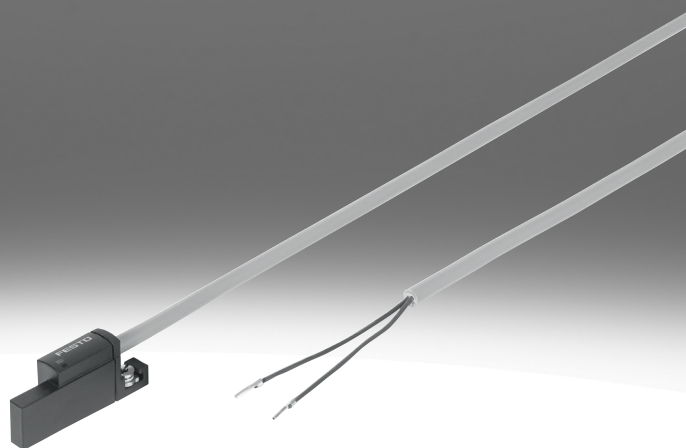


## Proximity switch SDBT-BSW

**FESTO**



## Characteristics

### At a glance

For contactless piston rod position sensing on FESTO pneumatic cylinders, in particular the hinge cylinder DWx for the automotive and tier 1 supplier industry, in low and medium frequency welding installations (50/60 Hz, 1000 Hz) with strong constant or alternating magnetic fields.

When using the SDBT-BSW on drives other than the DWx series, multiple switching can occur.

The SDBT-BSW-...-ZU-... (2-wire version for 50/60 Hz AC) can be used on all drives.

The SDBT-BSW-...-PU/NU-... (3-wire version for 50/60 Hz AC and 1000 Hz MFDC). The application range should be checked where necessary.

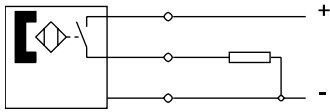
## Type code

001	Series	
SDBT	Sensor, position, binary, T series	
002	Sensor version	
B	Can be inserted in the slot, clamping at rear	
003	Sensor principle	
S	Contactless (solid state)	
004	Additional features	
W	Welding field immune	
005	Nominal operating voltage	
1	24 V DC	
006	Display	
L	LED	

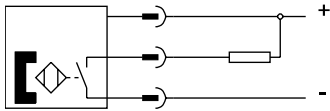
007	Digital switching output	
NU	3-wire N/O contact, NPN	
PU	3-wire N/O contact, PNP	
ZU	2-wire N/O contact	
008	Cable characteristic	
W	Resistant to welding spatter	
009	Cable length [m]	
0.3	0.3 m	
5	5 m	
010	Cable identification	
N	Without label holder	
011	Electrical connection	
LE	Open end	
M12	Plug M12, A-coded	

## Datasheet

## General technical data



- Oil-resistant
- Welding-field-resistant, AC 50 ... 60 Hz, MFDC 1000 Hz
- Resistant to welding spatter
- UV-resistant



Instructions on use	<a href="https://www.festo.com/Drive-Sensor-Overview">https://www.festo.com/Drive-Sensor-Overview</a>
Design	For T-slot
Based on standard	EN 60947-5-2
Approval	RCM trademark, c UL us listed (OL)
Special characteristics	UV resistant, Oil resistant, Welding field resistant, Resistant to welding spatter
Switching behavior during welding process	Output signal freezes
CE mark (see declaration of conformity)	To EU EMC Directive, In accordance with EU RoHS Directive
CE marking (see declaration of conformity) <sup>1)</sup>	To UK instructions for EMC, To UK RoHS instructions
Note on materials	RoHS-compliant

1) For information about the area of use, see the declaration of conformity at: [www.festo.com/catalogue/... d Support/Downloads](http://www.festo.com/catalogue/...d 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

Measuring principle	Magneto-resistive
Measured variable	Position
Ambient temperature	-25 ... 85°C

## Signal processing

Max. travel speed	1 m/s
-------------------	-------

## Switching output

Switching output	NPN, PNP, Non-contacting, 2-wire
Switching element function	N/O contact
Repetition accuracy	0.2 mm
Switch-on time	≤15 ms
Switch-off time	≤25 ms
Max. switching frequency	25 Hz
Max. output current	80 ... 100 mA
Max. output current using mounting kits	80 ... 100 mA
Max. switching capacity DC	1.9 ... 2.8 W
Max. switching capacity DC using mounting kits	1.9 ... 2.8 W
Voltage drop	<6 V
Min. load current	0 ... 2.4 mA
Off-state current	<0.7 mA

