

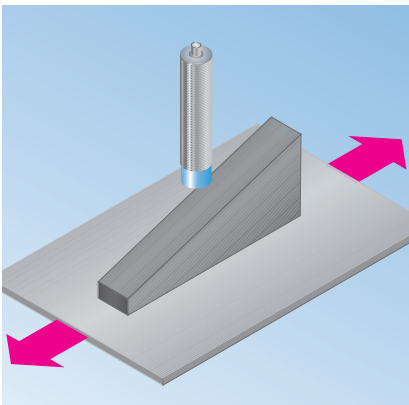


## IMA Inductive analog sensors

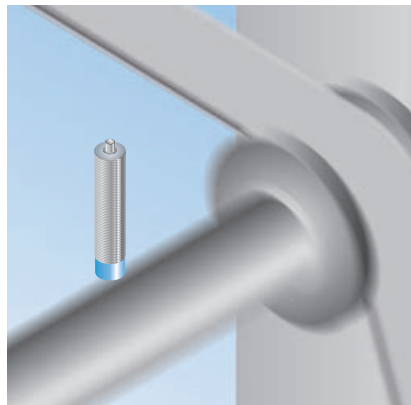
Reliable positioning

# Inductive analog sensors – positioning reliably and precisely to the highest standards with an extremely large detection range.

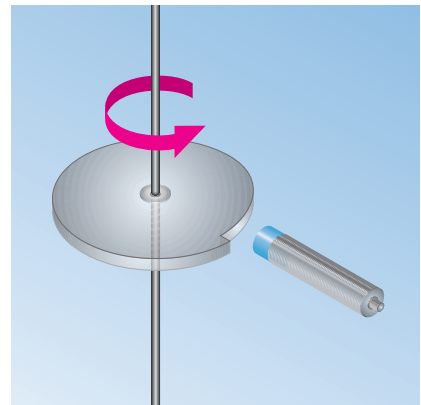
Inductive analog sensors from SICK have extremely large detection ranges, high precision and robustness. The current or voltage signal delivered at the output is proportional to the distance between the metal target and the sensor. Similarly, targets of various shapes, sizes and material types (ferrite and non-ferrite metals) generate various output signals. The sensors are hence suitable for distance measurement, positioning, angle detection, bearing clearance and true running control, detection of material and size differences, thickness measurement, etc.



Linear path detection with the help of an inclined plane



Bearing clearance and true running control directly on a shaft



Angle detection with the help of a worm-shaped disk

## Linear path detection

Linear movements can be queried either directly or indirectly with inductive analog sensors. In the case of a direct query, the detection range limits the maximum path. In the case of an indirect query via an inclined plane, even larger distances can be resolved.

## Bearing clearance and true running control

Bearing clearance and true running can be queried directly on an axis or shaft with inductive analog sensors. With the corresponding pre-damping, out-of-roundness and bearing clearance generate a direct up or down deflection.

## Angle detection

Rotary movements e.g. on the swivel arms and feed units can be detected or deflected with the help of a worm-shaped disk. This makes inductive analog sensors a simple and low-priced alternative to encoders or other angle measuring systems.

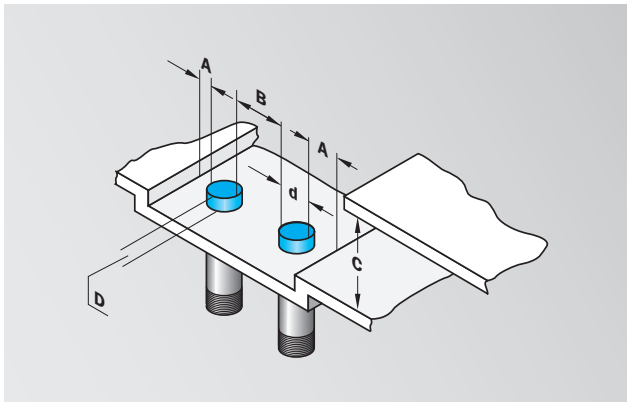


## INSTALLATION NOTES

### Quasi flush installation into metal

These proximity sensors with an increased sensing range can not be installed in metal fully flush. They must be installed quasi-flush taking into account the specified metal free area.

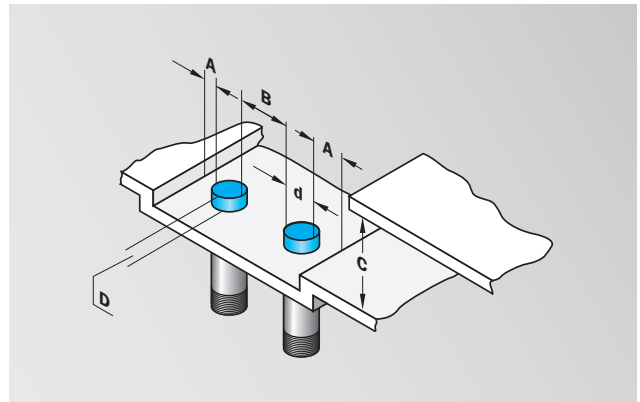
General type of installation for cylindrical type for quasi-flush installation into metal.



### Non-flush installation into metal

In the event of proximity sensors for non-flush installation, a metal-free zone must be observed due to the non-directional field distribution.

General installation notes for cylindrical type for non-flush installation into metal.



d = outer diameter of the sensor


Model name	Metal-free zone [mm]	Type of installation	Page
IMA08-04BE3ZC0K	A = 4 mm, B = 12 mm, C = 12 mm, D = 1 mm	Quasi-flush	4
IMA12-06BE3ZC0K	A = 6 mm, B = 18 mm, C = 18 mm, D = 2 mm	Quasi-flush	6
IMA18-10BE1ZC0K	A = 10 mm, B = 26 mm, C = 30 mm, D = 4 mm	Quasi-flush	8
IMA18-20NE1ZC0K	A = 21 mm, B = 60 mm, C = 60 mm, D = 20 mm	Non-flush	10
IMA30-20BE1ZC0K	A = 25 mm, B = 50 mm, C = 60 mm, D = 6 mm	Quasi-flush	12
IMA30-40NE1ZC0K	A = 40 mm, B = 120 mm, C = 120 mm, D = 25 <sup>1)</sup> /35 <sup>2)</sup> /20 <sup>3)</sup> mm	Non-flush	14

