

Proximity switch SDBT-MSX

FESTO



Characteristics

At a glance

- Quick and easy installation without the need to search for switching points
- Mounting without accessories (power supply)
- Reliable teach-in of the switching position under load during operation
- Can be programmed flexibly for expanded applications

Description

The SDBT-MSX is an electronic proximity sensor for contactless feedback of the piston position of drives with magnetic proximity sensing.

Additional features

[X] Automatic teach-in and programmable

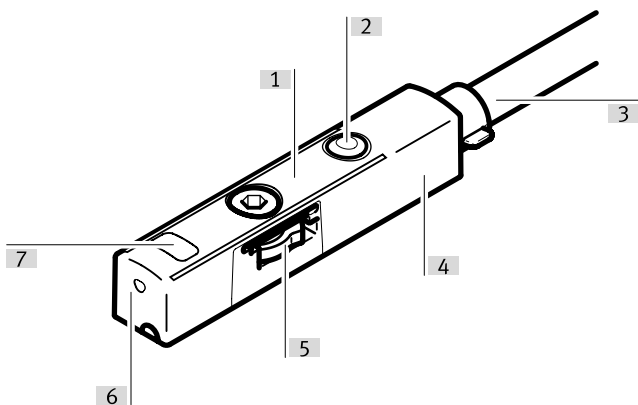
Auto teach-in

- Very easy to install without a power supply or precision adjustment. Automatic setup during operation.
- 20 mm sensing range marked on the SDBT-MSX
- Mount the switch so that the end stop of the piston lies within the sensing range
- Connect SDBT-MSX to input module (PLC)
- The SDBT-MSX automatically teaches in the switching point when the system is started

Programmable

- Programmable via integrated operating button.
- Switching point (alternative to auto teach-in)
- Switching window range between 2 ... 15 mm
- PNP/NPN
- NO/NC

Overview



- [1] Auto teach-In: the proximity switch detects the end position of the piston stroke and automatically learns the switching point during operation
- [2] Capacitive operating button: Programming switching point, programming PNP/NPN, programming NO/NC, programming switching window 2 15 mm
- [3] Cable quality energy chain + robot: 3 wire, M8 plug and open end
- [4] Electronic: switching output PNP/NPN, NO/NC
- [5] Sturdy and secure mounting with retaining screw
- [6] Compact, sturdy housing: 28 mm short, IP65 and IP68
- [7] 2 LED: teach-in display, piston within sensing range, switching output ON

Characteristics

Product segmentation



Festo Core Range

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With the Festo Core Range, we have selected the most important products and functions from our broad product catalogue, and added the quickest delivery. the Core Range offers you the best value with the expected high Festo quality.

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- Expected high Festo quality
- Easy and fast to select

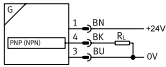
Type code

001	Series	
SDBT	Sensor, position, binary, T series	
002	Sensor version	
M	Can be inserted in the slot	
003	Sensor principle	
S	Contactless (solid state)	
004	Additional features	
X	Automatic teach-in and programmable	
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	
008	Cable characteristic	
E	Suitable for energy chains/robot applications	
009	Cable length [m]	
0.3	0.3 m	
2.5	2.5 m	
5	5 m	
010	Cable identification	
N	Without label holder	
011	Electrical connection	
LE	Open end	
M8	Plug M8, A-coded	

Datasheet

General technical data



Design	For T-slot
Based on standard	EN 60947-5-2
Approval	RCM trademark, c UL us listed (OL)
Certificate issuing authority	UL E232949
CE mark (see declaration of conformity) ¹⁾	To EU EMC Directive, In accordance with EU RoHS Directive
CE marking (see declaration of conformity) ²⁾	To UK instructions for EMC, To UK RoHS instructions
Instructions on use	https://www.festo.com/Drive-Sensor-Overview
Note on materials	RoHS-compliant, Free of halogen
LABS (PWIS) conformity	VDMA24364-B2-L
Suitability for the production of Li-ion batteries	Metals with more than 1% copper, zinc or nickel by mass are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils
Cleanroom class	Class 4 according to ISO 14644-1

1) Please refer to the declaration of conformity for the area of use: www.festo.com/catalogue/sdbt-msx → 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.

