

Position transmitters, proximity sensors SDAS-MHS for T-slot



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Key features

General

The SDAS-MHS is used for contactless feedback of the piston position with drives whose position can be detected magnetically. It combines two functions into a single device.

1. As a position transmitter, it provides an output signal proportional to travel within the sensing range, with the signal being made available in the IO-Link® communication standard. Furthermore, 4 channels can be programmed via IO-Link® as proximity sensor, window comparator or hysteresis comparator.
2. As a programmable proximity sensor, the SDAS-MHS provides binary feed-

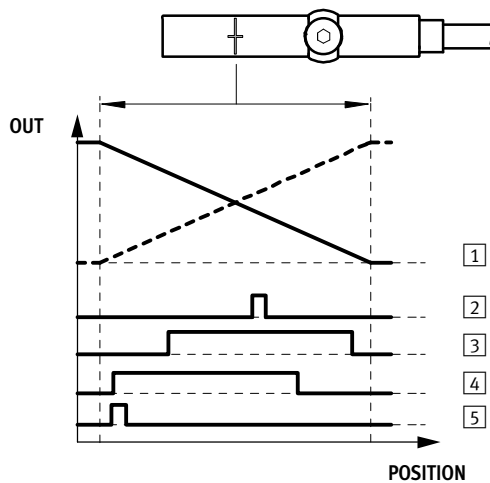
back of the piston position which is made available as a standard 24 V output signal. Additionally, two proximity sensor switching points can be taught in within the sensing range via a capacitive control key directly on the device.

Thanks to its extremely compact design, the SDAS-MHS is the ideal solution for grippers, compact cylinders and all applications with limited installation space.

Note

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. A selection aid with suitable drives can be found below.

Position transmitters

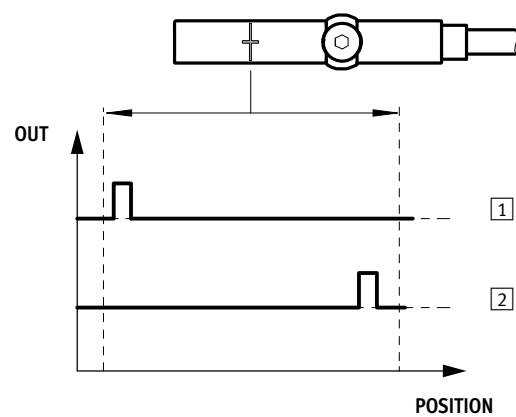


---- Output signal (PDV): direction of increase inverted
 -- Output signal (PDV): direction of increase as delivered

- | | |
|-----------------------------------|--------|
| 1 PDV (position data values) | 3 SSC2 |
| 2 SSC1 (switching signal channel) | 4 SSC3 |
| | 5 SSC4 |

Applications: good/bad part sorting, press-fitting, riveting, ultrasonic welding etc.

Proximity sensors



- | | |
|-----------------------|-----------------------|
| 1 Electrical output 1 | 2 Electrical output 2 |
|-----------------------|-----------------------|

Applications: two proximity sensors in one device to save space on compact drives and to save time during assembly and commissioning.

Position transmitters, proximity sensors SDAS-MHS for T-slot

Key features

For drive	Sensing range [mm]
Standards-based cylinders	
ADN-12	25
ADN-16	25
ADN-20	28
ADN-25	28
ADN-32	29
ADN-40	29
ADN-50	33
ADN-63	34
ADN-80	37
ADN-100	43
ADN-125	41
ADN-TT-12	25
ADN-TT-16	25
ADN-TT-20	27
ADN-TT-25	28
ADN-TT-32	29
ADN-TT-40	29
ADN-TT-50	33
ADN-TT-63	34
ADN-TT-80	37
ADN-TT-100	42
ADN-TT-125	41
DSBC-32	28
DSBC-40	30
DSBC-50	30
DSBC-63	34
DSBC-80	38
DSBC-100	42
DSBC-125	42
DSBC-TT-32	27
DSBC-TT-40	30
DSBC-TT-50	30
DSBC-TT-63	34
DSBC-TT-80	38
DSBC-TT-100	42
DSBC-TT-125	42
DSBG-32	31
DSBG-40	29
DSBG-50	30
DSBG-63	32
DSBG-80	35
DSBG-100	40
DSBG-125	45
DSBG-32 V2	31
DSBG-63 V2	32
DSBG-100 V2	36
DSNU-8	24
DSNU-10	26
DSNU-12	27
DSNU-16	28
DSNU-20	27
DSNU-25	29
DSNU-32	27
DSNU-40	28
DSNU-50	31
DSNU-63	32

