

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

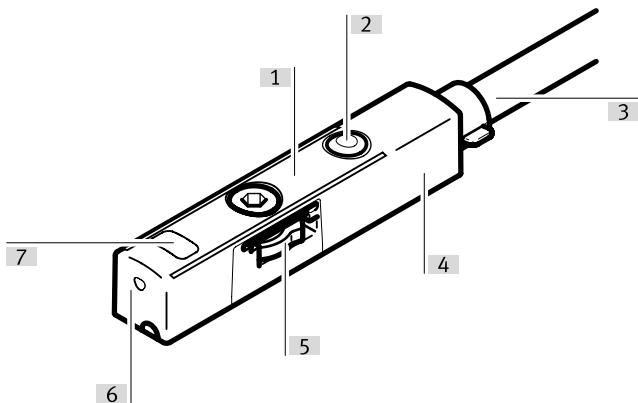
Auto teach-in

- Proximity switch is very easy to install.
- Mount the sensor roughly within the detection range of 20 mm. Without precision adjustment.
- A power supply is not necessary for mounting.
- SDBT-MSX automatically learns the switching point when the system is started up.
- The taught-in switching point remains stored in the sensor even after the power supply is switched off.

Programmable

- Additional functions can be programmed via the integrated operating button.
- Switching point (alternative to auto teach-in)
- Switching window range between 2 ... 15 mm
- PNP/NPN
- NO/NC
- Reset

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, M12 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

Solves the majority of your automation tasks

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

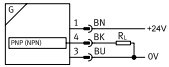
Type code

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/robots	
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	
M12	Plug M12, 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
UKCA 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	Product corresponds to the internal product definition from Festo for use in battery production: Metals with more than 1% by mass of copper, zinc or nickel are excluded from use. The 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	M12x1, A-coded to EN 61076-2-101, 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 strength: > 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 ferrule	–

Display/operation

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

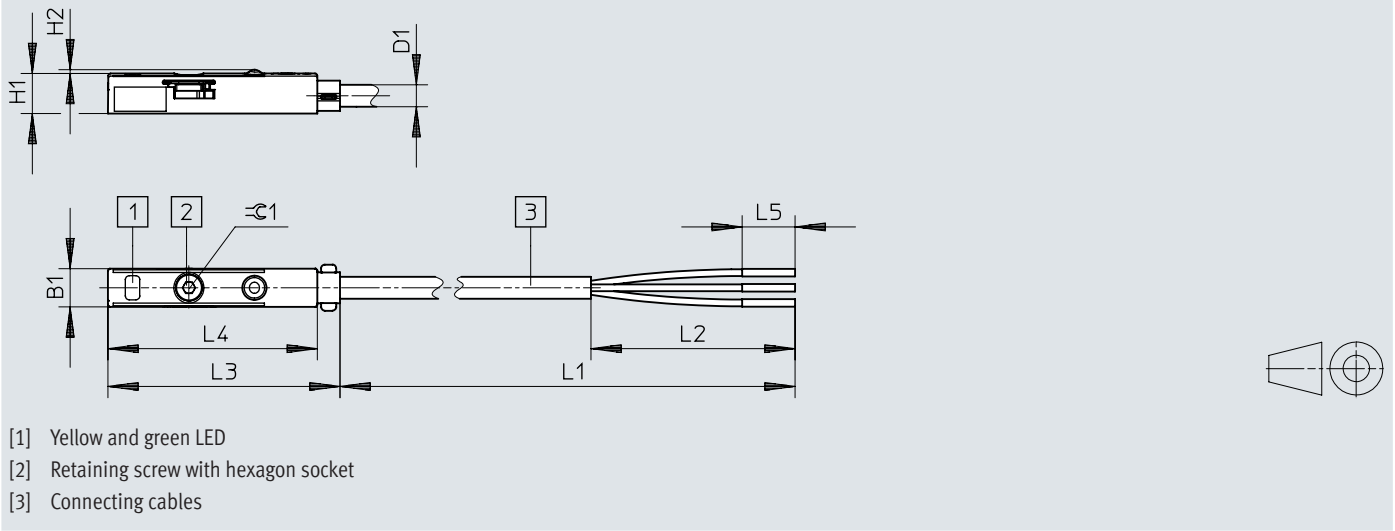
Immission/emission

Ambient temperature with moving cable	-20 ... 85°C
Degree of protection	IP65, IP68, IP69K