2) More information www.festo.com/catalogue/sdbt → Support/Downloads

Input signal/measuring element

Measuring principle	Magnetic Hall
Measured variable	Position
Ambient temperature	-40 ... 85°C
Ambient temperature with moving cable	-20 ... 85°C

Signal processing

Max. travel speed	3 m/s
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Switching output

Switching output	PNP/NPN, switchable
Switching element function	N/C or N/O contact, switchable
Repetition accuracy	0.1 mm
Hysteresis	0.2
Switch-on time	≤2 ms
Switch-off time	≤2 ms
Max. switching frequency	200 Hz
Max. output current	100 mA
Max. output current using mounting kits	100 mA
Max. switching capacity DC	2.8 W
Max. switching capacity DC using mounting kits	2.8 W
Voltage drop	<1.5 V
Min. load current	0.15 mA
Off-state current	<0.2 mA

Output, additional 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

Electrical connection 1, connection type	Cable	Cable with plug
Electrical connection 1, connector system	Open end	M8x1, A-coded, to EN 61076-2-104
Electrical connection 1, number of connections/cores	3	
Connection outlet orientation	In-line	
Cable characteristic	Suitable for energy chains/robot applications	
Test conditions cable	Bending strength: to Festo standard, Test conditions on request, Torsional resistance: > 300,000 cycles, $\pm 270^\circ/0.1$ m, Energy chain: > 5 million cycles, bending radius 28 mm	

Mechanical components

Electrical connection 1, connection type	Cable	Cable with plug
Type of mounting	Screw-clamped, Insertable in the slot from above	
Electrical connection 1, type of mounting	–	Screw-type lock
Mounting position	optional	
Max. tightening torque	0.6 Nm	
Material housing	PA-reinforced, High-alloy stainless steel	Brass, nickel-plated, PA-reinforced, High-alloy stainless steel
Housing colour	Black	
Material cable sheath	TPE-U(PUR)	
Cable sheath colour	grey	
Wire ends	Wire end sleeve	–

Display/operation

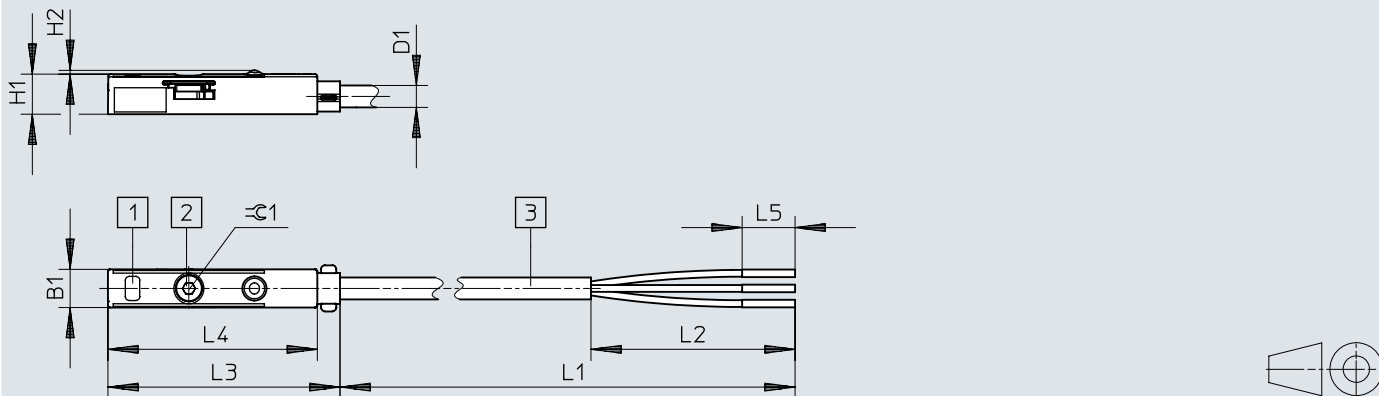
Setting options	Auto teach-in, Capacitive pushbutton
Switching status indication	Yellow LED
Status indication	Green LED

