

## Standards-based cylinders DDPG, integrated displacement encoder

**FESTO**



## Product range overview

| Function          | Type                                                                                | Description                                                                                                                                                                                                                                                                                      |
|-------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Drives            | Rodless                                                                             |                                                                                                                                                                                                                                                                                                  |
|                   | DDLI                                                                                | <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 the end face</li><li>• System product for handling and assembly technology</li></ul>                       |
|                   |    |                                                                                                                                                                                                                                                                                                  |
|                   | DGCI                                                                                | <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 the end face or at the front</li><li>• System product for handling and assembly technology</li></ul> |
|                   |    |                                                                                                                                                                                                                                                                                                  |
|                   | With piston rod                                                                     |                                                                                                                                                                                                                                                                                                  |
|                   | DNCI                                                                                | <ul style="list-style-type: none"><li>• With displacement encoder for contactless measurement</li><li>• Range of 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>• Range of 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>• Range of piston rod variants</li><li>• Standards-based cylinder to ISO 15552</li></ul>                                  |
|                   |  |                                                                                                                                                                                                                                                                                                  |
| Semi-rotary drive | Semi-rotary drive                                                                   |                                                                                                                                                                                                                                                                                                  |
|                   |  | <ul style="list-style-type: none"><li>• Based on semi-rotary drive DSM</li><li>• Integrated rotary potentiometer</li><li>• Compact design</li><li>• Wide range of mounting options</li></ul>                                                                                                     |

## Product range overview

| Piston ∅           | Stroke/swivel angle                                                            | Suitable             |                             |       | As a measuring cylinder |
|--------------------|--------------------------------------------------------------------------------|----------------------|-----------------------------|-------|-------------------------|
|                    |                                                                                | For positioning with | For end-position controller |       |                         |
|                    | [mm/°]                                                                         | 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                                         | ■                    | ■                           | ■     | ■                       |
| Semi-rotary drive  |                                                                                |                      |                             |       |                         |
| 25, 40, 63         | 270                                                                            | ■                    | ■                           | ■     | ■                       |

### Key features

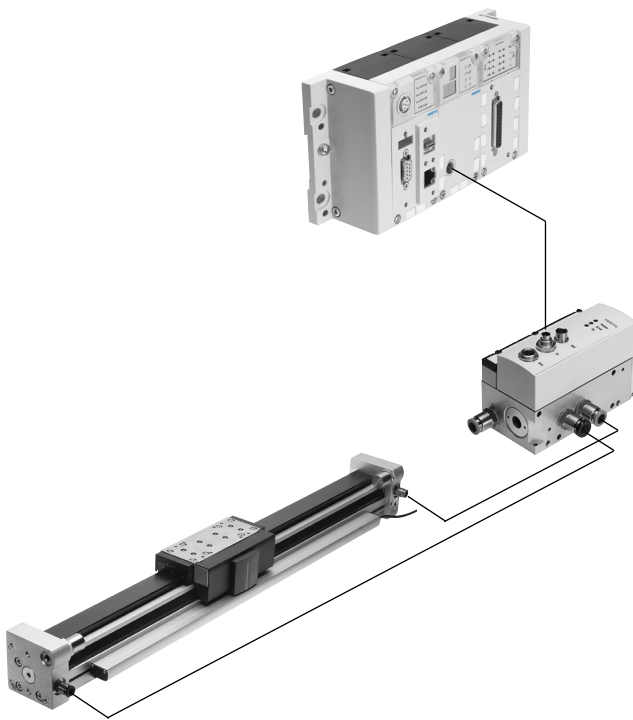
#### Servo-pneumatic drive technology

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 for 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 more is needed:

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 controllers CPX-CMPX

Datasheets → Internet: [cpx-cmpx](http://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 control of standstills.

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

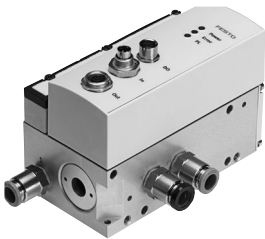
Depending on the fieldbus chosen, up to 9 end-position controllers can be actuated on the CPX terminal.

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

Datasheets → Internet: [vpwp](http://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 error-free and fast connection to 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

Datasheets → Internet: [cpx-cmix](http://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 even for a potentiometer type MLO.

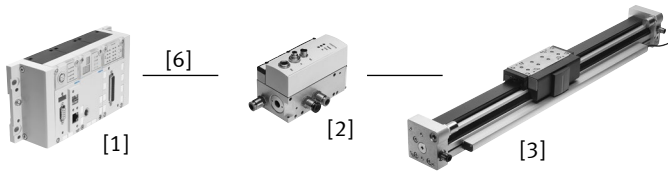
## Advantages:

- 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

Datasheets → 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-...

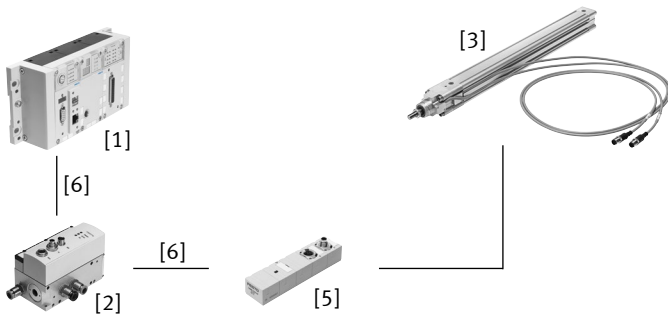
- Pneumatic rodless linear drive with displacement encoder, with or without recirculating ball bearing guide
- Displacement encoder with absolute and contactless measurement
- Diameter:
  - With DGCI: 18 ... 63 mm
  - With DDLI: 25 ... 63 mm
- Stroke: 100 ... 2000 mm in fixed lengths
- Application areas: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

#### Advantages:

- Complete drive unit
- DDLI for easy connection to 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

Datasheets → 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 measurement
- Diameter: 32 ... 100 mm
- Stroke: 100 ... 750 mm
- Application areas: Soft Stop and pneumatic positioning
- Loads from 3 ... 450 kg and the corresponding sensor interface CASM-S-D3-R7
- Pre-assembled cables guarantee error-free and fast electrical connection

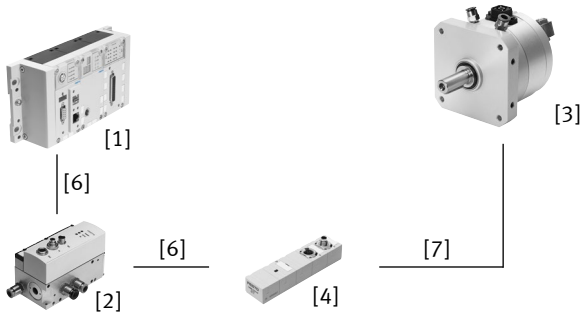
#### Advantages:

- 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 semi-rotary drive DSMI

Datasheets → Internet: dsmi



- [1] Controller module CPX-CMPX or CPX-CMAX
- [2] Proportional directional control valve VPWP
- [3] Semi-rotary drive 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

