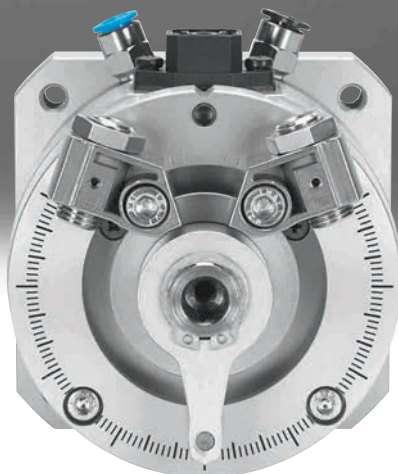











## Swivel modules DSMI-B, with integrated angular displacement encoder

**FESTO**



## Product range overview

Function	Type	Description
Drives	<b>Rodless</b>	
	DDLl	<ul style="list-style-type: none"> <li>• Without guide</li> <li>• With displacement encoder for contactless measurement</li> <li>• Based on linear drive DGC-K</li> <li>• Supply ports on end face</li> <li>• System product for handling and assembly technology</li> </ul>
		
	DGCl	<ul style="list-style-type: none"> <li>• With guide</li> <li>• With displacement encoder for contactless measurement</li> <li>• Based on linear drive DGC</li> <li>• Supply ports optionally on end face or front</li> <li>• System product for handling and assembly technology</li> </ul>
		
	<b>With piston rod</b>	
	DNCI	<ul style="list-style-type: none"> <li>• With displacement encoder for contactless measurement</li> <li>• Various piston rod variants</li> <li>• Standards-based cylinder to ISO 15552</li> </ul>
		
	DDPC	<ul style="list-style-type: none"> <li>• With displacement encoder for contactless measurement</li> <li>• Various piston rod variants</li> <li>• Standards-based cylinder to ISO 15552</li> </ul>
		
	DNC/DSBC	<ul style="list-style-type: none"> <li>• With attached potentiometer MLO-LWG</li> <li>• Various piston rod variants</li> <li>• Standards-based cylinder to ISO 15552</li> </ul>
		
Swivel module	<b>Swivel module</b>	
		<ul style="list-style-type: none"> <li>• Based on swivel module DSM</li> <li>• Integrated rotary potentiometer</li> <li>• Compact design</li> <li>• Wide range of mounting options</li> </ul>

## Product range overview

Piston diameter	Stroke/swivel angle [mm/°]	Suitable			
		for positioning with	for end-position controller		for use as a measuring cylinder
		CPX-CMAX	CPX-CMPX	SPC11	
Rodless					
25, 32, 40, 63	100, 160, 225, 300, 360, 450, 500, 600, 750, 850, 1000, 1250, 1500, 1750, 2000	■	■	■	■
18, 25, 32, 40, 63	100, 160, 225, 300, 360, 450, 500, 600, 750, 850, 1000, 1250, 1500, 1750, 2000	■	■	■	■
With piston rod					
32, 40, 50, 63	10 ... 2000	–	–	–	■
	100 ... 750	■	■	■	–
80, 100	10 ... 2000	–	–	–	■
	100 ... 750	■	■	■	–
32, 40, 50, 63, 80	100, 150, 225, 300, 360, 450, 600, 750	■	■	■	■
Swivel module					
25, 40, 63	270	■	■	■	■

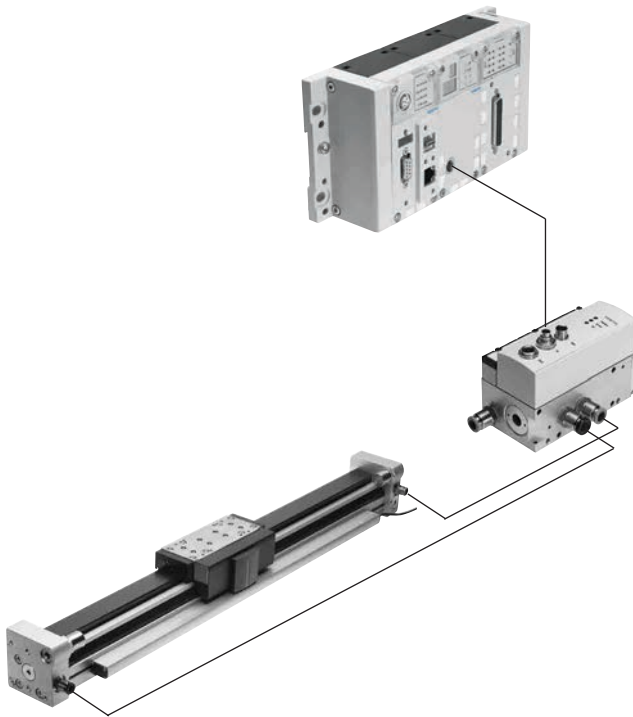
### Key features

#### Servo-pneumatic drive technology

Positioning and Soft Stop applications as an integral component of the valve terminal CPX – the modular peripheral system for decentralised automation tasks. The modular design means that valves, digital inputs and outputs, positioning modules and end-position controllers, as appropriate to the application, can be combined in almost any way on the CPX terminal.

#### Advantages:

- Pneumatics and electrics – control and positioning on one platform
- Innovative positioning technology – piston rod drives, rodless drives, rotary drives
- Actuation via fieldbus
- Remote maintenance, remote diagnostics, web server, SMS and e-mail alerts are all possible via TCP/IP
- Modules can be quickly exchanged and expanded without altering the wiring



#### Axis controller CPX-CMAX



#### Free choice:

Position and force control, directly actuated or selected from one of 128 configurable position sets. If you are looking for something more: The configurable record sequencing function enables simple functional sequences to be realised with the axis controller CPX-CMAX. Everything is recognisable: the auto-identification function identifies each participant with its device data on the controller CPX-CMAX.

#### Also included:

Actuation of a brake or clamping unit via the proportional directional control valve VPWP is also part of the scope of performance of the controller CPX-CMAX. Up to 8 modules (max. 8 axes) can be operated in parallel and independently of each other. Commissioning via FCT (Festo configuration software) or via fieldbus: no programming, only configuration.

