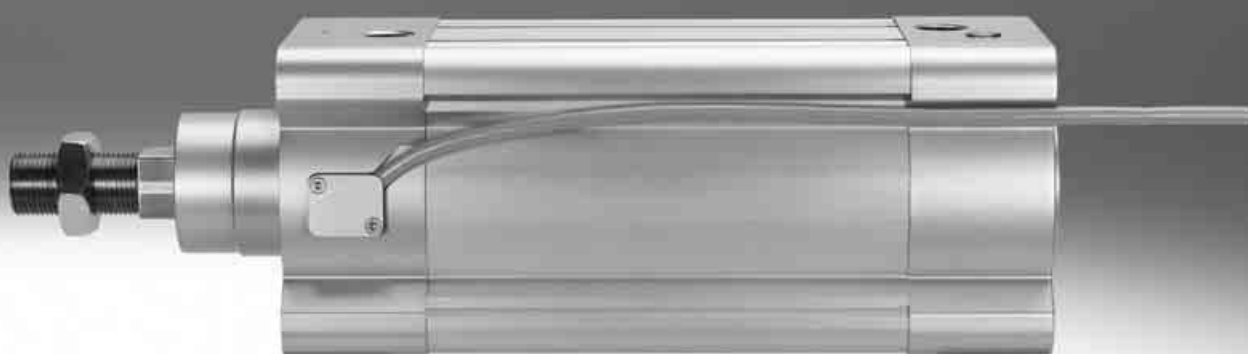


Standard cylinders DDPC, with measured-value transducer DADE

FESTO



Standard cylinders DDPG, with measured-value transducer DADE

Features

FESTO

Components for positioning and measuring using the standard cylinder DDPG



Measuring
with measured-value transducer DADE

Measured-value transducer
DADE-...



PLC control,
e.g. FEC-...



Operator unit
e.g. FED-...



Positioning
with end-position controller SPC11 or controller module CPX-CMAX/-CMPX

Proportional directional
control valve
MPYE-...



Proportional directional
control valve
VPWP-...



End-position controller
SPC11-INC



Sensor interface
CASM-S-D3-R7



Controller module
CPX-CMAX, CPX-CMPX



Standard cylinders DDPC, with measured-value transducer DADE

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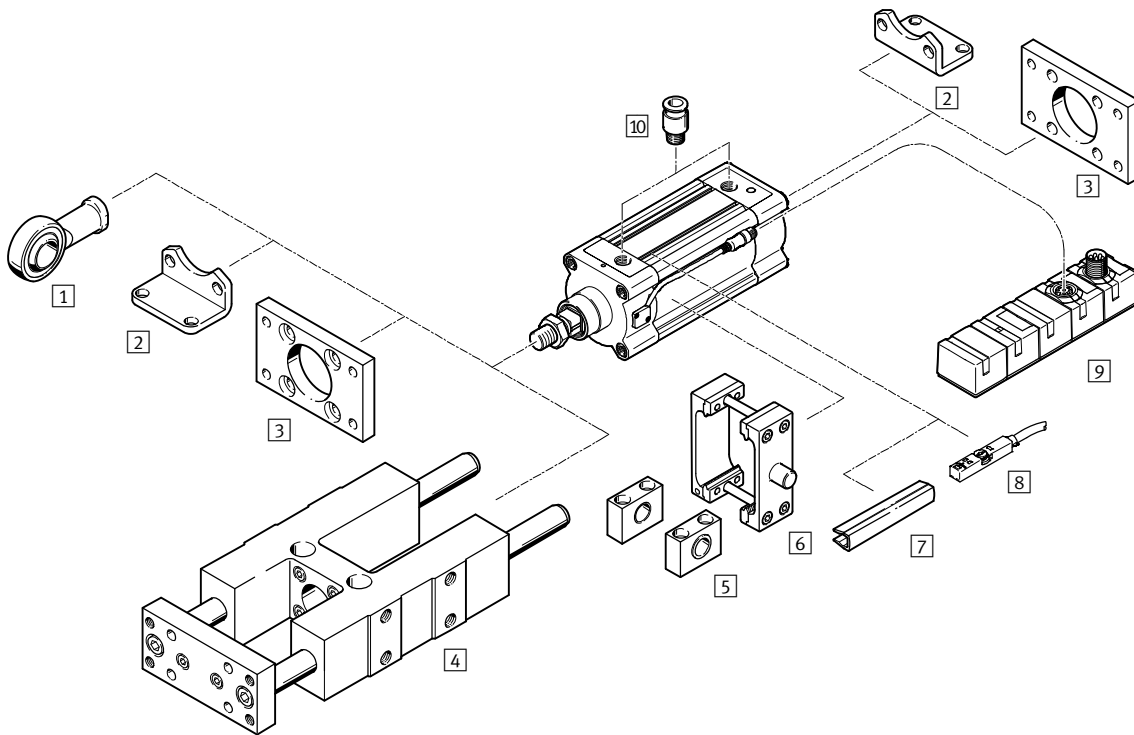
Type codes