Dimensions

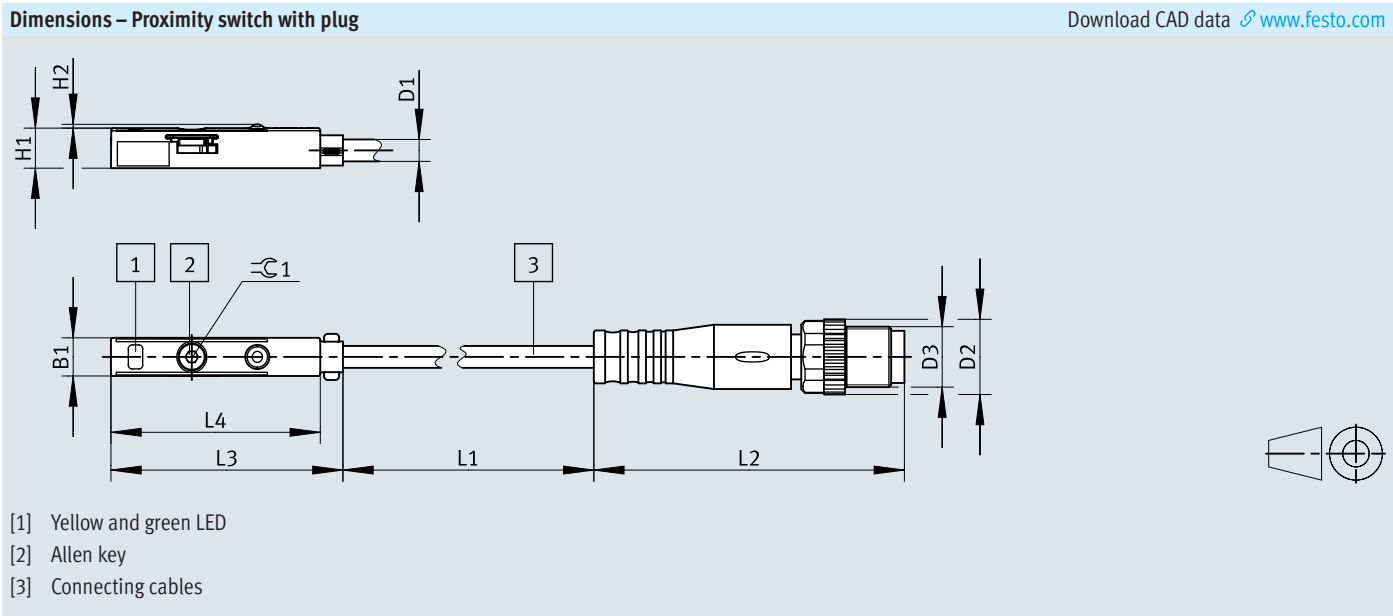
Dimensions – Proximity switch open end

Download CAD data www.festo.com



SDBT-MSX	B1	D1 ø	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

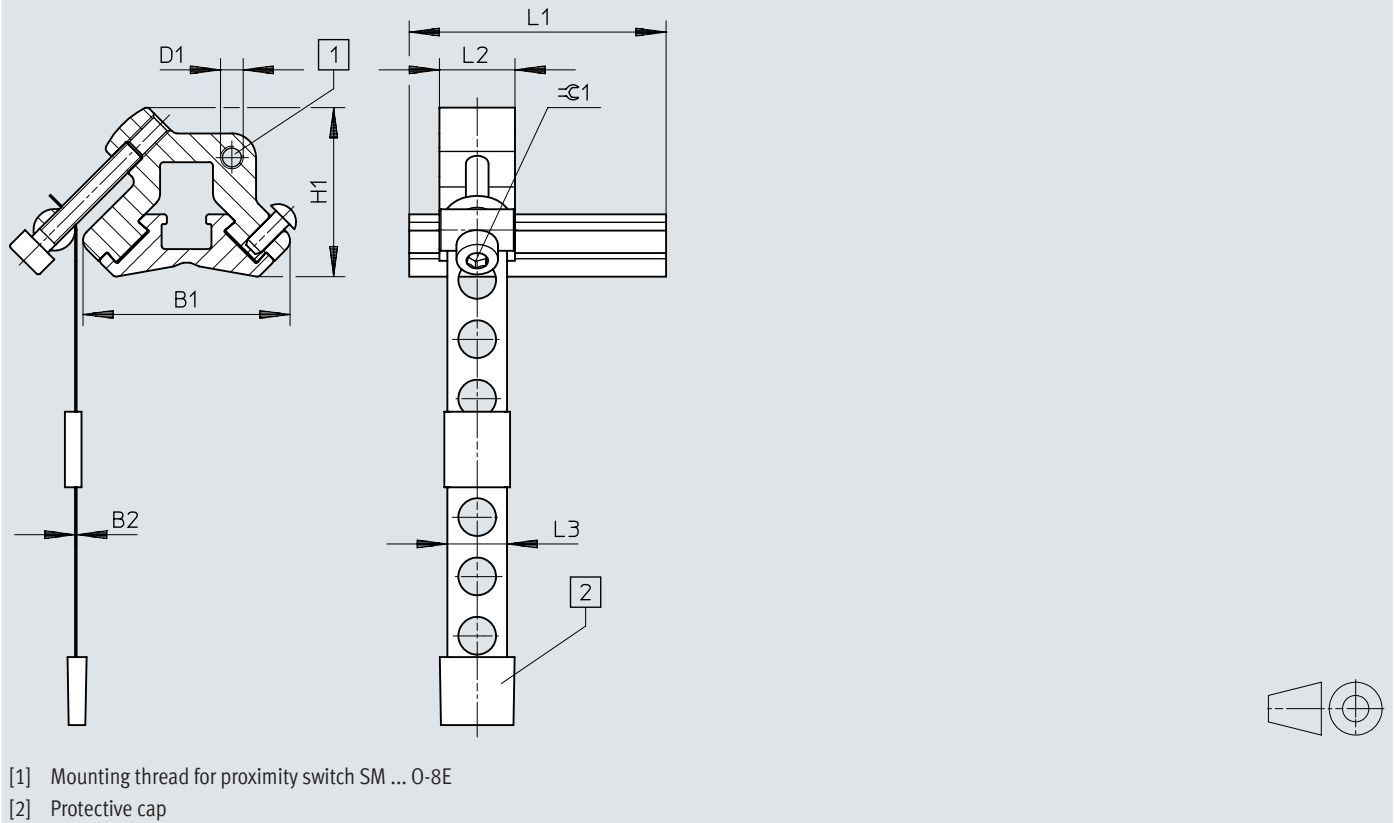


	B1	D1 Ø	D2 Ø	D3	H1	H2	L1	L2	L3	L4	∠ 1
SDBT-MSX-1L-PU-E-0,3-N-M8	5,1	2,9	10	M8x1	5,3	0,5	300	41,1	30,7	27,7	1,5
SDBT-MSX-1L-NU-E-0,3-N-M8	5,1	2,9	10	M8x1	5,3	0,5	300	41,1	30,7	27,7	1,5
SDBT-MSX-1L-PU-E-0,3-N-M12	5,1	2,9	15	M12x1	5,3	0,5	300	54,5	30,7	27,7	1,5

Dimensions

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

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	B1	B2	D1	H1	L1	L2	L3	±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