#### Advantages:

- Greater flexibility
- OEM friendly – commissioning also via fieldbus
- Easy installation and fast commissioning
- Cost-effective
- You program the system in your PLC environment

## Key features

## End-position controller CPX-CMPX

Data sheets → Internet: [cpx-cmpx](#)

Fast travel between the mechanical end stops of the cylinder, stopping gently and without impact in the end position.

Fast commissioning via control panel, fieldbus or handheld unit.

Improved standstill control.

Actuation of a brake or clamping unit via the proportional directional control valve VPWP is an integral part of the controller CMPX.

Depending on the fieldbus chosen, up to 9 end-position controllers can be actuated on the CPX terminal.

All system data can be read and written via the fieldbus, including, for example, the mid-positions.

## Advantages:

- Greater flexibility
- OEM friendly – commissioning also via fieldbus
- Easy installation and fast commissioning
- Cost-effective
  - Up to 30% faster cycle rates
  - Significantly reduced system vibration
- Improved work ergonomics thanks to significantly reduced noise level
- The extended diagnostics help to reduce the service time of the machine

## Proportional directional control valve VPWP

Data sheets → Internet: [vpwp](#)

The 5/3-way proportional directional control valve for applications with Soft Stop and pneumatic positioning.

Fully digitalised – with integrated pressure sensors, with new diagnostic functions.

In sizes 4, 6, 8 and 10.

Flow rates of 350, 700, 1400 and 2000 l/min.

With switching output for controlling a brake.

Colour-coded supply ports.

Pre-assembled cables guarantee faultless and fast connection with the controllers CPX-CMPX and CPX-CMAX.

## Advantages:

- Easy installation and fast commissioning
- Reduction of system downtimes thanks to the new diagnostic options
- With switching output for controlling a brake/clamping unit

## Measuring module CPX-CMIX

Data sheets → Internet: [cpx-cmix](#)

Fully digital data acquisition and transmission means that pneumatic cylinders can be used as sensors. With very high repetition accuracy and incorporating both analogue and digital measuring sensors.

Suitable for the linear drive DGCI with displacement encoder for measuring absolute values, for the piston rod drive DNCI/DDPC with incremental displacement encoder or alternatively for a potentiometer of the type MLO.

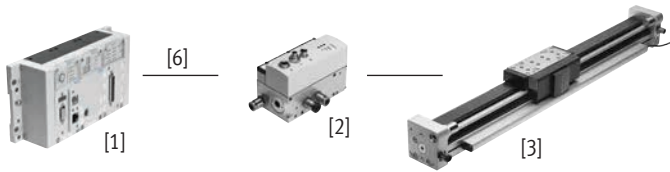
## Advantages:

- All process steps can be documented, which improves quality
- An adjustable contact force (via pressure regulator) increases the precision of the "displacement sensor"
- With displacement encoders for measuring absolute values, the actual position is immediately available after the system is switched on

## Drive options

### System with linear drive DDLI, DGCI

Data sheets → Internet: [ddli](#) or [dgci](#)



- [1] Controller module CPX-CMPX or CPX-CMAX
- [2] Proportional directional control valve VPWP
- [3] Linear drive DDLI, DGCI with displacement encoder
- [6] Connecting cable KVI-CP-3-...

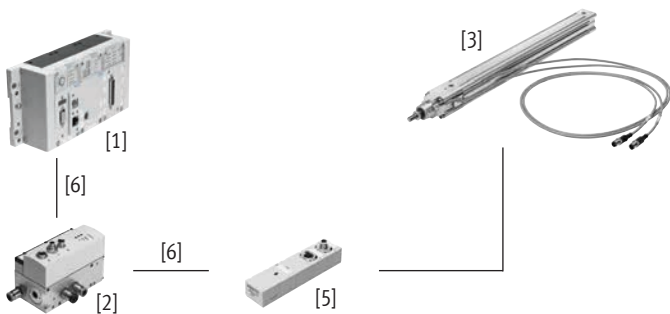
- Pneumatic rodless linear drive with displacement encoder, with or without recirculating ball bearing guide
- Displacement encoder with absolute and contactless measurement
- Diameter:
  - With DGCI: 18 ... 63 mm
  - With DDLI: 25 ... 63 mm
- Stroke: 100 ... 2000 mm in fixed lengths
- Range of applications: Soft Stop and pneumatic positioning
- Loads from 1 ... 180 kg
- No sensor interface required

#### Advantages:

- Complete drive unit
- DDLI for easy connection to the customer's guide system
- Excellent running characteristics
- For fast and accurate positioning up to  $\pm 0.2$  mm (only with axis controller CPX-CMAX)

### System with standards-based cylinder DNCI, DDPC

Data sheets → Internet: [dncl](#)



- [1] Controller module CPX-CMPX or CPX-CMAX
- [2] Proportional directional control valve VPWP
- [3] Standards-based cylinder DNCI, DDPC with displacement encoder
- [5] Sensor interface CASM-S-D3-R7
- [6] Connecting cable KVI-CP-3-...

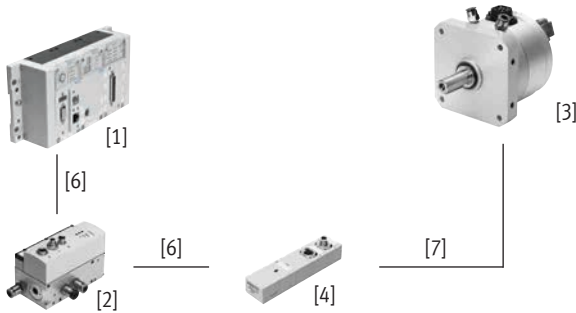
- Standards-based cylinder with integrated displacement encoder, conforms to DIN ISO 6432, VDMA 24 562, NF E 49 003.1 and Uni 10 290
- Displacement encoder with contactless and incremental measuring
- Diameter: 32 ... 100 mm
- Stroke: 100 ... 750 mm
- Range of applications: Soft Stop and pneumatic positioning
- Loads from 3 ... 450 kg and the corresponding sensor interface CASM-S-D3-R7
- Pre-assembled cables guarantee faultless and fast electrical connection

