

Proximity sensors SIE..., inductive

Product overview



- Designs for DC and AC
- Switch output PNP, NPN or analogue
- Ø 3 mm ... M30 and special designs
- Corrosion-resistant and welding field immune versions
- Versions with increased switching distance
- Free of copper and PTFE

Detailed product information
 → www.festo.com/catalogue/sie

Product overview						
Variant	Type	Operating voltage	Switch output / analogue output	Type of mounting	Size	→ Page
Reduction factor, material-specific						
Standard operating distance	SIEN	10 ... 30 V DC	PNP	Flush fitting	Ø 4 mm, M5, Ø 6.5 mm,	121
	Basic version	15 ... 34 V DC	NPN	Non-flush	M8, M12, M18, M30	
	SIED	20 ... 320 V DC	2-wire, contactless	Flush fitting	M12, M18, M30	124
	Basic version	20 ... 265 V AC		Non-flush		
	SIES	10 ... 30 V DC	PNP	Flush fitting	5x5x25 mm ...	125
	Special design		NPN		40x40x120 mm	
Increased operating distance	SIEN-...-PA Polyamide housing	10 ... 30 V DC	PNP NPN	Flush fitting Non-flush	M12, M18, M30	126
	SIED-...-PA Polyamide housing	10 ... 300 V DC 20 ... 250 V AC	2-wire, contactless	Flush fitting Non-flush	M12, M18, M30	127
Increased operating distance	SIEH	10 ... 30 V DC	PNP	Flush fitting	Ø 3 mm, M12, M18	128
	Basic version	15 ... 34 V DC	NPN			
Analogue output	SIEH-...-CR Stainless steel housing	10 ... 30 V DC	PNP NPN	Flush fitting	M12, M18	128
	SIEA	15 ... 30 V DC	0 ... 10 V and 4 ... 20 mA	Flush fitting	M8, M12, M18, M30	130
Reduction factor 1 for all metals, welding field immune						
Increased operating distance	SIEF	10 ... 30 V DC	PNP	Non-flush	M8, M12, M18, M30	131
	Basic version		NPN	Partially flush		
Increased operating distance	SIEF-...-WA Housing resistant to welding spatter	10 ... 30 V DC	PNP NPN	Flush fitting Partially flush	M12, M18, M30, 40x40 mm	131

Proximity sensors SIE..., inductive

Type codes

SIE N - M 30 NB - P S - K - L -

Type	
SIE	Proximity sensor, inductive
Design	
A	With analogue output
D	For DC and AC
F	With reduction factor 1 for all metals, welding field immune
H	With increased operating distance
N	With standard operating distance
S	Special design
Constructional design	
-	Round
M	Metric parallel thread
Q	Block-shaped
V3	Block-shaped
Size	
Type of mounting	
B	Flush
NB	Non-flush
S	Partially flush
Electrical output	
P	Switch output PNP
N	Switch output NPN
Z	2-wire output
PU	Analogue output 0 ... 10 V
UI	Analogue output 0 ... 10 V and 4 ... 20 mA
Switching element function	
S	Normally open
O	Normally closed
A	Antivalent
Electrical connection	
K	Cable
S	Plug
X	Screw terminals
Indication	
-	Without indication
L	Switching status
2L	Switching status and ready status
Variant	
-	Standard
CR	Stainless steel housing
PA	Polyamide housing
WA	Housing resistant to welding spatter

Proximity sensors SIEN, inductive

Technical data – Standard operating distance, basic version



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General technical data									
Size			∅ 4 mm	M5	∅ 6.5 mm	M8x1	M12x1	M18x1	M30x1.5
Type of mounting	Flush				Flush or non-flush				
Rated operating 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
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

Electrical data									
Size			∅ 4 mm	M5	∅ 6.5 mm	M8x1	M12x1	M18x1	M30x1.5
Electrical connection	Cable	3-wire							
	Plug	M8x1, 3-pin				M12x1, 3-pin			
Operating voltage range	[V DC]	10 ... 30			15 ... 34				
Max. output current as a function of temperature	[mA]	200 at ≤ 70 °C			150 at ≤ 85 °C				
	[mA]	–			200 at ≤ 50 °C				
Max. switching frequency	Flush	[Hz]	3,000	3,000	1,500	1,500	1,200	800	350
	Non-flush	[Hz]	–	–	–	900	800	300	300
Protection against short circuit	Pulsed								
Protection against polarity reversal	For all electrical connections								
Protection class	IP67								

Operating and environmental conditions									
Size			∅ 4 mm	M5	∅ 6.5 mm	M8x1	M12x1	M18x1	M30x1.5
Ambient temperature	[°C]	–25 ... +70			–25 ... +85				
Ambient temperature with flexible cable installation	[°C]	–25 ... +70			–25 ... +85				
CE mark (see declaration of conformity)	In accordance with EU EMC directive								
Certification	C-Tick								

Materials									
Size			∅ 4 mm	M5	∅ 6.5 mm	M8x1	M12x1	M18x1	M30x1.5
Housing	High-alloy stainless steel					Nickel-plated brass			
Cable sheath	Polyurethane								

