




Glare

REDEFINING POLISHED PERFORMANCE

Glare sensors

SICK
Sensor Intelligence.



 **IO-Link**



A BRILLIANT PERFORMANCE

GLOSS AND PERFORMANCE COMBINED

The Glare sensor detects and distinguishes glare on even surfaces. It also provides maximum reliability and saves costs.

Previously, gloss on object surfaces was a disruptive factor that regularly had engineers breaking into a sweat. Now, gloss properties are a distinguishing criterion for process control – regardless of color, transparency or pattern. And it will be engineers' eyes that shine, not their brows.

Equipped with intelligent Delta-S-Technology, Glare is a further milestone in customer-oriented sensor development. Once again, SICK is confirming its leading position in opto-electronic sensors for the detection of a range of objects.



**We
simply detect
any object.**

ALL THAT GLITTERS IS NOT GOLD



Glare is suitable for all applications in which the gloss of an object is the decisive feature in process control. It not only detects objects based on their gloss properties, but also distinguishes between objects with different gloss levels. The only requirement is an even object surface.



Detecting authenticity features

To protect products against tampering, authenticity features such as seals, holograms and labels are added to packages before they leave production. Steps must be taken to guarantee that these features are indeed added, for example for medications. If the glare of a feature differs from the packaging material, Glare will reliably detect it – even if a packaging design or writing appears underneath the seal.



Detecting coatings

The gloss level of moist or dry coatings such as oils, adhesives and paints differs from that of an object's other, non-coated surfaces. Glare verifies that these coatings have been applied correctly, ensuring quality in the production process.



Detecting different surface treatments

Smoothing, cleaning and polishing materials affects their surface structure and, therefore, their gloss properties. Glare checks these surface treatments.



Detecting protective packaging

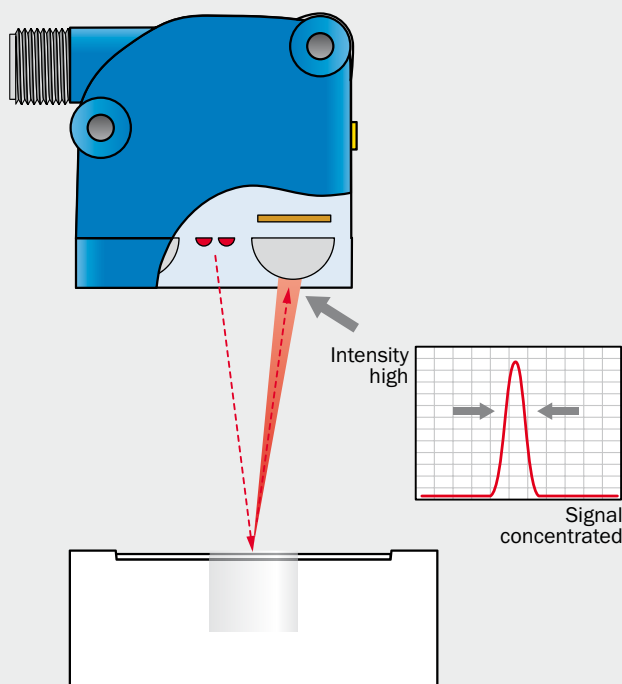
Outer packaging for products and protective films on sensitive surfaces are generally made from transparent or glossy materials. Glare reliably verifies the presence of such protective packaging, ensuring an error-free packaging process.

BRILLIANT TECHNOLOGICAL PERFORMANCE

Glare checks for the presence of glossy objects, regardless of color, transparency or pattern. The principle of operation is as simple as it is innovative – sheer technological brilliance. This results in exceptionally high process reliability with very low material, installation and configuration outlay. In inspection tasks, Glare is therefore the cost-efficient alternative to complex camera systems.

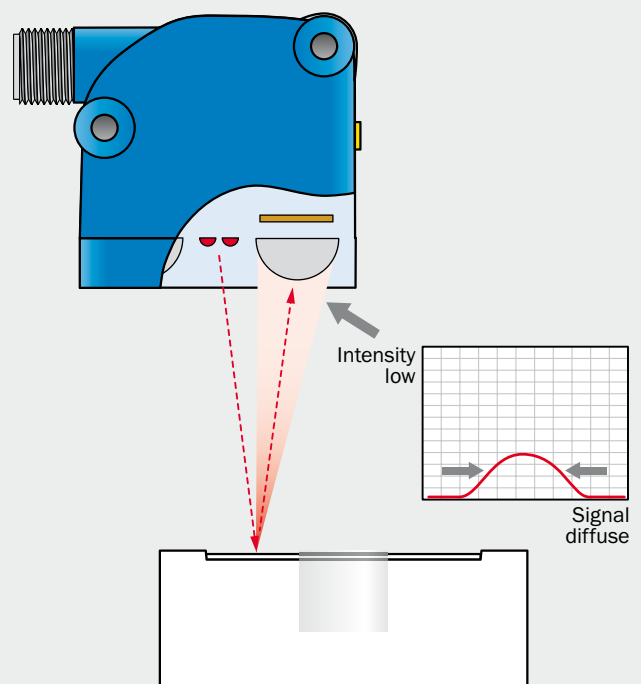
Innovative technology

Detection on glossy object surfaces



At a defined angle, visible red light lands on the object to be detected. Depending on the gloss level of the surface, the light beam is thrown back with a different intensity and scatter.

