IQG

EXCHANGING HAS NEVER BEEN EASIER

Inductive proximity sensors

SICK
Sensor Intelligence.

IQG: EXCHANGING HAS NEVER BEEN EASIER.

The IQG inductive proximity sensor allows you to enjoy all of the advantages offered by SICK in a matter of seconds. This is thanks to its unique, patented sturdy push-lock system, which is compatible with a large number of brackets. It has never been quicker or easier to exchange corner LEDs, enclosure rating IP 68/IP 69K, and the latest ASIC technology from SICK. And as this high-performance sensor offers such high levels of reliability and sturdiness, long-lasting use is guaranteed.

The IQG is also extremely flexible, available in both a short body version for use in factory automation and a long body version for outdoor applications.
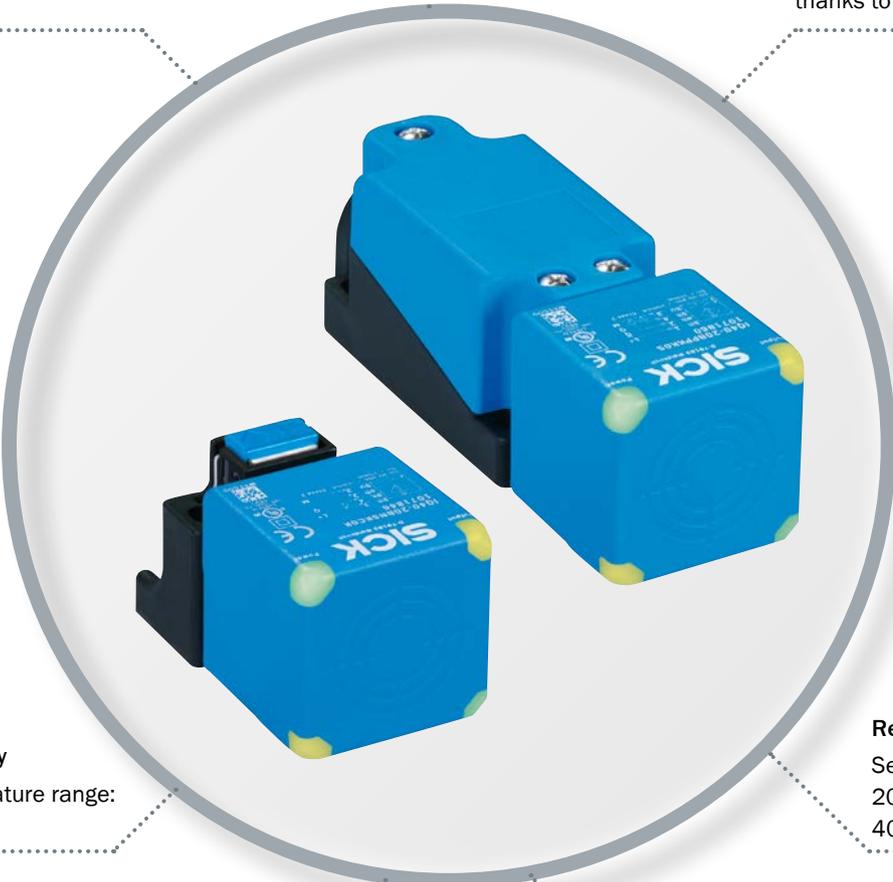
www.sick.de/IQG

EXCHANGE NOW AND IMMEDIATELY BENEFIT FROM THE ADVANTAGES OF THE IQG

Flexible adjustment

The sensor head can be turned in five directions

All-round visibility

Sensor status can be seen from all directions thanks to the four corner LEDs

Quick installation

Mounting takes just 2 seconds thanks to the push-lock system

Climate flexibility

Ambient temperature range: −25 °C to 85 °C

Reliable detection

Sensing ranges: 20 mm if flush and 40 mm if non-flush

Watertight

Enclosure rating: IP 68, IP 69K

Wind and weather resistant

Can withstand UV light, aggressive media, impacts, and vibration

QUICK, RELIABLE, UNIQUE – THE PUSH-LOCK SYSTEM FROM SICK

Mounting in just two seconds with no need for tools: SICK's push-lock system makes exchanging the sensor incredibly straightforward. Plus, SICK has taken special care over the interlocking system, which ensures that the IQG stays in position and does not become detached from the bracket.