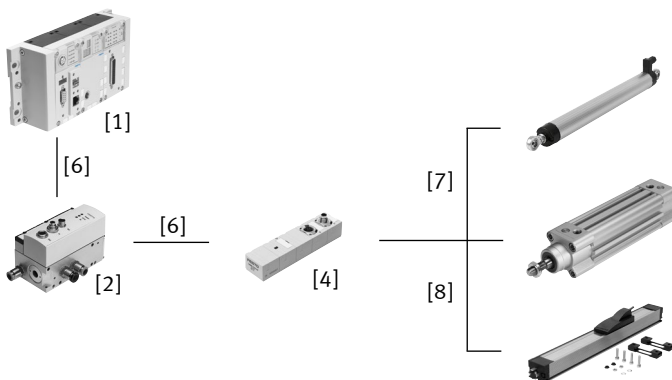
- Semi-rotary drive DSMI with integrated displacement encoder
- Identical design to pneumatic semi-rotary drive DSM
- Absolute displacement encoder based on a potentiometer
- Swivel range from 0 ... 270°
- Size: 25, 40, 63
- Max. torque: 5 ... 40 Nm
- Application areas: Soft Stop and pneumatic positioning
- Mass moments of inertia of 15 ... 6000 kgcm<sup>2</sup> and the corresponding sensor interface CASM-S-D2-R3
- Pre-assembled cables guarantee error-free 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

Datasheets → 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 error-free and fast connection to the sensor interface CASM
- Application areas: 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 operating 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 | Semi-rotary drive | Displacement encoder |         | → Page/<br>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 | Semi-rotary drive | Displacement encoder |         | → Page/<br>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 | Semi-rotary drive | Displacement encoder |         | → Page/<br>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                |

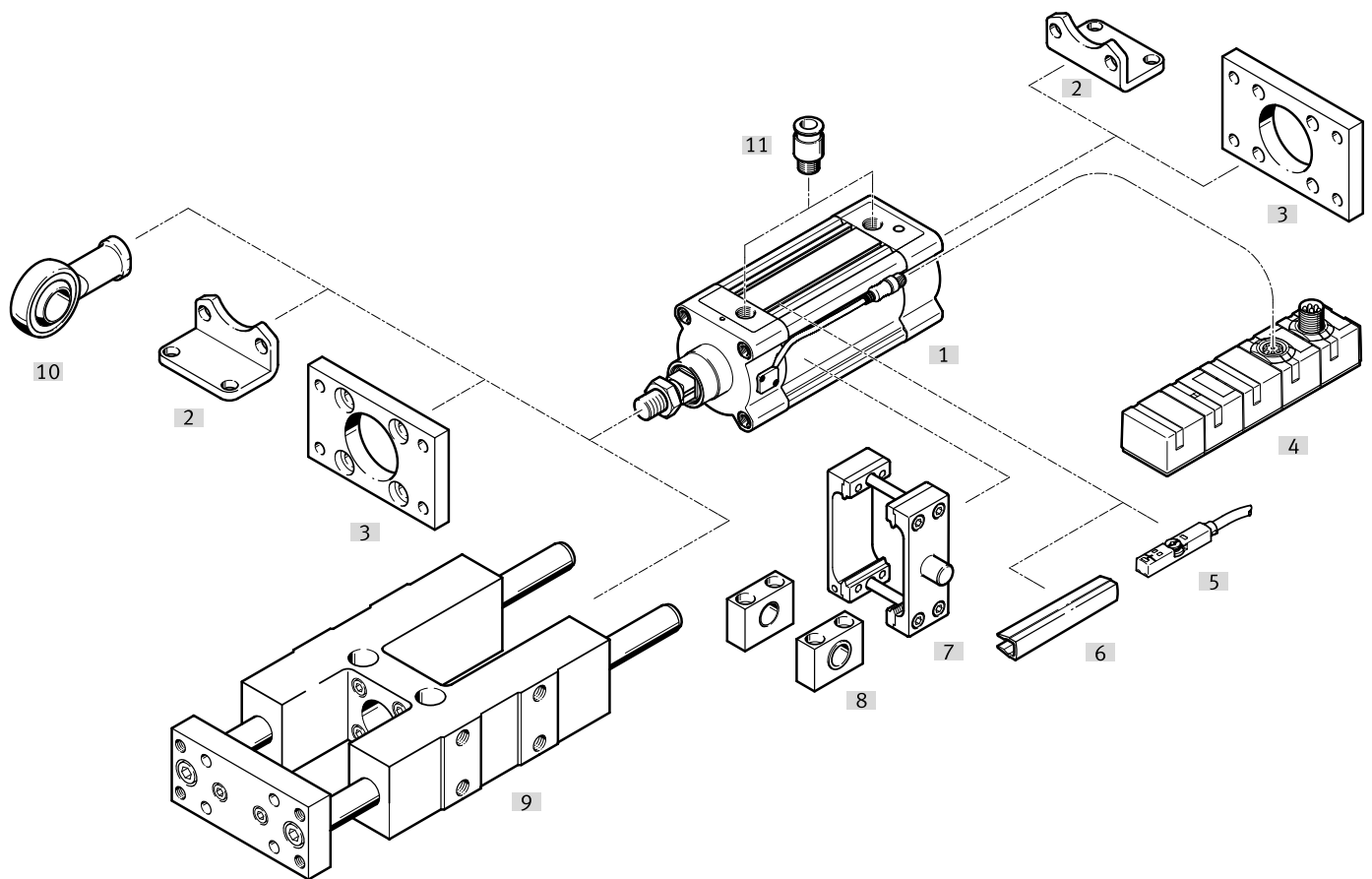
1) As an extension

## Type codes

|      |                                                           |  |
|------|-----------------------------------------------------------|--|
| 001  | Series                                                    |  |
| DDPC | Standards-based cylinder, integrated displacement encoder |  |
| 002  | Protection against rotation                               |  |
| D    | With guide unit                                           |  |
| Q    | With protection against rotation                          |  |
| 003  | Piston diameter                                           |  |
| 80   | 80                                                        |  |
| 100  | 100                                                       |  |
| 004  | Stroke                                                    |  |
| ...  | 10 ... 2000                                               |  |
| 005  | Clamping unit                                             |  |
|      | None                                                      |  |
| C    | Attached                                                  |  |

|      |                                               |  |
|------|-----------------------------------------------|--|
| 006  | Piston rod type                               |  |
|      | At one end                                    |  |
| T    | Through piston rod                            |  |
| 007  | Cushioning                                    |  |
| P    | Elastic cushioning rings/plates on both sides |  |
| 008  | Position sensing                              |  |
| A    | For proximity sensor                          |  |
| 009  | Piston rod extension                          |  |
|      | None                                          |  |
| ...E | 1 ... 500 mm                                  |  |

## Peripherals overview



### 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.

## Peripherals overview

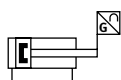
| Accessories                          |                                                                                                                                                           |                 |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Type                                 | Description                                                                                                                                               | → Page/Internet |
| [1] Standards-based cylinder DDPC    | Double-acting                                                                                                                                             | 12              |
| [2] Foot mounting HNC                | For mounting the drive on the bearing and end caps                                                                                                        | 21              |
| [3] Flange mounting FNC              | For mounting the drive on the bearing and end caps                                                                                                        | 21              |
| [4] Sensor interface CASM            | Used to connect pneumatic drives with analogue/incremental displacement encoder to a position controller CPX-CMAX or CPX-CMPX                             | casm            |
| [5] Proximity switch 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 system | sm              |
| [6] Slot cover ABP-5-S               | For protection against contamination                                                                                                                      | 23              |
| [7] Trunnion flange kit DAMT         | For swivel mounting of the drive                                                                                                                          | 22              |
| [8] Trunnion support LNKG            | For securing the trunnion flange kit DAMT                                                                                                                 | 23              |
| [9] Guide unit <sup>1)</sup> FENG-KF | To protect against rotation at high torques                                                                                                               | 19              |
| [10] Rod eye SGS                     | With spherical bearing                                                                                                                                    | 22              |
| [11] Push-in fitting QS              | For connecting tubing with standard O.D.                                                                                                                  | qs              |

