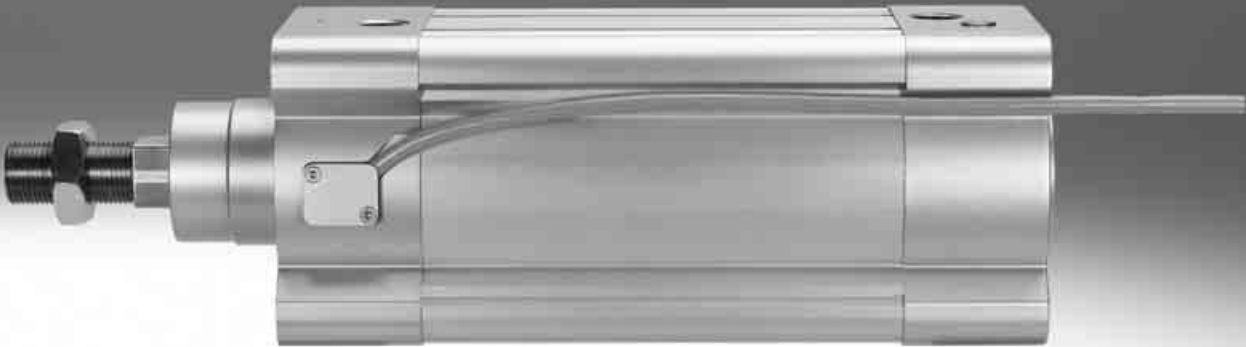


Standard cylinders DDPC, with measured-value transducer DADE



Standard cylinders DDPC, with measured-value transducer DADE

Features

Components for positioning and measuring using the standard cylinder DDPC



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

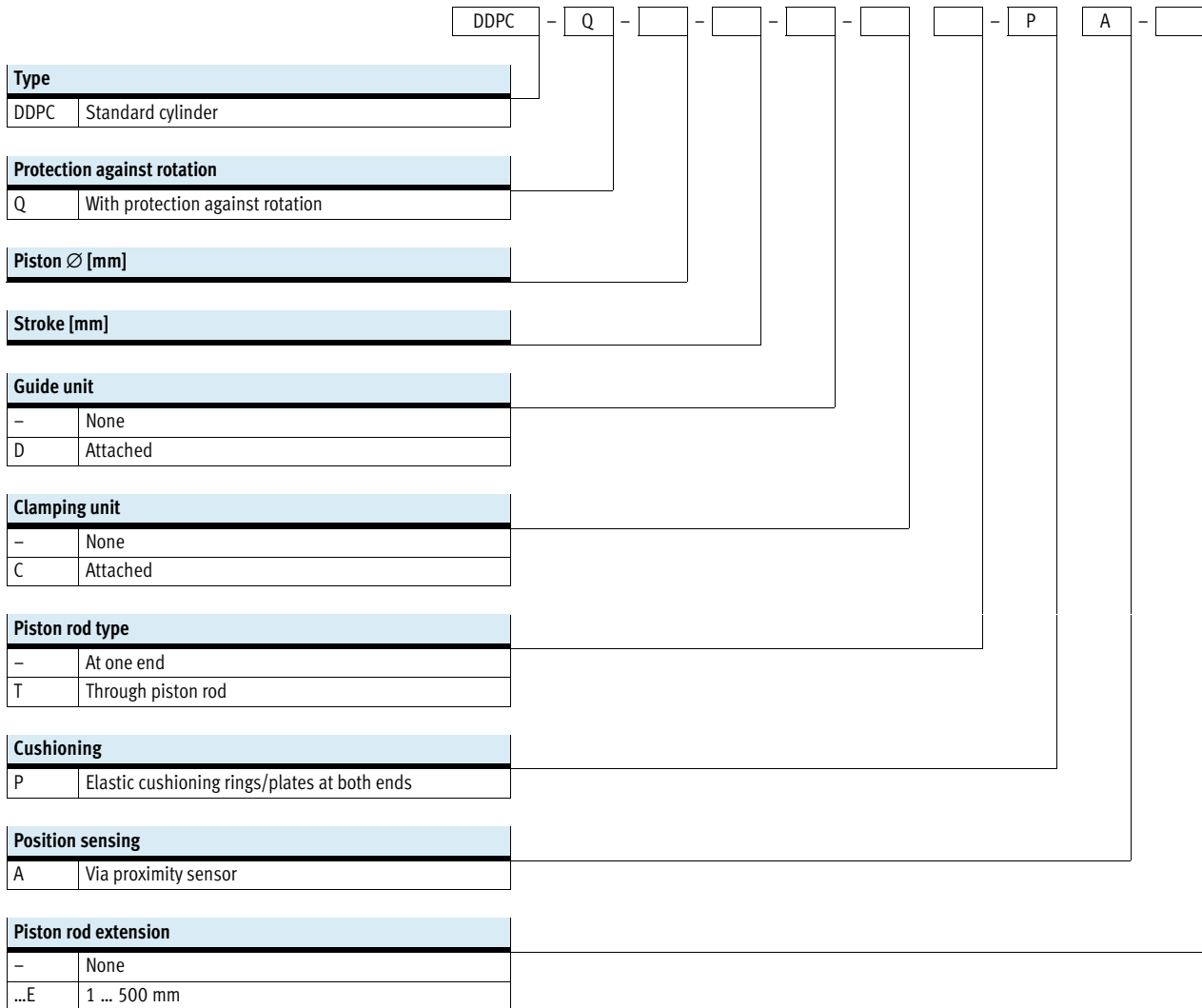


Controller module CPX-CMAX, CPX-CMPX