1. Quick exchange

With the IQG it all clicks into place: Simply press it into the bracket and the IQG locks in place automatically, protecting it against shock and vibration.
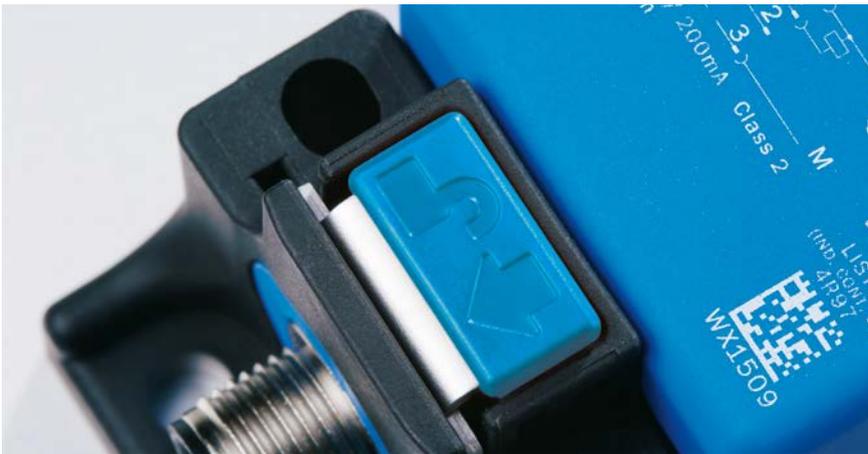
2. Safe sealing

Extra safety is provided by an additional locking mechanism, preventing the IQG from being unlocked unintentionally.

3. Rapid replacement

It doesn't get any quicker: Apply significant pressure to the push-lock button and the sensor springs out of the bracket automatically.

IQG: FLEXIBLE AND RELIABLE

The IQG shows off its strengths in a wide range of applications – both indoors and outdoors.

The automotive industry: positioning a skid conveyor

High system throughput and reliable processes are key in ensuring efficiency in modern-day car manufacturing. IQG has been specifically developed to meet these requirements.

Theme parks: presence detection on roller coasters

Roller coasters promise lots of fun for the whole family, and, of course, sun, water, and high speeds all have their part to play here. Safety requirements for the operation of roller coasters are extremely high, particularly for the sensors involved. The IQG can be relied upon for detection even in the face of these challenging conditions.

Advantages:

- Reliable switching performance, even in harsh environments
- Easy to adapt to suit any application
- Quick to mount with no need for tools
- Sensor status can be seen from all directions regardless of the mounting position thanks to the four corner LEDs

Advantages:

- High level of reliability, even in harsh environments
- Ambient temperature range: –25 °C to 85 °C
- Enclosure rating: IP 68, IP 69K

Storage and conveyor systems: positioning of an electrical overhead conveyor (OHC)

High levels of efficiency, flexibility, and reliability are requirements of modern material flow systems. The IQG overcomes challenging conditions with ease – whether it is put to use in the low-temperature sector, at dizzying heights on an electrical overhead conveyor, or on a constantly vibrating conveying line.

The automotive industry: positioning a skid conveyor

High system throughput and reliable processes are key in ensuring efficiency in modern-day car manufacturing. IQG has been specifically developed to meet these requirements.

Advantages:

- Reliable and cost-effective sensor solution
- Quick to mount with no need for tools
- Sensor status can be seen from all directions regardless of the mounting position thanks to the four corner LEDs
- Ambient temperature range: –25 °C to 85 °C, meaning it is also suitable for use within the low-temperature sector
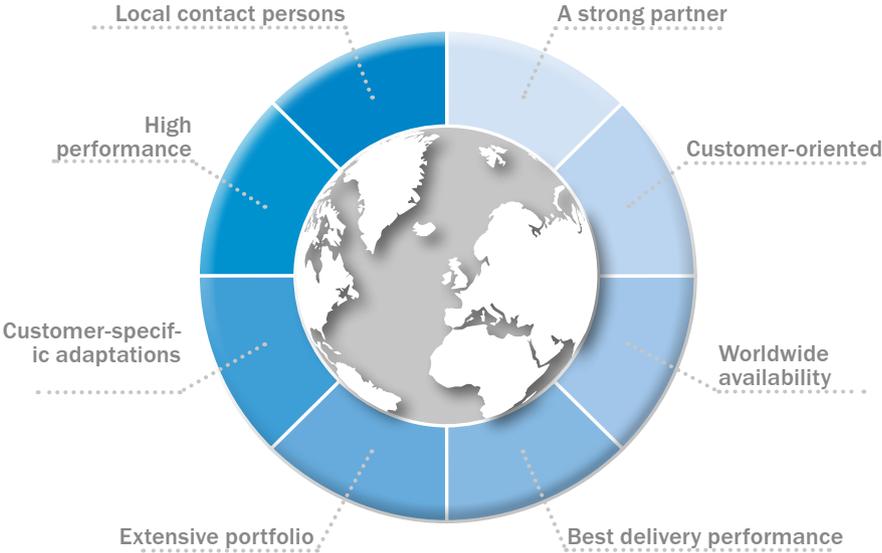
Advantages:

- Reliable switching performance, even in harsh environments
- Easy to adapt to suit any application
- Quick to mount with no need for tools
- Sensor status can be seen from all directions regardless of the mounting position thanks to the four corner LEDs

SICK – WE UNDERSTAND

In addition to their high performance capacity, the inductive sensors by SICK also fulfill the basic conditions. The inductive sensors are characterized by their worldwide availability, the best delivery performance and an extensive portfolio – and make SICK the right partner for you.

If, despite the extensive portfolio selection, no suitable sensor is available, our customer-specific adaptations provide an even higher degree of flexibility. Our goal: the right sensor for your application – and at the right time.

Even for tricky tasks. Thanks to worldwide support in over 88 countries, SICK will work with you to always find a solution.

Local contact persons

A strong partner

High performance

Customer-oriented

Customer-specific adaptations

Worldwide availability

Extensive portfolio

Best delivery performance

As a major player in automation technology, partnership with SICK offers you many benefits. Our goal is to continue driving innovation in the industry, even in areas neglected by others – and we want to do this across all sectors. Our global network of production plants with unified quality standards guarantees a safe and reliable supply. Our elaborate logistics concept ensures rapid availability on site, regardless of which of our over 40,000 products you require. The individual needs of our customers are paramount to SICK. Our local sales department will advise and support you with your automation projects. Together with our regional development and competence centers, we thus create added value for our customers.

COMPACT AND QUICK TO MOUNT – FOR USE IN HARSH ENVIRONMENTS

Product description

The new IQG inductive proximity sensor can be mounted in a matter of seconds, offers flexible adjustment options, and is easy to monitor. The innovative push-lock system enables mounting without tools in one second flat and makes replacing sensors child's play. Thanks to the rotating sensor head, the IQG can be adapted to suit a whole range of applications. The four corner LEDs enable straightforward sensor status monitoring, whatever the mounting position. With state-of-the-art ASIC technology and SICK's many years of experience behind it, the proximity sensor features an extensive ambient temperature range, excellent resistance to shocks and vibrations, plus electromagnetic compatibility. Even in extremely harsh environments with severe weather conditions, it operates reliably at all times.

At a glance

- Housing design: 40 mm x 40 mm
- Increased sensing ranges: 20 mm, flush and 40 mm, non-flush
- Electrical configuration: DC 3-wire, DC 4-wire
- Ambient temperature range: –25 °C to 85 °C
- Enclosure rating: IP 68, IP 69K
- Push-lock mounting system
- Four corner LEDs
- Sensor head can be rotated in five directions

Your benefits

- Reliable, cost-effective detection
- Easy to mount in one second flat without the need for additional tools
- The four corner LEDs ensure that the sensor status can be identified from any viewing direction, whatever the mounting position
- Can be easily adapted to numerous applications
- Long sensor service life, even in harsh environments that are subjected to severe weather conditions
- Stable processes thanks to extensive sensing ranges
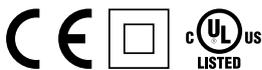
Additional information

→ **www.mysick.com/en/IQG**

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

	Short-body	Standard-body
Housing	Rectangular	
Dimensions (W x H x D)	40 mm x 40 mm x 66 mm	40 mm x 40 mm x 118 mm 40 mm x 40 mm x 132 mm (depending on type)
Sensing range S_n		
Flush	20 mm	
Non-flush	40 mm	
Assured sensing range S_a		
Flush	16.2 mm	
Non-flush	32.4 mm	
Installation type	Flush / non-flush (depending on type)	
Switching frequency	150 Hz	
Output type	PNP / NPN (depending on type)	
Output function	NC / NO / Complementary (depending on type)	
Electrical wiring	DC 3-wire / DC 4-wire (depending on type)	
Enclosure rating	IP 67, IP 68, IP 69K	

Mechanics/electronics

	Short-body	Standard-body
Supply voltage	10 V DC ... 30 V DC	
Ripple [1]	≤ 10 V_{pp}	
Voltage drop	≤ 2 V	
Current consumption	≤ 20 mA	
Time delay before availability		
Flush	≤ 50 ms	
Non-flush	≤ 200 ms	
Hysteresis [3]	3 % ... 15 %	
Temperature drift (of S_r)	± 10 %	
Continuous current I_a	≤ 200 mA	
Connection type	Male connector, M12	Cable gland Male connector, M12 (depending on type)
Short-circuit protection	✔	
Reverse polarity protection	✔	
Power-up pulse protection	✔	
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm	
Ambient operating temperature	–25 °C ... +85 °C	
Ambient storage temperature	–40 °C ... +85 °C	
Housing material	Plastic, PA 66	
Sensing face material	Plastic, PA 66	
Tightening torque, max.	1.8 Nm	
Protection class	II [4]	
UL-File-No. [4]	E348498	

[1] Of Ub.

