mm hex, metal

GR18S, metal, connector, angled, fully flush,
no adjustment possibility



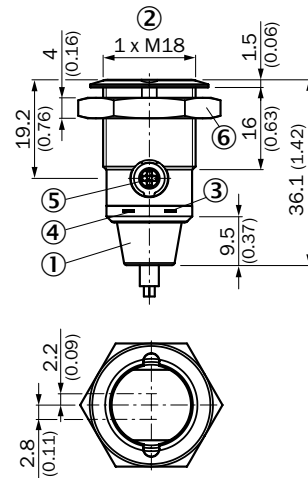
- ① Connector M12, 3-pin
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Dummy plug
- ⑥ Fastening nut; 24 mm hex, metal

GR18S, metal, connector, straight, fully flush, adjustable



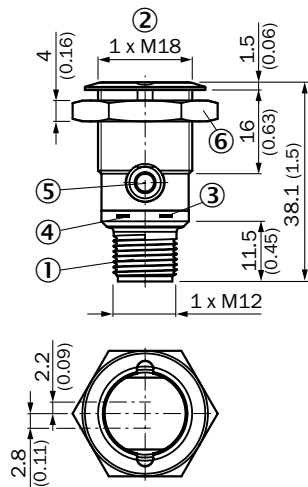
- ① Connector M12, 3-pin
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nut; 24 mm hex, metal

GR18S, metal, cable, straight, fully flush, adjustable



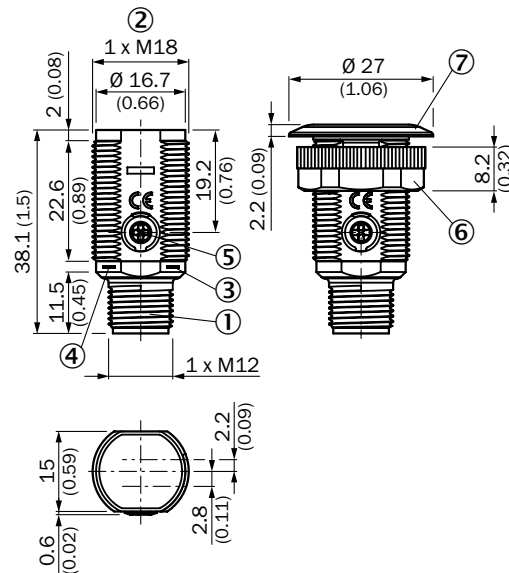
- ① Connection cable 2 m
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nut; 24 mm hex, metal

GR18S, metal, connector, straight, fully flush, no adjustment possibility



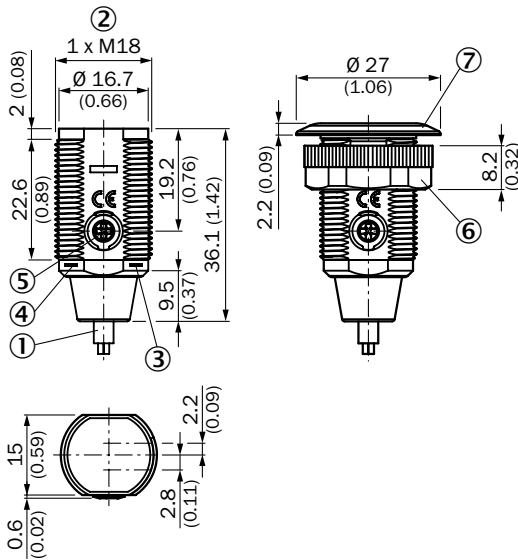
- ① Connector M12, 3-pin
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Dummy plug
- ⑥ Fastening nut; 24 mm hex, metal

GR18S, plastic, connector, straight, adjustable



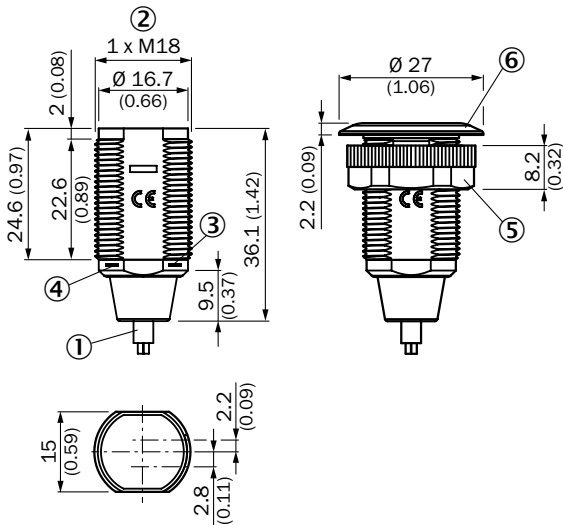
- ① Connector M12, 3-pin
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nut; 22 mm hex, plastic
- ⑦ Mounting ring

