Linear actuators DFPI
Linear actuators DFPI

Key features

Function
DFPIs are closed-loop controlled linear actuators. They are available with integrated displacement encoder (DFPI-…-E-…) or fully integrated positioner (DFPI-…-C1V-…). In the version DFPI-…-E-…, the potentiometric displacement encoder supplies an analogue voltage signal proportional to the piston position. This can be used for operation with an external positioner. In the version DFPI-…-C1V-…, the integrated positioner provides the positioning function. This actuator has a factory-defined safety position that is assumed if the operating voltage or the analogue setpoint value fails. The position is preset via an analogue setpoint signal in the range of 4 … 20 mA. The position feedback takes place via an analogue feedback signal in the range of 4 … 20 mA. The feedback signal provides the user with greater reliability and easier diagnostics. The travel speed can be adjusted using the integrated flow control screws. Variants with a mounting interface to ISO 15552 or DIN EN ISO 5210 are available. The sturdy corrosion-resistant design of the DFPI is ideal for use under harsh ambient conditions.

Innovative
- Ready-to-install, compact unit for easy installation
- Sturdy and corrosion-resistant, ideal for use under harsh ambient conditions
- Wide range of accessories for virtually any installation situation
- Suitable for use in potentially explosive locations
- Additional contactless binary end-position sensing possible with proximity sensors
- Suitable for applications with closed-loop controlled linear and swivel motion
- Double-acting
- Optionally with integrated displacement encoder or fully integrated positioner
- Sizes Ø 100, Ø 125, Ø 160, Ø 200, Ø 250 and Ø 320
- Stroke lengths 40 to 990 mm
- Mounting interfaces to ISO 15552 or DIN EN ISO 5210
- IP65, IP67, IP69K, NEMA4
- ATEX certification

Ordering data – Product options

Configurable product
This product and all its product options can be ordered using the configurator.

The configurator can be found under Products on the DVD or
www.festo.com/catalogue/...

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Type</th>
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<tbody>
<tr>
<td>5078949</td>
<td>DFPI-100</td>
</tr>
<tr>
<td>5087658</td>
<td>DFPI-125</td>
</tr>
<tr>
<td>5091933</td>
<td>DFPI-160</td>
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<tr>
<td>5092508</td>
<td>DFPI-200</td>
</tr>
<tr>
<td>5099770</td>
<td>DFPI-250</td>
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<tr>
<td>5106115</td>
<td>DFPI-320</td>
</tr>
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</table>

Subject to change – 2019/04
Linear actuators DFPI
Key features

Product options for DFPI-...-NB3P... based on ISO 15552

1. M12x1 plug, 5-pin, A-coded
2. Cable connector M16x1.5
3. Metal flanged socket
4. Push-in fitting QS1)
5. Air duct at the actuator, stainless steel pipe or plastic tubing
6. Connecting cable NHSB1), 5-wire, for DFPI-...-C1V-P-A
7. Connecting cable NHSB1), 3-wire, for DFPI-...-E-P

1) Can be ordered separately as an accessory

Product options for DFPI-...-E... and DFPI-...-C1V... based on DIN EN ISO 5210

1. Plastic flanged socket
2. Metal flanged socket
3. Push-in fitting QS1)
4. Connecting cable NHSB1), 5-wire, for DFPI-...-C1V-P-A
5. Connecting cable NHSB1), 3-wire, for DFPI-...-E-P

1) Can be ordered separately as an accessory

New
### Linear actuators DFPI

#### Product range overview

**DFPI-...-E-NB3...**
- For operation with an external positioner with analogue voltage input
- Potentiometric displacement encoder integrated into the actuator DFPI
- Sturdy tie rod design
- Double-acting
- Mounting interfaces to ISO 15552 on bearing and end caps

