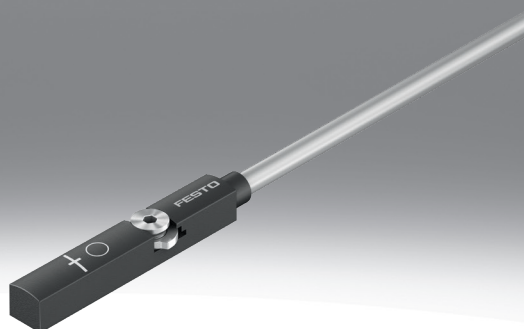


## Position transmitter SDAS-MHS

**FESTO**



## Characteristics

### At a glance

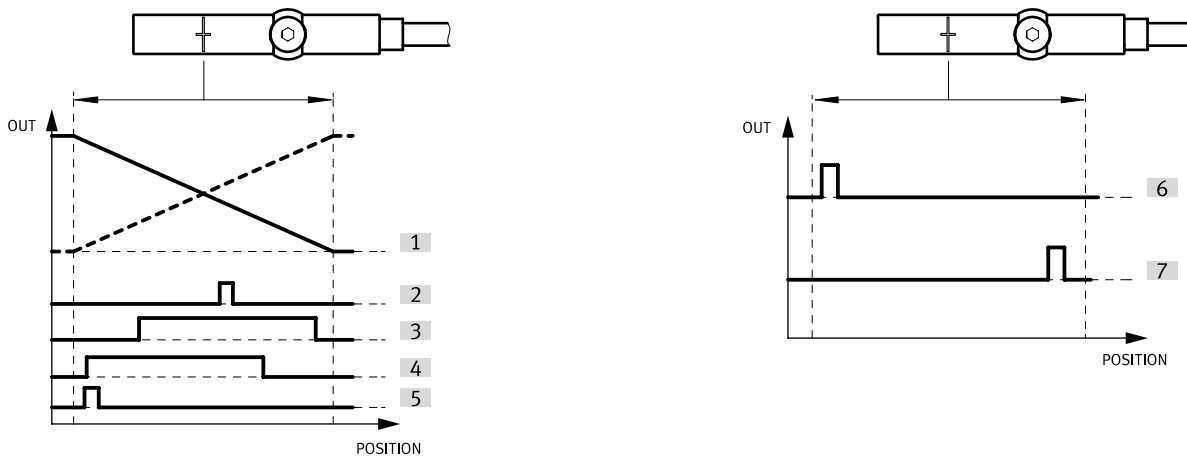
The SDAS-MHS is used for contactless feedback of the piston position of drives whose position can be sensed magnetically. It covers two functions in one device.

1. As a position transmitter, it provides a displacement-proportional output signal in the sensing range that is made available in the IO-Link® communication standard. In addition, 4 channels can be programmed via IO-Link® as a proximity switch, window comparator or hysteresis comparator.
2. As a programmable proximity switch, the SDAS-MHS provides binary feedback on the piston position, which is made available as a standard 24V output signal. Additionally, two switching points for the proximity switch can be taught in within the sensing range via a capacitive operating button directly on the device.

Thanks to its extremely compact design, the SDAS-MHS is the ideal solution for grippers, compact cylinders 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.

### Application example



--- Output signal (PDV): Rise direction inverted

- Output signal (PDV): Rise direction on delivery

#### Position transmitter

- [1] PDV (position data values)
- [2] SSC1 (switching signal channel)
- [3] SSC2
- [4] SSC3
- [5] SSC4
- Applications: Good/bad part sorting, press-fitting, riveting, ultrasonic welding etc.

#### Proximity switch

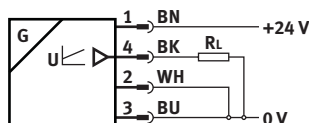
- [6] electrical output 1
- [7] electrical output 2
- Applications: Applications: two proximity switches in one device to save space on compact drives and to save time during assembly and commissioning.