<sup>1)</sup> Aluminum/brass

<sup>2)</sup> Steel

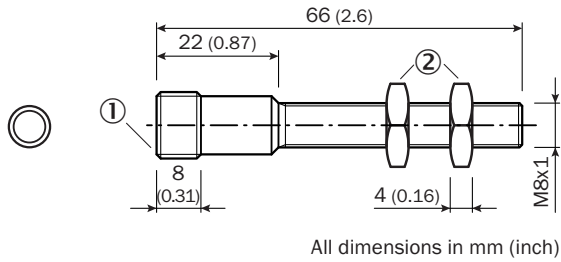
<sup>3)</sup> Stainless steel

# IMA08-04BE3ZCOK Inductive sensor

	<b>Sensing range</b>
	<b>0 ... 4 mm</b>
<b>Inductive sensor</b>	

■ Analog output 0 ... 10 V

## Dimensional drawing

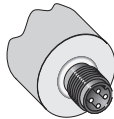


- ① Connection
- ② Fastening nuts (2 x), width across 13 mm, metal

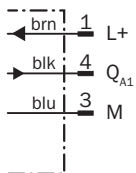


## Connection type

IMA08-04BE3ZCOK



M12, 4-pin



<b>Accessories</b>
Cables and connectors
Mounting systems

**Technical data**

IMA08-

04BE  
3ZCOK

<b>Sensing range <math>s_d</math></b>	0 ... 4 mm
<b>Repeat accuracy <sup>1)</sup></b>	0.3 mm <sup>2)</sup>
<b>Repeat accuracy (<math>T_A = \text{constant}</math>)</b>	$\pm 0.01$ mm
<b>Resolution</b>	$\leq 1$ $\mu\text{m}$
<b>Supply voltage <math>V_S</math></b>	15 ... 30 V DC
Ripple $U_{pp}$	$\leq 20$ % <sup>3)</sup>
<b>Output voltage at <math>Q_{A1}</math></b>	<b>s = 0 mm</b> 0 V / - 0 + 0.4 V (23 °C) <b>s = 2 mm</b> +5.2 V / $\pm 0.4$ V (23 °C) <b>s = 4 mm</b> +10 V / $\pm 0.4$ V (23 °C)
<b>Load at voltage output <math>Q_{A1}</math></b>	$\leq 10$ mA
<b>No-load supply current <sup>4)</sup></b>	$\leq 10$ mA
<b>Bandwidth</b>	1,600 Hz <sup>5)</sup>
<b>Time delay before availability</b>	$\leq 50$ ms
Temperature drift, of $s_r$	$\leq \pm 5$ % (0 ... +70 °C) $\leq \pm 10$ % (-25 ... 0 °C)
<b>Connection type</b>	Connector M12, 4-pin
<b>Enclosure rating</b>	IP 67 <sup>6)</sup>
<b>Short-circuit protection</b>	✓
<b>Reverse polarity protection</b>	✓
<b>Cable length</b>	300 m max.
<b>Ambient temperature <math>T_A</math></b>	-25 ... +70 °C
<b>Housing material</b>	Brass nickel-plated, PBTP

<sup>1)</sup> According to IEC 60947-5-2

<sup>2)</sup>  $U_b = 20 \dots 30$  V DC,  
 $T_A = 23$  °C  $\pm 5$  °C

<sup>3)</sup> Of  $U_b$

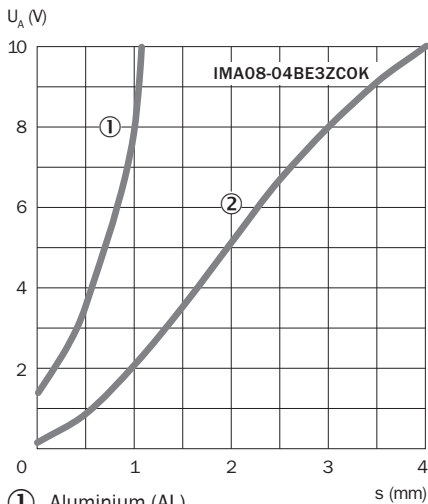
<sup>4)</sup> Without load

<sup>5)</sup> -3 dB at  $s = 2$  mm

<sup>6)</sup> According to EN 60529: 2000-09

**Response curve**

**Ordering information**



Model name	Part no.
IMA08-04BE3ZCOK	6041782


Further types on request

- ① Aluminium (AL)
- ② St37 (FE)

**Reduction factor  $R_M$**

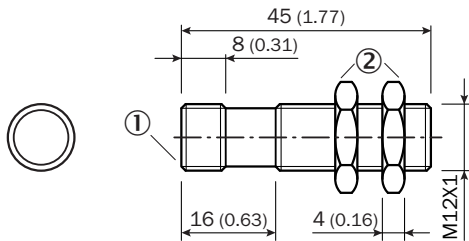
The following are reference values, which may vary from type to type:

Steel (FE360)	1
Stainless steel (V2A)	Approx. 0.68
Aluminium (Al)	Approx. 0.28
Copper (Cu)	Approx. 0.25
Brass (Ms)	Approx. 0.40

	<b>Sensing range</b>
	<b>0 ... 6 mm</b>
<b>Inductive sensor</b>	

■ Analog output 0 ... 10 V

**Dimensional drawing**



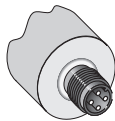
All dimensions in mm (inch)

- ① Connection
- ② Fastening nuts (2 x), width across 17 mm, metal

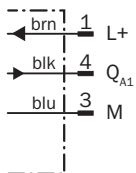


**Connection type**

IMA12-06BE3ZCOK



M12, 4-pin



<b>Accessories</b>
Cables and connectors
Mounting systems

Technical data		IMA12-	06BE												
			3ZCOK												
<b>Sensing range <math>s_d</math></b>		0 ... 6 mm													
<b>Repeat accuracy <sup>1)</sup></b>		0.3 mm <sup>2)</sup>													
<b>Repeat accuracy (<math>T_A = \text{constant}</math>)</b>		$\pm 0.01$ mm													
<b>Resolution</b>		$\leq 1$ $\mu\text{m}$													
<b>Supply voltage <math>V_S</math></b>		15 ... 30 V DC													
Ripple $U_{pp}$		$\leq 20$ % <sup>3)</sup>													
<b>Output voltage at <math>Q_{A1}</math></b>	<b>s = 0 mm</b>	0 V / - 0 + 0.4 V (23 °C)													
	<b>s = 3 mm</b>	+5.2 V / $\pm 0.4$ V (23 °C)													
	<b>s = 6 mm</b>	+10 V / $\pm 0.4$ V (23 °C)													
<b>Load at voltage output <math>Q_{A1}</math></b>		$\leq 10$ mA													
<b>No-load supply current <sup>4)</sup></b>		$\leq 12$ mA													
<b>Bandwidth</b>		1,000 Hz <sup>5)</sup>													
<b>Time delay before availability</b>		$\leq 50$ ms													
Temperature drift, of $s_r$		$\leq \pm 5$ % (0 ... +70 °C)													
		$\leq \pm 10$ % (-25 ... 0 °C)													
<b>Connection type</b>		Connector M12, 4-pin													
<b>Enclosure rating</b>		IP 67 <sup>6)</sup>													
<b>Short-circuit protection</b>		✓													
<b>Reverse polarity protection</b>		✓													
<b>Cable length</b>		300 m max.													
<b>Housing material</b>		Brass nickel-plated, PBTP													

<sup>1)</sup> According to IEC 60947-5-2

<sup>2)</sup>  $U_b = 20 \dots 30$  V DC,  
 $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

<sup>3)</sup> Of  $U_b$

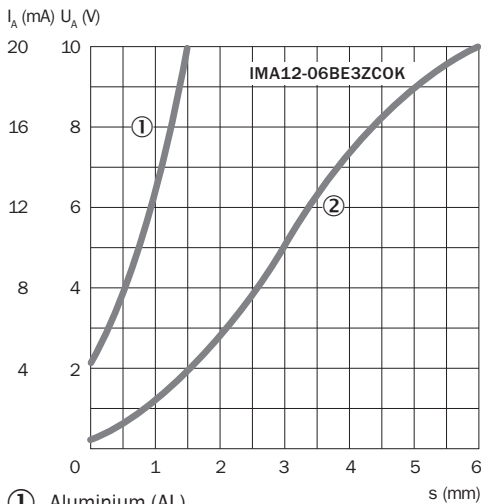
<sup>4)</sup> Without load

<sup>5)</sup> -3 dB at  $s = 3$  mm

<sup>6)</sup> According to EN 60529: 2000-09

**Response curve**

**Ordering information**



Model name	Part no.
IMA12-06BE3ZCOK	6041792

Further types on request

① Aluminium (AL)

② St37 (FE)

**Reduction factor  $R_M$**

The following are reference values, which may vary from type to type:

Steel (FE360)	1
Stainless steel (V2A)	Approx. 0.47
Aluminium (Al)	Approx. 0.28
Copper (Cu)	Approx. 0.20
Brass (Ms)	Approx. 0.35

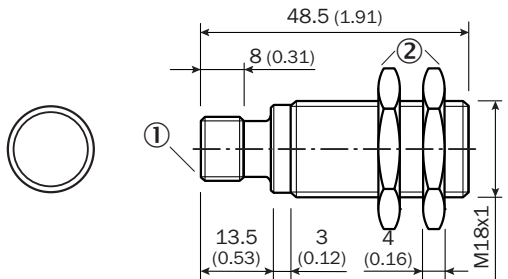
# IMA18-10BE1ZCOK Inductive sensor

**Sensing range**  
**0 ... 10 mm**

Inductive sensor

- Analog output 4 ... 20 mA
- Analog output 0 ... 10 V

## Dimensional drawing



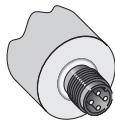
All dimensions in mm (inch)

- ① Connection
- ② Fastening nuts (2 x), width across 24 mm, metal

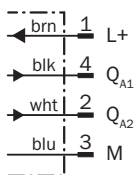


## Connection type

IMA18-10BE1ZCOK



M12, 4-pin



**Accessories**

Cables and connectors

Mounting systems



Technical data		IMA18-	10BE												
			1ZCOK												
<b>Sensing range <math>s_d</math></b>		0 ... 10 mm													
<b>Repeat accuracy <sup>1)</sup></b>		0.3 mm <sup>2)</sup>													
<b>Repeat accuracy (<math>T_A = \text{constant}</math>)</b>		$\pm 0.02$ mm													
<b>Resolution</b>		$\leq 2$ $\mu\text{m}$													
<b>Supply voltage <math>V_S</math></b>		15 ... 30 V DC													
Ripple $U_{pp}$		$\leq 20$ % <sup>3)</sup>													
<b>Output voltage at <math>Q_{A1}</math></b>	<b>s = 0 mm</b>	0 V / - 0 + 0.4 V (23 °C)													
	<b>s = 5 mm</b>	+5.2 V / $\pm 0.4$ V (23 °C)													
	<b>s = 10 mm</b>	+10 V / $\pm 0.4$ V (23 °C)													
<b>Load at voltage output <math>Q_{A1}</math></b>		$\leq 10$ mA													
<b>Output current at <math>Q_{A2}</math></b>	<b>s = 0 mm</b>	4 mA / $\pm 0.8$ mA (23 °C)													
	<b>s = 10 mm</b>	20 mA / $\pm 0.8$ mA (23 °C)													
Max. load at current output $Q_{A2}$		400 $\Omega$ ( $U_b = 15$ V) / 1 k $\Omega$ ( $U_b = 30$ V)													
<b>No-load supply current <sup>4)</sup></b>		$\leq 12$ mA													
<b>Bandwidth</b>		500 Hz <sup>5)</sup>													
<b>Time delay before availability</b>		$\leq 50$ ms													
Temperature drift, of $s_r$		$\leq 10$ %													
<b>Connection type</b>		Connector M12, 4-pin													
<b>Enclosure rating</b>		IP 67 <sup>6)</sup>													
<b>Short-circuit protection</b>		✓													
<b>Reverse polarity protection</b>		✓													
<b>Cable length</b>		300 m max.													
<b>Ambient temperature <math>T_A</math></b>															
	load at $Q_{A1}$ , no load at $Q_{A2}$	-25 ... +70 °C													
	no load at $Q_{A1}$ , load at $Q_{A2}$	See temperature derating													
<b>Housing material</b>		Brass nickel-plated, PBTP													

<sup>1)</sup> According to IEC 60947-5-2

<sup>2)</sup>  $U_b = 20 \dots 30$  V DC,  
 $T_A = 23$  °C  $\pm 5$  °C

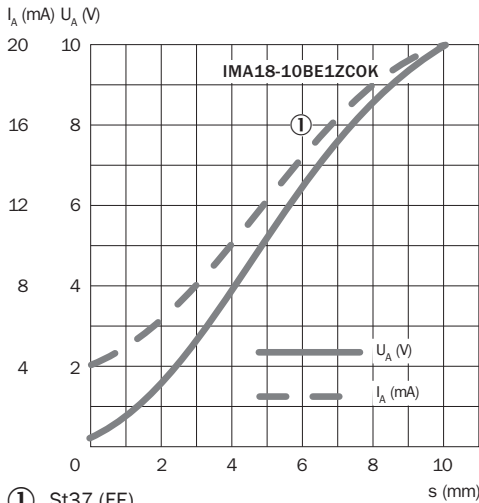
<sup>3)</sup> Of  $U_b$

<sup>4)</sup> Without load

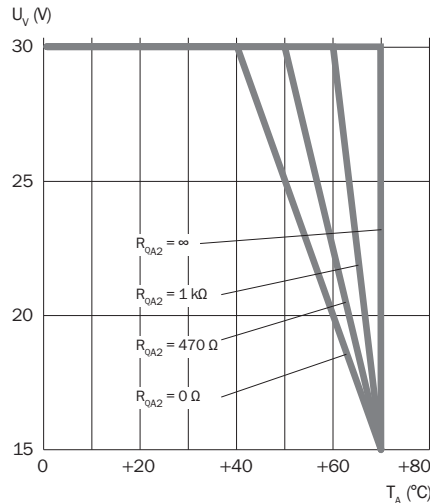
<sup>5)</sup> -3 dB at  $s = 5$  mm

<sup>6)</sup> According to EN 60529: 2000-09

**Response curve**



**Temperature derating**



**Ordering information**

Model name	Part no.
IMA18-10BE1ZCOK	6041793


Further types on request

**Reduction factor  $R_M$**

The following are reference values, which may vary from type to type:

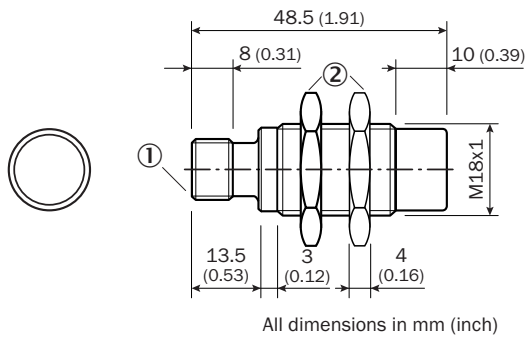
Steel (FE360)	1
Stainless steel (V2A)	Approx. 0.60
Aluminium (Al)	Approx. 0.18
Copper (Cu)	Approx. 0.15
Brass (Ms)	Approx. 0.28

# IMA18-20NE1ZCOK Inductive sensor

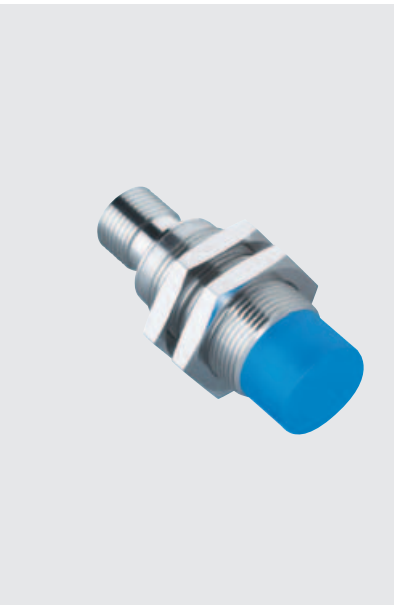
	<b>Sensing range</b>
	<b>0 ... 20 mm</b>
<b>Inductive sensor</b>	