		DDPC	-	Q	-		-		-		-		-	P	-	A	-	
Type																		
DDPC	Standard cylinder																	
Protection against rotation																		
Q	With protection against rotation																	
Piston Ø [mm]																		
Stroke [mm]																		
Guide unit																		
-	None																	
D	Attached																	
Clamping unit																		
-	None																	
C	Attached																	
Piston rod type																		
-	At one end																	
T	Through piston rod																	
Cushioning																		
P	Elastic cushioning rings/plates at both ends																	
Position sensing																		
A	Via proximity sensor																	
Piston rod extension																		
-	None																	
...E	1 ... 500 mm																	

Standard cylinders DDPC, with measured-value transducer DADE

Peripherals overview

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Note

If the drive DDPC is used without an end-position controller CPX-CMPX, SPC11 or axis controller CPX-CMAX, SPC200, e.g. as a measuring cylinder, then the standard accessories for the drive DNC can be used.

Standard cylinders DDPC, with measured-value transducer DADE

Peripherals overview

Accessories		
Type	Brief description	→ Page/Internet
1 Rod eye SGS	With spherical bearing	ddpc
2 Foot mounting HNC	For mounting the drive on the bearing and end caps	ddpc
3 Flange mounting FNC	For mounting the drive on the bearing and end caps	ddpc
4 Guide unit ¹⁾ FENG-KF	For protecting against rotation at high torque loads	12
5 Trunnion support LNZG	For securing the trunnion mounting kit DAMT	ddpc
6 Trunnion mounting kit DAMT	For swivelling movements of the drive	ddpc
7 Slot cover ABP-5-S	For protecting against contamination	ddpc
8 Proximity sensor SME/SMT-8	For additional sensing of the piston position, can be ordered optionally, only in conjunction with the order code A in the drive's modular product section	ddpc
9 Measured-value transducer DADE	Converts the sensor signal of the cylinder in to a voltage signal of 0 ... 10 V and/or a current signal of 4 ... 20 mA	14
10 Push-in fitting QS	For connecting outer toleranced compressed air tubing	quick star

1) Guide unit FENG-KF must be attached to the piston rod in a way that eliminates backlash

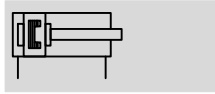
Standard cylinders DDPG, with measured-value transducer DADE

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Technical data

Function

www.festo.com/en/
Spare_parts_service



- N- Diameter
80 and 100 mm
- T- Stroke length
10 ... 2,000 mm



General technical data		
Piston Ø	80	100
Based on standard	ISO 15552	
Design	Piston	
	Piston rod	
	Profile barrel	
Mode of operation	Double-acting	
Guide ¹⁾	Guide rod with yoke, with ball bearing guide	
Protection against rotation	Square piston rod	
Mounting position	Any	
Type of mounting	Via accessories	
Cushioning	Elastic cushioning rings/plates at both ends	
Position sensing	Integrated displacement encoder	
	Via proximity sensor ²⁾	
Measuring principle (displacement encoder)	Encoder, contactless and relative measurement	
Pneumatic port	G $\frac{3}{8}$	G $\frac{1}{2}$
Stroke		
DDPG-... [mm]	10 ... 2,000	
DDPG-...-D [mm]	100 ... 500	
Extended piston rod [mm]	1 ... 500	

- 1) Guide unit FENG-KF can be ordered via the modular product system (feature D) and is supplied attached. The maximum stroke is restricted.
- 2) Not included in the scope of delivery, can be ordered as an option

Operating and environmental conditions		
Operating pressure [bar]	4 ... 12	
Operating pressure ¹⁾ [bar]	4 ... 8	
Operating medium ²⁾	Compressed air to ISO 8573-1:2010 [6:4:4]	
Note on operating/pilot medium	Lubricated operation not possible	
	Pressure dew point 10°C below ambient/medium temperature	
Ambient temperature ³⁾ [°C]	-20 ... +80	
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) ⁴⁾	To EU EMC Directive	
Corrosion resistance class CRC ⁵⁾	1	