## Type code

001	Series		007	Electrical output 1	
SDAS	Position transmitter/cylinder switch		PNLK	PNP/NPN/IO-Link	
002	Sensor version		008	Electrical output 2	
M	Can be inserted in the slot		PN	PNP or NPN	
003	Sensor principle		009	Cable characteristic	
HS	Hall sensor		E	Suitable for energy chains/robots	
004	Measuring range		010	Cable length [m]	
M40	Typically up to 40 mm		0.3	0.3	
005	Nominal operating voltage		2.5	2.5	
1	24 V DC		011	Electrical connection	
006	Display		LE	Open end	
L	LED		M8	Plug M8, A-coded	

## Datasheet

## General technical data



Design	For T-slot
Mounting position	optional
Type of mounting	Screw-clamped, Insertable in the slot from above
Instructions on use	<a href="https://www.festo.com/Drive-Sensor-Overview">https://www.festo.com/Drive-Sensor-Overview</a>
Approval	RCM trademark, c UL us listed (OL)
CE mark (see declaration of conformity) <sup>1)</sup>	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
Degree of protection	IP65, IP68
LABS (PWS) 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
Cleanroom class	Class 4 according to ISO 14644-1
Note on materials	RoHS-compliant, Free of halogen

<sup>1)</sup> Please refer to the declaration of conformity for the area of use: [www.festo.com/catalogue/sdas-mhs](http://www.festo.com/catalogue/sdas-mhs) → 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.

## Sensors

Measured variable	Position
Measuring principle	Magnetic Hall
Sensing range <sup>1)</sup>	≤52 mm
Ambient temperature	-40°C, 80°C
Typical sampling interval	2 ms
Max. travel speed	3 m/s
Displacement resolution	≤0.02 mm
Repetition accuracy	0.2 mm
Typical linearity error	± 1 mm

<sup>1)</sup> Depending on the drive, see application note.

## Electronics: general

Operational voltage range DC	10 ... 30 V
Residual ripple	10%
Reverse polarity protection	For all electrical connections

## Electronics: switching output, proximity switch operating mode

Switching output	2x PNP or 2x NPN adjustable
Switching element function <sup>1)</sup>	N/C or N/O contact, switchable
Switch-on time	<4 ms
Switch-off time	<4 ms
Max. switching frequency	125 Hz
Max. output current <sup>2)</sup>	50 mA
No-load supply current	<12 mA
Short circuit current rating	yes
Overload protection	Available
Max. switching output voltage DC	30 V
Max. switching capacity DC	1.5 W
Voltage drop	<0.5 V

<sup>1)</sup> Switching element function can only be set via IO-Link®

<sup>2)</sup> Per switching output

## Datasheet

### IO-Link®: mode of operation of position transmitter

Protocol	I-Port, IO-Link®
IO-Link, Protocol version	Device V 1.1
IO-Link, Profile	Smart sensor profile
IO-Link, Function classes	Process data variable (PDV)
IO-Link, communication mode	COM2 (38.4 kBaud)
IO-Link, SIO-Mode support	Yes
IO-Link, Port class	A
IO-Link, Process data length IN	2 bytes
IO-Link, Process data content IN	12 bit PDV (measured position value), 4 bit SSC (Switching Signal)
IO-Link, Min. cycle time	2.5 ms

### Display, operation

Switching status indication	Yellow LED
Status indication	Red LED
Setting options	IO-Link®