- Analog output 4 ... 20 mA
- Analog output 0 ... 10 V

## Dimensional drawing

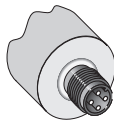


- ① Connection
- ② Fastening nuts (2 x), width across 24 mm, metal

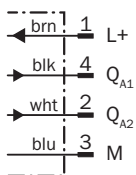


## Connection type

IMA18-20NE1ZCOK



M12, 4-pin



<b>Accessories</b>
Cables and connectors
Mounting systems

Technical data		IMA18-	20NE												
			1ZCOK												
<b>Sensing range <math>s_d</math></b>		0 ... 20 mm													
<b>Repeat accuracy <sup>1)</sup></b>		0.3 mm <sup>2)</sup>													
<b>Repeat accuracy (<math>T_A = \text{constant}</math>)</b>		$\pm 0.05$ mm													
<b>Resolution</b>		$\leq 5$ $\mu\text{m}$													
<b>Supply voltage <math>V_S</math></b>		15 ... 30 V DC													
Ripple $U_{pp}$		$\leq 20$ % <sup>3)</sup>													
<b>Output voltage at <math>Q_{A1}</math></b>	<b>s = 0 mm</b>	0 V / - 0 + 0.4 V (23 °C)													
	<b>s = 10 mm</b>	+5.2 V / $\pm 0.4$ V (23 °C)													
	<b>s = 20 mm</b>	+10 V / $\pm 0.4$ V (23 °C)													
<b>Load at voltage output <math>Q_{A1}</math></b>		$\leq 10$ mA													
<b>Output current at <math>Q_{A2}</math></b>	<b>s = 0 mm</b>	4 mA / $\pm 0.8$ mA (23 °C)													
	<b>s = 20 mm</b>	20 mA / $\pm 0.8$ mA (23 °C)													
Max. load at current output $Q_{A2}$		400 $\Omega$ ( $U_b = 15$ V) / 1 k $\Omega$ ( $U_b = 30$ V)													
<b>No-load supply current <sup>4)</sup></b>		$\leq 12$ mA													
<b>Bandwidth</b>		250 Hz <sup>5)</sup>													
<b>Time delay before availability</b>		$\leq 60$ ms													
Temperature drift, of $s_r$		$\leq 10$ %													
<b>Connection type</b>		Connector M12, 4-pin													
<b>Enclosure rating</b>		IP 67 <sup>6)</sup>													
<b>Short-circuit protection</b>		✓													
<b>Reverse polarity protection</b>		✓													
<b>Cable length</b>		300 m max.													
<b>Ambient temperature <math>T_A</math></b>															
	load at $Q_{A1}$ , no load at $Q_{A2}$	-25 ... +70 °C													
	no load at $Q_{A1}$ , load at $Q_{A2}$	See temperature derating													
<b>Housing material</b>		Brass nickel-plated, PBTP													

<sup>1)</sup> According to IEC 60947-5-2

<sup>2)</sup>  $U_b = 20 \dots 30$  V DC,  
 $T_A = 23$  °C  $\pm 5$  °C

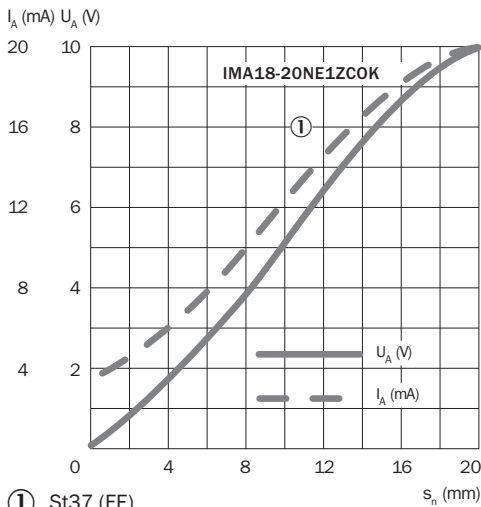
<sup>3)</sup> Of  $U_b$

<sup>4)</sup> Without load

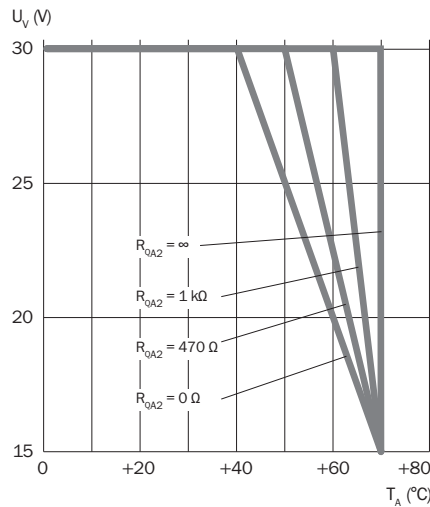
<sup>5)</sup> -3 dB at  $s = 10$  mm

<sup>6)</sup> According to EN 60529: 2000-09

**Response curve**



**Temperature derating**



**Ordering information**

Model name	Part no.
IMA18-20NE1ZCOK	6041794


Further types on request

**Reduction factor  $R_M$**

The following are reference values, which may vary from type to type:

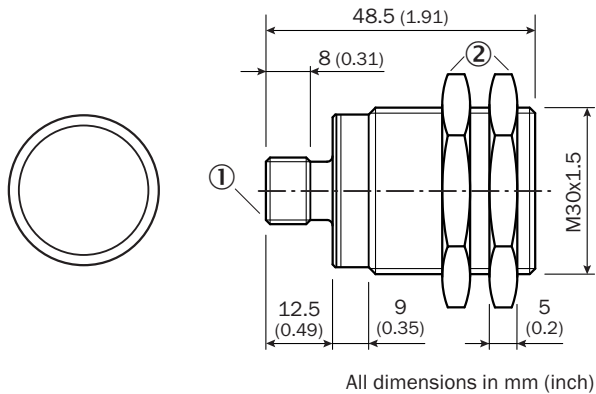
Steel (FE360)	1
Stainless steel (V2A)	Approx. 0.69
Aluminium (Al)	Approx. 0.38
Copper (Cu)	Approx. 0.36
Brass (Ms)	Approx. 0.46

# IMA30-20BE1ZCOK Inductive sensor

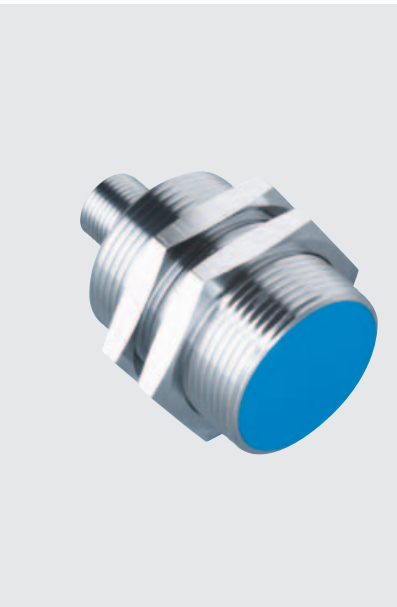
	<b>Sensing range</b>
	<b>0 ... 20 mm</b>
<b>Inductive sensor</b>	