- 1) Only applies to applications with end-position controller CPX-CMPX, SPC11 and axis controller CPX-CMAX, SPC200
- 2) The proportional directional control valve VPWP, MPYE requires these characteristic values
- 3) Note operating range of proximity sensors
- 4) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com → Support → User documentation.
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.
- 5) Corrosion resistance class 1 according to Festo standard 940 070
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Standard cylinders DDPC, with measured-value transducer DADE

FESTO

Technical data

Forces [N] and impact energy [Nm]		
Piston Ø	80	100
Theoretical force at 6 bar, advancing	3,016	4,712
Theoretical force at 6 bar, retracting	2,721	4,418
Impact energy at the end positions	1.8	2.5

Permissible impact velocity

$$v_{perm.} \leq \sqrt{\frac{2 \times E_{perm.}}{m_{intrinsic} + m_{Load}}}$$

$v_{perm.}$ Permissible impact velocity
 $E_{perm.}$ Maximum impact energy
 $m_{intrinsic}$ Moving mass (drive)
 m_{Load} Moving payload

Note

These specifications represent the maximum values that can be achieved. Note the maximum permissible impact energy.

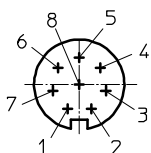
Maximum permissible load:

$$m_{Load} \leq \frac{2 \times E_{perm.}}{v^2} - m_{intrinsic}$$

Electrical data – Displacement encoder		
Output signal	Analogue	
Linearity error		
Strokes up to 500 mm	[mm]	< ±0.08
Strokes up to 1,000 mm	[mm]	< ±0.09
Strokes above 1,000 mm	[mm]	< ±0.11
Maximum travel speed	[m/s]	1.5
Protection class	IP65	
CE marking (see declaration of conformity)	To EU EMC Directive ¹⁾	
Maximum permitted magnetic interference field ²⁾	[kA/m]	10
Electrical connection	Cable with 8-pin plug, round design, M12	
Cable length	[m]	1.5

- 1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com → Support → User documentation.
 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.
- 2) At a distance of 100 mm

Pin allocation for plug



Pin	Function	Colour
1	5V	Black
2	GND	Brown
3	sin+	Red
4	sin-	Orange
5	cos-	Green
6	cos+	Yellow
7	Screening	Screening
8	n.c.	—

Standard cylinders DDPG, with measured-value transducer DADE

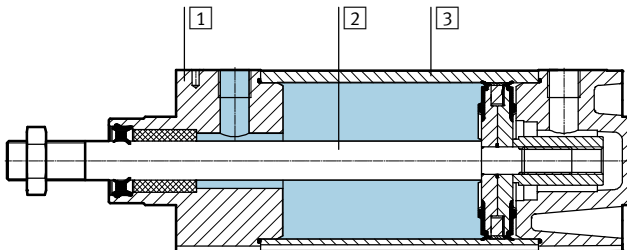
FESTO

Technical data

Weight [g]		
Piston Ø	80	100
DDPG-...		
Basic weight with 0 mm stroke	3,053	4,330
Additional weight per 10 mm stroke	87	95
Moving mass with 0 mm stroke	804	994
Additional weight per 10 mm stroke	31	31
DDPG-...-T – through piston rod		
Basic weight with 0 mm stroke	3,537	5,019
Additional weight per 10 mm stroke	127	134
Moving mass with 0 mm stroke	1,247	1,467
Additional weight per 10 mm stroke	70	70
DDPG-...-E – additional weight with piston rod extension		
Additional weight per 10 mm extension	31	31
DDPG-...-C – additional weight with clamping unit		
Additional weight	2,046	2,829
DDPG-...-D – additional weight with guide unit		
Basic weight with 0 mm stroke	10,430	12,990
Additional weight per 10 mm stroke	80	80

Materials

Sectional view



Standard cylinder		
1	Cover	Wrought aluminum alloy
2	Piston rod	High-alloy steel
3	Cylinder barrel	Wrought aluminum alloy
–	Seals	Nitrile rubber, polyurethane
Note on materials		Free of copper and PTFE
		RoHS-compliant

Standard cylinders DDPG, with measured-value transducer DADE

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Technical data

Torques and lateral forces

Max. torque for protection against rotation:

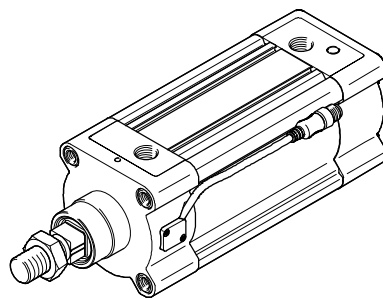
Dynamic $\leq 3 \text{ Nm}$

Static $\leq 5 \text{ Nm}$

An external guide unit FENG-KF is recommended with higher torque loads. The guide unit is supplied attached.

