



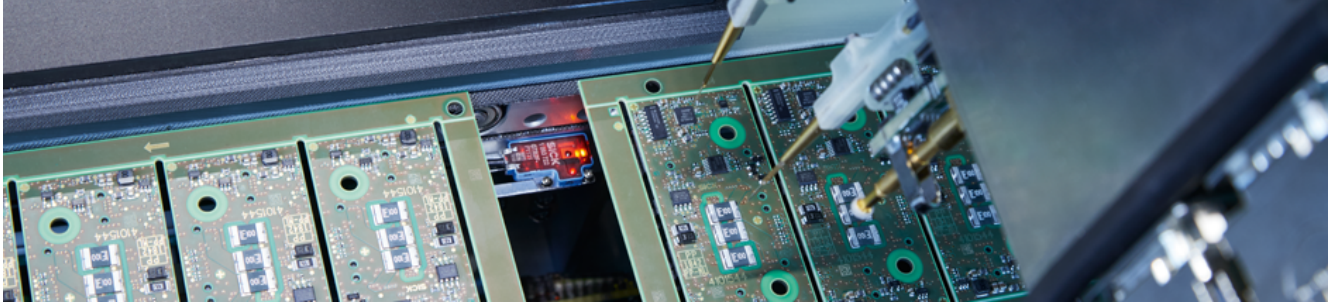
G2F

Outstanding performance in miniature format

PHOTOELECTRIC SENSORS

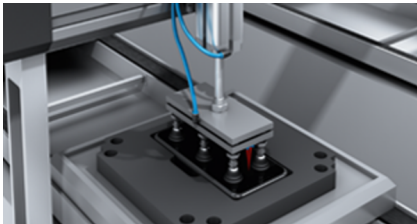
SICK
Sensor Intelligence.

Advantages



Very high performance for miniature plants

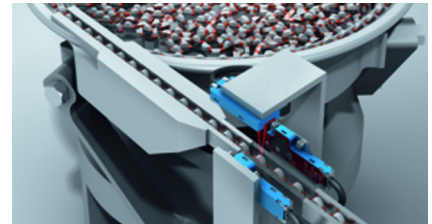
The miniature housing of the G2 Flat is enabling new and even more compact designs to be developed without compromising on high-performance detection. The sensor can be integrated into very narrow gaps and tight installation spaces without problems. As such, it is opening up virtually endless possibilities for reliable object detection in applications involving the conveying of small parts in logistics.



With reliable background suppression, the G2 Flat detects object starting from just 8 mm



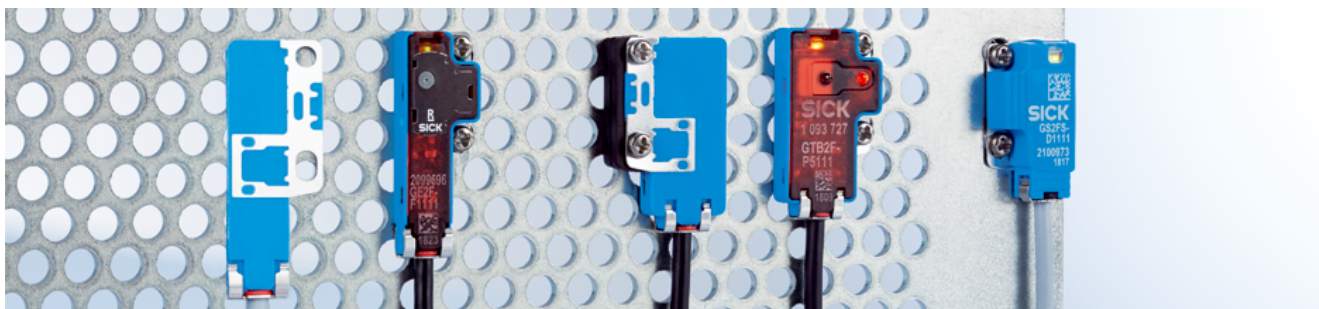
Very high detection accuracy for jet-black, specular, transparent, and shiny object surfaces



It also easily detects very small objects of down to 0.1 mm (with BGS) or 0.2 mm (with the through-beam photoelectric sensor) in size



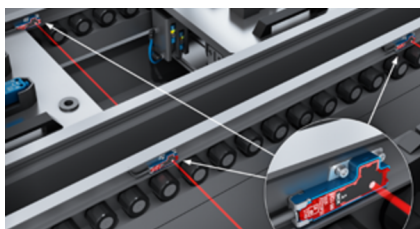
Nearly limitless machine design: The G2 Flat is opening up entirely new possibilities for the design of miniature plants and robotics systems. The sensor is flexible and can be adapted to meet individual OEM requirements.



Sophistication through simplicity

SICK developed the G2 Flat to make it easy and straightforward to use miniature sensors in compact machine and plant configurations. The sensors are flexible to mount and easy to install as through-beam photoelectric sensors in close proximity to one other. Thanks to type-dependent sensing ranges, they are also highly versatile in application. Thanks to their rugged design, the sensors require little maintenance, enjoy a long service life, and will deliver reliable detection results in long-term operation.