[2] Without load.

[3] Of S_r.

[4] Reference voltage: 50 V DC.

Reduction factors

Note	The values are reference values which may vary
Stainless steel (V2A, 304)	
Flush	Approx. 0.71
Non-flush	Approx. 0.8
Aluminum (Al)	
Flush	Approx. 0.3
Non-flush	Approx. 0.34
Copper (Cu)	
Flush	Approx. 0.25
Non-flush	Approx. 0.27
Brass (Br)	
Flush	Approx. 0.36
Non-flush	Approx. 0.38

Ordering information

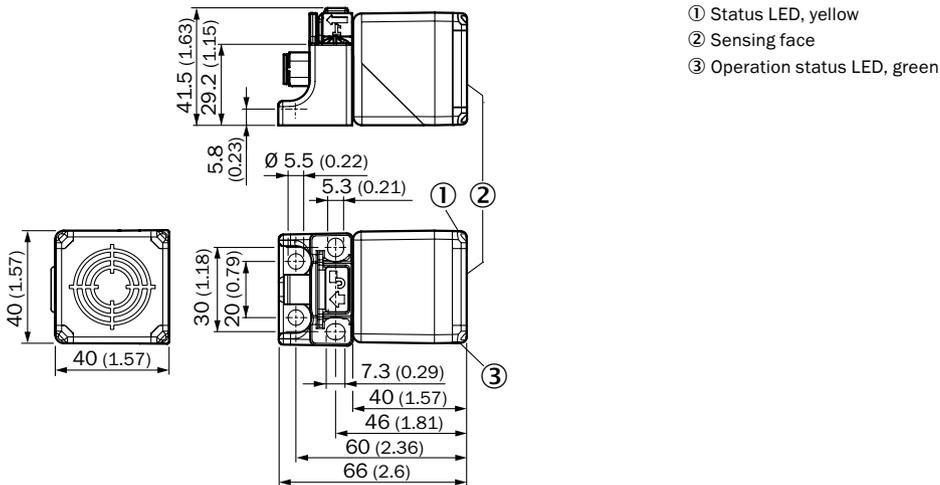Other models ➜ **www.mysick.com/en/IQG**

Short-body

- **Connection:** connector M12, 4-pin
- **Dimensions (W x H x D):** 40 mm x 40 mm x 66 mm

Sensing range S_n	Installation type	Electrical wiring	Output function	Output type	Connection diagram	Type	Part no.
20 mm	Flush	DC 3-wire	NC	PNP	Cd-008	IQ40-20BPOKC0K	1071844
			NC	NPN	Cd-008	IQ40-20BNOKC0K	1071848
			NO	PNP	Cd-011	IQ40-20BPSKC0K	1071840
			NO	NPN	Cd-011	IQ40-20BNSKC0K	1071846
		DC 4-wire	Complementary	NPN	Cd-009	IQ40-20BNPKC0K	1071560
			Complementary	PNP	Cd-009	IQ40-20BPPKC0K	1071553
40 mm	Non-flush	DC 3-wire	NC	PNP	Cd-008	IQ40-40NPOKC0K	1071852
			NC	NPN	Cd-008	IQ40-40NNOKC0K	1071856
			NO	PNP	Cd-011	IQ40-40NPSKC0K	1071850
			NO	NPN	Cd-011	IQ40-40NNSKC0K	1071854
		DC 4-wire	Complementary	PNP	Cd-009	IQ40-40NPPKC0K	1071552
			Complementary	NPN	Cd-009	IQ40-40NNPKC0K	1071864

Standard-body

- **Connection:** Cable gland
- **Dimensions (W x H x D):** 40 mm x 40 mm x 118 mm

Sensing range S_n	Installation type	Electrical wiring	Output function	Output type	Connection diagram	Type	Part no.
20 mm	Flush	DC 3-wire	NC	PNP	Cd-341	IQ40-20BPOKK0S	1071845
			NC	NPN	Cd-341	IQ40-20BNOKK0S	1071849
			NO	PNP	Cd-342	IQ40-20BPSKK0S	1071843
			NO	NPN	Cd-342	IQ40-20BNSKK0S	1071847
		DC 4-wire	Complementary	NPN	Cd-030	IQ40-20BNPKK0S	1071861
			Complementary	PNP	Cd-030	IQ40-20BPPKK0S	1071860

