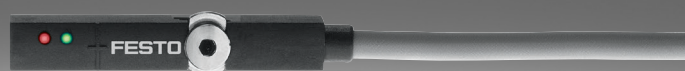


Position transmitter SMAT-8M

FESTO



Characteristics

At a glance

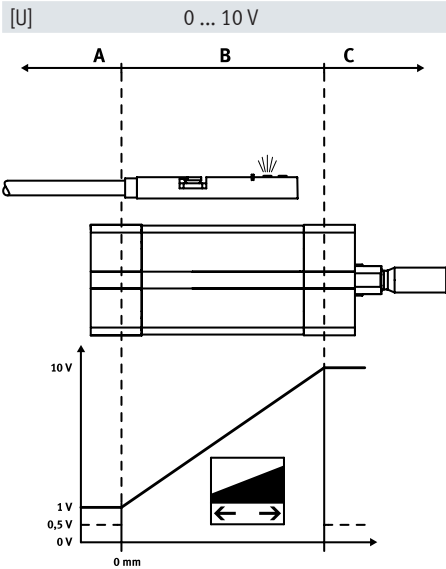
The position transmitter SMAT-8M is used for the contactless sensing of the piston position of drives that can be detected magnetically.

It supplies a displacement-proportional analogue output signal in the position measuring range. The connection is made directly to analogue inputs of the PLC without accessories.

Thanks to its compact design, the SDAS-8M is the ideal solution for grippers, short-stroke drives and all applications with limited installation space.

It can be used with Festo drives with T-slot (profile slot 8) as well as round cylinders and tie-rod cylinders with mounting kits. See Support Portal for "The right sensor for the drive".

Analogue output



The SMAT-8M provides a displacement-proportional analogue output signal of 0 ... 10 V in the position measuring range of up to 52 mm (depending on the drive used).

For visual support, the green LED lights up in normal operation within the position measuring range (B) and the red LED lights up outside the position measuring range (A)/(C).

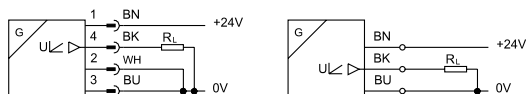
Type code

001	Series	
SMAT	Position transmitter, magnetic	
002	Design type	
8	For T-slot	
003	Sensor version	
M	Inserted in the slot from above	
004	Analogue output	
U	0 ... 10 V	

005	Cable characteristic	
E	Suitable for energy chains/robots	
006	Cable length [m]	
0,3	0.3 m	
2,5	2.5 m	
007	Electrical connection	
M8D	Plug M8, 4-pin, rotatable thread	
OE	Open end	

Datasheet

General technical data



Design	For T-slot
Mounting position	optional
Approval	RCM trademark, c UL us listed (OL)
CE mark (see declaration of conformity) ¹⁾	To EU EMC Directive, In accordance with EU RoHS Directive
UKCA marking (see declaration of conformity)	To UK instructions for EMC, To UK RoHS instructions
Certificate issuing authority	UL E232949
Instructions on use	https://www.festo.com/Drive-Sensor-Overview
LABS (PWIS) conformity	VDMA24364-B2-L
Suitability for the production of Li-ion batteries	Suitable for battery production according to the Festo internal definition of the degree of severity F1A with restrictions regarding the use of Cu/Zn/Ni

1) For information about the area of use, see the EC declaration of conformity at: www.festo.com/catalogue/smat-8m → 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 for measuring element

Measured variable	Position
Measuring principle	Magnetic Hall
Sensing range	≤52 mm

Signal processing

Max. travel speed	3 m/s
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Output, general

Displacement resolution	≤0.02 mm
Repetition accuracy	0.2 mm

Analogue output

Typical linearity error	± 1 mm
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Electrical outputs

Analogue output	0 - 10 V
Short circuit current rating	yes
Overload protection	Available
Output signal	Analogue

Electronics

Operational voltage range DC	15 ... 30 V
No-load supply current	<12 mA
Typical sampling interval	2 ms
Residual ripple	10%
Reverse polarity protection	For all electrical connections