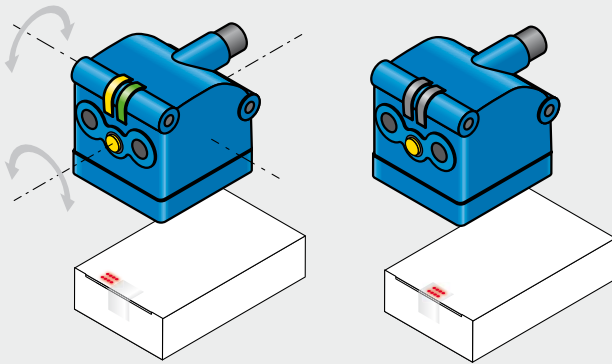
Detection on matte object surfaces



This information is recorded and analyzed via two high-resolution line sensors with the patented Delta-S-Technology.

- + High signal and process quality
- + Cost-efficient sensor

Easy to install and commission



Once assembled, Glare is remarkably simple to align and commission. In "Align" mode, two LEDs attached to the sensor each cover one tilt direction (horizontal or vertical) and flash until the sensor is correctly aligned in the respective direction.

The SOPAS configuration software also displays cross hairs to aid the customer in alignment and features a detailed context menu to help with installation and commissioning.

- + Time savings and simple installation through integrated alignment aid in "Align" mode

- + High operational safety and time savings through commissioning with SOPAS

Better performance with IO-Link

Via the IO-Link communication interface, Glare offers clever communication possibilities with additional benefits.

Automated configuration via PLC

- + Time and cost savings

Extensive and fine filter functions

- + High process quality

Parameter cloning enables sensor configuration to be saved and re-used easily

- + Fault prevention during format changes and recommissioning

Diagnostic functions through additional data transmission to the machine controller

- + High operational safety through continuous monitoring of teach-in, alignment and process quality

Output of on-board automation functions such as counters or traceability of products via time stamps

- + Large range of functions




→ For more information on IO-Link, see page 10 and the publication "Smart Sensor Solutions powered by IO-Link" (8011727).

BRILLIANT EQUIPMENT

The Glare sensor impresses from start to finish – and ensures maximum process reliability throughout. While its optics ensure high signal stability thanks to multi-sensor fusion, its clearly arranged control panel with rotary switches and a teach-in button offers a user-friendly configuration. Glare – sheer brilliance.

High-performance interior



Alarm threshold to continuously monitor process quality

- + Early signaling of contamination, bad alignment, declining quality of object surface, etc.

High ambient light immunity

- + Very high operational safety

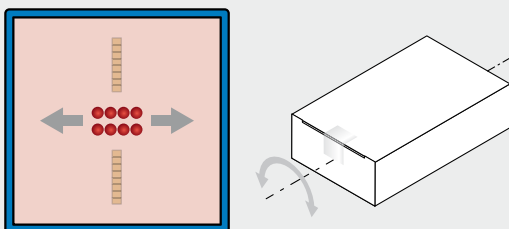
Intelligent algorithms in signal processing

- + Innovative sensor technology for reliable measurement results

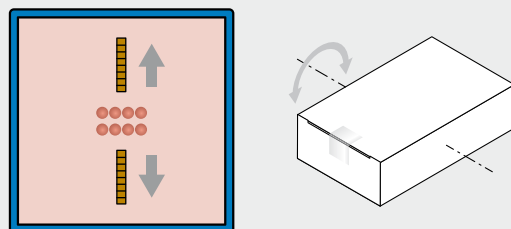
Multi-sensor fusion through eight red-light LEDs (2 rows of 4 LEDs) and two receivers with line sensors

- + High signal quality, even in cases of vibration during machine operation or tilted objects moving past

Multi-sensor fusion



With eight red-light LEDs, Glare is ideally suited for reliable operation in cases of horizontal tilting.



With receivers arranged vertically to the red-light LEDs, Glare is immune to vertical tilting.