Standard cylinders DDPC, with measured-value transducer DADE

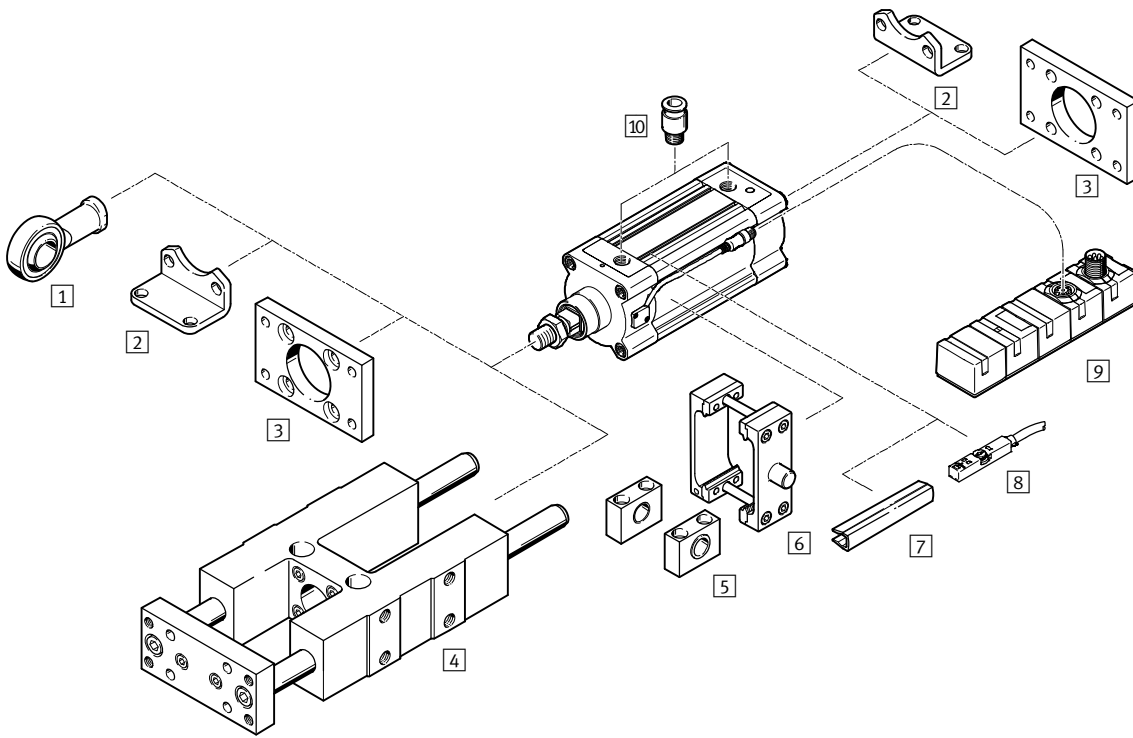
Type codes




Standard cylinders DDPC, with measured-value transducer DADE

Peripherals overview

FESTO



-  - Note

If the drive DDPC is used without an end-position controller CPX-CMPX, SPC11 or axis controller CPX-CMAX, 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	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