The permissible static and dynamic characteristic load values with and without attached guide

→ Internet: feng



Mounting conditions

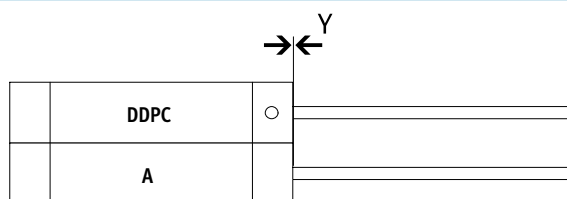
When mounting a drive A with magnet (for position sensing) next to a standard cylinder DDPG, the following conditions must be observed:

X Minimum distance between the drives

Y Offset between the drives on the bearing cap

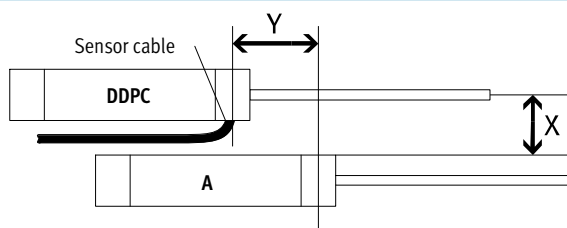
Parallel assembly

If the offset $Y = 0 \text{ mm}$, the drives can be assembled directly next to one another.



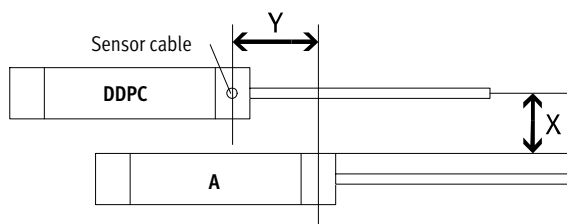
Off-set assembly, cable outlet between the drives

If the offset is $Y > 0 \text{ mm}$ and the cable outlet is between the drives, a distance of $X > 70 \text{ mm}$ must be observed.



Off-set assembly, cable outlet upwards or downwards

If the offset is $Y > 0 \text{ mm}$ and the cable outlet is up or down, a distance of $X > 60 \text{ mm}$ must be observed.



