Proximity sensors SIE..., inductive

FESTO

- PNP, NPN or analogue switch outputs
- Corrosion-resistant and welding field immune versions
- Versions with increased switching distance
- Free of copper, PTFE and silicone

Inductive sensors and proximity sensors at their finest

Inductive sensors are the ideal solution for measurement, monitoring and control applications, thanks to their natural advantages in the areas of flexibility, switching distances, speed, miniaturisation, resistance and economy.

SIEA
In addition to performing traditional measurement, monitoring and control tasks, the analogue sensor ensures maximum machine availability by effectively monitoring vibrations and concentricity properties using a PLC.

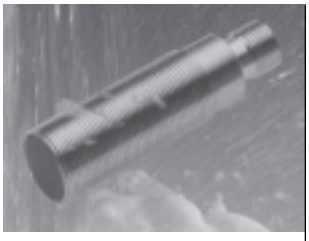
SIEF with reduction factor 1
Number 1 for extremely wide sensor ranges. Whether –30 or +85 °C. And up to 500% faster than conventional proximity sensors.

SIEH-3B
The miniaturised version with a weight of only 2 grams, diameter of 3 mm and length of 22 mm – but nonetheless complete. Fully protected against overload, short circuits, polarity reversal, inductive load, electrostatic discharge, voltage peaks and high-frequency fields.

SIEN/SIED
The ultimate cost-effective solution for sensing metal objects. Universal in use: sizes M12/M18/M30. Approved even for use in the food processing and packaging industry.

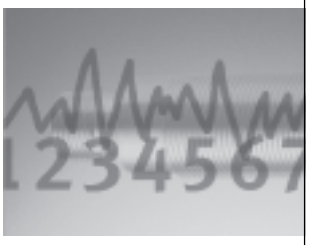
All with IP67 protection

The complete sensor family SIE..., all with high IP67 protection. Ideal for use under extreme conditions.



Corrosion-resistant

At home even under harsh conditions: the corrosion-resistant sensors SIEN/SIED.



SIEF: Reduction factor 1

SIEF technology: the secret of maximum range and switching frequencies. Of course all with IP67 protection.

You know what you want your sensors to do – we'll provide you with the inductive solution you need.

	Advantages for designers	Advantages for buyers
Wide range of variants	■ The right inductive sensors and proximity sensors for almost every application ■ Choice of analogue proximity sensors, proximity sensors with reduction factor 1, miniature proximity sensors, stainless steel sensors and polymer proximity sensors ■ Greater system safety and optimised process control through wide range of measurement parameters	■ Significant cost savings because you only pay for the functions you actually need ■ Increased production reliability thanks to trouble-free operating sequences ■ Greater security against failure thanks to extremely sturdy designs
Clear and accurate measured output, standard design	■ Increased functional reliability thanks to simple and reliable inductive measurement principle	■ Reduced follow-up costs and greater time savings thanks to standard dimensions
Commissioning and servicing made easy	■ Festo plug and work® ■ Reduced costs thanks to a wide range of mounting, format and function options ■ Optimum configuration thanks to wide range of products	■ Increased system productivity and reduced down-times ■ Significantly reduced training expenditure for service personnel thanks to a wide range of designs

Proximity sensors SIE..., inductive

Key features

Inductive sensors

Inductive sensors are signal generators which, by contactless means, detect functional motions of processing and production machinery, robots, production lines, conveyor systems, etc. and convert these into electrical signals.
Signal generators of this type have the following characteristics:

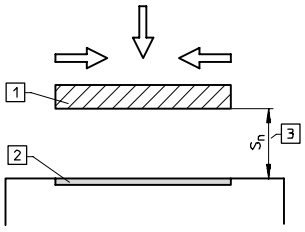
- Inductive sensors detect and acquire all electrically conductive objects which pass through or remain within the high-frequency magnetic field of the oscillator, without making contact with the sensor.
- Inductive sensors function in a contactless fashion, i.e. no mechanical force acts upon the control device or the parts to be sensed.
- Inductive sensors do not require any sensing mechanisms such as rollers, stems or lever arms commonly used for mechanical limit switches.
- Inductive sensors operate without mechanically actuated electrical contacts. Switching is accomplished by means of electronic components.

This has the following benefits:

- No mechanical wear and tear, resulting in long service life
- No downtime due to dirty or welded-together contacts
- No contact bounce, and thus no switching errors
- Switching frequencies of up to 3000 Hz
- Vibration-resistant
- Any mounting position
- Fully encapsulated, providing a high degree of protection

Operational principle

An electrical signal is generated when a metallic object approaches the active surface of the inductive sensor and is situated within the specified switching distance.



1 Test plate (steel) St 37
2 Active surface
3 Switching distance

Types of installation

■ Flush mounting
Flush-mounted sensors can be surrounded by metal right up to the level of the active surface.

■ Non-flush mounting
Non-flush-mounted sensors require a metal-free zone around their active surface.

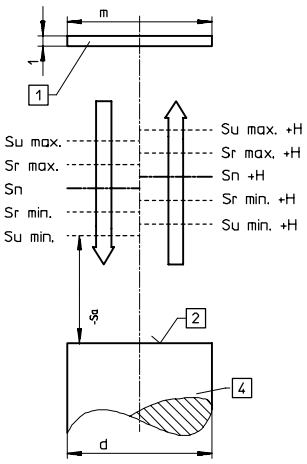
Switching distances

Nominal switching distance S_n:
Characteristic value with no allowance for production tolerances or deviations due to temperature or voltage.

Real switching distance S_r:
The real switching distance is determined at the rated operating voltage and at an ambient temperature of 293 K (20 °C). It may deviate from the nominal switching distance by a maximum of ±10%.

Useful switching distance S_u:
This is the switching distance for a given sensor within defined voltage and temperature ranges. It may deviate from the actual switching distance by a maximum of ±10%.

Assured switching distance S_a:
This is the switching distance at which the sensor will operate throughout the entire range of permissible operating conditions. Lies between 0 and the lowest value for useful switching distance.



1 Test plate
2 Active surface
4 Sensor
H = Hysteresis

Switching element functions

A distinction is made between the following functions:

■ NO contact:
When the sensor is attenuated, current flows through the load; when the sensor is not attenuated, the current flow is interrupted.

■ NC contact:
When the sensor is attenuated, the current flow is interrupted; when the sensor is not attenuated, current flows through the load.

■ Antivalent (changeover switch):
Both outputs (NC and NO contacts) are available.

Proximity sensors SIE..., inductive

Key features

Attachment

Sensors without threads should if possible be bonded in with adhesive. Sensors can be clamped in with moderate pressure, which should be distributed over as large an area as possible.
Concentrated pressure, e.g. produced by grub screws, can easily cause damage to sensors.

Note

Inductive sensors must not be used as end stops.

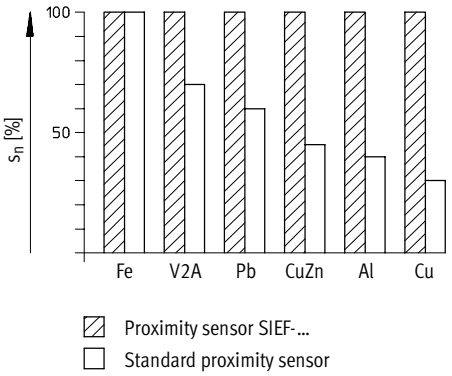
Proximity sensors SIEF-...

Properties

Like all inductive proximity sensors, proximity sensors SIEF-... are able to sense metals without contact and therefore without wear. Thanks to their special structure with a ferrite-free 3-coil system, they have properties that in many applications offer decisive advantages in comparison with conventional inductive sensors:

■ Extremely long switching distance
Proximity sensors SIEF-... offer a particularly long switching distance, without restricting installability.

■ Reduction factor 1
Proximity sensors SIEF-... have the same long switching distance for all metals. In installations that frequently sense aluminium or stainless steel, this translates into an additional switching distance of up to 400 % with aluminium.



■ Magnetic field immune
The omission of the ferrite core means that proximity sensors SIEF-... are immune to interference caused by strong magnetic fields such as are found in electronic welding and many other applications (e.g. lifts, electronic furnaces, etc.).

■ Large temperature range
The ambient temperature range of –30 ... +85 °C means that the proximity sensors can be used at extremes of temperature.

■ High switching frequency
The fast air-core coils mean that a SIEF-... is up to 500 % faster than a conventional sensor – vital for machines and systems that are becoming increasingly faster.

■ Excellent EMC resistance
As well as meeting the requirements of the current standard EN 50 082-2, all proximity sensors SIEF-... exceed the stringent requirements of EN 61 000-4-6 (these requirements are expected to be incorporated into the standard for proximity sensors from 2005).

The proximity sensor SIEF-... is therefore optimally protected, particularly against conducted interference (e.g. by means of frequency converters), ensuring that your systems are equipped for the future.

■ Flush mounting
Flush mounting means that proximity sensors SIEF-... do not require a metal-free zone around their active surface. Most designs can even be reset by 1 ... 2 mm to protect against mechanical damage. Unlike partially flush devices, flush proximity sensors of the type SIEF-... can therefore be installed fully flush.

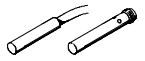
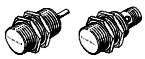
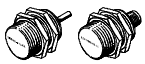
■ Non-flush mounting
An integrated pre-attenuation protection system means that non-flush proximity sensors will never be as flexible in terms of installation as flush proximity sensors. The protective effect is produced by means of self-compensation in the innovative multi-coil system.

In practice this means that in contrast to conventional sensors with a ferrite core, the metal-free zones can be significantly smaller. Some designs can even be mounted with metal on three sides. The self-compensator automatically compensates the pre-attenuation.

With conventional, non-flush ferrite core sensors, this type of partially flush installation leads to uncontrolled switching. For non-flush proximity sensors SIEF-..., the integrated self-compensator means maximum switching distance without compromise.

Proximity sensors SIE..., inductive

Product range overview – Standard switching distance

Function	Version	Type	Nominal switching distance		Switch output	Switching element function
			flush [mm]	non-flush [mm]		
Sensors for DC	**∅ 4 mm**					
		**SIEN-4**	0.8	–	PNP	NO contact
						NC contact
					NPN	NO contact
						NC contact
	Male thread M5					
		**SIEN-M5**	0.8	–	PNP	NO contact
						NC contact
					NPN	NO contact
						NC contact
	∅ 6.5 mm					
		**SIEN-6,5**	1.5	–	PNP	NO contact
						NC contact
					NPN	NO contact
						NC contact
	Male thread M8x1					
		**SIEN-M8**	1.5	2.5	PNP	NO contact
						NC contact
					NPN	NO contact
						NC contact
	Male thread M12x1					
		**SIEN-M12**	2.0	4.0	PNP	NO contact
						NC contact
					NPN	NO contact
						NC contact
	Male thread M18x1					
		**SIEN-M18**	5.0	8.0	PNP	NO contact
						NC contact
					NPN	NO contact
						NC contact
	Male thread M30x1.5					
		**SIEN-M30**	10.0	15.0	PNP	NO contact
						NC contact
					NPN	NO contact
						NC contact

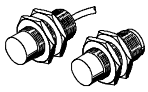
Proximity sensors SIE..., inductive

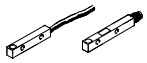
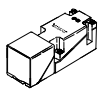
Product range overview – Standard switching distance

Type	Operating voltage		Electrical connection		Type of installation		Free of copper, PTFE and silicone	➔ Page
	DC	AC	Plug	Cable	flush	non-flush		
∅ 4 mm								
SIEN-4	■	–	■	■	■	–	■	4 / 8.2-18
Male thread M5								
SIEN-M5	■	–	■	■	■	–	■	4 / 8.2-18
∅ 6.5 mm								
SIEN-6,5	■	–	■	■	■	–	■	4 / 8.2-18
Male thread M8x1								
SIEN-M8	■	–	■	■	■	■	■	4 / 8.2-18
Male thread M12x1								
SIEN-M12	■	–	■	■	■	■	■	4 / 8.2-18
Male thread M18x1								
SIEN-M18	■	–	■	■	■	■	■	4 / 8.2-18
Male thread M30x1.5								
SIEN-M30	■	–	■	■	■	■	■	4 / 8.2-18

Proximity sensors SIE..., inductive

Product range overview – Standard switching distance

Function	Version	Type	Nominal switching distance		Switching element function
			flush [mm]	non-flush [mm]	
Sensors for DC and AC	**Male thread M12x1**				
		**SIED-M12**	2.0	4.0	NO contact
					NC contact
	Male thread M18x1				
		**SIED-M18**	5.0	8.0	NO contact
					NC contact
	Male thread M30x1.5				
		**SIED-M30**	10.0	15.0	NO contact
					NC contact

Function	Version	Type	Nominal switching distance [mm]	Switch output	Switching element function
Sensors for DC	**5x5x25 mm**				
		**SIES-Q5B**	0.8	PNP	NO contact
					NC contact
				NPN	NO contact
					NC contact
	8x8x40 mm				
		**SIES-Q8B**	1.5	PNP	NO contact
					NC contact
				NPN	NO contact
					NC contact
	15x20x30 mm				
		**SIES-V3B**	2.0	PNP	NO contact
				NPN	NO contact
	26x40x12 mm				
		**SIES-QB**	2.0	PNP	NO contact
					NC contact
	40x40x120 mm				
		**SIES-Q40B**	15.0	PNP	Antivalent

Proximity sensors SIE..., inductive

Product range overview – Standard switching distance

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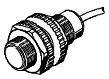
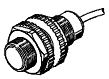
Type	Operating voltage		Electrical connection		Type of installation		Free of copper, PTFE and silicone	➔ Page
	DC	AC	Plug	Cable	flush	non-flush		
Male thread M12x1								
SIED-M12	■	■	■	■	■	■	■	4 / 8.2-26
Male thread M18x1								
SIED-M18	■	■	■	■	■	■	■	4 / 8.2-26
Male thread M30x1.5								
SIED-M30	■	■	■	■	■	■	■	4 / 8.2-26

Type	Operating voltage		Electrical connection			Type of installation		Free of copper, PTFE and silicone	➔ Page
	DC	AC	Plug	Cable	Terminals	flush	non-flush		
5x5x25 mm									
SIES-Q5B	■	–	–	■	–	■	–	■	4 / 8.2-32
8x8x40 mm									
SIES-Q8B	■	–	■	■	–	■	–	■	4 / 8.2-32
15x20x30 mm									
SIES-V3B	■	–	■	■	–	■	–	■	4 / 8.2-32
26x40x12 mm									
SIES-QB	■	–	–	■	–	■	–	■	4 / 8.2-32
40x40x120 mm									
SIES-Q40B	■	–	–	–	■	■	–	■	4 / 8.2-32