Immission/emission

Ambient temperature with moving cable	-20 ... 85°C
Degree of protection	IP68

Dimensions

Dimensions – Proximity switch open end

Download CAD data → www.festo.com

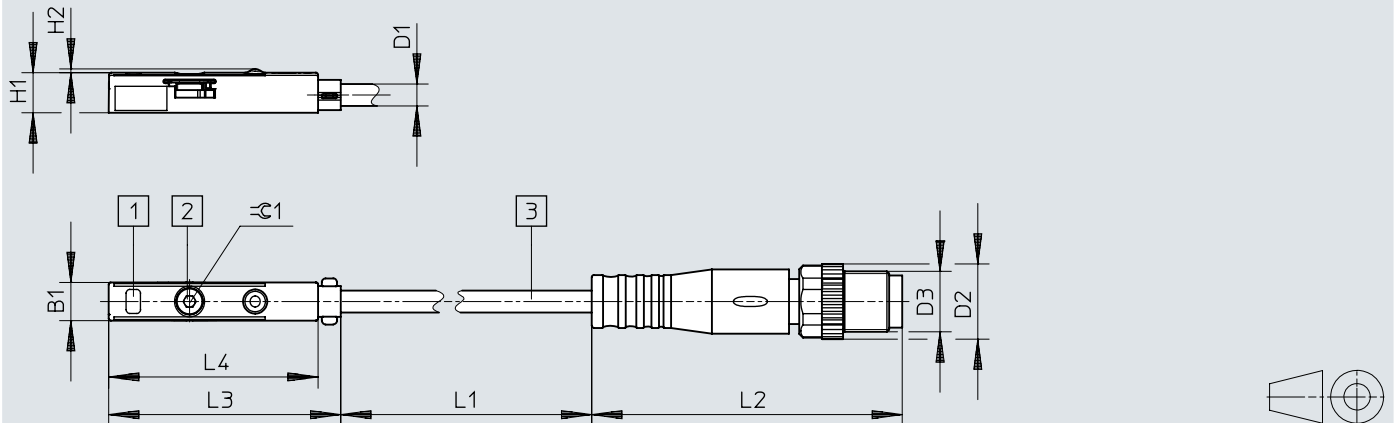
- [1] Yellow and green LED
 [2] Retaining screw with hexagon socket
 [3] Connecting cables

SDBT-MSX	B1	D1 ∅	H1	H2	L1	L2	L3	L4	L5	≈ 1
SDBT-MSX-1L-PU-E-2,5-N-LE	5,1	2,9	5,3	0,5	2500	50	30,7	27,7	7	1,5
SDBT-MSX-1L-PU-E-5-N-LE					5000					
SDBT-MSX-1L-NU-E-2,5-N-LE					2500					
SDBT-MSX-1L-NU-E-5-N-LE					5000					