Standard cylinders DDPG, with measured-value transducer DADE

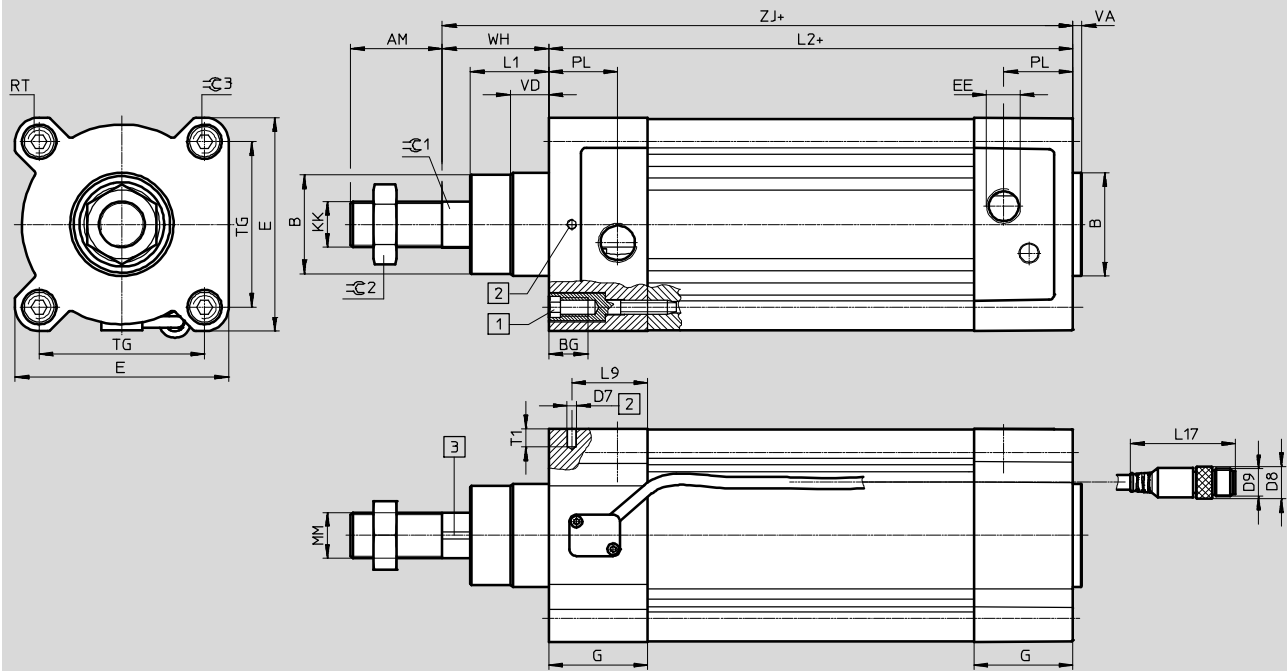
FESTO

Technical data

Dimensions

Download CAD Data → www.festo.com/us/cad

DDPG...



1 Socket head screw with female thread for mounting attachments

2 Hole for securing the earthing for self-tapping M4 screw according to DIN 7500

3 Magnetic measuring band

+ = plus stroke length

++ = plus 2x stroke length

Ø	AM	B	BG	D7	D8	D9	E	EE	G
[mm]		Ø d11		Ø	Ø				
80	40	45	17	3.7	14	M12	93	G ³ / ₈	43
100	40	55	17	3.7	14	M12	110	G ¹ / ₂	48

Ø	KK	L1	L2	L9	L17	MM	PL	RT	T1
[mm]						Ø			
80	M20x1.5	34.2	128	20	45.7	20	30	M10	8
100	M20x1.5	38	138	21.5	45.7	20	31.5	M10	8

Ø	TG	VA	VD	WH	ZJ	⌀ 1	⌀ 2	⌀ 3
[mm]								
80	72	4	16.7	46	174	22	30	6
100	89	4	20.5	51	189	22	30	6

Standard cylinders DDPC, with measured-value transducer DADE

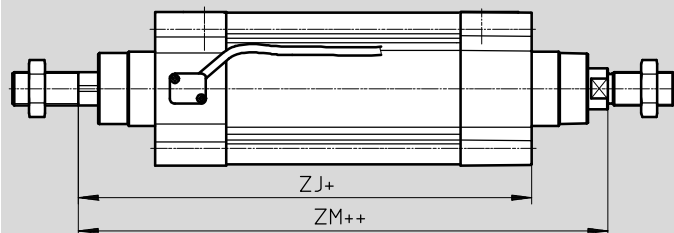
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Technical data

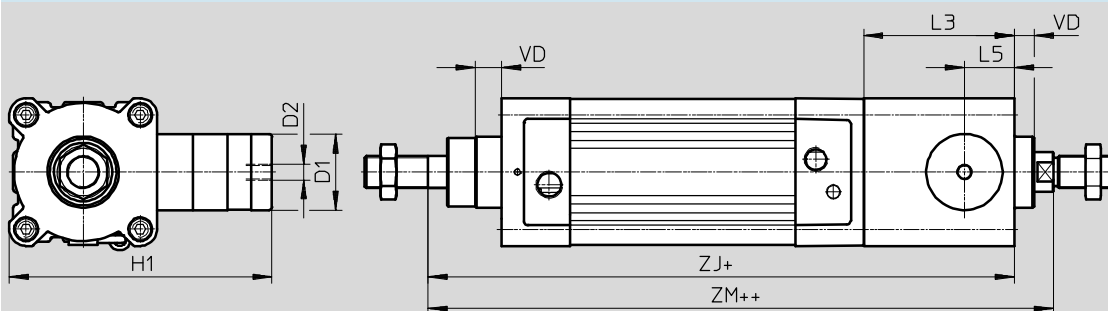
Dimensions

Download CAD Data → www.festo.com/us/cad

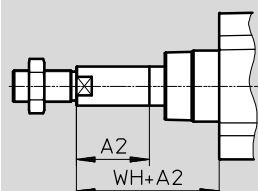
DDPC-...-T – through piston rod



DDPC-...-CT – through piston rod with clamping unit



DDPC-...-E – extended piston rod



Ø	A2	D1	D2	H1	L3	L5
[mm]	max.	Ø f9				
80	500	48	G1/8	165.5	95	31.5
100	500	48	G1/8	174	98	31

