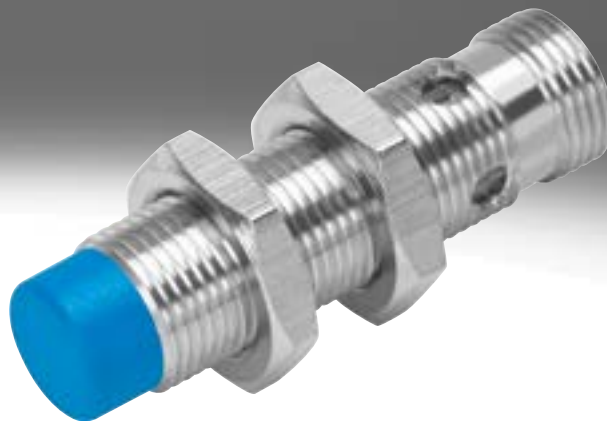


Proximity switches SIEF, inductive

FESTO

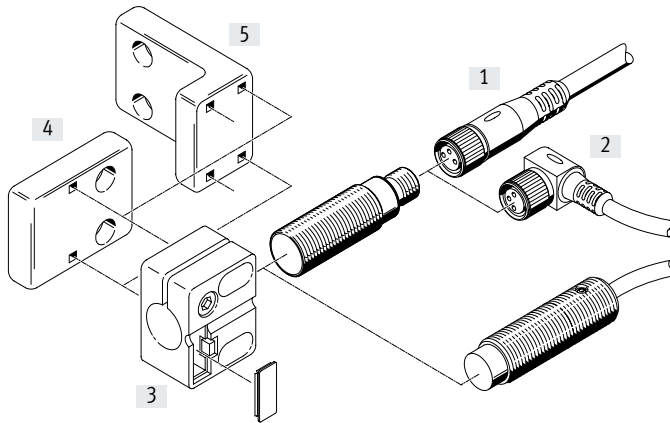


Product range overview

Version	Type	Operating voltage	Switching output/ analogue output	Type of installation	Size	→ Page
Reduction factor, material-specific						
Standard switching distance	SIEN Basic version	10 ... 30 V DC 15 ... 34 V DC	PNP NPN	Flush Not flush	∅ 4 mm, M5, ∅ 6.5 mm, M8, M12, M18, M30	–
	SIEN-...-PA Polyamide housing	10 ... 30 V DC	PNP NPN	Flush Not flush	M12, M18, M30	–
	SIED Basic version	20 ... 265 V AC 20 ... 320 V DC	Contactless, 2-wire	Flush Not flush	M12, M18, M30	–
	SIED-...-PA Polyamide housing	20 ... 250 V AC 10 ... 300 V DC	Contactless, 2-wire	Flush Not flush	M12, M18, M30	–
	SIES Special design	10 ... 30 V DC	PNP NPN	Flush	5x5x25 mm ... 40x40x120 mm	–
	Increased switching distance	SIEH Basic version	10 ... 30 V DC 15 ... 34 V DC	PNP NPN	Flush	∅ 3 mm, M12, M18
SIEH-...-CR Stainless steel housing		10 ... 30 V DC	PNP NPN	Flush	M12, M18	–
Reduction factor 1 for all metals, welding-field-resistant						
Increased switching distance	SIEF Basic version	10 ... 65 V DC	PNP NPN	Flush Partially flush	M8, M12, M18, M30 40x40x65 mm	5
	SIEF-...-WA Housing resistant to welding spatter	10 ... 30 V DC	PNP NPN	Flush Partially flush	M12, M18, M30,	11

Peripherals overview

SIE...