GR18S, plastic, cable, straight, adjustable



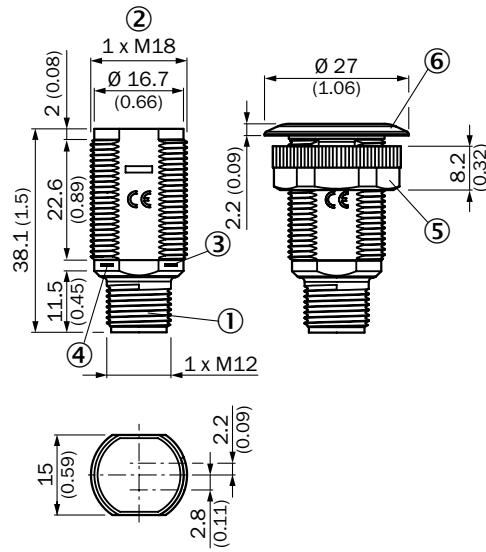
- ① Connection cable 2 m
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nut; 22 mm hex, plastic
- ⑦ Mounting ring

GR18S, plastic, cable (with plug), straight, no adjustment possibility



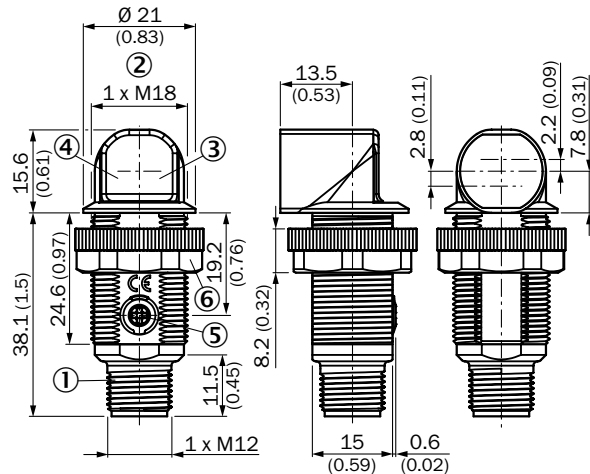
- ① Cable (with male connector)
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Fastening nut; 22 mm hex, plastic
- ⑥ Mounting ring

GR18S, plastic, connector, straight, fully flush, no adjustment possibility



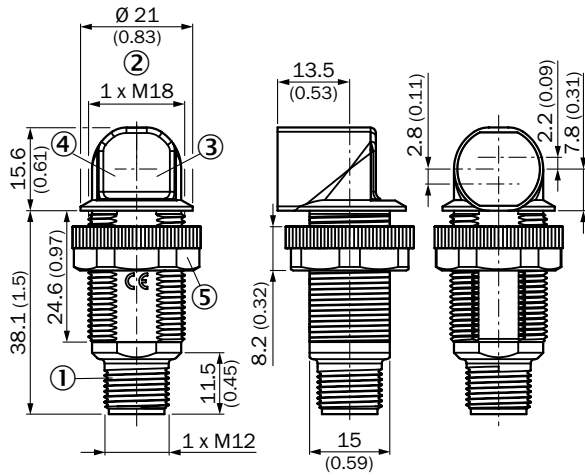
- ① Connector M12, 3-pin
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Fastening nut; 22 mm hex, plastic
- ⑥ Mounting ring