Convenient operating elements

Clearly arranged control panel with locking function

- + Protection against operating errors and tampering

Rugged housing

- + High strength in industrial use

On/off delay possible via SOPAS and IO-Link

- + High signal stability and shock resistance

User-friendly rotary switch to configure different sensitivity levels (fine, medium, coarse)

- + Adjustment of measurement stability when selecting materials with comparable gloss levels and for objects with fluctuating gloss levels

The central image shows the blue control panel of the GLARE sensor. It features a rotary switch on the left with positions A (Fine), B (Middle), C (Coarse), and D (Align). A central yellow button is labeled 'TEACHMODE'. To the right of the button is a 'TEACHMODE' selector with a grid of options: 0, 2, 4, 6, Q in the top row; 1, 3, 5, 7, Q in the second row; and 1P, 2P, DYN, 3P in the third row. Below the button are two blue LEDs. At the bottom is a large, rectangular teach-in button.

Rotary switch to choose from a total of four teach-in procedures: 1-point teach-in, 2-point teach-in, static, 2-point teach-in, dynamic, and 3-point teach-in

- + Intuitive, time-saving operation

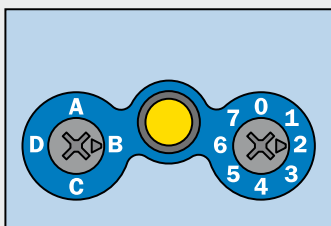
LEDs for displaying operating voltage and switching output or for supporting alignment in "Align" mode