Dimensions

Dimensions – Proximity switch with plug

Download CAD data → www.festo.com

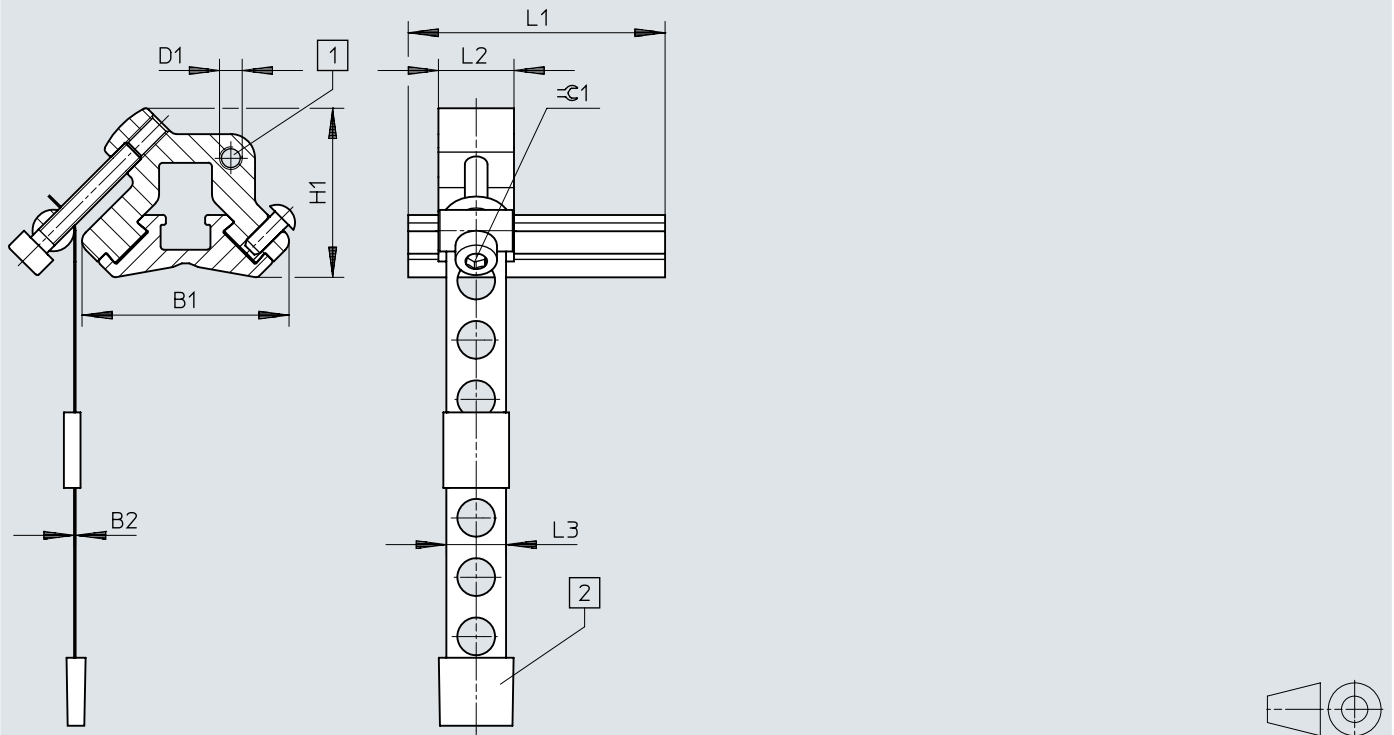


- [1] Yellow and green LED
- [2] Allen key
- [3] Connecting cables

SDBT-MSX	B1	D1 ∅	D2 ∅	D3	H1	H2	L1	L2	L3	L4	±1
SDBT-MSX-1L-PU-E-0,3-N-M8	5,1	2,9	10	M8x1	5,3	0,5	300	41,1	30,7	27,7	1,5
SDBT-MSX-1L-NU-E-0,3-N-M8											