For drive	Sensing range [mm]
Piston rod cylinder	
ADVC-32	Stroke < sensing range of SDAS
ADVC-40	Stroke < sensing range of SDAS
ADVC-50	Stroke < sensing range of SDAS
ADVC-63	Stroke < sensing range of SDAS
ADVC-80	Stroke < sensing range of SDAS
ADVC-100	Stroke < sensing range of SDAS
ADVU-12	27
ADVU-16	24
ADVU-20	29
ADVU-25	30
ADVU-32	33
ADVU-40	35
ADVU-50	32
ADVU-63	40
ADVU-80	44
ADVU-100	45
ADVU-125	40
DMM-10	23
DMM-16	27
DMM-20	32
DMM-25	31
DMM-32	33
DZF-12	28
DZF-18	29
DZF-25	35
DZF-32	34
DZF-40	44
DZF-50	47
DZF-63	52
DGST-16	28
DGST-20	32
DGST-25	32
DZH-16	31
DZH-20	32
DZH-25	33
DSL-16	32
DSL-20	25
DSL-25	36
DSL-32	37
DSL-40	40

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Key features

For drive	Sensing range [mm]
Rodless cylinders	
DGC-18	33
DGC-32	43
DGC-K-18	34
DGC-K-25	44
DGC-K-32	52
Semi-rotary drives with rack and pinion	
DRRD-16	Stroke < sensing range of SDAS
DRRD-20	23
DRRD-25	28
DRRD-32	30
DRRD-35	31
DRRD-40	30
DRRD-50	29
DRRD-63	29
DRQD-16	Stroke < sensing range of SDAS
DRQD-20	29
DRQD-25	29
DRQD-32	31
DRQD-50	39
DRQD-63	29

For drive	Sensing range [mm]
Drives with linear guide	
DFM-16	25
DFM-20	31
DFM-25	30
DFM-32	33
DFM-40	32
DFM-50	34
DFM-63	36
DFM-80	41
DFM-100	46
DFM-12-B	25
DFM-16-B	27
DFM-20-B	28
DFM-25-B	29
DFM-32-B	30
DFM-40-B	30
DFM-50-B	32
DFM-63-B	36
DGC-18	33
DGC-32	43
DGC-K-18	34
DGC-K-25	44
DGC-K-32	52
DPZ-10	27
DPZ-16	30
DPZ-20	34
DPZ-25	32
DPZ-32	34

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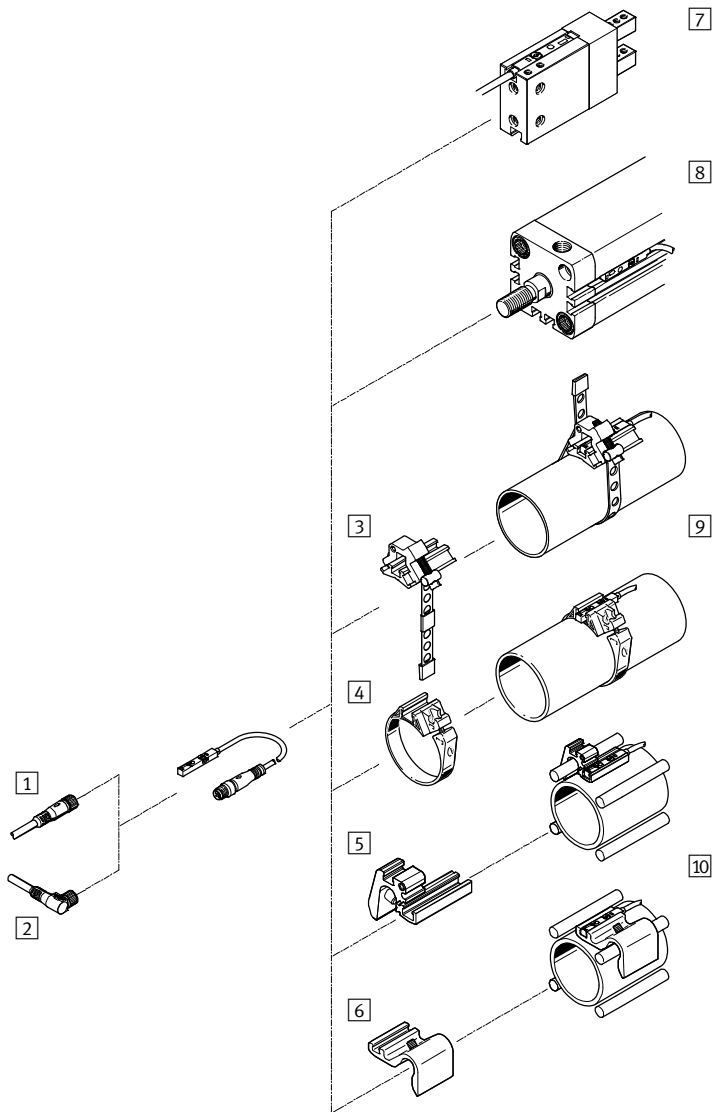
Key features