### Electromechanics

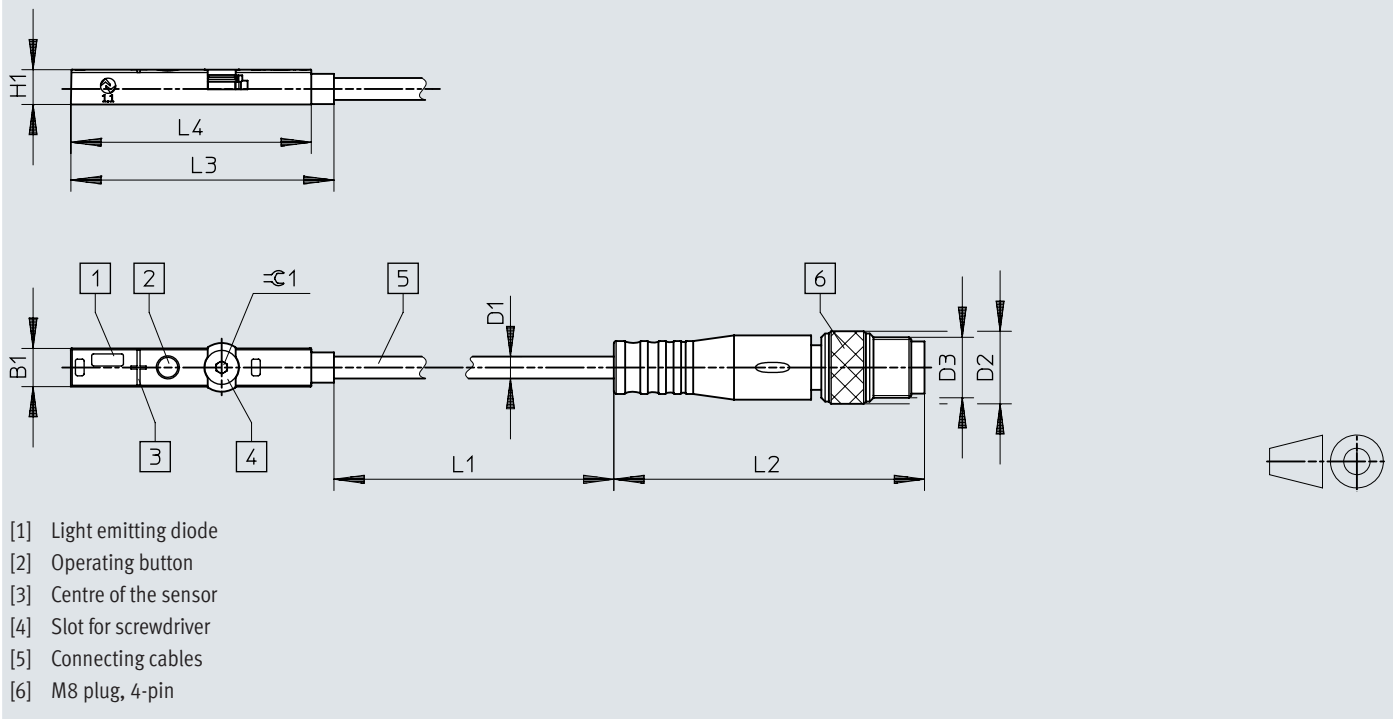
Electrical connection 1, connection type	Cable	Cable with plug
Electrical connection 1, connector system	Open end	M8x1, A-coded, to EN 61076-2-104
Electrical connection 1, number of connections/cores	4	
Electrical connection 1, type of mounting	–	Screw-type lock
Type of mounting	Screw-clamped, Insertable in the slot from above	
Connection outlet orientation	In-line	
Ambient temperature with moving cable	-20°C, 70°C	
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, ±270°/0.1 m, Energy chain: > 5 million cycles, bending radius 28 mm	
Cable sheath colour	Grey	
Material cable sheath	TPE-U(PUR)	
Material electrical contact	–	Gold-plated copper alloy

### Mechanical components

Electrical connection 1, connection type	Cable	Cable with plug
Type of mounting	Screw-clamped, Insertable in the slot from above	
Product weight	27 g	9.5 g
Material housing	PA-reinforced, High-alloy stainless steel	
Material union nut	–	Nickel-plated brass

Dimensions

Dimensions – Cable with plug Download CAD data [www.festo.com](http://www.festo.com)