Sensing range S_n	Installation type	Electrical wiring	Output function	Output type	Connection diagram	Type	Part no.
40 mm	Non-flush	DC 3-wire	NC	PNP	Cd-341	IQ40-40NPOKK0S	1071853
			NC	NPN	Cd-341	IQ40-40NNOKK0S	1071857
			NO	PNP	Cd-342	IQ40-40NPSKK0S	1071851
			NO	NPN	Cd-342	IQ40-40NNSKK0S	1071855
		DC 4-wire	Complementary	PNP	Cd-030	IQ40-40NPPKK0S	1071863
			Complementary	NPN	Cd-030	IQ40-40NNPKK0S	1071865

Standard-body

- **Connection:** connector M12, 4-pin
- **Dimensions (W x H x D):** 40 mm x 40 mm x 132 mm

Sensing range S_n	Installation type	Electrical wiring	Output function	Output type	Connection diagram	Type	Part no.
20 mm	Flush	DC 3-wire	NO	PNP	Cd-011	IQ40-20BPSKC0S	1071858
		DC 4-wire	Complementary	PNP	Cd-009	IQ40-20BPPKC0S	1071862
40 mm	Non-flush	DC 3-wire	NO	PNP	Cd-011	IQ40-40NPSKC0S	1071859
		DC 4-wire	Complementary	PNP	Cd-009	IQ40-40NPPKC0S	1071866

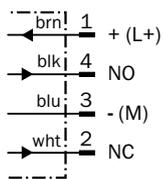## Dimensional drawings (Dimensions in mm (inch))

IQG Short-body housing

① Status LED, yellow
② Sensing face
③ Operation status LED, green

IQG Standard, cable gland

① Status LED, yellow
② Sensing face
③ Operation status LED, green
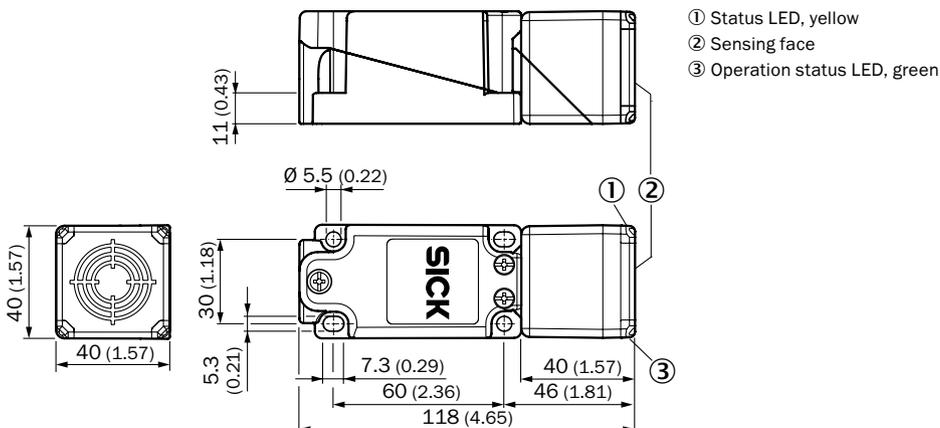
IQG Standard, connector M12

① Status LED, yellow
② Sensing face
③ Operation status LED, green

11 (0.43)

Ø 5.5 (0.22)

40 (1.57)

40 (1.57)

30 (1.18)

5.3 (0.21)

7.3 (0.29)

60 (2.36)

40 (1.57)

46 (1.81)

118 (4.65)

132 (5.2)