## Output, further data

Short circuit current rating	yes
Overload protection	Available

## Datasheet

### Electronics

Rated operational voltage DC	24 V
Operational voltage range DC	10 ... 30 V
Reverse polarity protection	For all electrical connections

### Electromechanics

Switching output	NPN, PNP, Non-contacting, 2-wire
Electrical connection 1, connection type	Cable, Cable with plug
Electrical connection 1, connector system	M12x1, A-coded to EN 61076-2-101, Open end
Electrical connection 1, number of connections/cores	2 ... 3
Connection outlet orientation	In-line
Cable characteristic	Resistant to welding spatter
Test conditions cable	Bending strength: to Festo standard, Test conditions on request

### Mechanics

Switching output	NPN, PNP, Non-contacting, 2-wire
Type of mounting	Screw-clamped, Insertable in the slot from above
Mounting position	optional
Max. tightening torque	0.6 Nm
Material housing	Epoxy resin, PA-reinforced, High-alloy stainless steel
Material union nut	Nickel-plated brass
Material cable sheath	PVC, irradiated
Material insulating sheath	PVC
Material connector housing	TPE-U(PU)
Wire ends	Wire end sleeve
Material electrical contact	Brass, nickel-plated and gold-plated

### Display/operation

Switching status indication	Yellow LED
Function reserve indication	Orange LED

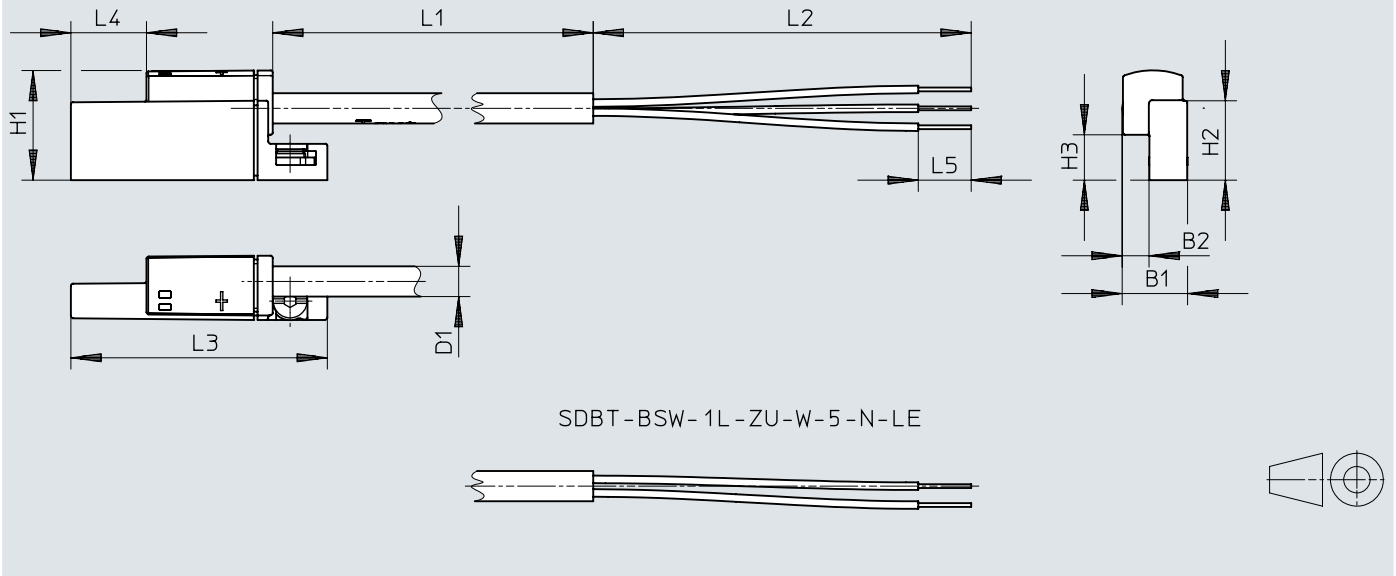
### Immission/emission

Ambient temperature with moving cable	-5 ... 80°C
Degree of protection	IP65, IP68
Inductive protective circuit	Adapted to MZ, MY, ME coils
Immunity to magnetic fields	Insensitive to alternating magnetic fields (50...60 Hz) < 160 mT, Insensitive to alternating magnetic fields (50...60 Hz) < 200 mT, Insensitive to MFDC magnetic fields (1000 Hz) < 200 mT, Design insensitive to permanent magnetic fields < Bon