Proximity sensors SIE..., inductive

Product range overview – Standard switching distance

Function	Version	Type	Nominal switching distance		Switch output	Switching element function
			flush [mm]	non-flush [mm]		
Corrosion-resistant sensors for DC	**Male thread M12x1**					
		**SIEN-M12-...-PA**	2.0	4.0	PNP	NO contact
					NPN	NO contact
	Male thread M18x1					
		**SIEN-M18-...-PA**	5.0	8.0	PNP	NO contact
					NPN	NO contact
	Male thread M30x1.5					
		**SIEN-M30-...-PA**	10.0	15.0	PNP	NO contact
					NPN	NO contact

Function	Version	Type	Nominal switching distance		Switching element function
			flush [mm]	non-flush [mm]	
Corrosion-resistant sensors for DC and AC	**Male thread M12x1**				
		**SIED-M12-...-PA**	2.0	4.0	NO contact
	Male thread M18x1				
		**SIED-M18-...-PA**	5.0	8.0	NO contact
	Male thread M30x1.5				
		**SIED-M30-...-PA**	10.0	15.0	NO contact

Proximity sensors SIE..., inductive

Product range overview – Standard switching distance

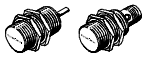
FESTO

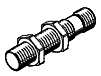
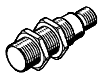
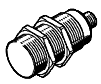
Type	Operating voltage		Electrical connection		Type of installation		Free of copper, PTFE and silicone	➔ Page
	DC	AC	Plug	Cable	flush	non-flush		
Male thread M12x1								
SIEN-M12-...-PA	■	–	–	■	■	■	■	4 / 8.2-36
Male thread M18x1								
SIEN-M18-...-PA	■	–	–	■	■	■	■	4 / 8.2-36
Male thread M30x1.5								
SIEN-M30-...-PA	■	–	–	■	■	■	■	4 / 8.2-36

Type	Operating voltage		Electrical connection		Type of installation		Free of copper, PTFE and silicone	➔ Page
	DC	AC	Plug	Cable	flush	non-flush		
Male thread M12x1								
SIED-M12-...-PA	■	■	–	■	■	■	■	4 / 8.2-40
Male thread M18x1								
SIED-M18-...-PA	■	■	–	■	■	■	■	4 / 8.2-40
Male thread M30x1.5								
SIED-M30-...-PA	■	■	–	■	■	■	■	4 / 8.2-40

Proximity sensors SIE..., inductive

Product range overview – Increased switching distance, with analogue output

Function	Version	Type	Nominal switching distance [mm]	Switch output	Switching element function
Sensors with increased switching distance	∅ 3 mm				
		SIEH-3	1.0	PNP	NO contact
				NPN	NO contact
	Male thread M12x1				
		SIEH-M12	4.0	PNP	NO contact
					NC contact
				NPN	NO contact
					NC contact
	Male thread M18x1				
		SIEH-M18	7.0	PNP	NO contact
					NC contact
				NPN	NO contact
					NC contact

Function	Version	Type	Position measuring range [mm]	Analogue output [V]	Analogue output [mA]
Sensors with analogue output	Male thread M8x1				
		SIEA-M8	0 ... 4	0 ... 10	–
	Male thread M12x1				
		SIEA-M12	0 ... 6	0 ... 10	4 ... 20
	Male thread M18x1				
		SIEA-M18	0 ... 10	0 ... 10	4 ... 20
	Male thread M30x1.5				
		SIEA-M30	0 ... 20	0 ... 10	4 ... 20

Proximity sensors SIE..., inductive

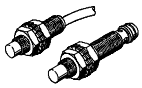
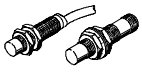
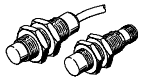
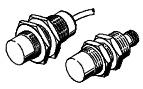
Product range overview – Increased switching distance, with analogue output

Type	Operating voltage		Electrical connection		Type of installation		Free of copper, PTFE and silicone	→ Page
	DC	AC	Plug	Cable	flush	non-flush		
∅ 3 mm								
SIEH-3	■	–	■	■	■	–	■	4 / 8.2-44
Male thread M12x1								
SIEH-M12	■	–	■	■	■	–	■	4 / 8.2-44
Male thread M18x1								
SIEH-M18	■	–	■	■	■	–	■	4 / 8.2-44

Type	Operating voltage		Electrical connection		Type of installation		Free of copper, PTFE and silicone	→ Page
	DC	AC	Plug	Cable	flush	non-flush		
Male thread M8x1								
SIEA-M8	■	–	■	–	■	–	■	4 / 8.2-48
Male thread M12x1								
SIEA-M12	■	–	■	–	■	–	■	4 / 8.2-48
Male thread M18x1								
SIEA-M18	■	–	■	–	■	–	■	4 / 8.2-48
Male thread M30x1.5								
SIEA-M30	■	–	■	–	■	–	■	4 / 8.2-48

Proximity sensors SIE..., inductive

Product range overview – Reduction factor 1

Function	Version	Type	Nominal switching distance [mm]	Switch output	Switching element function
Sensors with reduction factor 1 for all metals	**Male thread M8x1**				
		SIEF-M8	4.0	PNP	NO contact
				NPN	NO contact
	Male thread M12x1				
		SIEF-M12	8.0	PNP	NO contact
				NPN	NO contact
	Male thread M18x1				
		SIEF-M18	12.0	PNP	NO contact
				NPN	NO contact
	Male thread M30x1.5				
		SIEF-M30	20.0	PNP	NO contact
				NPN	NO contact

Function	Version	Type	Nominal switching distance		Switch output	Switching element function
			flush [mm]	non-flush [mm]		
Welding field immune sensors with reduction factor 1 for all metals	**Male thread M12x1**					
		SIEF-M12-...-WA	3.0	8.0	PNP	NO contact
					NPN	NO contact
	Male thread M18x1					
		SIEF-M18-...-WA	5.0	12.0	PNP	NO contact
					NPN	NO contact
	Male thread M30x1.5					
		SIEF-M30-...-WA	10.0	20.0	PNP	NO contact
					NPN	NO contact
	Block form, 40x40x60 mm					
		SIEF-Q40S	–	35.0	PNP	Antivalent
					NPN	Antivalent

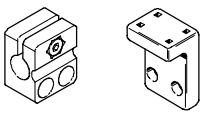
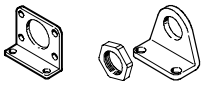
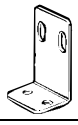
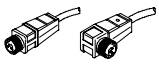
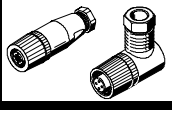
Proximity sensors SIE..., inductive

Product range overview – Reduction factor 1

FESTO

Type	Operating voltage		Electrical connection		Type of installation		Free of copper, PTFE and silicone	➔ Page
	DC	AC	Plug	Cable	flush	non-flush		
Male thread M8x1								
SIEF-M8	■	–	■	■	–	■	■	4 / 8.2-51
Male thread M12x1								
SIEF-M12	■	–	■	■	–	■	■	4 / 8.2-51
Male thread M18x1								
SIEF-M18	■	–	■	■	–	■	■	4 / 8.2-51
Male thread M30x1.5								
SIEF-M30	■	–	■	■	–	■	■	4 / 8.2-51

Type	Operating voltage		Electrical connection		Type of installation		Free of copper, PTFE and silicone	➔ Page
	DC	AC	Plug	Cable	flush	non-flush		
Male thread M12x1								
SIEF-M12-...-WA	■	–	■	–	■	■	–	4 / 8.2-56
Male thread M18x1								
SIEF-M18-...-WA	■	–	■	–	■	■	–	4 / 8.2-56
Male thread M30x1.5								
SIEF-M30-...-WA	■	–	■	–	■	■	–	4 / 8.2-56
Block form, 40x40x60 mm								
SIEF-Q40S	■	–	■	–	■	–	■	4 / 8.2-56

Function	Version	Description	Free of copper, PTFE and silicone	➔ Page
General accessories		Sensor retainers	■	4 / 8.2-61
		Flange and foot mountings	■	4 / 8.2-62
		Sensor bracket for SIES-V3B	–	
		Stop blocks	■	
		Plug socket with cable M8x1	–	4 / 8.2-63
		Plug socket with cable M12x1	–	
		Sensor sockets M12x1	–	4 / 8.2-63

Proximity sensors SIE..., inductive

Type codes

SIE	N	–	M	30	NB	–	P	S	–	K	–	2L	–	

Type	
SIE	Sensors/inductive/electronic

Construction	
A	Sensors with analogue output
D	Sensors for DC and AC
F	Sensors with reduction factor 1 for all metals
H	Sensors with increased switching distance
N	Sensors with standard switching distance
S	Special sensor designs
Z	Accessories

Design	
	Round
M	Metric parallel thread
Q	Block-shaped
V3	V3 shape (similar to valve V-3-M5)

Size	

Type of installation	
B	Flush
NB	Non-flush
S	Non-flush

Electrical output	
P	PNP switch output
PU	Analogue output 0 ... 10 V
UI	Analogue output 0 ... 10 V and 4 ... 20 mA
N	NPN switch output
Z	2-wire output

Switching element function	
S	NO contact
O	NC contact
A	Antivalent

Electrical connection	
K	Cable
S	Plug
X	Terminals

Switching status display/ready status display	
	Without LED
L	LED for indicating switching status
2L	LED for indicating switching status and operating voltage

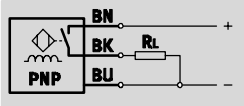
Options	
	Standard
PA	Polyamide
WA	Welding field immune design

Proximity sensors SIEN-..., inductive

Technical data

FESTO

Function[1)]



1) e.g. NO contact with PNP output and cable

- Standard switching distance
- For DC voltage
- Round design

General technical data									
Size			∅ 4 mm	M5	∅ 6.5 mm	M8x1	M12x1	M18x1	M30x1.5
Type of installation			flush			flush or non-flush			
Nominal switching distance S_n	flush	[mm]	0.8	0.8	1.5	1.5	2.0	5.0	10.0
	non-flush	[mm]	–	–	–	2.5	4.0	8.0	15.0
Assured switching distance S_a	flush	[mm]	0.64	0.64	1.21	1.21	1.62	4.05	8.1
	non-flush	[mm]	–	–	–	2.03	3.24	6.48	12.15
Repetition accuracy	flush	[mm]	±0.04	±0.04	±0.075	±0.075	±0.1	±0.15	±0.3
	non-flush	[mm]	–	–	–	±0.125	±0.2	±0.2	±0.4
Type of mounting			Clamped	Via lock nut	Clamped	Via lock nut			
Tightening torque		[Nm]	–	2	–	5	12	25	50
Ready status display			–						
Switching status display			Yellow LED						
Conforms to			DIN EN 60947-5-2						

Electrical data									
Size			∅ 4 mm	M5	∅ 6.5 mm	M8x1	M12x1	M18x1	M30x1.5
Switch output			PNP or NPN						
Switching element function			NC or NO contact						
Electrical connection		Plug	M8x1, 3-pin				M12x1, 3-pin		
		Cable	3-core						
Cable length		[m]	2.5						
Operating voltage range		[V DC]	10 ... 30		15 ... 34				
Residual ripple		[%]	10						
Max. switching frequency	flush	[Hz]	3000	3000	1500	1500	1200	800	350
	non-flush	[Hz]	–	–	–	900	800	300	300
Max. output current as a function of temperature		[mA]	200 at ≤ 70 °C		150 at ≤ 85 °C				
		[mA]			200 at ≤ 50 °C				
Voltage drop		[V]	2.0		3.2				
Idle current		[mA]	10		30				
Protection against short circuit			Pulsed						
Protection against polarity reversal			For all electrical connections						
Resistance to interference from magnetic fields			–						
Protection class to EN 60 529			IP67						
CE symbol			89/336/EEC (EMC)						

Proximity sensors SIEN-..., inductive

Technical data

Reduction factors of nominal switching distance S_n							
Size	∅ 4 mm	M5	∅ 6.5 mm	M8x1	M12x1	M18x1	M30x1.5
Flush mounting							
Steel St 37	1.0						
Stainless steel St 18/8	0.7	0.7	0.78	0.78	0.7	0.7	0.7
Brass	0.4	0.4	0.45	0.45	0.5	0.4	0.4
Aluminium	0.4	0.4	0.38	0.38	0.4	0.4	0.4
Copper	0.3	0.3	0.2	0.2	0.2	0.3	0.3
Non-flush mounting							
Steel St 37	–	–	–	1.0			
Stainless steel St 18/8	–	–	–	0.7	0.8	0.7	0.7
Brass	–	–	–	0.4	0.5	0.4	0.4
Aluminium	–	–	–	0.4	0.5	0.4	0.4
Copper	–	–	–	0.3	0.4	0.3	0.3

Materials							
Size	∅ 4 mm	M5	∅ 6.5 mm	M8x1	M12x1	M18x1	M30x1.5
Housing	High-alloy stainless steel				Nickel plated brass		
Cable sheath	Polyurethane						
Note on materials	Free of copper, PTFE and silicone						

Operating and environmental conditions								
Size		∅ 4 mm	M5	∅ 6.5 mm	M8x1	M12x1	M18x1	M30x1.5
Ambient temperature	[°C]	–25 ... +70		–25 ... +85				

Weight [g]							
Size	∅ 4 mm	M5	∅ 6.5 mm	M8x1	M12x1	M18x1	M30x1.5
Plug version	9	9	20	20	30	40	100
Cable version	48	48	60	60	80	120	170

Proximity sensors SIEN-..., inductive

Technical data

Dimensions – ∅ 4 mm

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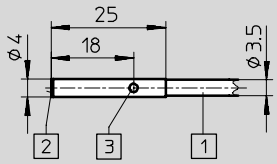
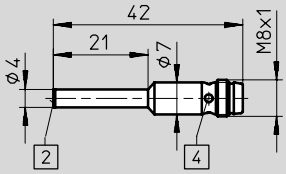
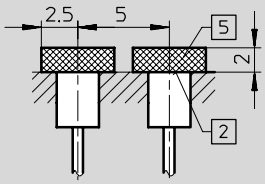
Cable



Plug



Installation instructions



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

Dimensions – M5

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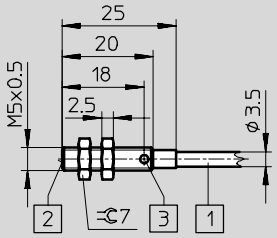
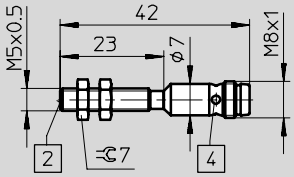
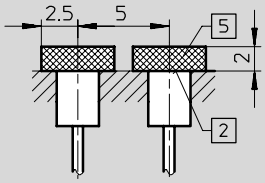
Cable



Plug



Installation instructions



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

Dimensions – ∅ 6.5 mm

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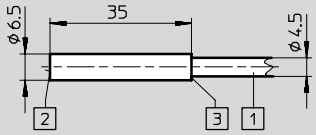
Cable