1) The guide unit FENG-KF must be connected to the piston rod without any backlash

**Note**

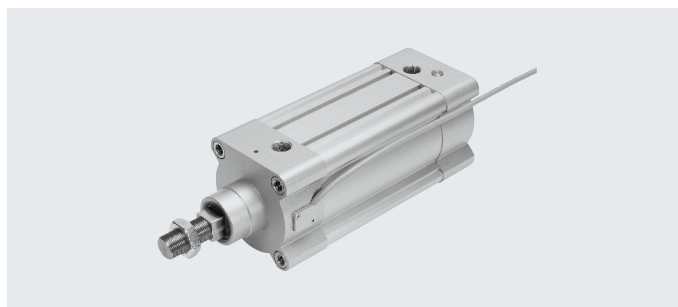
Allocation table of drives and associated proportional directional control valves  
a page 24

## Datasheet



Repair service

www.festo.com



- Ø - Diameter  
80 and 100 mm
- l - Stroke length  
10 ... 2000 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 <sup>1)</sup>                        | Guide rod with yoke, ball bearing guided     |             |
| Protection against rotation                | Square piston rod                            |             |
| Mounting position                          | Any                                          |             |
| Type of mounting                           | With accessories                             |             |
| Cushioning                                 | Elastic cushioning rings/plates at both ends |             |
| Position sensing                           | Integrated displacement encoder              |             |
|                                            | Via proximity sensor <sup>2)</sup>           |             |
| Measuring principle (displacement encoder) | Encoder, contactless and relative measuring  |             |
| Pneumatic connection                       | G3/8                                         | G1/2        |
| Stroke                                     |                                              |             |
| DDPG-... <sup>3)</sup>                     | [mm]                                         | 10 ... 2000 |
| 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 limited.

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

3) Can only be used as a positioning drive without restriction in the range from 100 ... 750 mm.

Note stroke reduction in combination with CPX-CMAX

| Operating and environmental conditions                   |                                                                                                |             |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------|
| Operating pressure                                       | [bar]                                                                                          | 4 ... 12    |
| 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                       | Lubricated operation not possible<br>Pressure dew point 10 °C below ambient/medium temperature |             |
| Ambient temperature <sup>3)</sup>                        | [°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) <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) a 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) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Datasheet

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

Permissible impact velocity:  $v = \sqrt{\frac{2 \cdot E}{m_1 + m_2}}$

Maximum permissible mass:  $m_2 = \frac{2 \cdot E}{v^2} - m_1$

V Permissible impact velocity  
E Max. impact energy  
m1 Moving mass (drive)  
m2 Moving payload

| Positioning characteristics with axis controller CPX-CMAX |            |             |
|-----------------------------------------------------------|------------|-------------|
| Piston Ø                                                  | 80         | 100         |
| Stroke                                                    | [mm]       | 100 ... 750 |
| Mounting position                                         |            | Any         |
| Resolution                                                | [mm]       | 0.01        |
| Repetition accuracy                                       | [mm]       | ± 0.5       |
| Minimum load, horizontal                                  | [kg]       | 20          |
| Maximum load, horizontal                                  | [kg]       | 300         |
| Minimum load, vertical1)                                  | [kg]       | 20          |
| Maximum load, vertical1)                                  | [kg]       | 100         |
| Min. travel speed                                         | [m/s]      | 0.05        |
| Max. travel speed                                         | [m/s]      | 1           |
| Typical positioning time, long stroke2)                   | [s]        | 0.8 8/1.02  |
| Typical positioning time, short stroke3)                  | [s]        | 0.7 7/0.95  |
| Minimum positioning stroke4)                              | [mm]       | ≤ 3         |
| Stroke reduction 5)                                       | [mm]       | 15          |
| Recommended proportional directional control valve        |            |             |
| For CPX-CMAX                                              | → Seite 24 |             |

1) Only in conjunction with external guidance

2) At 6 bar, horizontal mounting position, DNCI-XX-500, 400 mm positioning travel at min./max. load

3) At 6 bar, horizontal mounting position, DNCI-XX-500, 200 mm positioning travel at min./max. load

4) In relation to the cylinder stroke, but not more than 10 mm

5) The stroke reduction is to be maintained on each side of the drive, the max. positionable stroke is therefore: stroke – two times the stroke reduction

| Force control characteristics with axis controller CPX-CMAX |      |             |
|-------------------------------------------------------------|------|-------------|
| Piston Ø                                                    | 80   | 100         |
| Stroke                                                      | [mm] | 100 ... 750 |
| Mounting position                                           |      | Any         |
| Max. controllable force1)                                   | [N]  | 271 0/2440  |
| Typical friction forces2)                                   | [N]  | 140         |
| Repetition accuracy of pressure control3)4)                 | [%]  | < ± 2       |

1) Advancing/retracting at 6 bar

2) These values can fluctuate greatly from cylinder to cylinder and are not guaranteed.

These friction forces must also be taken into consideration when using an external guide or when the cylinder is moving other components subject to friction

3) This value defines the repetition accuracy with which the internal pressure differential in the cylinder, that corresponds to the prescribed force setpoint value, is controlled and refers to the maximum controllable force

4) The effective force at the workpiece and its accuracy depend largely on the friction in the system as well as the repetition accuracy of the internal control system. Note that friction forces always work against the direction of movement of the piston. The following formula can be used as a rule of thumb to approximate the force F at the workpiece:

$$F = F_{\text{setpoint}} \pm F_{\text{friction forces}} \pm \text{repetition accuracy of pressure control}$$

## Datasheet

| Positioning characteristics with Soft Stop end-position controller CPX-CMPX, SPC11 |      |                                                                                      |     |
|------------------------------------------------------------------------------------|------|--------------------------------------------------------------------------------------|-----|
| Piston ø                                                                           |      | 80                                                                                   | 100 |
| Stroke                                                                             | [mm] | 100 ... 500                                                                          |     |
| Mounting position                                                                  |      | Any                                                                                  |     |
| Repetition accuracy <sup>1)</sup>                                                  | [mm] | ±2                                                                                   |     |
| Minimum load, horizontal                                                           | [kg] | 20                                                                                   | 32  |
| Maximum load, horizontal                                                           | [kg] | 300                                                                                  | 450 |
| Minimum load, vertical <sup>2)</sup>                                               | [kg] | 20                                                                                   | 32  |
| Maximum load, vertical <sup>2)</sup>                                               | [kg] | 100                                                                                  | 150 |
| Travel time                                                                        | [s]  | → Engineering software Soft Stop: → <a href="http://www.festo.com">www.festo.com</a> |     |
| Recommended proportional directional control valve                                 |      |                                                                                      |     |
| For CPX-CMPX                                                                       |      | → Seite 24                                                                           |     |
| For SPC11                                                                          |      | → Seite 24                                                                           |     |

1) Intermediate position The accuracy in the end positions depends solely on the mechanical stability of the end stops

