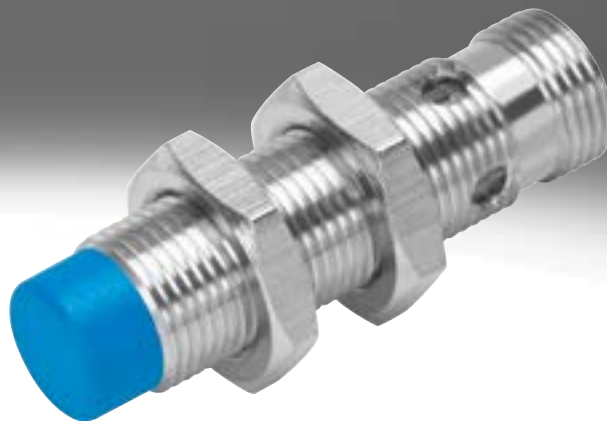


Proximity switches SIEH, inductive

FESTO

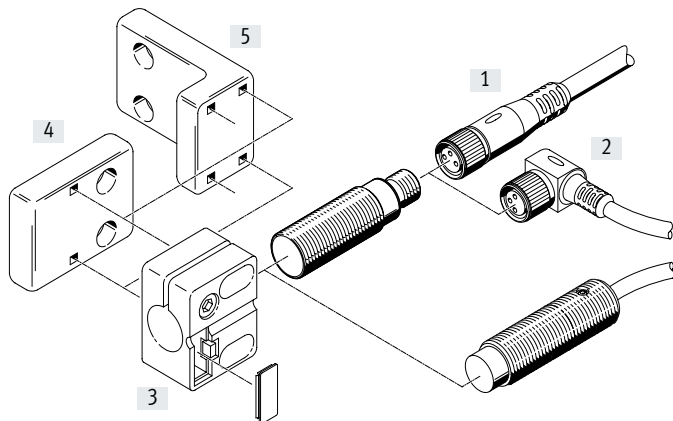


Product range overview

Design	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	9
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	
	SIEF-...-WA Housing resistant to welding spatter	10 ... 30 V DC	PNP NPN	Flush Partially flush	M12, M18, M30	

Peripherals overview

SIE...



Mounting attachments and accessories		→ Page
[1]	Connecting cable, straight socket NEBU-M...G...	13
[2]	Connecting cable, angled socket NEBU-M...W...	13
[3]	Sensor bracket SIEZ-...B	13
[4]	Sensor bracket SIEZ-NB	13
[5]	Sensor bracket SIEZ-UH	13
-	Mounting bracket HV-M5	13
Mounting attachments and accessories		→ Page
-	Foot mounting HBN	13
-	Flange mounting FBN	13
-	Stop SDA	13

Type codes

001	Series	
SIEH	Proximity sensor, inductive, with increased switching distance	

002	Design	
3	Round, diameter 3 mm	
M12	Round, M12x1	
M18	Round, M18x1	

003	Mounting type	
B	Flush	

004	Switching input/output	
N	NPN	
P	PNP	

005	Switching element function	
O	N/C contact	
S	N/O contact	

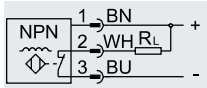
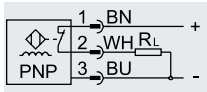
006	Electrical connection	
K	Open end	
S	Plug M8x1, 4-pin	

007	Display	
L	Switching status	

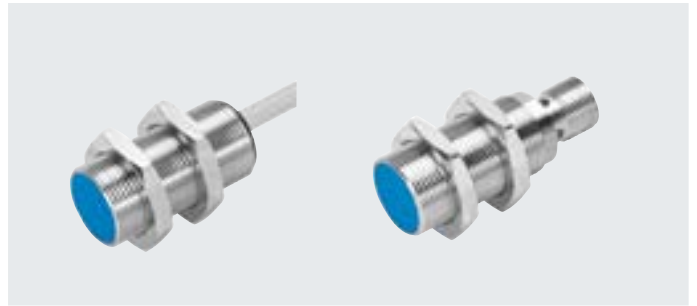
008	Housing material	
	Standard	
CR	Stainless steel housing	

