PRODUCT INFORMATION

IQ Flat
Inductive sensors

Compact and reliable

SICK
Sensor Intelligence.

Inductive, flat designs IQ04, IQ06, IQ20 and IQ25 – for quick mounting in applications with limited space

- Fits in applications with limited space
- Can be fixed using a single screw
- No restrictions in machine design
- Small and compact

- Extremely stable and durable – thanks to robust metal housing
- Increased sensing ranges
- Flat design

8013996/2011-12-23
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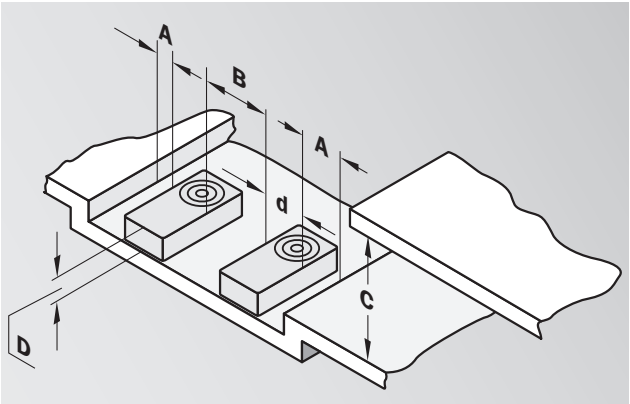
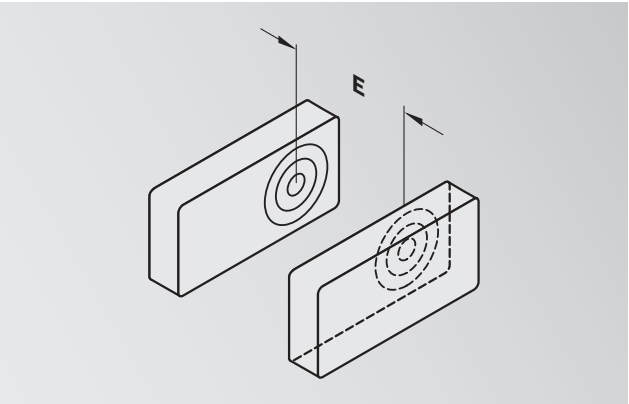
INSTALLATION NOTES

Flush installation into metal

Flush-mounted sensors can be recessed into metal so that they are level with the active surface. This gives them great protection against mechanical damage.





d = Outer dimensions of sensor

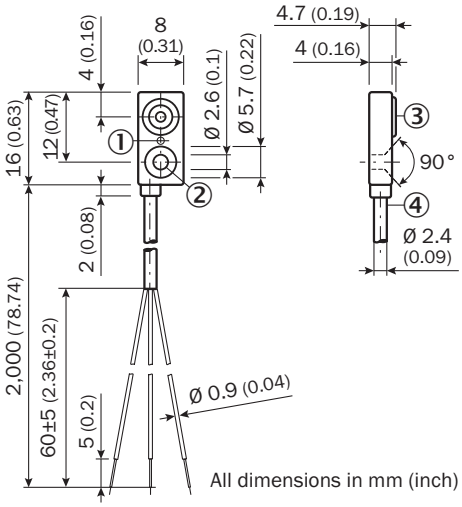
	A	B	C	d	D	E
6042017 IQ04-1B5PSKW2S	0 mm	16 mm	4,5 mm	8 mm	0 mm	24 mm
6042018 IQ04-1B5P0KW2S	0 mm	16 mm	4,5 mm	8 mm	0 mm	24 mm
6042019 IQ04-1B5NSKW2S	0 mm	16 mm	4,5 mm	8 mm	0 mm	24 mm
6042020 IQ04-1B5N0KW2S	0 mm	16 mm	4,5 mm	8 mm	0 mm	24 mm
6042022 IQ06-03BPSKU2S	1,5 mm	20 mm	9 mm	10 mm	0 mm	30 mm
6042023 IQ06-03BP0KU2S	1,5 mm	20 mm	9 mm	10 mm	0 mm	30 mm
6042024 IQ06-03BNSKU2S	1,5 mm	20 mm	9 mm	10 mm	0 mm	30 mm
6042025 IQ06-03BN0KU2S	1,5 mm	20 mm	9 mm	10 mm	0 mm	30 mm
6042043 IQ20-07BPSDP0S	0 mm	20 mm	21 mm	20 mm	0 mm	60 mm
6042044 IQ20-07BNSDP0S	0 mm	20 mm	21 mm	20 mm	0 mm	60 mm
6042045 IQ20-07BPPDQ0S	0 mm	20 mm	21 mm	20 mm	0 mm	60 mm
6042046 IQ25-05BPSDU2S	0 mm	25 mm	15 mm	25 mm	0 mm	75 mm
6042047 IQ25-05BPPDU2S	0 mm	25 mm	15 mm	25 mm	0 mm	75 mm