- Analog output 4 ... 20 mA
- Analog output 0 ... 10 V

## Dimensional drawing

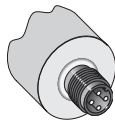


- ① Connection
- ② Fastening nuts (2 x), width across 36 mm, metal

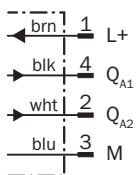


## Connection type

IMA30-20BE1ZCOK



M12, 4-pin

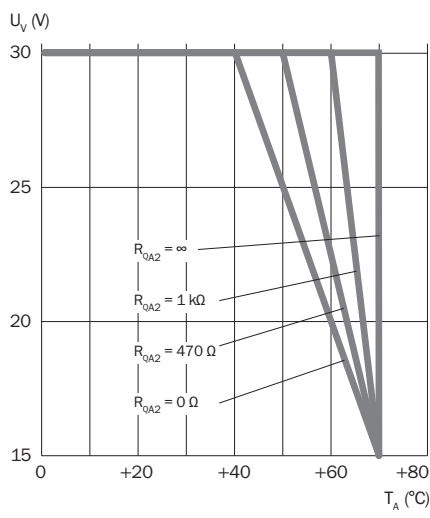
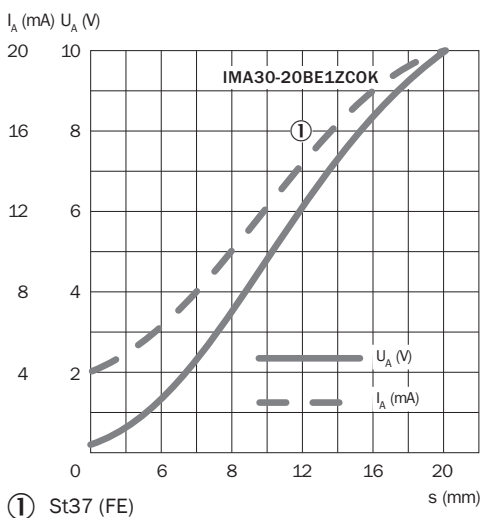


<b>Accessories</b>
Cables and connectors
Mounting systems

Technical data		IMA30-	20BE												
			1ZCOK												
<b>Sensing range <math>s_d</math></b>		0 ... 20 mm													
<b>Repeat accuracy <sup>1)</sup></b>		0.3 mm <sup>2)</sup>													
<b>Repeat accuracy (<math>T_A = \text{constant}</math>)</b>		$\pm 0.05$ mm													
<b>Resolution</b>		$\leq 5$ $\mu\text{m}$													
<b>Supply voltage <math>V_S</math></b>		15 ... 30 V DC													
Ripple $U_{pp}$		$\leq 20$ % <sup>3)</sup>													
<b>Output voltage at <math>Q_{A1}</math></b>	<b>s = 0 mm</b>	0 V / - 0 + 0.4 V (23 °C)													
	<b>s = 10 mm</b>	+5.2 V / $\pm 0.4$ V (23 °C)													
	<b>s = 20 mm</b>	+10 V / $\pm 0.4$ V (23 °C)													
<b>Load at voltage output <math>Q_{A1}</math></b>		$\leq 10$ mA													
<b>Output current at <math>Q_{A2}</math></b>	<b>s = 0 mm</b>	4 mA / $\pm 0.8$ mA (23 °C)													
	<b>s = 20 mm</b>	20 mA / $\pm 0.8$ mA (23 °C)													
Max. load at current output $Q_{A2}$		400 $\Omega$ ( $U_b = 15$ V) / 1 k $\Omega$ ( $U_b = 30$ V)													
<b>No-load supply current <sup>4)</sup></b>		$\leq 12$ mA													
<b>Bandwidth</b>		200 Hz <sup>5)</sup>													
<b>Time delay before availability</b>		$\leq 50$ ms													
Temperature drift, of $s_r$		$\leq 10$ %													
<b>Connection type</b>		Connector M12, 4-pin													
<b>Enclosure rating</b>		IP 67 <sup>6)</sup>													
<b>Short-circuit protection</b>		✓													
<b>Reverse polarity protection</b>		✓													
<b>Cable length</b>		300 m max.													
<b>Ambient temperature <math>T_A</math></b>															
	load at $Q_{A1}$ , no load at $Q_{A2}$	-25 ... +70 °C													
	no load at $Q_{A1}$ , load at $Q_{A2}$	See temperature derating													
<b>Housing material</b>		Brass nickel-plated, PBTP													

1) According to IEC 60947-5-2      2)  $U_b = 20 \dots 30$  V DC,  $T_A = 23$  °C  $\pm 5$  °C      3) Of  $U_b$       4) Without load  
 5) -3 dB at s = 10 mm      6) According to EN 60529: 2000-09

Response curve	Temperature derating	Ordering information
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**Reduction factor  $R_M$**


The following are reference values, which may vary from type to type:

Steel (FE360)	1
Stainless steel (V2A)	Approx. 0.65
Aluminium (Al)	Approx. 0.20
Copper (Cu)	Approx. 0.17
Brass (Ms)	Approx. 0.30

Model name	Part no.
IMA30-20BE1ZCOK	6041795

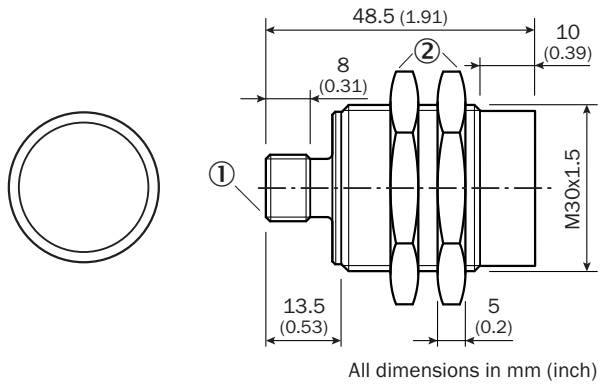
Further types on request

# IMA30-40NE1ZCOK Inductive sensor

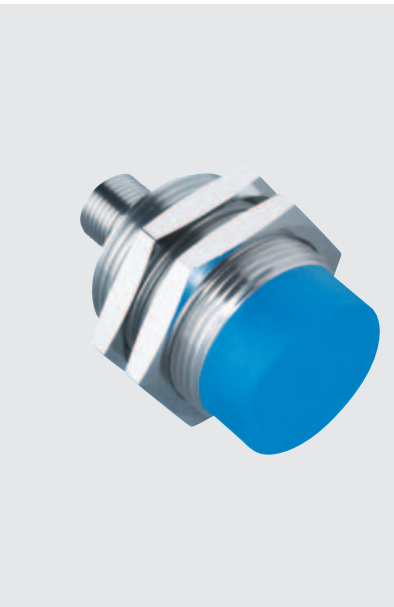
	<b>Sensing range</b>
	<b>0 ... 40 mm</b>
<b>Inductive sensor</b>	