Technical data – Increased switching distance

Function



- Increased switching distance
- For DC voltage
- Round design



General technical data			
Size	3 mm	M12	M18
Design	Round	–	–
Conforms to standard	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2
Certification	c UL us Listed (OL)	c UL us Listed (OL)	c UL us Listed (OL)
	RCM compliance mark	C-Tick	RCM compliance mark
CE marking (see declaration of conformity)	To EU EMC Directive ¹⁾	To EU EMC Directive ¹⁾	To EU EMC Directive ¹⁾
Note on materials	Free of copper and PTFE	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/SIEH → 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]	–25 ... +70

Output, general			
Size	3 mm	M12	M18
Repetition accuracy	[mm]	0.02	–
Repetition accuracy under constant conditions	[mm]	–	0.2

Switching output			
Size	3 mm	M12	M18
Switching output	PNP	PNP	PNP
	NPN	NPN	NPN
Switching element function	N/O	N/C	N/O
	–	N/C	N/C
Rated operating distance	[mm]	1	4
Actual operating distance	[mm]	0.81	3.24

Reduction factors			
Aluminium		0.5	0.4
Stainless steel St 18/8		0.8	0.8
Copper		0.45	0.4
Brass		0.6	0.5
Steel St 37		1.0	1.0
Hysteresis	[mm]	≤ 0.12	≤ 0.36
Switch-on time	[ms]	0.02	–
Max. switching frequency	[Hz]	3 000	2 500
Max. output current	[mA]	100	200
Voltage drop	[V]	0 ... 2	–

Technical data – Increased switching distance

Output, additional data			
Size	3 mm	M12	M18
Short circuit current rating	Pulsed	Pulsed	Pulsed
Inductive protective circuit	Integrated	Integrated	–
	Output current < 100 mA		
	and switching frequency < 10 Hz		

Electronics			
Size	3 mm	M12	M18
Operating voltage range [V DC]	10 ... 30		
Residual ripple [%]	20	±10	±20
No-load supply current [mA]	0 ... 10		
Reverse polarity protection	For all electrical connections		

Electromechanics						
Electrical connection	Cable			Plug		
Size	3 mm	M12	M18	3 mm	M12	M18
Electrical connection	Cable, 3-wire			Cable with plug, M8x1, 3-pin	Plug, M12x1, 3-pin	
Cable length [m]	2.5			0.15	–	
Information on materials: Cable sheath	TPE-U (PUR)			TPE-U (PUR)		
Information on materials: Insulating sheath	PVC	–	–	PVC	–	

Mechanical system						
Electrical connection	Cable			Plug		
Size	3 mm	M12	M18	3 mm	M12	M18
Type of mounting	Clamped		With lock nut	Clamped		With lock nut
Type of installation	Flush			Flush		
Tightening torque [Nm]	–	–	20	–	–	20
Product weight [g]	18	110	108	4	30	43
Information on materials: Housing	High-alloy stainless steel	Nickel-plated brass		High-alloy stainless steel	Nickel-plated brass	
		PBTP			PBTP	
		–			PA	

Display/operation	
Switching status indication	Yellow LED

Immission/emission						
Electrical connection	Cable			Plug		
Size	3 mm	M12	M18	3 mm	M12	M18
Ambient temperature with flexible cable installation [°C]	–5 ... +70			–5 ... +70		
Degree of protection	–	IP65	–	–	IP65	–
	IP67			IP67		
Surge resistance [kV]	–	–	0.8	–	–	0.8
Corrosion resistance class CRC ¹⁾	4	2	–	1	2	–
Pollution degree	–	–	3	–	–	3

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

Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

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.