<table>
<thead>
<tr>
<th>Version</th>
<th>Characteristics</th>
<th>Page</th>
</tr>
</thead>
</table>
| DFPI-...-E-NB3... | • Electrical, pneumatic connection using metal flanged socket, pre-assembled connecting cable NHSB, see Accessories chapter  
• Air duct on the outside of the actuator via plastic tubing | 11   |
| DFPI-...-E-NB3P9B2... | • Electrical connection using cable connector M16x1.5, screw terminal  
• Pneumatic connection G3/8  
• Air duct on the outside of the actuator, either using a stainless steel pipe for variant DFPI-...-E-NB3P9B2-M or plastic tubing for variant DFPI-...-E-NB3P9B2 | 11   |
| DFPI-...-E-NB3M12B2... | • Electrical connection via M12x1 plug, 5-pin  
• Pneumatic connection G3/8  
• Air duct on the outside of the actuator, either using a stainless steel pipe for variant DFPI-...-E-NB3M12B2-M or plastic tubing for variant DFPI-...-E-NB3M12B2 | 11   |
| DFPI-...-C1V-NB3... | • Digital electropneumatic positioner integrated within the drive housing  
• Setpoint input 4 ... 20 mA  
• Position feedback 4 ... 20 mA  
• Safety position either retracting or advancing piston rod depending on the product version  
• Sturdy tie rod design  
• Double-acting  
• Mounting interfaces to ISO 15552 on bearing and end caps | 17   |
| DFPI-...-C1V-NB3P-A | • Electrical, pneumatic connection using metal flanged socket, pre-assembled connecting cable NHSB, see Accessories chapter  
• Air duct on the outside of the actuator via plastic tubing  
• Safety position if the operating voltage or setpoint signal fails: retracting piston rod | 17   |
| DFPI-...-C1V-NB3P-R-A | • Electrical, pneumatic connection using metal flanged socket, pre-assembled connecting cable NHSB, see Accessories chapter  
• Air duct on the outside of the actuator via plastic tubing  
• Safety position if the operating voltage or setpoint signal fails: advancing piston rod | 17   |
Linear actuators DFPI

Product range overview

DFPI-...-E...
- For operation with an external positioner with analogue voltage input
- Potentiometric displacement encoder integrated into the actuator
- Integrated air duct on the actuator
- Double-acting
- Mounting interfaces for process valves to DIN EN ISO 5210

<table>
<thead>
<tr>
<th>Version</th>
<th>Characteristics</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-...-E-...</td>
<td>DFPI-...-E-P-G2</td>
<td>24</td>
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</table>

<table>
<thead>
<tr>
<th>Version</th>
<th>Characteristics</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-...-C1V-...</td>
<td>DFPI-...-C1V-P-A</td>
<td>30</td>
</tr>
<tr>
<td>DFPI-...-C1V-A</td>
<td></td>
<td>30</td>
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</table>

DFPI-...-C1V-...
- Digital electropneumatic positioner integrated within the drive housing
- Setpoint input 4 ... 20 mA
- Position feedback 4 ... 20 mA
- Retracting piston rod safety position
- Integrated air duct on the actuator
- Double-acting
- Mounting interfaces for process valves to DIN EN ISO 5210

<table>
<thead>
<tr>
<th>Version</th>
<th>Characteristics</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-...-C1V-...</td>
<td>DFPI-...-C1V-P-A</td>
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<td>DFPI-...-C1V-A</td>
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New
Linear actuators DFPI

Type codes

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<tr>
<th>Type</th>
<th>DFPI</th>
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<tbody>
<tr>
<td>Piston diameter</td>
<td>100 mm, 125 mm, 160 mm, 200 mm, 250 mm, 320 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>x length [40 – 990 mm]</td>
</tr>
<tr>
<td>Cushioning</td>
<td>N No cushioning</td>
</tr>
<tr>
<td>Displacement encoder</td>
<td>D2 Analogue</td>
</tr>
<tr>
<td>Method of measurement</td>
<td>P Potentiometer</td>
</tr>
<tr>
<td>Control unit</td>
<td>– None, C1 Closed-loop controller 1</td>
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<tr>
<td>Closed-loop controller attachment position</td>
<td>– Integrated, E External</td>
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<tr>
<td>Directional control valve</td>
<td>– None, V Integrated</td>
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### Linear actuators DFPI