Sensing range 1.5 mm

Inductive sensor

- Extremely flat
- Small and compact
- Can be fixed using a single screw

Dimensional drawing

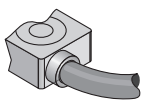


All dimensions in mm (inch)

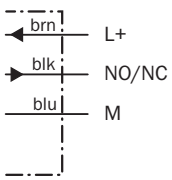
① LED function indicator, red
② Fixing hole
③ Active surface
④ Connection

Connection type

IQ04-1B5PSKW2S
IQ04-1B5POKW2S
IQ04-1B5NSKW2S
IQ04-1B5NOKW2S



3 x 0.09 mm²



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Technical specifications	IQ04-	1B5PS KW2S	1B5P0 KW2S	1B5NS KW2S	1B5N0 KW2S						
Sensing range S_n	1.5 mm	■	■	■	■						
Electrical configuration	DC3-wire	■	■	■	■						
Supply voltage V_S	DC 10 ... 30 V	■	■	■	■						
Ripple U_{pp}	Max. 10 % [1]	■	■	■	■						
Voltage drop U_d	< 2.5 V [2]	■	■	■	■						
Power consumption	10 mA [3]	■	■	■	■						
Continuous current I_a	100 mA	■	■	■	■						
Hysteresis H, of s_r	Max. 15 %	■	■	■	■						
Repeatability R	1 % (U_b and T_a constant) [4]	■	■	■	■						
EMC	According to EN 60947-5-2	■	■	■	■						
Switching output	PNP	■	■								
	NPN			■	■						
Output function	Normally open	■		■							
	Normally closed		■		■						
Installation	Flush	■	■	■	■						
Connection type	Cable, PVC, 3-pin, 2 m	■	■	■	■						
Enclosure rating	IP 67 [5]	■	■	■	■						
Switching frequency	600 Hz	■	■	■	■						
Dimensions	8 x 16 x 4 mm [6]	■	■	■	■						
Short-circuit protection	✓	■	■	■	■						
Reverse polarity protection	✓	■	■	■	■						
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm	■	■	■	■						
Tightening torque	Max. 0.06 Nm	■	■	■	■						
Temperature drift of s_r	± 10 %	■	■	■	■						
Time delay before availability t_V	≤ 20 ms	■	■	■	■						
Approvals											
UL approval	cULus Listed	■	■	■	■						
Ambient temperature	–25 °C ... +70 °C	■	■	■	■						
Housing material	PA6-GF30	■	■	■	■						
Material of the active surface	PA6-GF30	■	■	■	■						

1) Of V_S
2) At I_a max.
3) Without load
4) Of s_r
5) According to EN 60529
6) Width x height x depth

Reduction factor R_M	
The following are reference values, which may vary from type to type:	
Steel (FE360)	1
Stainless steel (V2A)	Approx. 0.7
Aluminum (Al)	Approx. 0.4
Copper (Cn)	Approx. 0.3
Brass (Ms)	Approx. 0.4

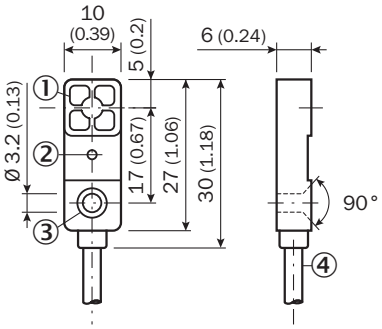
Ordering information	
Model name	**Part no.**
IQ04-1B5PSKW2S	6042017
IQ04-1B5P0KW2S	6042018
IQ04-1B5NSKW2S	6042019
IQ04-1B5N0KW2S	6042020

Sensing range 3 mm

Inductive sensor

- Enhanced sensing range
- Extremely flat
- Small and compact
- Can be fixed using a single screw

