

## Position transmitter SDAC-MHS

**FESTO**



## Characteristics

### At a glance

The SDAC-MHS is used for providing contactless feedback on the piston position of actuators that can be sensed magnetically. An IO-Link® version and a variant with classic 0-10V analogue output are available. Its compact small design makes the SDAS-MHS the ideal solution for grippers, compact cylinders and in all applications where installation space is limited.

The IO-Link® variant covers two functions in one device.

1. As a position transmitter, it provides an output signal proportional to the motion within the sensing range, with the signal being made available in the IO-Link® communication standard. Furthermore, in the IO-Link® version, 4 channels can be programmed via IO-Link® as proximity switch, window comparator or hysteresis comparator.

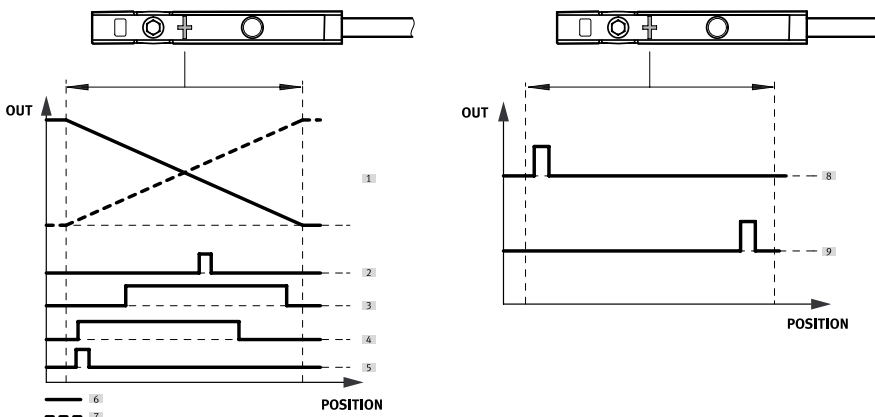
2. As a programmable proximity switch, the SDAS-MHS provides binary feedback on the piston position, which is made available as a standard 24V output signal. Additionally, two switching points for the proximity switch can be taught in within the sensing range via a capacitive operating button directly on the device.

Its very compact design makes the SDAC-MHS the ideal solution for grippers, compact cylinders and in all applications where installation space is limited.

Applications position transmitter: continuous position feedback e.g. for good/bad selection, press-fitting, riveting, ultrasonic welding, etc.

Applications with proximity switch function for binary position feedback. Having two proximity switches in one device saves space on small drives and saves time during installation and commissioning.

### Description



Example IO-Link® variant:

- [1] PDV (position data valves)
- [2] SSC1 (switching signal channel)
- [3] SSC2
- [4] SSC3
- [5] SSC4
- [6] Output signal (PDV): direction of increase inverted
- [7] Output signal (PDV): direction of increase as delivered

Example of proximity switch function:

- (8) Switching output 1
- (9) Switching output 2

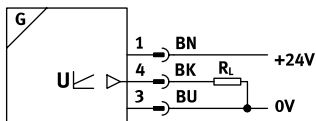
## Type code

001	Series	
SDAC	Position transmitter	
002	Sensor version	
M	Can be inserted in the slot	
003	Sensor principle	
HS	Hall sensor	
004	Measuring range	
M20	Typically up to 20 mm	
M30	Typically up to 30 mm	
005	Nominal operating voltage	
1	24 V DC	
006	Display	
L	LED	

007	Electrical output 1	
PNLK	PNP/NPN/IO-Link	
V	0 ... 10 V	
008	Electrical output 2	
	None	
PN	PNP or NPN	
009	Cable length [m]	
0.3	0.3 m	
2.5	2.5 m	
010	Connection outlet	
	Axial	
011	Electrical connection	
LE	Open end	
M8	Plug M8, A-coded	