GR18S, plastic, connector, angled, adjustable



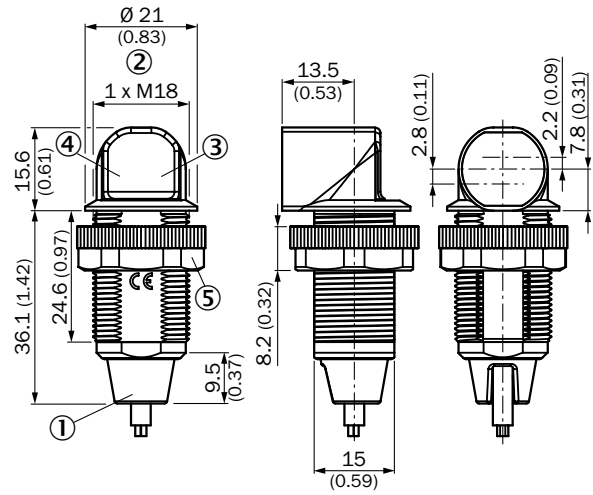
- ① Connector M12, 3-pin
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nut; 22 mm hex, plastic

GR18S, plastic, connector, angled,
no adjustment possibility



- ① Connector M12, 3-pin
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Fastening nut; 22 mm hex, plastic

GR18S, plastic, cable, angled,
no adjustment possibility

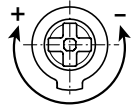


- ① Connection cable 2 m
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Fastening nut; 22 mm hex, plastic

Adjustment options

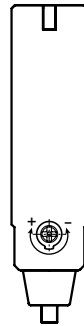
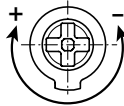
GRTB18S, GRTE18S,
Sensing range adjustment:
potentiometer, 270°

Sensing range



GRTB18S, GRTE18S,
Sensitivity adjustment:
potentiometer, 270°

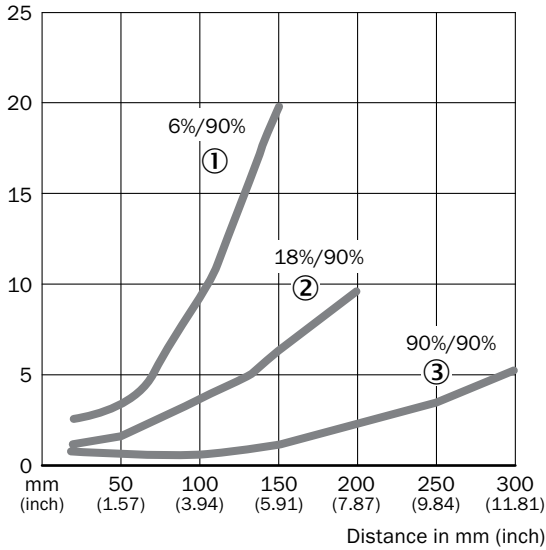
Sensitivity



Operating reserve

GRTB18S

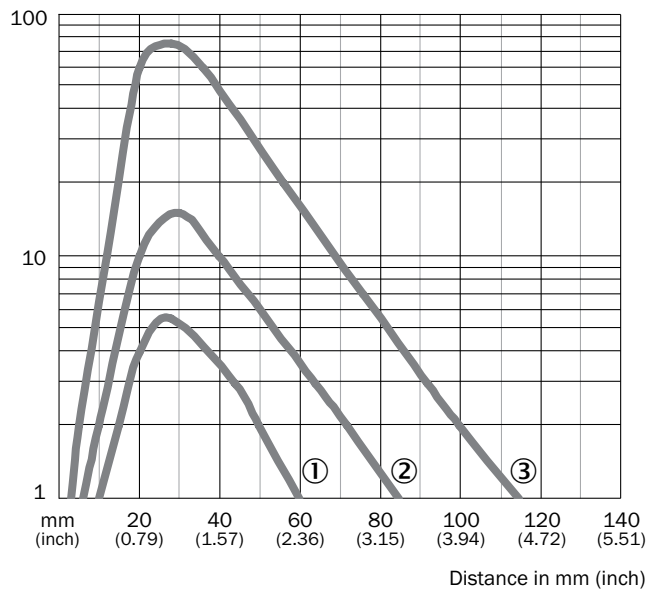
% of sensing range



- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 20 % remission
- ③ Sensing range on white, 90% remission