Tough yet easy to handle



Space-saving design for very easy installation into very small installation spaces



Easy differentiation of sender and receiver through different color cables and laser markings



Very rugged thanks to tough VISTAL® housing. Quick and easy mounting with M2 mounting plates made of steel with spacer for rear-side mounting. Fixing screw flush with the sensor.



Flexible in application: Thanks to its rugged design and countless application possibilities, the G2 Flat is suitable for all kinds of application environments



Technical data overview

Dimensions (W x H x D)	14 mm x 24 mm x 3.5 mm 10 mm x 27 mm x 3.5 mm 4.5 mm x 21 mm x 11 mm
Sensing range max.	0 mm ... 1,300 mm (depending on type)
Light source	PinPoint LED
Type of light	Visible red light / visible blue light (depending on type)
Enclosure rating	IP67
Housing material	Plastic VISTAL®
Adjustment	None

Product description

The G2 Flat is a miniature photoelectric sensor for use in particularly compact plants and robotics systems. With powerful background suppression (BGS), the sensor can be relied upon to detect objects at distances starting from just 8 mm – virtually regardless of object size and surface. This makes it an excellent solution for all kinds of tasks wherever space is at a premium and opens up entirely new possibilities for miniaturization in industrial environments. Sensor integration and handling could not be easier. As one of the smallest photoelectric sensor product families from SICK, the G2 Flat is the smart application solution in a miniature format for industrial automation.

At a glance

- Ultra-thin housing for the tightest of installation spaces
- BGS: Object detection starting from just 8 mm
- Detection of objects from 0.1 mm in size
- Reliable detection of jet-black, specular, transparent, and shiny objects
- PinPoint LED
- VISTAL® housing, steel mounting plates
- Can be adjusted individually to OEM requirements

Your benefits

- The ultra-thin G2 Flat sensors can be integrated into miniature plants and very tight installation spaces
- Reliable detection: Detect objects with excellent and high-performance background suppression starting from just 8 mm
- Even the smallest of objects can be detected without problems
- Versatility of use: The G2 Flat can be relied upon to detect jet-black, specular, transparent, and shiny objects
- Easy installation and maintenance – not least thanks to easy differentiation between sender and receiver
- Ultra-reliable sensor design with VISTAL® housing and steel mounting plates

Fields of application

- Robot arms and grippers
- OEM machine builders (e.g., pharmaceutical, packaging, automotive industry, logistics)
- Small conveyors for electronics, solar cells, printed circuit boards, and small parts
- Parts conveyors
- Modern vending machines
- Modern doors and gate systems
- Logistics devices such as shuttle systems and stackers

Ordering information

Other models and accessories → www.sick.com/G2F

- **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.
1 mm ... 18 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTB2F-E5111	1093742
			Cable, 3-wire, 2 m ¹⁾	GTB2F-E1111	1093736
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTB2F-F5111	1093739
			Cable, 3-wire, 2 m ¹⁾	GTB2F-F1111	1093733
1 mm ... 35 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTB2F-E5131	1093743
			Cable, 3-wire, 2 m ¹⁾	GTB2F-E1131	1093737
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTB2F-F5131	1093740
			Cable, 3-wire, 2 m ¹⁾	GTB2F-F1131	1093734
1 mm ... 9 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTB2F-E5141	1093744
			Cable, 3-wire, 2 m ¹⁾	GTB2F-E1141	1093738
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTB2F-F5141	1093741
			Cable, 3-wire, 2 m ¹⁾	GTB2F-F1141	1093735

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 blue light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
0 mm ... 9 mm	NPN	None	Cable, 3-wire, 2 m ¹⁾	GTB2F-E1341	1112800
	PNP	None	Cable, 3-wire, 2 m ¹⁾	GTB2F-F1341	1120805

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- **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.
1 mm ... 18 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTB2F-N5111	1093730
			Cable, 3-wire, 2 m ¹⁾	GTB2F-N1111	1093724
			Cable, 3-wire, 3 m ¹⁾	GTB2F-N0111S04	1110051
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTB2F-P5111	1093727
			Cable, 3-wire, 2 m ¹⁾	GTB2F-P1111	1093721
	1 mm ... 31 mm	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTB2F-P5101S08
1 mm ... 35 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTB2F-N5131	1093731
			Cable, 3-wire, 2 m ¹⁾	GTB2F-N1131	1093725
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTB2F-P5131	1093728
			Cable, 3-wire, 2 m ¹⁾	GTB2F-P1131	1093722
1 mm ... 9 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTB2F-N5141	1093732
			Cable, 3-wire, 2 m ¹⁾	GTB2F-N1141	1093726
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTB2F-P5141	1093729
			Cable, 3-wire, 2 m ¹⁾	GTB2F-P1141	1093723

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

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
0 mm ... 9 mm	NPN	None	Cable, 3-wire, 2 m ¹⁾	GTB2F-N1341	1110117
	PNP	None	Cable, 3-wire, 2 m ¹⁾	GTB2F-P1341	1113493