Dimensional drawing

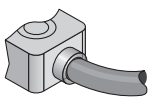


All dimensions in mm (inch)

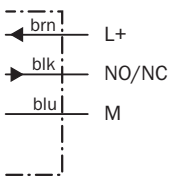
① Active surface
② LED function indicator, red
③ Fixing hole
④ Connection

Connection type

IQ06-03BPSKU2S
IQ06-03BP0KU2S
IQ06-03BNSKU2S
IQ06-03BN0KU2S



3 x 0.14 mm²



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Technical specifications	IQ06-	03BPS KU2S	03BPO KU2S	03BNS KU2S	03BNO KU2S						
Sensing range S_n	3 mm	■	■	■	■						
Electrical configuration	DC3-wire	■	■	■	■						
Supply voltage V_S	DC 10 ... 30 V	■	■	■	■						
Ripple U_{pp}	Max. 10 % [1]	■	■	■	■						
Voltage drop U_d	Max. 2.5 V [2]	■	■	■	■						
Power consumption	10 mA [3]	■	■	■	■						
Continuous current I_a	100 mA	■	■	■	■						
Hysteresis H, of s_r	Max. 15 %	■	■	■	■						
Repeatability R	± 1 % (U_b and T_a constant) [4]	■	■	■	■						
EMC	According to EN 60947-5-2	■	■	■	■						
Switching output	PNP	■	■								
	NPN			■	■						
Output function	Normally open	■		■							
	Normally closed		■		■						
Installation	Flush	■	■	■	■						
Connection type	Cable, PUR, 3-pin, 2 m	■	■	■	■						
Enclosure rating	IP 67 [5]	■	■	■	■						
Switching frequency	1,000 Hz	■	■	■	■						
Dimensions	10 x 30 x 6 mm [6]	■	■	■	■						
Short-circuit protection	✓	■	■	■	■						
Reverse polarity protection	✓	■	■	■	■						
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm	■	■	■	■						
Temperature drift of s_r	± 10 %	■	■	■	■						
Time delay before availability t_v	≤ 20 ms	■	■	■	■						
Tightening torque	Max. 0.06 Nm	■	■	■	■						
Approvals											
UL approval	cULus Listed	■	■	■	■						
Ambient temperature	–25 °C ... +70 °C	■	■	■	■						
Housing material	PA6-GF30	■	■	■	■						
Material of the active surface	PA6-GF30	■	■	■	■						

1) Of V_S
2) At I_a max.
3) Without load
4) Of s_r
5) According to EN 60529
6) Width x height x depth

Reduction factor R_M	
The following are reference values, which may vary from type to type:	
Steel (FE360)	1
Stainless steel (V2A)	Approx. 0.7
Aluminum (Al)	Approx. 0.4
Copper (Cn)	Approx. 0.3
Brass (Ms)	Approx. 0.4

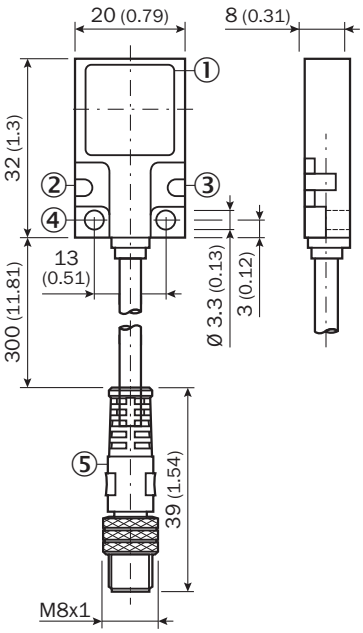
Ordering information	
Model name	**Part no.**
IQ06-03BPSKU2S	6042022
IQ06-03BPOKU2S	6042023
IQ06-03BNSKU2S	6042024
IQ06-03BNOKU2S	6042025