GRTE18S, 100 mm

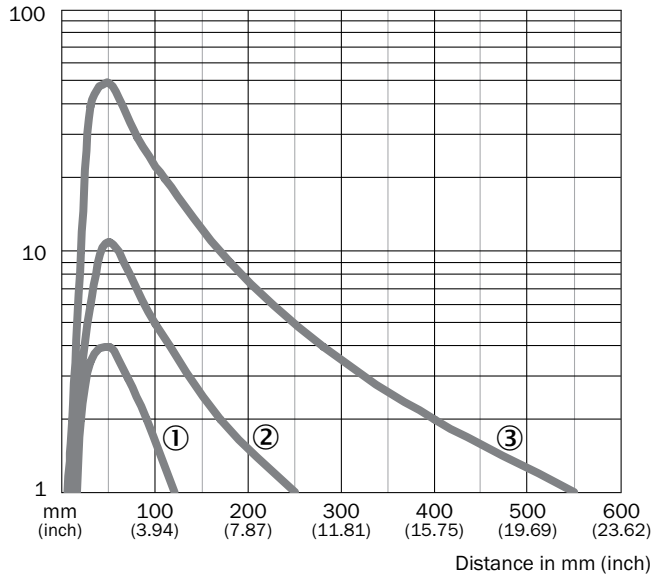
Operating reserve



- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 20 % remission
- ③ Sensing range on white, 90% remission

GRTE18S, 400 mm

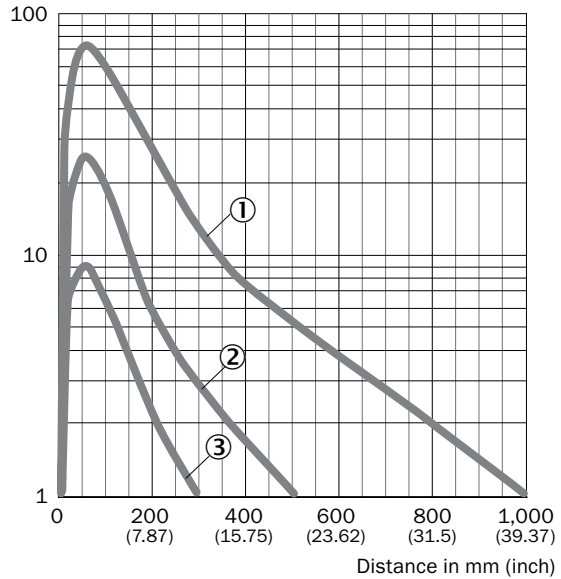
Operating reserve



- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 20 % remission
- ③ Sensing range on white, 90% remission

GRTE18S, 800 mm

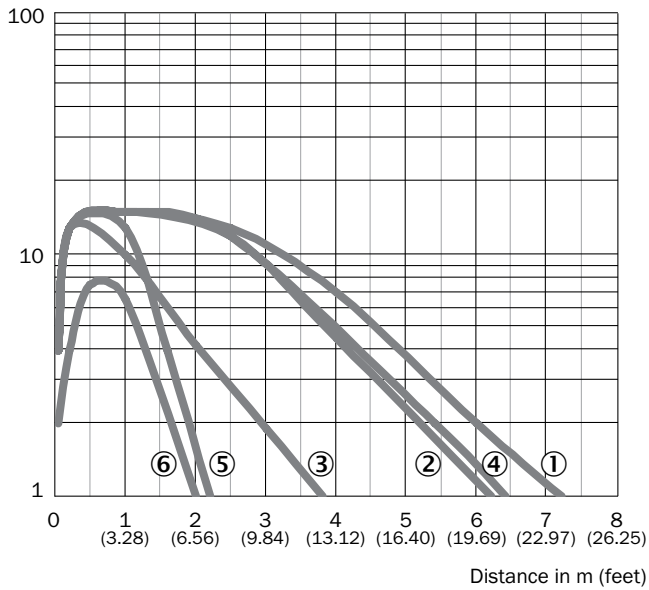
Operating reserve



- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 20 % remission
- ③ Sensing range on white, 90% remission

GRL18S

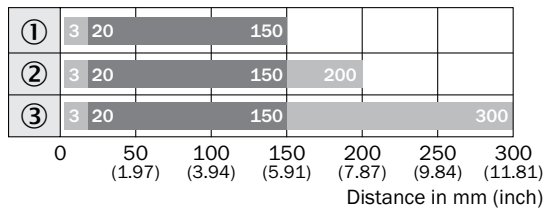
Operating reserve



- ① Reflector type PL80A
- ② Reflector type PL40A
- ③ Reflector type PL20A
- ④ Reflector type P205
- ⑤ Reflector type PL22-2
- ⑥ Reflective tape REF-Plus 3436

Sensing range

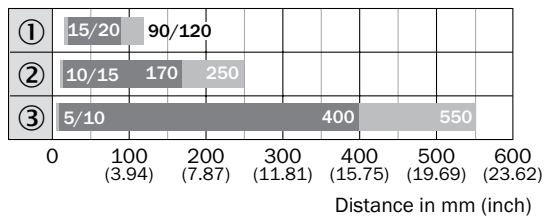
GRTB18S



■ Sensing range ■ Sensing range max.

- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 18% remission
- ③ Sensing range on white, 90% remission

GRTE18S, 400 mm

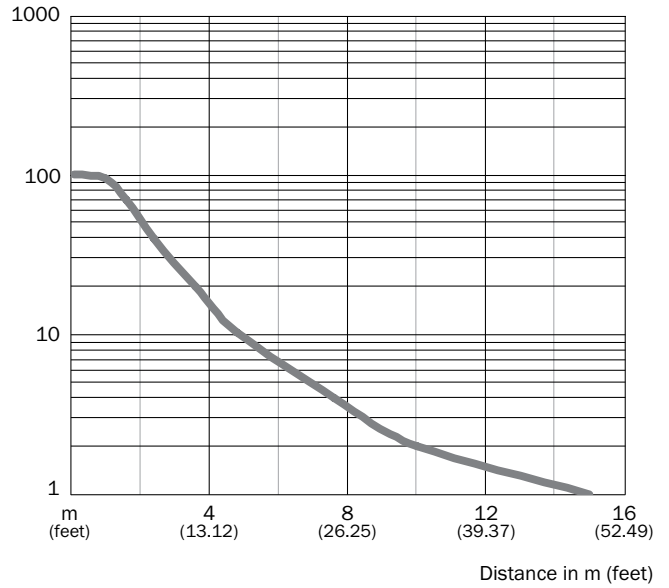


■ Sensing range ■ Sensing range max.

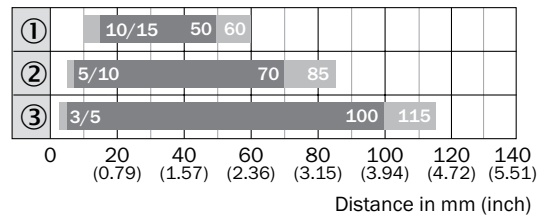
- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 20% remission
- ③ Sensing range on white, 90% remission

GRSE18S

Operating reserve



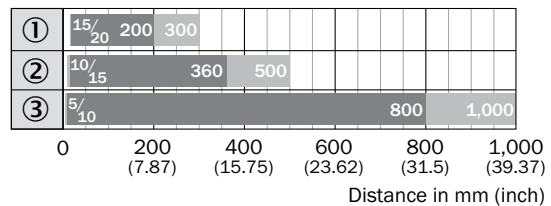
GRTE18S, 100 mm



■ Sensing range ■ Sensing range max.

- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 20% remission
- ③ Sensing range on white, 90% remission

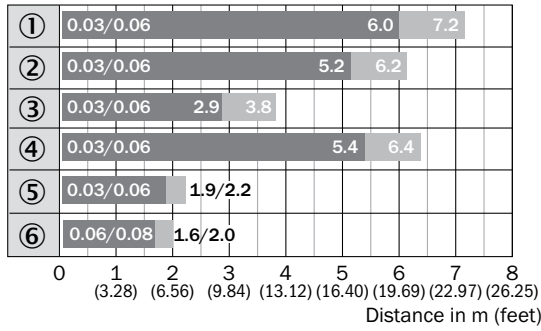
GRTE18S, 800 mm



■ Sensing range ■ Sensing range max. typ.

- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 20% remission
- ③ Sensing range on white, 90% remission

GRL18S

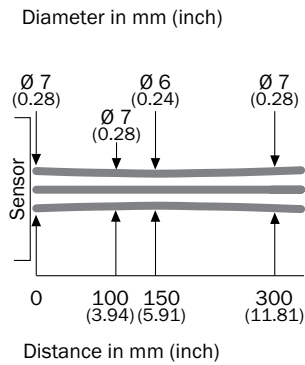


■ Sensing range ■ Sensing range max.