Datasheet

Electromechanics

Electrical connection 1, connection type	Cable	Cable with plug
Electrical connection 1, function	Analogue output, Power supply	
Electrical connection 1, connector system	Open end	M8x1, A-coded, to EN 61076-2-104
Electrical connection 1, number of connections/cores	3	4
Electrical connection 1, type of mounting	–	Screw-type lock, Rotatable
Electrical connection 1, compatible type of mounting	–	Compatible with rotatable/non-rotatable screw-type lock
Connection outlet orientation	In-line	
Cable length	2.5 m	0.3 m
Cable characteristic	Suitable for energy chains/robot applications	
Test conditions cable	Bending strength: to Festo standard, Torsional strength: > 300,000 cycles, $\pm 270^\circ/0.1$ m, Energy chain: > 5 million cycles, bending radius 28 mm	
Material housing	PA-reinforced, High-alloy stainless steel	
Material cable sheath	TPE-U(PUR)	
Material electrical contact	–	Gold-plated copper alloy
Material screw-type lock	–	Nickel-plated brass
Note on materials	RoHS-compliant, Free of halogen	
Cable sheath colour	Grey	

Mechanics

Electrical connection 1, connection type	Cable	Cable with plug
Type of mounting	Screw-clamped, Insertable in the slot from above	
Product weight	29 g	9.5 g

Display operation

Status indication	LED red, green
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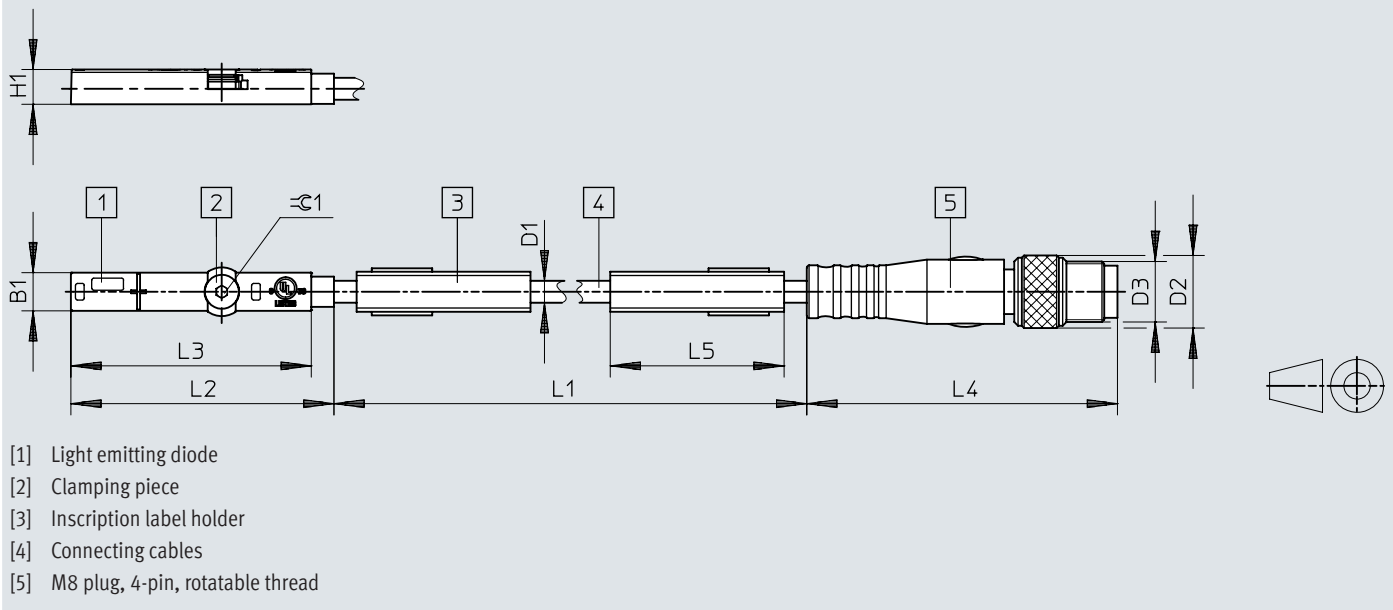
Immission Emission