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.
1.5 mm ... 15 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTE2F-E5111	1108576
			Cable, 3-wire, 2 m ¹⁾	GTE2F-E1111	1108574
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTE2F-F5111	1108575
			Cable, 3-wire, 2 m ¹⁾	GTE2F-F1111	1108573
1 mm ... 30 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTE2F-E5131	1108572
			Cable, 3-wire, 2 m ¹⁾	GTE2F-E1131	1108570
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTE2F-F5131	1108571
			Cable, 3-wire, 2 m ¹⁾	GTE2F-F1131	1108569

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.
1.5 mm ... 15 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTE2F-N5111	1108482
			Cable, 3-wire, 2 m ¹⁾	GTE2F-N1111	1108480
	PNP	None	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	GTE2F-P0111S04	1108484
			Cable with connector M8, 3-pin, 200 mm ¹⁾	GTE2F-P5111	1108481
			Cable, 3-wire, 2 m ¹⁾	GTE2F-P1111	1108479
1 mm ... 30 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GTE2F-N5131	1108126
			Cable, 3-wire, 2 m ¹⁾	GTE2F-N1131	1108124
	PNP	None	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	GTE2F-P0131S09	1122283
			Cable with connector M8, 3-pin, 200 mm ¹⁾	GTE2F-P5131	1108125
			Cable, 3-wire, 2 m ¹⁾	GTE2F-P1131	1108123

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 mm ... 1,300 mm	NPN	None	Cable, 3-wire, 2,000 mm ¹⁾	GSE2FS-E1162	1113779			
			Cable, 3-wire, 2 m ¹⁾	GSE2F-E1161	1118585			
		GSE2FS-E1161		1121030				
0 mm ... 200 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GSE2F-E5121	1095456			
				GSE2FS-E5121	1095482			
			Cable, 3-wire, 2 m ¹⁾	GSE2F-E1121	1095444			
				GSE2FS-E1121	1095470			
				PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GSE2F-F5121	1095453
							GSE2FS-F5121	1095479
	Cable with male connector M8, 3 pin (common male connector for sender and receiver), 500 mm ¹⁾	GSE2F-F0121S13	1113669					
		GSE2FS-F0121S14	1113670					
	Cable with male connector M8, 4 pin (common male connector for sender and receiver), 500 mm ¹⁾	GSE2F-F0121S12	1110900					
		GSE2FS-F0121S11	1110899					
	Cable, 3-wire, 2 m ¹⁾	GSE2F-F1121	1095441					
		GSE2FS-F1121	1095467					
0 mm ... 60 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GSE2F-E5111	1095455			
				GSE2FS-E5111	1095481			
			Cable, 3-wire, 2 m ¹⁾	GSE2F-E1111	1095443			
				GSE2FS-E1111	1095469			
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GSE2F-F5111	1095452			
				GSE2FS-F5111	1095478			
			Cable, 3-wire, 2 m ¹⁾	GSE2F-F1111	1095440			
				GSE2FS-F1111	1095466			
0 mm ... 700 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GSE2F-E5151	1095457			
				GSE2FS-E5151	1095483			
			Cable, 3-wire, 2 m ¹⁾	GSE2F-E1151	1095445			
				GSE2FS-E1151	1095471			
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GSE2F-F5151	1095454			
				GSE2FS-F5151	1095480			
			Cable, 3-wire, 2 m ¹⁾	GSE2F-F1151	1095442			
				GSE2FS-F1151	1095468			

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- **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 mm ... 1,300 mm	NPN	None	Cable, 3-wire, 2 m ¹⁾	GSE2F-N1161	1106521
				GSE2FS-N1161	1119049
			Cable, 3-wire, 500 mm ¹⁾	GSE2FS-N0162S01	1100225
	PNP	None	Cable, 3-wire, 2 m ¹⁾	GSE2F-P1161	1114856
				GSE2FS-P1161	1106098
	0 mm ... 200 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GSE2F-N5121
GSE2FS-N5121					1095476
Cable, 3-wire, 2 m ¹⁾				GSE2F-N1121	1095438
				GSE2FS-N1121	1095464
PNP		None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GSE2F-P5121	1095447
				GSE2FS-P5121	1095473
			Cable, 3-wire, 2 m ¹⁾	GSE2F-P1121	1095435
				GSE2FS-P1121	1095461
0 mm ... 60 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GSE2F-N5111	1095449
				GSE2FS-N5111	1095475
			Cable, 3-wire, 2 m ¹⁾	GSE2F-N1111	1095437
				GSE2FS-N1111	1095463
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GSE2F-P5111	1095446
				GSE2FS-P5111	1095472
			Cable, 3-wire, 2 m ¹⁾	GSE2F-P1111	1095433
				GSE2FS-P1111	1095459
0 mm ... 700 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GSE2F-N5151	1095451
				GSE2FS-N5151	1095477
			Cable, 3-wire, 2 m ¹⁾	GSE2F-N1151	1095439
				GSE2FS-N1151	1095465
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	GSE2F-P5151	1095448
				GSE2FS-P5151	1095474
			Cable, 3-wire, 2 m ¹⁾	GSE2F-P1151	1095436
				GSE2FS-P1151	1095462

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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