## Dimensions

Dimensions – Proximity switch, open end

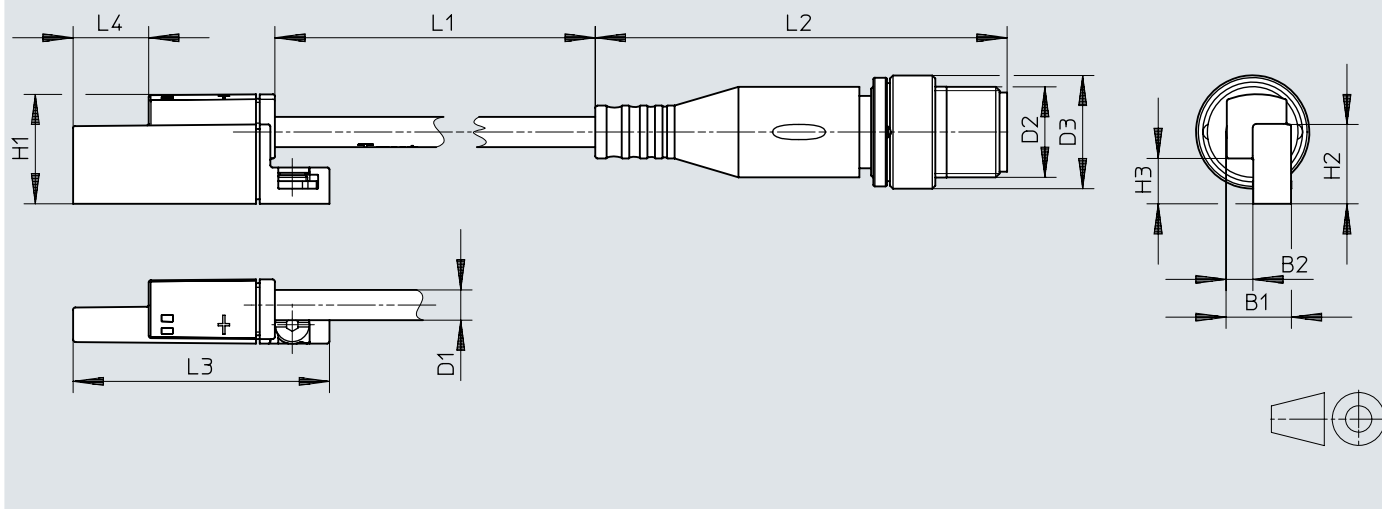
Download CAD data → [www.festo.com](http://www.festo.com)



	B1	B2	D1 ∅	H1	H2	H3	L1	L2	L3	L4	L5
SDBT-BSW-1L-PU-W-5-N-LE											
SDBT-BSW-1L-ZU-W-5-N-LE	8,5	3,5	4	14,5	10,5	6	5000	50	34	10	7
SDBT-BSW-1L-NU-W-5-N-LE											