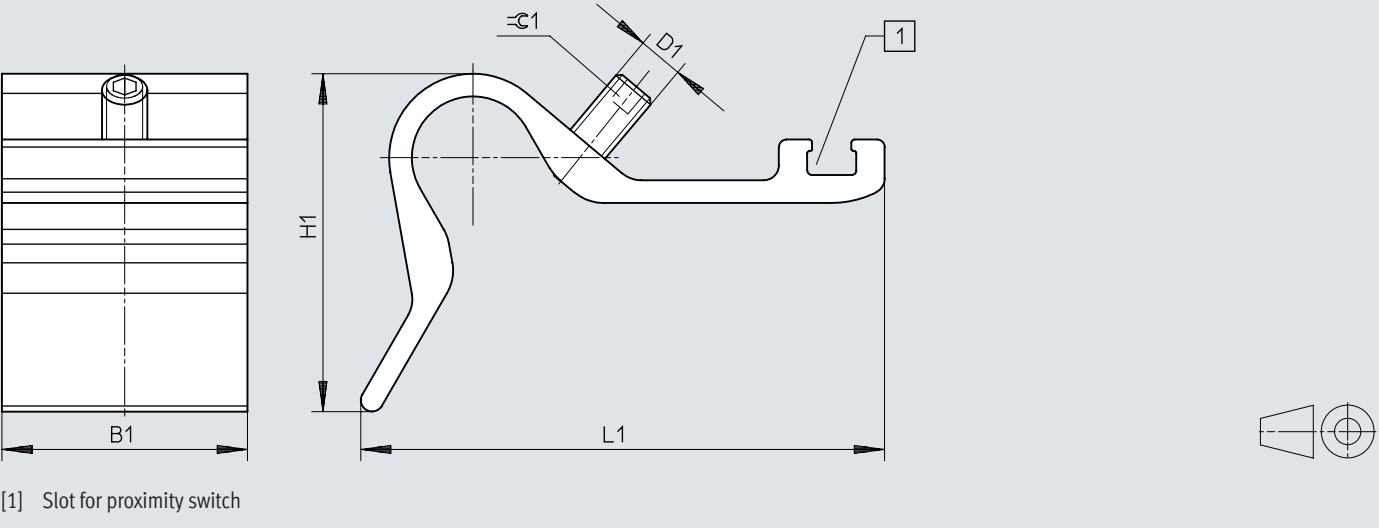
[1] Proximity switches SME-8- ..., SMT-8- ...
[2] Guide slot for switch cable

	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

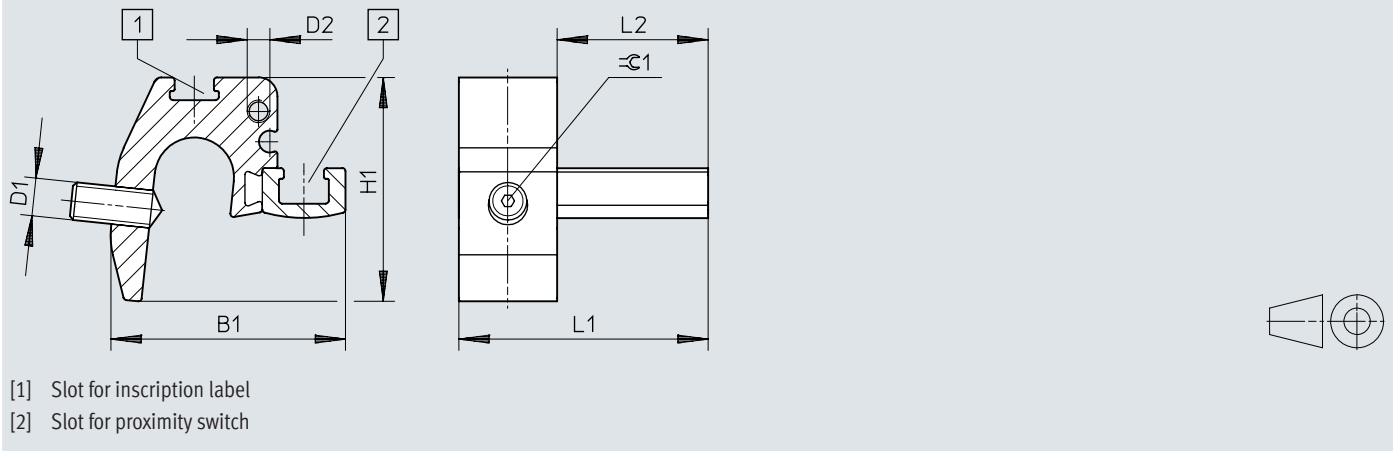
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	B1	D1	H1	L1	$\pm C1$
DASP-M4-125-A	32,5	M5	28	45,4	2,5
DASP-M4-160-A	32,5	M6	44,7	69,4	3
DASP-M4-250-A	32,5	M6	56,3	88	3
DASP-M4-320-A	32,5	M6	56,3	88	3