2) Only in conjunction with an external tour

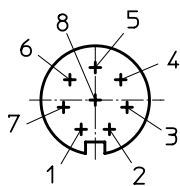
| Electrical data – Displacement encoder                   |        |                                         |  |
|----------------------------------------------------------|--------|-----------------------------------------|--|
| Output signal                                            |        | Analogue                                |  |
| 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                                 |  |
| Max. travel speed                                        | [m/s]  | 1.5                                     |  |
| Degree of protection                                     |        | IP65                                    |  |
| CE marking (see declaration of conformity)               |        | To EU EMC Directive <sup>1)</sup>       |  |
| Max. permitted magnetic interference field <sup>2)</sup> | [kA/m] | 10                                      |  |
| Electrical connection                                    |        | Cable with 8-pin plug, round M12 design |  |
| Cable length                                             | [m]    | 1.5                                     |  |

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

2) Distance in 100 mm

## Pin allocation for the plug



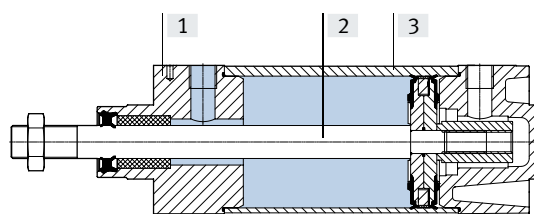
| Pin     |                     |
|---------|---------------------|
| 1       | + Ub sensor         |
| 2       | 0 V                 |
| 3       | Signal sine +       |
| 4       | Signal sine -       |
| 5       | Signal Cosine -     |
| 6       | Signal Cosine +     |
| 7       | Shielding           |
| 8       | –                   |
| Housing | Earth terminal (FE) |

## Datasheet

|                                                                 |       |       |
|-----------------------------------------------------------------|-------|-------|
| <b>Weight [g]</b>                                               |       |       |
| Piston Ø                                                        | 80    | 100   |
| <b>DDPC-...</b>                                                 |       |       |
| 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    |
| <b>DDPC-...-T – Through piston rod</b>                          |       |       |
| 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    |
| <b>DDPC-...-E – Additional weight with piston rod extension</b> |       |       |
| Weight surcharge per 10 mm extension                            | 31    | 31    |
| <b>DDPC-...-C – Additional weight with clamping unit</b>        |       |       |
| Additional weight                                               | 2046  | 2829  |
| <b>DDPC-...-D – Additional weight with guide unit</b>           |       |       |
| Basic weight with 0 mm stroke                                   | 10430 | 12990 |
| Additional weight per 10 mm stroke                              | 80    | 80    |

### Materials

Sectional view



|                          |                         |  |
|--------------------------|-------------------------|--|
| Standards-based cylinder |                         |  |
| [1] Cover                | Wrought aluminium alloy |  |
| [2] Piston rod           | High-alloy steel        |  |
| [3] Cylinder barrel      | Wrought aluminium alloy |  |
| – Seals                  | NBR, polyurethane       |  |
| Note on materials        | RoHS-compliant          |  |

## Datasheet

### Torques and shear forces

Max. torque for protection against rotation:

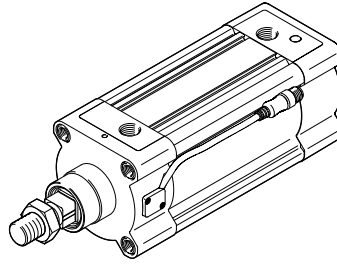
Dynamic  $\leq 3 \text{ Nm}$

Static  $\leq 5 \text{ Nm}$

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

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

→ Internet: feng



### Installation conditions

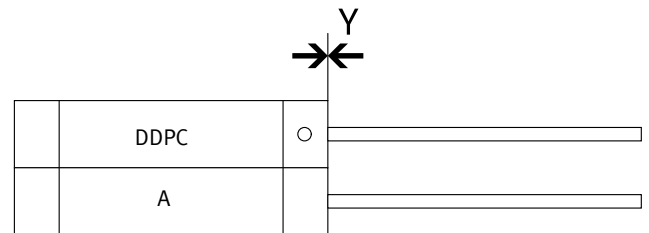
When installing a drive A with magnet (for position detection) next to a standard cylinder DDPC, the following conditions must be observed:

X Minimum distance between the drives

Y Offset between the drives on the bearing cover

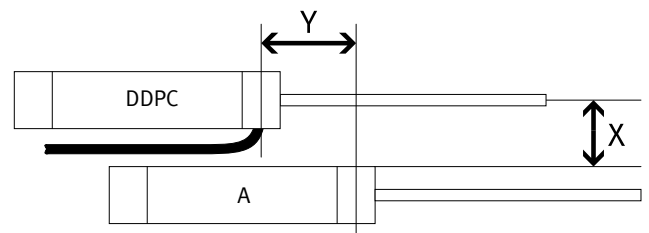
#### Parallel mounting

If the offset  $Y = 0 \text{ mm}$ , the drives can be mounted directly next to each other.



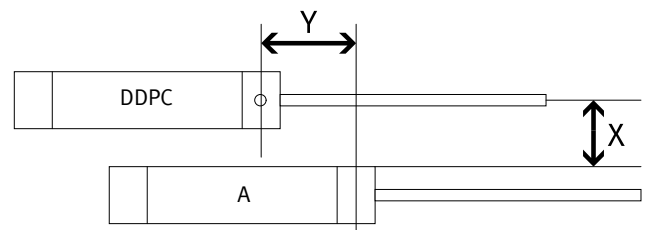
#### Offset mounting, cable outlet between the drives

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.