## Dimensions

## Dimensions – Proximity switch with plug

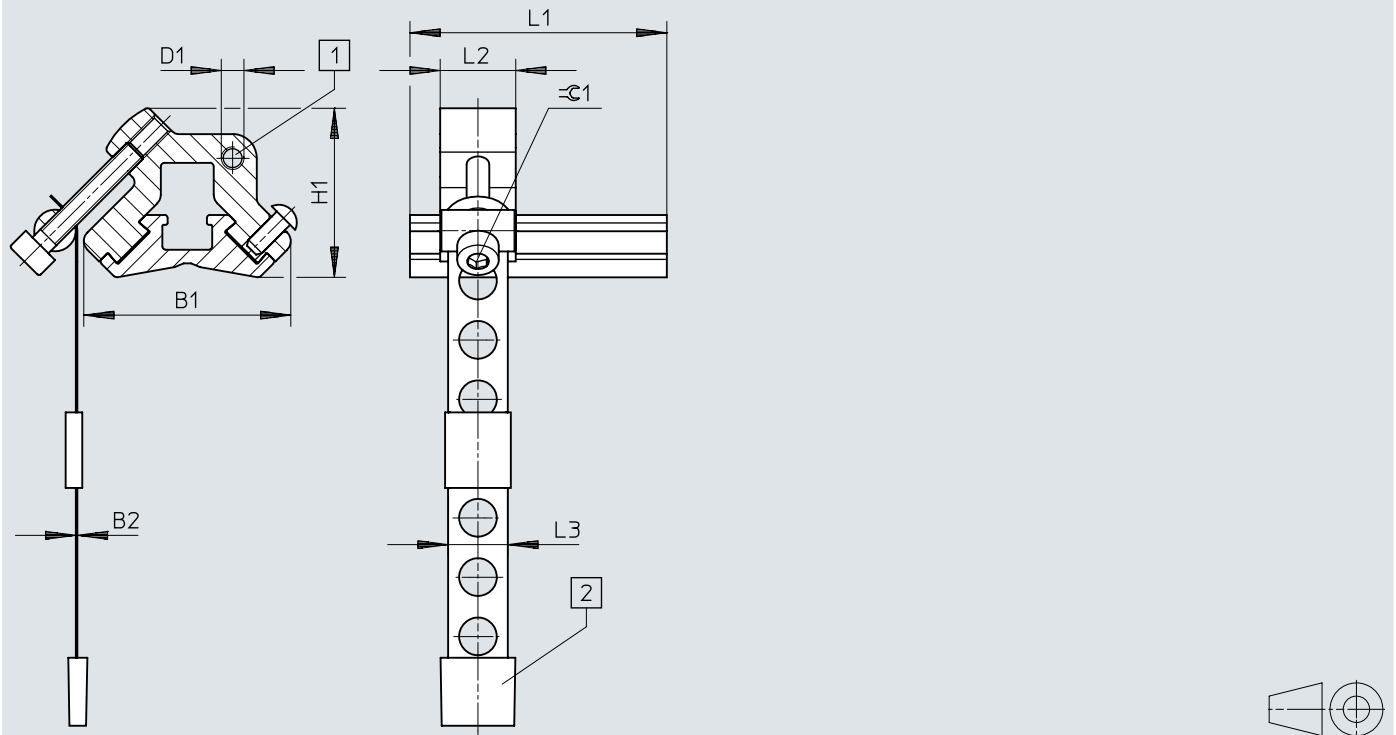
Download CAD data → [www.festo.com](http://www.festo.com)

	B1	B2	D1 ∅	D2	D3 ∅	H1	H2	H3	L1	L2	L3	L4
SDBT-BSW-1L-PU-W-0,3-N-M12	8,5	3,5	4	M12	15	14,5	10,5	6	300	54,5	34	10
SDBT-BSW-1L-NU-W-0,3-N-M12												

## Dimensions

### Dimensions – Mounting kit SMBR-8-8/100-S6

Download CAD data → [www.festo.com](http://www.festo.com)



[1] Mounting thread for proximity switch SM ... 0-8E

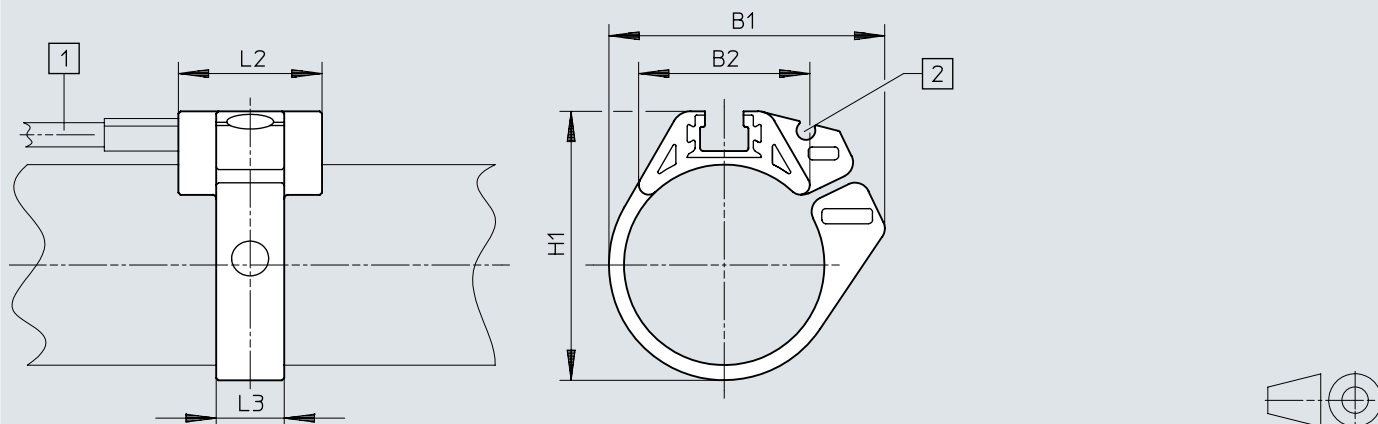
[2] Protective cap

	B1	B2	D1	H1	L1	L2	L3	±0.1
SMBR-8-8/100-S6	27,4	0,2	M3	22,4	34	10	7,9	2,5



## Dimensions

## Dimensions – Mounting kit SMBR

Download CAD data → [www.festo.com](http://www.festo.com)