Connection diagram

Cd-009

brn	1	+ (L+)
blk	4	NO
blu	3	- (M)
wht	2	NC

Cd-008

brn	1	+ (L+)
blk	4	not connected
blu	3	- (M)
wht	2	NC

Cd-011

brn	1	+ (L+)
blk	4	NO
blu	3	- (M)
wht	2	not connected

Cd-030

1	+ (L+)
4	NO
3	- (M)
2	NC

Cd-341

1	+(L+)
4	not connected
3	-(M)
2	NC

Cd-342

1	+(L+)
4	NO
3	-(M)
2	not connected
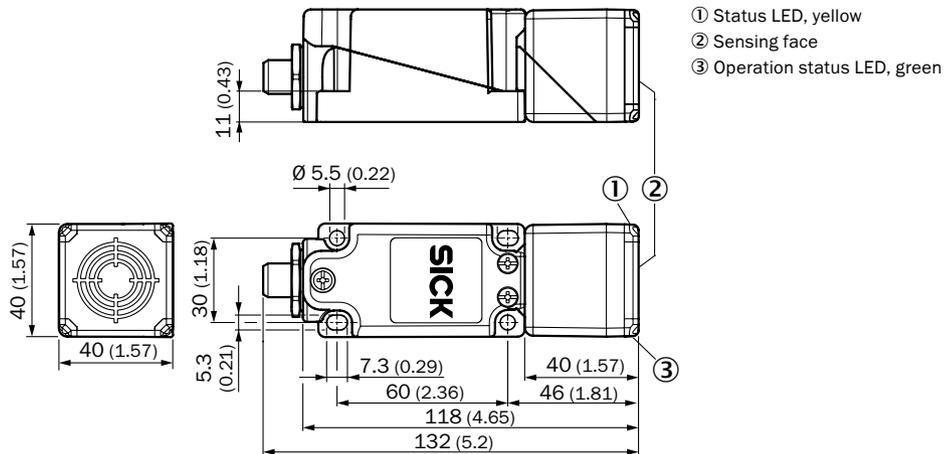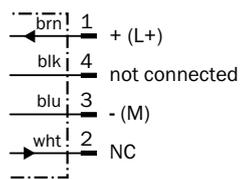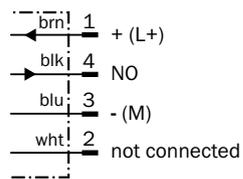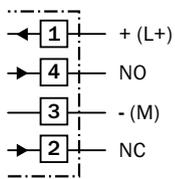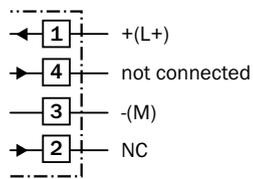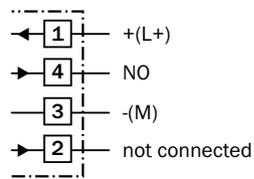
Installation note
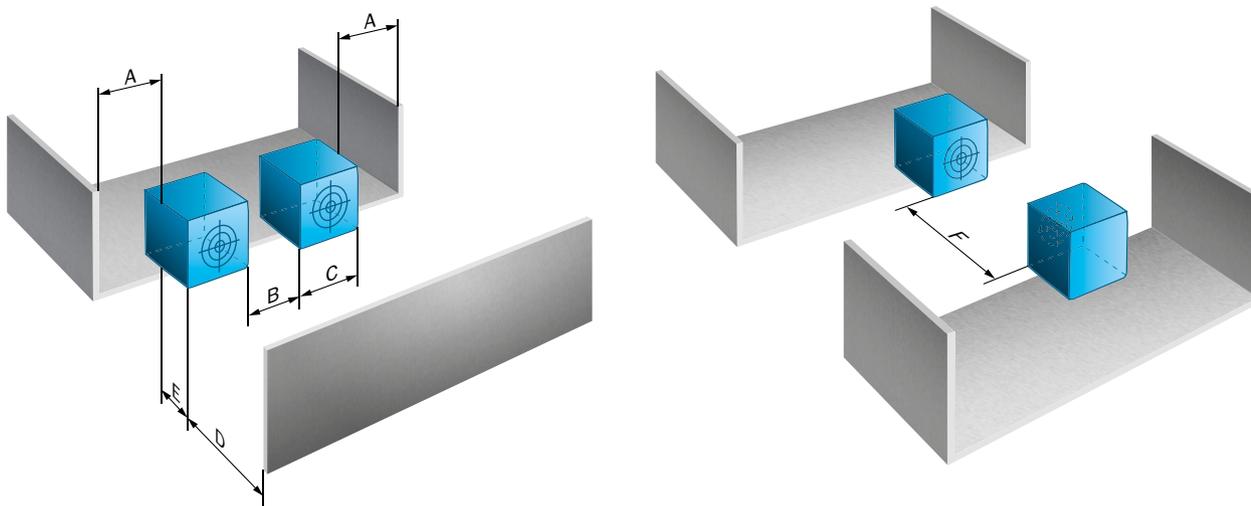
	Installation	Ssensing range Sn	A	B	C	D	E	F
IQ40-20Bxxxxxx	Flush	20 mm	0 mm	40 mm	40 mm	60 mm	0 mm	70 mm
IQ40-40Nxxxxxx	Non-flush	40 mm	42 mm	100 mm	40 mm	120 mm	40 mm	150 mm

Response curve

IQ40-20Bxxxxxx

Distance in mm (inch)

S_n in mm (inch)