#### Type codes

<table>
<thead>
<tr>
<th>Standard</th>
<th>Not according to standard</th>
<th>NB3</th>
<th>Based on ISO 15552</th>
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<tr>
<td>Connection type</td>
<td>Standard</td>
<td>P</td>
<td>Protected</td>
</tr>
<tr>
<td></td>
<td>P9</td>
<td>Cable connector</td>
<td>M12</td>
</tr>
<tr>
<td>Connection type material</td>
<td>Standard</td>
<td>B2</td>
<td>Brass, nickel-plated</td>
</tr>
<tr>
<td>Safety position</td>
<td>Advancing</td>
<td>R</td>
<td>Retracting</td>
</tr>
<tr>
<td>Additional function</td>
<td>Standard</td>
<td>A</td>
<td>Position feedback 4 ... 20 mA</td>
</tr>
<tr>
<td>Tubing</td>
<td>Standard</td>
<td>M</td>
<td>Metal</td>
</tr>
<tr>
<td>Generation</td>
<td>First generation</td>
<td>G2</td>
<td>Second generation</td>
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</table>
## Mounting components and accessories

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th></th>
<th>Page/Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Foot mounting HNC/CRHNC</td>
<td></td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Foot mounting HNG</td>
<td></td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>For bearing or end caps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Flange mounting FNC/CRFNG</td>
<td></td>
<td>40</td>
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<tr>
<td></td>
<td>Flange mounting FNG</td>
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<td>40</td>
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<tr>
<td></td>
<td>For bearing or end caps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Trunnion flange ZNCF/CRZNG</td>
<td></td>
<td>41</td>
</tr>
<tr>
<td>4</td>
<td>Trunnion support LN2Z/CRLN2ZG</td>
<td></td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>For trunnion flange ZNCF/CRZNG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Swivel flange SNC</td>
<td></td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Swivel flange SNG</td>
<td></td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>For end caps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Clevis foot LSNG</td>
<td></td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>With spherical bearing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Linear actuators DFPI-NB3...