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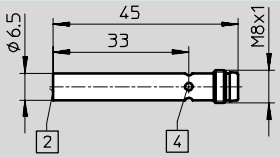
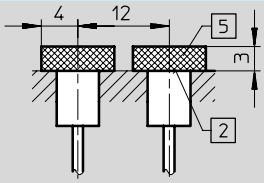


Installation instructions



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

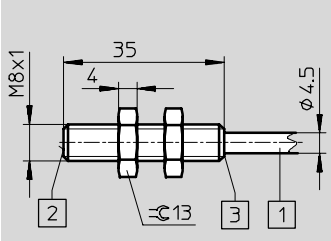
Proximity sensors SIEN-..., inductive

Technical data

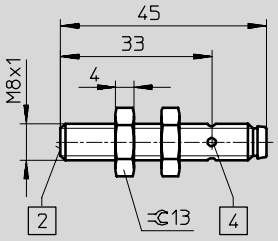
Dimensions – M8x1 Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

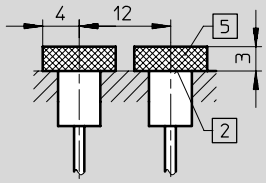
Cable



Plug



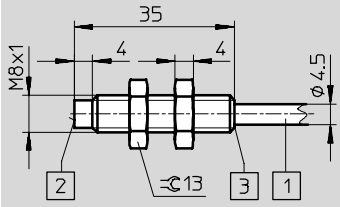
Installation instructions



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

Non-flush mounting

Cable



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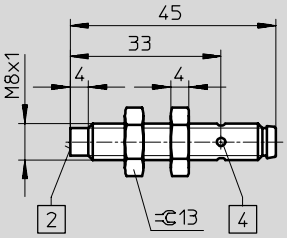
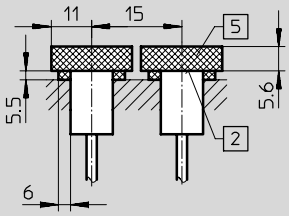


Installation instructions

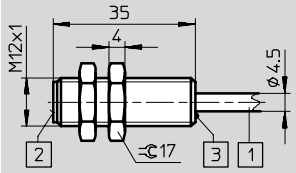


1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

Dimensions – M12x1 Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

Cable



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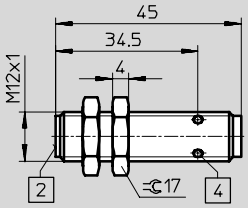
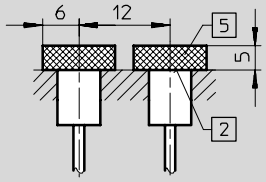


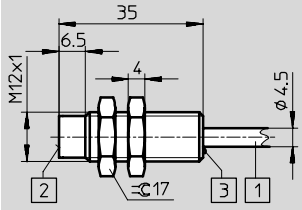
Installation instructions



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

Non-flush mounting

Cable



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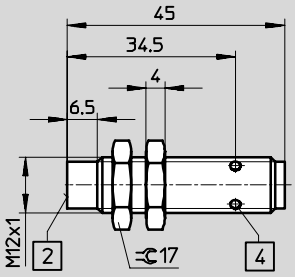

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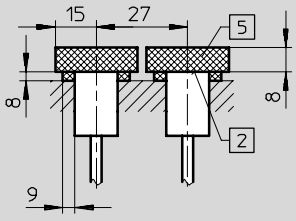

1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

Proximity sensors SIEN-..., inductive

Technical data

FESTO

Dimensions – M18x1

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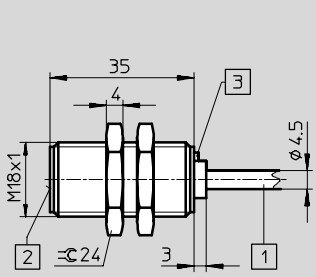
Flush mounting

Cable



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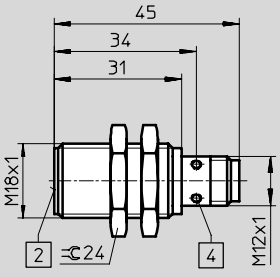
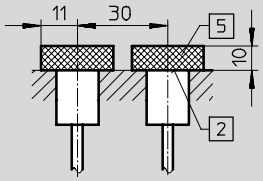


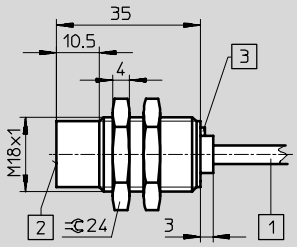
Installation instructions



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

Non-flush mounting

Cable



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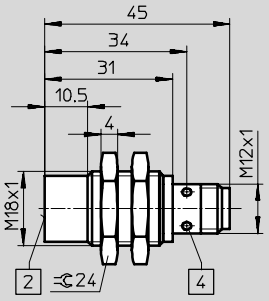
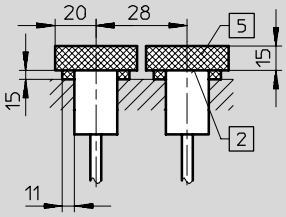


Installation instructions



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

Dimensions – M30x1.5

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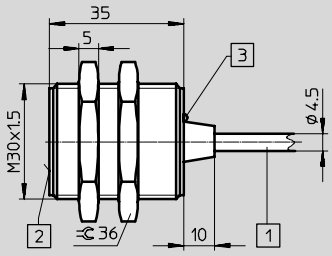
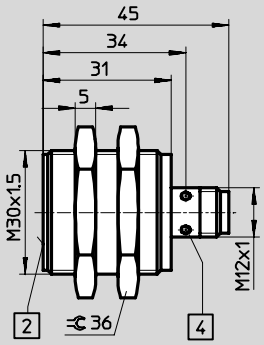
Flush mounting

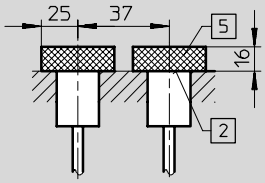
Cable



Plug



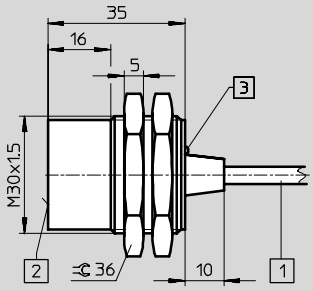
Installation instructions



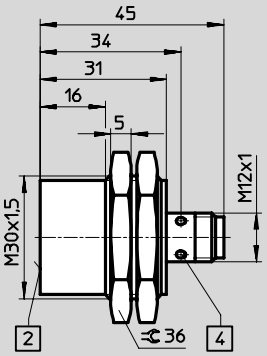
1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

Non-flush mounting

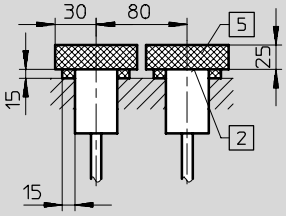
Cable



Plug



Installation instructions



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

Proximity sensors SIEN-..., inductive

Technical data

Ordering data – ∅ 4 mm

Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	150 362	SIEN-4B-PS-K-L
	■	–	–	■	150 363	SIEN-4B-PS-S-L
NPN	■	–	■	–	150 360	SIEN-4B-NS-K-L
	■	–	–	■	150 361	SIEN-4B-NS-S-L
NC contact						
PNP	■	–	■	–	150 366	SIEN-4B-PO-K-L
	■	–	–	■	150 367	SIEN-4B-PO-S-L
NPN	■	–	■	–	150 364	SIEN-4B-NO-K-L
	■	–	–	■	150 365	SIEN-4B-NO-S-L

Ordering data – ∅ 6.5 mm

Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	150 378	SIEN-6,5B-PS-K-L
	■	–	–	■	150 379	SIEN-6,5B-PS-S-L
NPN	■	–	■	–	150 376	SIEN-6,5B-NS-K-L
	■	–	–	■	150 377	SIEN-6,5B-NS-S-L
NC contact						
PNP	■	–	■	–	150 382	SIEN-6,5B-PO-K-L
	■	–	–	■	150 383	SIEN-6,5B-PO-S-L
NPN	■	–	■	–	150 380	SIEN-6,5B-NO-K-L
	■	–	–	■	150 381	SIEN-6,5B-NO-S-L

Ordering data – M5

Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	150 370	SIEN-M5B-PS-K-L
	■	–	–	■	150 371	SIEN-M5B-PS-S-L
NPN	■	–	■	–	150 368	SIEN-M5B-NS-K-L
	■	–	–	■	150 369	SIEN-M5B-NS-S-L
NC contact						
PNP	■	–	■	–	150 374	SIEN-M5B-PO-K-L
	■	–	–	■	150 375	SIEN-M5B-PO-S-L
NPN	■	–	■	–	150 372	SIEN-M5B-NO-K-L
	■	–	–	■	150 373	SIEN-M5B-NO-S-L

Proximity sensors SIEN-..., inductive

Technical data

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Ordering data – M8x1						
Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	150 386	SIEN-M8B-PS-K-L
	■	–	–	■	150 387	SIEN-M8B-PS-S-L
	–	■	■	–	150 394	SIEN-M8NB-PS-K-L
	–	■	–	■	150 395	SIEN-M8NB-PS-S-L
NPN	■	–	■	–	150 384	SIEN-M8B-NS-K-L
	■	–	–	■	150 385	SIEN-M8B-NS-S-L
	–	■	■	–	150 392	SIEN-M8NB-NS-K-L
	–	■	–	■	150 393	SIEN-M8NB-NS-S-L
NC contact						
PNP	■	–	■	–	150 390	SIEN-M8B-PO-K-L
	■	–	–	■	150 391	SIEN-M8B-PO-S-L
	–	■	■	–	150 398	SIEN-M8NB-PO-K-L
	–	■	–	■	150 399	SIEN-M8NB-PO-S-L
NPN	■	–	■	–	150 388	SIEN-M8B-NO-K-L
	■	–	–	■	150 389	SIEN-M8B-NO-S-L
	–	■	■	–	150 396	SIEN-M8NB-NO-K-L
	–	■	–	■	150 397	SIEN-M8NB-NO-S-L

Ordering data – M12x1						
Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	150 402	SIEN-M12B-PS-K-L
	■	–	–	■	150 403	SIEN-M12B-PS-S-L
	–	■	■	–	150 410	SIEN-M12NB-PS-K-L
	–	■	–	■	150 411	SIEN-M12NB-PS-S-L
NPN	■	–	■	–	150 400	SIEN-M12B-NS-K-L
	■	–	–	■	150 401	SIEN-M12B-NS-S-L
	–	■	■	–	150 408	SIEN-M12NB-NS-K-L
	–	■	–	■	150 409	SIEN-M12NB-NS-S-L
NC contact						
PNP	■	–	■	–	150 406	SIEN-M12B-PO-K-L
	■	–	–	■	150 407	SIEN-M12B-PO-S-L
	–	■	■	–	150 414	SIEN-M12NB-PO-K-L
	–	■	–	■	150 415	SIEN-M12NB-PO-S-L
NPN	■	–	■	–	150 404	SIEN-M12B-NO-K-L
	■	–	–	■	150 405	SIEN-M12B-NO-S-L
	–	■	■	–	150 412	SIEN-M12NB-NO-K-L
	–	■	–	■	150 413	SIEN-M12NB-NO-S-L

Proximity sensors SIEN-..., inductive

Technical data

Ordering data – M18x1						
Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	150 418	SIEN-M18B-PS-K-L
	■	–	–	■	150 419	SIEN-M18B-PS-S-L
	–	■	■	–	150 426	SIEN-M18NB-PS-K-L
	–	■	–	■	150 427	SIEN-M18NB-PS-S-L
NPN	■	–	■	–	150 416	SIEN-M18B-NS-K-L
	■	–	–	■	150 417	SIEN-M18B-NS-S-L
	–	■	■	–	150 424	SIEN-M18NB-NS-K-L
	–	■	–	■	150 425	SIEN-M18NB-NS-S-L
NC contact						
PNP	■	–	■	–	150 422	SIEN-M18B-PO-K-L
	■	–	–	■	150 423	SIEN-M18B-PO-S-L
	–	■	■	–	150 430	SIEN-M18NB-PO-K-L
	–	■	–	■	150 431	SIEN-M18NB-PO-S-L
NPN	■	–	■	–	150 420	SIEN-M18B-NO-K-L
	■	–	–	■	150 421	SIEN-M18B-NO-S-L
	–	■	■	–	150 428	SIEN-M18NB-NO-K-L
	–	■	–	■	150 429	SIEN-M18NB-NO-S-L

Ordering data – M30x1.5						
Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	150 434	SIEN-M30B-PS-K-L
	■	–	–	■	150 435	SIEN-M30B-PS-S-L
	–	■	■	–	150 442	SIEN-M30NB-PS-K-L
	–	■	–	■	150 443	SIEN-M30NB-PS-S-L
NPN	■	–	■	–	150 432	SIEN-M30B-NS-K-L
	■	–	–	■	150 433	SIEN-M30B-NS-S-L
	–	■	■	–	150 440	SIEN-M30NB-NS-K-L
	–	■	–	■	150 441	SIEN-M30NB-NS-S-L
NC contact						
PNP	■	–	■	–	150 438	SIEN-M30B-PO-K-L
	■	–	–	■	150 439	SIEN-M30B-PO-S-L
	–	■	■	–	150 446	SIEN-M30NB-PO-K-L
	–	■	–	■	150 447	SIEN-M30NB-PO-S-L
NPN	■	–	■	–	150 436	SIEN-M30B-NO-K-L
	■	–	–	■	150 437	SIEN-M30B-NO-S-L
	–	■	■	–	150 444	SIEN-M30NB-NO-K-L
	–	■	–	■	150 445	SIEN-M30NB-NO-S-L

Proximity sensors SIED-..., inductive

Technical data

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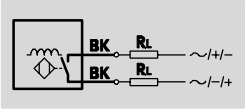
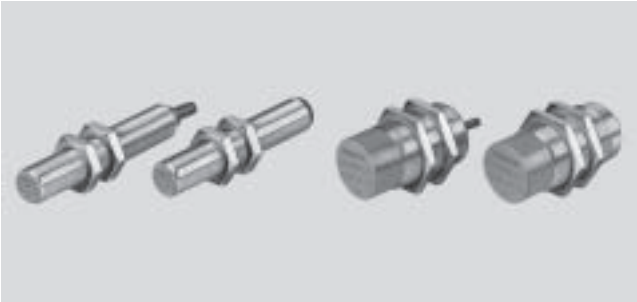
Function[1)]



1) e.g. NO contact and cable

- Standard switching distance
- For DC and AC
- Round design



General technical data					
Size			M12x1	M18x1	M30x1.5
Type of installation			flush or non-flush		
Nominal switching distance S_n	flush	[mm]	2.0	5.0	10.0
	non-flush	[mm]	4.0	8.0	15.0
Assured switching distance S_a	flush	[mm]	1.62	4.05	8.1
	non-flush	[mm]	3.24	6.5	12.15
Repetition accuracy	flush	[mm]	±0.1	±0.15	±0.3
	non-flush	[mm]	±0.2	±0.2	±0.4
Type of mounting			Via lock nut		
Tightening torque		[Nm]	10	20	40
Ready status display			–		
Switching status display			Yellow LED		
Conforms to			DIN EN 60947-5-2		