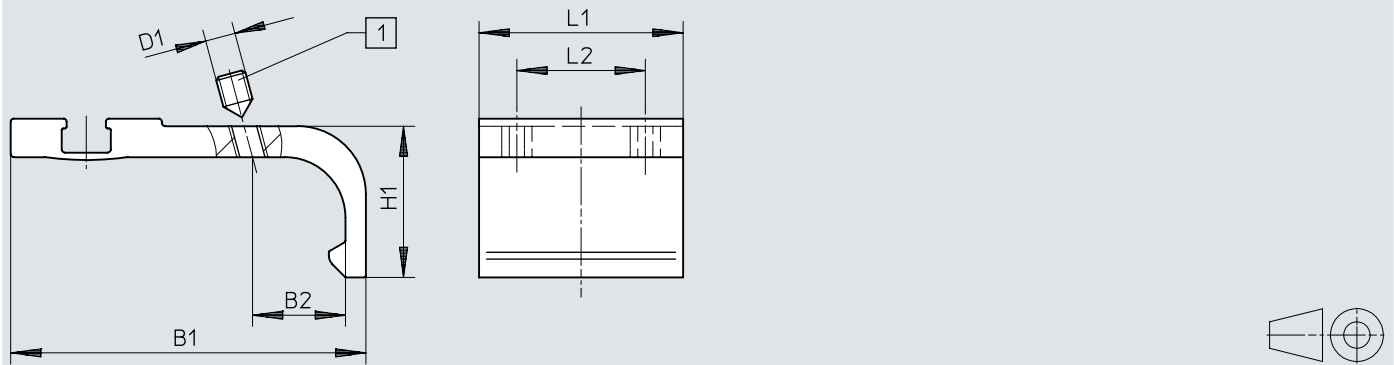
- [1] Proximity switches SME-8- ..., SMT-8- ...  
 [2] Guide slot for switch cable

	B1	B2	H1	L2	L3
SMBR-8-8	18,9	12,3	17,5	19	7
SMBR-8-10	20,4	13,7	19,9	19	7
SMBR-8-12	22,7	14,3	21,9	19	7
SMBR-8-16	28,2	16,9	25,7	19	8
SMBR-8-20	34,5	20,8	30,4	19	9
SMBR-8-25	36,7	22,7	35,6	19	9
SMBR-8-32	41,7	24,6	42,7	19	9
SMBR-8-40	47,1	26,5	50,7	19	9
SMBR-8-50	56,4	28,6	61,5	19	9
SMBR-8-63	69,4	32	74,5	19	9

## Dimensions

### Dimensions – Mounting kit SMB-8-FENG

Download CAD data → [www.festo.com](http://www.festo.com)