Ambient temperature	-40 ... 80°C
Ambient temperature with moving cable	-20 ... 70°C
Degree of protection	IP65, IP68
Corrosion resistance class CRC ¹⁾	2 - Moderate corrosion stress
Cleanroom class	Element installed statically, no meaningful evaluation possible according to ISO 14644-1

1) More information: www.festo.com/x/topic/crc

Dimensions

Dimensions – Position transmitter SMAT-8M, with plug Download CAD data www.festo.com

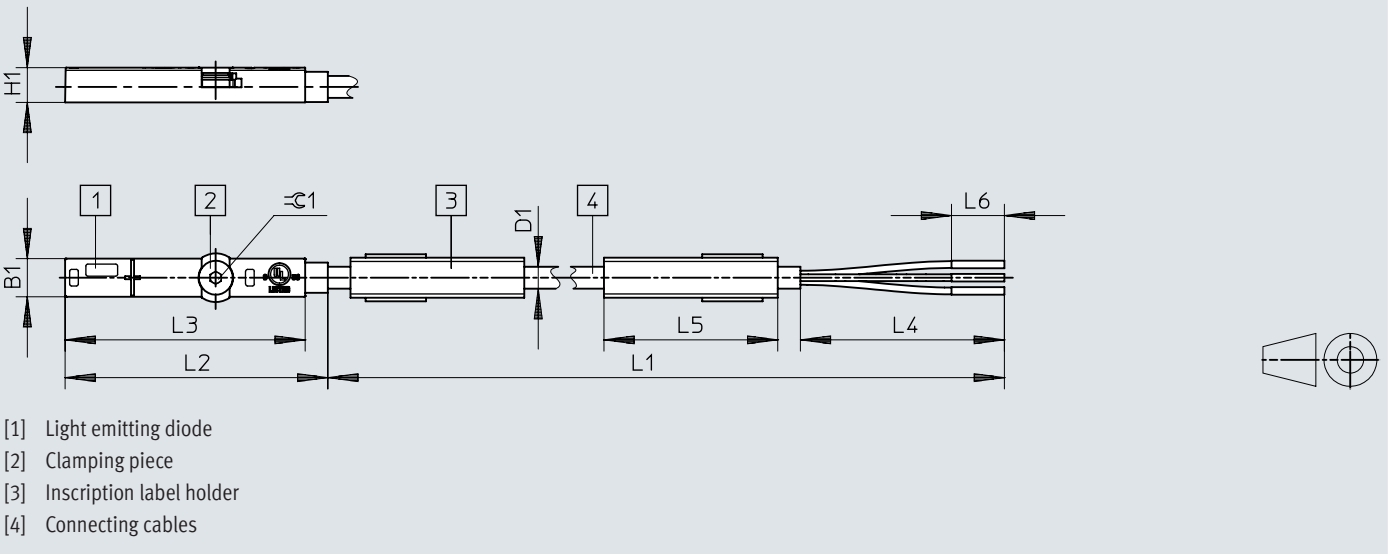


	B1	D1	D2 Ø	D3 Ø	H1	L1	L2	L3	L4	L5	≙