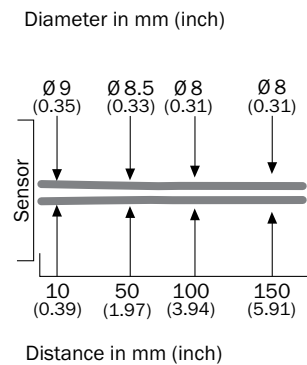
- ① Reflector type PL80A
- ② Reflector type PL40A
- ③ Reflector type PL20A
- ④ Reflector type P205
- ⑤ Reflector type PL22-2
- ⑥ Reflective tape REF-Plus 3436

Light spot diameter

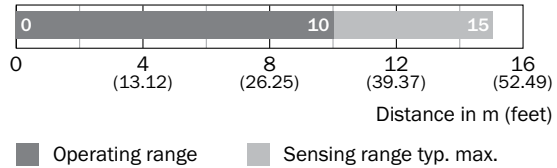
GRTB18S



GRTE18S, 100 mm

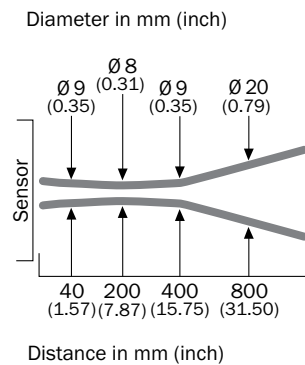


GRSE18S

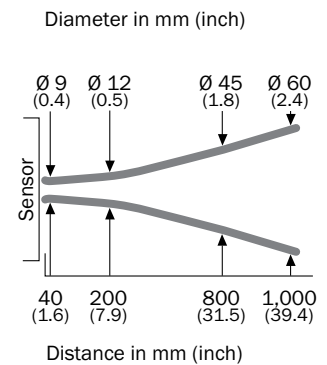


■ Operating range ■ Sensing range typ. max.

