



GR18S

Round, short and economically unbeatable

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Technical data overview

Dimensions (W x H x D)	18 mm x 18 mm x 38.1 mm
Sensing range max.	3 mm ... 300 mm ¹⁾ 3 mm ... 100 mm ¹⁾ 3 mm ... 115 mm ¹⁾ 3 mm ... 350 mm ¹⁾ 5 mm ... 550 mm ¹⁾ 5 mm ... 1,000 mm ¹⁾ 0.03 m ... 7.2 m ²⁾ 0 m ... 15 m
Light source	PinPoint LED / LED (depending on type)
Type of light	Visible red light / Infrared light (depending on type)
Enclosure rating	IP67
Housing material	Metal Nickel-plated brass and ABS Plastic ABS
Adjustment	Potentiometer, 270° / none (depending on type)

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

²⁾ Reflector PL80A.

Product description

The GR18S family of photoelectric sensors in cylindrical M18-housings has a special shortened design and offers an optimal price/performance ratio. It can be used universally in many applications thanks to five different housing designs. PinPoint LEDs, plastic and metal housing versions as well as status indicators that are easily visible from all angles round off the sensor family's features. One highlight is the fully-flush metal variant, which has been especially designed for use in harsh industrial environments found in handling and warehousing systems.

At a glance

- Low-cost cylindrical M18 sensor with extra short housing
- Five different housing styles
- Variety of plastic and metal housing styles, with straight or right angle optics
- Bright and highly visible PinPoint-LED
- Potentiometer for adjustment of switching threshold (depending on type)
- Special flush type, one-piece metal housing
- Highly visible signal indicator LED
- IP 67 rating

Your benefits

- Space-saving solution due to short housing
- Flexible mounting options due to versatile housing styles
- Easy installation and precise detection due to PinPoint LED
- Reduced maintenance costs due to high tightening torque of single piece flush metal housing
- Rugged and reliable with proven SICK technology
- Highly visible signal indicator LED saves maintenance and commissioning time

Ordering information

Other models and accessories → www.sick.com/GR18S

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light/dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
3 mm ... 100 mm	PNP	None	Male connector M12, 4-pin	GRTB18S-P2406S01	1077945
3 mm ... 300 mm	NPN	Potentiometer	Cable, 4-wire, 2 m ¹⁾	GRTB18S-N1112	1076105
				GRTB18S-N1117	1076104
				GRTB18S-N111Z	1076106
			Male connector M12, 4-pin	GRTB18S-N2412	1076108
				GRTB18S-N2417	1076107
				GRTB18S-N241Z	1076109
	PNP	Potentiometer	Cable, 4-wire, 2 m ¹⁾	GRTB18S-P1112	1076099
				GRTB18S-P1117	1076098
				GRTB18S-P111Z	1076100
			Male connector M12, 4-pin	GRTB18S-P2412	1076102
				GRTB18S-P2417	1076101
				GRTB18S-P241Z	1076103

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Light source:** LED
- **Voltage type:** DC
- **Switching mode:** Light/dark switching
- **Type of light:** Infrared light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
3 mm ... 300 mm	PNP	Potentiometer	Male connector M12, 4-pin	GRTB18S-P2402S11	1094930

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
3 mm ... 300 mm	NPN	Potentiometer	Cable with M8 male connector, 4-pin, 300 mm ¹⁾	GRTB18S-N3017S13	1118880
			Cable, 3-wire, 2 m ¹⁾	GRTB18S-N1317	1076096
			Cable, 3-wire, 5 m ¹⁾	GRTB18S-N1417	1077894
			Connector M12, 3-pin	GRTB18S-N2317	1076097
	PNP	Potentiometer	Cable, 3-wire, 2 m ¹⁾	GRTB18S-P1317	1076094
			Cable, 3-wire, 5 m ¹⁾	GRTB18S-P1417	1077893
			Connector M12, 3-pin	GRTB18S-P2317	1076095

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
3 mm ... 300 mm	NPN	Potentiometer	Cable, 3-wire, 2 m ¹⁾	GRTB18S-E1317	1076112
			Connector M12, 3-pin	GRTB18S-E2317	1076113
	PNP	Potentiometer	Cable, 3-wire, 2 m ¹⁾	GRTB18S-F1317	1076110
			Cable, 3-wire, 5 m ¹⁾	GRTB18S-F1417	1081695
				GRTB18S-F1417S09	1090652
			Connector M12, 3-pin	GRTB18S-F2317	1076111