IQ40-40Nxxxxxx

Distance in mm (inch)

S_n in mm (inch)
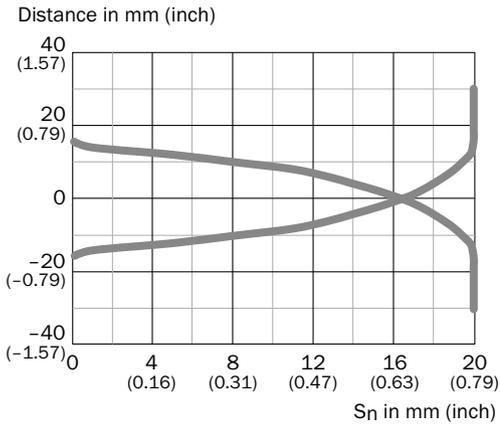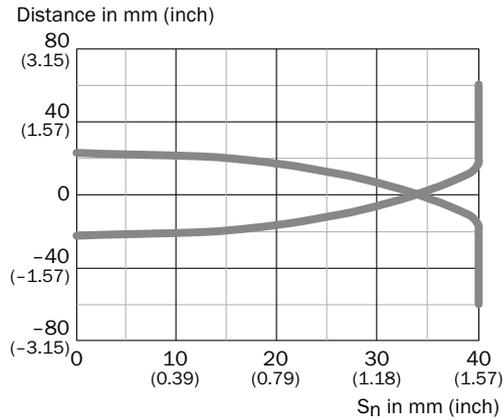
Recommended accessories

Connection systems

Female connectors (ready to assemble), M12, 4-pin

Figure	Connection type head A	Connection type head B	Connector material	Type	Part no.
	Female connector, M12, 4-pin, straight, unshielded	Screw-type terminals	PA	DOS-1204-G	6007302
	Female connector, M12, 4-pin, angled, unshielded	Screw-type terminals	PBT	DOS-1204-W	6007303

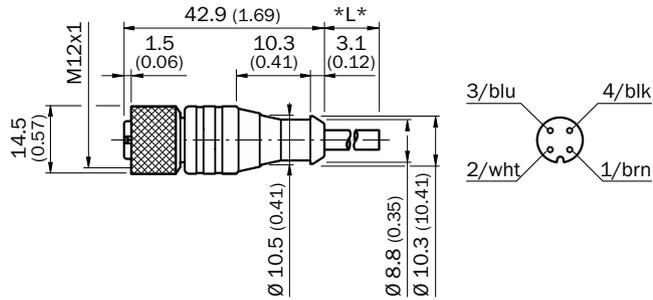Connecting cables with female connectorM12, 4-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU

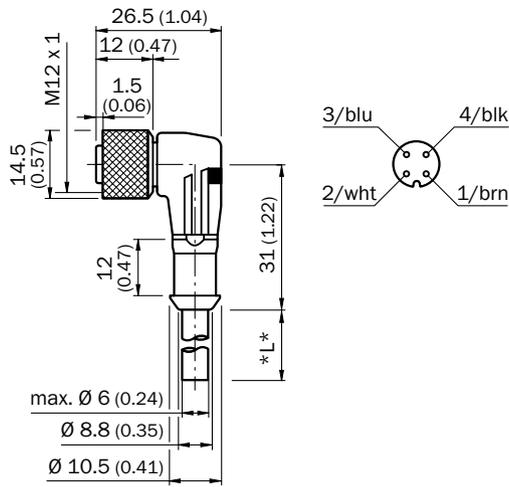| Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 4-pin, straight, unshielded	Cable, open conductor heads	2 m, 4-wire	DOL-1204-G02M	6009382
			5 m, 4-wire	DOL-1204-G05M	6009866
			10 m, 4-wire	DOL-1204-G10M	6010543
	Female connector, M12, 4-pin, angled, with 3 LEDs, unshielded	Cable, open conductor heads	2 m, 4-wire	DOL-1204-L02M	6027945
			5 m, 4-wire	DOL-1204-L05M	6027944
			10 m, 4-wire	DOL-1204-L10M	6027946
	Female connector, M12, 4-pin, angled, unshielded	Cable, open conductor heads	2 m, 4-wire	DOL-1204-W02M	6009383
			5 m, 4-wire	DOL-1204-W05M	6009867
			10 m, 4-wire	DOL-1204-W10M	6010541