Mounting attachments and accessories		→ Page
[1]	Connecting cable, straight socket NEBU-M...G...	15
[2]	Connecting cable, angled socket NEBU-M...W...	15
[3]	Sensor bracket SIEZ-...B	15
[4]	Sensor bracket SIEZ-NB	15
[5]	Sensor bracket SIEZ-UH	15
-	Mounting bracket HV-M5	15
Mounting attachments and accessories		→ Page
-	Foot mounting HBN	15
-	Flange mounting FBN	15
-	Stop SDA	15

Type codes

001	Series
SIEF	Proximity sensor, inductive, with reduction factor 1 for all metals, welding field immune

002	Design
M8	Round, M8x1
M12	Round, M12x1
M18	Round, M18x1
M30	Round, M30x1.5
Q40	Cube 40 mm

003	Mounting type
B	Flush
S	Partially flush
NB	Not flush

004	Switching input/output
N	NPN
P	PNP

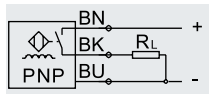
005	Switching element function
A	Antivalent
S	N/O contact

006	Electrical connection
K	Open end
S	Plug M8x1, 4-pin

007	Display
L	Switching status
2L	Switching status and ready status

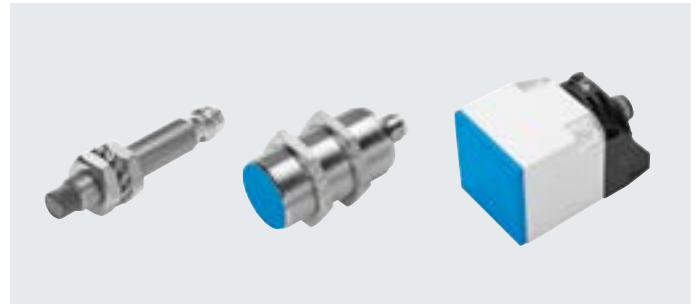
008	Housing material
	Standard
WA	Housing resistant to welding spatter

Technical data – Increased switching distance, reduction factor 1, welding field-resistant

Function¹⁾

1) e.g. N/O contact with PNP output and cable

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



General technical data											
Type of installation	Flush				Partially flush						
Size	M8	M12	M18	M30	M8	M12	M18	M30	Q40		
Design	Round				Round						Square
Conforms to standard	EN 60947-5-2				EN 60947-5-2						
Certification	c UL us Listed (OL)				c UL us Listed (OL)						
	RCM				RCM						
CE marking (see declaration of conformity)	To EU EMC Directive ¹⁾				To EU EMC Directive ¹⁾						
Note on materials	Free of copper and PTFE				Free of copper and PTFE						
	RoHS-compliant				-						

1) For information about the area of use, see the EC declaration of conformity at: www.festo.com/catalogue/SIEF → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Input signal/measuring element										
Type of installation	Flush				Partially flush					
Electrical connection	Cable		Plug		Cable			Plug		
Ambient temperature [°C]	-30 ... +70		-30 ... +85		-30 ... +85					

Output, general										
Type of installation	Flush				Partially flush					
Size	M8	M12	M18	M30	M8	M12	M18	M30	Q40	
Repetition accuracy [mm]	0.08	0.16	0.28	0.55	0.08	0.16	0.24	0.4	0.7	

Switching output											
Type of installation	Flush				Partially flush						
Size	M8	M12	M18	M30	M8	M12	M18	M30	Q40		
Switching output	PNP				PNP						
	NPN				NPN						
Switching element function	N/O				N/O						Antivalent
Rated operating distance [mm]	1.5	3	5	10	4	8	12	20	35		
Actual operating distance [mm]	-	-	-	-	3.24	6.48	9.72	16.2	28.35		

Reduction factors										
	Flush				Partially flush					
Aluminium	-				1.0					
Stainless steel St 18/8	-				1.0					
Copper	-				1.0					
Brass	-				1.0					
Steel St 37	-				1.0					
Hysteresis [mm]	-				0.12...0.6	0.24...1.2	0.36...1.8	0.36...1.8	1.05...5.25	
Max. switching frequency DC [Hz]	2 000	3 000	2 500	2 000	2 000	2 000	2 000	1 500	250	
Max. output current [mA]	150	200				150	200			
Voltage drop [V]	-				≤ 1.8					