Electrical data					
Size			M12x1	M18x1	M30x1.5
Switching element function			NC or NO contact		
Electrical connection		Plug	M12x1, 2-pin		
		Cable	2-core		
Cable length		[m]	2.5		
Operating voltage range		[V DC]	20 ... 320		
		[V AC]	20 ... 265		
Max. switching frequency DC	flush	[Hz]	1200	490	220
	non-flush	[Hz]	900	340	200
Max. switching frequency AC	flush	[Hz]	25		
	non-flush	[Hz]	25		
Max. output current		[mA]	200	300	
Minimum load current		[mA]	5.0		
Mains frequency		[Hz]	50		
Voltage drop		[V]	≤ 8.0		
Idle current		[mA]	≤ 1.5		
Protection against short circuit			No		
Protection against polarity reversal			For all electrical connections		
Protection against overloading			Not available		
Resistance to interference from magnetic fields			–		
Inductive protective circuit			Integrated		
Protection class to EN 60 529			IP67		
CE symbol			89/336/EEC (EMC) 73/23/EEC (low voltage)		

Proximity sensors SIED-..., inductive

Technical data

Reduction factors of nominal switching distance S_n			
Size	M12x1	M18x1	M30x1.5
Flush mounting:			
Steel St 37	1.0		
Stainless steel St 18/8	0.9	0.7	0.7
Brass	0.6	0.4	0.4
Aluminium	0.5	0.4	0.4
Copper	0.4	0.3	0.3
Non-flush mounting:			
Steel St 37	1.0		
Stainless steel St 18/8	0.9	0.7	0.8
Brass	0.6	0.4	0.5
Aluminium	0.6	0.5	0.5
Copper	0.5	0.3	0.4

Materials			
Size	M12x1	M18x1	M30x1.5
Housing	Nickel plated brass Polyamide		
Cable sheath	Polyurethane		
Note on materials	Free of copper, PTFE and silicone		

Operating and environmental conditions				
Size		M12x1	M18x1	M30x1.5
Ambient temperature	[°C]	–25 ... +85		
Ambient temperature with flexible cable installation	[°C]	–5 ... +50		
Corrosion resistance class CRC[1)]		1		

1) Corrosion resistance class 1 according to Festo standard 940 070
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Weight [g]			
Size	M12x1	M18x1	M30x1.5
Plug version	20	50	140
Cable version	90	110	190

Proximity sensors SIED-..., inductive

Technical data

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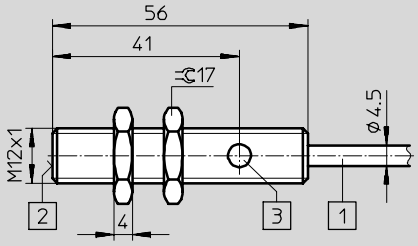
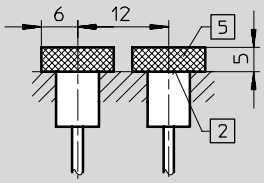
Dimensions – M12x1 Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

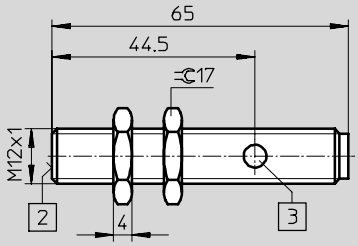
Cable



Installation instructions



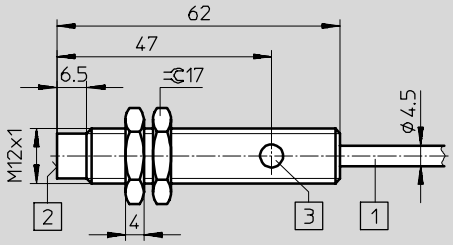
Plug



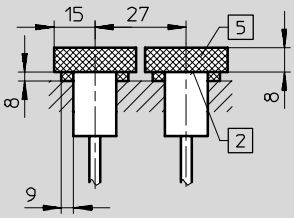
1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Non-flush mounting

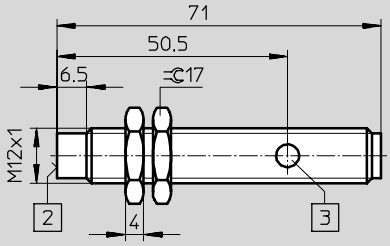
Cable



Installation instructions



Plug

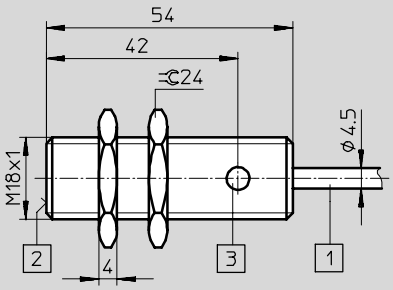


1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

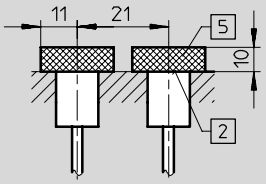
Dimensions – M18x1 Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

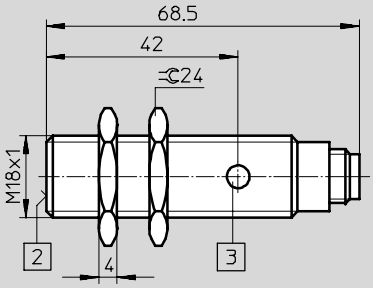
Cable



Installation instructions



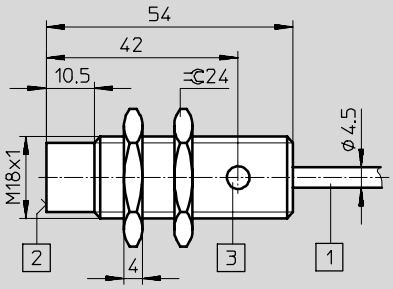
Plug



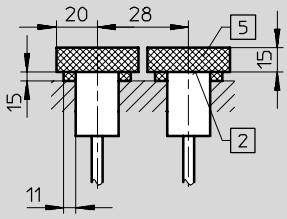
1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Non-flush mounting

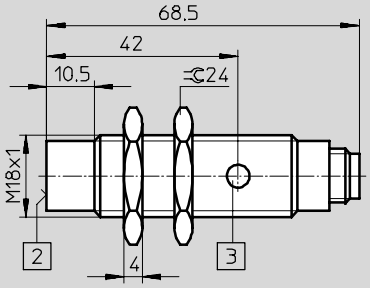
Cable



Installation instructions



Plug

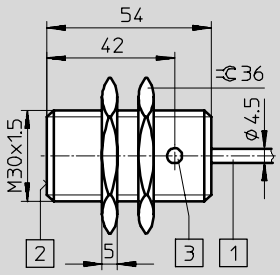


1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

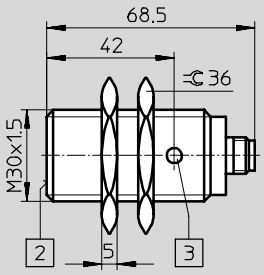
Dimensions – M30x1.5 Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

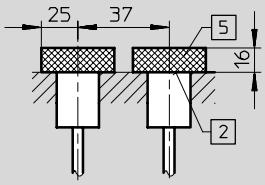
Cable



Plug



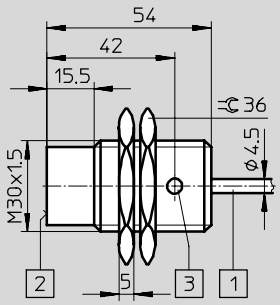
Installation instructions



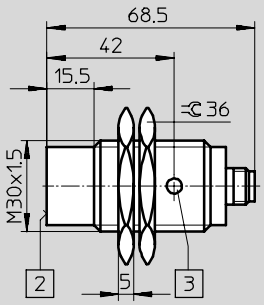
1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Non-flush mounting

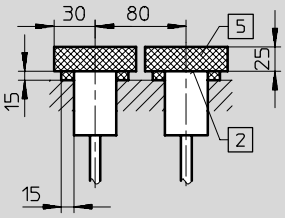
Cable



Plug



Installation instructions



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Proximity sensors SIED-..., inductive

Technical data

Ordering data – M12x1					
Installation		Electrical connection		Part No.	Type
Flush	Non-flush	Cable	Plug		
NO contact					
■	–	■	–	538 272	SIED-M12B-ZS-K-L
■	–	–	■	538 271	SIED-M12B-ZS-S-L
–	■	■	–	538 268	SIED-M12NB-ZS-K-L
–	■	–	■	538 267	SIED-M12NB-ZS-S-L
NC contact					
■	–	■	–	538 274	SIED-M12B-ZO-K-L
■	–	–	■	538 273	SIED-M12B-ZO-S-L
–	■	■	–	538 270	SIED-M12NB-ZO-K-L
–	■	–	■	538 269	SIED-M12NB-ZO-S-L

Ordering data – M18x1					
Installation		Electrical connection		Part No.	Type
Flush	Non-flush	Cable	Plug		
NO contact					
■	–	■	–	538 280	SIED-M18B-ZS-K-L
■	–	–	■	538 279	SIED-M18B-ZS-S-L
–	■	■	–	538 276	SIED-M18NB-ZS-K-L
–	■	–	■	538 275	SIED-M18NB-ZS-S-L
NC contact					
■	–	■	–	538 282	SIED-M18B-ZO-K-L
■	–	–	■	538 281	SIED-M18B-ZO-S-L
–	■	■	–	538 278	SIED-M18NB-ZO-K-L
–	■	–	■	538 277	SIED-M18NB-ZO-S-L

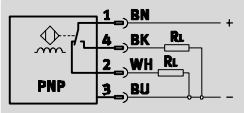
Ordering data – M30x1.5					
Installation		Electrical connection		Part No.	Type
Flush	Non-flush	Cable	Plug		
NO contact					
■	–	■	–	538 288	SIED-M30B-ZS-K-L
■	–	–	■	538 287	SIED-M30B-ZS-S-L
–	■	■	–	538 284	SIED-M30NB-ZS-K-L
–	■	–	■	538 283	SIED-M30NB-ZS-S-L
NC contact					
■	–	■	–	538 290	SIED-M30B-ZO-K-L
■	–	–	■	538 289	SIED-M30B-ZO-S-L
–	■	■	–	538 286	SIED-M30NB-ZO-K-L
–	■	–	■	538 285	SIED-M30NB-ZO-S-L

Proximity sensors SIES-..., inductive

Technical data

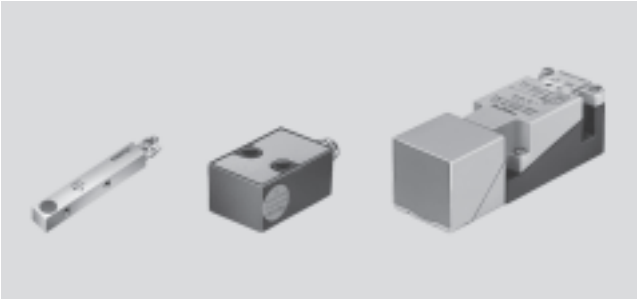
FESTO

Function[1)]



1) e.g. antivalent with PNP output and terminals

- Standard switching distance
- For DC voltage
- Block-shaped design



General technical data						
Design		SIES-Q5B-...	SIES-Q8B-...	SIES-V3B-...	SIES-QB-...	SIES-Q40B-...
Type of installation		flush				
Nominal switching distance S_n	[mm]	0.8	1.5	2.0	2.0	15.0
Assured switching distance S_a	[mm]	0.64	1.2	1.6	1.6	12.2
Repetition accuracy	[mm]	±0.04	±0.075	±0.1	±0.1	±0.75
Type of mounting		Via female threads		Via through-holes		
Ready status display		–				Green LED
Switching status display		Yellow LED				
Conforms to		DIN EN 60947-5-2				

Electrical data						
Design		SIES-Q5B-...	SIES-Q8B-...	SIES-V3B-...	SIES-QB-...	SIES-Q40B-...
Switch output		PNP or NPN				
Switching element function		NC or NO contact				Antivalent
Electrical connection	Plug	–	M8x1, 3-pin	M8x1, 3-pin	–	Screw terminal
	Cable	3-core	3-core	–	3-core	–
Cable length	[m]	2.5				
Operating voltage range	[V DC]	10 ... 30				
Residual ripple	[%]	10				
Max. switching frequency	[Hz]	3000	1500	1200	1200	100
Max. output current	[mA]	200		–		
Max. output current as a function of temperature	[mA]	200 at ≤ 70 °C		150 at ≤ 85 °C		
	[mA]			200 at ≤ 50 °C		
Voltage drop	[V]	2.0		3.2		3.5
Idle current	[mA]	10		30		
Protection against short circuit		Pulsed				
Protection against polarity reversal		For all electrical connections				
Resistance to interference from magnetic fields		–				
Protection class to EN 60 529		IP67				IP65
CE symbol		89/336/EEC (EMC)				

Proximity sensors SIES-..., inductive

Technical data

Reduction factors of nominal switching distance S_n					
Design	SIES-Q5B-...	SIES-Q8B-...	SIES-V3B-...	SIES-QB-...	SIES-Q40B-...
Steel St 37	1.0				
Stainless steel St 18/8	0.7	0.8	0.7	0.8	0.7
Brass	0.4	0.5	0.5	0.5	0.3
Aluminium	0.4	0.4	0.45	0.45	0.3
Copper	0.3	0.2	0.3	0.35	0.25

Materials					
Design	SIES-Q5B-...	SIES-Q8B-...	SIES-V3B-...	SIES-QB-...	SIES-Q40B-...
Housing	Nickel plated brass		Die-cast zinc	Polybutylene terephtalate, reinforced	Polyester
Cable sheath	Polyurethane				–
Note on materials	Free of copper, PTFE and silicone				

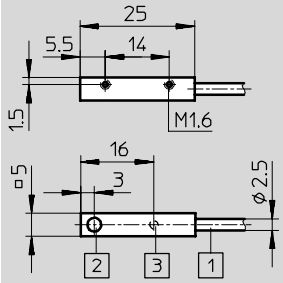
Operating and environmental conditions						
Design		SIES-Q5B-...	SIES-Q8B-...	SIES-V3B-...	SIES-QB-...	SIES-Q40B-...
Ambient temperature	[°C]	–25 ... +70		–25 ... +85		

Weight [g]					
Design	SIES-Q5B-...	SIES-Q8B-...	SIES-V3B-...	SIES-QB-...	SIES-Q40B-...
Plug version	–	15	120	–	230
Cable version	22	15	–	170	–