Dimensions

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

Download CAD data → www.festo.com

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

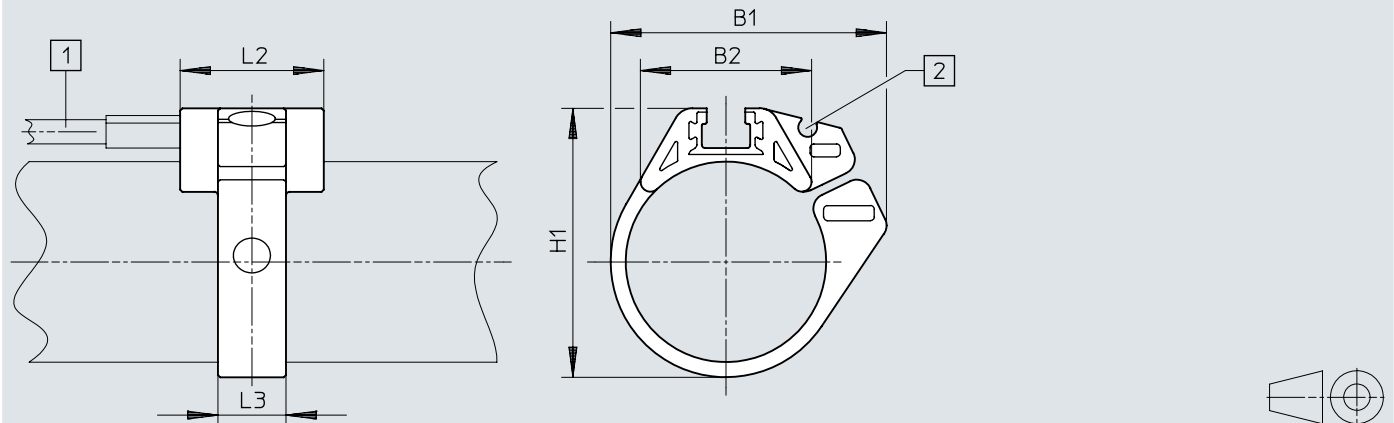
[2] Protective cap

	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

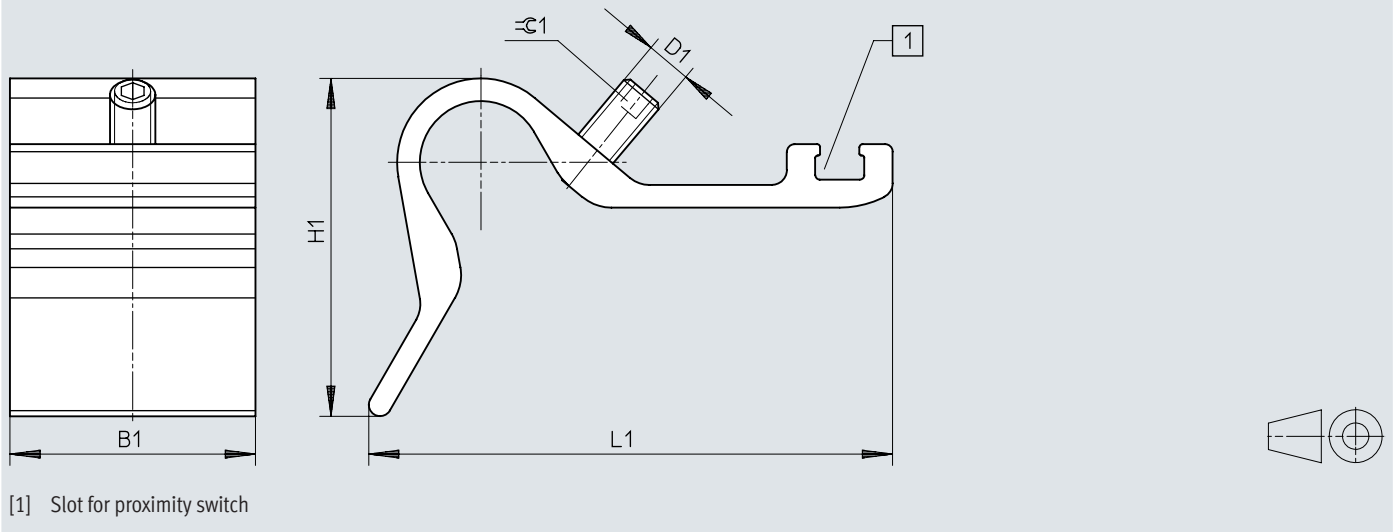


- [1] Proximity switches SME-8- ..., SMT-8- ...
- [2] Guide slot for switch cable

	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 – Sensor holder DASP-M4-...-A

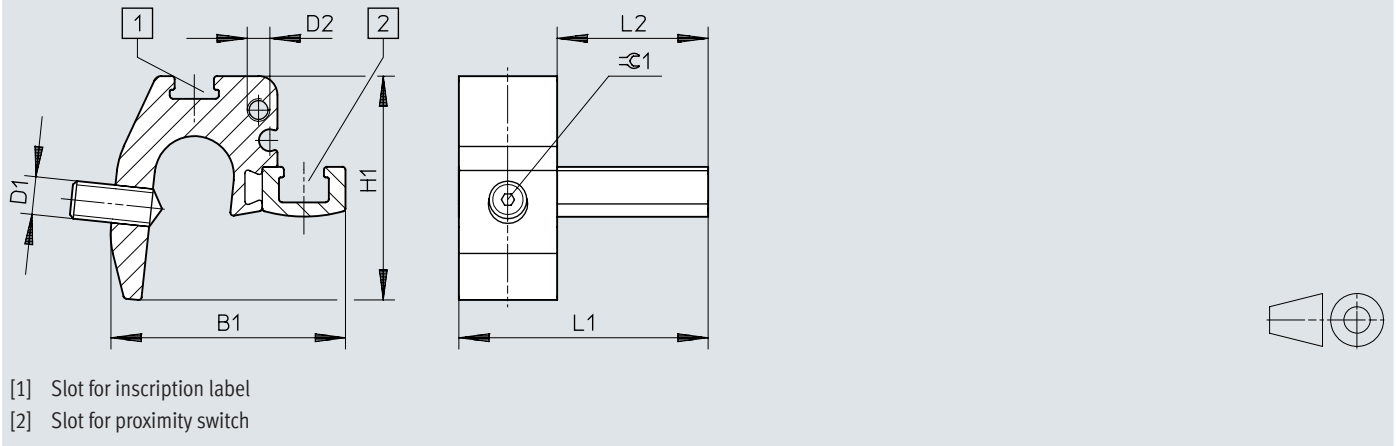
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	B1	D1	H1	L1	± 0.1
DASP-M4-125-A	32,5	M5	28	45,4	2,5
DASP-M4-160-A	32,5	M6	44,7	69,4	3
DASP-M4-250-A	32,5	M6	56,3	88	3
DASP-M4-320-A	32,5	M6	56,3	88	3