Technical data – Increased switching distance, reduction factor 1, welding field-resistant

Output, additional data											
Short circuit current rating		Pulsed									
Electronics											
Type of installation		Flush				Partially flush					
Size		M8	M12	M18	M30	M8	M12	M18	M30	Q40	
Operating voltage range		[V DC]	10 ... 30			10 ... 30			10 ... 65		
Residual ripple		[%]	–			10			10		
No-load supply current		[mA]	–			≤ 15			≤ 15		
Reverse polarity protection		For all electrical connections				For all electrical connections					
Electromechanics											
Type of installation		Flush				Partially flush					
Size		M8	M12	M18	M30	M8	M12	M18	M30	Q40	
Cable											
Electrical connection		Cable, 3-wire				Cable, 3-wire				–	
Cable length		[m]	2.5			2.5					
Information on materials: Cable sheath		TPE-U(PU)				TPE-U (PUR)					
Information on materials: Insulating sheath		PVC				PVC					
Plug											
Electrical connection		Plug, M8x1, 3-pin	Plug, M12x1, 3-pin			Plug, M8x1, 3-pin	Plug, M12x1, 3-pin, Fixcon			Plug, M12x1, 4-pin, Fixcon	
Information on materials: Housing		Chrome-plated brass				Chrome-plated brass					
Mechanical system											
Type of installation		Flush									
Size		M8		M12		M18		M30		Q40	
Electrical connection		Cable	Plug	Cable	Plug	Cable	Plug	Cable	Plug	Plug	
Product weight		[g]	61.4	12	105	24	124	41	191	100	156
Information on materials: Housing		High-alloy stainless steel			Chrome-plated brass		Chrome-plated brass		Chrome-plated brass		Reinforced PBT
		PA			Reinforced LCP		Reinforced LCP		Reinforced LCP		PA
		PP	–	TPE-O	–	TPE-O	–	TPE-O	–	–	
Mechanical system											
Type of installation		Partially flush									
Size		M8		M12		M18		M30		Q40	
Electrical connection		Cable	Plug	Cable	Plug	Cable	Plug	Cable	Plug	Plug	
Type of mounting		With lock nut								With through-hole	
Tightening torque		[Nm]	10	10	10	10	25	25	75	75	–
Product weight		[g]	77	19	120	22	141	38	194	90	156
Information on materials: Housing		High-alloy stainless steel			Chrome-plated brass		Chrome-plated brass		Chrome-plated brass		Reinforced PBT
		PA			PBT		PBT		PBT		PA

Technical data – Increased switching distance, reduction factor 1, welding field-resistant

Display/operation										
Type of installation	Flush				Partially flush					
Size	M8	M12	M18	M30	M8	M12	M18	M30	Q40S	
Ready status indication	–				–					LED green
Switching status indication	LED yellow				LED yellow					LED yellow
Immission/emission										
Electrical connection	Cable				Plug					
Size	M8	M12	M18	M30	M8	M12	M18	M30	Q40	
Flush										
Ambient temperature with flexible cable installation [°C]	–5 ... +70				–					–
Degree of protection	IP68				IP68					
Resistance to interference from magnetic fields	Magnetic direct and alternating field				Magnetic direct and alternating field					
Surge resistance [kV]	0.8				0.8					
Corrosion resistance CRC ¹⁾	2				2					
Pollution degree	3				3					
Partially flush										
Ambient temperature with flexible cable installation [°C]	0 ... 80				–					
Degree of protection	IP67				IP67					
Resistance to interference from magnetic fields	Magnetic direct and alternating field				Magnetic direct and alternating field					
Surge resistance [kV]	–				–					
Corrosion resistance CRC ¹⁾	4	2			4	2				
Pollution degree	–				–					

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Corrosion resistance class CRC 4 to Festo standard FN 940070

Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, e.g. in the chemical or food industries.