Ordering data								
Size	S_n ¹⁾ [mm]	Type of mounting	Switch output	Switching element function	Electrical connection			
					Cable		Plug	
					Part No.	Type	Part No.	Type
∅ 4 mm								
	0.8	Flush	PNP	Normally open	150 362	SIEN-4B-PS-K-L	150 363	SIEN-4B-PS-S-L
				Normally closed	150 366	SIEN-4B-PO-K-L	150 367	SIEN-4B-PO-S-L
			NPN	Normally open	150 360	SIEN-4B-NS-K-L	150 361	SIEN-4B-NS-S-L
				Normally closed	150 364	SIEN-4B-NO-K-L	150 365	SIEN-4B-NO-S-L
M5								
	0.8	Flush	PNP	Normally open	150 370	SIEN-M5B-PS-K-L	150 371	SIEN-M5B-PS-S-L
				Normally closed	150 374	SIEN-M5B-PO-K-L	150 375	SIEN-M5B-PO-S-L
			NPN	Normally open	150 368	SIEN-M5B-NS-K-L	150 369	SIEN-M5B-NS-S-L
				Normally closed	150 372	SIEN-M5B-NO-K-L	150 373	SIEN-M5B-NO-S-L

1) S_n Rated operating distance [mm]

Proximity sensors SIEN, inductive

Technical data – Standard operating distance, basic version



Ordering data								
Size	S _n ¹⁾ [mm]	Type of mounting	Switch output	Switching element function	Electrical connection			
					Cable		Plug	
					Part No.	Type	Part No.	Type
∅ 6.5 mm								
	1.5	Flush	PNP	Normally open	150 378	SIEN-6,5B-PS-K-L	150 379	SIEN-6,5B-PS-S-L
				Normally closed	150 382	SIEN-6,5B-PO-K-L	150 383	SIEN-6,5B-PO-S-L
			NPN	Normally open	150 376	SIEN-6,5B-NS-K-L	150 377	SIEN-6,5B-NS-S-L
				Normally closed	150 380	SIEN-6,5B-NO-K-L	150 381	SIEN-6,5B-NO-S-L
M8								
	1.5	Flush	PNP	Normally open	150 386	SIEN-M8B-PS-K-L	150 387	SIEN-M8B-PS-S-L
				Normally closed	150 390	SIEN-M8B-PO-K-L	150 391	SIEN-M8B-PO-S-L
			NPN	Normally open	150 384	SIEN-M8B-NS-K-L	150 385	SIEN-M8B-NS-S-L
				Normally closed	150 388	SIEN-M8B-NO-K-L	150 389	SIEN-M8B-NO-S-L
	2.5	Non-flush	PNP	Normally open	150 394	SIEN-M8NB-PS-K-L	150 395	SIEN-M8NB-PS-S-L
				Normally closed	150 398	SIEN-M8NB-PO-K-L	150 399	SIEN-M8NB-PO-S-L
			NPN	Normally open	150 392	SIEN-M8NB-NS-K-L	150 393	SIEN-M8NB-NS-S-L
				Normally closed	150 396	SIEN-M8NB-NO-K-L	150 397	SIEN-M8NB-NO-S-L
M12								
	2.0	Flush	PNP	Normally open	150 402	SIEN-M12B-PS-K-L	150 403	SIEN-M12B-PS-S-L
				Normally closed	150 406	SIEN-M12B-PO-K-L	150 407	SIEN-M12B-PO-S-L
			NPN	Normally open	150 400	SIEN-M12B-NS-K-L	150 401	SIEN-M12B-NS-S-L
				Normally closed	150 404	SIEN-M12B-NO-K-L	150 405	SIEN-M12B-NO-S-L
	4.0	Non-flush	PNP	Normally open	150 410	SIEN-M12NB-PS-K-L	150 411	SIEN-M12NB-PS-S-L
				Normally closed	150 414	SIEN-M12NB-PO-K-L	150 415	SIEN-M12NB-PO-S-L
			NPN	Normally open	150 408	SIEN-M12NB-NS-K-L	150 409	SIEN-M12NB-NS-S-L
				Normally closed	150 412	SIEN-M12NB-NO-K-L	150 413	SIEN-M12NB-NO-S-L
M18								
	5.0	Flush	PNP	Normally open	150 418	SIEN-M18B-PS-K-L	150 419	SIEN-M18B-PS-S-L
				Normally closed	150 422	SIEN-M18B-PO-K-L	150 423	SIEN-M18B-PO-S-L
			NPN	Normally open	150 416	SIEN-M18B-NS-K-L	150 417	SIEN-M18B-NS-S-L
				Normally closed	150 420	SIEN-M18B-NO-K-L	150 421	SIEN-M18B-NO-S-L
	8.0	Non-flush	PNP	Normally open	150 426	SIEN-M18NB-PS-K-L	150 427	SIEN-M18NB-PS-S-L
				Normally closed	150 430	SIEN-M18NB-PO-K-L	150 431	SIEN-M18NB-PO-S-L
			NPN	Normally open	150 424	SIEN-M18NB-NS-K-L	150 425	SIEN-M18NB-NS-S-L
				Normally closed	150 428	SIEN-M18NB-NO-K-L	150 429	SIEN-M18NB-NO-S-L
M30								
	10.0	Flush	PNP	Normally open	150 434	SIEN-M30B-PS-K-L	150 435	SIEN-M30B-PS-S-L
				Normally closed	150 438	SIEN-M30B-PO-K-L	150 439	SIEN-M30B-PO-S-L
			NPN	Normally open	150 432	SIEN-M30B-NS-K-L	150 433	SIEN-M30B-NS-S-L
				Normally closed	150 436	SIEN-M30B-NO-K-L	150 437	SIEN-M30B-NO-S-L
	15.0	Non-flush	PNP	Normally open	150 442	SIEN-M30NB-PS-K-L	150 443	SIEN-M30NB-PS-S-L
				Normally closed	150 446	SIEN-M30NB-PO-K-L	150 447	SIEN-M30NB-PO-S-L
			NPN	Normally open	150 440	SIEN-M30NB-NS-K-L	150 441	SIEN-M30NB-NS-S-L
				Normally closed	150 444	SIEN-M30NB-NO-K-L	150 445	SIEN-M30NB-NO-S-L

1) S_n Rated operating distance [mm]