#### Advantages:

- Compact drive unit
- Can be used universally
- Also with guide unit
- For fast and accurate positioning up to  $\pm 0.5$  mm (only with axis controller CPX-CMAX)

## Drive options

## System with swivel module DSMI

Data sheets → Internet: [dsmi](#)

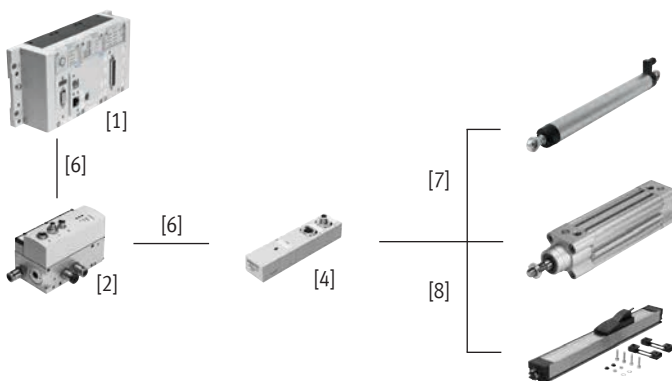
- [1] Controller module CPX-CMPX or CPX-CMAX
- [2] Proportional directional control valve VPWP
- [3] Swivel module DSMI with displacement encoder
- [4] Sensor interface CASM-S-D2-R3
- [6] Connecting cable KVI-CP-3-...
- [7] Connecting cable NEBC-P1W4-K-0.3-N-M12G5

- Swivel module DSMI with integrated displacement encoder
- Identical design to pneumatic swivel module DSM
- Absolute displacement encoder based on a potentiometer
- Swivel range from 0 ... 270°
- Size: 25, 40, 63
- Max. torque: 5 ... 40 Nm
- Range of applications: Soft Stop and pneumatic positioning
- Mass moments of inertia of 15 ... 6000 kgcm<sup>2</sup> and the corresponding sensor interface CASM-S-D2-R3
- Pre-assembled cables guarantee faultless and fast connection to the proportional directional control valve VPWP

## Advantages:

- Complete drive unit, compact, can be used immediately
- High angular acceleration
- With adjustable fixed stops
- For fast and accurate positioning down to ±0.2° (only with axis controller CPX-CMAX)

## System with potentiometer

Data sheets → Internet: [casm](#)

- [1] Controller module CPX-CMPX or CPX-CMAX
- [2] Proportional directional control valve VPWP
- [4] Sensor interface CASM-S-D2-R3
- [6] Connecting cable KVI-CP-3-...
- [7] Connecting cable NEBC-P1W4-K-0.3-N-M12G5
- [8] Connecting cable NEBC-A1W3-K-0.4-N-M12G5

- Attachable potentiometers with absolute measurement, with high degree of protection
- With connecting rod or moment compensator
- Measuring range:  
Connecting rod: 100 ... 750 mm  
Moment compensator: 225 ... 2000 mm
- Pre-assembled cables guarantee faultless and fast connection with the sensor interface CASM
- Range of applications: Soft Stop and pneumatic positioning with cylinder diameters of 25 ... 80 mm
- Loads from 1 ... 300 kg

## Advantages:

- Easy installation and fast commissioning
- Cost-effective
- Can also be used in harsh ambient conditions
- Variety of drives: CPX-CMPX and CPX-CMAX also support cylinders with external displacement encoder

## Drive options

System components for Soft Stop systems with end-position controller CPX-CMPX						
	Linear drive	Standards-based cylinder	Swivel module	Displacement encoder		→ Page/ Internet
	DDLI/DGCI	DNCI, DDPC	DSMI	MLO-LWG/-TLF	MME-MTS	
End-position controller CPX-CMPX	■	■	■	■	■	cmpx
Proportional directional control valve VPWP	■	■	■	■	■	vpwp
Sensor interface CASM-S-D2-R3	–	–	■	■	–	casm
Sensor interface CASM-S-D3-R7	–	■	–	–	–	casm
Connecting cable KVI-CP-3-...	■	■	■	■	■	kvi
Connecting cable NEBC-P1W4-...	–	–	■	■ / –	–	nebc
Connecting cable NEBC-A1W3-...	–	–	–	– / ■	–	nebc
Connecting cable NEBP-M16W6-...	–	–	–	–	■	vpwp

System components for pneumatic positioning systems with axis controller CPX-CMAX						
	Linear drive	Standards-based cylinder	Swivel module	Displacement encoder		→ Page/ Internet
	DDLI/DGCI	DNCI, DDPC	DSMI	MLO-LWG/-TLF	MME-MTS	
Axis controller CPX-CMAX	■	■	■	■	■	cmax
Proportional directional control valve VPWP	■	■	■	■	■	vpwp
Sensor interface CASM-S-D2-R3	–	–	■	■	–	casm
Sensor interface CASM-S-D3-R7	–	■	–	–	–	casm
Connecting cable KVI-CP-3-...	■	■	■	■	■	kvi
Connecting cable NEBC-P1W4-...	–	–	■	■ / –	–	nebc
Connecting cable NEBC-A1W3-...	–	–	–	– / ■	–	nebc
Connecting cable NEBP-M16W6-...	–	–	–	–	■	vpwp