Technical data – Increased switching distance

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

N/C

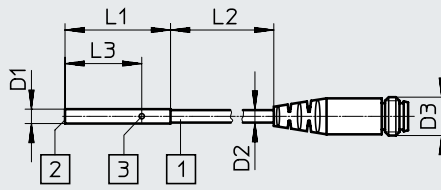
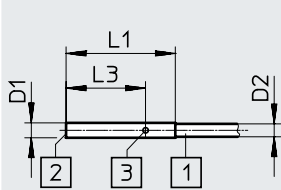
N/C	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	-
	2	White	Output

Dimensions – 3 mm

Download CAD data → www.festo.com

Cable

Plug



- [1] 3-wire cable, 2.5 m long
- [2] Active surface
- [3] 1 switching status indication, yellow

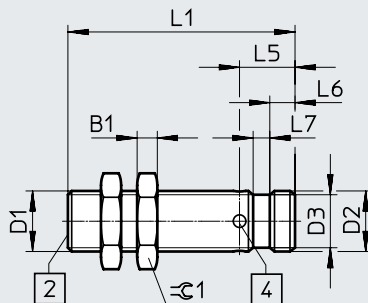
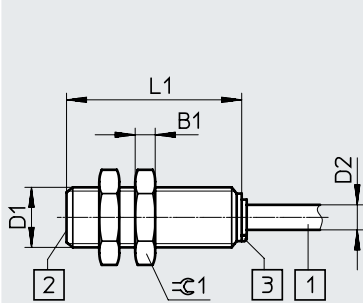
Type	D1 ∅	D2 ∅	D3	L1	L2	L3
SIEH-3B-...-S-K-L	3	2.6	-	22	-	16
SIEH-3B-...-S-S-L	3	2.6	M8x1	22	150	16

Dimensions – M12

Download CAD data → www.festo.com

Cable

Plug



- [1] 3-wire cable, 2.5 m long
- [2] Active surface
- [3] 1 switching status indication, yellow
- [4] 4 switching status indications, yellow

Type	B1	D1	D2 ∅	D2	D3 ∅	L1	L5	L6	L7	⊕ 1
SIEH-M12B-...-K-L	4	M12x1	5	-	-	35	-	-	-	17
SIEH-M12B-...-S-L	4	M12x1	-	M12x1	10.5	45	11	5	3.3	17

Technical data – Increased switching distance

Dimensions – M18

Download CAD data → www.festo.com

Cable

Plug

[1] 3-wire cable, 2.5 m long
 [2] Active surface
 [3] 1 switching status indication, yellow
 [4] 4 switching status indications, yellow

Type	B1	D1	D2 ∅	D2	D3 ∅	L1	L4	L5	L6	L7	⊘ 1
SIEH-M18B-...-K-L	4	M18x1	5	-	-	35	-	-	-	-	24
SIEH-M18B-...-S-L	4	M18x1	-	M12x1	16.4	48.5	13.5	11	8	3	24

Fitting instructions

Flush installation

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

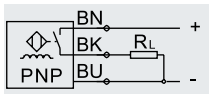
Size	B1	B2	H
3 mm	2.5	5	3
M12	10	24	12
M18	18	40	24

Ordering data

Size	S _n ¹⁾ [mm]	Type of installation	Switching output	Switching element function	Electrical connection			
					Cable		Plug	
					Part No.	Type	Part No.	Type
3 mm								
	1.0	Flush	PNP	N/O	538264	SIEH-3B-PS-K-L	538263	SIEH-3B-PS-S-L
			NPN	N/O	538266	SIEH-3B-NS-K-L	538265	SIEH-3B-NS-S-L
M12								
	4.0	Flush	PNP	N/O	150450	SIEH-M12B-PS-K-L	150451	SIEH-M12B-PS-S-L
				N/C	150454	SIEH-M12B-PO-K-L	150455	SIEH-M12B-PO-S-L
			NPN	N/O	150448	SIEH-M12B-NS-K-L	150449	SIEH-M12B-NS-S-L
				N/C	150452	SIEH-M12B-NO-K-L	150453	SIEH-M12B-NO-S-L
M18								
	7.0	Flush	PNP	N/O	150458	SIEH-M18B-PS-K-L	150459	SIEH-M18B-PS-S-L
				N/C	150462	SIEH-M18B-PO-K-L	150463	SIEH-M18B-PO-S-L
			NPN	N/O	150456	SIEH-M18B-NS-K-L	150457	SIEH-M18B-NS-S-L
				N/C	150460	SIEH-M18B-NO-K-L	150461	SIEH-M18B-NO-S-L