Proximity sensors SIED, inductive

Technical data – Standard operating distance, for DC and AC

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General technical data					
Size		M12x1	M18x1	M30x1.5	
Type of mounting		Flush or non-flush			
Rated operating distance S_n	Flush	[mm]	2.0	5.0	10.0
	Non-flush	[mm]	4.0	8.0	15.0
Repetition accuracy	Flush	[mm]	±0.1	±0.15	±0.3
	Non-flush	[mm]	±0.2	±0.2	±0.4

Electrical data					
Size		M12x1	M18x1	M30x1.5	
Electrical connection		Cable, 2-wire Plug M12x1, 2-pin			
Operating voltage range	[V DC]	20 ... 320			
	[V AC]	20 ... 265			
Max. output current		[mA]	200	300	
Max. switching frequency DC	Flush	[Hz]	1,200	490	220
	Non-flush	[Hz]	900	340	200
Max. switching frequency AC	Flush	[Hz]	25		
	Non-flush	[Hz]	25		
Minimum load current		[mA]	5.0		
Protection against short circuit		No			
Protection against polarity reversal		For all electrical connections			
Protection class		IP67			







Operating and environmental conditions		
Ambient temperature	[°C]	-25 ... +85
Ambient temperature with flexible cable installation	[°C]	-5 ... +50
CE mark (see declaration of conformity)	In accordance with EU EMC directive In accordance with EU Low Voltage Directive	
Certification	C-Tick	

Materials	
Housing	Nickel-plated brass; polyamide
Cable sheath	Polyurethane

Proximity sensors SIED, inductive

Technical data – Standard operating distance, for DC and AC



Ordering data								
Size	S _n ¹⁾ [mm]	Type of mounting	Switch output	Switching element function	Electrical connection			
					Cable		Plug	
					Part No.	Type	Part No.	Type
M12 – For DC and AC								
	2.0	Flush	2-wire, contactless	Normally open	538 272	SIED-M12B-ZS-K-L	538 271	SIED-M12B-ZS-S-L
				Normally closed	538 274	SIED-M12B-ZO-K-L	538 273	SIED-M12B-ZO-S-L
	4.0	Non-flush	2-wire, contactless	Normally open	538 268	SIED-M12NB-ZS-K-L	538 267	SIED-M12NB-ZS-S-L
				Normally closed	538 270	SIED-M12NB-ZO-K-L	538 269	SIED-M12NB-ZO-S-L
M18 – For DC and AC								
	5.0	Flush	2-wire, contactless	Normally open	538 280	SIED-M18B-ZS-K-L	538 279	SIED-M18B-ZS-S-L
				Normally closed	538 282	SIED-M18B-ZO-K-L	538 281	SIED-M18B-ZO-S-L
	8.0	Non-flush	2-wire, contactless	Normally open	538 276	SIED-M18NB-ZS-K-L	538 275	SIED-M18NB-ZS-S-L
				Normally closed	538 278	SIED-M18NB-ZO-K-L	538 277	SIED-M18NB-ZO-S-L
M30 – For DC and AC								
	10.0	Flush	2-wire, contactless	Normally open	538 288	SIED-M30B-ZS-K-L	538 287	SIED-M30B-ZS-S-L
				Normally closed	538 290	SIED-M30B-ZO-K-L	538 289	SIED-M30B-ZO-S-L
	15.0	Non-flush	2-wire, contactless	Normally open	538 284	SIED-M30NB-ZS-K-L	538 283	SIED-M30NB-ZS-S-L
				Normally closed	538 286	SIED-M30NB-ZO-K-L	538 285	SIED-M30NB-ZO-S-L

1) S_n Rated operating distance [mm]

Proximity sensors SIES, inductive

Technical data – Standard operating distance, special design


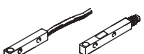
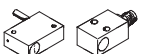

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General technical data						
Design	SIES-Q5B-...	SIES-Q8B-...	SIES-V3B-...	SIES-QB-...	SIES-Q40B-...	
Type of mounting	Flush					
Rated operating distance S_n	[mm]	0.8	1.5	2.0	2.0	15.0
Repetition accuracy	[mm]	±0.04	±0.075	±0.1	±0.1	±0.75

Electrical data						
Design	SIES-Q5B-...	SIES-Q8B-...	SIES-V3B-...	SIES-QB-...	SIES-Q40B-...	
Electrical connection	Cable, 3-wire	Cable, 3-wire Plug, M8x1, 3-pin	Plug, M8x1, 3-pin	Cable, 3-wire	Screw terminals	
Operating voltage range	[V DC]	10 ... 30				
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		
Max. switching frequency	[Hz]	3,000	1,500	1,200	1,200	100
Protection against short circuit		Pulsed				
Protection against polarity reversal		For all electrical connections				
Protection class		IP67				IP65

Operating and environmental conditions						
Design	SIES-Q5B-...	SIES-Q8B-...	SIES-V3B-...	SIES-QB-...	SIES-Q40B-...	
Ambient temperature	[°C]	–25 ... +70		–25 ... +85		
CE mark (see declaration of conformity)	In accordance with EU EMC directive					
Certification	C-Tick					

Materials						
Design	SIES-Q5B-...	SIES-Q8B-...	SIES-V3B-...	SIES-QB-...	SIES-Q40B-...	
Housing	Nickel-plated brass		Die-cast zinc	Polybutylene terephthalate, reinforced	Polyester	
Cable sheath	Polyurethane					–