For gripper	Sensing range [mm]
DHDS-32	Stroke < sensing range of SDAS
DHDS-50	Stroke < sensing range of SDAS
DHDS-32-NC	Stroke < sensing range of SDAS
DHDS-50-NC	Stroke < sensing range of SDAS
DHPS-10	Stroke < sensing range of SDAS
DHPS-16	Stroke < sensing range of SDAS
DHPS-20	Stroke < sensing range of SDAS
DHPS-25	Stroke < sensing range of SDAS
DHPS-35	Stroke < sensing range of SDAS
DHPS-10-NC	Stroke < sensing range of SDAS
DHPS-16-NC	Stroke < sensing range of SDAS
DHPS-35-NC	Stroke < sensing range of SDAS
DHPS-10-NO	Stroke < sensing range of SDAS
DHPS-16-NO	Stroke < sensing range of SDAS
DHPS-20-NO	Stroke < sensing range of SDAS
DHPS-35-NO	Stroke < sensing range of SDAS
DHRS-16	Stroke < sensing range of SDAS
DHRS-25	Stroke < sensing range of SDAS
DHRS-32	Stroke < sensing range of SDAS
DHRS-40	Stroke < sensing range of SDAS
DHRS-16-NC	Stroke < sensing range of SDAS
DHRS-25-NC	Stroke < sensing range of SDAS
DHRS-32-NC	Stroke < sensing range of SDAS
DHRS-40-NC	Stroke < sensing range of SDAS
HGW-16	Stroke < sensing range of SDAS
HGW-25	Stroke < sensing range of SDAS
HGW-32	Stroke < sensing range of SDAS
HGW-40	Stroke < sensing range of SDAS
DHWS-16	Stroke < sensing range of SDAS
DHWS-25	Stroke < sensing range of SDAS
DHWS-32	Stroke < sensing range of SDAS
DHWS-40	Stroke < sensing range of SDAS
DHWS-16-NC	Stroke < sensing range of SDAS
DHWS-25-NC	Stroke < sensing range of SDAS
DHWS-32-NC	Stroke < sensing range of SDAS
DHWS-40-NC	Stroke < sensing range of SDAS
HGDD-50	Stroke < sensing range of SDAS
HGDD-63	Stroke < sensing range of SDAS
HGDD-80	Stroke < sensing range of SDAS
HGDD-35-G1	Stroke < sensing range of SDAS
HGDD-40-G1	Stroke < sensing range of SDAS
HGDD-50-G1	Stroke < sensing range of SDAS
HGDD-63-G1	Stroke < sensing range of SDAS
HGDD-80-G1	Stroke < sensing range of SDAS
HGDD-35-G2	Stroke < sensing range of SDAS
HGDD-40-G2	Stroke < sensing range of SDAS
HGDD-50-G2	Stroke < sensing range of SDAS
HGDD-63-G2	Stroke < sensing range of SDAS
HGDD-80-G2	Stroke < sensing range of SDAS