- + High process reliability

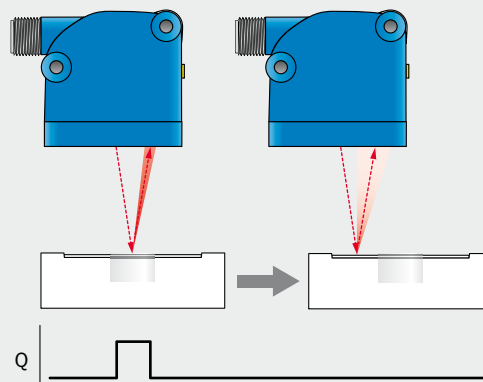
User-friendly teach-in button

- + Quick and convenient sensor configuration

Example settings

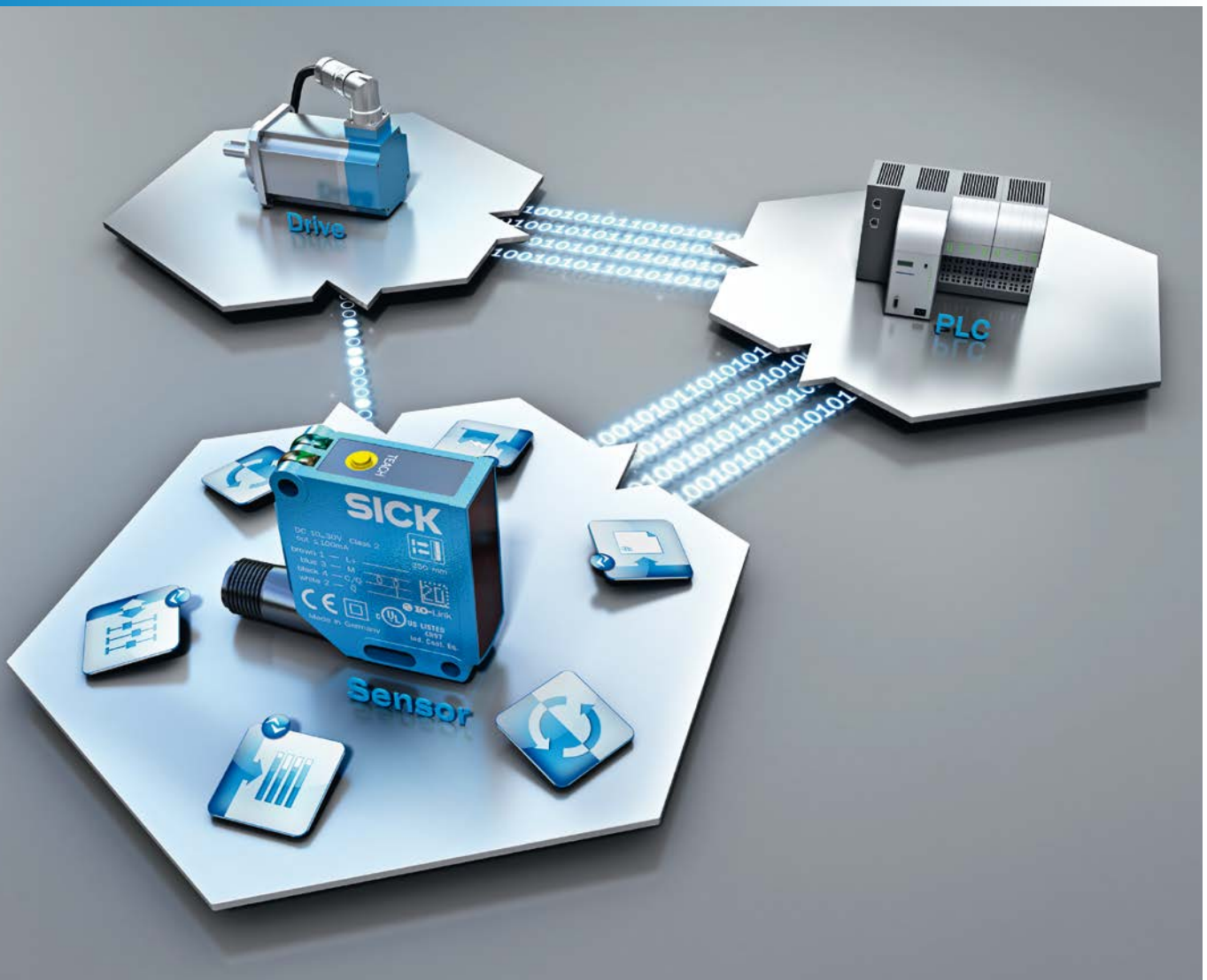


Control panel settings via rotary switch:
Sensitivity "B: medium",
teach-in mode "2": 2-point teach-in, static, not inverted



First teach-in on glossy surface, second teach-in on matte surface. The sensor switches only with the glossy surface (not inverted).

SMART SENSOR SOLUTIONS – STANDARD FUNCTIONS WITH IO-LINK



SICK sensors with IO-Link functions that can be integrated into an automation system offer a whole host of useful functions, from configuration and operation all the way through to monitoring. Even the standard functions go far beyond the scope of straightforward binary 0/1 switching signals.

OPTIMIZED AUTOMATION FOR MACHINES AND SYSTEMS



Condition monitoring / diagnostics

Implementing diagnostics and self-test options enables features such as contamination evaluation for sensors. Thanks to the monitoring capabilities of the sensors, preventive maintenance can be carried out using a precise maintenance plan. This ability to predict machine status even extends across area boundaries. The advantages of this are reduced maintenance and repair times, minimal risk of failure, as well as accurate fault localization and diagnostics.



E-parts list / E-inventory

IO-Link enables the electronic documentation for all sensors in the machine or system's as-delivered state to be created quickly and using an automated method. The advantages of this are increased transparency in the electronic documentation for installed sensors, cables, and male connectors. This prevents time-consuming troubleshooting processes that result from different versions of documentation. What is more, the machine or system's as-delivered state can be documented easily and accurately in this way.



Sensor visualization

Sensor data such as the device ID, serial number, teach-in values or switching behavior can be displayed and modified using visualization software and the SiLink Box on a PC. All parameters can be optimized and transferred to multiple sensors.

The advantages of this are:

- Comprehensive diagnostics options
- Availability values can be checked and parameters can be optimized
- Simplified range of function and performance options available for selection
- Quick and safe sensor pre-configuration
- Easy identification of optimized application parameters
- Simple commissioning



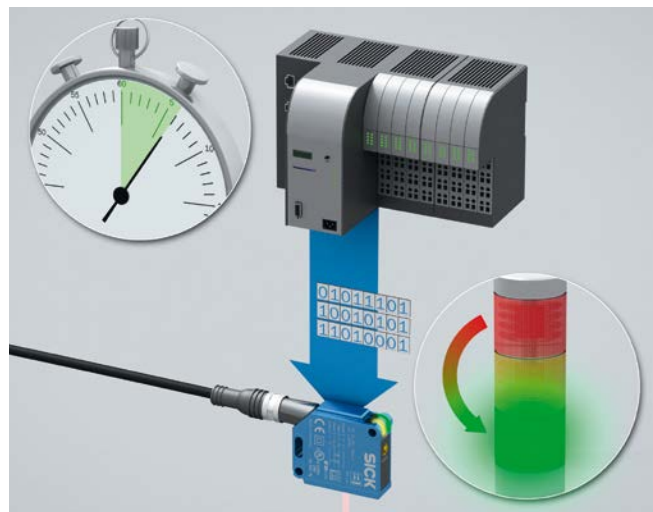
Flexible sensor adjustment

An IO-Link sensor receives optimized, application-specific parameters (such as the teach-in procedures, sensitivity adjustment or on/off delay) from the automation system according to the production process or the product that is to be produced. The advantages of this are reduced machine downtimes and changeover times when switching products, more machine flexibility, and the prevention of incorrect settings.



Easy device replacement

Sensors with IO-Link can be replaced quickly and easily, as they are able to adopt the set function parameters without any alterations. The parameters are stored in the IO-Link master or in the control system. The advantages of this are minimal downtimes, guaranteed machine availability, as well as recorded and documented replacement processes.



REDEFINING POLISHED PERFORMANCE



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Product description

The Glare sensor is specially designed to recognize and differentiate objects on the basis of their gloss in order to control production processes. The Glare sensor analyzes the spatial distribution of reflected light using Delta-S technology, which allows the sensor to determine the gloss level of flat object surfaces and to differentiate between objects of differing gloss levels. The measurement result is transmitted to the process controls either via two digital switching outputs or IO-Link. Several operating

modes are available, making the Glare sensor perfectly suited to a range of different applications. The combination of intelligent signal evaluation algorithms, the multi-sensor arrangement and sensitivity adjustments ensure increased operational safety in industrial applications. The Glare's IO-Link interface enables the sensor to be integrated into the machine controller, featuring automatic, process-oriented configuration and online diagnostics.