Dimensions

Dimensions – Mounting SMBZ-8-32/100

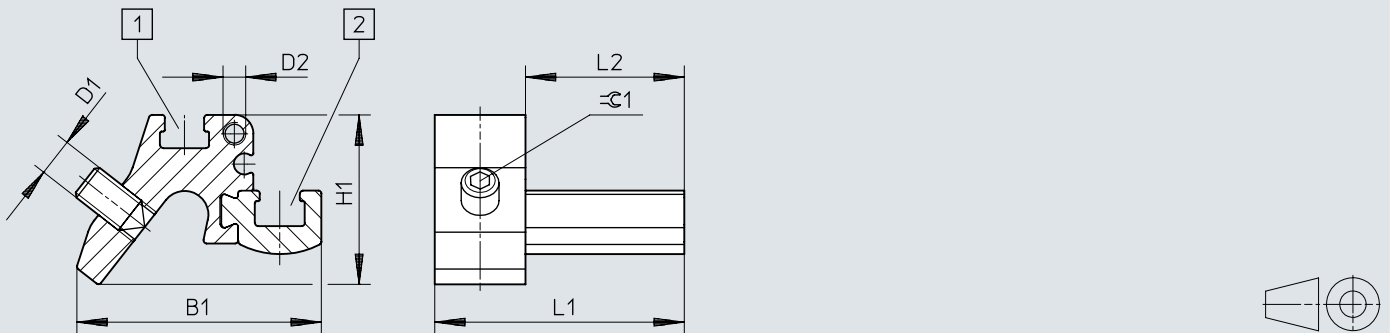
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SDBT-MSX	B1	D1	D2	H1	L1	L2	$\varnothing C1$
SMBZ-8-32/100	31	M5	M3	30	33	20	1,5

Dimensions

Dimensions – Mounting SMBZ-8-125/320

Download CAD data → www.festo.com

[1] Slot for inscription label

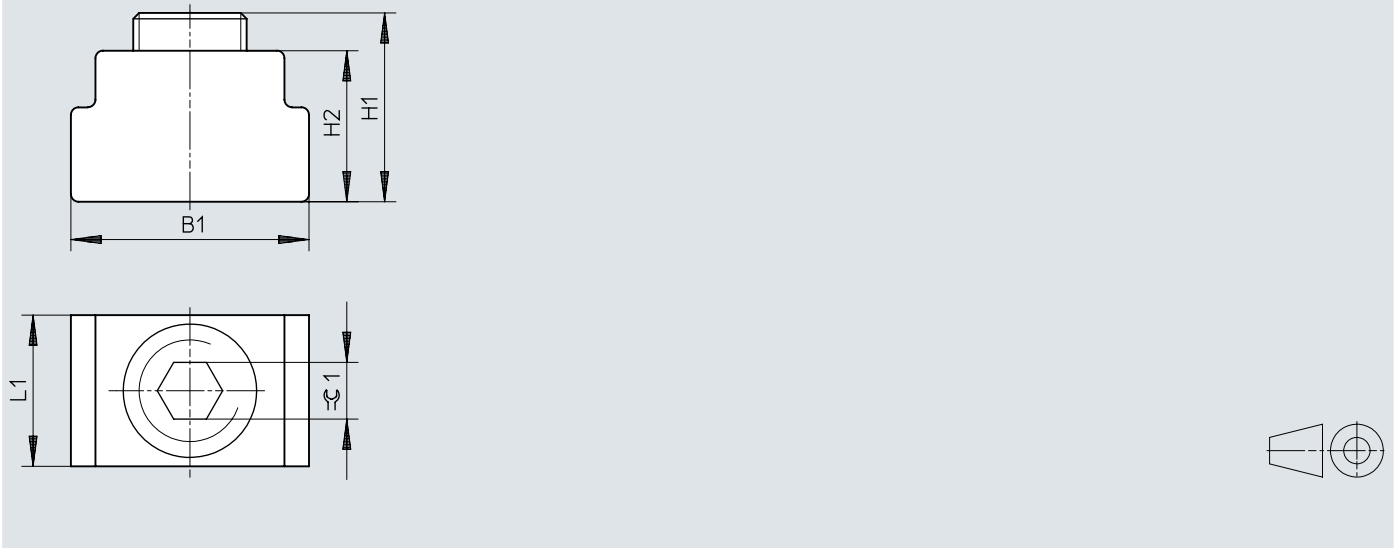
[2] Slot for proximity switch

SDBT-MSX	B1	D1	D2	H1	L1	L2	$\varnothing 1$
SMBZ-8-125/320	32,3	M5	M3	22	33	20	2,5