For gripper	Sensing range [mm]
HGPD-40	Stroke < sensing range of SDAS
HGPD-50	Stroke < sensing range of SDAS
HGPD-63	Stroke < sensing range of SDAS
HGPD-80	Stroke < sensing range of SDAS
HGPD-40-G1	Stroke < sensing range of SDAS
HGPD-50-G1	Stroke < sensing range of SDAS
HGPD-63-G1	Stroke < sensing range of SDAS
HGPD-80-G1	Stroke < sensing range of SDAS
HGPD-40-G2	Stroke < sensing range of SDAS
HGPD-50-G2	Stroke < sensing range of SDAS
HGPD-63-G2	Stroke < sensing range of SDAS
HGPD-80-G2	Stroke < sensing range of SDAS
HGPL-14	25
HGPL-25	28
HGPL-40	32
HGPL-63	33
HGPL-B-14	26
HGPL-B-25	28
HGPL-B-40	32
HGPL-B-63	33
HGPT-40	Stroke < sensing range of SDAS
HGPT-50	Stroke < sensing range of SDAS
HGPT-63	Stroke < sensing range of SDAS
HGPT-80	Stroke < sensing range of SDAS
HGPT-40-G1	Stroke < sensing range of SDAS
HGPT-50-G1	Stroke < sensing range of SDAS
HGPT-63-G1	Stroke < sensing range of SDAS
HGPT-80-G1	Stroke < sensing range of SDAS
HGPT-40-G2	Stroke < sensing range of SDAS
HGPT-50-G2	Stroke < sensing range of SDAS
HGPT-63-G2	Stroke < sensing range of SDAS
HGPT-80-G2	Stroke < sensing range of SDAS
HGRT-40	Stroke < sensing range of SDAS
HGRT-50	36
HGRT-40-G2	Stroke < sensing range of SDAS
HGRT-50-G2	40
EHPS-16	Stroke < sensing range of SDAS
EHPS-20	Stroke < sensing range of SDAS
EHPS-25	Stroke < sensing range of SDAS

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Peripherals overview



Accessories	→ Page/Internet
1 Connecting cable NEBU-M8G4	12
2 Connecting cable NEBU-M8W4	12
3 Mounting kit SMBR-8-8/100-S6, heat-resistant	12
4 Mounting kit SMBR	12
5 Mounting SMBZ-8	12
6 Sensor bracket DASP-M4-...	12
7 Three-point gripper HGDD	hgdd
Parallel gripper DHPS	dhps
Parallel gripper HGPD	hgpd
Parallel gripper HGPT	hgpt
Angle gripper DHWS	dhws
Radial gripper DHRS	dhrs
Radial gripper HGRT	hgrrt

Accessories	→ Page/Internet
8 Standards-based DSBC	dsbc
Standards-based DNC	dnc
Compact cylinder ADN	adn
Short-stroke cylinder ADVC/AEVC	advc
Compact cylinder ADVU/AEVU	advu
Flat cylinder DZF	dzf
Linear drive DGC	dgc
Linear/swivel clamp CLR	clr
Guided drive DFM	dfm
9 Standards-based/round cylinder DSNU	dsnu
Linear drive unit SLE	sle
10 Standards-based DSBG	dsbg

Position transmitters, proximity sensors SDAS-MHS for T-slot

Type codes

SDAS - M HS - M40 - 1 - L - - - PN - E - - A - -

Type code

SDAS	Position transmitter
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Sensor version

M	Insertable in slot
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Sensor type

HS	Hall sensor
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Measuring range

M40	Typically up to 40 mm
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Nominal operating voltage

1	24 V DC
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Display

L	LED
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Electrical output 1

PNLK	PNP or NPN or IO-Link®
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Electrical output 2

PN	PNP or NPN
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Cable property

E	Suitable for use with energy chains/robot applications
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Cable length

0.3	0.3 m
2.5	2.5 m

Connection outlet

	Axial
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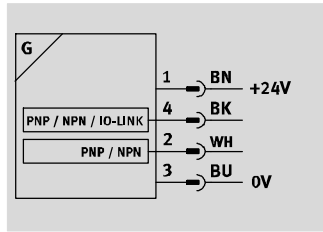
Electrical connection

LE	Open end
M8	Plug M8

Position transmitters, proximity sensors SDAS-MHS for T-slot

Technical data

Function



Operating mode of position transmitter

Operating mode of proximity sensor



General technical data	
Design	For T-slot
Mounting position	Any
Type of mounting	Screw-clamped
Certification	RCM mark
KC mark	KC EMC
CE marking (see declaration of conformity)	To EU EMC Directive
Degree of protection	IP65, IP68
Note on materials	RoHS-compliant Free of halogen