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Energetic
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.		
3 mm ... 115 mm	NPN	Potentiometer	Cable, 3-wire, 2 m ¹⁾	GRTE18S-N1312	1058201		
				GRTE18S-N1317	1058194		
			Connector M12, 3-pin	GRTE18S-N2312	1059408		
				GRTE18S-N2317	1059378		
				GRTE18S-N231Z	1059432		
				GRTE18S-N231Z	1059432		
			PNP	Potentiometer	Cable, 3-wire, 2 m ¹⁾	GRTE18S-P1312	1058203
						GRTE18S-P1317	1058195
	Connector M12, 3-pin	GRTE18S-P131Z			1102602		
		GRTE18S-P2312			1058204		
		GRTE18S-P2312S02			1066165		
		GRTE18S-P2317			1058196		
		GRTE18S-P2319			1059407		
		GRTE18S-P231X			1059440		
	GRTE18S-P231Z	1059436					
	5 mm ... 550 mm	NPN	Potentiometer	Cable, 3-wire, 2 m ¹⁾	GRTE18S-N1342	1058202	
GRTE18S-N1347					1058393		
Cable, 3-wire, 5 m ¹⁾				GRTE18S-N1442	1094936		
				Connector M12, 3-pin	GRTE18S-N2342	1059482	
					GRTE18S-N2347	1059441	
GRTE18S-N234Z					1059484		
PNP				Potentiometer	Cable, 3-wire, 2 m ¹⁾	GRTE18S-P1342	1058205
						GRTE18S-P1347	1058197
						GRTE18S-P134Z	1064171
		Connector M12, 3-pin	GRTE18S-P2342		1058200		
			GRTE18S-P2347		1058193		
			GRTE18S-P2349		1059481		
			GRTE18S-P234X		1059489		
GRTE18S-P234Z		1059487					

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Energetic
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light/dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
3 mm ... 115 mm	NPN	Potentiometer	Cable, 4-wire, 2 m ¹⁾	GRTE18S-N1112	1069584
				GRTE18S-N1117	1069581
	PNP	Potentiometer	Male connector M12, 4-pin	GRTE18S-P2412	1069583
				GRTE18S-P2417	1069582
5 mm ... 550 mm	NPN	Potentiometer	Cable, 4-wire, 2 m ¹⁾	GRTE18S-N1142	1069580
				GRTE18S-N1147	1062024
	PNP	Potentiometer	Male connector M12, 4-pin	GRTE18S-P2442	1069579
				GRTE18S-P2447	1069073
				GRTE18S-P2449	1069074

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Energetic
- **Light source:** LED
- **Voltage type:** DC
- **Switching mode:** Light/dark switching
- **Type of light:** Infrared light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.	
3 mm ... 350 mm	NPN	Potentiometer	Cable, 4-wire, 2 m ¹⁾	GRTE18S-E1137	1094747	
				GRTE18S-N1132	1094784	
				GRTE18S-N1137	1094578	
				GRTE18S-N113Z	1094789	
			Cable, 4-wire, 5 m ¹⁾	GRTE18S-E1232	1097488	
				Male connector M12, 4-pin	GRTE18S-N2432	1094791
					GRTE18S-N2437	1094785
			GRTE18S-N243Z	1094783		
			PNP	Potentiometer	Cable, 4-wire, 2 m ¹⁾	GRTE18S-P1132
	GRTE18S-P1137	1094787				
	GRTE18S-P113Z	1094788				
	Cable, 4-wire, 5 m ¹⁾	GRTE18S-P1232			1108637	
		Male connector M12, 4-pin			GRTE18S-F2432	1094695
					GRTE18S-P2432	1094792
	GRTE18S-P2437	1094598				
GRTE18S-P243Z	1094599					

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Energetic
- **Light source:** LED
- **Voltage type:** DC
- **Switching mode:** Light switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
5 mm ... 1,000 mm	NPN	Potentiometer	Cable, 3-wire, 2 m ¹⁾	GRTE18S-N1362	1069500
				GRTE18S-N1367	1069494
			Connector M12, 3-pin	GRTE18S-N2362	1069501
				GRTE18S-N2367	1069495
				GRTE18S-N236Z	1069555
				GRTE18S-P1362	1069503
	PNP	Potentiometer	Cable, 3-wire, 2 m ¹⁾	GRTE18S-P1367	1069496
				GRTE18S-P2362	1069504
			Connector M12, 3-pin	GRTE18S-P2367	1069497
				GRTE18S-P2369	1069499
				GRTE18S-P236X	1069559
				GRTE18S-P236Z	1069557