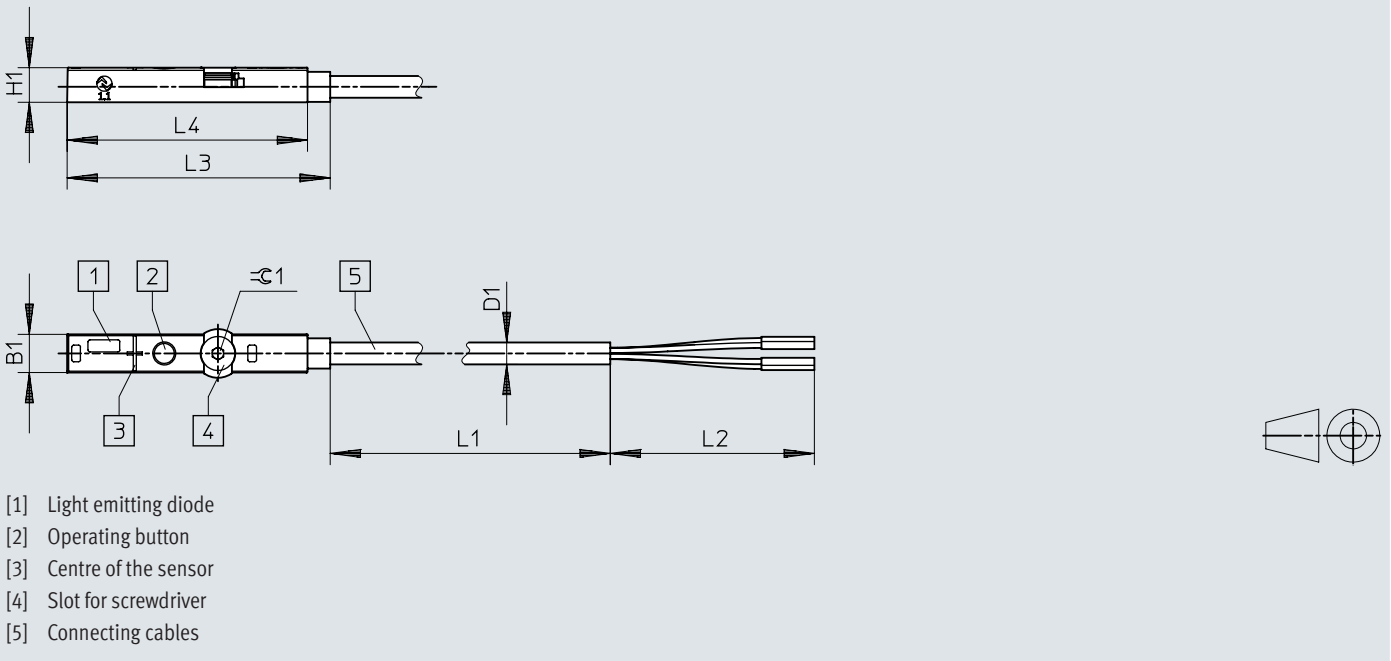


	B1	D1 Ø	D2 Ø	D3	H1	L1	L2	L3	L4	⌀ 1
SDAS-MHS-...-M8	5	2,9	9,6	M8	4,6	300	41,1	34,8	31,8	1,5

Dimensions


Dimensions – Cable

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



	B1	D1 ø	H1	L1	L2	L3	L4	⌀ 1
SDAS-MHS-...-LE	5	2,9	4,6	2500	50	34,8	31,8	1,5

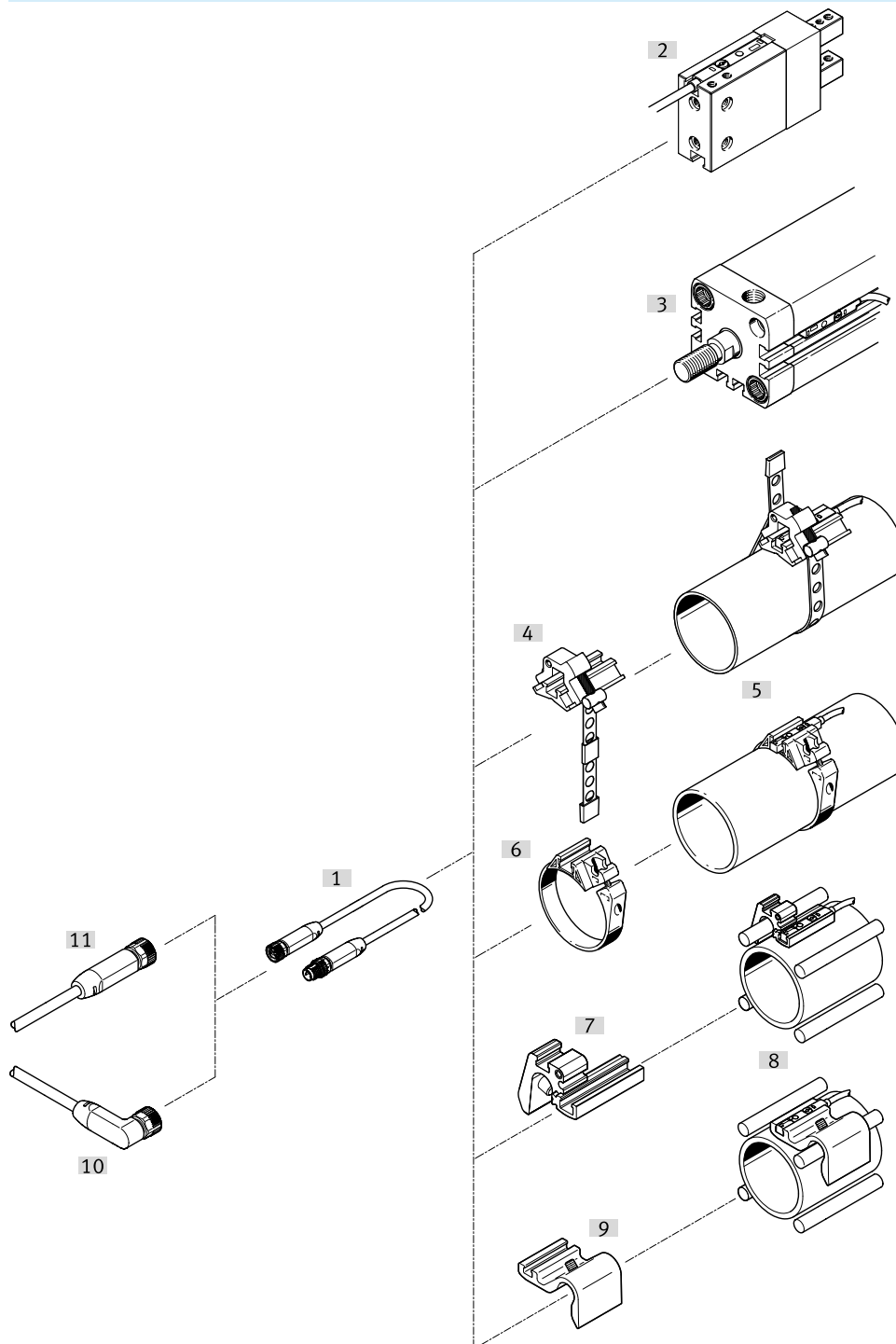
Ordering data

Ordering data					
	Electrical connection 1, connection type	Electrical connection 1, connector system	Electrical connection 1, number of connections/ cores	Part no.	Type
	Cable	Open end	4	8063975	SDAS-MHS-M40-1L-PNLK-PN-E-2.5-LE
	Cable with plug	M8x1, A-coded, to EN 61076-2-104		8063974	SDAS-MHS-M40-1L-PNLK-PN-E-0.3-M8