Dimensions

Dimensions – Mounting SMBZ-8-32/100 Download CAD data www.festo.com

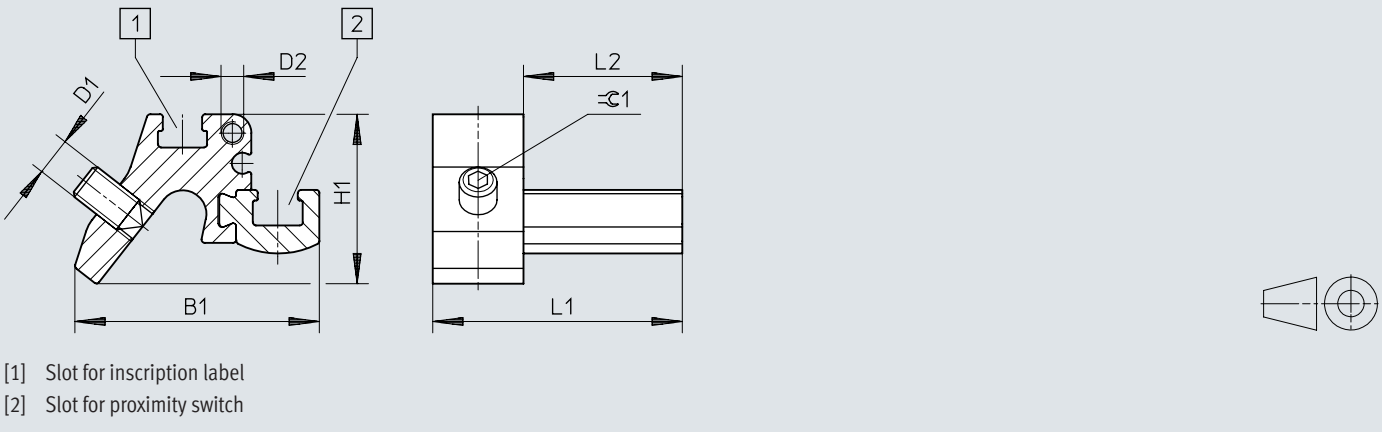


SDBT-MSX	B1	D1	D2	H1	L1	L2	$\varnothing 1$
SMBZ-8-32/100	31	M5	M3	30	33	20	1,5

Dimensions

Dimensions – Mounting SMBZ-8-125/320

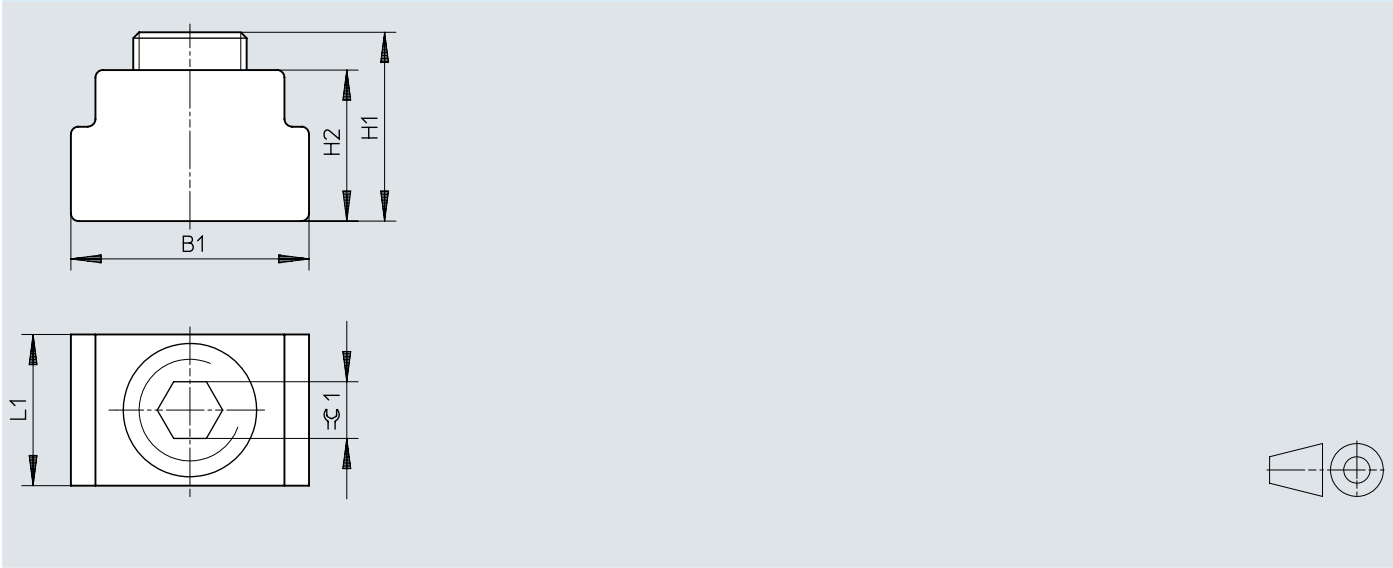