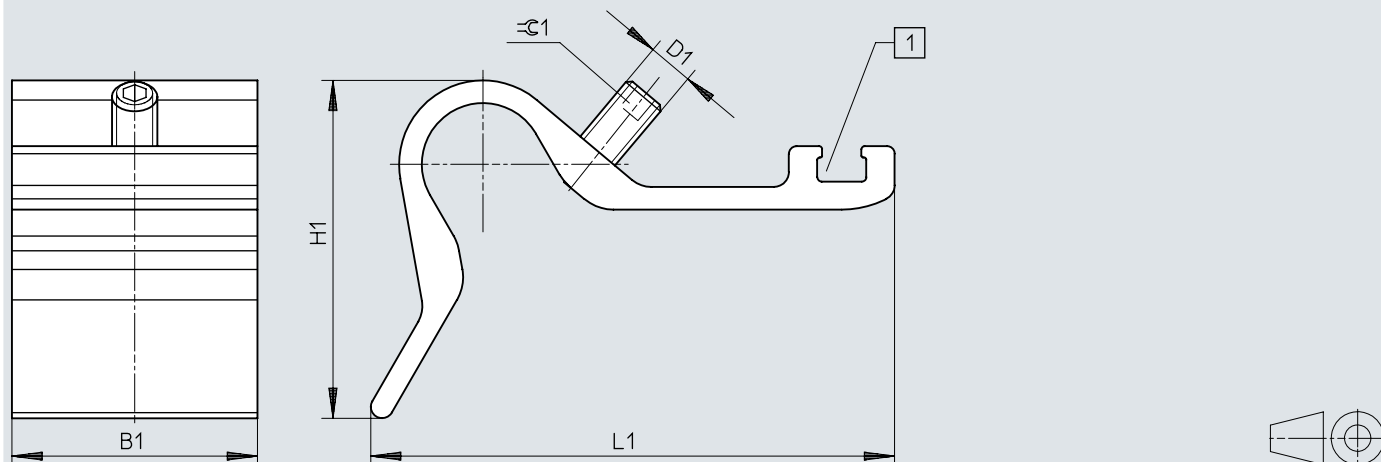


[1] Threaded pin

	B1	B2	D1	H1	L1	L2
SMB-8-FENG-32/40	35,1	8,7	M3	15,5	27	17
SMB-8-FENG-50/63	47	12,3	M4	20	27	17
SMB-8-FENG-80/100	64,3	15,7	M5	24,3	27	17

## Dimensions

## Dimensions – Sensor bracket DASP-M4-...-A

Download CAD data → [www.festo.com](http://www.festo.com)

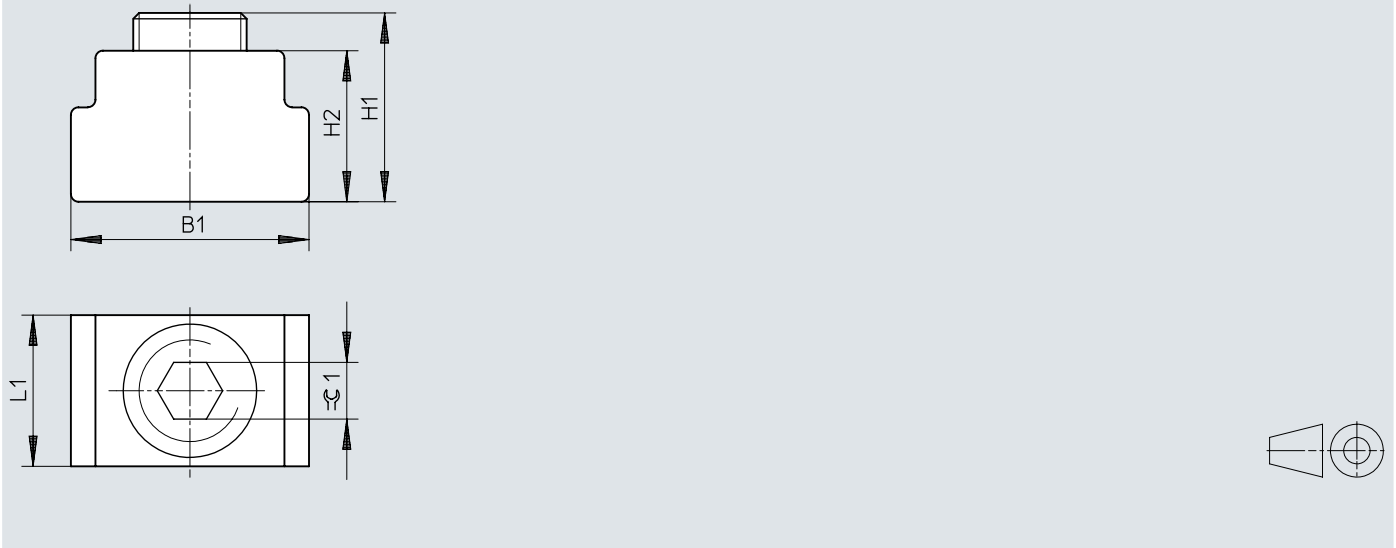
[1] Slot for proximity switch

	B1	D1	H1	L1	$\varnothing 1$
DASP-M4-125-A	32,5	M5	28	45,4	2,5
DASP-M4-160-A	32,5	M6	44,7	69,4	3
DASP-M4-250-A	32,5	M6	56,3	88	3
DASP-M4-320-A	32,5	M6	56,3	88	3

## Dimensions

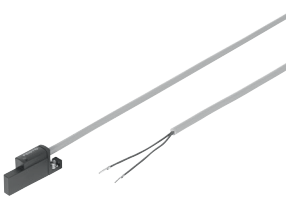
Dimensions – Positioning element SMM

Download CAD data → [www.festo.com](http://www.festo.com)