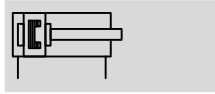
1) Guide unit FENG-KF must be attached to the piston rod in a way that eliminates backlash

Standard cylinders DDPG, with measured-value transducer DADE

FESTO

Technical data

Function



- \varnothing - Diameter
80 and 100 mm
- | - Stroke length
10 ... 1250 mm



General technical data		
Piston \varnothing	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 ... 1250	
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
- 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/sp → 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 CRC 1 to Festo standard FN 940070
Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Standard cylinders DDPC, with measured-value transducer DADE


Technical data

Forces [N] and impact energy [Nm]		
Piston \varnothing	80	100
Theoretical force at 6 bar, advancing	3016	4712
Theoretical force at 6 bar, retracting	2721	4418
Impact energy at the end positions	1.8	2.5

Permissible impact velocity

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

$v_{perm.}$ 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.

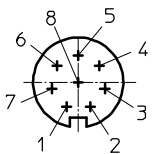
Maximum permissible load:

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

Electrical data – Displacement encoder		
Output signal	Analogue	
Linearity error		
Strokes up to 500 mm	[mm]	< ±0.08
Strokes up to 1000 mm	[mm]	< ±0.09
Strokes over 1000 mm	[mm]	< ±0.11
Resolution ¹⁾	[%]	≤ 0.025
Repetition accuracy		
≤ 400	[mm]	±0.1
≤ 500	[mm]	±0.13
≤ 750	[mm]	±0.19
≤ 1200	[mm]	±0.3
≤ 1250	[mm]	±0.4
Max. travel speed	[m/s]	1.5
Degree of protection	IP65	
CE marking (see declaration of conformity)	To EU EMC Directive ²⁾	
Maximum permitted magnetic interference field ³⁾	[kA/m]	10
Electrical connection	Cable with 8-pin plug, round design, M12	
Cable length	[m]	1.5

- 1) Always refers to max. stroke
- 2) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp → 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.
- 3) 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.	-

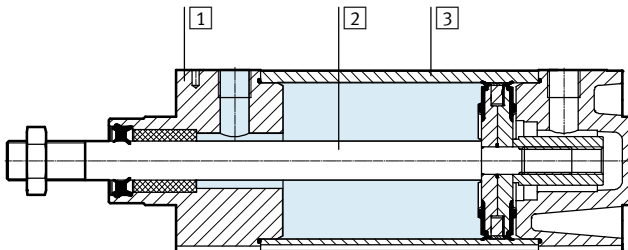
Standard cylinders DDPG, with measured-value transducer DADE

Technical data

Weight [g]		
Piston Ø	80	100
DDPG-...		
Basic weight with 0 mm stroke	3053	4330
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	3537	5019
Additional weight per 10 mm stroke	127	134
Moving mass with 0 mm stroke	1247	1467
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	2046	2829
DDPG-...-D – additional weight with guide unit		
Basic weight with 0 mm stroke	10430	12990
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 NBR, polyurethane
Note on materials Free of copper and PTFE RoHS-compliant	

Standard cylinders DDPC, with measured-value transducer DADE

Technical data

Torques and lateral forces

Max. torque for protection against rotation:

Dynamic $\leq 3 \text{ Nm}$

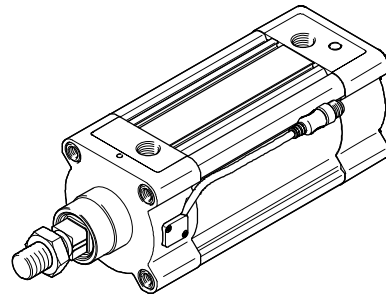
Static $\leq 5 \text{ Nm}$

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

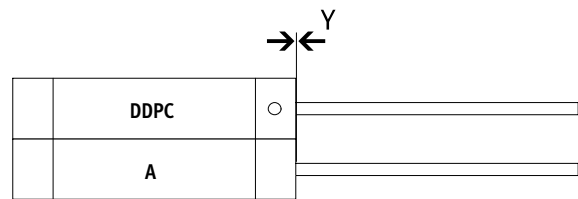
When mounting a drive A with magnet (for position sensing) next to a standard cylinder DDPC, the following conditions must be observed:

X Minimum distance between the drives

Y Offset between the drives on the bearing cap

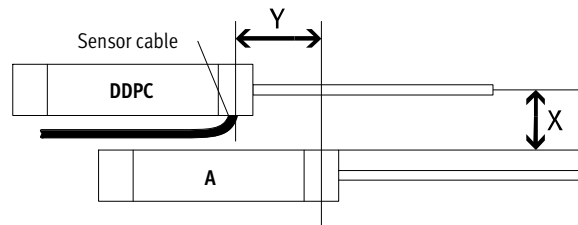
Parallel assembly

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



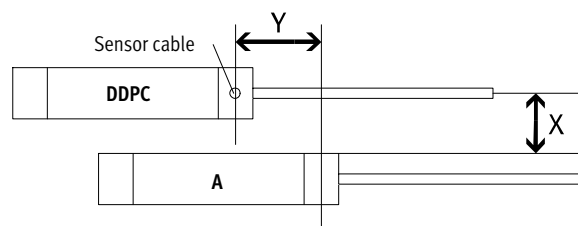
Off-set assembly, cable outlet between the drives