At a glance

- Object detection and differentiation on the basis of surface gloss level
- Configurable in many different operating modes to meet the requirements of any application
- Integrated alignment aid
- Integrated automation functions
- Two digital push-pull outputs and one configurable input
- Sensitivity adjusts to object properties
- IO-Link provides easy data access from the PLC
- Quick and easy configuration

Your benefits

- Quick installation via alignment mode
- Integrated key lock reduces the risk of operating errors and tampering
- Sensitivity adjustments increase the system's operational safety
- Teach-in via the single teach-in button or SOPAS configuration software facilitates quick and easy operation
- Reliable gloss identification regardless of color, labeling or structure increases operational safety
- State-of-the-art detection method makes it possible to conduct inspections at lower costs than with camera solutions
- Sensor's resistance to object fluctuations increases operational safety
- Flexible sensor settings, monitoring, advanced diagnostics, and visualization thanks to IO-Link

→ www.mysick.com/en/Glare

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.



Detailed technical data

Features

	Glare	Glare, IO-Link
Dimensions (W x H x D)	42.5 mm x 44 mm x 43.4 mm	
Sensor principle	Delta-S-Technology®	
Sensing distance	50 mm	
Housing design (light emission)	Rectangular	
Sensing distance tolerance	± 5 mm	
Alignment tolerance ¹⁾	± 1°	
Minimum detectable object (MDO) ²⁾	12 x 14 mm	
Light source ³⁾	LED	
Type of light	Visible red light	
Wave length	640 nm	
Light spot size	10 mm x 12 mm	
Object speed max. ⁴⁾	2 m/s	
Sensitivity	fine, middle, coarse	
Teach-in mode	1-point-teach-in / 2-point teach-in / 2-point teach-in dynamic / 3-point teach-in	
IO-Link	–	✓
IO-Link functions	–	Standard functions / advanced functions (depending on type)
IO-Link advanced functions	–	Timestamp / high speed counter (depending on type)

¹⁾ Object tolerance during process: ± 4 °.

²⁾ MDO min. detectable object.

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

⁴⁾ At minimum object size.

Mechanics/electronics

	Glare	Glare, IO-Link
Supply voltage ¹⁾	10 V DC ... 30 V DC	
Ripple ²⁾	≤ 5 V _{pp}	
Power consumption ³⁾	< 150 mA	
Switching frequency ⁴⁾	500 Hz	
Response time ⁵⁾	1 ms	
Jitter ⁶⁾	500 µs	
Input	HIGH = > V _S - 2 V / LOW = open or < 2 V	
Switching output	Push/Pull (High: V _S - 3 V, Low: < 3 V)	
Number of switching output	2 (Q1, Q2)	
Output current I _{max.} ⁷⁾	< 100 mA	
Initialization time	< 2.5 s	
On delay	–	0 s ... 30 s
Off delay	–	0 s ... 30 s
Pulse duration	–	≤ 30 s
Connection type	Male connector M12, 5-pin	
Ambient light safety	> 50 klx	
Circuit protection	A ⁸⁾ C ⁹⁾ D ¹⁰⁾	
Protection class	III	

	Glare	Glare, IO-Link
Fieldbus interface	–	IO-Link
Enclosure rating	IP 67	
Weight	130 g	
Housing material	Plastic ABS	

¹⁾ Limit values; operation in short-circuit protected network max. 8 A.

²⁾ May not exceed or fall short of V_S tolerances.

³⁾ Without load.

⁴⁾ With light/dark ratio 1:1.

⁵⁾ Signal transit time with resistive load.

⁶⁾ Typical value, depending on adjustment.

⁷⁾ Consumption count Q1 / Q2.

⁸⁾ A = V_S connections reverse-polarity protected.

⁹⁾ C = interference suppression.

¹⁰⁾ D = outputs overcurrent and short-circuit protected.