- Analog output 4 ... 20 mA
- Analog output 0 ... 10 V

## Dimensional drawing

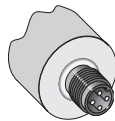


- ① Connection
- ② Fastening nuts (2 x), width across 36 mm, metal

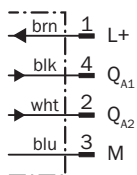


## Connection type

IMA30-40NE1ZCOK



M12, 4-pin



<b>Accessories</b>
Cables and connectors
Mounting systems

Technical data		IMA30-	40NE												
			1ZCOK												
<b>Sensing range <math>s_d</math></b>		0 ... 40 mm													
<b>Repeat accuracy <sup>1)</sup></b>		0.6 mm <sup>2)</sup>													
<b>Repeat accuracy (<math>T_A = \text{constant}</math>)</b>		$\pm 0.1$ mm													
<b>Resolution</b>		$\leq 10$ $\mu\text{m}$													
<b>Supply voltage <math>V_S</math></b>		15 ... 30 V DC													
Ripple $U_{pp}$		$\leq 20$ % <sup>3)</sup>													
<b>Output voltage at <math>Q_{A1}</math></b>	<b><math>s = 0</math> mm</b>	0 V / - 0 + 0.4 V (23 °C)													
	<b><math>s = 20</math> mm</b>	+5.2 V / $\pm 0.4$ V (23 °C)													
	<b><math>s = 40</math> mm</b>	+10 V / $\pm 0.4$ V (23 °C)													
<b>Load at voltage output <math>Q_{A1}</math></b>		$\leq 10$ mA													
<b>Output current at <math>Q_{A2}</math></b>	<b><math>s = 0</math> mm</b>	4 mA / $\pm 0.8$ mA (23 °C)													
	<b><math>s = 40</math> mm</b>	20 mA / $\pm 0.8$ mA (23 °C)													
Max. load at current output $Q_{A2}$		400 $\Omega$ ( $U_b = 15$ V) / 1 k $\Omega$ ( $U_b = 30$ V)													
<b>No-load supply current <sup>4)</sup></b>		$\leq 12$ mA													
<b>Bandwidth</b>		100 Hz <sup>5)</sup>													
<b>Time delay before availability</b>		$\leq 50$ ms													
Temperature drift, of $s_r$		$\leq 10$ %													
<b>Connection type</b>		Connector M12, 4-pin													
<b>Enclosure rating</b>		IP 67 <sup>6)</sup>													
<b>Short-circuit protection</b>		✓													
<b>Reverse polarity protection</b>		✓													
<b>Cable length</b>		300 m max.													
<b>Ambient temperature <math>T_A</math></b>															
	load at $Q_{A1}$ , no load at $Q_{A2}$	-25 ... +70 °C													
	no load at $Q_{A1}$ , load at $Q_{A2}$	See temperature derating													
<b>Housing material</b>		Brass nickel-plated, PBTP													

<sup>1)</sup> According to IEC 60947-5-2

<sup>2)</sup>  $U_b = 20 \dots 30$  V DC,  
 $T_A = 23$  °C  $\pm 5$  °C

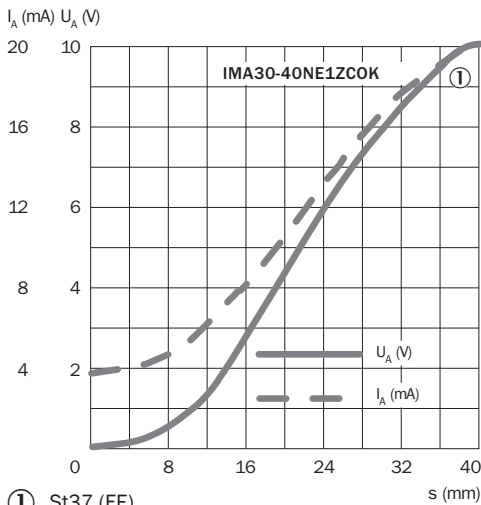
<sup>3)</sup> Of  $U_b$

<sup>4)</sup> Without load

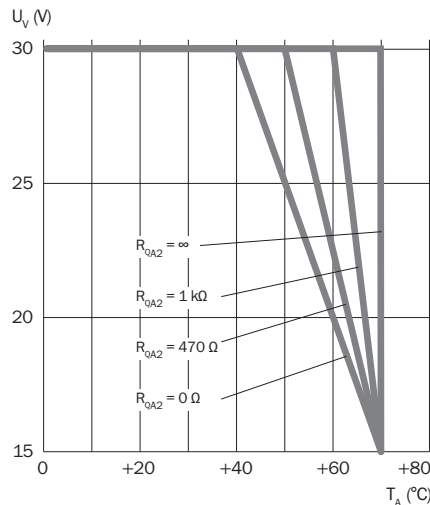
<sup>5)</sup> -3 dB at  $s = 20$  mm

<sup>6)</sup> According to EN 60529: 2000-09

**Response curve**



**Temperature derating**



**Ordering information**

Model name	Part no.
IMA30-40NE1ZCOK	6041796

Further types on request

**Reduction factor  $R_M$**

The following are reference values, which may vary from type to type:

Steel (FE360)	1
Stainless steel (V2A)	Approx. 0.80
Aluminium (Al)	Approx. 0.40
Copper (Cu)	Approx. 0.40
Brass (Ms)	Approx. 0.50

## Connecting cables PVC

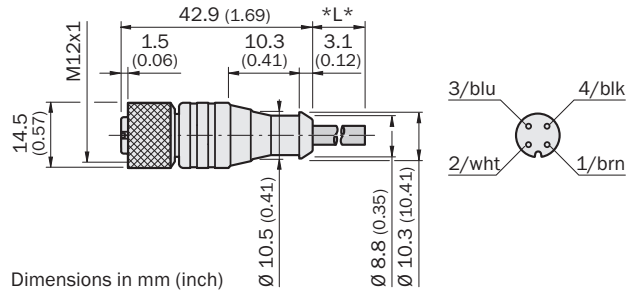
### Round connectors

- Especially suitable for use in assembly, packaging and production lines with average mechanical loads
- Improved resistance to chemicals
- Resistant against oils and lubricants under certain circumstances
- Siliconefree-cable
- Gold plated pins

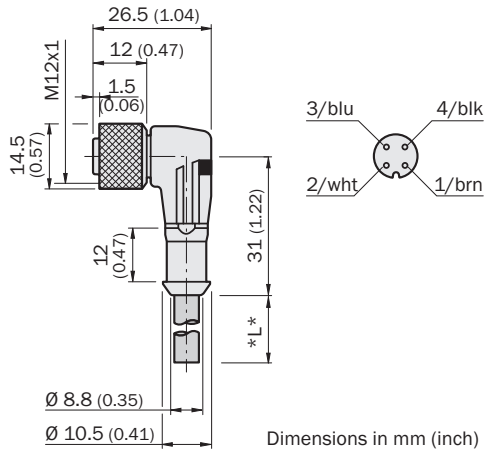
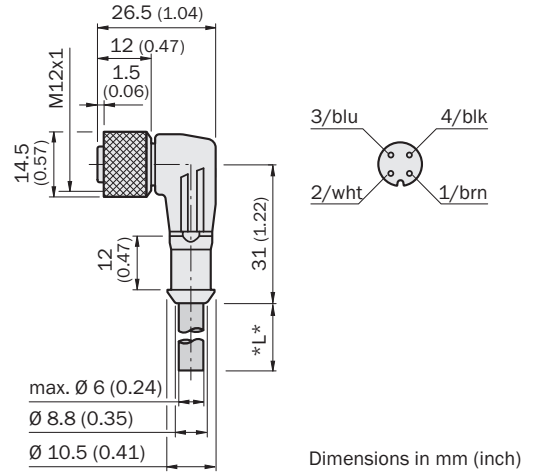


### Dimensional drawings

DOL-12...



DOL-1204-L...