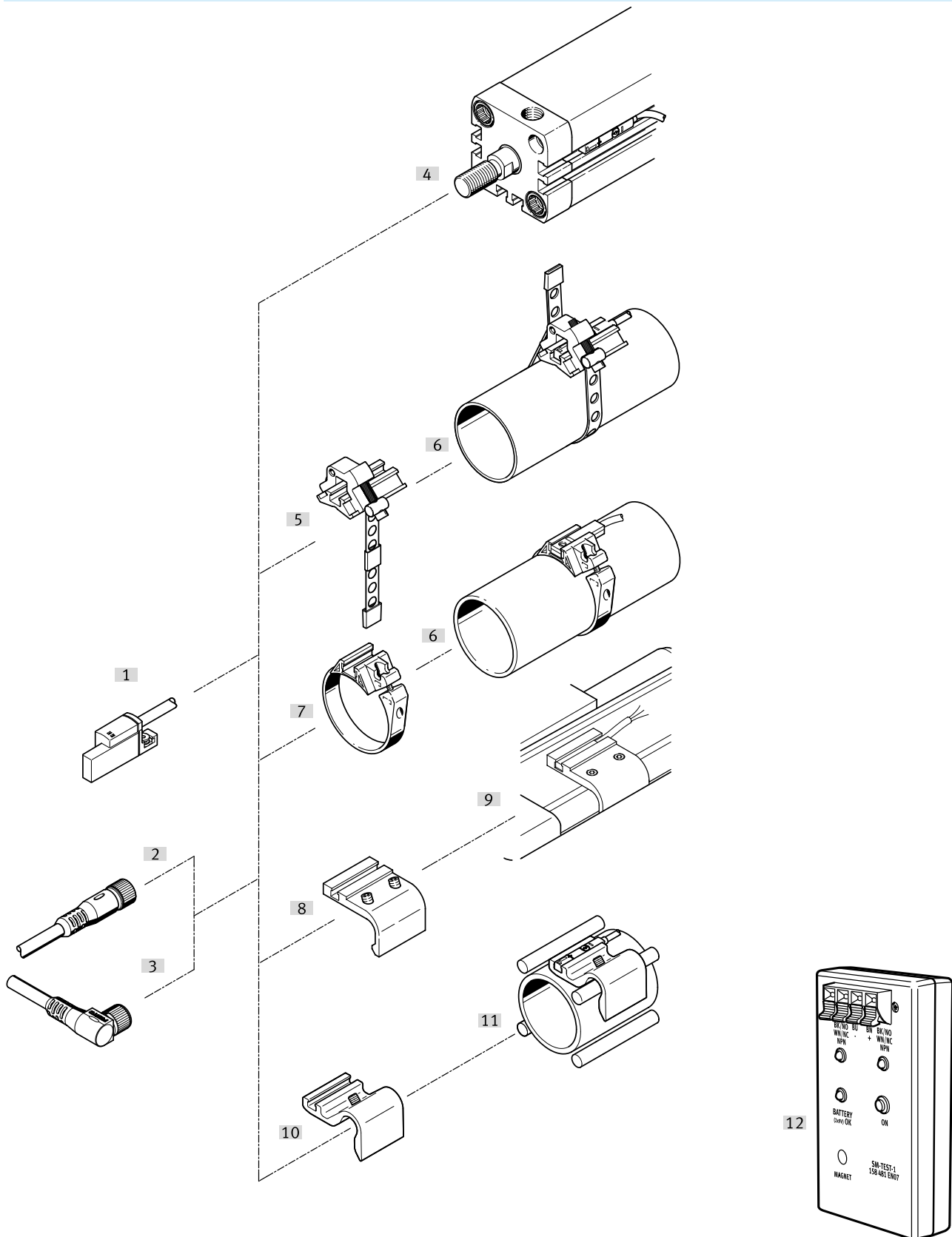
	B1	H1	H2	L1	1
SMM-8	6,3	5,0	4,0	4,0	1,5

## Ordering data

Proximity switch						
	Switching output	Cable length	Product weight	Part no.	Type	
	NPN	0.3 m	23.3 g	2427615	SDBT-BSW-1L-NU-W-0.3-N-M12	
		5 m	119.4 g	2427618	SDBT-BSW-1L-NU-W-5-N-LE	
	PNP	0.3 m	23.3 g	2476855	SDBT-BSW-1L-PU-W-0.3-N-M12	
		5 m	119.4 g	2427616	SDBT-BSW-1L-PU-W-5-N-LE	
	Non-contacting, 2-wire			116.9 g	2427617	SDBT-BSW-1L-ZU-W-5-N-LE