## Datasheet

### General technical data, SDAC 0 to 10V



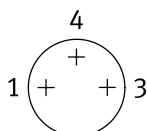
Design	For C-slot
Mounting position	optional
Type of mounting	Screw-clamped, Insertable in the slot lengthwise
Instructions on use	Support / actuator-sensor overview”The right sensor for the actuator”
Approval	RCM trademark
CE mark (see declaration of conformity)	To EU EMC Directive, In accordance with EU RoHS Directive
CE marking (see declaration of conformity)	To UK instructions for EMC, To UK RoHS instructions
Degree of protection	IP65, IP68
Note on materials	RoHS-compliant, Free of halogen
LABS (PWIS) conformity	VDMA24364-B2-L

### Sensors, SDAC 0 to 10V

Measured variable	Position
Measuring principle	Magnetic Hall
Sensing range <sup>1)</sup>	25 mm
Ambient temperature	-40 ... 80°C
Typical sampling interval	2 ms
Max. travel speed	≥4 m/s
Displacement resolution	0.047 mm
Repetition accuracy	0.2 mm
Typical linearity error	±2 mm

1) Depending on the drive, see application note.

### Electronics, SDAC 0 to 10V



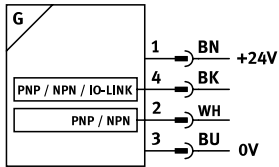
Operational voltage range DC	15 ... 30 V
Residual ripple	10%
Reverse polarity protection	yes
Analogue output	0 - 10 V
Sensitivity	0.45 V/mm
Min. load resistance voltage output	10 kOhm
Short circuit current rating	yes
Overload protection	Available
Output signal	Analogue
No-load supply current	<12 mA
Status indication	LED red, green

### Display, operation, SDAC 0 to 10V

Switching status indication	–
Status indication	LED red, green
Setting options	–

## Datasheet

## General technical data, SDAC with IO-Link®



Design	For C-slot
Mounting position	optional
Type of mounting	Screw-clamped, Insertable in the slot lengthwise
Instructions on use	Support / actuator-sensor overview "The right sensor for the actuator"
Approval	RCM trademark
CE mark (see declaration of conformity)	To EU EMC Directive, In accordance with EU RoHS Directive
CE marking (see declaration of conformity)	To UK instructions for EMC, To UK RoHS instructions
Degree of protection	IP65, IP68
Note on materials	RoHS-compliant, Free of halogen
LABS (PWIS) conformity	VDMA24364-B2-L

## Sensors, SDAC with IO-Link®

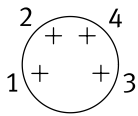
Measured variable	Position
Measuring principle	Magnetic Hall
Sensing range	35 mm
Ambient temperature	-40 ... 80°C
Typical sampling interval	2 ms
Max. travel speed	≥4 m/s
Displacement resolution	0.012 mm
Repetition accuracy	0.2 mm
Typical linearity error	±2 mm

## Electronics, SDAC with IO-Link®

Operational voltage range DC	10 ... 30 V
Residual ripple	10%
Reverse polarity protection	yes
Analogue output	–
Sensitivity	–
Min. load resistance voltage output	–
Short circuit current rating	yes
Overload protection	Available
Output signal	–
No-load supply current	<19 mA
Status indication	Red LED

## Datasheet

## Electronics – Switching output, SDAC with IO-Link®



Switching output	2x PNP or 2x NPN adjustable
Switching element function <sup>1)</sup>	N/C or N/O contact, switchable
Switch-on time	≤3 ms
Switch-off time	≤3 ms
Max. switching frequency	166 Hz
Max. switching output voltage DC	30 V
Max. output current <sup>2)</sup>	50 mA
Max. switching capacity DC	1.5 W
Voltage drop	≤0.4 V

1) Switching element function can only be set via IO-Link®

2) Per switching output

## Display, operation, SDAC with IO-Link®

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

## IO-Link®

Protocol	IO-Link®
IO-Link, revision ID	V1.1
IO-Link, device profile	Function locator, Identification and diagnostics, Measuring and switching sensor, Smart sensor - SSP 4.1.1
IO-Link, transmission rate	COM2
IO-Link, SIO-Mode support	Yes
IO-Link, port type	Class A
IO-Link, process data length input	32
IO-Link, minimum cycle time	3
IO-Link, Process data content IN	Position value 16-bit MDC, Monitoring 4-bit SSC