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SDBT-MSX	B1	D1	D2	H1	L1	L2	Ø1
SMBZ-8-125/320	32,3	M5	M3	22	33	20	2,5

Dimensions

Dimensions – Positioning element SMM Download CAD data www.festo.com



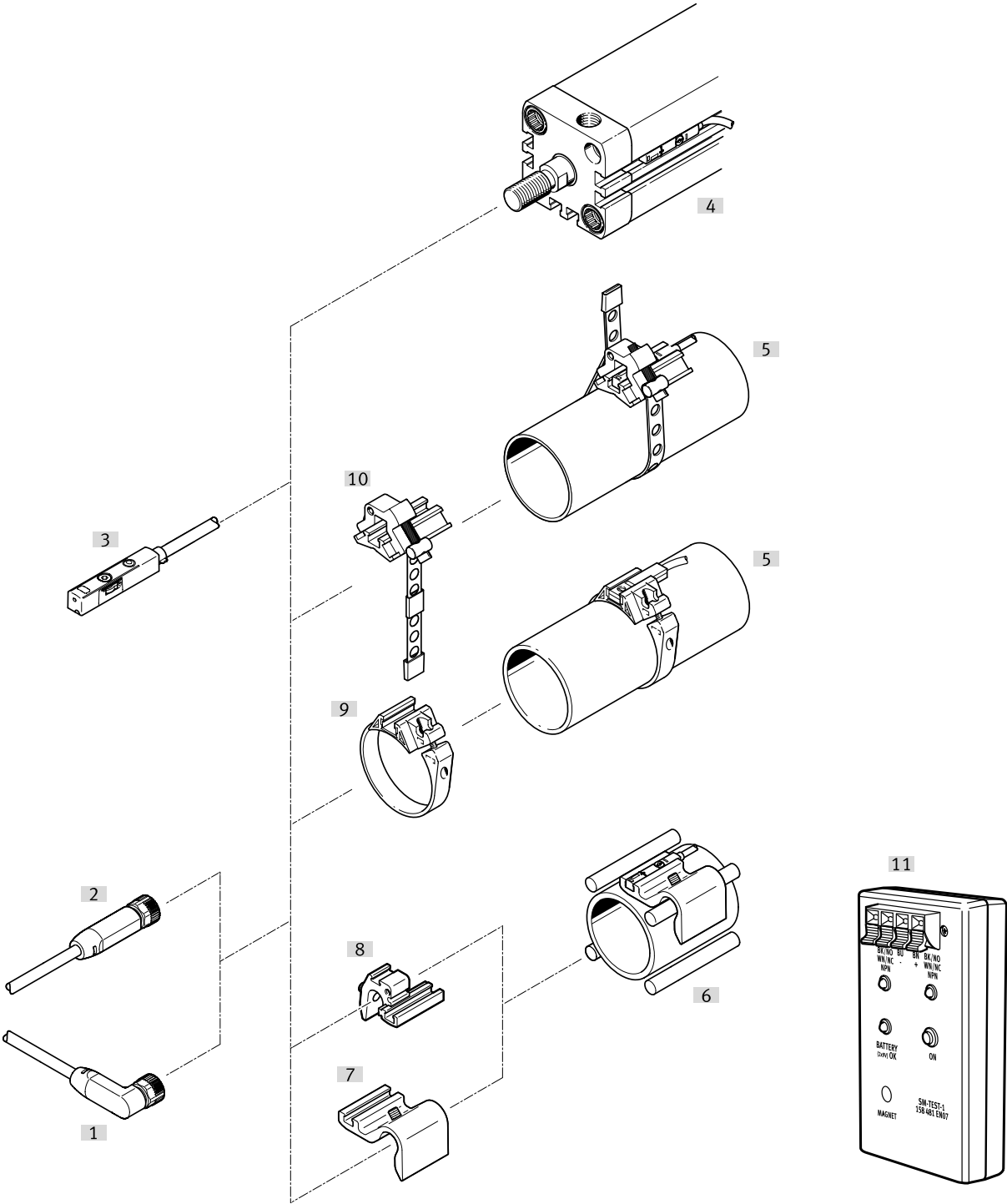
	B1	H1	H2	L1	⌀1
SMM-8	6,3	5,0	4,0	4,0	1,5