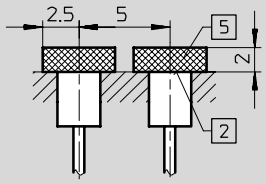
Dimensions – SIES-Q5B

Download CAD data ➔ **www.festo.com/en/engineering**

Cable



Installation instructions



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Proximity sensors SIES-..., inductive

Technical data

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Dimensions – SIES-Q8B

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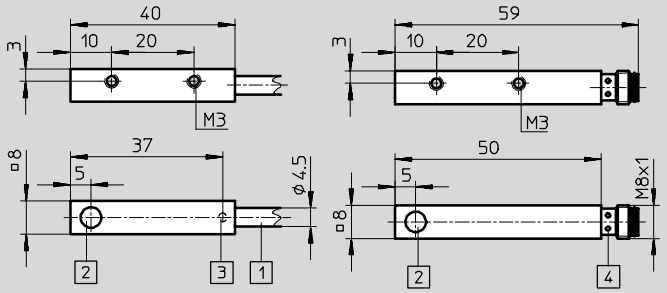
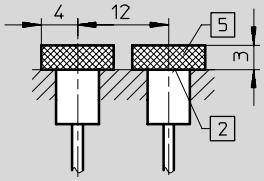
Cable | Plug | Installation instructions



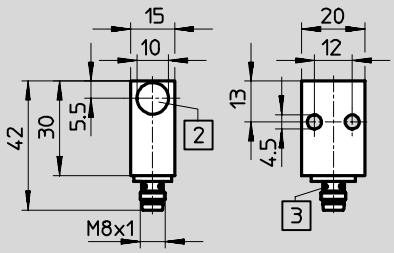


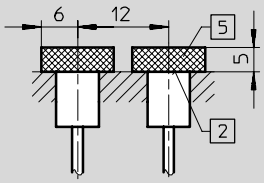
1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

Dimensions – SIES-V3B

Download CAD data ➔ **www.festo.com/en/engineering**

Installation instructions



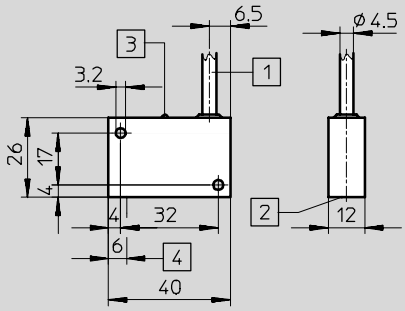


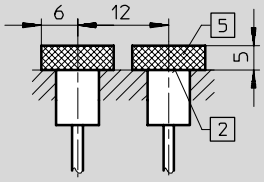
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Dimensions – SIES-QB

Download CAD data ➔ **www.festo.com/en/engineering**

Installation instructions



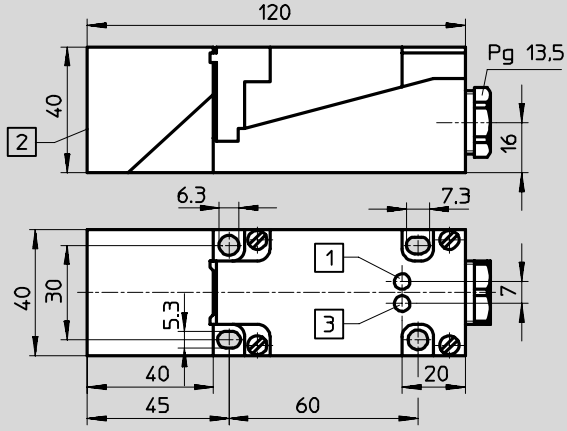


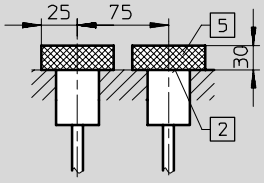
1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Sensor centre
5 Metal-free zone

Dimensions – SIES-Q40B

Download CAD data ➔ **www.festo.com/en/engineering**

Installation instructions





1 Ready status display
2 Supplied with active surface facing forward: sensor head can be adjusted to any one of 5 response directions
3 Switching status display
5 Metal-free zone

Proximity sensors SIES-..., inductive

Technical data

Ordering data – Design SIES-Q5B

Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	**178 291**	**SIES-Q5B-PS-K-L**
NPN	■	–	■	–	**178 290**	**SIES-Q5B-NS-K-L**
NC contact						
PNP	■	–	■	–	**174 549**	**SIES-Q5B-PO-K-L**
NPN	■	–	■	–	**174 548**	**SIES-Q5B-NO-K-L**

Ordering data – Design SIES-Q8B

Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	**178 294**	**SIES-Q8B-PS-K-L**
	■	–	–	■	**178 295**	**SIES-Q8B-PS-S-L**
NPN	■	–	■	–	**178 292**	**SIES-Q8B-NS-K-L**
	■	–	–	■	**178 293**	**SIES-Q8B-NS-S-L**
NC contact						
PNP	■	–	■	–	**174 552**	**SIES-Q8B-PO-K-L**
	■	–	–	■	**174 553**	**SIES-Q8B-PO-S-L**
NPN	■	–	■	–	**174 550**	**SIES-Q8B-NO-K-L**
	■	–	–	■	**174 451**	**SIES-Q8B-NO-S-L**

Ordering data – Remaining variants

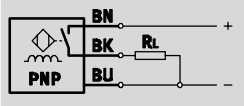
Switch output	Installation		Electrical connection			Part No.	Type
	Flush	Non-flush	Cable	Plug	Screw terminal		
NO contact							
PNP	■	–	–	■	–	**150 491**	**SIES-V3B-PS-S-L**
NPN	■	–	–	■	–	**150 490**	**SIES-V3B-NS-S-L**
PNP	■	–	■	–	–	**150 488**	**SIES-QB-PS-K-L**
NC contact							
PNP	■	–	■	–	–	**150 489**	**SIES-QB-PO-K-L**
Antivalent							
PNP	■	–	–	–	■	**150 492**	**SIES-Q40-PA-X-2L**

Proximity sensors SIEN-...-PA, inductive

Technical data

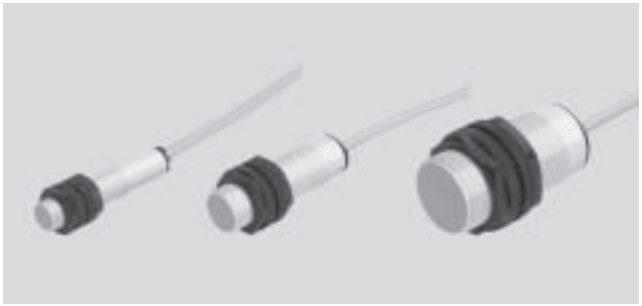
FESTO

Function[1)]



1) e.g. NO contact with PNP output and cable

- Standard switching distance
- Corrosion-resistant
- Polyamide housing
- For DC voltage
- Round design



General technical data					
Size			M12x1	M18x1	M30x1.5
Type of installation			flush or non-flush		
Nominal switching distance S_n	flush	[mm]	2.0	5.0	10.0
	non-flush	[mm]	4.0	8.0	15.0
Assured switching distance S_a	flush	[mm]	1.62	4.05	8.1
	non-flush	[mm]	3.24	6.48	12.15
Repetition accuracy	flush	[mm]	0.04	0.1	0.2
	non-flush	[mm]	0.08	0.16	0.3
Type of mounting			Via lock nut		
Tightening torque		[Nm]	1.0	2.0	5.0
Ready status display			–		
Switching status display			Yellow LED		
Conforms to			DIN EN 60947-5-2		

Electrical data					
Size			M12x1	M18x1	M30x1.5
Switch output			PNP or NPN		
Switching element function			NO contact		
Electrical connection		Cable	3-core		
Cable length		[m]	2.5		
Operating voltage range		[V DC]	10 ... 30		
Residual ripple		[%]	10		
Max. switching frequency	flush	[Hz]	2000	1000	500
	non-flush	[Hz]	2000	1000	500
Max. output current		[mA]	200		
Voltage drop		[V]	≤ 1.8		
Idle current		[mA]	≤ 15		
Protection against short circuit			Pulsed		
Protection against polarity reversal			For all electrical connections		
Resistance to interference from magnetic fields			–		
Protection class to EN 60 529			IP65/IP67		
CE symbol			89/336/EEC (EMC)		

Proximity sensors SIEN-...-PA, inductive

Technical data

Reduction factors of nominal switching distance S_n			
Size	M12x1	M18x1	M30x1.5
Steel St 37	1.0		
Stainless steel St 18/8	0.6 ... 1.0		
Brass	0.35 ... 0.5		
Aluminium	0.35 ... 0.5		
Copper	0.25 ... 0.45		

Materials			
Size	M12x1	M18x1	M30x1.5
Housing	Polyamide, reinforced		
Cable sheath	Polyvinyl chloride		
Note on materials	Free of copper, PTFE and silicone		

Operating and environmental conditions				
Size		M12x1	M18x1	M30x1.5
Ambient temperature	[°C]	–25 ... +70		
Ambient temperature with flexible cable installation	[°C]	0 ... +70		
Corrosion resistance class CRC[1)]		4		

1) Corrosion resistance class 4 according to Festo standard 940 070
Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required.

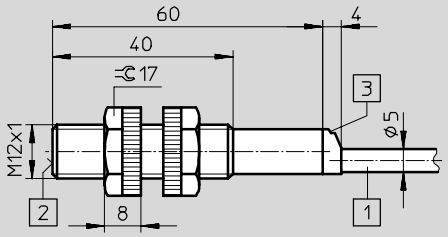
Weight [g]			
Size	M12x1	M18x1	M30x1.5
	113	127	158

Proximity sensors SIEN-...-PA, inductive

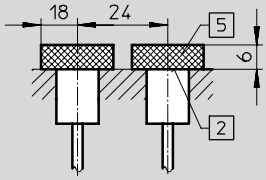
Technical data

Dimensions – M12x1 Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

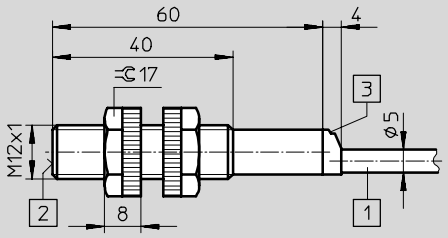


Installation instructions

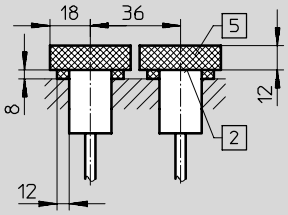


1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Non-flush mounting



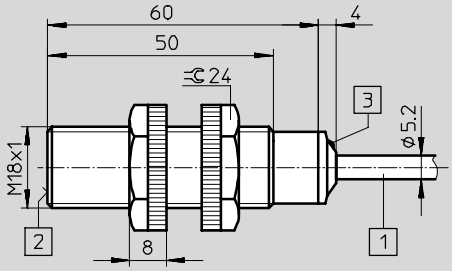
Installation instructions



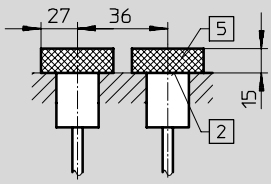
1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Dimensions – M18x1 Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

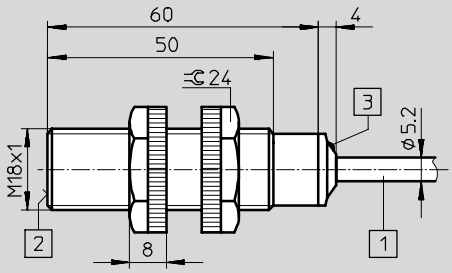


Installation instructions

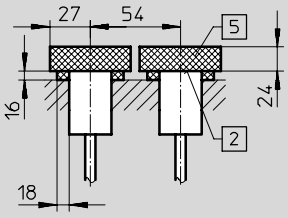


1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Non-flush mounting



Installation instructions



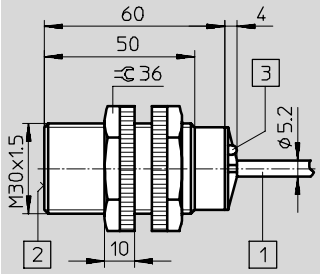
1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Proximity sensors SIEN-...-PA, inductive

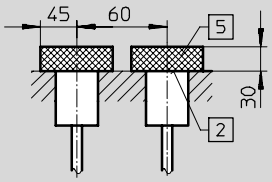
Technical data

Dimensions – M30x1.5 Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

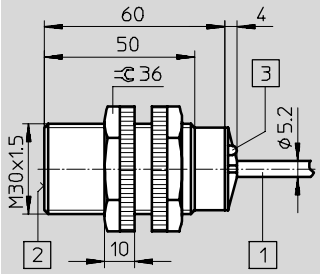


Installation instructions

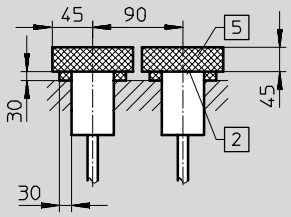


1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Non-flush mounting



Installation instructions



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Ordering data – M12x1

Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	538 323	SIEN-M12B-PS-K-L-PA
	–	■	■	–	538 329	SIEN-M12NB-PS-K-L-PA
NPN	■	–	■	–	538 324	SIEN-M12B-NS-K-L-PA
	–	■	■	–	538 330	SIEN-M12NB-NS-K-L-PA

Ordering data – M18x1

Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	538 325	SIEN-M18B-PS-K-L-PA
	–	■	■	–	538 331	SIEN-M18NB-PS-K-L-PA
NPN	■	–	■	–	538 326	SIEN-M18B-NS-K-L-PA
	–	■	■	–	538 332	SIEN-M18NB-NS-K-L-PA

Ordering data – M30x1.5

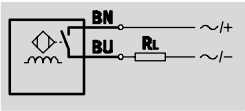
Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	538 327	SIEN-M30B-PS-K-L-PA
	–	■	■	–	538 333	SIEN-M30NB-PS-K-L-PA
NPN	■	–	■	–	538 328	SIEN-M30B-NS-K-L-PA
	–	■	■	–	538 334	SIEN-M30NB-NS-K-L-PA

Proximity sensors SIED-...-PA, inductive

Technical data

FESTO

Function[1)]



1) e.g. NO contact with cable

- Standard switching distance
- Corrosion-resistant
- Polyamide housing
- For DC and AC
- Round design

General technical data					
Size			M12x1	M18x1	M30x1.5
Type of installation			flush or non-flush		
Nominal switching distance S_n	flush	[mm]	2.0	5.0	10.0
	non-flush	[mm]	4.0	8.0	15.0
Assured switching distance S_a	flush	[mm]	1.62	4.05	8.1
	non-flush	[mm]	3.24	6.5	12.15
Repetition accuracy	flush	[mm]	0.04	0.1	0.2
	non-flush	[mm]	0.08	0.16	0.3
Type of mounting			Via lock nut		
Tightening torque		[Nm]	1.0	2.0	5.0
Ready status display			–		
Switching status display			Yellow LED		
Conforms to			DIN EN 60947-5-2		

Electrical data				
Size		M12x1	M18x1	M30x1.5
Switching element function		NO contact		
Electrical connection	Plug	M12x1, 2-pin		
	Cable	2-core		
Cable length	[m]	2.5		
Operating voltage range	[V DC]	10 ... 300		
	[V AC]	20 ... 250		
Residual ripple	[%]			
Max. switching frequency DC	[Hz]	60		
Max. switching frequency AC	[Hz]	20		
Max. output current	[mA]	100	300	
Minimum load current	[mA]	3.0		
Mains frequency	[Hz]	50 ... 60		
Voltage drop	[V]	≤ 6.0		
Idle current	[mA]	≤ 1.5		
Protection against short circuit		No		
Protection against polarity reversal		For all electrical connections		
Resistance to interference from magnetic fields				
Protection class to EN 60 529		IP65/IP67		
CE symbol		89/336/EEC (EMC)		

Proximity sensors SIED-...-PA, inductive

Technical data

Reduction factors of nominal switching distance S_n			
Size	M12x1	M18x1	M30x1.5
Steel St 37	1.0		
Stainless steel St 18/8	0.6 ... 1.0		
Brass	0.35 ... 0.5		
Aluminium	0.35 ... 0.5		
Copper	0.25 ... 0.45		

Materials			
Size	M12x1	M18x1	M30x1.5
Housing	Polyamide, reinforced		
Cable sheath	Polyvinyl chloride		
Note on materials	Free of copper, PTFE and silicone		

Operating and environmental conditions				
Size		M12x1	M18x1	M30x1.5
Ambient temperature	[°C]	–25 ... +70		
Ambient temperature with flexible cable installation	[°C]	0 ... +70		
Corrosion resistance class CRC[1)]		4		

1) Corrosion resistance class 4 according to Festo standard 940 070
Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required.