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

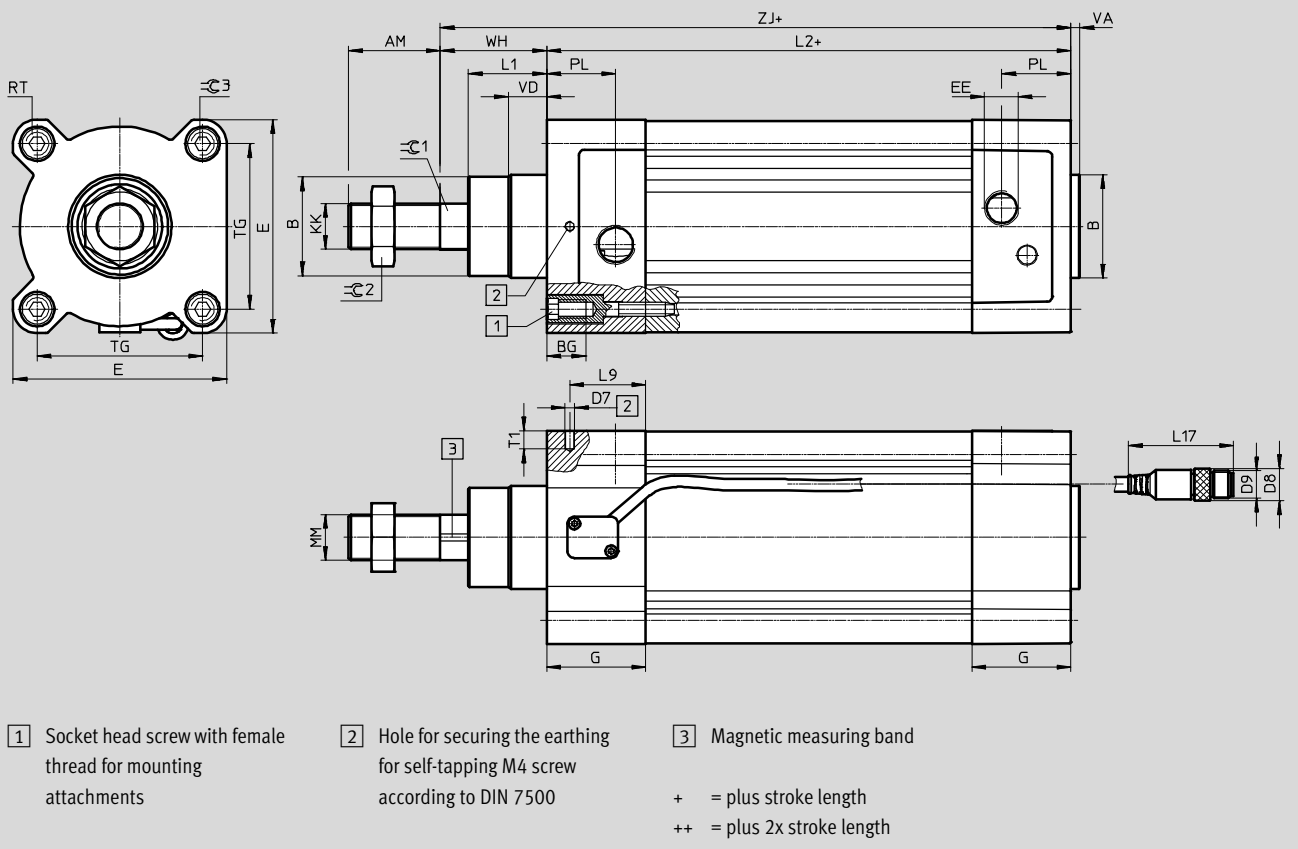
Technical data

FESTO

Dimensions

Download CAD data → www.festo.com

DDPG-...



∅	AM	B	BG	D7	D8	D9	E	EE	G
[mm]		∅ d11		∅	∅				
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

∅	KK	L1	L2	L9	L17	MM	PL	RT	T1
[mm]						∅			
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

∅	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

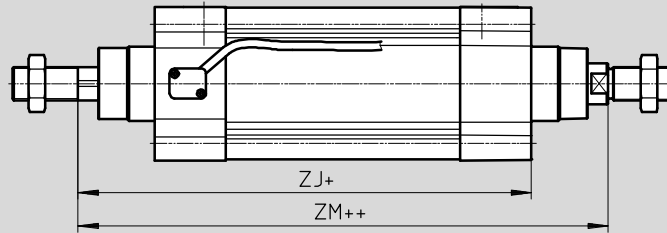
Standard cylinders DDPC, with measured-value transducer DADE