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Energetic
- **Light source:** LED
- **Voltage type:** DC
- **Switching mode:** Light/dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
5 mm ... 1,000 mm	NPN	Potentiometer	Cable, 4-wire, 2 m ¹⁾	GRTE18S-N1162	1069578
				GRTE18S-N1167	1069121
	PNP		Male connector M12, 4-pin	GRTE18S-P2467	1069122
				GRTE18S-P246Z	1069123

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Energetic
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
3 mm ... 115 mm	NPN	Potentiometer	Connector M12, 3-pin	GRTE18S-E231Z	1059409
	PNP	Potentiometer	Connector M12, 3-pin	GRTE18S-F2319	1059406
				GRTE18S-F231X	1059438
				GRTE18S-F231Z	1059435
5 mm ... 550 mm	NPN	Potentiometer	Connector M12, 3-pin	GRTE18S-E234Z	1059483
	PNP	Potentiometer	Cable, 3-wire, 2 m ¹⁾	GRTE18S-F134Z	1062423
			Connector M12, 3-pin	GRTE18S-F2349	1059480
				GRTE18S-F234X	1059488
				GRTE18S-F234Z	1059486

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Energetic
- **Light source:** LED
- **Voltage type:** DC
- **Switching mode:** Light switching
- **Type of light:** Infrared light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
5 mm ... 550 mm	NPN	Potentiometer	Cable, 3-wire, 2 m ¹⁾	GRTE18S-N1307S20	1111632
	PNP	Potentiometer	Cable, 3-wire, 2 m ¹⁾	GRTE18S-P135ZS01	1065711

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Energetic
- **Light source:** LED
- **Voltage type:** DC
- **Switching mode:** Dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
5 mm ... 1,000 mm	NPN	Potentiometer	Connector M12, 3-pin	GRTE18S-E236Z	1069554
	PNP	Potentiometer	Connector M12, 3-pin	GRTE18S-F2369	1069498
				GRTE18S-F236X	1069558
				GRTE18S-F236Z	1069556

- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.		
0.03 m ... 7.2 m	NPN	Potentiometer	Connector M12, 3-pin	GRL18SG-E233Z	1061927		
0.03 m ... 7.2 m	NPN	None	Cable, 3-wire, 2 m ¹⁾	GRL18S-E1331	1059537		
				GRL18S-E1336	1059530		
				GRL18S-E1351	1064153		
				GRL18S-E1356	1064143		
			Connector M12, 3-pin	GRL18S-E2336	1097041		
	PNP	Potentiometer	None	Cable, 3-wire, 2 m	GRL18SG-F1337	1062231	
					Connector M12, 3-pin	GRL18SG-F2332	1059555
				Cable with M8 male connector, 4-pin, 300 mm ¹⁾	GRL18SG-F2337	1059553	
					GRL18SG-F2339	1059554	
					GRL18SG-F233X	1059557	
		None	None	None	Cable with M8 male connector, 4-pin, 300 mm ¹⁾	GRL18SG-F233Z	1059556
						GRL18S-F3036S02	1067943
					Cable, 3-wire, 2 m ¹⁾	GRL18S-F1331	1059541
						GRL18S-F1336	1059532
						GRL18S-F1338	1059535
						GRL18S-F1351	1064155
						GRL18S-F1356	1064145
						GRL18S-F1358	1064149
		Cable, 3-wire, 5 m ¹⁾	GRL18S-F1431	1078580			
			GRL18S-F1431P01	1078581			
Connector M12, 3-pin	None	None	None	GRL18S-F2331	1058198		
				GRL18S-F2336	1059533		
				GRL18S-F2338	1058211		
				GRL18S-F233W	1058209		
				GRL18S-F233Y	1058206		
				GRL18S-F2351	1064156		
				GRL18S-F2356	1064146		
				GRL18S-F2358	1064150		
GRL18S-F235W	1064161						
GRL18S-F235Y	1064159						