Overview of peripherals for DFPI based on ISO 15552

<table>
<thead>
<tr>
<th>Mounting components and accessories</th>
<th>Description</th>
<th>Page/Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Clevis foot LSNSG</td>
<td>Weld-on, with spherical bearing</td>
<td>49</td>
</tr>
<tr>
<td>8 Swivel flange SNCS</td>
<td>With spherical bearing for end caps</td>
<td>46</td>
</tr>
<tr>
<td>9 Clevis foot LBG</td>
<td>For swivel flange SNCS</td>
<td>49</td>
</tr>
<tr>
<td>10 Swivel flange SNCL</td>
<td>For end caps</td>
<td>46</td>
</tr>
<tr>
<td>11 Swivel flange SNGL</td>
<td>For end caps, corresponds to MP2 to ISO 15552</td>
<td>46</td>
</tr>
<tr>
<td>12 Clevis foot SNCL</td>
<td>For swivel flange SNCL</td>
<td>49</td>
</tr>
<tr>
<td>13 Clevis foot LNJ/LNJC</td>
<td>For swivel flange SNLG</td>
<td>49</td>
</tr>
<tr>
<td>14 Clevis foot LSN</td>
<td>With spherical bearing</td>
<td>49</td>
</tr>
<tr>
<td>15 Rod eye SGS</td>
<td>For rod eye SGS</td>
<td>49</td>
</tr>
<tr>
<td>16 Rod eye SGS/CRSGS</td>
<td>With spherical bearing</td>
<td>50</td>
</tr>
<tr>
<td>17 Coupling piece KSG</td>
<td>To compensate for radial deviations</td>
<td>50</td>
</tr>
<tr>
<td>18 Rod clevis SG/CRSG</td>
<td>Permits a swivel motion of the cylinder in one plane</td>
<td>50</td>
</tr>
<tr>
<td>19 Self-aligning rod coupler FK/CRFK</td>
<td>To compensate for radial and angular deviations</td>
<td>50</td>
</tr>
<tr>
<td>20 Connecting cable NHSB</td>
<td>For electrical and pneumatic connection of linear actuator DFPI-...-P-...</td>
<td>36</td>
</tr>
<tr>
<td>21 DADG-AK-F6-A2</td>
<td>Mounting bracket for mounting a positioner with interface according to VDI/VDE 3845 or mounting with a hole spacing of 150 mm</td>
<td>47</td>
</tr>
<tr>
<td>22 Connecting cable NEBU</td>
<td>For proximity sensor</td>
<td>52</td>
</tr>
<tr>
<td>23 Proximity sensor SMPO-1-H-B</td>
<td>For sensing the piston position</td>
<td>52</td>
</tr>
<tr>
<td>24 Mounting kit SMB5</td>
<td>For proximity sensor SMPO-1-H-B 41</td>
<td>52</td>
</tr>
<tr>
<td>25 Proximity sensor SMT-8M-A</td>
<td>Magneto resistive, 5 ... 30 V DC, to EU Explosion Protection Directive (ATEX)</td>
<td>51</td>
</tr>
<tr>
<td>26 Proximity sensor CRSMT-8</td>
<td>Magneto resistive, corrosion-resistant, to EU Explosion Protection Directive (ATEX)</td>
<td>51</td>
</tr>
<tr>
<td>27 Sensor bracket DASP-M4-</td>
<td>Magneto resistive, NAMUR, to EU Explosion Protection Directive (ATEX)</td>
<td>51</td>
</tr>
<tr>
<td>28 Mounting kit SMBZ-8- ...</td>
<td>For proximity sensor SME/SMT-8M, for piston diameter 100</td>
<td>51</td>
</tr>
<tr>
<td>29 Sensor bracket DASP-M4- ...</td>
<td>For proximity sensor SME/SMT-8M, for piston diameters 125, 160, 200, 250, 320</td>
<td>51</td>
</tr>
</tbody>
</table>
## Mounting components and accessories

<table>
<thead>
<tr>
<th>Mounting Component</th>
<th>Description</th>
<th>Page/Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Rod clevis</td>
<td>Enables a simple connection between the piston rod and slide gate</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>SG</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rod clevis, stainless steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CRS G</td>
<td></td>
</tr>
<tr>
<td>2 Rod eye</td>
<td>With spherical bearing</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>SGS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rod eye, stainless steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CRSGS</td>
<td></td>
</tr>
<tr>
<td>3 Rod clevis</td>
<td>With male thread</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>SGA</td>
<td></td>
</tr>
<tr>
<td>4 Self-aligning rod</td>
<td>To compensate for radial and angular deviations</td>
<td>50</td>
</tr>
<tr>
<td>coupler</td>
<td>FK</td>
<td></td>
</tr>
<tr>
<td>5 Proximity sensor</td>
<td>Magnetoresistive, 5 ... 30 V DC, to EU Explosion Protection Directive (ATEX)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>SMT-8M-A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proximity sensor, corrosion-resistant, to EU Explosion Protection Directive</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>ATEX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CRSMT-8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proximity sensor, NAMUR, to EU Explosion Protection Directive (ATEX)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>SDFT</td>
<td></td>
</tr>
<tr>
<td>6 Slot cover</td>
<td>To protect the sensor cables and slots from contamination</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>ABP-5-S</td>
<td></td>
</tr>
<tr>
<td>7 Connecting cable</td>
<td>For electrical and pneumatic connection</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>NHSB</td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes
- 3-wire, for DFPI-...-E-P
- 5-wire, for DFPI-...-C1V-P-A
### Linear actuators DFPI-...-E-NB3...