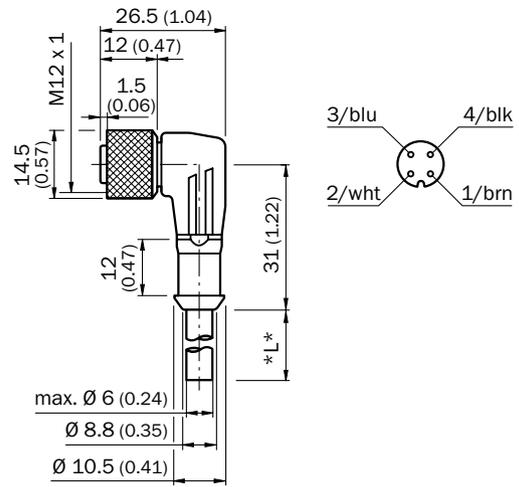## Dimensional drawings for accessories (Dimensions in mm (inch))
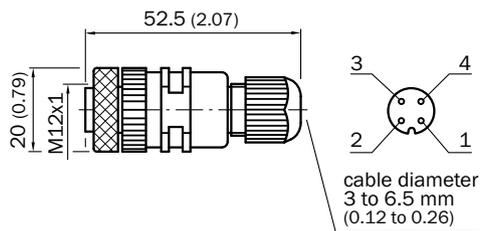
Plug connectors and cables

DOL-1204-GxxM

DOL-1204-LxxM

DOL-1204-WxxM
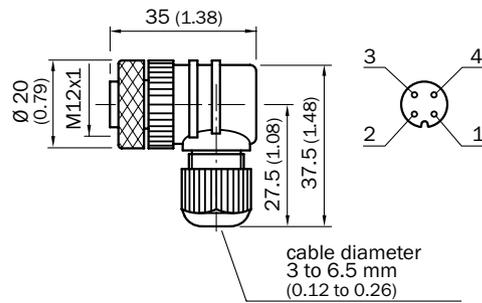

DOS-1204-G

cable diameter
3 to 6.5 mm
(0.12 to 0.26)

DOS-1204-W

cable diameter
3 to 6.5 mm
(0.12 to 0.26)

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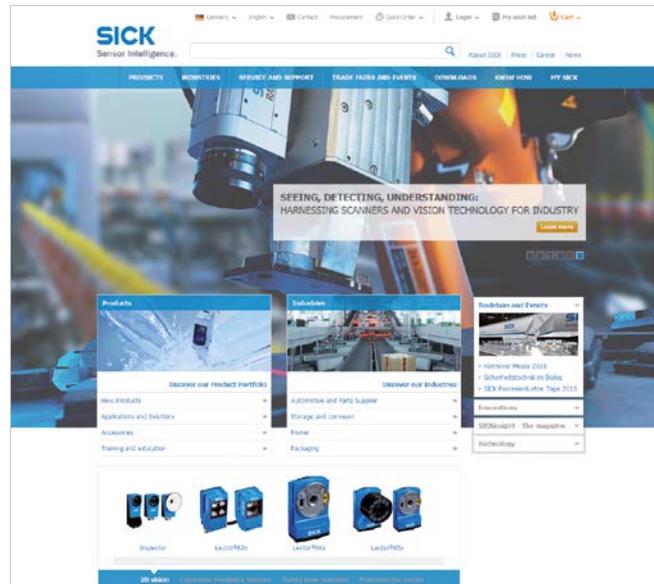
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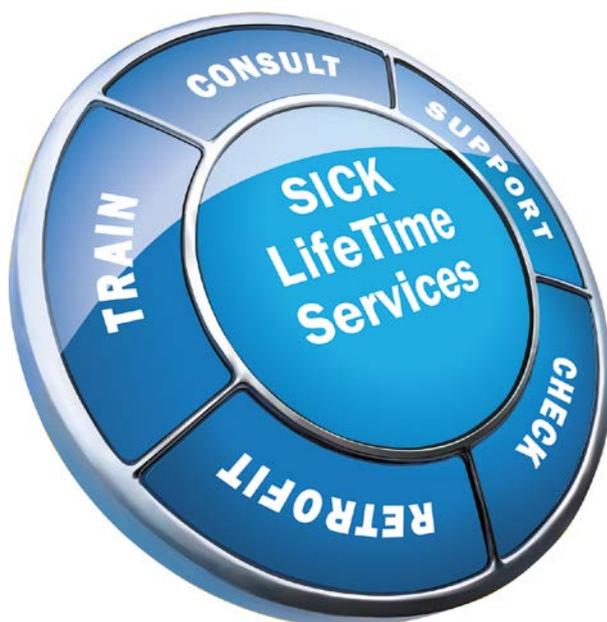
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Upgrade and retrofits
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Practical, focused and professional

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 8,000 employees and over 50 subsidiaries and equity investments as well as numerous agencies 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, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

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