Such applications may need to be safeguarded by means of special testing (→ also FN 940082), using appropriate media.

Pin allocation to EN 60947-5-2

M8x1, 3-pin

N/O	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	–
	4	Black	Output

M12x1, 3-pin

N/O	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	–
	4	Black	Output

M12x1, 4-pin

NPN, antivalent

N/O	Pin	Wire colour	Allocation
	1	Brown	+
	2	White	N/O
	3	Blue	–
	4	Black	N/C

PNP, antivalent

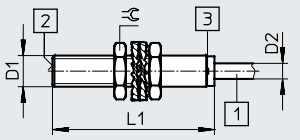
N/O	Pin	Wire colour	Allocation
	1	Brown	+
	2	White	N/C
	3	Blue	–
	4	Black	N/O

Technical data – Increased switching distance, reduction factor 1, welding field-resistant

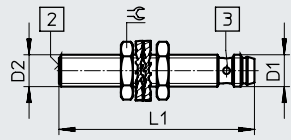
Dimensions

Download CAD data → www.festo.com

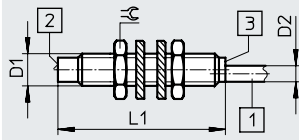
M8 – Flush fitting
Cable



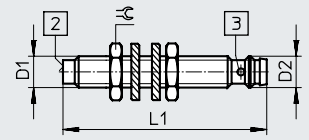
Plug



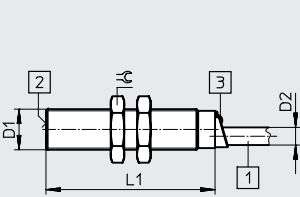
M8 – Partially flush fitting
Cable



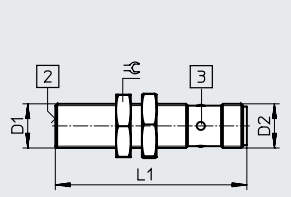
Plug



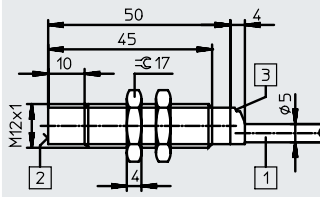
M12 – Flush fitting
Cable



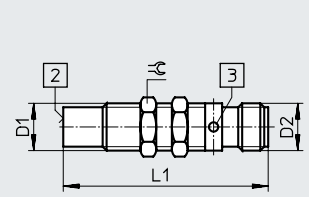
Plug



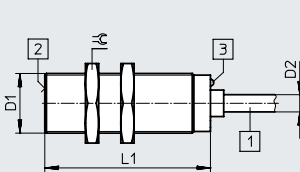
M12 – Partially flush fitting
Cable



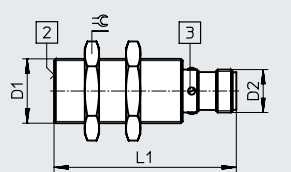
Plug



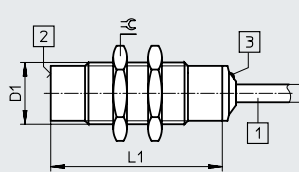
M18 – Flush fitting
Cable



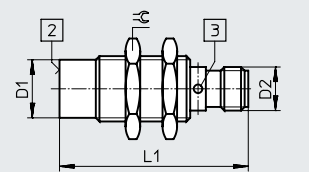
Plug



M18 – Partially flush fitting
Cable



Plug



Type of installation	Electrical connection	D1	D2	L1	⌀
M8					
Flush	Cable	M8x1	4	41.6	13
	Plug		M8x1	49	
Partially flush	Cable	M8x1	4	41.6	13
	Plug		M8x1	52	
M12					
Flush	Cable	M12x1	5.2	50	17
	Plug		M12x1	52	
Partially flush	Cable	M12x1	5	50	17
	Plug		M12x1	52	
M18					
Flush	Cable	M18x1	5.2	50	24
	Plug		M12x1	52	
Partially flush	Cable	M18x1	5.2	50	24
	Plug		M12x1	52	