Technical data

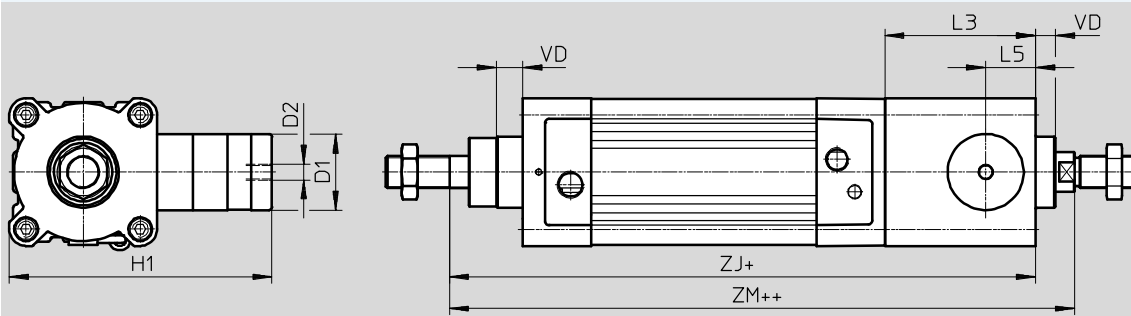
Dimensions

Download CAD data → www.festo.com

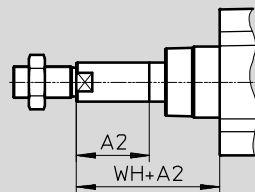
DDPC-...-T – through piston rod



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



DDPC-...-E – extended piston rod



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

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

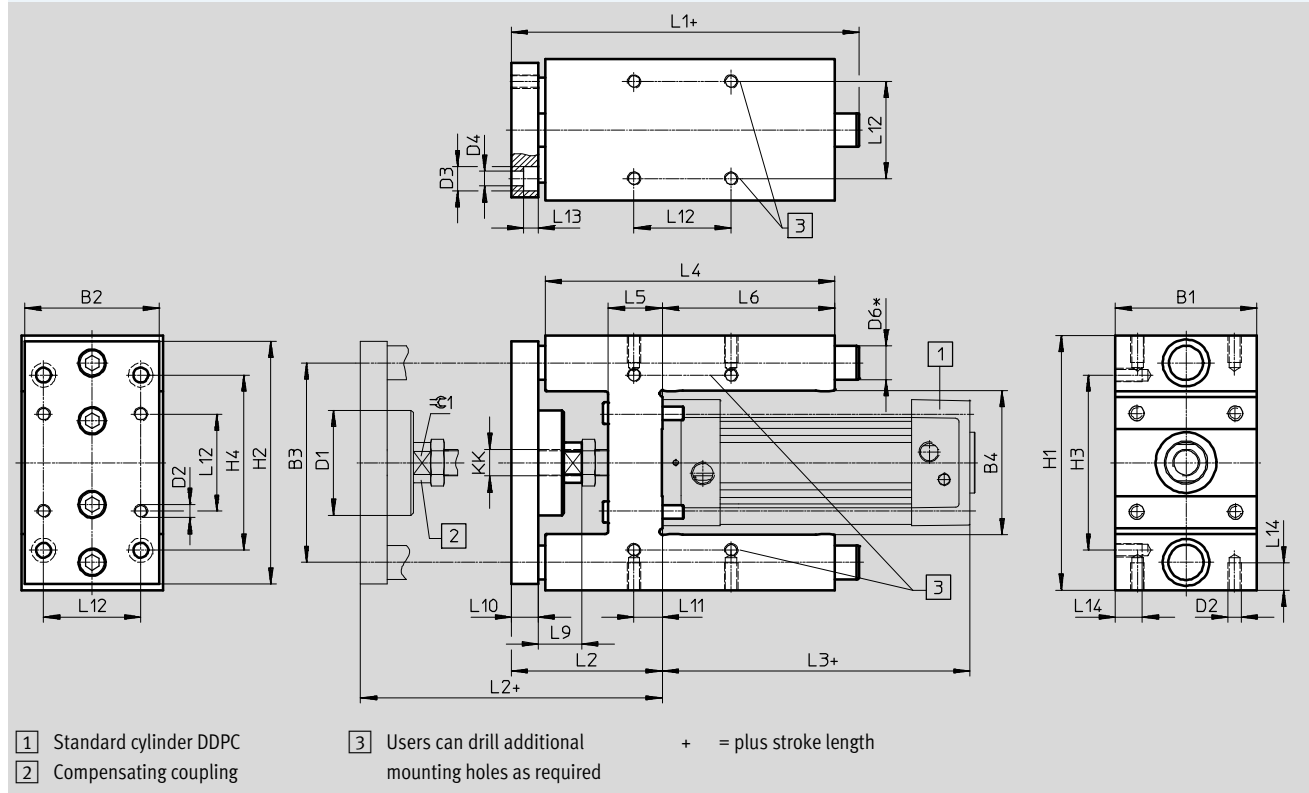
Standard cylinders DDPG, with measured-value transducer DADE

Technical data

Dimensions

Download CAD data → www.festo.com

DDPG-...-D



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

∅	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

∅	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 DDPG, with measured-value transducer DADE

Ordering data – Modular products

Ordering table					
Piston Ø	80	100	Condi- tions	Code	Enter code
M Module No.	1677705	1691433			
Function	Standard cylinder with integrated displacement encoder			DDPG	DDPG
Protection against rotation	With protection against rotation			-Q	-Q
Piston Ø [mm]	80	100		-...	
Stroke [mm]	10 ... 1250			-...	
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