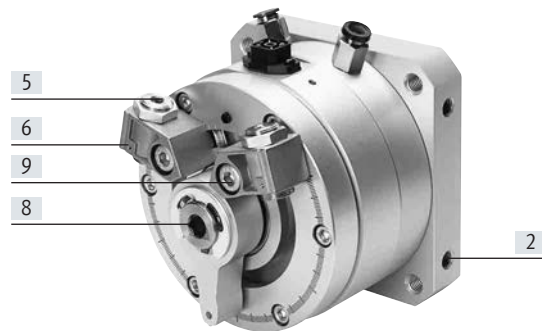
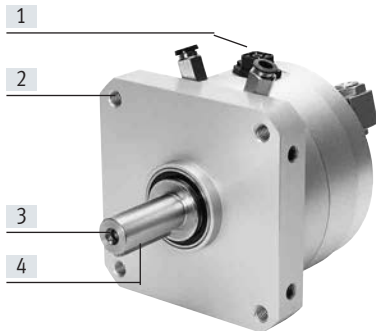
System components for measuring cylinders with measuring module CPX-CMIX						
	Linear drive	Standards-based cylinder	Swivel module	Displacement encoder		→ Page/ Internet
	DDLI/DGCI	DNCI, DDPC	DSMI	MLO-LWG/-TLF	MME-MTS	
Measuring module CPX-CMIX-M1-1	■	■	■	■	■	cmix
Sensor interface CASM-S-D2-R3	–	–	■	■	–	casm
Sensor interface CASM-S-D3-R7	–	■	–	–	–	casm
Connecting cable KVI-CP-3-...	(■) <sup>1)</sup>	■	■	■	(■)	kvi
Connecting cable NEBC-P1W4-...	–	–	■	■ / –	–	nebc
Connecting cable NEBC-A1W3-...	–	–	–	– / ■	–	nebc
Connecting cable NEBP-M16W6-...	–	–	–	–	■	vpwp

1) As an extension



## Key features

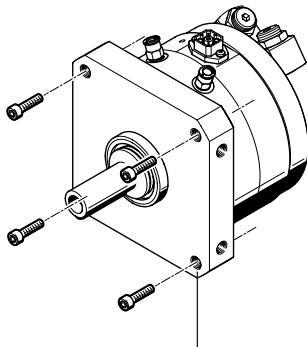
### At a glance



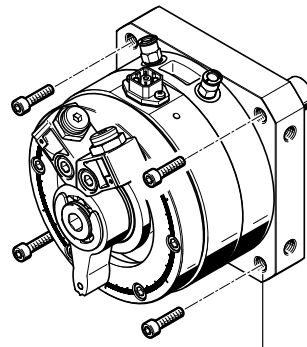
- [1] Connector plug for displacement encoder
- [2] Wide range of integrated mounting options
- [3] Option for mounting on the drive shaft by the customer
- [4] Featherkey
- [5] Fixed stop with precision adjustment of the swivel angle
- [6] Sensor bracket for mounting proximity switch, for contactless position sensing

- [7] Fixed stop can be set at any point within the swivel angle
- [8] Manual operation via internal hexagon socket in the drive shaft. A female thread is already integrated for attachment of an additional drive shaft by the customer.