#### Offset mounting, 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.

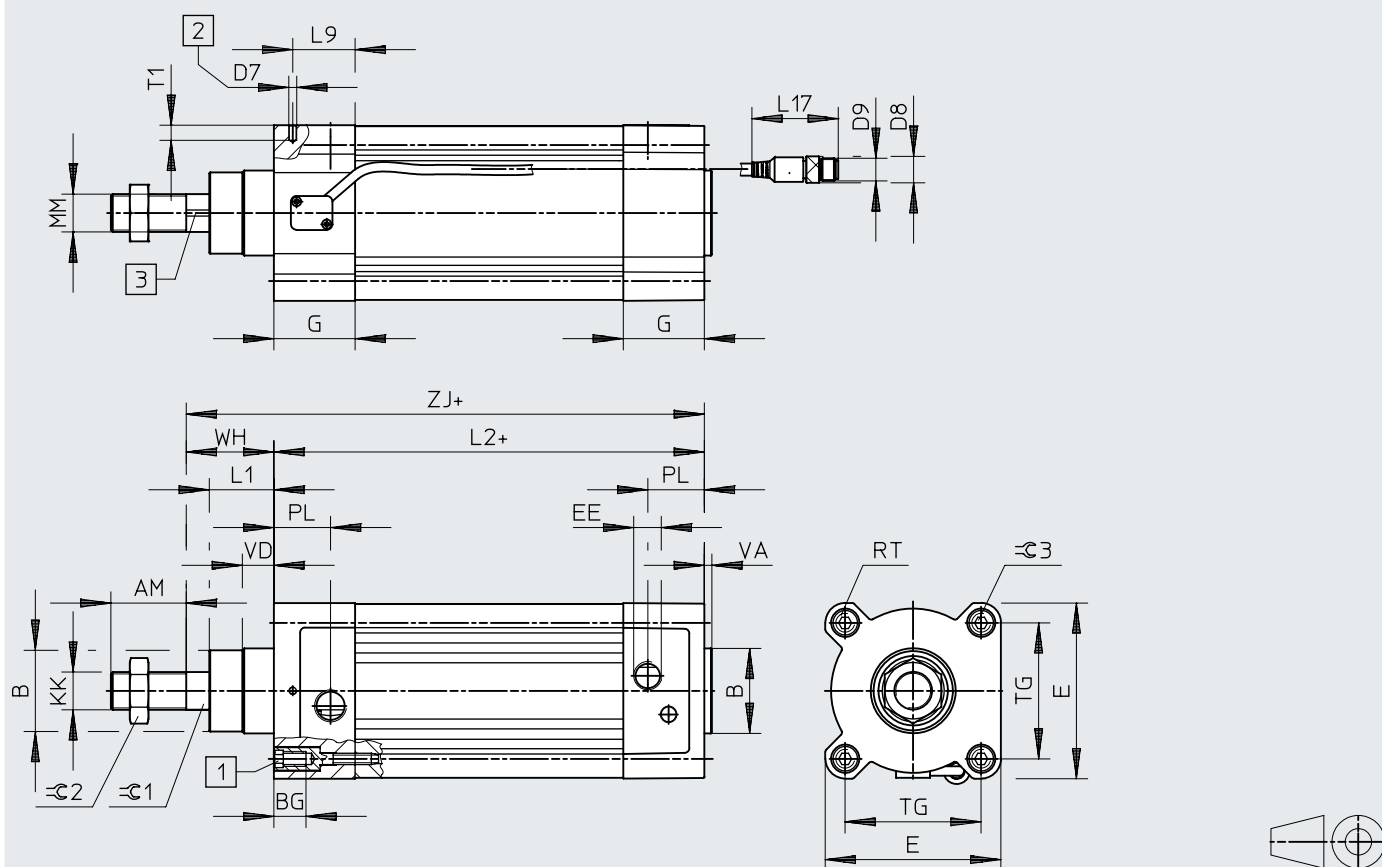


## Datasheet

## Dimensions

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

DDPC...



[1] Socket head screw with female thread for mounting components

[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<br>ø<br>d11 | BG | D7<br>ø | D8<br>ø | D9  | E   | EE   | G  |
|------|----|---------------|----|---------|---------|-----|-----|------|----|
| [mm] |    |               |    |         |         |     |     |      |    |
| 80   | 40 | 45            | 17 | 3.7     | 14      | M12 | 93  | G3/8 | 43 |
| 100  | 40 | 55            | 17 | 3.7     | 14      | M12 | 110 | G1/2 | 48 |

| ø    | KK      | L1   | L2  | L9   | L17  | MM<br>ø | 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  |

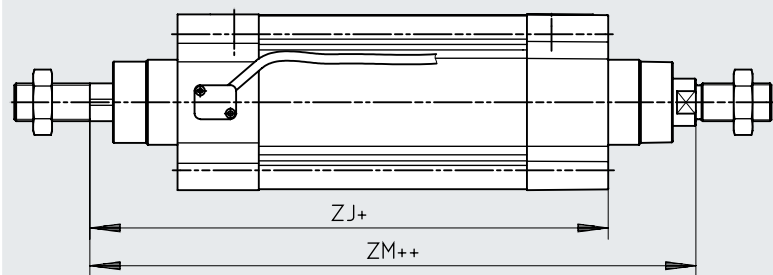
| ø    | TG | VA | VD   | WH | ZJ  | ⌀ 1 | ⌀ 2 | ⌀ 3 |
|------|----|----|------|----|-----|-----|-----|-----|
| [mm] |    |    |      |    |     |     |     |     |
| 80   | 72 | 4  | 16.7 | 46 | 174 | 22  | 30  | 6   |
| 100  | 89 | 4  | 20.5 | 51 | 189 | 22  | 30  | 6   |

Datasheet

Dimensions

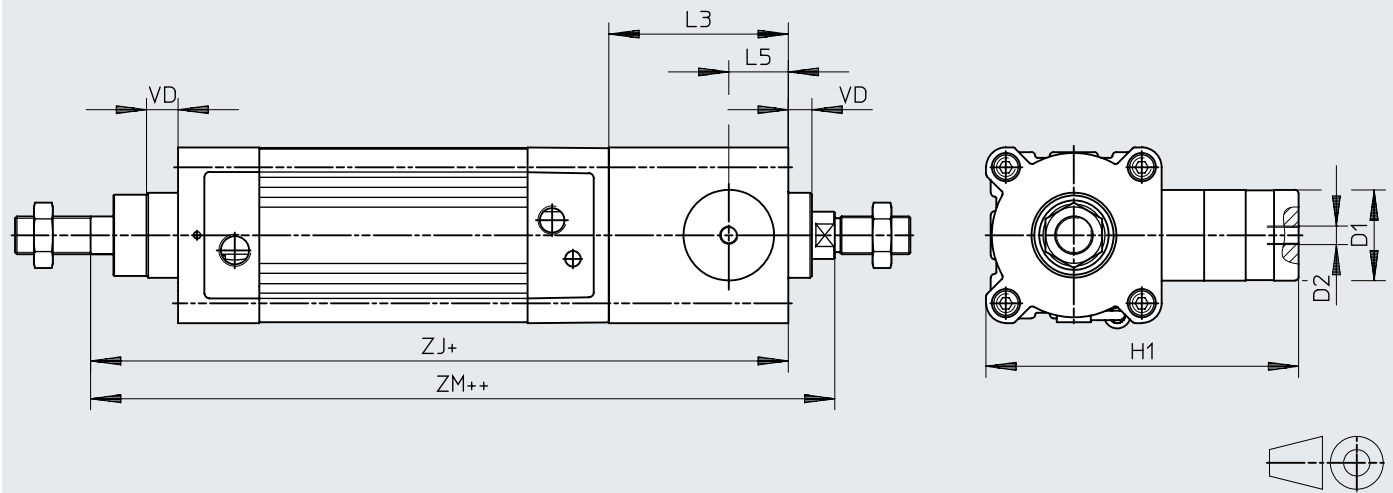
Download CAD data → [www.festo.com](http://www.festo.com)

DDPC-...-T – Through piston rod



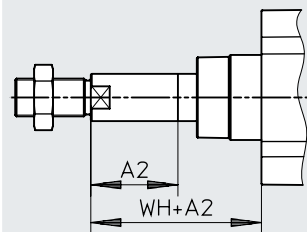
+ = plus stroke length  
++ = plus 2x stroke length

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



+ = plus stroke length  
++ = plus 2x stroke length

DDPC-...-...E – Extended piston rod



| ø    | A2   | D1      | D2   | H1    | L3 | L5   |
|------|------|---------|------|-------|----|------|
| [mm] | max. | ø<br>f9 |      |       |    |      |
| 80   | 500  | 48      | G1/8 | 165.5 | 95 | 31.5 |
| 100  | 500  | 48      | G1/8 | 174   | 98 | 31   |