Sensing range 7 mm

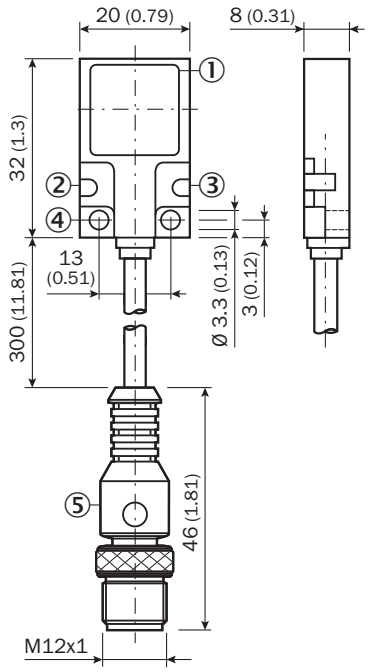
Inductive sensor

- Extremely flat
- Enhanced sensing range
- Metal housing

Dimensional drawing



All dimensions in mm (inch)

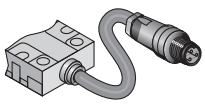


All dimensions in mm (inch)

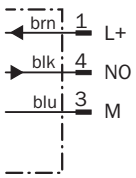
① Active surface
② LED operational status, green
③ LED status indicator, yellow
④ Fixing holes
⑤ Connection

Connection type

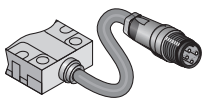
IQ20-07BPSDP0S
IQ20-07BNSDP0S



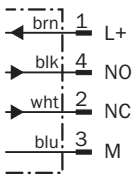
M8, 3-pin with 300 mm cable



IQ20-07BPPDQ0S



M12, 4-pin with 300 mm cable



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Technical specifications	IQ20-	07BPS DP0S	07BNS DP0S	07BPP DQ0S
Sensing range S_n	7 mm	■	■	■
Electrical configuration	DC3-wire	■	■	
	DC4-wire			■
Supply voltage V_S	DC 10 ... 30 V	■	■	■
Ripple U_{pp}	Max. 10 % [1]	■	■	■
Voltage drop U_d	Max. 2.5 V [2]	■	■	■
Power consumption	15 mA [3]	■	■	■
Continuous current I_a	200 mA	■	■	■
Time delay before availability t_v	Max. 20 ms	■	■	■
Hysteresis H, of s_r	Max. 15 %	■	■	■
Repeatability R	5 % (U_b and T_a constant) [4]	■	■	■
EMC	According to EN 60947-5-2	■	■	■
Switching output	PNP	■		■
	NPN		■	
Output function	Normally open	■	■	
	Complementary			■
Installation	Flush	■	■	■
Connection type	Cable with plug, M8, 3-pin, PUR, 0.3 m	■	■	
	Cable with plug, M12, 4-pin, PUR, 0.3 m			■
Enclosure rating	IP 67 [5]	■	■	■
Switching frequency	150 Hz	■	■	■
Dimensions	20 x 32 x 8 mm [6]	■	■	■
Short-circuit protection	✓	■	■	■
Reverse polarity protection	✓	■	■	■
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm	■	■	■
Temperature drift of s_r	± 10 %	■	■	■
Approvals				
UL approval	cULus Listed	■	■	■
Ambient temperature	–25 °C ... +70 °C	■	■	■
Housing material	GD Zn	■	■	■
Material of the active surface	PA12	■	■	■

1) Of V_S
2) At I_a max.
3) Without load
4) Of s_r
5) According to EN 60529
6) Width x height x depth

Reduction factor R_M	
The following are reference values, which may vary from type to type:	
Steel (FE360)	1
Stainless steel (V2A)	Approx. 0.7
Aluminum (Al)	Approx. 0.4
Copper (Cn)	Approx. 0.3
Brass (Ms)	Approx. 0.4

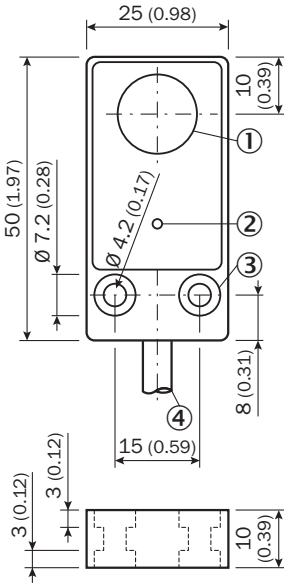
Ordering information	
Model name	**Part no.**
IQ20-07BPSDP0S	6042043
IQ20-07BNSDP0S	6042044
IQ20-07BPPDQ0S	6042045