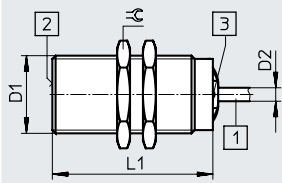
- [1] Connecting cable
- [2] Active surface
- [3] Light emitting diode

Technical data – Increased switching distance, reduction factor 1, welding field-resistant

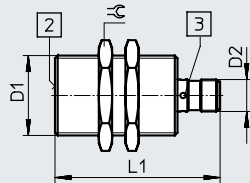
Dimensions

Download CAD data → www.festo.com

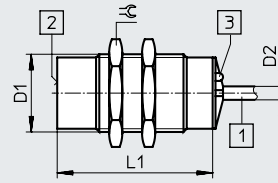
M30 – Flush fitting
Cable



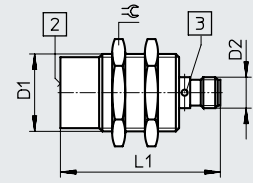
Plug



M30 – Partially flush fitting
Cable



Plug



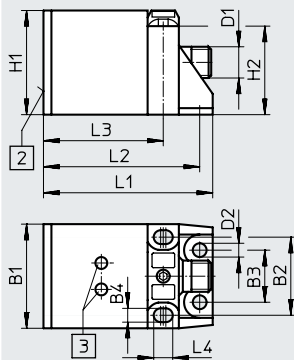
Type of installation	Electrical connection	D1	D2	L1	⌀
M30					
Flush	Cable	M30x1.5	5.2	60	36
	Plug		M12x1	62	
Partially flush	Cable	M30x1.5	5.2	60	36
	Plug		M12x1	62	

- [1] Connecting cable
- [2] Active surface
- [3] Light emitting diode

Dimensions – 40x40x65 mm

Download CAD data → www.festo.com

Partially flush fitting

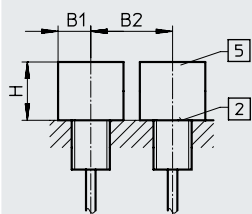


- [2] Active surface
- [3] Light emitting diode

Type of installation	Electrical connection	B1	B2	B3	B4	D1	D2	H1	H2	L1	L2	L3	L4
40x40x65 mm													
Partially flush	Plug	40	30	20	5.3	M12x1	5.3	40	34	65	60	46	7.3

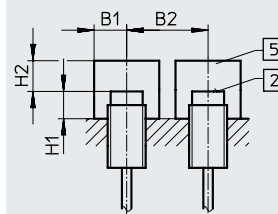
Fitting instructions

Flush installation



- [2] Active surface
- [5] Metal-free zone

Partially flush fitting

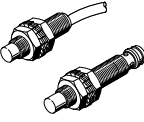
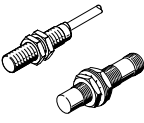
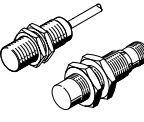
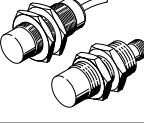



- [2] Active surface
- [5] Metal-free zone

Size	B1	B2	H
M8	12	16	4.5
M12	18	24	12
M18	27	36	15
M30	45	60	30

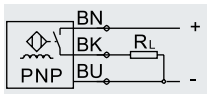
Size	B1	B2	H1	H2
M8	12	32	8	12
M12	18	48	16	24
M18	27	54	24	36
M30	45	90	30	60
40x40x65 mm	60	120	30	105

Technical data – Increased switching distance, reduction factor 1, welding field-resistant