Weight [g]			
Size	M12x1	M18x1	M30x1.5
Cable version	109	123	175

Proximity sensors SIED-...-PA, inductive

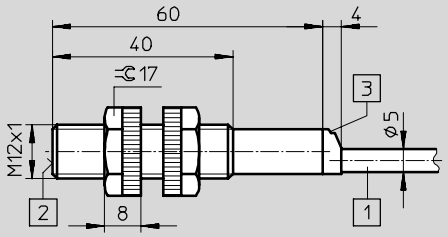
Technical data

FESTO

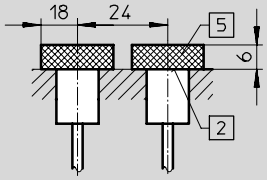
Dimensions – M12x1

Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

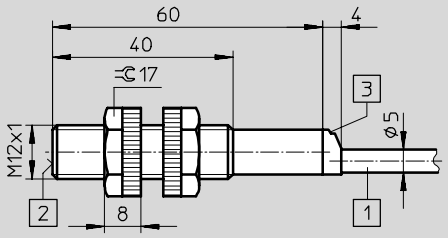


Installation instructions

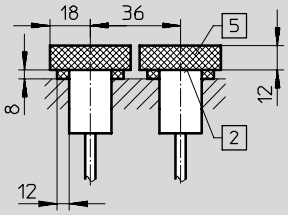


1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Non-flush mounting



Installation instructions

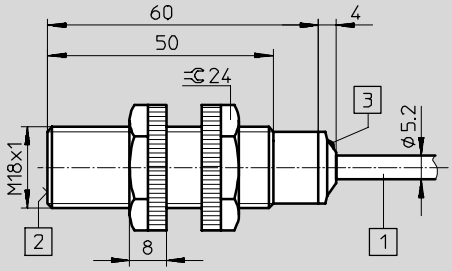


1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

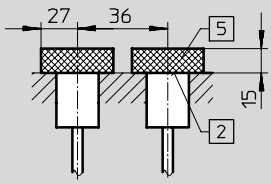
Dimensions – M18x1

Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

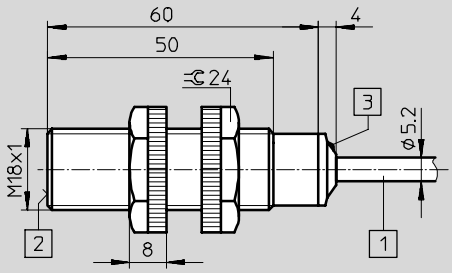


Installation instructions

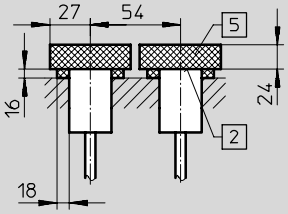


1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Non-flush mounting



Installation instructions



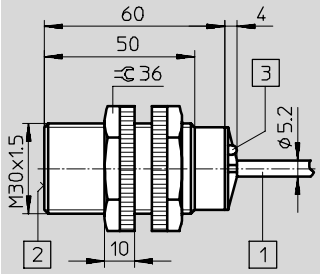
1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Proximity sensors SIED-...-PA, inductive

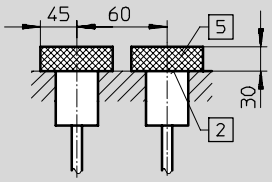
Technical data

Dimensions – M30x1.5 Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

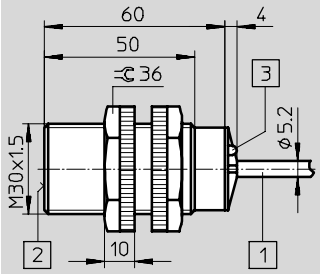


Installation instructions

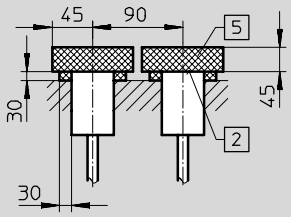


1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Non-flush mounting



Installation instructions



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Ordering data – M12x1

Installation		Electrical connection		Part No.	Type
Flush	Non-flush	Cable	Plug		
NO contact					
■	–	■	–	**538 336**	**SIED-M12B-ZS-K-L-PA**
–	■	■	–	**538 335**	**SIED-M12NB-ZS-K-L-PA**

Ordering data – M18x1

Installation		Electrical connection		Part No.	Type
Flush	Non-flush	Cable	Plug		
NO contact					
■	–	■	–	**538 338**	**SIED-M18B-ZS-K-L-PA**
–	■	■	–	**538 337**	**SIED-M18NB-ZS-K-L-PA**

Ordering data – M30x1.5

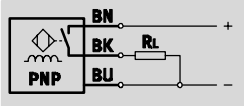
Installation		Electrical connection		Part No.	Type
Flush	Non-flush	Cable	Plug		
NO contact					
■	–	■	–	**538 340**	**SIED-M30B-ZS-K-L-PA**
–	■	■	–	**538 339**	**SIED-M30NB-ZS-K-L-PA**

Proximity sensors SIEH-..., inductive

Technical data

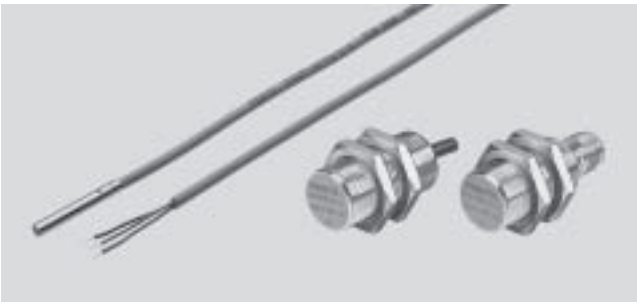
FESTO

Function[1)]



1) e.g. NO contact with PNP output and cable

- Increased switching distance
- For DC voltage
- Round design



General technical data				
Size		∅ 3 mm	M12x1	M18x1
Type of installation		flush		
Nominal switching distance S_n	[mm]	1.0	4.0	7.0
Assured switching distance S_a	[mm]	0.81	2.9	4.9
Repetition accuracy	[mm]	±0.02	±0.2	±0.2
Type of mounting		Clamped	Via lock nut	
Tightening torque	[Nm]	–	12	25
Ready status display		–		
Switching status display		Yellow LED		
Conforms to		DIN EN 60947-5-2	–	

Electrical data				
Size		∅ 3 mm	M12x1	M18x1
Switch output		PNP or NPN		
Switching element function		NC or NO contact		
Electrical connection	Plug	M8x1, 3-pin[1)]	M12x1, 3-pin	
	Cable	3-core		
Cable length	[m]	0.15[1)] or 2.5	2.5	
Operating voltage range	[V DC]	10 ... 30	15 ... 34	
Residual ripple	[%]	20	10	
Max. switching frequency DC	[Hz]	3000	400	250
Max. output current	[mA]	100		
Max. output current as a function of temperature	[mA]		150 at ≤ 85 °C	
	[mA]		200 at ≤ 50 °C	
Voltage drop	[V]	≤ 2.0	3.2	
Idle current	[mA]	≤ 0.1	≤ 0.01	
Protection against short circuit		Pulsed		
Protection against polarity reversal		For all electrical connections		
Resistance to interference from magnetic fields		–		
Protection class to EN 60 529		IP67		
CE symbol		89/336/EEC (EMC)		

1) Cable with plug

Proximity sensors SIEH-..., inductive

Technical data

Reduction factors of nominal switching distance S_n			
Size	∅ 3 mm	M12x1	M18x1
Steel St 37	1.0		
Stainless steel St 18/8	0.8	0.8	0.7
Brass	0.6	0.6	0.4
Aluminium	0.5	0.5	0.4
Copper	0.45	0.4	0.3

Materials			
Size	∅ 3 mm	M12x1	M18x1
Housing	High-alloy stainless steel	Nickel plated brass	
Cable sheath	Polyurethane		
Note on materials	Free of copper, PTFE and silicone		

Operating and environmental conditions				
Size		∅ 3 mm	M12x1	M18x1
Ambient temperature	[°C]	−25 ... +70	−25 ... +85	
Ambient temperature with flexible cable installation	[°C]	−5 ... +70	−5 ... +85	

Weight [g]			
Size	∅ 3 mm	M12x1	M18x1
Plug version	4	30	40
Cable version	18	80	120

Proximity sensors SIEH-..., inductive

Technical data

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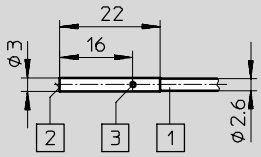
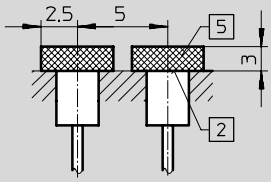
Dimensions – ∅ 3 mm

Download CAD data ➔ **www.festo.com/en/engineering**

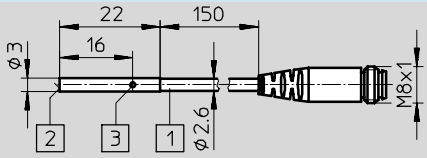
Cable



Installation instructions



Plug



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Dimensions – M12x1

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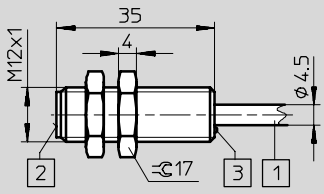
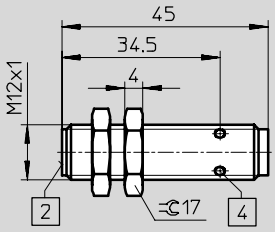
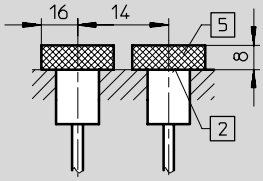
Cable



Plug



Installation instructions

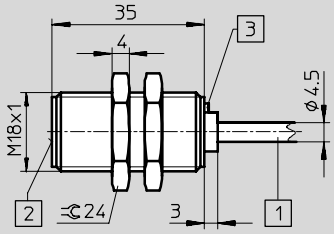


1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

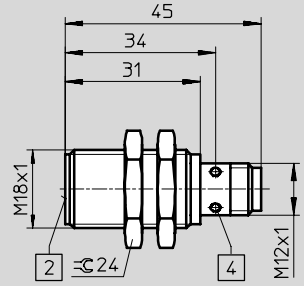
Dimensions – M18x1

Download CAD data ➔ **www.festo.com/en/engineering**

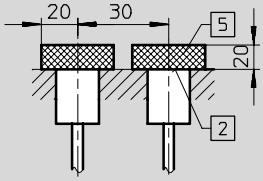
Cable



Plug



Installation instructions



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
4 Light emitting diode (LED)
5 Metal-free zone

Proximity sensors SIEH-..., inductive

Technical data

Ordering data – ∅ 3 mm						
Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	538 264	SIEH-3B-PS-K-L
	■	–	–	■	538 263	SIEH-3B-PS-S-L
NPN	■	–	■	–	538 266	SIEH-3B-NS-K-L
	■	–	–	■	538 265	SIEH-3B-NS-S-L

Ordering data – M12x1						
Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	150 450	SIEH-M12B-PS-K-L
	■	–	–	■	150 451	SIEH-M12B-PS-S-L
NPN	■	–	■	–	150 448	SIEH-M12B-NS-K-L
	■	–	–	■	150 449	SIEH-M12B-NS-S-L
NC contact						
PNP	■	–	■	–	150 454	SIEH-M12B-PO-K-L
	■	–	–	■	150 455	SIEH-M12B-PO-S-L
NPN	■	–	■	–	150 452	SIEH-M12B-NO-K-L
	■	–	–	■	150 453	SIEH-M12B-NO-S-L

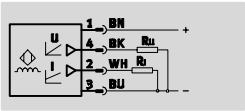
Ordering data – M18x1						
Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	■	–	■	–	150 458	SIEH-M18B-PS-K-L
	■	–	–	■	150 459	SIEH-M18B-PS-S-L
NPN	■	–	■	–	150 456	SIEH-M18B-NS-K-L
	■	–	–	■	150 457	SIEH-M18B-NS-S-L
NC contact						
PNP	■	–	■	–	150 462	SIEH-M18B-PO-K-L
	■	–	–	■	150 463	SIEH-M18B-PO-S-L
NPN	■	–	■	–	150 460	SIEH-M18B-NO-K-L
	■	–	–	■	150 461	SIEH-M18B-NO-S-L

Proximity sensors SIEA-..., inductive

Technical data

FESTO

Function[1)]



1) e.g. with analogue output for current and voltage

- Analogue output
- For DC voltage
- Round design

General technical data					
Size		M8x1	M12x1	M18x1	M30x1.5
Type of installation		flush			
Position measuring range	[mm]	0 ... 4	0 ... 6	0 ... 10	0 ... 20
Repetition accuracy	[mm]	0.01	0.01	0.02	0.05
Type of mounting		Via lock nut			
Tightening torque	[Nm]	4	10	25	70
Ready status display		–			
Switching status display		–			
Conforms to		–			