## Peripherals

### Peripherals overview

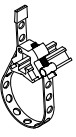



Accessories			→ Page/Internet
Type/order code	Description		
[1] Proximity switch SDBT-BSW	Welding-field-resistant		sdbt
[2] Connecting cables NEBU-M...G...	Straight socket		16

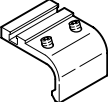
## Peripherals


Accessories		→ Page/Internet
Type/order code	Description	
[3] Connecting cables NEBU-M...W...	Angled socket	17
[4] Drives with T-slot	–	–
[5] Mounting kit SMBR-8-8/100-S6	Heat-resistant design	16
[6] Round cylinders	Ex.: DSNU	–
[7] Mounting kit SMBR	For round cylinders	16
[8] Mounting kit SMB-8-FENG	–	16
[9] Standards-based cylinder DSBC	–	dsbc
[10] Sensor bracket DASP-M4-...	–	16
[11] Drives with tie rod or mounting rod	For example: DSBG	–
[12] Sensor tester SM-TEST-1	Checking that the proximity switches are functioning using the built-in voltage source. Adjusting proximity switches on the cylinder.	17


## Accessories


Mounting kit SMBR-8-8/100-S6					
	For piston diameter	Material housing	Corrosion resistance class CRC	Part no.	Type
	Ø8 - Ø100	Wrought aluminium alloy, Anodised, High-alloy stainless steel	4 - Very high corrosion stress	538937	SMBR-8-8/100-S6

Mounting kit SMBR						
	Material retaining bracket	Material profile	Ambient temperature	Corrosion resistance class CRC	Part no.	Type
	POM	Wrought aluminium alloy	-20 ... 70 °C	2 - Moderate corrosion stress	★ 175096	SMBR-8-25
					175092	SMBR-8-10
					175099	SMBR-8-50
					175091	SMBR-8-8
					175098	SMBR-8-40
					★ 175094	SMBR-8-16
					★ 175095	SMBR-8-20
					175100	SMBR-8-63
					★ 175093	SMBR-8-12
175097	SMBR-8-32					

Mounting kit SMB-8-FENG					
	Size	Note on materials	LABS (PWIS) conformity	Part no.	Type
	8	RoHS-compliant	VDMA24364-B2-L	175706	SMB-8-FENG-50/63
				175707	SMB-8-FENG-80/100
				175705	SMB-8-FENG-32/40


Sensor bracket DASP-M4-...-A					
	Tightening torque	Material housing	Corrosion resistance class CRC	Part no.	Type
	0.6 ... 1 Nm	Wrought aluminium alloy, Anodised	3 - high corrosion stress	1451483	DASP-M4-125-A
				3015256	DASP-M4-320-A
				1553813	DASP-M4-160-A
				1456781	DASP-M4-250-A


Positioning element SMM						
	Material housing	Type of mounting	Ambient temperature	Corrosion resistance class CRC	Part no.	Type
	Wrought aluminium alloy, Anodised	Clamped in T-slot, Insertable in the slot lengthwise	-40 ... 120 °C	3 - high corrosion stress	547941	SMM-8

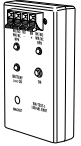
Connecting cables M12x1 socket, 5-pin, straight socket					
	Electrical connection 1, number of connections/cores	Electrical connection 1, connector system	Cable length	Part no.	Type
	5	M12x1, A-coded to EN 61076-2-101	2.5 m	541363	NEBU-M12G5-K-2.5-LE3
			5 m	541364	NEBU-M12G5-K-5-LE3



## Accessories

Connecting cables M12x1 socket, 5-pin, angled plug socket					
	Electrical connection 1, number of connections/cores	Electrical connection 1, connector system	Cable length	Part no.	Type
	5	M12x1, A-coded to EN 61076-2-101	2.5 m	541367	NEBU-M12W5-K-2.5-LE3
			5 m	541370	NEBU-M12W5-K-5-LE3

Mounting components			
	Type of mounting	Part no.	Type
	Clamped in T-slot	534254	SMBK-8

Sensor tester				
	Operational voltage range DC	Degree of protection	Part no.	Type
	12 ... 20 V	IP20	158481	SM-TEST-1

Inscription labels			
	Material label	Part no.	Type
	PC	541598	ASLR-L-423