Ordering data								
Size	S _n ¹⁾ [mm]	Type of installation	Switching element function	Switching output	Electrical connection			
					Cable		Plug	
					Part No.	Type	Part No.	Type
M8								
	1.5	Flush	N/O	PNP	553538	SIEF-M8B-PS-K-L	553537	SIEF-M8B-PS-S-L
	4.0	Partially flush		NPN	553540	SIEF-M8B-NS-K-L	553539	SIEF-M8B-NS-S-L
				PNP	538308	SIEF-M8NB-PS-K-L	538307	SIEF-M8NB-PS-S-L
				NPN	538310	SIEF-M8NB-NS-K-L	538309	SIEF-M8NB-NS-S-L
M12								
	3.0	Flush	N/O	PNP	553542	SIEF-M12B-PS-K-L	553541	SIEF-M12B-PS-S-L
	8.0	Partially flush		NPN	553544	SIEF-M12B-NS-K-L	553543	SIEF-M12B-NS-S-L
				PNP	538312	SIEF-M12NB-PS-K-L	538311	SIEF-M12NB-PS-S-L
				NPN	538314	SIEF-M12NB-NS-K-L	538313	SIEF-M12NB-NS-S-L
M18								
	5.0	Flush	N/O	PNP	553546	SIEF-M18B-PS-K-L	553545	SIEF-M18B-PS-S-L
	12.0	Partially flush		NPN	553548	SIEF-M18B-NS-K-L	553547	SIEF-M18B-NS-S-L
				PNP	538316	SIEF-M18NB-PS-K-L	538315	SIEF-M18NB-PS-S-L
				NPN	538318	SIEF-M18NB-NS-K-L	538317	SIEF-M18NB-NS-S-L
M30								
	10.0	Flush	N/O	PNP	553550	SIEF-M30B-PS-K-L	553549	SIEF-M30B-PS-S-L
	20.0	Partially flush		NPN	553552	SIEF-M30B-NS-K-L	553551	SIEF-M30B-NS-S-L
				PNP	538320	SIEF-M30NB-PS-K-L	538319	SIEF-M30NB-PS-S-L
				NPN	538322	SIEF-M30NB-NS-K-L	538321	SIEF-M30NB-NS-S-L
40x40x65 mm								
	35.0	Partially flush	Antivalent	PNP	-		538341	SIEF-Q40S-PA-S-2L
				NPN			538342	SIEF-Q40S-NA-S-2L

1) S_n Rated operating distance [mm]

Technical data – Increased switching distance, reduction factor 1, welding field-resistant

Function¹⁾

1) e.g. N/O contact with PNP output and cable

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



General technical data

Design	Round
Conforms to standard	EN 60947-5-2
Certification	c UL us Listed (OL) RCM
CE marking (see declaration of conformity)	To EU EMC Directive ¹⁾

1) For information about the area of use, see the EC declaration of conformity at: www.festo.com/catalogue/SIEF → Support/Downloads.
If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Input signal/measuring element

Ambient temperature	[°C]	-30 ... +85
---------------------	------	-------------

Output, general

Type of installation	Flush			Partially flush			
	M12	M18	M30	M12	M18	M30	
Size							
Repetition accuracy	[mm]	0.06	0.1	0.2	0.16	0.24	0.4

Switching output

Type of installation	Flush			Partially flush			
	M12	M18	M30	M12	M18	M30	
Size							
Switching output	PNP NPN						
Switching element function	N/O						
Rated operating distance	[mm]	3	5	10	8	12	20
Actual operating distance	[mm]	2.43	4.05	16.2	6.48	9.72	16.2


Reduction factors

Aluminium		1.0					
Stainless steel St 18/8		1.0					
Copper		1.0					
Brass		1.0					
Steel St 37		1.0					
Hysteresis	[mm]	0.24 ... 1.2	0.15 ... 0.75	0.36 ... 1.8	0.24 ... 1.2	0.36 ... 1.8	0.36 ... 1.8
Max. switching frequency DC	[Hz]	3 000	2 500	1 500	2 000	2 000	1 500
Max. output current	[mA]	200					
Voltage drop	[V]	≤ 1.8					

Output, additional data

Short circuit current rating		Pulsed
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Technical data – Increased switching distance, reduction factor 1, welding field-resistant