SMAT-8M	5	M8x1	9,6	2,9	4,6	300	34,8	31,8	41,1	23	1,5

Dimensions

Dimensions – Position transmitter SMAT-8M, open end

Download CAD data www.festo.com



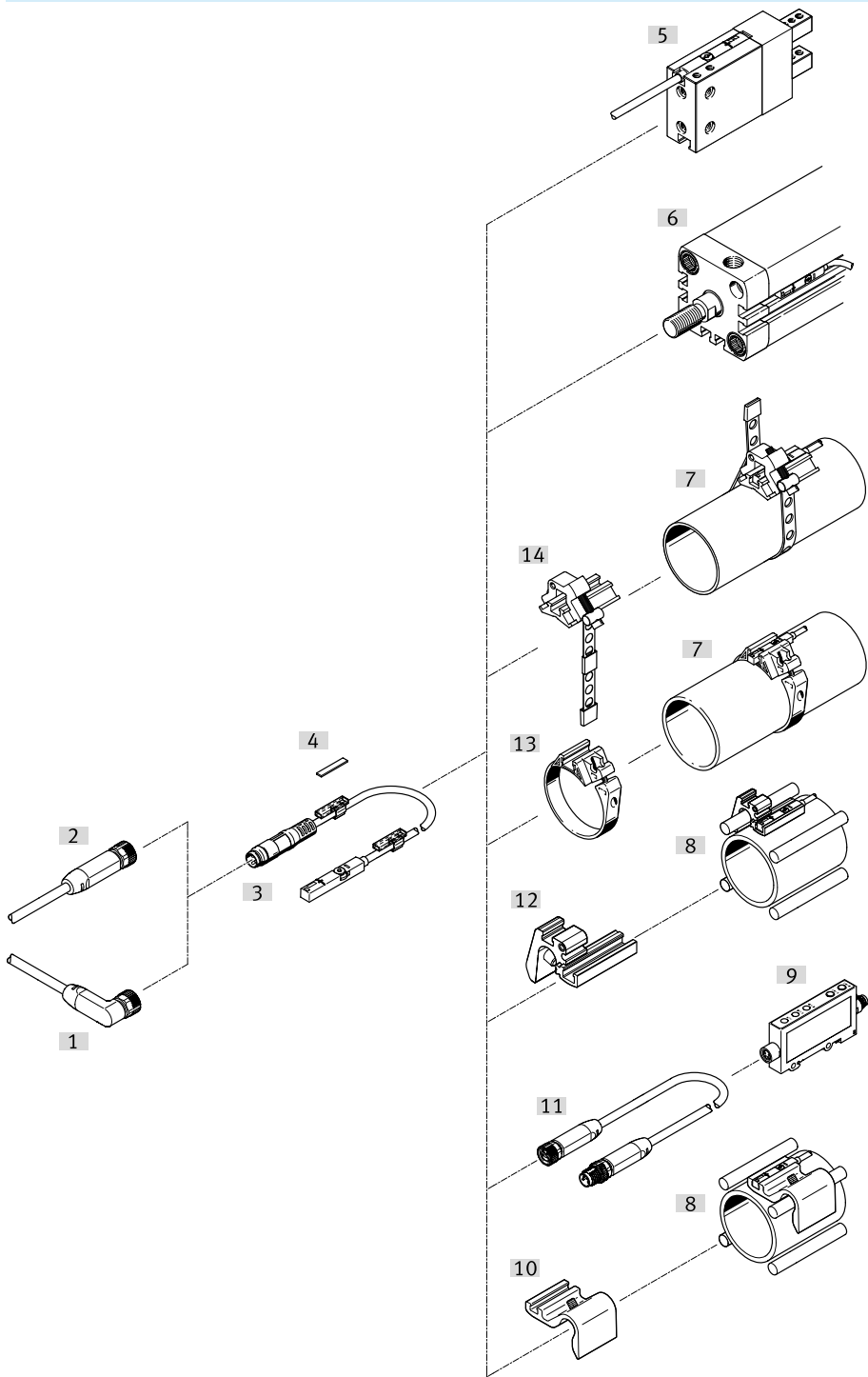
	B1	D1 Ø	H1	L1 min.	L2	L3	L4	L5	L6	±1
SMAT-8M-U-E-2,5-OE	5	2,9	4,6	2500	34,8	31,8	50	23	7	1,5

Ordering data

Ordering data					
	Electrical connection 1, connector system	Analogue output	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	0 - 10 V	0.3 m	553744	SMAT-8M-U-E-0,3-M8D
	Open end		2.5 m	8200152	SMAT-8M-U-E-2,5-OE