Ordering data							
Size	$S_n^{1)}$ [mm]	Type of mounting	Switch output	Switching element function	Electrical connection		
					Cable		Plug
					Part No.	Type	Part No.
Special design							
	0.8	Flush	PNP	Normally open	178 291	SIES-Q5B-PS-K-L	–
				Normally closed	174 549	SIES-Q5B-PO-K-L	–
			NPN	Normally open	178 290	SIES-Q5B-NS-K-L	–
				Normally closed	174 548	SIES-Q5B-NO-K-L	–
	1.5	Flush	PNP	Normally open	178 294	SIES-Q8B-PS-K-L	178 295 SIES-Q8B-PS-S-L
				Normally closed	174 552	SIES-Q8B-PO-K-L	174 553 SIES-Q8B-PO-S-L
			NPN	Normally open	178 292	SIES-Q8B-NS-K-L	178 293 SIES-Q8B-NS-S-L
				Normally closed	174 550	SIES-Q8B-NO-K-L	174 551 SIES-Q8B-NO-S-L
	2.0	Flush	PNP	Normally open	150 488	SIES-QB-PS-K-L	150 491 SIES-V3B-PS-S-L
				Normally closed	150 489	SIES-QB-PO-K-L	–
			NPN	Normally open	–	150 490	SIES-V3B-NS-S-L
				Normally closed	–	–	–
	15.0	Flush	PNP	Antivalent	–	150 492	SIES-Q40-PA-X-2L ²⁾

1) S_n Rated operating distance [mm]
2) Electrical connection with screw terminals

Proximity sensors SIEN-...-PA, inductive

Technical data – Standard operating distance, polyamide housing






General technical data				
Size	M12x1		M18x1	M30x1.5
Mounting conditions	Flush or non-flush			
Rated operating distance S_n	Flush	[mm]	2.0	5.0
	Non-flush	[mm]	4.0	8.0
Repetition accuracy	Flush	[mm]	0.04	0.1
	Non-flush	[mm]	0.08	0.16

Electrical data				
Size	M12x1		M18x1	M30x1.5
Electrical connection	Cable, 3-wire			
Operating voltage range	[V DC]	10 ... 30		
Max. output current	[mA]	200		
Max. switching frequency DC	Flush	[Hz]	2,000	1,000
	Non-flush	[Hz]	2,000	1,000
Protection against short circuit	Pulsed			
Protection against polarity reversal	For all electrical connections			
Protection class	IP65, IP67			

Operating and environmental conditions		
Ambient temperature	[°C]	-25 ... +70
Ambient temperature with flexible cable installation	[°C]	0 ... 70
CE mark (see declaration of conformity)	In accordance with EU EMC directive	
Certification	C-Tick	

Materials	
Housing	Reinforced polyamide
Cable sheath	Polyvinyl chloride

Ordering data						
Size	S_n ¹⁾ [mm]	Type of mounting	Switch output	Switching element function	Electrical connection	
					Cable	Part No. Type
M12x1						
	2.0	Flush	PNP	Normally open	538 323	SIEN-M12B-PS-K-L-PA
			NPN		538 324	SIEN-M12B-NS-K-L-PA
	4.0	Non-flush	PNP	Normally open	538 329	SIEN-M12NB-PS-K-L-PA
			NPN		538 330	SIEN-M12NB-NS-K-L-PA
M18x1						
	5.0	Flush	PNP	Normally open	538 325	SIEN-M18B-PS-K-L-PA
			NPN		538 326	SIEN-M18B-NS-K-L-PA
	8.0	Non-flush	PNP	Normally open	538 331	SIEN-M18NB-PS-K-L-PA
			NPN		538 332	SIEN-M18NB-NS-K-L-PA
M30x1.5						
	10.0	Flush	PNP	Normally open	538 327	SIEN-M30B-PS-K-L-PA
			NPN		538 328	SIEN-M30B-NS-K-L-PA
	15.0	Non-flush	PNP	Normally open	538 333	SIEN-M30NB-PS-K-L-PA
			NPN		538 334	SIEN-M30NB-NS-K-L-PA

1) S_n Rated operating distance [mm]

Proximity sensors SIED-...-PA, inductive




Technical data – Standard operating distance, polyamide housing, for DC and AC

General technical data					
Size		M12x1	M18x1	M30x1.5	
Mounting conditions		Flush or non-flush			
Rated operating distance S_n	Flush	[mm]	2.0	5.0	10.0
	Non-flush	[mm]	4.0	8.0	15.0
Repetition accuracy	Flush	[mm]	0.04	0.1	0.2
	Non-flush	[mm]	0.08	0.16	0.3

Electrical data					
Size		M12x1	M18x1	M30x1.5	
Electrical connection		Cable, 2-wire			
Operating voltage range	[V DC]	10 ... 300			
	[V AC]	20 ... 250			
Max. output current	[mA]	100	300		
Max. switching frequency DC	Flush	[Hz]	60		
	Non-flush	[Hz]	60		
Max. switching frequency AC	Flush	[Hz]	20		
	Non-flush	[Hz]	20		
Minimum load current	[mA]	3.0			
Protection against short circuit	No				
Protection against polarity reversal	For all electrical connections				
Protection class	IP65, IP67				

Operating and environmental conditions		
Ambient temperature	[°C]	-25 ... +70
Ambient temperature with flexible cable installation	[°C]	0 ... 70
CE mark (see declaration of conformity)	In accordance with EU EMC directive In accordance with EU Low Voltage Directive	
Certification	C-Tick	

Materials	
Housing	Reinforced polyamide
Cable sheath	Polyvinyl chloride

Ordering data						
Size	S_n ¹⁾ [mm]	Type of mounting	Switch output	Switching element function	Electrical connection	
					Cable	Part No. Type
M12						
	2.0	Flush	2-wire, contactless	Normally open	538 336	SIED-M12B-ZS-K-L-PA
	4.0	Non-flush			538 335	SIED-M12NB-ZS-K-L-PA
M18						
	5.0	Flush	2-wire, contactless	Normally open	538 338	SIED-M18B-ZS-K-L-PA
	8.0	Non-flush			538 337	SIED-M18NB-ZS-K-L-PA
M30						
	10.0	Flush	2-wire, contactless	Normally open	538 340	SIED-M30B-ZS-K-L-PA
	15.0	Non-flush			538 339	SIED-M30NB-ZS-K-L-PA