Ambient data

Ambient operating temperature	–10 °C ... +55 °C
Ambient storage temperature	–25 °C ... +75 °C
Shock load	According to EN 60068-2-27, single shock (30 g/11 MS), continuous shock (25 g/11 MS)
UL File No.	NRKH.E181493

Ordering information

Glare

IO-Link	Advanced functions	Adjustment	Model name	Part no.
–	–	Potentiometer (Sensitivity (Q, Q/, teach-in)) Cable (Teach-in) Single teach-in button (Teach-in)	OPR20G-RB111517	1065685

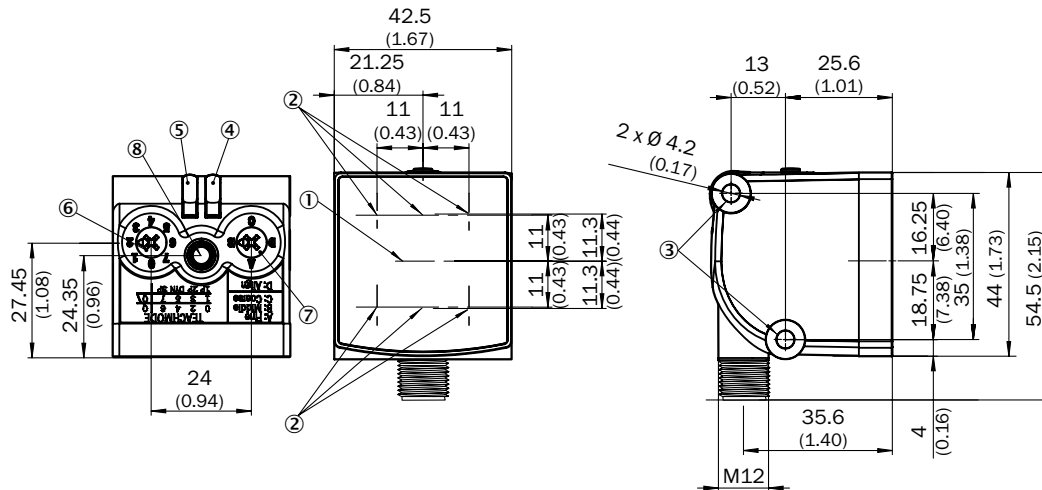
Glare, IO-Link

IO-Link	Advanced functions	Adjustment	Model name	Part no.
Standard functions	–	Potentiometer (Sensitivity (Q, Q/, teach-in)) Cable, IO-Link (Teach-in / Keylock) ¹⁾ Single teach-in button (Teach-in)	OPR20G-RB317537	1068822
		Potentiometer (Sensitivity (Q, Q/, teach-in)) Cable, IO-Link (Teach-in / Keylock) ²⁾ Single teach-in button (Teach-in)	OPR20G-RB417537	1068823
		Potentiometer (Sensitivity (Q, Q/, teach-in)) Cable, IO-Link (Teach-in / Keylock) ¹⁾ Single teach-in button (Teach-in)	OPR20G-RB317537A90	1072052
Standard functions, advanced functions	Timestamp	Potentiometer (Sensitivity (Q, Q/, teach-in)) Cable, IO-Link (Teach-in / Keylock) ¹⁾ Single teach-in button (Teach-in)	OPR20G-RB317537A90	1072052
	High speed counter	Potentiometer (Sensitivity (Q, Q/, teach-in)) Cable, IO-Link (counter reset) ²⁾ Single teach-in button (Teach-in)	OPR20G-RB517537A01	1072051

¹⁾ Default: Teach-in.

²⁾ Default: Keylock.

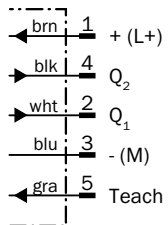
Dimensional drawings (Dimensions in mm (inch))



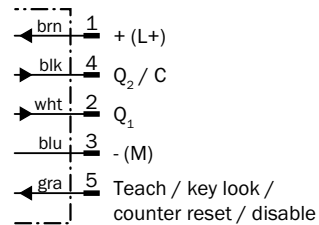
- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ Mounting hole
- ④ Status indicator LED green: supply voltage on
- ⑤ Status indicator LED, yellow: Detection of gloss level 1
- ⑥ Teach-in mode, inverting switching output
- ⑦ Sensitivity adjustment (A, B, C.) / Operating mode (D)
- ⑧ Teach-in button

Connection type and diagram

Glare








Glare, IO-Link



Recommended accessories



Universal bar clamp systems

Figure	Material	Description	Model name	Part no.
	Zinc diecast	Universal bar clamp for mounting bars with 12 mm diameter	BEF-KHS-KH3	5322626
	Stainless steel	Plate N10 for universal clamp bracket	BEF-KHS-N11N	2071081
	Steel, zinc coated	Mounting bar, straight, 200 mm, steel	BEF-MS12G-A	4056054
		Mounting bar, straight, 300 mm, steel	BEF-MS12G-B	4056055
	Steel, zinc coated	Mounting bar, L-shaped, 150 mm x 150 mm	BEF-MS12L-A	4056052
		Mounting bar, L-shaped, 250 mm x 250 mm	BEF-MS12L-B	4056053
	Steel, zinc coated	Mounting bar, Z-shaped, 150 mm x 70 mm x 150 mm	BEF-MS12Z-A	4056056
		Mounting bar, Z-shaped, 150 mm x 70 mm x 250 mm	BEF-MS12Z-B	4056057
	Aluminum	Bar clamp for bar diameter of 12 mm (fixing the mounting rod)	BEF-RMC-D12	5321878