Dimensions


Dimensions – Positioning element SMM

Download CAD data → www.festo.com



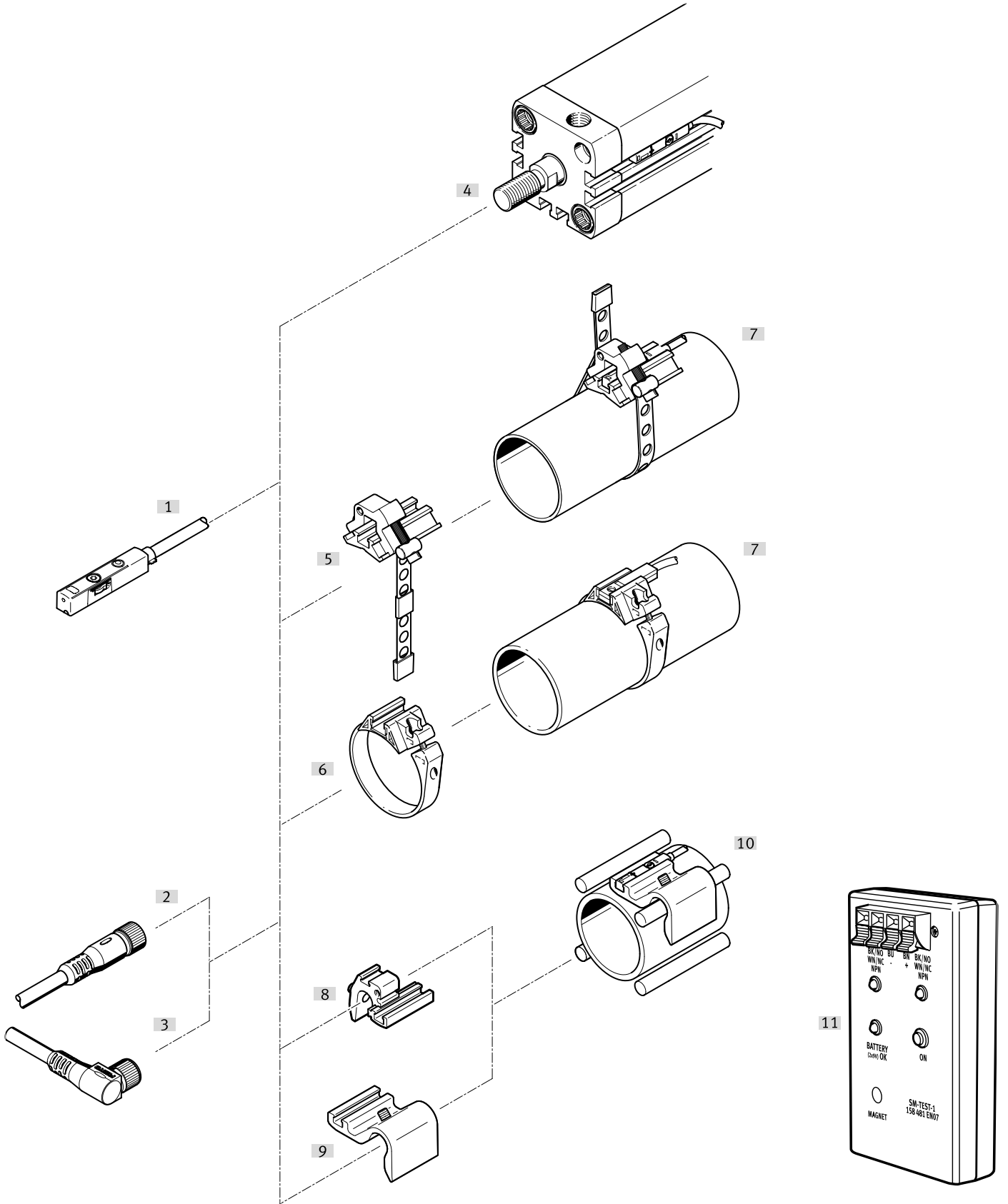
	B1	H1	H2	L1	1
SMM-8	6,3	5,0	4,0	4,0	1,5