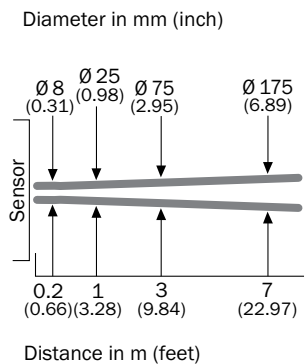
GRTE18S, 400 mm



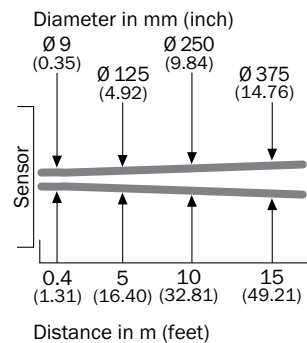
GRTE18S, 800 mm



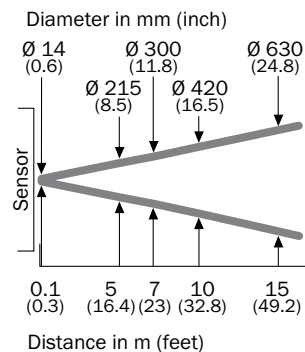
GRL18S



GRSE18S, red light

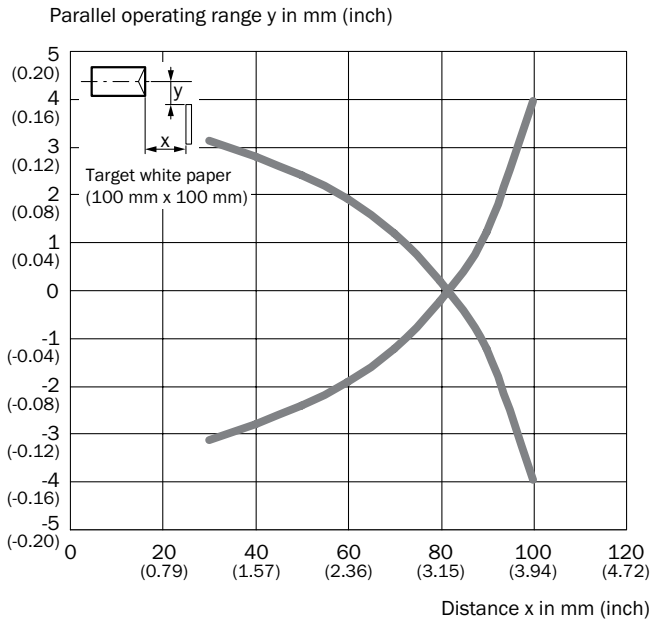


GRSE18S, infrared light

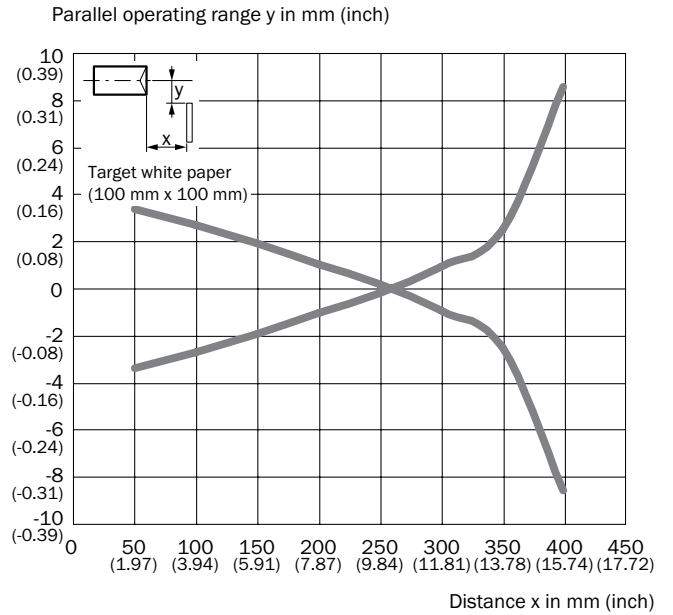


Response curve

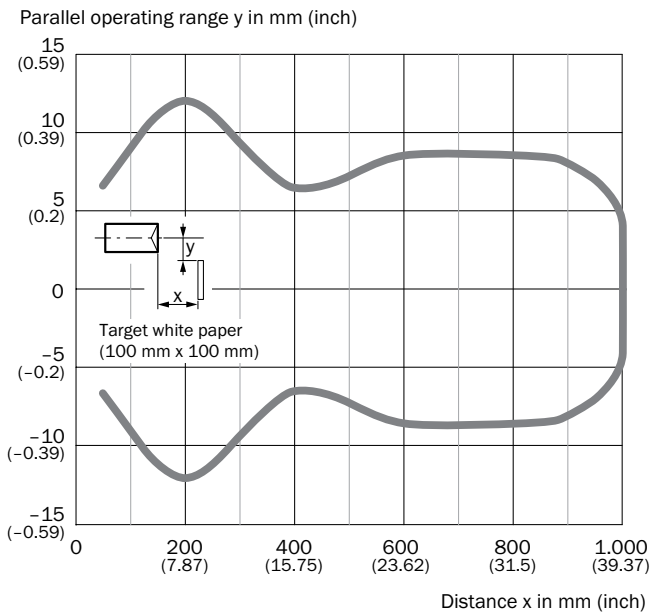
GRTE18S, 100 mm



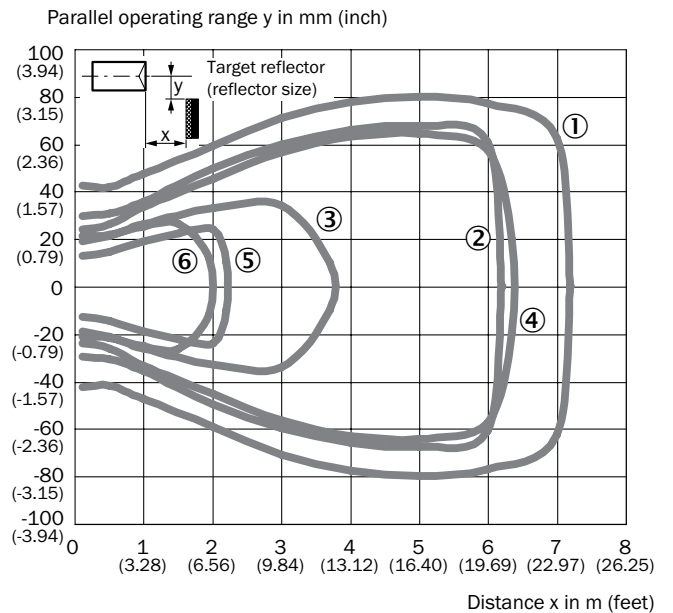
GRTE18S, 400 mm



GRTE18S, 800 mm

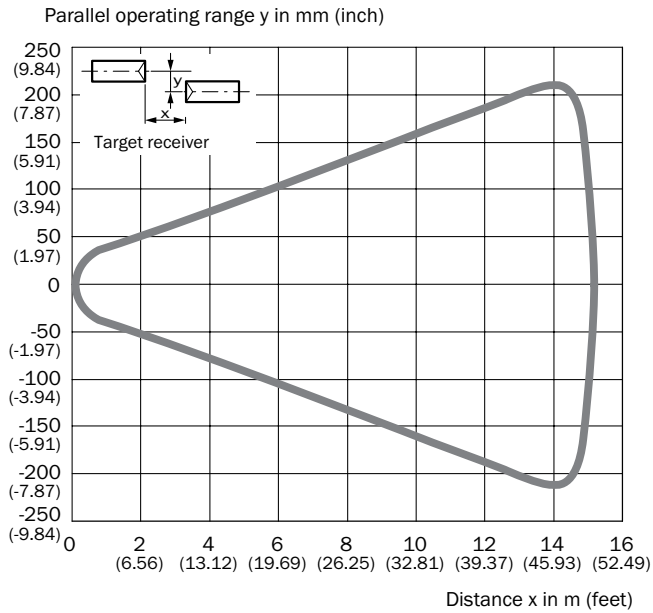


GRL18S



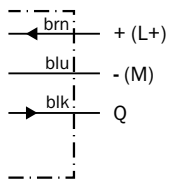
- ① Reflector type PL80A
- ② Reflector type PL40A
- ③ Reflector type PL20A
- ④ Reflector type P205