Plug connectors and cables

Connecting cables with female connector

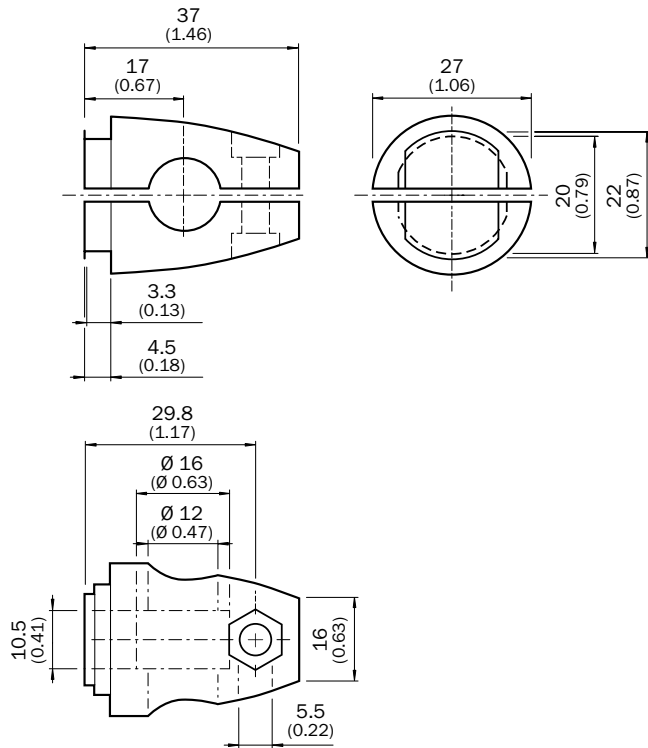
M12, 5-pin, PVC

Figure	Connection type head A	Connection type head B	Connecting cable	Model name	Part no.
 Illustration may differ	Female connector, M12, 5-pin, straight, unshielded	Cable, open conductor heads	2 m, 5-wire	DOL-1205-G02M	6008899
			5 m, 5-wire	DOL-1205-G05M	6009868
			10 m, 5-wire	DOL-1205-G10M	6010544
 Illustration may differ	Female connector, M12, 5-pin, angled, unshielded	Cable, open conductor heads	2 m, 5-wire	DOL-1205-W02M	6008900
			5 m, 5-wire	DOL-1205-W05M	6009869
			10 m, 5-wire	DOL-1205-W10M	6010542

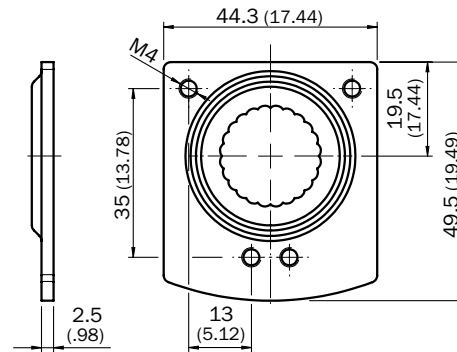
Dimensional drawings accessories

Universal bar clamp systems

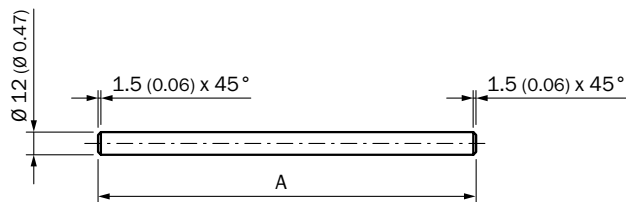
BEF-KHS-KH3



BEF-KHS-N11N

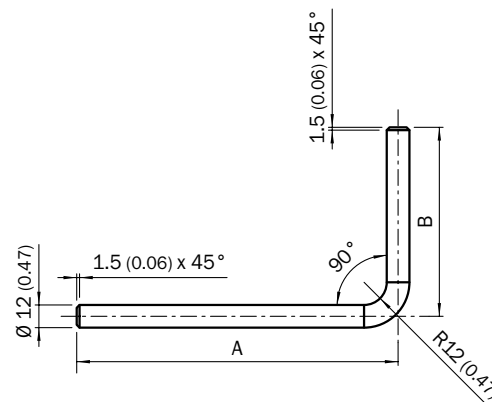


BEF-MS12G-A / BEF-MS12G-B



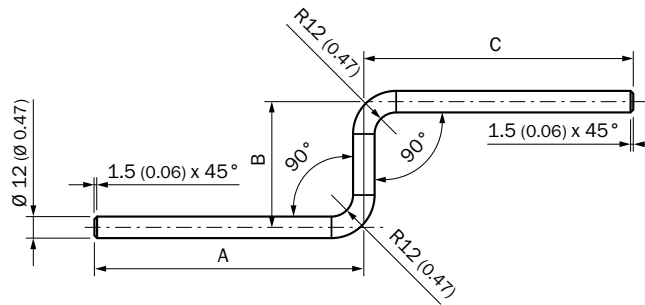
- ① BEF-MS12G-(N)A: A = 200 mm
- ② BEF-MS12G-(N)B: A = 300 mm