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.		
0.03 m ... 7.2 m	NPN	Potentiometer	Connector M12, 3-pin	GRL18SG-N233Z	1061928		
		None	Cable, 3-wire, 2 m ¹⁾	GRL18S-N1331	1059538		
				GRL18S-N1336	1059531		
				GRL18S-N1351	1064154		
				GRL18S-N1356	1064144		
		PNP	Potentiometer	Cable, 3-wire, 2 m ¹⁾	GRL18SG-P1339	1095616	
					Connector M12, 3-pin	GRL18SG-P2332	1060323
				None	Cable, 3-wire, 2 m ¹⁾	GRL18SG-P2339	1122432
	GRL18SG-P233Z					1068113	
	GRL18S-P1331		1059542				
	GRL18S-P1336		1059534				
	GRL18S-P1338		1059536				
	GRL18S-P133Y		1072117				
	GRL18S-P1351		1064157				
	GRL18S-P1356		1064147				
	GRL18S-P1358		1064151				
	Cable, 3-wire, 5 m ¹⁾		GRL18S-P1436			1091255	
			Connector M12, 3-pin			GRL18S-P2331	1058199
						GRL18S-P2336	1058192
				GRL18S-P2338	1058212		
	GRL18S-P233W			1058210			
	GRL18S-P233Y	1058207					
	GRL18S-P2351	1064158					
	GRL18S-P2356	1064148					
GRL18S-P2358	1064152						
GRL18S-P235W	1064162						
GRL18S-P235Y	1064160						

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light/dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.	
0.03 m ... 7.2 m	NPN	Potentiometer	Cable, 4-wire, 2 m	GRL18SG-N1137	1062031	
				GRL18SG-N1157	1068942	
		None	Cable, 4-wire, 2 m ¹⁾	GRL18S-N1131	1069588	
				GRL18S-N1136	1069585	
				Male connector M12, 4-pin	GRL18S-N2436	1077674
				GRL18S-N2436	1077674	
	PNP	Potentiometer	Cable, 4-wire, 2 m	GRL18SG-P1137	1066421	
				GRL18SG-P1157	1066940	
		None	Cable, 4-wire, 70 mm ¹⁾	GRL18S-P1036S03	1069609	
				Male connector M12, 4-pin	GRL18S-K2436	1069997
				GRL18S-K2438	1069996	
				GRL18S-P2431	1069586	
				GRL18S-P2436	1069072	
				GRL18S-P2438	1069071	

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Through-beam photoelectric sensor
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.	
0 m ... 15 m	NPN	None	Cable, 3-wire, 2 m ¹⁾	GRSE18S-E1331	1059548	
				GRSE18S-E1336	1059543	
	PNP	Potentiometer	Connector M12, 3-pin	GRSE18S-F2332	1119329	
				None	Cable, 3-wire, 2 m ¹⁾	GRSE18S-F1336
		Connector M12, 3-pin	GRSE18S-F2331			1059549
			GRSE18S-F2336			1058214
			GRSE18S-F2338			1059546
		GRSE18S-F233W	1059551			

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Through-beam photoelectric sensor
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
0 m ... 15 m	PNP	None	Cable, 3-wire, 2 m ¹⁾	GRSE18S-P1336	1059545
				GRSE18S-P133Y	1062422
			Connector M12, 3-pin	GRSE18S-P2331	1059550
				GRSE18S-P2336	1058215
				GRSE18S-P2338	1059547
				GRSE18S-P233W	1059552
				GRSE18S-P233Y	1062420

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Through-beam photoelectric sensor
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light/dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.	
0 m ... 15 m	NPN	Potentiometer	Cable, 4-wire, 2 m ¹⁾	GRSE18S-N1142	1069630	
				GRSE18S-N1147	1069124	
			Male connector M12, 4-pin	GRSE18S-N2442	1069628	
		GRSE18S-N2447		1069625		
		PNP	None	Cable, 4-wire, 2 m ¹⁾	GRSE18S-N1136	1062122
					Potentiometer	Cable, 4-wire, 2 m ¹⁾
	GRSE18S-P1147		1069626			
	Male connector M12, 4-pin		GRSE18S-P2442	1069125		
		GRSE18S-P2447	1069627			

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Through-beam photoelectric sensor
- **Light source:** LED
- **Voltage type:** DC
- **Switching mode:** Light/dark switching
- **Type of light:** Infrared light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
0 m ... 15 m	NPN	Potentiometer	Cable, 4-wire, 2 m ¹⁾	GRSE18S-N1122	1069638
				GRSE18S-N1127	1069634
			Male connector M12, 4-pin	GRSE18S-N2422	1069635
				GRSE18S-N2427	1069631
	PNP	Potentiometer	Cable, 4-wire, 2.3 m ¹⁾	GRSE18S-P1027S02	1095524
				Cable, 4-wire, 2 m ¹⁾	GRSE18S-P1122
			GRSE18S-P1127		1069632
			Male connector M12, 4-pin		GRSE18S-P2422
				GRSE18S-P2427	1069633

¹⁾ Do not bend below 0 °C.

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. 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 a wide range of 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 complete 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:

Contacts and other locations –www.sick.com