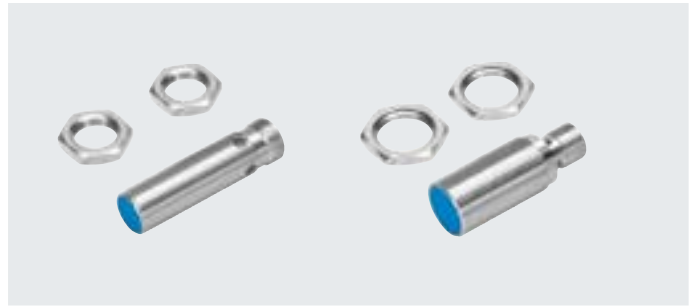
1) S_n Rated operating distance [mm]

Technical data – Increased switching distance

Function¹⁾

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

- Increased switching distance
- For DC voltage
- Round design
- Resistant to chemicals and mechanical stresses



General technical data				
Size	M12		M18	
Switching output	PNP	NPN	PNP	NPN
Conforms to standard	EN 60947-5-2		EN 60947-5-2	
Certification	c UL us Listed (OL)		c UL us Listed (OL)	
	RCM compliance mark		RCM compliance mark	
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	

1) For information about the area of use, see the EC declaration of conformity at: www.festo.com/catalogue/SIEH → 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]	-25 ... +70

Output, general			
Size	M12		M18
Reproducibility, switching value FS	[mm]	0.3	0.5

Switching output				
Size	M12		M18	
Switching output	PNP	NPN	PNP	NPN
Switching output	PNP		PNP	
	NPN		NPN	
Switching element function	N/O		N/O	
Rated operating distance	[mm]	6	10	
Actual operating distance	[mm]	4.86	8.1	

Reduction factors					
Aluminium	1.0		1.0		
Stainless steel, 1 mm thick	0.45		0.4		
Stainless steel, 2 mm thick	0.9		0.8		
Copper	0.85		0.8	0.85	
Brass	1.3		1.3		
Steel St 37	1.0		1.0		
Hysteresis	[mm]	≤ 0.73	≤ 1.22		
Max. switching frequency	[Hz]	600	200		
Max. output current	[mA]	200	200		
Voltage drop	[V]	2	≤ 2	2	≤ 2

Technical data – Increased switching distance

Output, additional data	
Short circuit current rating	Pulsed
Inductive protective circuit	Integrated
	Output current < 100 mA and switching frequency < 10 Hz

Electronics		
Switching output	PNP	NPN
Operating voltage range [V DC]	10 ... 30	10 ... 30
Residual ripple [%]	20	20
No-load supply current [mA]	< 12	≤ 17
Reverse polarity protection	For all electrical connections	For all electrical connections

Electromechanics		
Electrical connection	Cable	Plug
Electrical connection	Cable, 3-wire	Plug, M12x1, 3-pin
Information on materials: Cable sheath	TPE-U (PUR)	–

Mechanical system				
Size	M12		M18	
Electrical connection	Cable	Plug	Cable	Plug
Size	M12		M18	
Type of mounting	With lock nut		With lock nut	
Type of installation	Flush		Flush	
Product weight [g]	90	28	115	53
Information on materials: Housing	High-alloy steel		High-alloy steel	

Display/operation	
Switching status indication	Yellow LED

Immission/emission				
Size	M12		M18	
Switching output	PNP	NPN	PNP	NPN
Ambient temperature with flexible cable installation [°C]	–5 ... +70		–5 ... +70	
Degree of protection	IP67		IP67	
	IP69K		IP69K	
Corrosion resistance class CRC ¹⁾	2		2	
Resistance to sensor fitting pressure [bar]	80		60	

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.

Pin allocation to EN 60947-5-2

M8x1, 3-pin				M12x1, 3-pin				N/C			
N/O				N/O				N/C			
	Pin	Wire colour	Allocation		Pin	Wire colour	Allocation		Pin	Wire colour	Allocation
	1	Brown	+		1	Brown	+		1	Brown	+
	3	Blue	–		3	Blue	–		3	Blue	–
	4	Black	Output		4	Black	Output		2	White	Output