Ø	VD	WH	ZJ		ZM	
[mm]			DDPC-...-T	DDPC-...-CT	DDPC-...-T	DDPC-...-CT
80	16.7	46	174	269	222	317
100	20.5	51	189	287	240	338

Standard cylinders DDPC, with measured-value transducer DADE

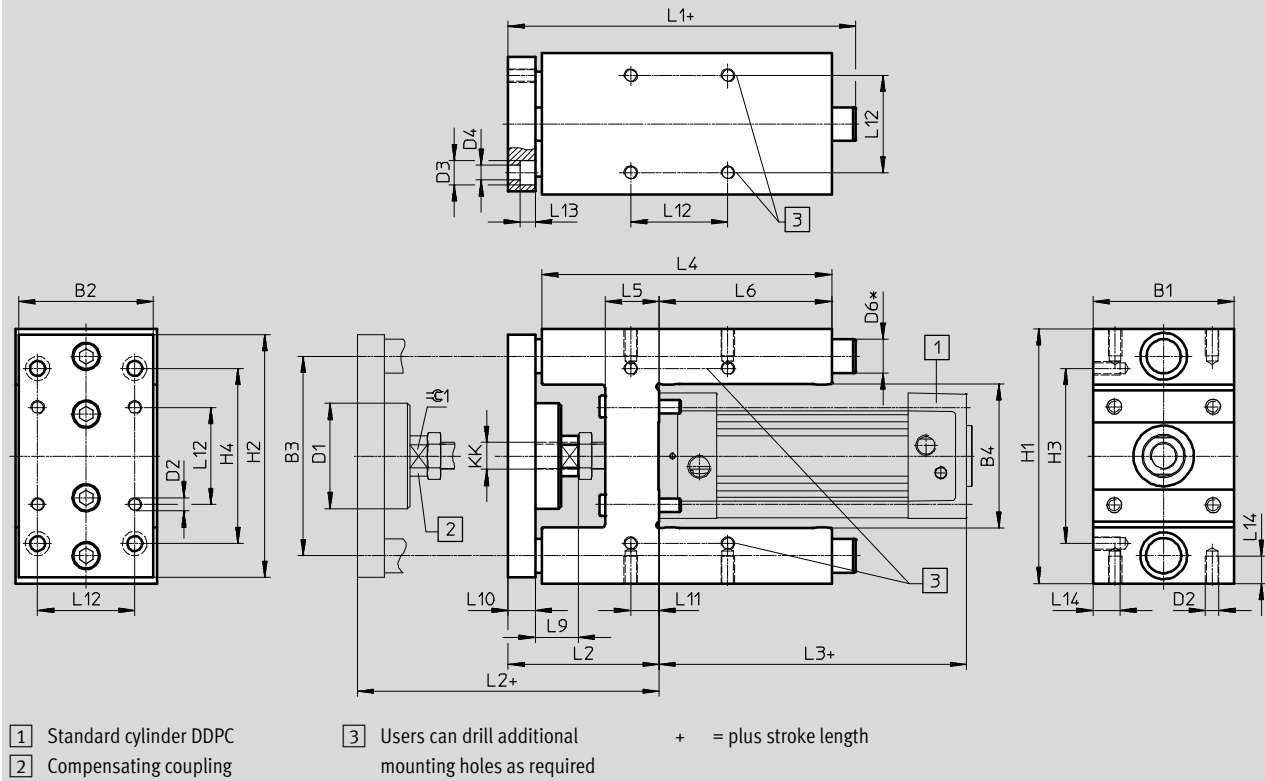
FESTO

Technical data

Dimensions

Download CAD Data → www.festo.com/us/cad

DDPC-...-D



Ø	B1	B2	B3	B4	D1	D2	D3	D4	D6
[mm]	-0.3		±0.2	±0.6	Ø		Ø	Ø	h6
80	105	100	148	106	78	M10	18	11	25
100	130	120	172	131	78	M10	18	11	25

Ø	H1	H2	H3	H4	KK	L1	L2	L3	L4
[mm]	-0.5		±0.2	±0.2			+10		
80	189	180	130	130	M20x1.5	258	111	194	215
100	213	200	150	150	M20x1.5	263	116	138	220

Ø	L5	L6	L9	L10	L11	L12	L13	L14	⌀ 1
[mm]						±0.2			
80	40	128	32	20	21	72	11	20	27
100	40	128	32	20	24.5	89	11	20	27

Standard cylinders DDPc, with measured-value transducer DADE

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Ordering data – Modular products