1) S_n Rated operating distance [mm]

Proximity sensors SIEH, inductive

Technical data – Increased operating distance



General technical data						
Size	Basic version			Stainless steel housing		
	∅ 3 mm	M12x1	M18x1	M12x1	M18x1	
Type of mounting	Flush					
Rated operating distance S_n	[mm]	1.0	4.0	7.0	6.0	10.0
Repetition accuracy	[mm]	0.02	0.2	0.2	0.3	0.5



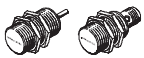

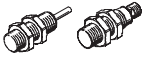
Electrical data						
Size	Basic version			Stainless steel housing		
	∅ 3 mm	M12x1	M18x1	M12x1	M18x1	
Electrical connection	Cable	3-wire				
	Plug	M8x1, 3-pin	M12x1, 3-pin		M12x1, 3-pin	
Operating voltage range	[V DC]	10 ... 30	15 ... 34		10 ... 30	
Max. output current as a function of temperature	[mA]	100	150 at ≤ 85 °C 200 at ≤ 50 °C		200	
Max. switching frequency	[Hz]	3,000	400	250	600	200
Protection against short circuit		Pulsed				
Protection against polarity reversal		For all electrical connections				
Protection class		IP67				

Operating and environmental conditions					
Size	Basic version			Stainless steel housing	
	∅ 3 mm	M12x1	M18x1	M12x1	M18x1
Ambient temperature	[°C]	-25 ... +70	-25 ... +85		-25 ... +70
Ambient temperature with flexible cable installation	[°C]	-5 ... +70	-5 ... +85		-5 ... +70
CE mark (see declaration of conformity)		In accordance with EU EMC directive			
Certification		C-Tick			

Materials					
Size	Basic version			Stainless steel housing	
	∅ 3 mm	M12x1	M18x1	M12x1	M18x1
Housing		High-alloy stainless steel	Nickel-plated brass		High-alloy steel
Cable sheath		Polyurethane			

Proximity sensors SIEH, inductive

Technical data – Increased operating distance

Ordering data								
Size	S _n ¹⁾ [mm]	Type of mounting	Switch output	Switching element function	Electrical connection			
					Cable		Plug	
					Part No.	Type	Part No.	Type
Ø 3 mm								
	1.0	Flush	PNP	Normally open	538 264	SIEH-3B-PS-K-L	538 263	SIEH-3B-PS-S-L
			NPN	Normally open	538 266	SIEH-3B-NS-K-L	538 265	SIEH-3B-NS-S-L
M12x1								
	4.0	Flush	PNP	Normally open	150 450	SIEH-M12B-PS-K-L	150 451	SIEH-M12B-PS-S-L
				Normally closed	150 454	SIEH-M12B-PO-K-L	150 455	SIEH-M12B-PO-S-L
			NPN	Normally open	150 448	SIEH-M12B-NS-K-L	150 449	SIEH-M12B-NS-S-L
				Normally closed	150 452	SIEH-M12B-NO-K-L	150 453	SIEH-M12B-NO-S-L
M18x1								
	7.0	Flush	PNP	Normally open	150 458	SIEH-M18B-PS-K-L	150 459	SIEH-M18B-PS-S-L
				Normally closed	150 462	SIEH-M18B-PO-K-L	150 463	SIEH-M18B-PO-S-L
			NPN	Normally open	150 456	SIEH-M18B-NS-K-L	150 457	SIEH-M18B-NS-S-L
				Normally closed	150 460	SIEH-M18B-NO-K-L	150 461	SIEH-M18B-NO-S-L
M12x1 – Stainless steel housing								
	6.0	Flush	PNP	Normally open	538 252	SIEH-M12B-PS-K-L-CR	538 251	SIEH-M12B-PS-S-L-CR
			NPN	Normally open	538 254	SIEH-M12B-NS-K-L-CR	538 253	SIEH-M12B-NS-S-L-CR
M18x1 – Stainless steel housing								
	10.0	Flush	PNP	Normally open	538 256	SIEH-M18B-PS-K-L-CR	538 255	SIEH-M18B-PS-S-L-CR
			NPN	Normally open	538 258	SIEH-M18B-NS-K-L-CR	538 257	SIEH-M18B-NS-S-L-CR

1) S_n Rated operating distance [mm]

Proximity sensors SIEA, inductive

Technical data – Analogue output







General technical data					
Size		M8x1	M12x1	M18x1	M30x1.5
Type of mounting		Flush			
Distance measuring range	[mm]	0 ... 4	0 ... 6	0 ... 10	0 ... 20
Repetition accuracy	[mm]	0.3	0.3	0.3	0.3
Repetition accuracy under constant conditions	[mm]	±0.01	±0.01	±0.02	±0.05
Displacement resolution	[mm]	0.001	0.001	0.002	0.005

Electrical data					
Size		M8x1	M12x1	M18x1	M30x1.5
Electrical connection	Plug	M8x1, 3-pin	M12x1, 4-pin		
Operating voltage range	[V DC]	15 ... 30			
Max. switching frequency	[Hz]	1,600	1,000	500	200
Protection against short circuit		Pulsed			
Protection against polarity reversal		For operating voltage			
Protection class		IP67			