## Electromechanics general

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, 4	
Electrical connection 1, type of mounting	–	Screw-type lock with hexagon A/F 9 mm and longitudinal knurl
Electrical connection 1, tightening torque	–	0.3 Nm
Connection outlet orientation	In-line	
Ambient temperature with moving cable	-20 ... 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 resistance: > 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	–	Brass, nickel-plated and gold-plated

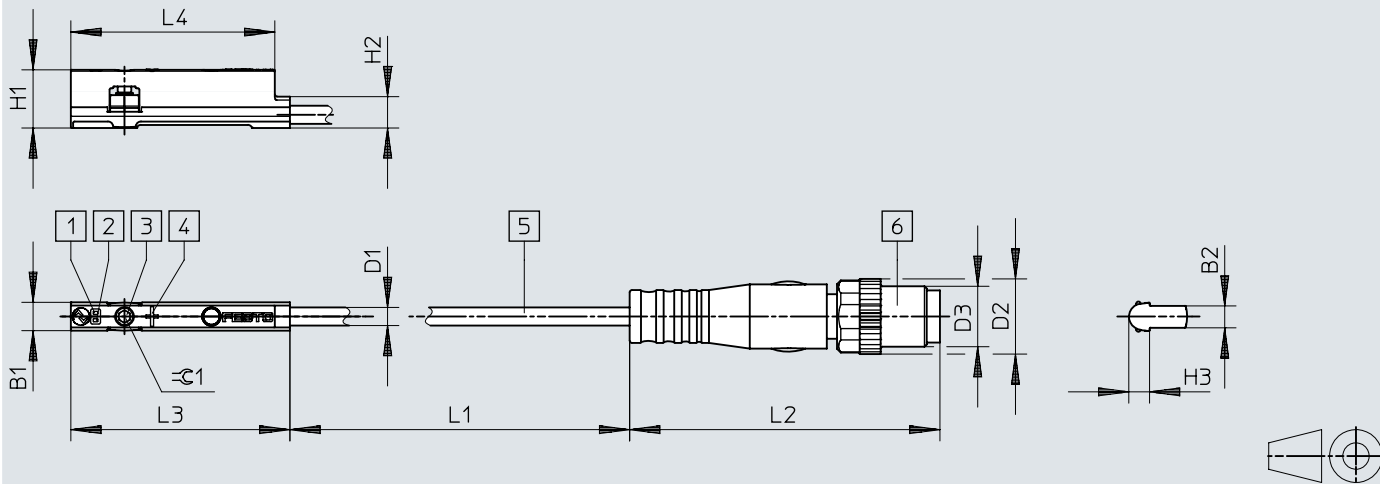
## Datasheet

Mechanics in general		
Electrical connection 1, connection type	Cable	Cable with plug
Product weight	21 g	9 g
Material housing	PA-reinforced, High-alloy stainless steel	
Material union nut	–	Nickel-plated brass

## Dimensions

Dimensions – SDAC-...-M8, with screw-type lock

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



- [1] Colour/colour abbreviation red
- [2] Colour/colour code: SDAC-MHS-M30-1L-PNLK-PN-E-Yellow; SDAC-MHS-M20-1L-V-E-Green
- [3] Internal hex
- [4] Centre of the sensor element
- [5] Connecting cables
- [6] M8 plug