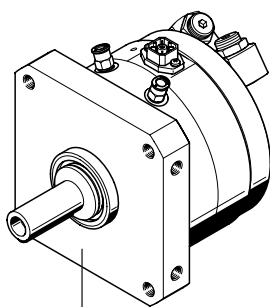
### Mounting options



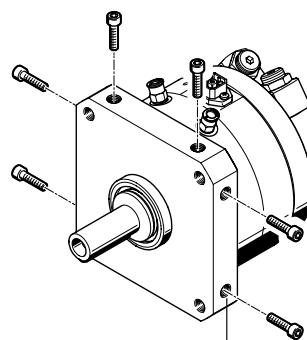
Threaded through-hole



Threaded through-hole



Centring collar



Basic thread

Type codes

001	Series	
DSMI	Semi-rotary drive with displacement encoder, double-acting	

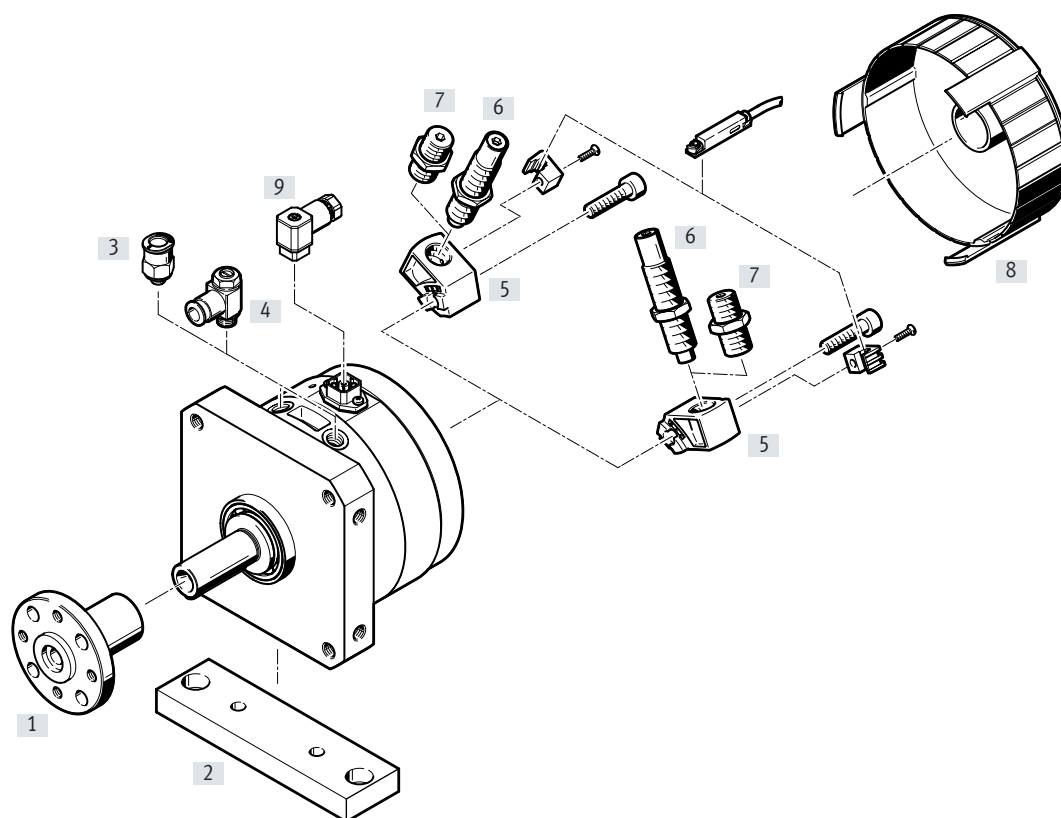
002	Size	
25	25	
40	40	
63	63	

003	Nominal swivel angle [°]	
270	270	

004	Position sensing	
A	For proximity sensor	

005	Variant	
B	B-series	

## Peripherals overview

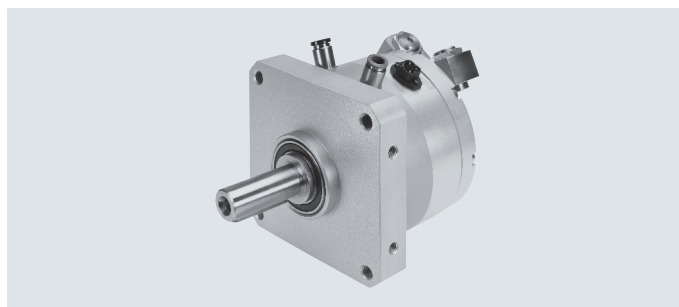


Accessories		For size	Description	→ Page/Internet
[1]	Push-on flange FWSR	25, 40	For mounting attachments	17
[2]	Mounting plate HSM	25, 40	Adapter plate for mounting the drive	17
[3]	Push-in fitting QS	25, 40, 63	For connecting tubing with standard O.D. (push-in fittings are included in the scope of delivery of the drive)	qs
[4]	One-way flow control valve GRLA	25, 40, 63	For regulating speed (is recommended when using the DSMI as a measuring cylinder)	19
[5]	Cushioning mount DSM-B	25, 40, 63	<ul style="list-style-type: none"> <li>• For elastic cushioning elements</li> <li>• For shock absorbers</li> <li>• As a mechanical stop in Soft Stop applications</li> </ul>	18
[6]	Shock absorber DYSC	25, 40, 63	Self-adjusting shock absorbers with fixed stop (is recommended when using the DSMI as a measuring cylinder)	18
[7]	Cushioning kit DSM-....-P-B	25, 40, 63	Elastic cushioning elements with fixed stop	18
[8]	Cover cap AKM	25, 40	Reduces the risk of injury in the swivel range of the stop lever	18
[9]	Plug socket SD	25, 40, 63	For connecting the displacement encoder	19

## Swivel modules DSMI-B, with integrated angular displacement encoder

### Data sheet

-  Size  
25 ... 63
-  Torque  
5 ... 40 Nm



General technical data				
Size		25	40	63
Design		Vane		
		Drive shaft, fitted with ball bearings		
Mode of operation		Double-acting		
Type of mounting		Via female thread		
Position sensing		Via integrated angular displacement encoder		
		Via proximity sensor <sup>1)</sup>		
Measuring principle (angular displacement encoder)		Analogue with conductive plastic potentiometer		
Min. travel speed	[°/s]	50		
Max. travel speed	[°/s]	2,000		
Max. swivel angle <sup>2)</sup>	[°]	272		
Setting range of swivel angle	[°]	0 ... 270		
Pneumatic connection		M5	G1/8	G1/4
Push-in fitting used		QSM-M5-6	QS-G1/8-8-I	QS-G1/4-8-I
Compressed air tubing O.D.	[mm]	6	8	8

1) Not included in the scope of delivery, can be ordered as an option

2) Note stroke reduction in combination with axis controller CPX-CMAX

Operating and environmental conditions		
Operating pressure	[bar]	2 ... 10
Operating pressure <sup>1)</sup>	[bar]	4 ... 8
Operating medium <sup>2)</sup>	Compressed air to ISO 8573-1:2010 [6:4:4]	
Note on the operating/pilot medium	Operation with lubricated medium not possible Pressure dew point 10°C below ambient/medium temperature	
Ambient temperature <sup>3)</sup>	[°C]	-10 ... +60
Vibration resistance to DIN/IEC 68, Part 2-6	Severity level 2	
Continuous shock resistance to DIN/IEC 68, Part 2-82	Severity level 2	
CE marking (see declaration of conformity) <sup>4)</sup>	To EU EMC Directive	
Corrosion resistance class CRC <sup>5)</sup>	1	

1) Only applies to applications with end-position controller CPX-CMPX, SPC11 and axis controller CPX-CMAX

2) The proportional directional control valve VPWP, MPYE used requires these characteristic values

3) Note operating range of proximity switches

4) For information about the area of use, see the EC declaration of conformity at: [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

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.

5) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Weight				
Size	25	40	63	
DSMI	[g]	1080	3950	6900

## Data sheet

Torque [Nm]			
Size	25	40	63
Torque <sup>1)</sup>	5	20	40

1) Theoretical values, calculated at 6 bar

Permissible forces on the drive shaft			
Size	25	40	63
Max. radial force [N]	120	350	500
Max. axial force [N]	50	120	500
Max. swivel frequency <sup>1)</sup> [Hz]	2		1

1) At max. permissible mass moment of inertia, operating pressure of 6 bar and a swivel angle of 270°

**Note**

Further technical data

→ Internet: dsm

Positioning characteristics with axis controller CPX-CMAX				
Size		25	40	63
Mounting position		Any		
Resolution	[°]	0.1		
Repetition accuracy	[°]	≤ ±0.3		
Min. mass moment of inertia, horizontal <sup>1)</sup>	[kgm <sup>2</sup> ]	15 x 10 <sup>-4</sup>	60 x 10 <sup>-4</sup>	300 x 10 <sup>-4</sup>
Max. mass moment of inertia, horizontal <sup>1)</sup>	[kgm <sup>2</sup> ]	300 x 10 <sup>-4</sup>	1200 x 10 <sup>-4</sup>	6000 x 10 <sup>-4</sup>
Min. mass moment of inertia, vertical <sup>2)</sup>	[kgm <sup>2</sup> ]	15 x 10 <sup>-4</sup>	60 x 10 <sup>-4</sup>	300 x 10 <sup>-4</sup>
Max. mass moment of inertia, vertical <sup>2)</sup>	[kgm <sup>2</sup> ]	300 x 10 <sup>-4</sup>	1200 x 10 <sup>-4</sup>	6000 x 10 <sup>-4</sup>
Min. travel speed	[°/s]	50		
Max. travel speed	[°/s]	2000		
Typ. positioning time, long stroke <sup>3)</sup>	[s]	0.35/0.60	0.30/0.55	0.64/1
Typ. positioning time, short stroke <sup>4)</sup>	[s]	0.15/0.25	0.25/0.25	0.30/0.35
Min. positioning stroke	[°]	5		
Max. swivel stroke <sup>5)</sup>	[°]	260		
Recommended proportional directional control valve				
For CPX-CMAX		VPWP-4-L-5-Q6-10-E-F	VPWP-4-L-5-Q8-10-E-F	