Ordering table						
Piston Ø	80	100	Condition s	Code		Enter code
M Module No.	1677705	1691433				
Function	Standard cylinder with integrated displacement encoder			DDPC		DDPC
Protection against rotation	With protection against rotation			-Q		-Q
Piston Ø [mm]	80	100		-...		
Stroke [mm]	10 ... 2,000			-...		
O Guide unit	None					
	Attached			-D		
Clamping unit	None					
	Attached		1	-C		
Piston rod type	At one end					
	Through piston rod			T		
M Cushioning	Elastic cushioning rings/plates at both ends			-P		-P
Position sensing	For proximity sensor			A		A
O Piston rod extension	None					
	[mm] 1 ... 500			-...E		

1 C Only available with T

Transfer order code

DDPC - **Q** - - - - - - - **P** **A** -

Standard cylinders DDPC, with measured-value transducer DADE

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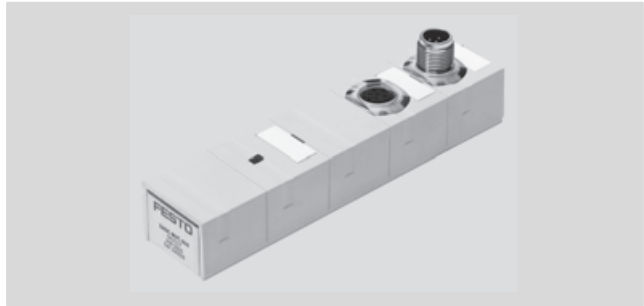
Technical data

Measured-value transducer

DADE-MVC-010

DADE-MVC-420

The measured-value transducer converts sensor signals from the standard cylinder DDPC into a voltage signal of 0 ... 10 V or a current signal of 4 ... 20 mA. These signals can be evaluated by a PLC with an appropriate signal input.



General technical data		
Type of mounting		Via through-hole
Mounting position		Any
Repetition accuracy in relation to effective stroke	≤ 400	± 0.1 mm
	≤ 750	± 0.2 mm
	≤ 1200	± 0.3 mm
	≤ 1600	± 0.4 mm
	≤ 2000	± 0.5 mm
Protection against short circuit		Yes
Protection against incorrect polarity		Yes
Diagnostic function		Display via LED

General electrical data		
Analogue output	[V]	0 ... 10 (according to EN 61131-2)
	[mA]	4 ... 20 (according to EN 61131-2)
Nominal operating voltage	[DC V]	24 \pm 25%
Residual ripple	[%]	4 (at 50 Hz)
Current consumption at nominal operating voltage	[mA]	20 ... 30
Switching logic at outputs		PNP
Switching logic at inputs		PNP
Debounce time at inputs	[ms]	3
Linearity error FS		0.2%

Operating and environmental conditions		
Ambient temperature	[°C]	0 ... 55
Protection class		IP65
Relative air humidity		95% non-condensing
CE marking (see declaration of conformity)		To EU EMC Directive
Corrosion resistance class CRC ¹⁾		1
Product weight	[g]	128
Note on material for housing		Polybutylene terephthalate

1) Corrosion resistance class 1 according to Festo standard 940 070

Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

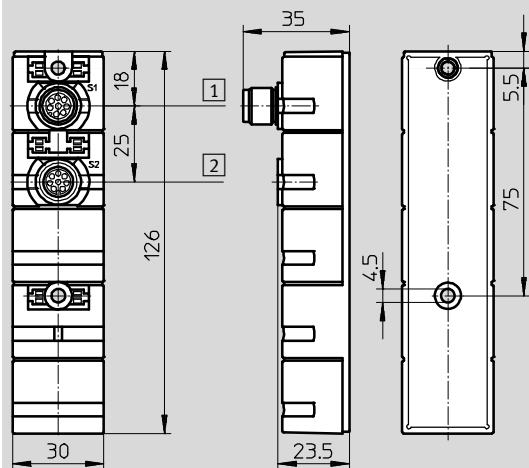
Standard cylinders DDPC, with measured-value transducer DADE

FESTO

Technical data

Dimensions

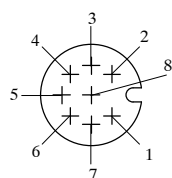
Download CAD Data → www.festo.com/us/cad



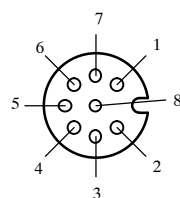
- 1 PLC interface:
8-pin M12, male
- 2 Measuring system interface:
8-pin M12, female