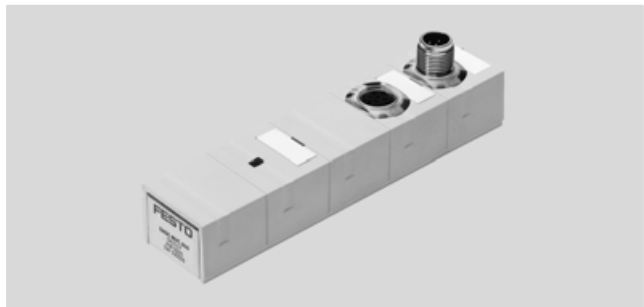
Transfer order code

Standard cylinders DDPC, with measured-value transducer DADE

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	With through-hole
Mounting position	Any
Protection against short circuit	Yes
Protection against incorrect polarity	Yes
Diagnostic function	Indication 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 ±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 CRC 1 to Festo standard FN 940070
 Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Standard cylinders DDPC, with measured-value transducer DADE

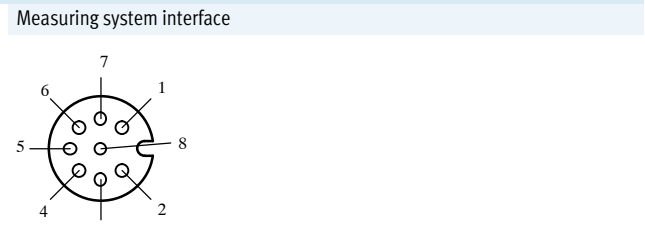
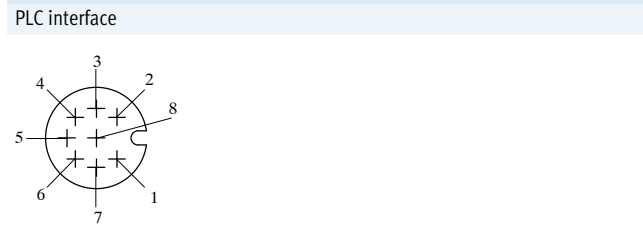
Technical data

Dimensions Download CAD data → www.festo.com

1 PLC interface:
8-pin M12, male

2 Measuring system interface:
8-pin M12, female

Pin allocation



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	542117	DADE-MVC-010
	With current signal	4 ... 20 mA	542118	DADE-MVC-420
Accessories Technical data → Internet: sim				
	Connecting cable	PLC connecting cable (length 2 m)	525616	SIM-M12-8GD-2-PU
		PLC connecting cable (length 5 m)	525618	SIM-M12-8GD-5-PU

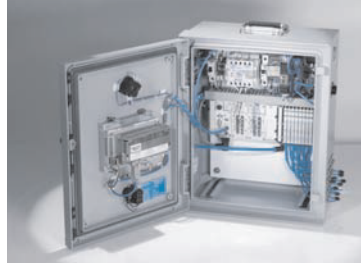
Product Range and Company Overview

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
Comprehensive engineering support and on-site services



Complete Systems
Shipment, stocking and storage services

The Broadest Range of Automation Components

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



Electromechanical
Electromechanical actuators, motors, controllers & drivers



Pneumatics
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.