- 1) Must not change during the movement, but may be outside the centre of gravity  
 2) Must not change during the movement, must act at the centre of gravity  
 3) At 6 bar, vertical mounting position, 260° positioning angle at min./max. mass moment of inertia  
 4) At 6 bar, vertical mounting position, 15° positioning angle at min./max. mass moment of inertia  
 5) A stroke reduction of 5° on both sides must be observed

## Data sheet

Positioning characteristics with Soft Stop end-position controller CPX-CMPX, SPC11				
Size	25	40	63	
Mounting position	Horizontal			
End-position repetition accuracy <sup>1)</sup>	[°]	< ±0.2		
Intermediate-position repetition accuracy	[°]	±2		
Cushioning <sup>2)</sup>	Electronically controlled			
Min. mass moment of inertia, horizontal <sup>3)</sup>	[kgm <sup>2</sup> ]	15 x 10 <sup>-4</sup>	60 x 10 <sup>-4</sup>	300 x 10 <sup>-4</sup>
Max. mass moment of inertia, horizontal <sup>3)</sup>	[kgm <sup>2</sup> ]	300 x 10 <sup>-4</sup>	1200 x 10 <sup>-4</sup>	6000 x 10 <sup>-4</sup>
Min. swivel stroke	[°]	15		
Recommended proportional directional control valve				
For CPX-CMPX	VPWP-4-L-5-Q6-10-E-F		VPWP-4-L-5-Q8-10-E-F	
For SPC11	MPYE-5-M5-010-B		MPYE-5-1/8-LF-010-B	

1) When using the DSMI stops

2) The cushioning pad on the stop lever must be removed for applications with Soft Stop. The stop lever must not swivel to the end stop at too great a speed as this could damage the swivel module

3) Must not change during the movement, but may be outside the centre of gravity

## Electrical data – Displacement encoder

Output signal	Analogue	
Linearity error <sup>1)</sup>	[%]	< ±0.25
Power supply <sup>2)</sup>	[V DC]	10
Max. current consumption	[mA]	4
Wiper current	Recommended	[µA] < 1
	Maximum <sup>3)</sup>	[mA] 10
Connection resistance	[kΩ]	5
Connection resistance tolerance	[%]	±20
Degree of protection	IP65	
CE marking (see declaration of conformity)	To EU EMC Directive <sup>4)</sup>	
Electrical connection	4-pin plug, □ 16, DIN 45 322	

1) In relation to max. swivel angle

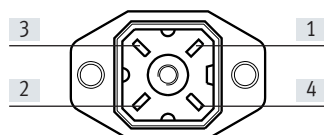
2) Stabilised power supply is recommended, max. 42 V DC permissible

3) Only permissible in the short term in the event of a fault

4) For information about the area of use, see the EC declaration of conformity at: [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

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.