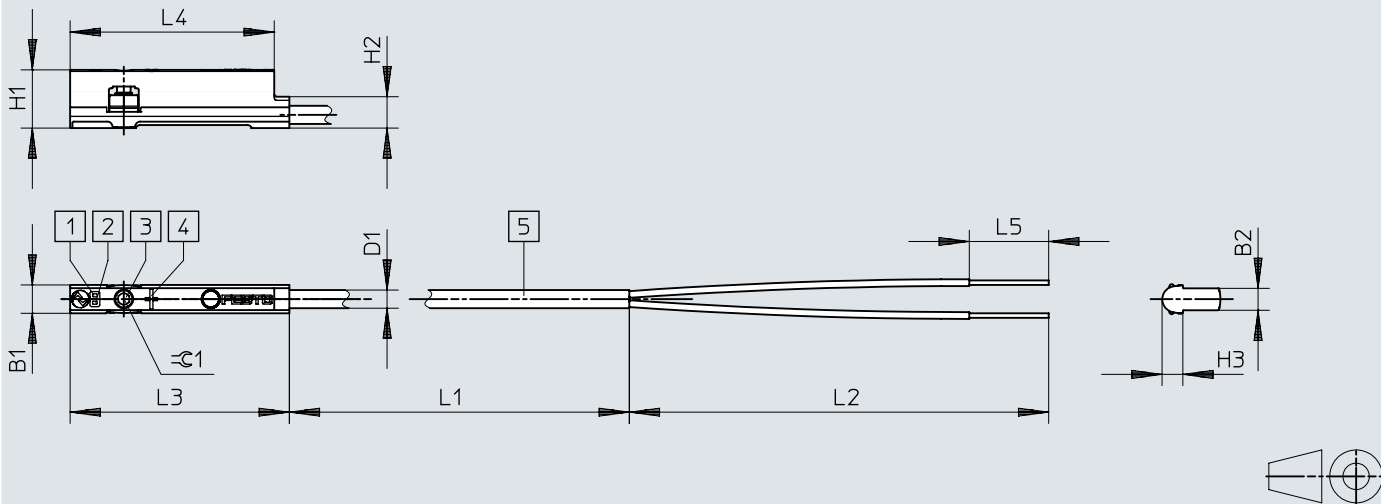
	B1	B2	D1 ø	D2 ø	D3	H1	H2	H3	L1	L2	L3	L4	±0.1
SDAC-MHS-M30-1L-PNLK-PN-E-0,3-M8	3,8	2,9	2,4	10	M8x1	7,7	4,1	2,8	300	41,1	29	27	1,5
SDAC-MHS-M20-1L-V-E-0,3-M8			2,2										



## Dimensions

Dimensions – SDAC...-LE, with open end


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- [1] Colour/colour abbreviation red
- [2] Colour/colour code: SDAC-MHS-M30-1L-PNLK-PN-E-Yellow; SDAC-MHS-M20-1L-V-E-Green
- [3] Internal hex
- [4] Centre of the sensor element
- [5] Connecting cables

	B1	B2	D1 ∅	H1	H2	H3	L1	L2	L3	L4	L5	⌀C1
SDAC-MHS-M30-1L-PNLK-PN-E-2,5-LE	3,8	2,9	2,4	7,7	4,1	2,8	2500	50	29	27	7	1,5
SDAC-MHS-M30-1L-V-E-2,5-LE			2,2									

## Ordering data

Position transmitter, 0 to 10V						
	Electrical connection 1, connection type	Electrical connection 1, connector system	Cable length	Analogue output	Part no.	Type
	Cable	Open end	2.5 m	0 - 10 V	<b>8128403</b>	<b>SDAC-MHS-M20-1L-V-E-2.5-LE</b>
	Cable with plug	M8x1, A-coded, to EN 61076-2-104	0.3 m		<b>8128402</b>	<b>SDAC-MHS-M20-1L-V-E-0.3-M8</b>

Position transmitter, IO-Link®						
	Electrical connection 1, connection type	Electrical connection 1, connector system	Cable length	Protocol	Part no.	Type
	Cable	Open end	2.5 m	IO-Link®	<b>8128405</b>	<b>SDAC-MHS-M30-1L-PNLK-PN-E-2.5-LE</b>
	Cable with plug	M8x1, A-coded, to EN 61076-2-104	0.3 m		<b>8128404</b>	<b>SDAC-MHS-M30-1L-PNLK-PN-E-0.3-M8</b>