Pin allocation

PLC interface



Measuring system interface



Pin	Function	Cable colour
1	24V	White
2	Analogue measurement signal	Brown
3	Reference output	Green
4	0 V measurement signal	Yellow
5	Reference input	Grey
6	Calibration input	Pink
7	Ready output	Blue
8	0 V power supply and inputs/outputs	Red

Pin	Function
1	Ub
2	0 V
3	Signal sine +
4	Signal sine –
5	Signal cosine –
6	Signal cosine +
7	Screening / earth
8	–

Ordering data

		Description	Part no.	Type
Measured-value transducer				
	With voltage signal	0 ... 10 V	542 117	DADE-MVC-010
	With current signal	4 ... 20 mA	542 118	DADE-MVC-420
Accessories				
	Connecting cable	PLC connecting cable (length 2 m)	525 616	SIM-M12-8GD-2-PU
		PLC connecting cable (length 5 m)	525 618	SIM-M12-8GD-5-PU

Technical data → Internet: sim

Product Range and Company Overview

A Complete Suite and Company Overview

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



Custom Automation Components
Complete custom engineered solutions



Custom Control Cabinets
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With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



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Electromechanical actuators, motors, controllers & drivers



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Pneumatic linear and rotary actuators, valves, and air supply



PLCs and I/O Devices
PLC's, operator interfaces, sensors and I/O devices

Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 16,000 employees in 60 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.

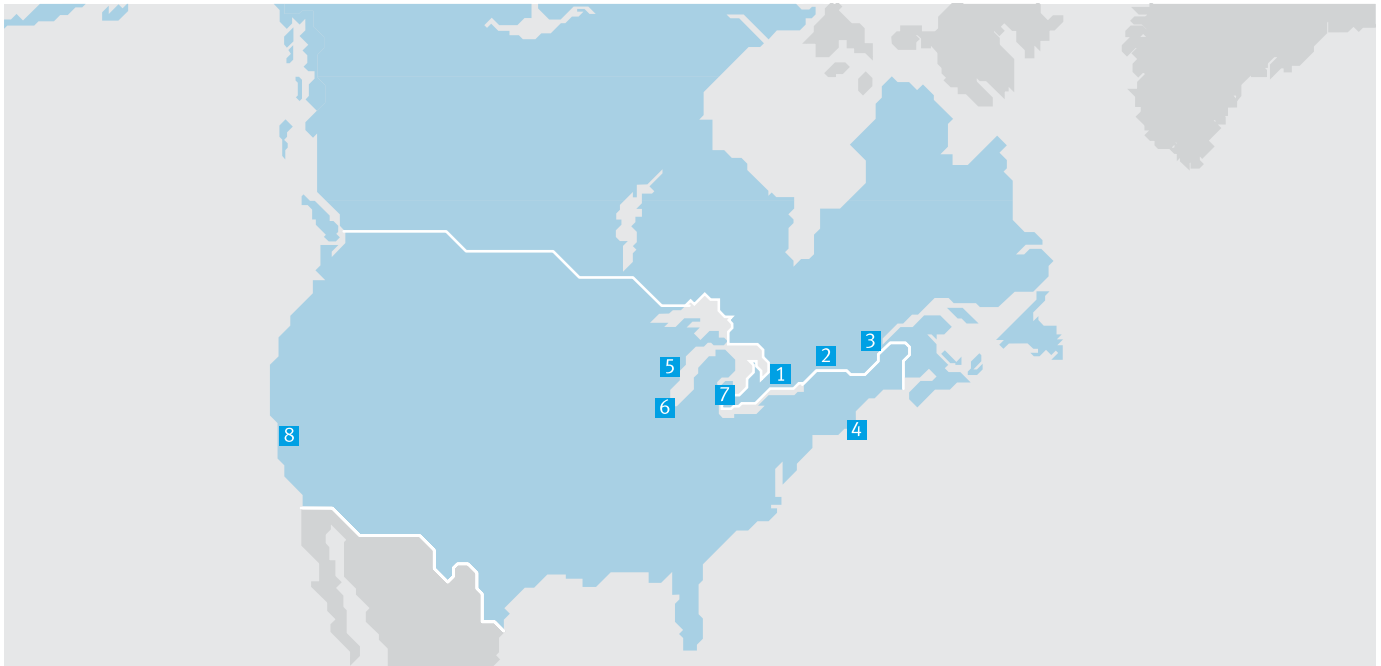


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