## Pin allocation for plug

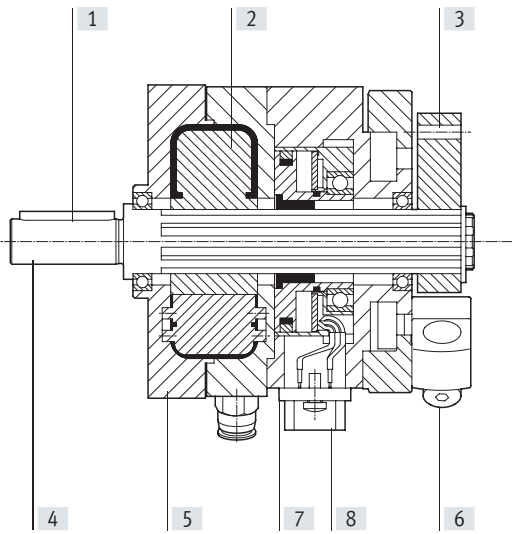


Pin	Function
1	24 V Power supply
2	Sig Signal
3	0 V GND
4	PE Shield

## Data sheet

**Materials**

## Sectional view

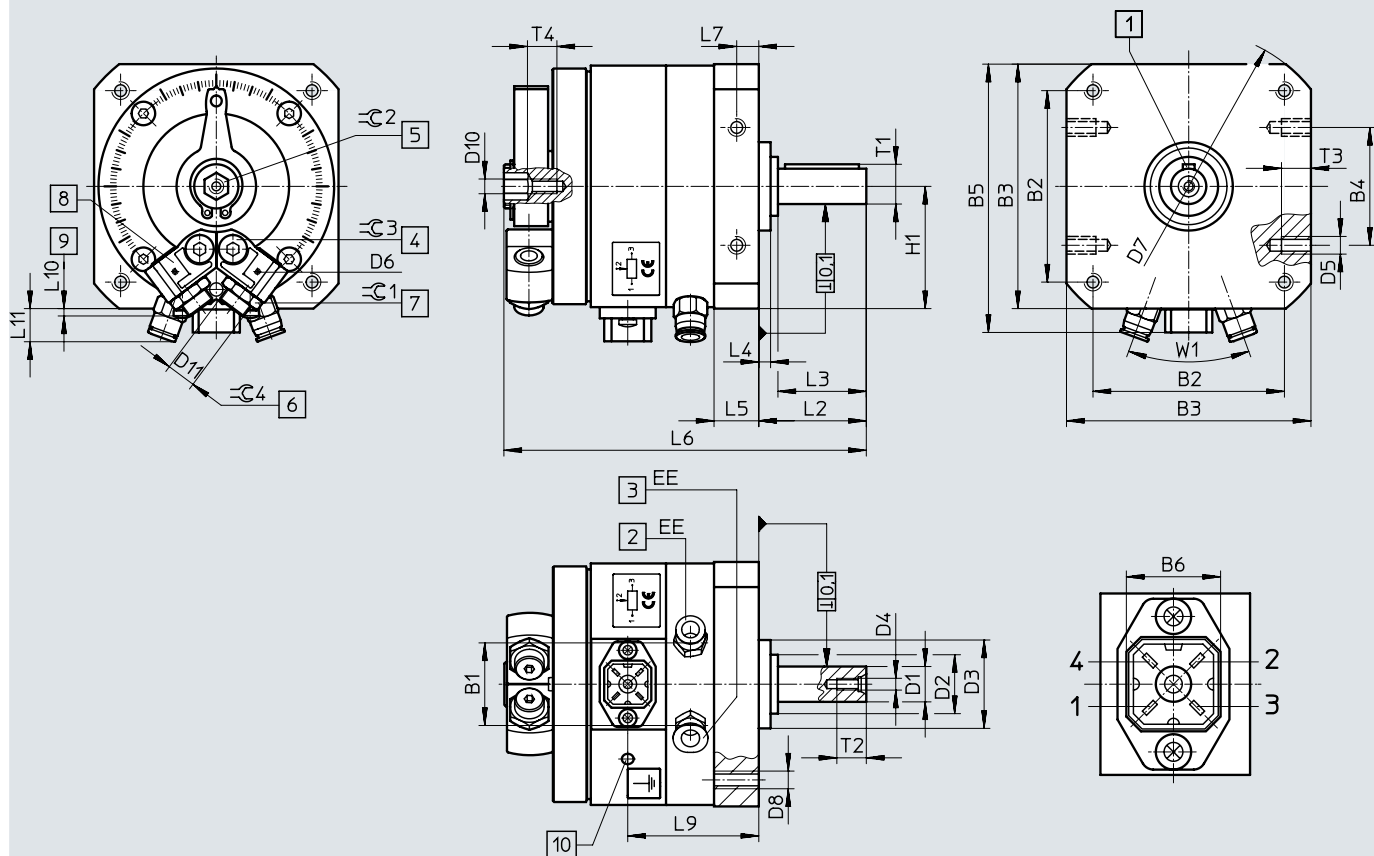


## Cylinder/displacement encoder

Cylinder		
[1]	Featherkey	Steel
[2]	Vane	Glass fibre-reinforced plastic
[3]	Stop lever	Anodised wrought aluminium alloy
[4]	Drive shaft	Nickel-plated steel
[5]	Housing	Anodised wrought aluminium alloy
[6]	Fixed stop/screw	Steel
Note on materials		Free of copper and PTFE
		RoHS-compliant
Displacement encoder		
[7]	Coupling	Polyurethane
[8]	Housing	Anodised aluminium

## Data sheet

## Dimensions

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

- [1] Featherkey position at 0°  
 [2] Blue release ring for supply port  
 [3] Black release ring for supply port  
 [4] Locking screw for clamping the stop  
 [5] Manual override (internal hexagon)  
 [6] End-position adjustment  
 [7] Lock nut for end-position adjustment  
 [8] Infinitely adjustable stops  
 [9] Projection for end-position adjustment  
 [10] Earth terminal for self-tapping M4x8 screw

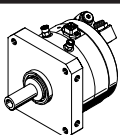
Size	B1	B2	B3	B4	B5	B6	D1 g7 ø	D2 ø	D3 f8 ø	D4	D5	D6	D7 ø
[mm]	±0.5												
25	28	65±0.3	83±0.3	40±0.2	91	16	12	20-0.3	30	M4	M6	M2	106±0.3
40	43.8	105±0.3	130±0.5	80±0.3	139	16	20	36-0.4	52	M6	M10	M2	168±0.5
63	55	125±0.5	152±0.5	80±0.3	157	16	25	40±0.3	70	M10	M10	M3	200±0.5

Size	D8	D10	D11	EE	H1	L2	L3	L4	L5	L6	L7	L9	L10
[mm]					±0.2	+0.6/-0.7	±0.2	±0.4	+0.2/-0.3		±0.2	±1	
25	M6	M5	M10x1	M5	41.5	36.5	30	4	15.2	123±0.5	7.5	44.5	2.9
40	M10	M6	M16x1	G1/8	65	62	50	8	23.7	184±0.6	12	64.5	3.4
63	M12	M6	M22x1.5	G1/4	76	75.5	60	10.5	28.5	235±0.6	14	80.5	6

Size	L11	T1	T2	T3	T4	W1	≈C 1	≈C 2	≈C 3	≈C 4	Featherkey to DIN 6885
[mm]	±2	max.	+2	±0.2							
25	12	13.5	10	10	10	40°	13	8	4	3	A4x4x25
40	16	22.5	16	15	10	40°	19	10	8	5	A6x6x45
63	20	28	22	16	20	40°	27	10	8	5	A8x7x50



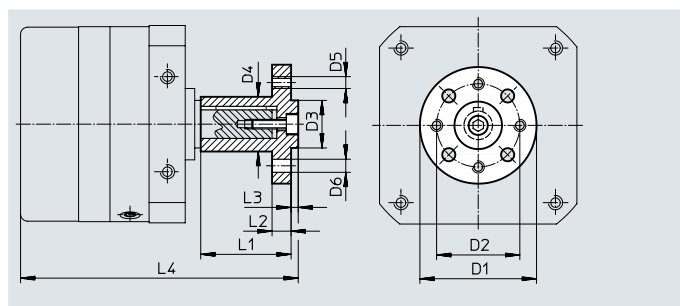
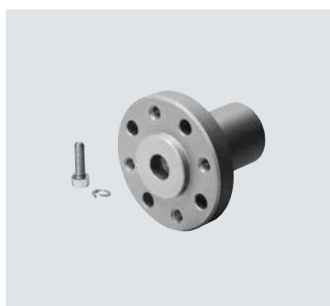
## Accessories