BEF-MS12L-A / BEF-MS12L-B



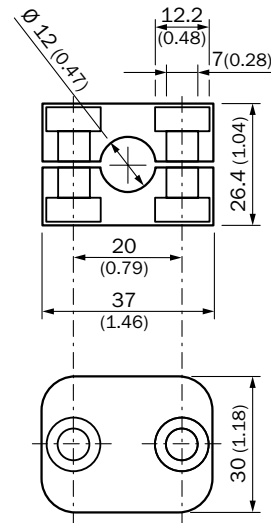
- ① BEF-MS12L-(N)A: A = 200 mm, B = 150 mm
- ② BEF-MS12L-(N)B: A = 250 mm, B = 250 mm

BEF-MS12Z-A / BEF-MS12Z-B



- ① BEF-MS12Z-(N)A: A = 150 mm, B = 70 mm, C = 150 mm
- ② BEF-MS12Z-(N)B: A = 150 mm, B = 70 mm, C = 250 mm

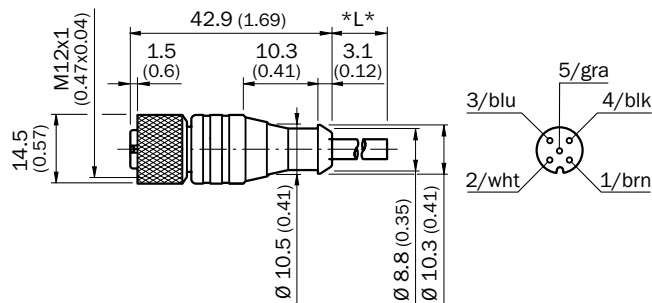
BEF-RMC-D12



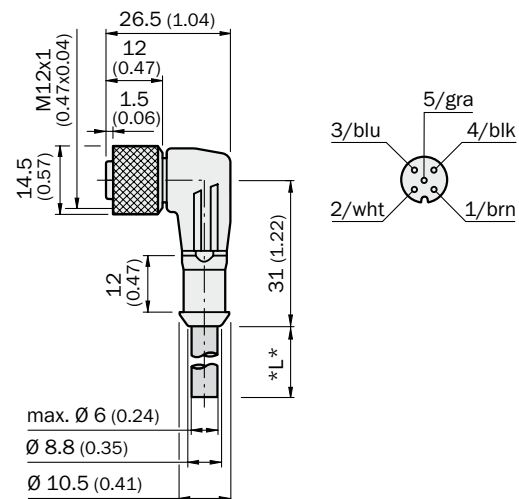
Plug connectors and cables

Connecting cables with female connector, M12, 5-pin, PVC

DOL-1205-GxxM

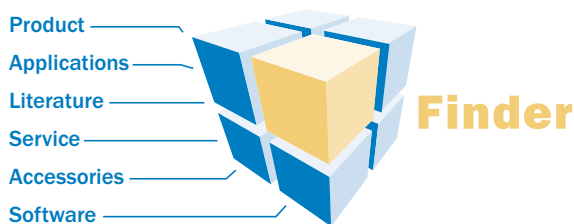


DOL-1205-WxxM



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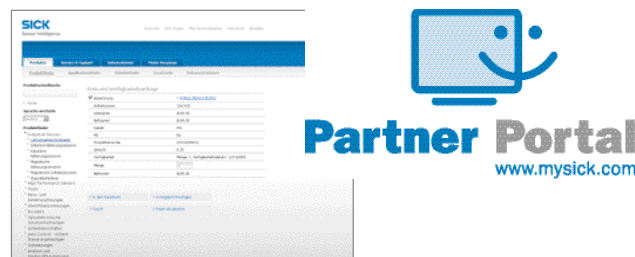
Product Finder: We can help you to quickly target the product that best matches your application.

Applications Finder: Select the application description on the basis of the challenge posed, industrial sector, or product group.

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Safe and professional



Product & System Support
Reliable, fast and on-site



Verification & Optimization
Safe and regularly inspected



Upgrade & Retrofits
Easy, safe, economical



Training & Education
Practical, focused and professional

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 6,500 employees and over 50 subsidiaries and equity investments as well as numerous representative offices worldwide, we are always close to our customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in various industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services round out 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:

Australia, Austria, Belgium/Luxembourg, Brazil, Czech Republic, Canada, China, Denmark, Finland, France, Germany, Great Britain, Hungary, India, Israel, Italy, Japan, Mexico, Netherlands, Norway, Poland, Romania, Russia, Singapore, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Turkey, United Arab Emirates, USA

Detailed addresses and additional representatives → www.sick.com