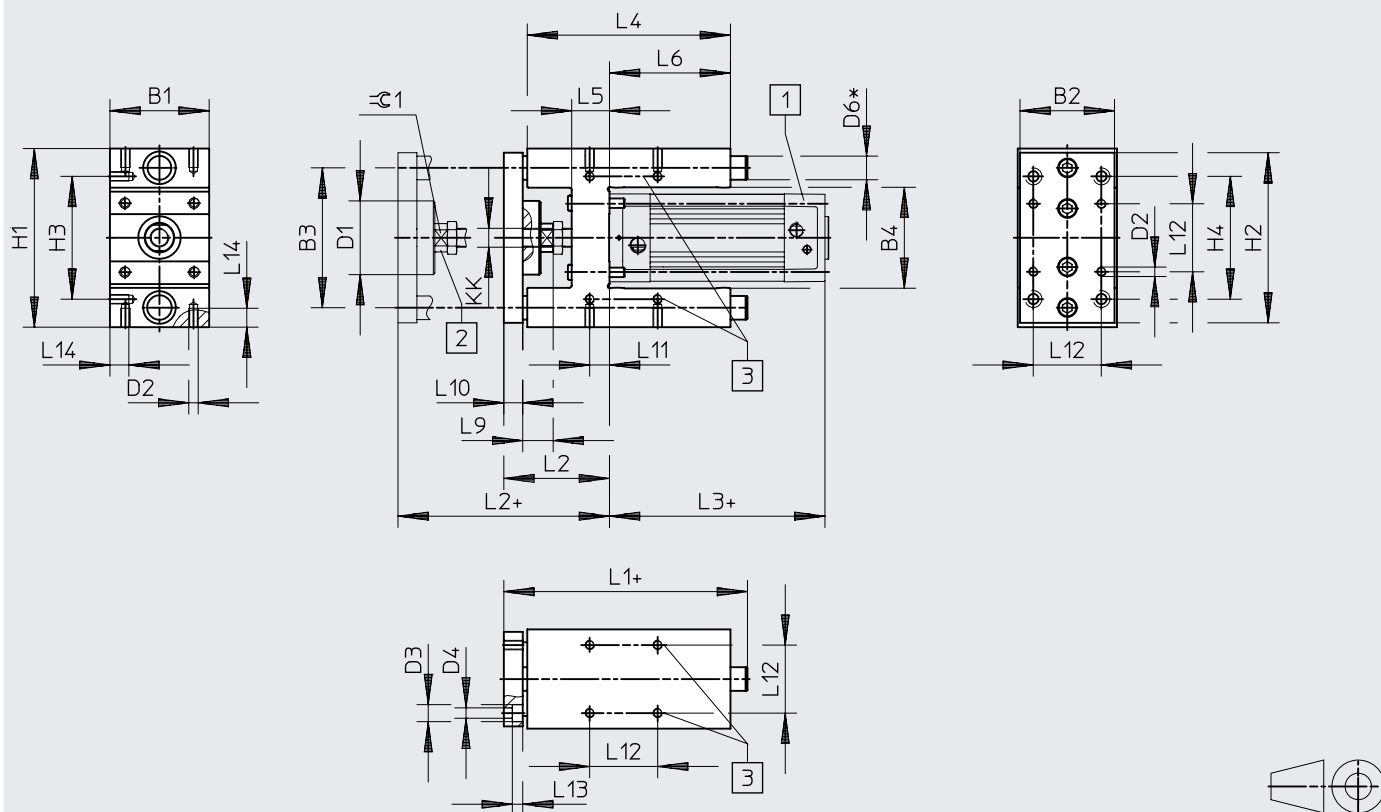
| ø    | VD   | WH | ZJ         | ZM          |
|------|------|----|------------|-------------|
| [mm] |      |    | DDPC-...-T | DDPC-...-CT |
| 80   | 16.7 | 46 | 174        | 269         |
| 100  | 20.5 | 51 | 189        | 287         |

## Datasheet

## Dimensions

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

DDPC-...-D



[1] Standards-based cylinder DDPC

[2] Compensating coupling

[3] Customers can drill additional mounting holes here as required

+ = plus stroke length

| ∅    | B1   | B2  | B3   | B4   | D1<br>∅ | D2  | D3<br>∅ | D4<br>∅ | D6<br>∅<br>h6 |
|------|------|-----|------|------|---------|-----|---------|---------|---------------|
| [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 | ≈G 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   |

## Ordering data – Modular product system

| Ordering table              |                                                        |                |            |              |            |
|-----------------------------|--------------------------------------------------------|----------------|------------|--------------|------------|
| Piston Ø                    | 80                                                     | 100            | Conditions | Code         | Enter code |
| Module no.                  | <b>1677705</b>                                         | <b>1691433</b> |            |              |            |
| Function                    | Standard cylinder with integrated displacement encoder |                |            | <b>DDPC</b>  | DDPC       |
| Protection against rotation | With protection against rotation                       |                |            | <b>-Q</b>    |            |
|                             | With guide unit                                        |                |            | <b>-D</b>    |            |
| Piston Ø [mm]               | 80                                                     | 100            |            | <b>-...</b>  |            |
| Stroke [mm]                 | 10 ... 2000                                            |                | [1]        | <b>-...</b>  |            |
| Clamping unit               | None                                                   |                |            |              |            |
|                             | Attached                                               |                | [2]        | <b>-C</b>    |            |
| Piston rod type             | At one end                                             |                |            |              |            |
|                             | Through piston rod                                     |                |            | <b>T</b>     |            |
| Cushioning                  | Elastic cushioning rings/plates at both ends           |                |            | <b>-P</b>    | -P         |
| Stroke [mm]                 | 10 ... 2 000                                           |                | [1]        | <b>-...</b>  |            |
| Stroke [mm]                 | 10 ... 2 000                                           |                |            | <b>-...</b>  |            |
| Position sensing            | Via proximity switch                                   |                |            | <b>A</b>     | A          |
| Extended piston rod         | None                                                   |                |            |              |            |
|                             | [mm]                                                   | 1 ... 500      |            | <b>-...E</b> |            |

[1] Can only be used as a positioning drive in the range of 100 ... 750 mm.

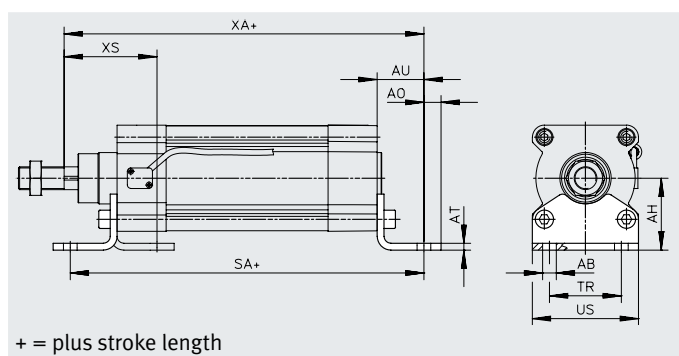
[1] -... Can only be used as a positioning drive in the range of 100 ... 750 mm.

[2] C Only available with T

## Accessories

### Foot mounting HNC

Material:  
Galvanised steel



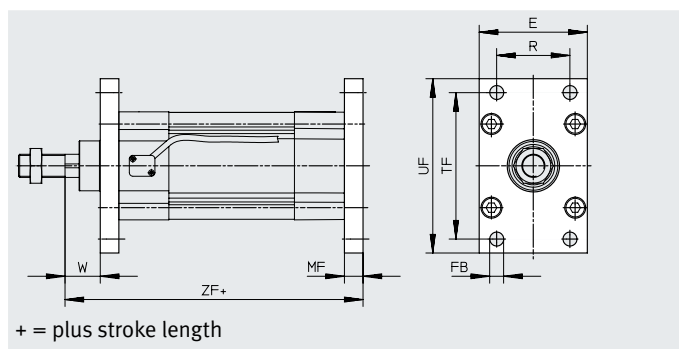
| Dimensions and ordering data |         |    |      |    |    |          |            |
|------------------------------|---------|----|------|----|----|----------|------------|
| For Ø                        | AB<br>Ø | AH | A0   | AT | AU | SA       |            |
| [mm]                         |         |    |      |    |    | DDPC-... | DDPC-...-C |
| 80                           | 12      | 63 | 15   | 6  | 41 | 276      | 371        |
| 100                          | 14.5    | 71 | 17.5 | 6  | 41 | 220      | 318        |

| For Ø | TR | US  | XA       |            | XS | CRC <sup>1)</sup> | Weight | Part no.      | Type           |
|-------|----|-----|----------|------------|----|-------------------|--------|---------------|----------------|
| [mm]  |    |     | DDPC-... | DDPC-...-C |    |                   | [g]    |               |                |
| 80    | 63 | 93  | 281      | 376        | 81 | 1                 | 829    | <b>174373</b> | <b>HNC-80</b>  |
| 100   | 75 | 110 | 230      | 328        | 86 | 1                 | 1009   | <b>174374</b> | <b>HNC-100</b> |