Electrical data					
Size		M8x1	M12x1	M18x1	M30x1.5
Analogue output	[V]	0 ... 10	0 ... 10	0 ... 10	0 ... 10
	[mA]	–	4 ... 20	4 ... 20	4 ... 20
Electrical connection	Plug	M8x1, 3-pin	M12x1, 4-pin		
Cable length	[m]	2.5			
Operating voltage range	[V DC]	15 ... 30			
Residual ripple	[%]	20			
Max. switching frequency DC	[Hz]	1600	1000	500	200
Idle current	[mA]	10			
Protection against short circuit		Pulsed			
Protection against polarity reversal		For operating voltage			
Resistance to interference from magnetic fields		–			
Protection class to EN 60 529		IP67			
CE symbol		89/336/EEC (EMC)			

Proximity sensors SIEA-..., inductive

Technical data

Reduction factors of nominal switching distance S_n				
Size	M8x1	M12x1	M18x1	M30x1.5
Steel St 37	1.0			
Stainless steel St 18/8	0.68	0.47	0.6	0.65
Brass	0.4	0.35	0.28	0.3
Aluminium	0.28	0.28	0.18	0.2
Copper	0.25	0.2	0.15	0.17

Materials				
Size	M8x1	M12x1	M18x1	M30x1.5
Housing	Chrome plated brass			
Note on materials	Free of copper, PTFE and silicone			

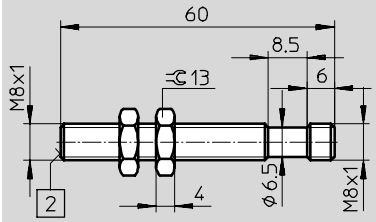
Operating and environmental conditions					
Size		M8x1	M12x1	M18x1	M30x1.5
Ambient temperature	[°C]	–25 ... +70			
Corrosion resistance class CRC[1)]		2			

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

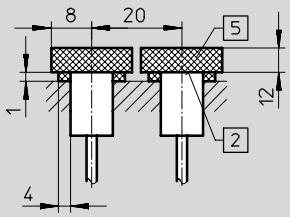
Weight [g]				
Size	M8x1	M12x1	M18x1	M30x1.5
	25	33	55	155

Dimensions – M8x1

Download CAD data ➔ **www.festo.com/en/engineering**



Installation instructions



2 Active surface
5 Metal-free zone

Dimensions – M12x1

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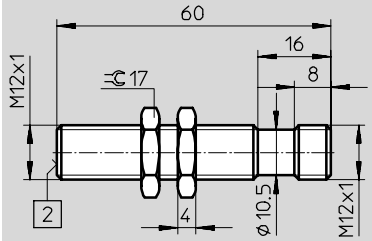
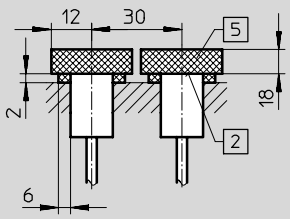


Installation instructions



2 Active surface
5 Metal-free zone

Proximity sensors SIEA-..., inductive

Technical data

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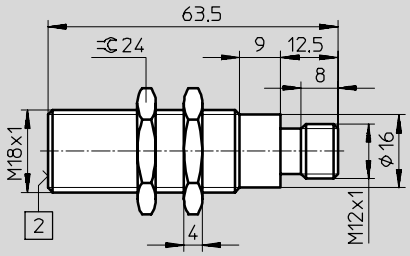
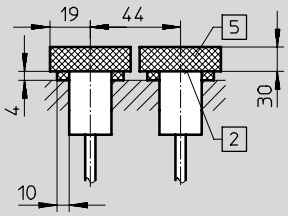
Dimensions – M18x1 Download CAD data ➔ **www.festo.com/en/engineering**

Installation instructions

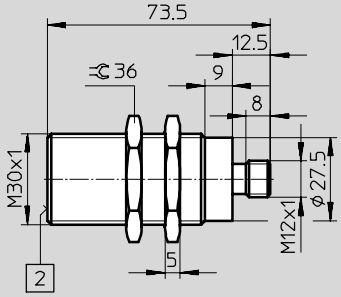


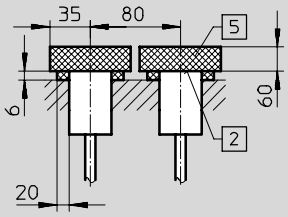


2 Active surface
5 Metal-free zone

Dimensions – M30x1.5 Download CAD data ➔ **www.festo.com/en/engineering**

Installation instructions





2 Active surface
5 Metal-free zone

Ordering data – M8x1

Analogue output		Installation		Electrical connection		Part No.	Type
0 ... 10 V	4 ... 20 mA	Flush	Non-flush	Cable	Plug		
■	–	■	–	–	■	**538 291**	**SIEA-M8B-PU-S**

Ordering data – M12x1

Analogue output		Installation		Electrical connection		Part No.	Type
0 ... 10 V	4 ... 20 mA	Flush	Non-flush	Cable	Plug		
■	■	■	–	–	■	**538 292**	**SIEA-M12B-UI-S**

Ordering data – M18x1

Analogue output		Installation		Electrical connection		Part No.	Type
0 ... 10 V	4 ... 20 mA	Flush	Non-flush	Cable	Plug		
■	■	■	–	–	■	**538 293**	**SIEA-M18B-UI-S**

Ordering data – M30x1.5

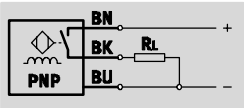
Analogue output		Installation		Electrical connection		Part No.	Type
0 ... 10 V	4 ... 20 mA	Flush	Non-flush	Cable	Plug		
■	■	■	–	–	■	**538 294**	**SIEA-M30B-UI-S**

Proximity sensors SIEF-..., inductive

Technical data

FESTO

Function[1)]



1) e.g. NO contact with PNP output and cable

- Standard switching distance
- Reduction factor 1 for all metals
- For DC voltage
- Round design

General technical data					
Size		M8x1	M12x1	M18x1x1	M30x1.5
Type of installation		non-flush	partially flush		
Nominal switching distance S_n	[mm]	4.0	8.0	12.0	20.0
Assured switching distance S_a	[mm]	3.24	6.48	9.72	16.2
Repetition accuracy	[mm]	0.08	0.16	0.24	0.4
Type of mounting		Via lock nut			
Tightening torque	[Nm]	10	10	25	90
Ready status display		–			
Switching status display		Yellow LED			
Conforms to		DIN EN 60947-5-2			

Electrical data					
Size		M8x1	M12x1	M18x1	M30x1.5
Switch output		PNP or NPN			
Switching element function		NO contact			
Electrical connection	Plug	M8x1, 3-pin	M12x1, Fixcon, 3-pin		
	Cable	3-core			
Cable length	[m]	2.5			
Operating voltage range	[V DC]	10 ... 30			
Residual ripple	[%]	10			
Max. switching frequency DC	[Hz]	2000			1500
Max. output current	[mA]	150	200		
Voltage drop	[V]	3.2			
Idle current	[mA]	≤ 15			
Protection against short circuit		Pulsed			
Protection against polarity reversal		For all electrical connections			
Resistance to interference from magnetic fields		Magnetic direct and alternating field			
Protection class to EN 60 529		IP67			
CE symbol		89/336/EEC (EMC)			

Proximity sensors SIEF-..., inductive

Technical data

Reduction factors of nominal switching distance S_n				
Size	M8x1	M12x1	M18x1	M30x1.5
Steel St 37	1.0			
Stainless steel St 18/8	1.0			
Brass	1.0			
Aluminium	1.0			
Copper	1.0			

Materials				
Size	M8x1	M12x1	M18x1	M30x1.5
Housing	High-alloy stainless steel Polyamide	Chrome plated brass Polybutylene terephtalate		
Cable sheath	Polyurethane			
Note on materials	Free of copper, PTFE and silicone			

Operating and environmental conditions					
Size		M8x1	M12x1	M18x1	M30x1.5
Ambient temperature	[°C]	–30 ... +85			
Ambient temperature with flexible cable installation	[°C]	0 ... 80			
Corrosion resistance class CRC[1)]		4	2	2	2

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.
Corrosion resistance class 4 according to Festo standard 940 070
Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required.

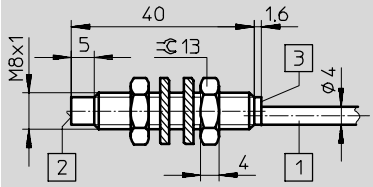
Weight [g]				
Size	M8x1	M12x1	M18x1	M30x1.5
Cable version	77	120	141	194
Plug version	19	22	38	90

Proximity sensors SIEF-..., inductive

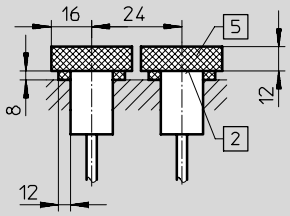
Technical data

Dimensions – M8x1 Download CAD data ➔ **www.festo.com/en/engineering**

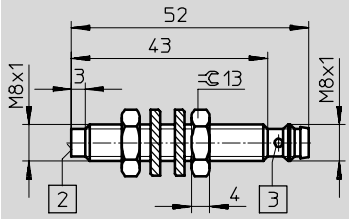
Cable



Installation instructions



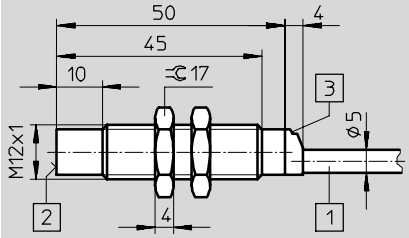
Plug



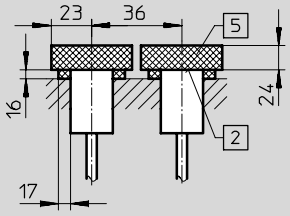
1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Dimensions – M12x1 Download CAD data ➔ **www.festo.com/en/engineering**

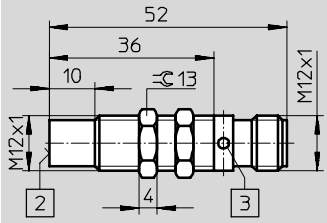
Cable



Installation instructions



Plug



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Proximity sensors SIEF-..., inductive

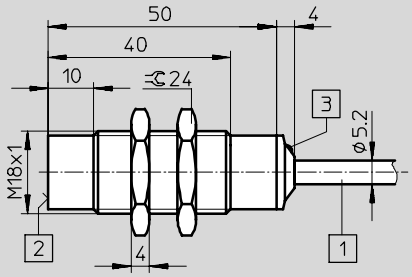
Technical data

FESTO

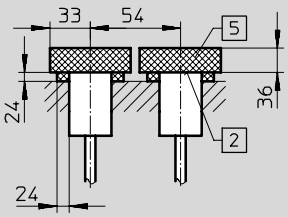
Dimensions – M18x1

Download CAD data ➔ **www.festo.com/en/engineering**

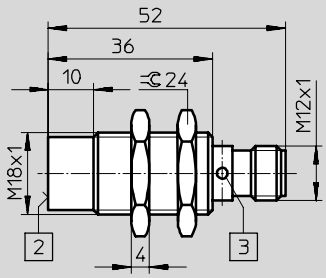
Cable



Installation instructions



Plug

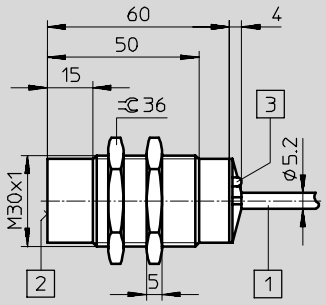


1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

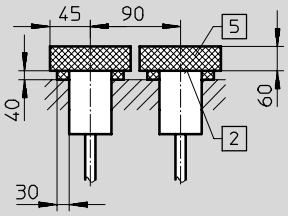
Dimensions – M30x1.5

Download CAD data ➔ **www.festo.com/en/engineering**

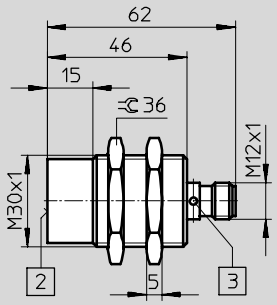
Cable



Installation instructions



Plug



1 Connecting cable
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Proximity sensors SIEF-..., inductive

Technical data

FESTO

Ordering data – M8x1

Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	–	■	■	–	538 308	SIEF-M8NB-PS-K-L
	–	■	–	■	538 307	SIEF-M8NB-PS-S-L
NPN	–	■	■	–	538 310	SIEF-M8NB-NS-K-L
	–	■	–	■	538 309	SIEF-M8NB-NS-S-L

Ordering data – M12x1

Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	–	■	■	–	538 312	SIEF-M12NB-PS-K-L
	–	■	–	■	538 311	SIEF-M12NB-PS-S-L
NPN	–	■	■	–	538 314	SIEF-M12NB-NS-K-L
	–	■	–	■	538 313	SIEF-M12NB-NS-S-L

Ordering data – M18x1

Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	–	■	■	–	538 316	SIEF-M18NB-PS-K-L
	–	■	–	■	538 315	SIEF-M18NB-PS-S-L
NPN	–	■	■	–	538 318	SIEF-M18NB-NS-K-L
	–	■	–	■	538 317	SIEF-M18NB-NS-S-L

Ordering data – M30x1.5

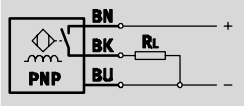
Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Non-flush	Cable	Plug		
NO contact						
PNP	–	■	■	–	538 320	SIEF-M30NB-PS-K-L
	–	■	–	■	538 319	SIEF-M30NB-PS-S-L
NPN	–	■	■	–	538 322	SIEF-M30NB-NS-K-L
	–	■	–	■	538 321	SIEF-M30NB-NS-S-L

Proximity sensors SIEF-...-WA, inductive

Technical data

FESTO

Function[1)]



1) e.g. NO contact with PNP output and cable

- Standard switching distance
- Reduction factor 1 for all metals
- Welding field immune
- For DC voltage
- Round design

General technical data						
Size			M12x1	M18x1	M30x1.5	40x40 mm
Type of installation			flush or partially flush			partially flush
Nominal switching distance S_n	flush	[mm]	3	5	10	–
	partially flush	[mm]	8	12	20	35
Assured switching distance S_a	flush	[mm]	2.43	4.05	8.1	28.35
	partially flush	[mm]	6.48	9.72	16.2	–
Repetition accuracy	flush	[mm]	0.06	0.1	0.2	
	partially flush	[mm]	0.16	0.24	0.4	0.7
Type of mounting			Via lock nut			Via through-holes
Tightening torque		[Nm]	10	25	90	–
Ready status display			–			Green LED
Switching status display			Yellow LED			
Conforms to			DIN EN 60947-5-2			