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
			12 g	8222734	SDBT-MSX-1L-PU-E-0.3-N-M12
		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		→ Link
Type/order code	Description	
[1] Connecting cables NEBA-M...W...	Angled socket	19
[2] Connecting cables NEBA-M...G...	Straight socket	18
[3] Proximity switch SDBT-MSX-....	-	sdbt-msx
[4] Drives with T-slot	-	-
[5] Round cylinder	Ex.: DSNU	-
[6] Drives with tie rod or mounting rod	For example: DSBG	-
[7] Sensor bracket DASP-M4-...	-	18
[8] Sensor bracket SMBZ-8-...	-	18
[9] Mounting kit SMBR	For round cylinders	18

Peripherals

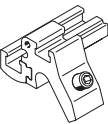
Accessories		→ Link
Type/order code	Description	
[10] Mounting kit SMBR-8-8/100-S6	Heat-resistant design	18
[11] Sensor tester SM-TEST-1	Checking the functionality of proximity switches using the integrated voltage supply. Adjusting proximity switches on the cylinder.	sm-test-1

Accessories

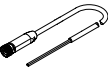
Mounting kit SMBR-8-8/100-S6				
	Material housing	Part no.	Type	
	Wrought aluminium alloy, Anodised, High-alloy stainless steel	538937	SMBR-8-8/100-S6	

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	

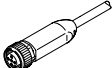
Mounting SMBZ-8-...				
	Material housing	Part no.	Type	
	Anodised wrought aluminium alloy	537808	SMBZ-8-125/320	
		537806	SMBZ-8-32/100	

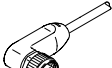
Positioning element SMM				
	Material housing	Part no.	Type	
	Wrought aluminium alloy, Anodised	547941	SMM-8	

Connecting cables socket M8x1, 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	★ 8078223	NEBA-M8G3-U-2.5-N-LE3
			5 m	★ 8078224	NEBA-M8G3-U-5-N-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	★ 8078230	NEBA-M8W3-U-2.5-N-LE3
			5 m	★ 8078231	NEBA-M8W3-U-5-N-LE3

Connecting cables socket M12x1, 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	8078236	NEBA-M12G5-U-2.5-N-LE3
			5 m	8078237	NEBA-M12G5-U-5-N-LE3

Connecting cables socket M12x1, 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	8078245	NEBA-M12W5-U-2.5-N-LE3

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

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