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp → Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Sensors	
Measured variable	Position
Measuring principle	Magnetic Hall
Sensing range [mm]	≤ 52
Ambient temperature [°C]	-40 ... +80
Typical sampling interval [ms]	2
Max. speed of travel [m/s]	3
Path resolution [mm]	≤ 0.02
Repetition accuracy [mm]	0.2
Typical linearity error [mm]	±1

Electronics – General	
Operating voltage range [V DC]	10 ... 30
Residual ripple [%]	10
Reverse polarity protection	For all electrical connections

Position transmitters, proximity sensors SDAS-MHS for T-slot

Technical data

Electronics – Switching output (operating mode of proximity sensor)		
Switching output		2x PNP or 2x NPN, adjustable
Switching element function ¹⁾		N/C or N/O contact, switchable
Switch-on time	[ms]	< 4
Switch-off time	[ms]	< 4
Max. switching frequency	[Hz]	125
Max. output current ²⁾	[mA]	50
Short circuit protection		Yes
Overload protection		Available
Max. switching output voltage DC	[V]	30
Max. switching capacity DC	[W]	1.5
Voltage drop	[V]	< 0.5

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

2) Per switching output

IO-Link® (operating mode of position transmitter)	
Protocol	IO-Link® I-Port
Protocol version	Device V 1.1
Profile	Smart sensor profile
Function classes	Process data variable (PDV) Identification Diagnostics Teach-in channel Switching signal channel (SSC)
Communication mode	COM2 (38.4 kBaud)
SIO mode support	Yes
Port class	A
Process data width IN	2 bytes
Process data content IN	12 bit PDV (measured position value) 4 bit SSC (switching signal)
Minimum cycle time	[ms] 2.5

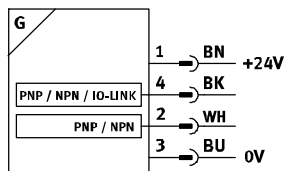
Display/operation	
Switching status indication	Yellow LED
Status indication	Red LED
Setting options	IO-Link® Capacitive pushbutton

Position transmitters, proximity sensors SDAS-MHS for T-slot

Technical data

Electromechanical components	SDAS-MHS- ... -0,3-M8	SDAS-MHS- ... -2,5-LE
Electrical connection 1		
Connection type	Cable with plug	Cable
Connection technology	M8x1, A-coded to EN 61076-2-104	Open end
Number of pins/wires	4	
Type of mounting	Screw-type lock	–
Connection outlet orientation	In-line	
Ambient temperature with flexible cable installation [°C]	–20 ... +70	
Cable length [m]	0.3	2.5
Cable property	Suitable for use with energy chains/robots	
Cable test conditions	Bending strength: to Festo standard	
	Energy chain: 5 million cycles, bending radius 28 mm	
	Torsional resistance: > 300,000 cycles, ± 270°/0.1 m	
Cable sheath colour	Grey	
Cable sheath material	TPE-U(PUR)	
Information on materials: pin contact	Gold-plated copper alloy	–

Pin allocation



Operating mode of proximity sensor

- 1 Operating voltage
- 2 Switching output 2
- 3 0 V
- 4 Switching output 1

Operating mode of position transmitter

- 1 Operating voltage
- 2 Not used
- 3 0 V
- 4 IO-Link®

Wire colours

BN = Brown WH = White
 BK = Black BU = Blue

Plug



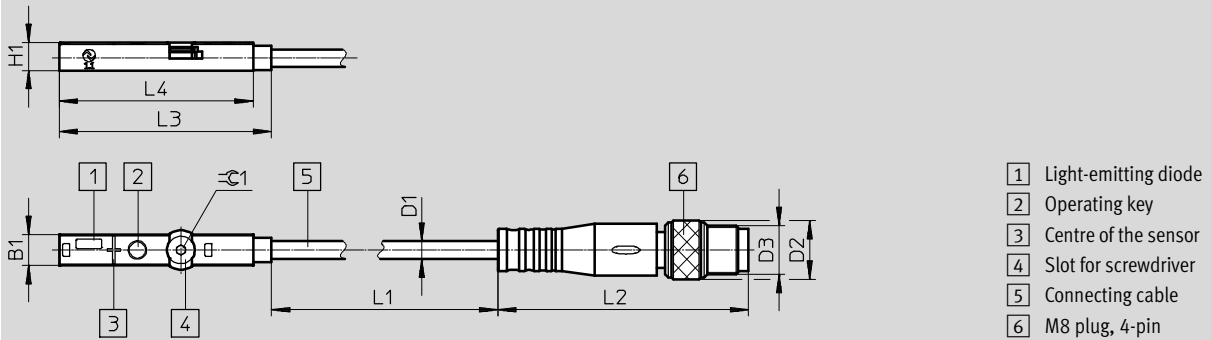
Mechanical components	SDAS-MHS- ... -0,3-M8	SDAS-MHS- ... -2,5-LE
Type of mounting	Insertable in the slot from above	
Product weight [g]	9.5	27
Housing materials	High-alloy stainless steel	
	PA-reinforced	
Information on materials: union nut	Brass, nickel-plated	–