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

### Flange mounting FNC

Material:  
FNC: Galvanised steel  
RoHS-compliant



| Dimensions and ordering data |     |         |    |    |     |     |    |          |            |                   |        |          |         |
|------------------------------|-----|---------|----|----|-----|-----|----|----------|------------|-------------------|--------|----------|---------|
| For Ø                        | E   | FB<br>Ø | MF | R  | TF  | UF  | W  | ZF       |            | CRC <sup>1)</sup> | Weight | Part no. | Type    |
| [mm]                         |     | H13     |    |    |     |     |    | DDPC-... | DDPC-...-C |                   | [g]    |          |         |
| 80                           | 93  | 12      | 16 | 63 | 126 | 150 | 30 | 256      | 351        | 1                 | 1495   | 174380   | FNC-80  |
| 100                          | 110 | 14      | 16 | 75 | 150 | 175 | 35 | 205      | 303        | 1                 | 2041   | 174381   | FNC-100 |

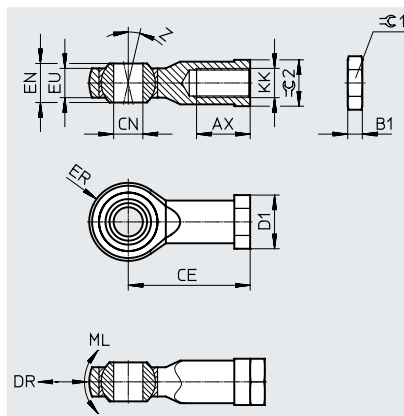
1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Accessories

### Rod eye SGS

Scope of delivery:  
1 rod eye, 1 hex nut to DIN 439

Material:  
Galvanised steel  
RoHS-compliant



#### Dimensions and ordering data

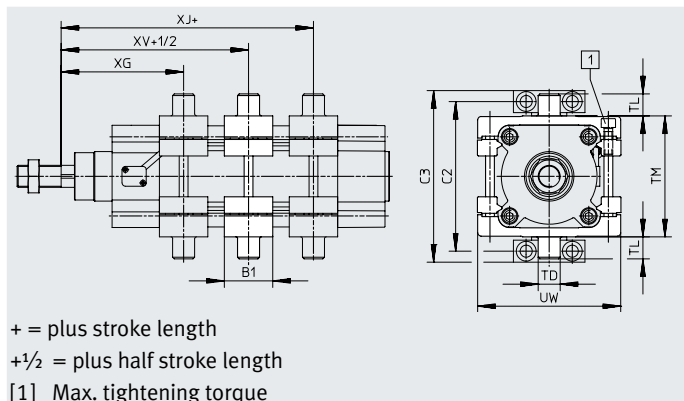
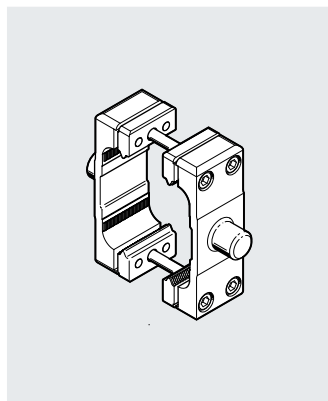
| For ø   | AV   | B1 | CE | CN<br>ø<br>H7 | D1<br>ø | EF<br>±0.5 | EN | EU | Z   | ≈G1 | ≈G2 | CRC <sup>1)</sup> | Weight<br>[g] | Part no. | Type        |
|---------|------|----|----|---------------|---------|------------|----|----|-----|-----|-----|-------------------|---------------|----------|-------------|
| [mm]    |      |    |    |               |         |            |    |    | [°] |     |     |                   |               |          |             |
| M20x1.5 | 33-2 | 10 | 77 | 20            | 34      | 25         | 25 | 18 | 15  | 30  | 30  | 1                 | 464           | 9264     | SGS-M20x1.5 |

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

### Trunnion flange kit DAMT

The kit can be attached at any position along the profile barrel of the cylinder.

Material:  
Galvanised steel  
RoHS-compliant



#### Dimensions and ordering data

| For ø | B1 | C2) | C3) | TD<br>ø<br>e9 | TL | TM  | UW  | XG       |            |
|-------|----|-----|-----|---------------|----|-----|-----|----------|------------|
| [mm]  |    |     |     |               |    |     |     | DDPC-... | DDPC-...-C |
| 80    | 44 | 136 | 156 | 20            | 20 | 110 | 130 | 111      | 206        |
| 100   | 48 | 164 | 189 | 25            | 25 | 132 | 145 | 123      | 221        |

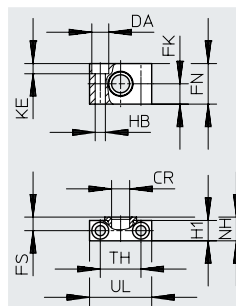
| For ø | XJ       |            | XV       |            | Max. tightening torque | CRC <sup>1)</sup> | Weight | Part no. | Type          |
|-------|----------|------------|----------|------------|------------------------|-------------------|--------|----------|---------------|
| [mm]  | DDPC-... | DDPC-...-C | DDPC-... | DDPC-...-C | [Nm]                   |                   | [g]    |          |               |
| 80    | 175      | 270        | 143      | 238        | 28+2                   | 1                 | 1494   | 163529   | DAMT-V1-80-A  |
| 100   | 117      | 215        | 120      | 218        | 28+2                   | 1                 | 2095   | 163530   | DAMT-V1-100-A |

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Accessories

### Trunnion support LNKG

Material:  
Trunnion support: Anodised aluminium  
Plain bearing: Plastic  
RoHS-compliant



#### Dimensions and ordering data

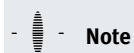
| For Ø | CR    | DA    | FK   | FN | FS | H1   | HB    | KE | NH   | TH   | UL | CRC <sup>1)</sup> | Weight | Part no.     | Type                 |
|-------|-------|-------|------|----|----|------|-------|----|------|------|----|-------------------|--------|--------------|----------------------|
| [mm]  | Ø D11 | Ø H13 | ±0.1 |    |    |      | Ø H13 |    |      | ±0.2 |    |                   | [g]    |              |                      |
| 80    | 20    | 18    | 20   | 40 | 13 | 20   | 11    | 11 | 23   | 42   | 65 | 2                 | 178    | <b>32961</b> | <b>LNKG-6 3/80</b>   |
| 100   | 25    | 20    | 25   | 50 | 16 | 24.5 | 14    | 13 | 28.5 | 50   | 75 | 2                 | 306    | <b>32962</b> | <b>LNKG-10 0/125</b> |