Peripherals

Peripherals overview



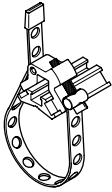
Accessories			→ Link
Type/order code	Description		
[1]	Connecting cable NEBA-M8W4	Angled design	11
[2]	Connecting cable NEBA-M8G4	Straight design	11
[3]	Position transmitter SMAT-8M	–	smat
[4]	Inscription label ASLR	–	11
[5]	Three-point gripper DHDS	–	dhds
[5]	Three-point gripper HGDD	–	hgdd
[5]	Parallel gripper DHPS	–	dhps
[5]	Parallel gripper HGPD	–	hgpd
[5]	Parallel gripper HGPT	–	hgpt

Peripherals

Accessories		→ Link
Type/order code	Description	
[5] Angle gripper DHWS	–	dhws
[5] Radial gripper DHRS	–	dhrs
[5] Radial gripper HGRT	–	hgrt
[6] Standards-based cylinder DSBC	–	dsbc
[6] Standards-based cylinder DNC	–	dnc
[6] Compact cylinder ADN	–	adn
[6] Short-stroke cylinder ADVC/AEVC	–	advc
[6] Compact cylinder ADVU/AEVU	–	advu
[6] Flat cylinder DZF	–	dzf
[6] Linear drive DGC	–	dgc
[6] Linear/swivel clamp CLR	–	clr
[6] Guided drive DFM	–	dfm
[7] Standards-based cylinder/round cylinder DSNU	–	dsnu
[7] Linear drive unit SLE	–	sle
[8] Standards-based cylinder DSBG	–	dsbg
[9] Signal converter SVE4	–	sve4
[10] Sensor bracket DASP-M4	For DSBG-125 ... 320	11
[11] Connecting cable NEBA-M8G4	–	11
[12] Mounting SMBZ-8	–	11
[13] Mounting kit SMBR	–	11
[14] Mounting kit SMBR-8-8/100-S6, heat resistant	Heat-resistant design	11

Accessories

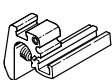
Mounting kit SMBR-8-8/100-S6, heat resistant

	For piston diameter	Part no.	Type
	Ø8 - Ø100	538937	SMBR-8-8/100-S6

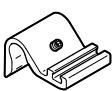
Mounting kit SMBR

	Size	Part no.	Type
	8	175091	SMBR-8-8
	10	175092	SMBR-8-10
	12	★ 175093	SMBR-8-12
	16	★ 175094	SMBR-8-16
	20	★ 175095	SMBR-8-20
	25	★ 175096	SMBR-8-25
	32	★ 175097	SMBR-8-32
	40	★ 175098	SMBR-8-40
	50	175099	SMBR-8-50
	63	175100	SMBR-8-63

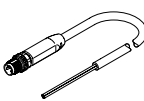
Mounting SMBZ

	For piston diameter	Part no.	Type
	Ø32 - Ø100	537806	SMBZ-8-32/100
	Ø125 - Ø320	537808	SMBZ-8-125/320

Sensor bracket DASP-M4-...

	For piston diameter	Part no.	Type
	Ø125	1451483	DASP-M4-125-A
	Diameter 250	1456781	DASP-M4-250-A
	Ø320	3015256	DASP-M4-320-A

Connecting cable NEBA-M8

	Electrical connection 1, connector system	Electrical connection 1, type of mounting	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	Screw-type lock with hexagon A/F 9 mm and longitudinal knurl, Rotatable	2.5 m	★ 8078227	NEBA-M8G4-U-2.5-N-LE4
				★ 8078233	NEBA-M8W4-U-2.5-N-LE4
			5 m	★ 8078234	NEBA-M8W4-U-5-N-LE4
				★ 8078228	NEBA-M8G4-U-5-N-LE4

Inscription label ASLR

	Size	Size of pack ¹⁾	Part no.	Type
	23x4 mm	30	541598	ASLR-L-423

1) Packaging unit per frame.