## Peripherals

### Peripherals overview





Accessories		→ Link
Type/order code	Description	
[1] Proximity switch SDAS-MHS	—	<a href="#">sdas-mhs</a>
[2] Three-point gripper HGDD	—	<a href="#">hgdd</a>
[2] Parallel gripper DHPS	—	<a href="#">dhps</a>
[2] Parallel gripper HGPD	—	<a href="#">hgpd</a>
[2] Parallel gripper HGPT	—	<a href="#">hgpt</a>
[2] Angle gripper DHWS	—	<a href="#">dhws</a>
[2] Radial gripper DHRS	—	<a href="#">dhrs</a>
[2] Radial gripper HGRT	—	<a href="#">hgtr</a>
[3] Standards-based cylinder DSBC	—	<a href="#">dsbc</a>

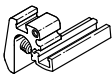
## Peripherals


Accessories		→ Link
Type/order code	Description	
[3] Standards-based cylinder DNC	–	<a href="#">dnc</a>
[3] Compact cylinder ADN	–	<a href="#">adn</a>
[3] Short-stroke cylinders ADVC, AEVC	–	<a href="#">advc</a>
[3] Compact cylinder ADVU, AEVU	–	<a href="#">advu</a>
[3] Flat cylinder DZF	–	<a href="#">dzf</a>
[3] Linear drive DGC	–	<a href="#">dgc</a>
[3] Linear/swivel clamp CLR	–	<a href="#">clr</a>
[3] Guided drive DFM	–	<a href="#">dfm</a>
[4] Mounting kit SMBR-8-8/100-S6, heat resistant	For round cylinders, heat-resistant version	<a href="#">11</a>
[5] Standards-based cylinder, round cylinder DSNU	–	<a href="#">dsnu</a>
[5] Linear drive unit SLE	–	<a href="#">sle</a>
[6] Mounting kit SMBR	For round cylinders	<a href="#">11</a>
[7] Mounting SMBZ-8		<a href="#">11</a>
[8] Standards-based cylinder DSBG	–	<a href="#">dsbg</a>
[9] Sensor bracket DASP-M4-...		<a href="#">11</a>
[10] Connecting cable NEBA-M8W4	Angled plug socket	<a href="#">11</a>
[11] Connecting cable NEBA-M8G4	Straight socket	<a href="#">11</a>


## Accessories


Mounting kit SMBR-8-8/100-S6, heat resistant					
	For piston diameter	Ambient temperature	Material housing	Part no.	Type
	Ø8 - Ø100	-20 ... 120 °C	Wrought aluminium alloy, Anodised, High-alloy stainless steel	538937	SMBR-8-8/100-S6

Mounting kit SMBR					
	Size	Material profile	Material retaining bracket	Part no.	Type
	8	Wrought aluminium alloy	POM	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	Material housing	Product weight	Part no.	Type
	Ø32 - Ø100	Anodised wrought aluminium alloy	14 g	537806	SMBZ-8-32/100
	Ø125 - Ø320			537808	SMBZ-8-125/320

Sensor bracket DASP-M4-...					
	For piston diameter	Material housing	Product weight	Part no.	Type
	Ø125	Wrought aluminium alloy, Anodised	26.5 g	1451483	DASP-M4-125-A
	Ø160 - Ø200		41.5 g	1553813	DASP-M4-160-A
	Diameter 250		60 g	1456781	DASP-M4-250-A
	Ø320			3015256	DASP-M4-320-A

Connecting cables NEBA-M8, straight socket					
	Electrical connection 1, connector system	Electrical connection 2, connector system	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	Open end	2.5 m	8078227	NEBA-M8G4-U-2.5-N-LE4
			5 m	8078228	NEBA-M8G4-U-5-N-LE4

Connecting cables NEBA-M8, angled socket					
	Electrical connection 1, connector system	Electrical connection 2, connector system	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	Open end	2.5 m	8078233	NEBA-M8W4-U-2.5-N-LE4
			5 m	8078234	NEBA-M8W4-U-5-N-LE4