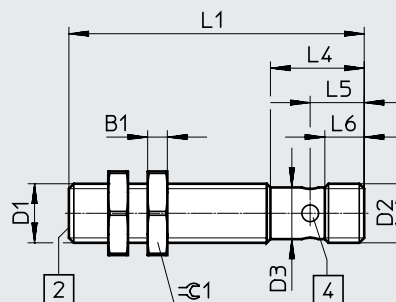
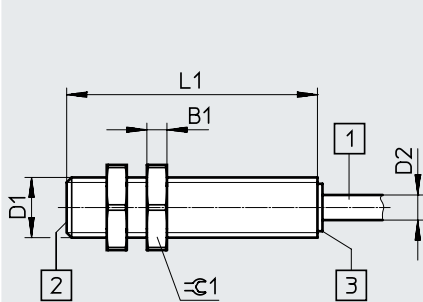
Technical data – Increased switching distance

Dimensions – M12

Download CAD data → www.festo.com

Cable

Plug



- [1] 3-wire cable, 2.5 m long
- [2] Active surface
- [3] 1 switching status indication, yellow
- [4] 4 switching status indications, yellow

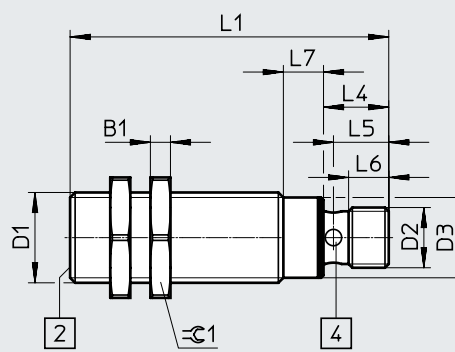
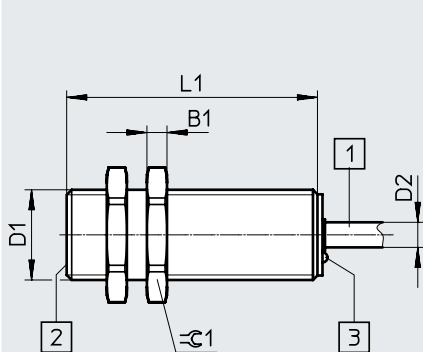
Type	B1	D1	D2 ∅	D2	D3 ∅	L1	L4	L5	L6	≈ 1
SIEH-M12B-...-S-K-L-CR	4	M12x1	5	-	-	50	-	-	-	17
SIEH-M12B-...-S-S-L-CR	4	M12x1	-	M12x1	10.5	60	19	11	8	17

Dimensions – M18

Download CAD data → www.festo.com

Cable

Plug



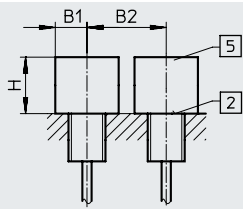
- [1] 3-wire cable, 2.5 m long
- [2] Active surface
- [3] 1 switching status indication, yellow
- [4] 4 switching status indications, yellow

Type	B1	D1	D2 ∅	D2	D3 ∅	L1	L4	L5	L6	L7	≈ 1
SIEH-M18B-...-S-K-L-CR	4	M18x1	5	-	-	50	-	-	-	-	24
SIEH-M18B-...-S-S-L-CR	4	M18x1	-	M12x1	16	63.5	13	11	8	8	24

Technical data – Increased switching distance

Fitting instructions


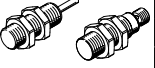
Flush installation



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



Size	B1	B2	H
M12	12	40	18
M18	25	60	30



Ordering data

Size	$S_n^{1)}$ [mm]	Type of installation	Switching output	Switching element function	Electrical connection			
					Cable		Plug	
					Part No.	Type	Part No.	Type
M12								
	6.0	Flush	PNP	N/O	538252	SIEH-M12B-PS-K-L-CR	538251	SIEH-M12B-PS-S-L-CR
			NPN	N/O	538254	SIEH-M12B-NS-K-L-CR	538253	SIEH-M12B-NS-S-L-CR
M18								
	10.0	Flush	PNP	N/O	538256	SIEH-M18B-PS-K-L-CR	538255	SIEH-M18B-PS-S-L-CR
			NPN	N/O	538258	SIEH-M18B-NS-K-L-CR	538257	SIEH-M18B-NS-S-L-CR






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

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⁾

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

Ordering data – Mounting components			
	For size	Part No.	Type
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