Position transmitters, proximity sensors SDAS-MHS for T-slot

Technical data

Dimensions – Cable with plug

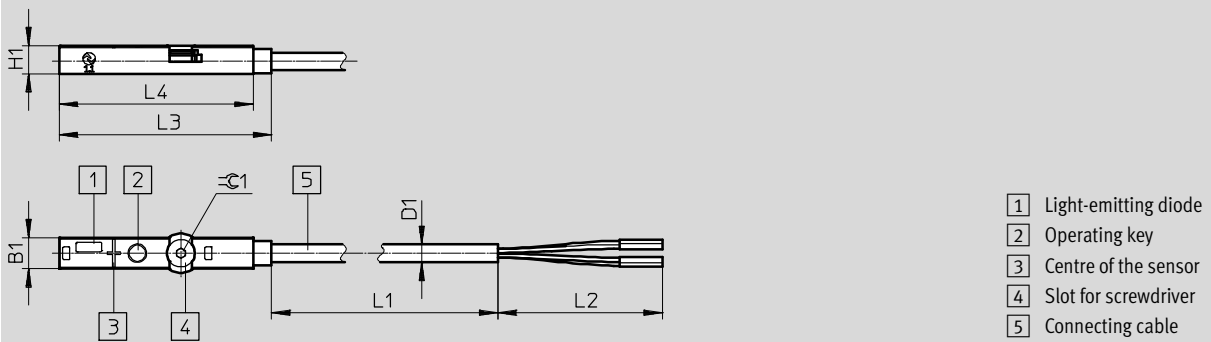
Download CAD data → www.festo.com



Type code	B1	D1 ∅	D2 ∅	D3	H1	L1	L2	L3	L4	±0.1
SDAS-MHS-...-M8	5	2.9	9.6	M8	4.6	300	41.1	34.8	31.8	1.5

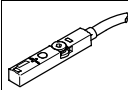
Dimensions – Cable

Download CAD data → www.festo.com



Type code	B1	D1 ∅	H1	L1	L2	L3	L4	±0.1
SDAS-MHS-...-LE	5	2.9	4.6	2500	50	34.8	31.8	1.5





Ordering data


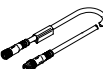
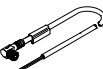
	Electrical connection	Cable length [m]	Part no.	Type code
	Cable with plug, M8x1, A-coded to EN 61076-2-104	0.3	8063974	SDAS-MHS-M40-1L-PNLK-PN-E-0.3-M8
	Cable, open end	2.5	8063975	SDAS-MHS-M40-1L-PNLK-PN-E-2.5-LE

Position transmitters, proximity sensors SDAS-MHS for T-slot



Accessories

Ordering data – Mounting attachments			
	For piston Ø	Part no.	Type code
Mounting kit SMBR-8-8/100-S6, heat-resistant			
	8 ... 100	538937	SMBR-8-8/100-S6
Mounting kit SMBR			
	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 DSBG 32 ... 100	537806	SMBZ-8-32/100
Sensor bracket DASP-M4-...			
	For DSBG-125	1451483	DASP-M4-125-A

Ordering data – Connecting cable NEBU-M8				Technical data → Internet: nebu	
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Type code
	Straight socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	541342	NEBU-M8G4-K-2.5-LE4
			5	541343	NEBU-M8G4-K-5-LE4
	Straight socket, M8x1, 4-pin	Straight socket, M8x1, 4-pin	2.5	554035	NEBU-M8G4-K-2.5-M8G4
	Angled socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	541344	NEBU-M8W4-K-2.5-LE4
			5	541345	NEBU-M8W4-K-5-LE4