Operating and environmental conditions					
Size		M8x1	M12x1	M18x1	M30x1.5
Ambient temperature	[°C]	-25 ... +70			
CE mark (see declaration of conformity)		In accordance with EU EMC directive			
Certification		C-Tick			

Materials					
Size		M8x1	M12x1	M18x1	M30x1.5
Housing		Brass, chrome-plated			

Ordering data					
Size	S ¹⁾ [mm]	Type of mounting	Analogue output	Electrical connection	
				Plug	Part No. Type
	0 ... 4	Flush	0 ... 10 V	–	538 291 SIEA-M8B-PU-S
	0 ... 6	Flush	0 ... 10 V	4 ... 20 mA	538 292 SIEA-M12B-UI-S
	0 ... 10	Flush	0 ... 10 V	4 ... 20 mA	538 293 SIEA-M18B-UI-S
	0 ... 20	Flush	0 ... 10 V	4 ... 20 mA	538 294 SIEA-M30B-UI-S

1) S Position measuring range [mm]

Proximity sensors SIEF, inductive

FESTO

Technical data – Increased operating distance, reduction factor 1, welding field immune

General technical data							
Size	M8x1		M12x1	M18x1	M30x1.5	40x40 mm	
Type of mounting	Non-flush		Flush or partially flush			Partially flush	
Rated operating distance S_n	Flush	[mm]	–	3.0	5.0	10.0	–
	Partially flush	[mm]	4.0	8.0	12.0	20.0	35.0
Repetition accuracy	Flush	[mm]	–	0.06	0.1	0.2	–
	Partially flush	[mm]	0.08	0.16	0.24	0.4	0.7

Electrical data							
Size	M8x1		M12x1	M18x1	M30x1.5	40x40 mm	
Electrical connection	Cable	3-wire					–
	Plug	M8x1, 3-pin		M12x1, 3-pin, Fixcon		M12x1, 4-pin, Fixcon	
Operating voltage range	[V DC]	10 ... 30				10 ... 65	
Max. output current	[mA]	150		200			
Max. switching frequency DC	Flush	[Hz]	–	3,000	2,500	2,000	–
	Partially flush	[Hz]	2,000	2,000	2,000	1,500	250
Protection against short circuit	Pulsed						
Protection against polarity reversal	For all electrical connections						
Protection class	IP67						

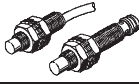







Operating and environmental conditions	
Resistance to interference from magnetic fields	Magnetic direct and alternating field
Ambient temperature [°C]	–30 ... +85
CE mark (see declaration of conformity)	In accordance with EU EMC directive
Certification	C-Tick

Materials						
Size	M8x1		M12x1	M18x1	M30x1.5	40x40 mm
Basic version						
Housing	High-alloy stainless steel; polyamide		Brass, chrome-plated; polybutylene terephthalate			Reinforced polyamide
Cable sheath	Polyurethane					–
Housing resistant to welding spatter						
Housing	–		Brass, PTFE-coated; polybutylene terephthalate			–

Proximity sensors SIEF, inductive

Technical data – Increased operating distance, reduction factor 1, welding field immune

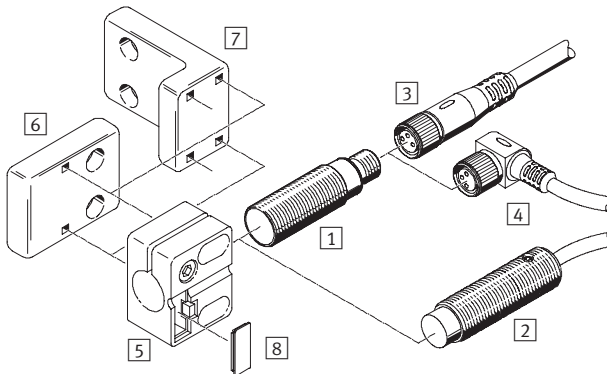


Ordering data								
Size	S _n ¹⁾ [mm]	Type of mounting	Switching element function	Electrical connection	Switch output			
					PNP		NPN	
					Part No.	Type	Part No.	Type
Basic version								
M8x1								
	4.0	Partially flush	Normally open	Cable	538 308	SIEF-M8NB-PS-K-L	538 310	SIEF-M8NB-NS-K-L
				Plug	538 307	SIEF-M8NB-PS-S-L	538 309	SIEF-M8NB-NS-S-L
M12x1								
	8.0	Partially flush	Normally open	Cable	538 312	SIEF-M12NB-PS-K-L	538 314	SIEF-M12NB-NS-K-L
				Plug	538 311	SIEF-M12NB-PS-S-L	538 313	SIEF-M12NB-NS-S-L
M18x1								
	12.0	Partially flush	Normally open	Cable	538 316	SIEF-M18NB-PS-K-L	538 318	SIEF-M18NB-NS-K-L
				Plug	538 315	SIEF-M18NB-PS-S-L	538 317	SIEF-M18NB-NS-S-L
M30x1.5								
	10.0	Partially flush	Normally open	Cable	538 320	SIEF-M30NB-PS-K-L	538 322	SIEF-M30NB-NS-K-L
				Plug	538 319	SIEF-M30NB-PS-S-L	538 321	SIEF-M30NB-NS-S-L
40x40 mm								
	35.0	Partially flush	Antivalent	Plug	538 341	SIEF-Q40S-PA-S-2L	538 342	SIEF-Q40S-NA-S-2L
Housing resistant to welding spatter								
M12x1								
	3.0	Flush	Normally open	Plug	538 297	SIEF-M12B-PS-S-L-WA	538 298	SIEF-M12B-NS-S-L-WA
	8.0	Partially flush			538 295	SIEF-M12NB-PS-S-L-WA	538 296	SIEF-M12NB-NS-S-L-WA
M18x1								
	5.0	Flush	Normally open	Plug	538 301	SIEF-M18B-PS-S-L-WA	538 302	SIEF-M18B-NS-S-L-WA
	12.0	Partially flush			538 299	SIEF-M18NB-PS-S-L-WA	538 300	SIEF-M18NB-NS-S-L-WA
M30x1.5								
	10.0	Flush	Normally open	Plug	538 305	SIEF-M30B-PS-S-L-WA	538 306	SIEF-M30B-NS-S-L-WA
	20.0	Partially flush			538 303	SIEF-M30NB-PS-S-L-WA	538 304	SIEF-M30NB-NS-S-L-WA