## Technical data

<b>Reference voltage</b>	250 V (M12, 4-pin/5-pin) 32 V (M12 with LED)	<b>Temperature range</b>	Cable: -40 °C ... +80 °C (in fixed position) -5 °C ... +80 °C (in flexible motion)
<b>Nominal power</b>	4 A	<b>Bending radius</b>	> 10 x cable diameter (in flexible motion) > 5 x cable diameter (in fixed position)
<b>Cable</b>	PVC, orange	<b>Enclosure rating</b>	M12: IP 67
<b>Conductor diameter</b>	4 x 0.25 mm <sup>2</sup>	<b>Locking nut</b>	CuZn
<b>Temperature range</b>	Connector M12: -25 °C ... +80 °C	<b>Housing</b>	TPU

## Ordering information

## Round connectors M12 connecting cable, PVC

Model name	Part no.	Description	Contacts	Cable length [m]
DOL-1204-G02M	6009382	Female connector straight	4	2
DOL-1204-G05M	6009866	Female connector straight	4	5
DOL-1204-G10M	6010543	Female connector straight	4	10
DOL-1204-G15M	6010753	Female connector straight	4	15
DOL-1204-G20M	6034401	Female connector straight	4	20
DOL-1204-W02M	6009383	Female connector angled	4	2
DOL-1204-W05M	6009867	Female connector angled	4	5
DOL-1204-W10M	6010541	Female connector angled	4	10
DOL-1204-W15M	6036474	Female connector angled	4	15
DOL-1204-W20M	6033559	Female connector angled	4	20
DOL-1204-L02M	6027945	Female connector angled, with 3 LEDs (PNP)	4	2
DOL-1204-L05M	6027944	Female connector angled, with 3 LEDs (PNP)	4	5
DOL-1204-L10M	6027946	Female connector angled, with 3 LEDs (PNP)	4	10

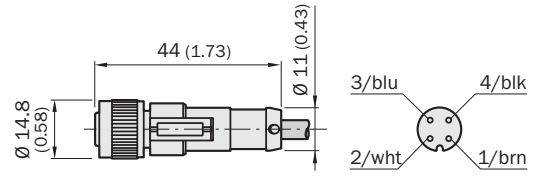
**Connecting cables  
PUR halogenfree**

**Round connectors**

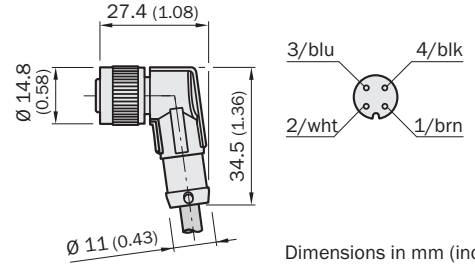
- Especially well suited for flexible applications and demanding fields of application
- Suitable for use with drag chains
- Very good resistance against oil, lubricants and coolants
- Halogenfree, PVC-free, siliconefree-cable
- Gold plated pins

**Dimensional drawings**

DOL-12...

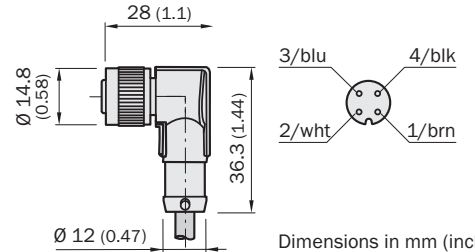


Dimensions in mm (inch)



Dimensions in mm (inch)

DOL-1204L...



Dimensions in mm (inch)



## Technical data

<b>Reference voltage</b>	250 V (M12, 3-pin, Connector)	<b>Bending radius</b>	> 10x cable diameter
	250 V (M12, 4-pin, Connector)		<b>Bending cycles</b>
<b>Nominal power</b>	4 A	<b>Speed</b>	
	2 A (M12, 8-pin)		<b>Enclosure rating</b>
<b>Cable</b>	PUR halogenfree, black	<b>Locking nut</b>	
<b>Conductor diameter</b>	4 x 0.34 mm <sup>2</sup>		<b>Housing</b>
	3 x 0.34 mm <sup>2</sup>		
<b>Temperature range</b>	Connector: -25 °C ... +90 °C		
	Cable: -40 °C ... +80 °C (in fixed position)		
	-5 °C ... +80 °C (in flexible motion)		

## Ordering information

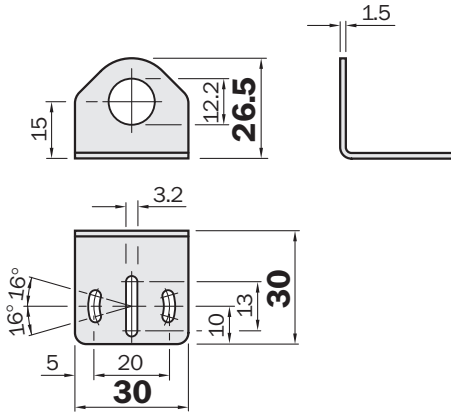
## Round connectors M12, connecting cable PUR halogenfree

Model name	Part no.	Description	Contacts	Cable length [m]
DOL-1203-G02MC	6039075	Female connector straight	4	2
DOL-1203-G05MC	6039076	Female connector straight	4	5
DOL-1203-G10MC	6039077	Female connector straight	4	10
DOL-1203-W02MC	6039078	Female connector angled	4	2
DOL-1203-W05MC	6039079	Female connector angled	4	5
DOL-1203-W10MC	6036752	Female connector angled	4	10
DOL-1203-W15MC	6036753	Female connector angled	4	15
DOL-1203-W20MC	6036754	Female connector angled	4	20
DOL-1204-G02MC	6025900	Female connector straight	4	2
DOL-1204-G05MC	6025901	Female connector straight	4	5
DOL-1204-G10MC	6025902	Female connector straight	4	10
DOL-1204-G15MC	6034749	Female connector straight	4	15
DOL-1204-G20MC	6034750	Female connector straight	4	20
DOL-1204-G25MC	6034751	Female connector straight	4	25
DOL-1204-W02MC	6025903	Female connector angled	4	2
DOL-1204-W05MC	6025904	Female connector angled	4	5
DOL-1204-W10MC	6025905	Female connector angled	4	10
DOL-1204-W15MC	6034752	Female connector angled	4	15
DOL-1204-W20MC	6034753	Female connector angled	4	20
DOL-1204-W25MC	6034754	Female connector angled	4	25
DOL-1204-L02MC	6039086	Female connector angled, with 3 LEDs (PNP)	4	2
DOL-1204-L05MC	6020398	Female connector angled, with 3 LEDs (PNP)	4	5
DOL-1204-L10MC	6039088	Female connector angled, with 3 LEDs (PNP)	4	10