Electronics										
Operating voltage range	[V DC]	10 ... 30								
Residual ripple	[%]	10								
No-load supply current	[mA]	≤ 15								
Reverse polarity protection		For all electrical connections								
Electromechanics										
Electrical connection		Plug, M12x1, 3-pin, Fixcon								
Information on materials: Housing		PTFE-coated brass								
Mechanical system										
Size		M12		M18		M30				
Type of installation		Flush	Partially flush	Flush	Partially flush	Flush		Partially flush		
Switching output		PNP/NPN	PNP/NPN	PNP/NPN	PNP/NPN	PNP	NPN	PNP	NPN	
Type of mounting		With lock nut								
Tightening torque	[Nm]	7		15		75		75		
Product weight	[g]	26		48		373		464, 919, 1010		
Information on materials: Housing		PTFE-coated brass PBT								
Display/operation										
Switching status indication		LED yellow								
Immission/emission										
Degree of protection		IP67								
Resistance to interference from magnetic fields		Magnetic direct and alternating field								
Pin allocation to EN 60947-5-2										
M12x1, 3-pin										
N/O										
		Pin	Wire colour				Allocation			
		1	Brown				+			
		3	Blue				-			
		4	Black				Output			

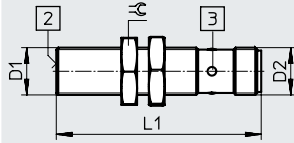
Technical data – Increased switching distance, reduction factor 1, welding field-resistant

Dimensions

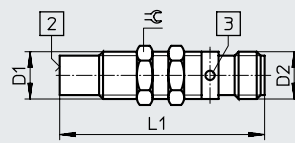
Download CAD data → www.festo.com

M12

Flush installation

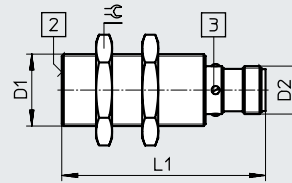


Partially flush fitting

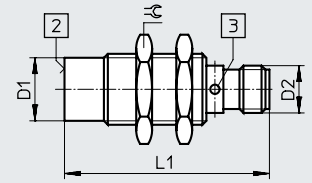


M18

Flush installation

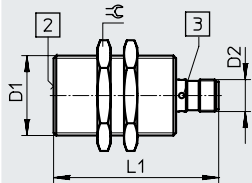


Partially flush fitting

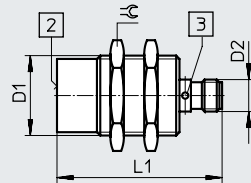


M30

Flush installation



Partially flush fitting

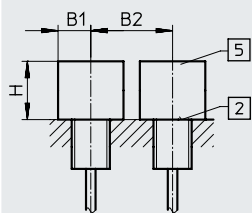


Type of installation	Electrical connection	D1	D2	L1	±0.1
M12					
Flush	Plug	M12x1	M12x1	52	17
Partially flush					13
M18					
Flush	Plug	M18x1	M12x1	52	24
Partially flush					
M30					
Flush	Plug	M30x1.5	M12x1	62	36
Partially flush					

- [2] Active surface
- [3] Light emitting diode

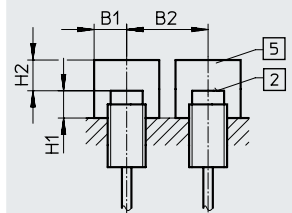
Fitting instructions

Flush installation



- [2] Active surface
- [5] Metal-free zone

Partially flush fitting






- [2] Active surface
- [5] Metal-free zone

Size	B1	B2	H
M12	18	24	9
M18	27	36	15
M30	45	60	30




Size	B1	B2	H1	H2
M12	18	48	16	24
M18	27	54	24	36
M30	45	90	40	60

Technical data – Increased switching distance, reduction factor 1, welding field-resistant