1) S_n Rated operating distance [mm]



Proximity sensors SIE..., inductive




Peripherals overview





Mounting attachments and accessories	
Proximity sensors	
1	SIE...-...-S, with plug
2	SIE...-...-K, with cable
Connecting cables	
3	NEBU-M...G..., SIM-M...-...G
4	NEBU-M...W..., SIM-M...-...W

Mounting attachments and accessories	
Mounting attachments	
5	SIEZ-...B-...
6	SIEZ-UV
7	SIEZ-UH
Inscription label	
8	SIEZ-LB

Ordering data – Connecting cables M8x1		Technical data → 261	
	Number of wires	Cable length [m]	Part No. Type
Straight plug socket			
	3	2.5	541 333 NEBU-M8G3-K-2.5-LE3
		5	541 334 NEBU-M8G3-K-5-LE3
Angled plug socket			
	3	2.5	541 338 NEBU-M8W3-K-2.5-LE3
		5	541 341 NEBU-M8W3-K-5-LE3

Ordering data – Mounting attachments			
	For design	Part No.	Type
With stop for flush mounting			
	4	538 343	SIEZ-NB-4
	6.5	538 344	SIEZ-NB-6,5
	M8	538 346	SIEZ-B-8
	M12	538 348	SIEZ-B-12
	M18	538 350	SIEZ-B-18
	M30	538 352	SIEZ-B-30
Without stop			
	M8	538 345	SIEZ-NB-8
	M12	538 347	SIEZ-NB-12
	M18	538 349	SIEZ-NB-18
	M30	538 351	SIEZ-NB-30
	M12, M18	538 354	SIEZ-UH
		538 355	SIEZ-UV
Inscription label			
	M12 ... M30	538 353	SIEZ-LB

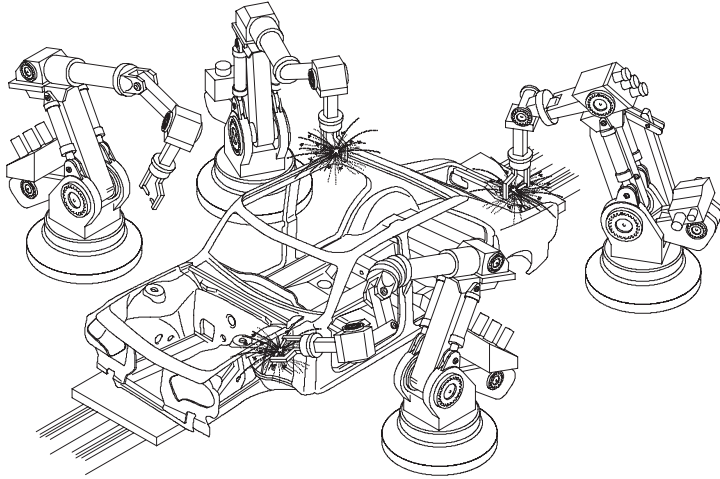
Ordering data – Connecting cables M12x1		Technical data → 264	
	Number of wires	Cable length [m]	Part No. Type
Straight plug socket			
	3	2.5	541 363 NEBU-M12G5-K-2.5-LE3
		5	541 364 NEBU-M12G5-K-5-LE3
	4	5	541 328 NEBU-M12G5-K-5-LE4
Angled plug socket			
	3	2.5	541 367 NEBU-M12W5-K-2.5-LE3
		5	541 370 NEBU-M12W5-K-5-LE3
		4	5

Proximity sensors SIE..., inductive

Application examples

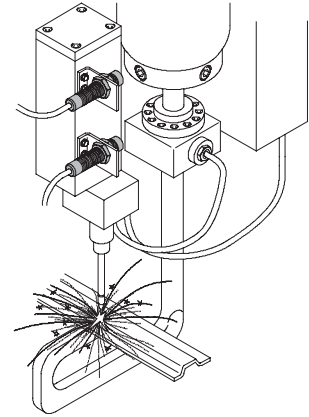


Proximity sensor with switch output

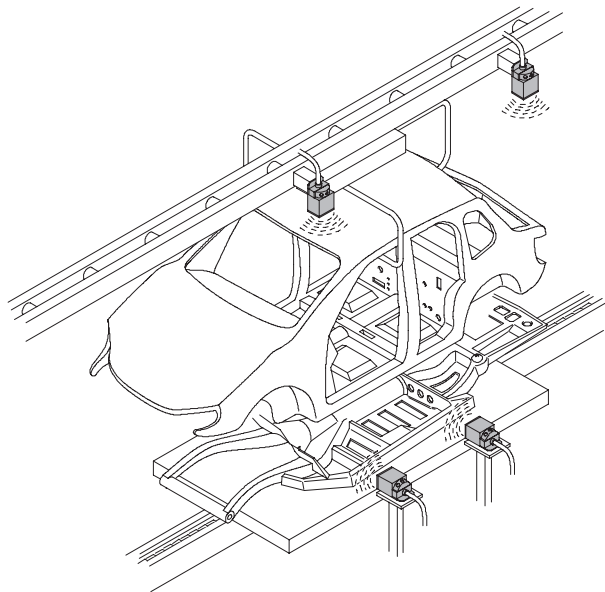


- End-position monitoring in welding robots and automatic welders with

magnetic field immune sensors SIEF-WA.