## Dimensional drawings and ordering information

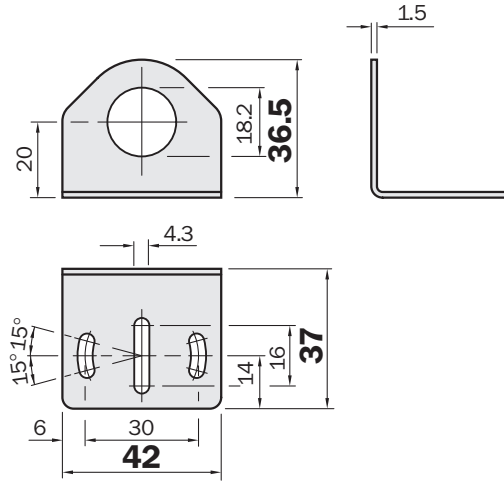
### Mounting bracket for IMA12

Model name	Part no.
BEF-WN-M12	5308447



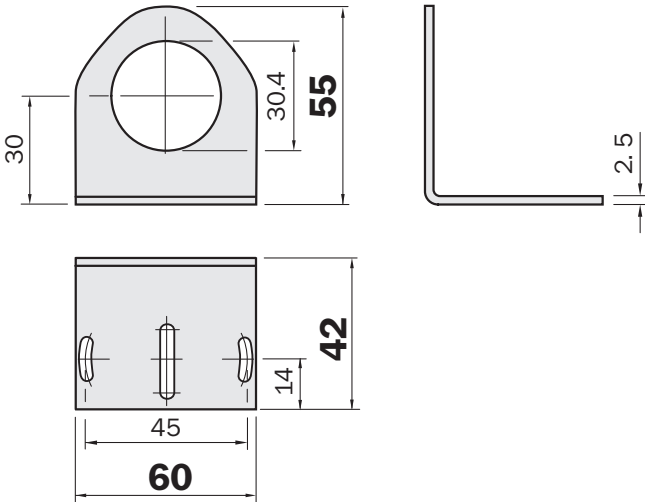
### Mounting bracket for IMA18

Model name	Part no.
BEF-WN-M18	5308446



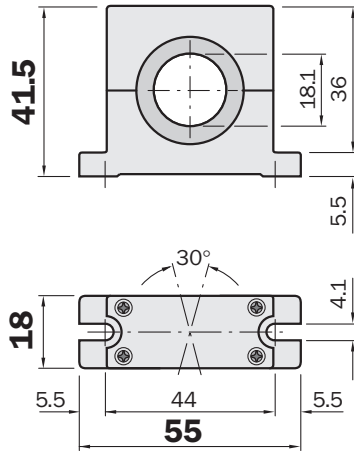
### Mounting bracket for IMA30

Model name	Part no.
BEF-WN-M30	5308445



### Mounting bracket for IMA18

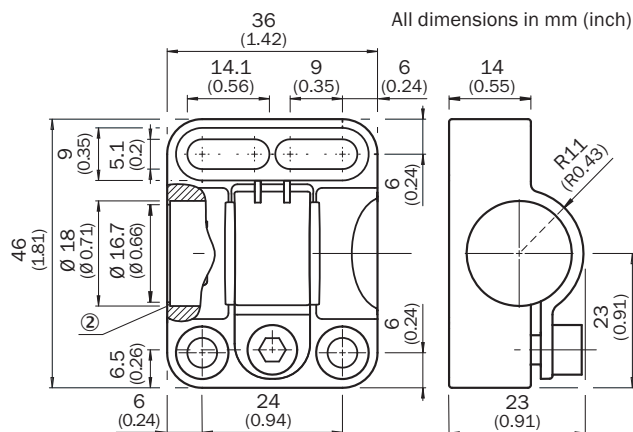
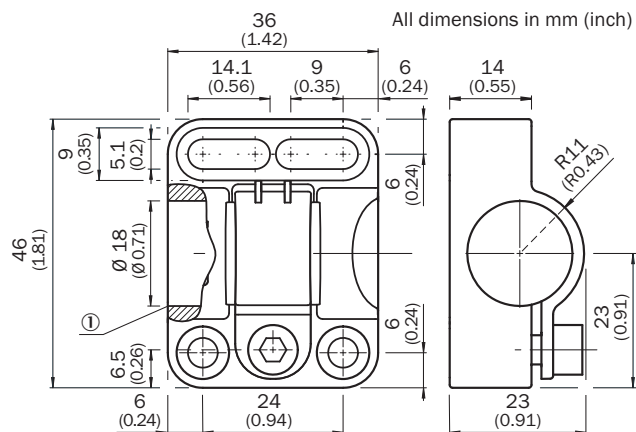
Model name	Part no.
BEF-WN-M18-ST02	5312973



Dimensional drawings and ordering information

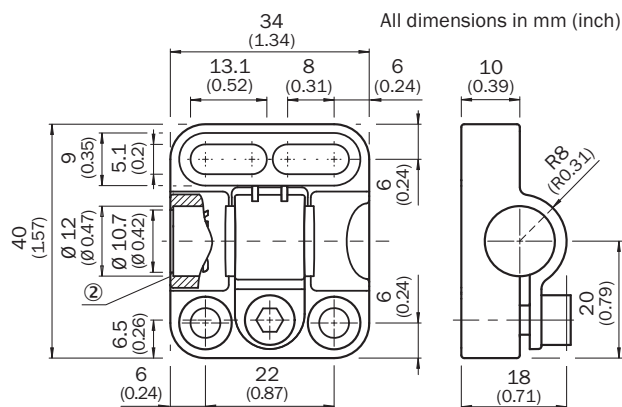
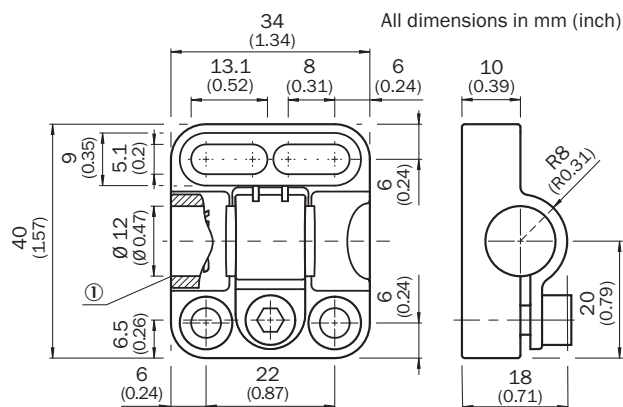
Mounting clamp for cylindrical sensors (without mechanical stop)		
Plastic (PA12), fiberglass reinforced, including mounting material		
Model name	Part no.	Features
BEF-KH-M18	2051481	① without mechanical stop

Mounting clamp for cylindrical sensors (with mechanical stop)		
Plastic (PA12), fiberglass reinforced, including mounting material		
Model name	Part no.	Features
BEF-KHF-M18	2051482	② with mechanical stop



Mounting clamp for cylindrical sensors (without mechanical stop)		
Plastic (PA12), fiberglass reinforced, including mounting material		
Model name	Part no.	Features
BEF-KH-M12	2051479	① without mechanical stop

Mounting clamp for cylindrical sensors (with mechanical stop)		
Plastic (PA12), fiberglass reinforced, including mounting material		
Model name	Part no.	Features
BEF-KHF-M12	2051480	② with mechanical stop



## Dimensional drawings and ordering information

### Mounting clamp for cylindrical sensors (without mechanical stop)

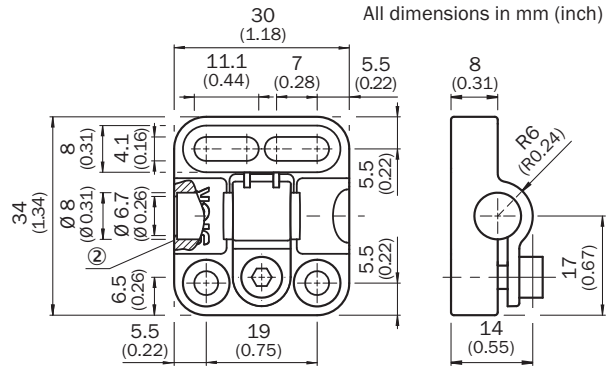
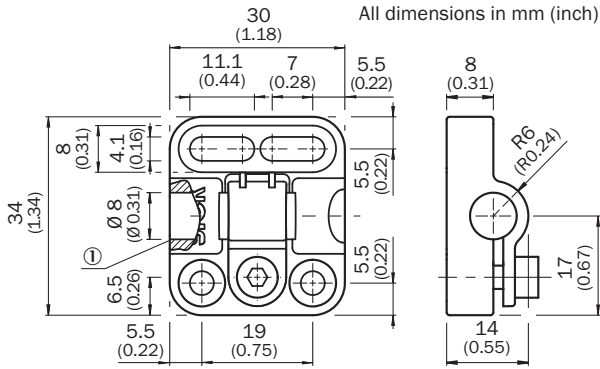
Plastic (PA12), fiberglass reinforced, including mounting material

Model name	Part no.	Features
BEF-KH-M08	2051477	① without mechanical stop

### Mounting clamp for cylindrical sensors (with mechanical stop)

Plastic (PA12), fiberglass reinforced, including mounting material

Model name	Part no.	Features
BEF-KHF-M08	2051478	② with mechanical stop





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