Sensing range 5 mm

Inductive sensor

- Extremely flat
- Metal housing

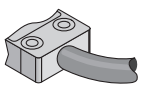
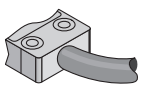
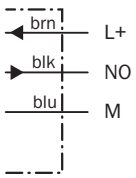
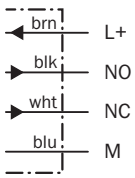
Dimensional drawing



All dimensions in mm (inch)

① Active surface
② LED function indicator, yellow
③ Fixing holes
④ Connection

Connection type

IQ25-05BPSDU2S	IQ25-05BPPDU2S
	
3 x 0.34 mm²	4 x 0.25 mm²
	

8013996/2011-12-23
Subject to change without notice

Technical specifications	IQ25-	05BPS DU2S	05BPP DU2S								
Sensing range S_n	5 mm	■	■								
Electrical configuration	DC3-wire	■									
	DC4-wire		■								
Supply voltage V_S	DC 10 ... 30 V	■	■								
Ripple U_{pp}	Max. 15 % [1]	■	■								
Voltage drop U_d	Max. 2.5 V [2]	■	■								
Power consumption	25 mA [3]	■									
	32 mA [3]		■								
Continuous current I_a	200 mA	■	■								
Time delay before availability t_v	50 ms	■	■								
Hysteresis H, of s_r	Max. 15 %	■	■								
Repeatability R	5 % (U_b and T_a constant) [4]	■	■								
EMC	According to EN 60947-5-2	■	■								
Switching output	PNP	■	■								
Output function	Normally open	■									
	Complementary		■								
Installation	Flush	■	■								
Connection type	Cable, PUR, 2 m	■	■								
Enclosure rating	IP 67 [5]	■	■								
Switching frequency	500 Hz	■	■								
Dimensions	25 x 50 x 10 mm [6]	■	■								
Short-circuit protection	✓	■	■								
Reverse polarity protection	✓	■	■								
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm	■	■								
Temperaturdrift	± 10 %	■	■								
Approvals											
UL approval	cULus Listed	■	■								
Ambient temperature	–25 °C ... +70 °C	■	■								
Housing material	Gd Al Si 12	■	■								
Material of the active surface	PBT	■	■								

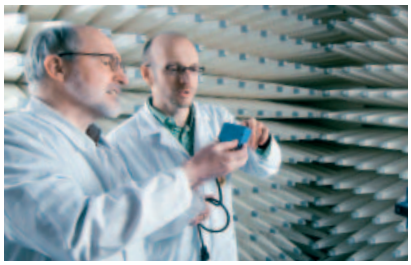
1) Of V_S
2) At I_a max.
3) Without load
4) Of s_r
5) According to EN 60529
6) Width x height x depth

Reduction factor R_M	
The following are reference values, which may vary from type to type:	
Steel (FE360)	1
Stainless steel (V2A)	Approx. 0.7
Aluminum (Al)	Approx. 0.4
Copper (Cn)	Approx. 0.3
Brass (Ms)	Approx. 0.4

Ordering information	
Model name	**Part no.**
IQ25-05BPSDU2S	6042046
IQ25-05BPPDU2S	6042047

8013996/2011-12-23 · GO (2011-12) · WB SMG USmod int37

SICK at a glance



Leading technologies

With a staff of more than 5,000 and over 50 subsidiaries and representations worldwide, SICK is one of the leading and most successful manufacturers of sensor technology. The power of innovation and solution competency have made SICK the global market leader. No matter what the project and industry may be, talking with an expert from SICK will provide you with an ideal basis for your plans – there is no need to settle for anything less than the best.

Unique product range

- Non-contact detecting, counting, classifying, positioning and measuring of any type of object or media
- Accident and operator protection with sensors, safety software and services
- Automatic identification with bar code and RFID readers
- Laser measurement technology for detecting the volume, position and contour of people and objects
- Complete system solutions for analysis and flow measurement of gases and liquids

Comprehensive services

- SICK LifeTime Services – for safety and productivity
- Application centers in Europe, Asia and North America for the development of system solutions under real-world conditions
- E-Business Partner Portal www.mysick.com – price and availability of products, requests for quotation and online orders

Worldwide presence with subsidiaries in the following countries:

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China
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Deutschland
España
France
Great Britain
India
Israel
Italia
Japan
México
Nederland
Norge
Österreich
Polska
România
Russia
Schweiz
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Slovenija
South Africa
South Korea
Suomi
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Sensor Intelligence.