Ordering data	Size	Swivel angle [°]	Part no.	Type
	25	270	561690	DSMI-25-270-A-B
	40		561691	DSMI-40-270-A-B
	63		1202485	DSMI-63-270-A-B

## Accessories

## Push-on flange FWSR

Material:  
Anodised aluminium  
Free of copper and PTFE

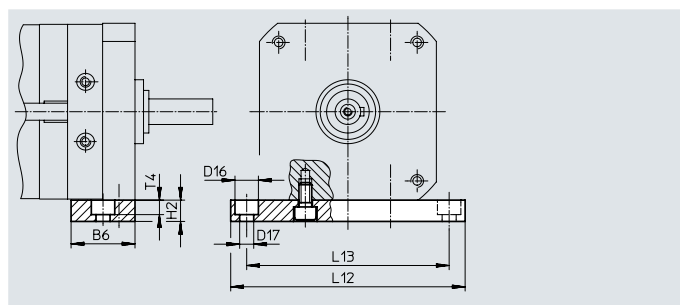
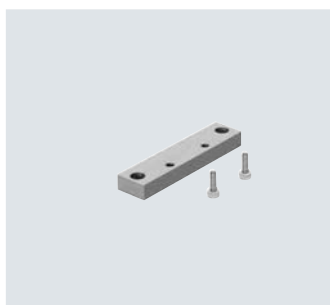


## Dimensions and ordering data

For size	B5	D11	D12 Ø H13	D13 Ø g7	D14 Ø	D15 Ø	L9	L10	L11	L12	Weight [g]	Part no.	Type
[mm]													
25	35	M5	5.5	20	50	23	38	8	3	116.5	68	13240	FWSR-25
40	54	M8	9	36	70	38	60	11	5	186.5	240	14656	FWSR-40

## Mounting plate HSM

Material:  
Anodised aluminium  
Free of copper and PTFE



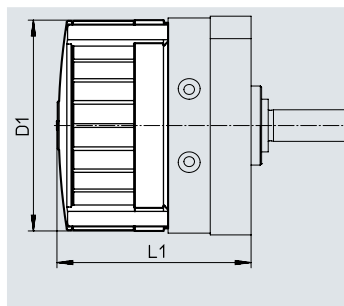
## Dimensions and ordering data

For size	B6	D16 Ø	D17 Ø	H2	L12	L13	T4	Weight [g]	Part no.	Type
[mm]										
25	30	11	6.6	10	110	95	6.8	94	165573	HSM-25
40	45	18	11	20	180	155	11	459	165575	HSM-40

## Accessories

## Cover cap AKM




Material:  
Polyamide



## Dimensions and ordering data

For size [mm]	D1 ø	L1	Part no.	Type
25	83	98.5±1.2	549196	AKM-25
40	130	135.5±1.5	549198	AKM-40

## Ordering data

Ordering data		For size	Description	Part no.	Type	PU <sup>1)</sup>
Cushioning mount						
	25	• For elastic cushioning elements • For shock absorbers	547902	DSM-25-B	2	
	40		547904	DSM-40-B		
	63		552085	DSM-63-B		
Cushioning kit						
	25	For cushioning mount DSMI-...-B	550658	DSM-16/25-P-B	2	
	40		550660	DSM-40-P-B		
	63		552086	DSM-63-P-B		
Shock absorber						
	25	For cushioning mount DSMI-...-B	548012	DYSC-7-5-Y1F	1	
	40		548014	DYSC-12-12-Y1F		
	63		553593	DYSC-16-18-Y1F		

1) Packaging unit

## Accessories

Ordering data – One-way flow control valves

For size

Connection Thread

For tubing O.D.

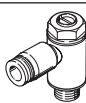
Material

Part no.

Type

Data sheets → Internet: grla

For exhaust air



25

M5

3

4

6

40

G1/8

3

4

6

8

63

G1/4

10

Metal design

193137

193138

193139

193142

193143

193144

193145

193148

GRLA-M5-QS-3-D

GRLA-M5-QS-4-D

GRLA-M5-QS-6-D

GRLA-1/8-QS-3-D

GRLA-1/8-QS-4-D

GRLA-1/8-QS-6-D

GRLA-1/8-QS-8-D

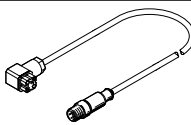
GRLA-1/4-QS-10-D

Ordering data – Connecting cable

Description

Part no.

Type



Between sensor interface CASM and displacement encoder

549293


NEBC-P1W4-K-0.3-N-M12G5

Ordering data – Plug sockets

Description

Part no.

Type



For displacement encoder connection

194332

SD-4-WD-7

# Festo - Your Partner in Automation



**1 Festo Inc.**  
5300 Explorer Drive  
Mississauga, ON L4W 5G4  
Canada

**Festo Customer Interaction Center**  
Tel: 1 877 463 3786  
Fax: 1 877 393 3786  
Email: [customer.service.ca@festo.com](mailto:customer.service.ca@festo.com)



**2 Festo Pneumatic**  
Av. Ceylán 3,  
Col. Tequesquináhuac  
54020 Tlalneptla,  
Estado de México

**Multinational Contact Center**  
01 800 337 8669  
[ventas.mexico@festo.com](mailto:ventas.mexico@festo.com)



**3 Festo Corporation**  
1377 Motor Parkway  
Suite 310  
Islandia, NY 11749

**Festo Customer Interaction Center**  
1 800 993 3786  
1 800 963 3786  
[customer.service.us@festo.com](mailto:customer.service.us@festo.com)



**4 Regional Service Center**  
7777 Columbia Road  
Mason, OH 45040

Connect with us

[www.festo.com/socialmedia](http://www.festo.com/socialmedia)



[www.festo.com](http://www.festo.com)

Subject to change