Electrical data						
Size			M12x1	M18x1	M30x1.5	40x40 mm
Switch output			PNP or NPN			
Switching element function			NO contact			Antivalent
Electrical connection		Plug	M12x1, Fixcon, 3-pin			M12x1, Fixcon, 4-pin
Operating voltage range		[V DC]	10 ... 30			10 ... 65
Residual ripple		[%]	10			
Max. switching frequency	flush	[Hz]	3000	2500	2000	–
	partially flush	[Hz]	2000	2000	1500	250
Max. output current		[mA]	200			
Voltage drop		[V]	≤ 1.8			
Idle current		[mA]	≤ 15			
Protection against short circuit			Pulsed			
Protection against polarity reversal			For all electrical connections			
Resistance to interference from magnetic fields			Magnetic direct and alternating field			
Protection class to EN 60 529			IP67			
CE symbol			89/336/EEC (EMC)			

Proximity sensors SIEF-...-WA, inductive

Technical data

FESTO

Reduction factors of nominal switching distance S_n				
Size	M12x1	M18x1	M30x1.5	40x40 mm
Steel St 37	1.0			
Stainless steel St 18/8	1.0			
Brass	1.0			
Aluminium	1.0			
Copper	1.0			

Materials				
Size	M12x1	M18x1	M30x1.5	40x40 mm
Housing	PTFE-coated brass Polybutylene terephtalate			Polyamide Polybutylene terephtalate, reinforced
Note on materials	–			Free of copper, PTFE and silicone

Operating and environmental conditions					
Size		M12x1	M18x1	M30x1.5	40x40 mm
Ambient temperature	[°C]	–30 ... +85			–25 ... +70

Weight [g]				
Size	M12x1	M18x1	M30x1.5	40x40 mm
Plug version	26	48	106	156

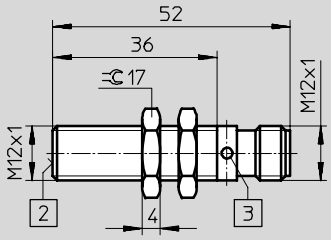
Proximity sensors SIEF-...-WA, inductive

Technical data

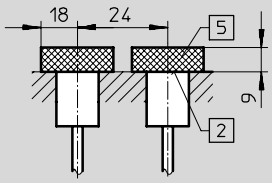
FESTO

Dimensions – M12x1 Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

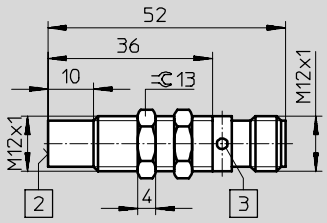


Installation instructions

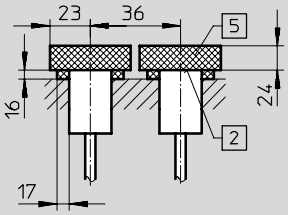


2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Partially flush mounting



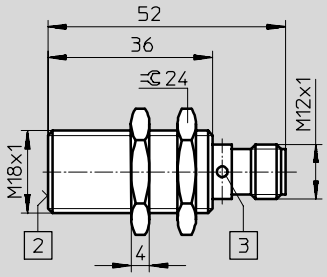
Installation instructions



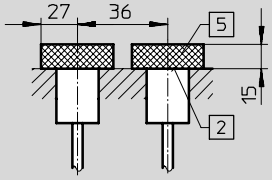
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Dimensions – M18x1 Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

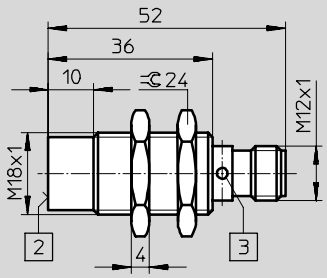


Installation instructions

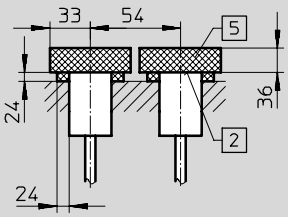


2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Partially flush mounting



Installation instructions



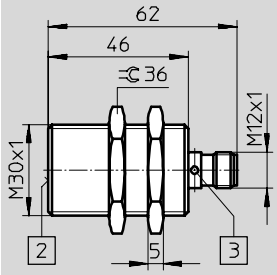
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Proximity sensors SIEF-...-WA, inductive

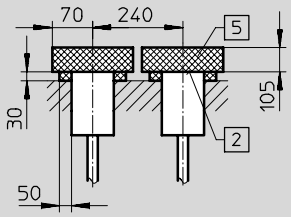
Technical data

Dimensions – M30x1.5 Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting

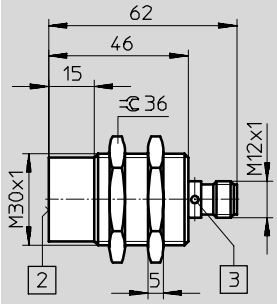


Installation instructions

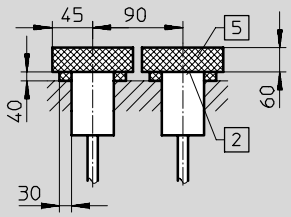


2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Partially flush mounting



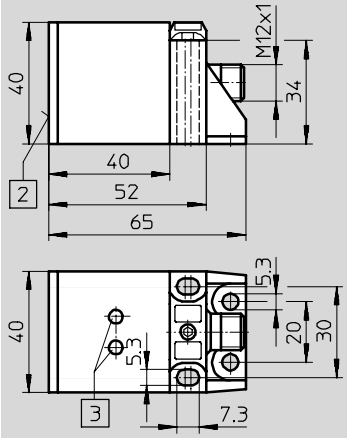
Installation instructions



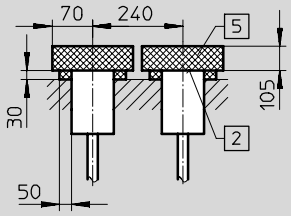
2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Dimensions – 40x40 mm Download CAD data ➔ **www.festo.com/en/engineering**

Flush mounting



Installation instructions



2 Active surface
3 Light emitting diode (LED)
5 Metal-free zone

Proximity sensors SIEF-...-WA, inductive

Technical data

FESTO

Ordering data – M12x1

Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Partially flush	Cable	Plug		
NO contact						
PNP	■	–	–	■	538 297	SIEF-M12B-PS-S-L-WA
	–	■	–	■	538 295	SIEF-M12NB-PS-S-L-WA
NPN	■	–	–	■	538 298	SIEF-M12B-NS-S-L-WA
	–	■	–	■	538 296	SIEF-M12NB-NS-S-L-WA

Ordering data – M18x1

Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Partially flush	Cable	Plug		
NO contact						
PNP	■	–	–	■	538 301	SIEF-M18B-PS-S-L-WA
	–	■	–	■	538 299	SIEF-M18NB-PS-S-L-WA
NPN	■	–	–	■	538 302	SIEF-M18B-NS-S-L-WA
	–	■	–	■	538 300	SIEF-M18NB-NS-S-L-WA

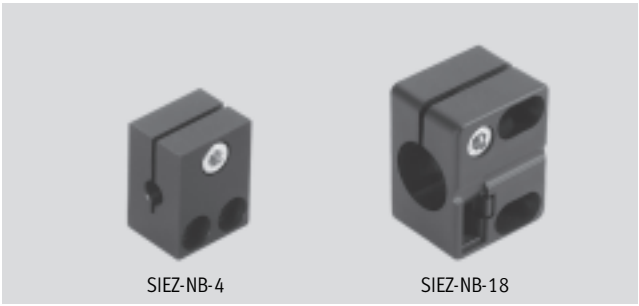
Ordering data – M30x1.5

Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Partially flush	Cable	Plug		
NO contact						
PNP	■	–	–	■	538 305	SIEF-M30B-PS-S-L-WA
	–	■	–	■	538 303	SIEF-M30NB-PS-S-L-WA
NPN	■	–	–	■	538 306	SIEF-M30B-NS-S-L-WA
	–	■	–	■	538 304	SIEF-M30NB-NS-S-L-WA

Ordering data – 40x40 mm

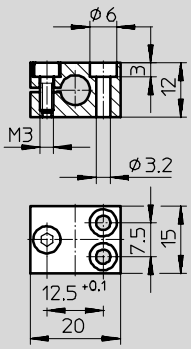
Switch output	Installation		Electrical connection		Part No.	Type
	Flush	Partially flush	Cable	Plug		
Antivalent						
PNP	–	■	–	■	538 341	SIEF-Q40S-PA-S-2L
NPN	–	■	–	■	538 342	SIEF-Q40S-NA-S-2L

Sensor retainer SIEZ-NB

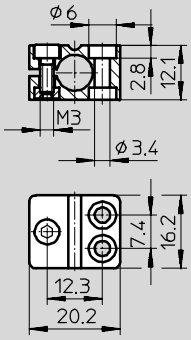


Dimensions Download CAD data ➔ **www.festo.com/en/engineering**

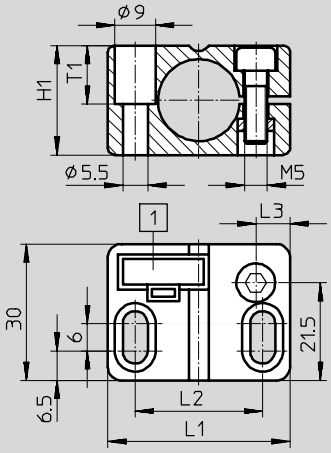
SIEZ-NB-4, SIEZ-NB-6,5



SIEZ-B-8, SIEZ-NB-8

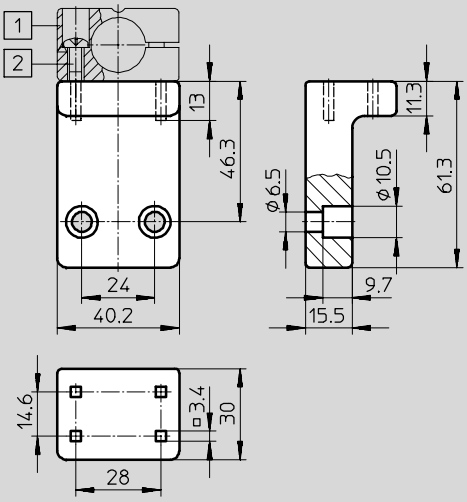


SIEZ-...B-12, SIEZ-...B-18, SIEZ-...B-30

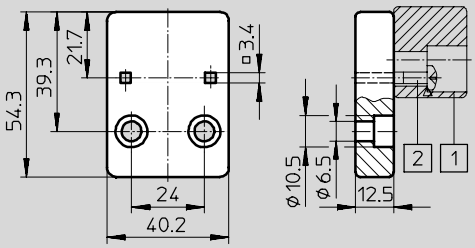


1 Location for inscription label SIEZ-LB

SIEZ-UH



SIEZ-UV



1 Sensor retainer SIEZ-...
2 Screw to DIN 7981 4.2 x 22 or 4.2 x 19 (not included in scope of delivery)

Dimensions

Size of sensor	H1	L1	L2	L3	T1
M12x1	18.3	40	28	9.75	9.75
M18x1	24	40	28	7.5	12.85
M30x1.5	36	54	42	7.5	19.5

Proximity sensors SIE..., inductive

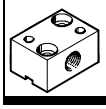
Accessories

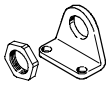
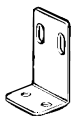
FESTO

Ordering data

Designation	Size of sensor	Type of installation		Weight	Material	Free of copper, PTFE and silicone	Part No.	Type
		Flush	Non-flush	[g]				
Sensor retainer	∅ 4 mm	■	–	14	Anodised aluminium	■	**538 343**	**SIEZ-NB-4**
	∅ 6.5 mm	■	–	9		■	**538 344**	**SIEZ-NB-6,5**
	M8x1	■	–	3.5	Polyamide, reinforced	■	**538 346**	**SIEZ-B-8**
		–	■			■	**538 345**	**SIEZ-NB-8**
	M12x1	■	–	20		■	**538 348**	**SIEZ-B-12**
		–	■			■	**538 347**	**SIEZ-NB-12**
	M18x1	■	–	21		■	**538 350**	**SIEZ-B-18**
		–	■			■	**538 349**	**SIEZ-NB-18**
	M30x1.5	■	–	36		■	**538 352**	**SIEZ-B-30**
		–	■			■	**538 351**	**SIEZ-NB-30**
	M12x1, M18x1	■	■	25		■	**538 354**	**SIEZ-UH**
		■	■	16		■	**538 355**	**SIEZ-UV**
Inscription label	M12x1 ... M30x1.5	■	■	15		■	**538 353**	**SIEZ-LB**

Ordering data – Mounting attachments

		Part No.	Type
Foot mounting for sensors M12x1			
		**5 123**	**HBN-8/10x1**
Flange mounting for sensors M30x1.5			
		**195 855**	**FBN-32**
Stop			
	for sensors M8x1	**11 542**	**SDA-8x1-B**
	for sensors M12x1	**11 541**	**SDA-12x1-B**

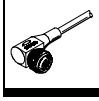
		Part No.	Type
Foot mounting for sensors M18x1			
		**188 990**	**HBE-25**
Mounting bracket for sensor SIES-V3B			
		**9 634**	**HV-M5**

Core Range

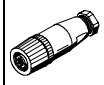
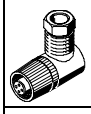
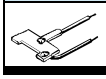
Ordering data – Plug sockets with cable M8x1 — Technical data ➔ 4 / 8.3-12

	Assembly	Connection	Switch output		Cable length	Part No.	Type
			PNP	NPN	[m]		
Straight socket							
	Union nut M8x1	3-pin	■	■	2.5	**159 420**	**SIM-M8-3GD-2,5-PU**
					5	**159 421**	**SIM-M8-3GD-5-PU**
Angled socket							
	Union nut M8x1	3-pin	■	■	2.5	**159 422**	**SIM-M8-3WD-2,5-PU**
					5	**159 423**	**SIM-M8-3WD-5-PU**
			■	–	2.5	**159 424**	**SIM-M8-3WD-2,5-PSL-PU**
					5	**159 425**	**SIM-M8-3WD-5-PSL-PU**
			–	■	2.5	**159 426**	**SIM-M8-3WD-2,5-NSL-PU**
					5	**159 427**	**SIM-M8-3WD-5-NSL-PU**

Ordering data – Plug sockets with cable M12x1 — Technical data ➔ 4 / 8.3-15

	Assembly	Connection	Switch output		Cable length	Part No.	Type
			PNP	NPN	[m]		
Straight socket							
	Union nut M12x1	4-pin	■	■	5	**164 259**	**SIM-M12-4GD-5-PU**
Angled socket							
	Union nut M12x1	4-pin	■	■	5	**164 258**	**SIM-M12-4WD-5-PU**

Ordering data – Sensor sockets M12x1 — Technical data ➔ 4 / 8.3-4

	Assembly	Connection	Switch output		Part No.	Type
			PNP	NPN		
Straight socket						
	Union nut M12x1	4-pin	■	■	**18 494**	**SIE-GD**
Angled socket						
	Union nut M12x1	4-pin	■	■	**12 956**	**SIE-WD-TR**
Operating status display for angled socket SIE-WD-TR						
	–	2-pin	■	■	**12 957**	**SIE-LP-LED-GR**

Core Range