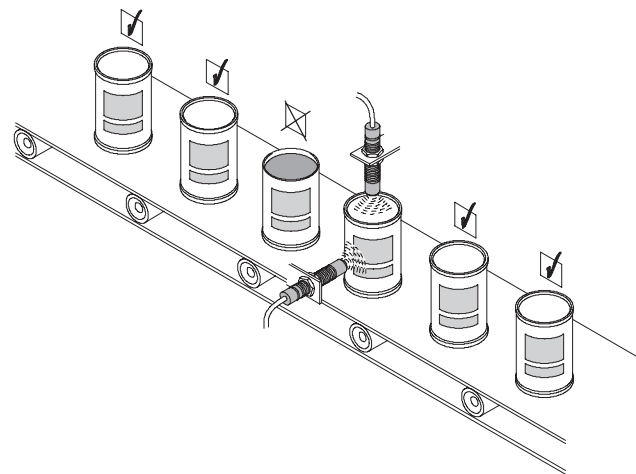


- It can also be used directly next to welding electrodes.

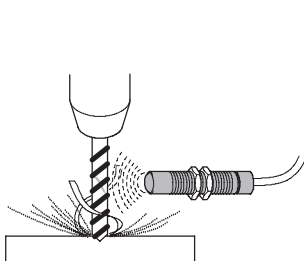


- Thanks to their long operating distance for all metals, block-shaped proximity sensors SIEF-Q40 guarantee reliable

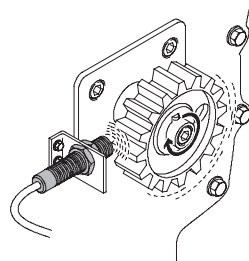
operation in transport and conveying systems in the automotive industry.



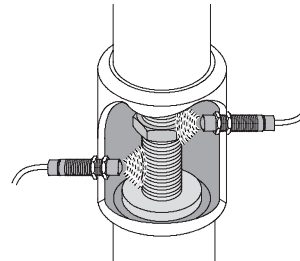
- Detection of cans and checking for the presence of the lid



- Monitoring tools (drill breakage)



- Proximity sensing of the teeth of a gearwheel for monitoring of the machine speed



- Detection of valve positions

Proximity sensors SIE..., inductive

Application examples

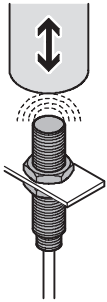
Proximity sensors with analogue output

Festo proximity sensors SIEA with analogue output supply an electrical signal, which is proportional to the distance between the active surface of

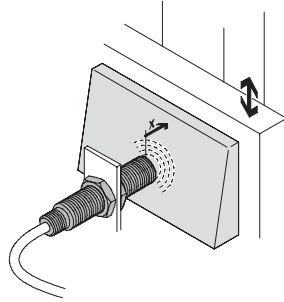
the sensor and the metallic object. This output signal also varies relative to the size of the detected object (if this is smaller than the standard test

plate or smaller than the sensor) and its material (different metals require different reduction factors for the

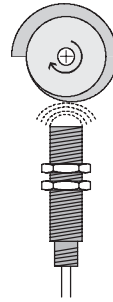
nominal operating distance S_n). These effects facilitate a wide range of applications in automation technology.



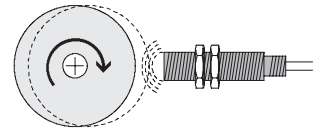
- Direct conversion of linear motion into an electrical signal.



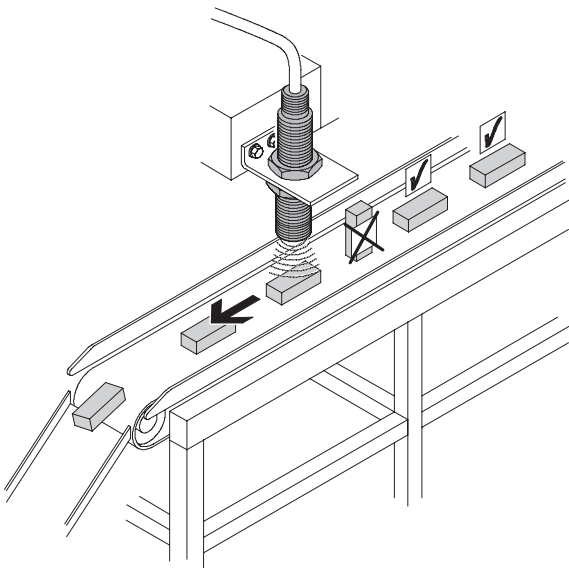
- Conversion of linear motion into an electrical signal using a wedge-shaped conduction component.



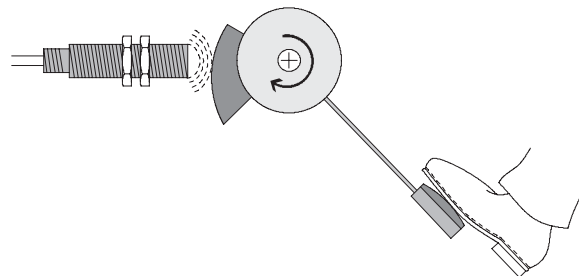
- Conversion of rotation into an electrical signal.



- Checking the smooth running of an axis or shaft.



- Monitoring of metallic workpieces for position, size or material, for example.



- Conversion of a rotation angle or distance into an electrical signal.

Proximity sensors SIE..., inductive

FESTO

Sensors
Inductive sensors

1.4