Ordering data						
Size	S _n ¹⁾ [mm]	Type of installation	Switching element function	Switching output	Electrical connection	
					Plug	
					Part No.	Type
M12						
	3.0	Flush	N/O	PNP	538297	SIEF-M12B-PS-S-L-WA
				NPN	538298	SIEF-M12B-NS-S-L-WA
	8.0	Partially flush		PNP	538295	SIEF-M12NB-PS-S-L-WA
				NPN	538296	SIEF-M12NB-NS-S-L-WA
M18						
	5.0	Flush	N/O	PNP	538301	SIEF-M18B-PS-S-L-WA
				NPN	538302	SIEF-M18B-NS-S-L-WA
	12.0	Partially flush		PNP	538299	SIEF-M18NB-PS-S-L-WA
				NPN	538300	SIEF-M18NB-NS-S-L-WA
M30						
	10.0	Flush	N/O	PNP	538305	SIEF-M30B-PS-S-L-WA
				NPN	538306	SIEF-M30B-NS-S-L-WA
	20.0	Partially flush		PNP	538303	SIEF-M30NB-PS-S-L-WA
				NPN	538304	SIEF-M30NB-NS-S-L-WA

1) S_n Rated operating distance [mm]

Accessories





Ordering data – Connecting cables M8x1			Technical data → Internet: nebu	
	Number of wires	Cable length [m]	Part No.	Type
Straight socket				
	3	2.5	★ 541333	NEBU-M8G3-K-2.5-LE3
		5	★ 541334	NEBU-M8G3-K-5-LE3
Angled socket				
	3	2.5	★ 541338	NEBU-M8W3-K-2.5-LE3
		5	★ 541341	NEBU-M8W3-K-5-LE3
Straight socket, straight plug				
	4	2.5	554037	NEBU-M8G3-K-2.5-M8G4 ¹⁾

1) For connecting proximity switches SIEA-M8B to signal converter SVE4-US.





Ordering data – Connecting cables M12x1			Technical data → Internet: nebu	
	Number of wires	Cable length [m]	Part No.	Type
Straight socket				
	3	2.5	★ 541363	NEBU-M12G5-K-2.5-LE3
		5	★ 541364	NEBU-M12G5-K-5-LE3
	4	2.5	★ 550326	NEBU-M12G5-K-2.5-LE4 ¹⁾
		5	★ 541328	NEBU-M12G5-K-5-LE4 ¹⁾
Angled socket				
	3	2.5	541367	NEBU-M12W5-K-2.5-LE3
		5	541370	NEBU-M12W5-K-5-LE3
	4	2.5	550325	NEBU-M12W5-K-2.5-LE4 ¹⁾
		5	541329	NEBU-M12W5-K-5-LE4 ¹⁾
Straight socket, straight plug				
	4	2.5	554036	NEBU-M12G5-K-2.5-M8G4 ²⁾

1) For connecting proximity switches SIE...-M12/M18/M30 in N/C contact version with plug.

2) For connecting proximity switches SIEA-M...B to the signal converter SVE4.

Ordering data – Mounting components		Part No.	Type
	For size		
Sensor bracket with stop for flush mounting			
	M8	538346	SIEZ-B-8
	M12	538348	SIEZ-B-12
	M18	538350	SIEZ-B-18
	M30	538352	SIEZ-B-30
Sensor bracket without stop			
	4	538343	SIEZ-NB-4
	6.5	538344	SIEZ-NB-6.5
	M8	538345	SIEZ-NB-8
	M12	538347	SIEZ-NB-12
	M18	538349	SIEZ-NB-18
	M30	538351	SIEZ-NB-30
	M12, M18	538354	SIEZ-UH

Accessories

Ordering data – Mounting components		Part No.	Type
	For size		
Foot mounting			
	M12	5123	HBN-8/10x1
Flange mounting			
	M30	195855	FBN-32
Mounting bracket			
	SIES-V3B	9634	HV-M5
Stop			
	M8	11542	SDA-8x1-B
	M12	11541	SDA-12x1-B