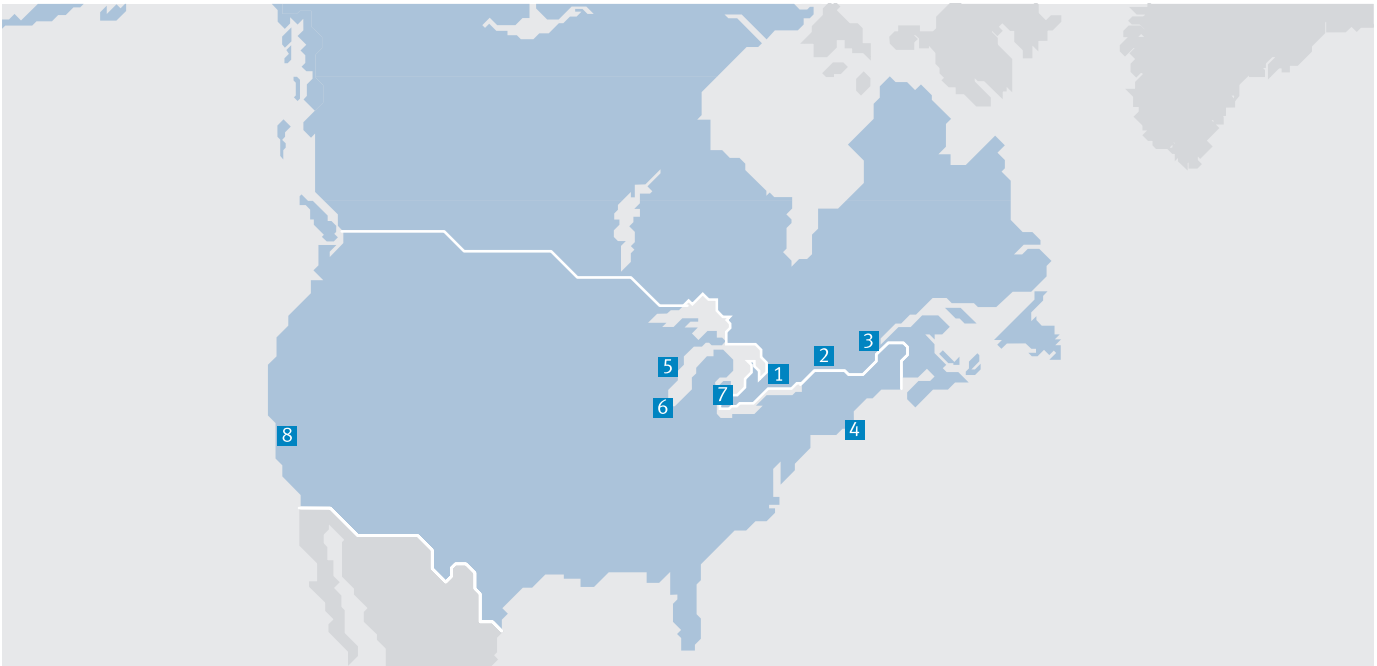


© Copyright 2013, Festo Corporation. While every effort is made to ensure that all dimensions and specifications are correct, Festo cannot guarantee that publications are completely free of any error, in particular typing or printing errors. Accordingly, Festo cannot be held responsible for the same. For Liability and Warranty conditions, refer to our "Terms and Conditions of Sale", available from your local Festo office. All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of Festo. All technical data subject to change according to technical update.



Printed on recycled paper at New Horizon Graphic, Inc., FSC certified as an environmental friendly printing plant.

Festo North America



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

2 Montréal
5600, Trans-Canada
Pointe-Claire, QC
H9R 1B6

3 Québec City
2930, rue Watt#117
Québec, QC
G1X 4G3



**4 Festo United States
Headquarters
Festo Corporation**
395 Moreland Road
Hauppauge, NY
11788

5 Appleton
North 922 Tower View Drive, Suite N
Greenville, WI
54942

7 Detroit
1441 West Long Lake Road
Troy, MI
48098

6 Chicago
85 W Algonquin - Suite 340
Arlington Heights, IL
60005

8 Silicon Valley
4935 Southfront Road, Suite F
Livermore, CA
94550

Festo Regional Contact Center

Canadian Customers

Commercial Support:
Tel: 1 877 GO FESTO (1 877 463 3786)
Fax: 1 877 FX FESTO (1 877 393 3786)
Email: festo.canada@ca.festo.com

Technical Support:
Tel: 1 866 GO FESTO (1 866 463 3786)
Fax: 1 877 FX FESTO (1 877 393 3786)
Email: technical.support@ca.festo.com

USA Customers

Commercial Support:
Tel: 1 800 99 FESTO (1 800 993 3786)
Fax: 1 800 96 FESTO (1 800 963 3786)
Email: customer.service@us.festo.com

Technical Support:
Tel: 1 866 GO FESTO (1 866 463 3786)
Fax: 1 800 96 FESTO (1 800 963 3786)
Email: product.support@us.festo.com

Subject to change

Internet: www.festo.com/us