- ⑤ Reflector type PL22-2
- ⑥ Reflective tape REF-Plus 3436

GRSE18S

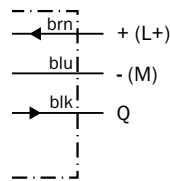


Connection diagram

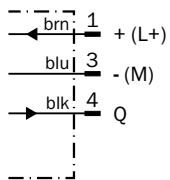
Cd-043



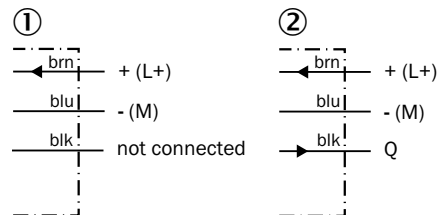
Cd-044



Cd-045

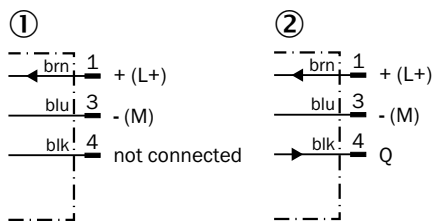


Cd-049



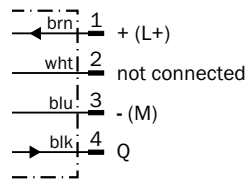
① Sender
② Receiver

Cd-051

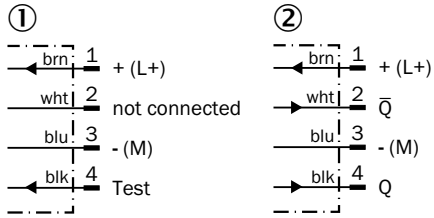


① Sender
② Receiver

Cd-066

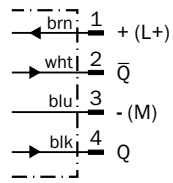


Cd-072

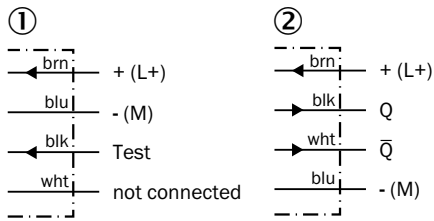


① Sender
 ② Receiver

Cd-084

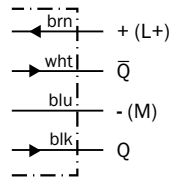


Cd-088



① Sender
 ② Receiver

Cd-094



Cd-101