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

#### Ordering data

|                                                                                    | For Ø   | Comment     | Part no.      | Type                       | PU <sup>1)</sup> |
|------------------------------------------------------------------------------------|---------|-------------|---------------|----------------------------|------------------|
| <b>Slot cover</b>                                                                  |         |             |               | Datasheets → Internet: abp |                  |
|  | 80, 100 | Every 0.5 m | <b>151680</b> | <b>ABP-5-S</b>             | 2                |

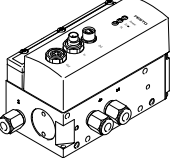
1) Packaging unit



#### Note

Recommended proximity switch  
→ Internet: dsbc

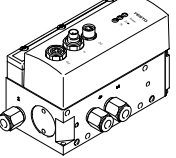
## Accessories

| Ordering data – Proportional directional control valves and push-in fittings      |                                                       |             |                                        |                          |                          |                          |                  |
|-----------------------------------------------------------------------------------|-------------------------------------------------------|-------------|----------------------------------------|--------------------------|--------------------------|--------------------------|------------------|
|                                                                                   | For Ø                                                 | Stroke      | Proportional directional control valve |                          | Push-in fitting for DDPC |                          | PU <sup>1)</sup> |
|                                                                                   | [mm]                                                  | [mm]        | Datasheets →                           | Internet: vpw            | Datasheets →             | Internet: qs             |                  |
|                                                                                   |                                                       |             | Part no.                               | Type                     | Part no.                 | Type                     |                  |
|  | <b>For applications with axis controller CPX-CMAX</b> |             |                                        |                          |                          |                          |                  |
|                                                                                   | 80                                                    | 100 ... 200 | 550171                                 | VPWP-6-L-5-Q8-10-E-...   | 186100                   | QS-G3/8-8                | 10               |
|                                                                                   |                                                       | 201 ... 450 | 550172                                 | VPWP-8-L-5-Q10-10-E-...  | 186102                   | QS-G3/8-10               |                  |
|                                                                                   |                                                       | 451 ... 750 | 1552544                                | VPWP-10-L-5-Q-10-E-G-EX1 | 186103                   | QS-G3/8-12               |                  |
|                                                                                   | 100                                                   | 100 ... 120 | 550171                                 | VPWP-6-L-5-Q8-10-E-...   | 186104                   | QS-G1/2-12 <sup>2)</sup> | 1                |
|                                                                                   |                                                       | 121 ... 330 | 550172                                 | VPWP-8-L-5-Q10-10-E-...  | 186104                   | QS-G1/2-12 <sup>3)</sup> |                  |
|                                                                                   |                                                       | 331 ... 750 | 1552544                                | VPWP-10-L-5-Q-10-E-G-EX1 | 186104                   | QS-G1/2-12               |                  |

1) Packaging unit

2) With additional reduction from Ø 12 to Ø 8, with push-in connector QS-12H-8 (part number 130624)

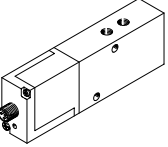
3) With additional reduction from Ø 12 to Ø 10, with push-in connector QS-12H-10 (part number 153044)

| Ordering data – Proportional directional control valves and push-in fittings       |                                                                         |             |                                        |                          |                          |                          |                  |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------|----------------------------------------|--------------------------|--------------------------|--------------------------|------------------|
|                                                                                    | For Ø                                                                   | Stroke      | Proportional directional control valve |                          | Push-in fitting for DDPC |                          | PU <sup>1)</sup> |
|                                                                                    | [mm]                                                                    | [mm]        | Datasheets →                           | Internet: vpw            | Datasheets →             | Internet: qs             |                  |
|                                                                                    |                                                                         |             | Part no.                               | Type                     | Part no.                 | Type                     |                  |
|  | <b>For applications with Soft Stop end-position controller CPX-CMPX</b> |             |                                        |                          |                          |                          |                  |
|                                                                                    | 80                                                                      | 100 ... 125 | 550170                                 | VPWP-4-L-5-Q8-10-E-...   | 186100                   | QS-G3/8-8                | 10               |
|                                                                                    |                                                                         | 126 ... 160 | 550171                                 | VPWP-6-L-5-Q8-10-E-...   | 186100                   | QS-G3/8-8                |                  |
|                                                                                    |                                                                         | 161 ... 400 | 550172                                 | VPWP-8-L-5-Q10-10-E-...  | 186102                   | QS-G3/8-10               |                  |
|                                                                                    |                                                                         | 401 ... 500 | 1552544                                | VPWP-10-L-5-Q-10-E-G-EX1 | 186103                   | QS-G3/8-12               |                  |
|                                                                                    | 100                                                                     | 100 ... 150 | 550171                                 | VPWP-6-L-5-Q8-10-E-...   | 186104                   | QS-G1/2-12 <sup>2)</sup> | 1                |
|                                                                                    |                                                                         | 151 ... 350 | 550172                                 | VPWP-8-L-5-Q10-10-E-...  | 186104                   | QS-G1/2-12 <sup>3)</sup> |                  |
|                                                                                    |                                                                         | 351 ... 500 | 1552544                                | VPWP-10-L-5-Q-10-E-G-EX1 | 186104                   | QS-G1/2-12               |                  |

1) Packaging unit

2) With additional reduction from Ø 12 to Ø 8, with push-in connector QS-12H-8 (part number 130624)

3) With additional reduction from Ø 12 to Ø 10, with push-in connector QS-12H-10 (part number 153044)

| Ordering data – Proportional directional control valves and push-in fittings       |                                                                      |             |                                        |                     |                          |                          |                  |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------|----------------------------------------|---------------------|--------------------------|--------------------------|------------------|
|                                                                                    | For Ø                                                                | Stroke      | Proportional directional control valve |                     | Push-in fitting for DDPC |                          | PU <sup>1)</sup> |
|                                                                                    | [mm]                                                                 | [mm]        | Datasheets →                           | Internet: mpye      | Datasheets →             | Internet: qs             |                  |
|                                                                                    |                                                                      |             | Part no.                               | Type                | Part no.                 | Type                     |                  |
|  | <b>For applications with Soft Stop end-position controller SPC11</b> |             |                                        |                     |                          |                          |                  |
|                                                                                    | 80                                                                   | 100 ... 125 | 151692                                 | MPYE-5-1/8-LF-010-B | 186100                   | QS-G3/8-8                | 10               |
|                                                                                    |                                                                      | 126 ... 160 | 151693                                 | MPYE-5-1/8-HF-010-B | 186100                   | QS-G3/8-8                |                  |
|                                                                                    |                                                                      | 161 ... 400 | 151694                                 | MPYE-5-1/4-010-B    | 186102                   | QS-G3/8-10               |                  |
|                                                                                    |                                                                      | 401 ... 500 | 151695                                 | MPYE-5-3/8-010-B    | 186103                   | QS-G3/8-12               |                  |
|                                                                                    | 100                                                                  | 100 ... 150 | 151693                                 | MPYE-5-1/8-HF-010-B | 186104                   | QS-G1/2-12 <sup>2)</sup> | 1                |
|                                                                                    |                                                                      | 151 ... 350 | 151694                                 | MPYE-5-1/4-010-B    | 186104                   | QS-G1/2-12 <sup>3)</sup> |                  |
|                                                                                    |                                                                      | 351 ... 500 | 151695                                 | MPYE-5-3/8-010-B    | 186104                   | QS-G1/2-12               |                  |

1) Packaging unit

2) With additional reduction from Ø 12 to Ø 8, with push-in connector QS-12H-8 (part number 130624)

3) With additional reduction from Ø 12 to Ø 10, with push-in connector QS-12H-10 (part number 153044)