Ordering data

Proximity switch					
	Switching output	Cable length	Product weight	Part no.	Type
	PNP/NPN, switchable	0.3 m	10 g	★ 8059123	SDBT-MSX-1L-NU-E-0.3-N-M8
				★ 8059120	SDBT-MSX-1L-PU-E-0.3-N-M8
		2.5 m	29 g	★ 8059121	SDBT-MSX-1L-PU-E-2.5-N-LE
				★ 8059124	SDBT-MSX-1L-NU-E-2.5-N-LE
		5 m	56 g	★ 8059125	SDBT-MSX-1L-NU-E-5-N-LE
				★ 8059122	SDBT-MSX-1L-PU-E-5-N-LE

Peripherals

Peripherals overview

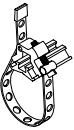



Accessories		→ Page/Internet
Type/order code	Description	
[1] Proximity switch SDBT-MSX-...-	-	sdbt-msx


Peripherals

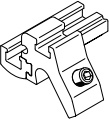
Accessories		→ Page/Internet
Type/order code	Description	
[2] Connecting cables NEBU-M...G...	Straight socket	18
[3] Connecting cables NEBU-M...W...	Angled socket	19
[4] Drives with T-slot	-	-
[5] Mounting kit SMBR-8-8/100-S6	Heat-resistant design	18
[6] Mounting kit SMBR	For round cylinders	18
[7] Round cylinder	Ex.: DSNU	-
[8] Sensor bracket SMBZ-8-...	-	18
[9] Sensor bracket DASP-M4-...	-	18
[10] Drives with tie rod or mounting rod	For example: DSBG	-
[11] Sensor tester SM-TEST-1	Checking the functionality of proximity switches using the integrated voltage supply. Adjusting proximity switches on the cylinder.	19


Accessories

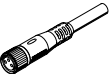
Mounting kit SMBR-8-8/100-S6				
	Material housing		Part no.	Type
	Wrought aluminium alloy, Anodised, High-alloy stainless steel		538937	SMBR-8-8/100-S6

Mounting kit SMBR				
	Material retaining bracket	Material profile	Part no.	Type
	POM	Wrought aluminium alloy	★ 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

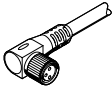
Sensor bracket DASP-M4-...-A				
	Material housing		Part no.	Type
	Wrought aluminium alloy, Anodised		1451483	DASP-M4-125-A
			3015256	DASP-M4-320-A
			1553813	DASP-M4-160-A
			1456781	DASP-M4-250-A


Mounting SMBZ-8-...				
	Material housing		Part no.	Type
	Anodised wrought aluminium alloy		537808	SMBZ-8-125/320
			537806	SMBZ-8-32/100


Positioning element SMM				
	Material housing		Part no.	Type
	Wrought aluminium alloy, Anodised		547941	SMM-8


Connecting cables M8x1 socket, 3-pin, straight socket					
	Electrical connection 1, number of connections/cores	Electrical connection 1, connector system	Cable length	Part no.	Type
	3	M8x1, A-coded, to EN 61076-2-104	2.5 m	541333	NEBU-M8G3-K-2.5-LE3
			5 m	541334	NEBU-M8G3-K-5-LE3


Accessories

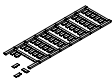
Connecting cables socket M8x1, 3-pin, angled plug socket					
	Electrical connection 1, number of connections/cores	Electrical connection 1, connector system	Cable length	Part no.	Type
	3	M8x1, A-coded, to EN 61076-2-104	2.5 m	541338	NEBU-M8W3-K-2.5-LE3
			5 m	541341	NEBU-M8W3-K-5-LE3

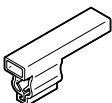
Connecting cables M12x1 socket, 5-pin, straight socket					
	Electrical connection 1, number of connections/cores	Electrical connection 1, connector system	Cable length	Part no.	Type
	5	M12x1, A-coded to EN 61076-2-101	2.5 m	541363	NEBU-M12G5-K-2.5-LE3
			5 m	541364	NEBU-M12G5-K-5-LE3

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

Inscription label holder						
	Length	Width	Height	Size of pack	Part no.	Type
	23 mm	5.4 mm	10.3 mm	100	8078306	NEAU-LH-2