#### Technical data

- **Function**
  - Piston diameter: 100 ... 320 mm
  - Stroke: 40 ... 990 mm
  - Force: 4417 ... 46385 N

#### General technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>40 ... 990 mm</td>
</tr>
<tr>
<td>Mode of operation</td>
<td>Double-acting</td>
</tr>
<tr>
<td>Based on standard</td>
<td>ISO 15552</td>
</tr>
<tr>
<td>Cushioning</td>
<td>No cushioning</td>
</tr>
<tr>
<td>Mounting position</td>
<td>Any</td>
</tr>
<tr>
<td>Design</td>
<td>Piston/Piston rod/Tie rod/Cylinder barrel</td>
</tr>
<tr>
<td>Position sensing</td>
<td>With integrated displacement encoder</td>
</tr>
<tr>
<td>Measuring principle of displacement encoder</td>
<td>Potentiometer</td>
</tr>
</tbody>
</table>

#### Pneumatic connection

- DFPI-...-E-NB3P...: With specific accessories, for tubing O.D. of 8 mm
- DFPI-...-E-NB3M12B2: G3/8
- DFPI-...-E-NB3P9B2: G3/8

#### Electrical connection

- DFPI-...-E-NB3P...: With specific accessories, 3-pin, straight plug, screw terminal
- DFPI-...-E-NB3M12B2: M12x1, 5-pin, straight plug, A-coded
- DFPI-...-E-NB3P9B2: Cable connector M16x1.5, 3-pin, straight plug, screw terminal

#### General electrical data

<table>
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<tr>
<th>Parameter</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Operating voltage range</td>
<td>0 ... 15 V DC</td>
</tr>
<tr>
<td>Resistance value of displacement encoder (on the TET) dependent on the stroke length (^1)</td>
<td>[k\Omega]</td>
</tr>
<tr>
<td>(\leq 290) mm</td>
<td>5</td>
</tr>
<tr>
<td>(&gt; 290 \ldots 590) mm</td>
<td>10</td>
</tr>
<tr>
<td>(&gt; 590 \ldots 990) mm</td>
<td>20</td>
</tr>
</tbody>
</table>

#### Displacement encoder

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Recommended loop current</td>
<td>&lt; 0.1 (\mu)A</td>
</tr>
<tr>
<td>Max. short-time loop current</td>
<td>10 mA</td>
</tr>
<tr>
<td>Independent linearity</td>
<td>(\pm 0.04)</td>
</tr>
<tr>
<td>Repetition accuracy</td>
<td>(\pm 0.12)</td>
</tr>
<tr>
<td>Hysteresis</td>
<td>0.33 mm</td>
</tr>
</tbody>
</table>

\(^1\) TET = theoretical electrical travel
## Linear actuators DFPI-...-E-NB3...

### Technical data

#### Operating and environmental conditions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Operating pressure [bar]</td>
<td>3 ... 8</td>
</tr>
<tr>
<td>Nominal operating pressure [bar]</td>
<td>6</td>
</tr>
<tr>
<td>Operating medium</td>
<td>Compressed air to ISO 8573-1:2010 [7:4:4]</td>
</tr>
<tr>
<td>Note on operating/pilot medium</td>
<td>Lubricated operation possible (in which case lubricated operation will always be required)</td>
</tr>
<tr>
<td>Storage temperature [°C]</td>
<td>−20 ... +80</td>
</tr>
<tr>
<td>Ambient temperature [°C]</td>
<td>−20 ... +80</td>
</tr>
<tr>
<td>Relative humidity [%]</td>
<td>5 ... 100, condensing</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP65, IP67, IP69K, NEMA 4</td>
</tr>
<tr>
<td>Vibration resistance in accordance with DIN/IEC 68, Part 2-6</td>
<td>Tested to severity level 2</td>
</tr>
<tr>
<td>Continuous shock resistance in accordance with DIN/IEC 68, Part 2-82</td>
<td>Tested to severity level 2</td>
</tr>
<tr>
<td>CE marking (see declaration of conformity)1)</td>
<td>To EU Explosion Protection Directive (ATEX)</td>
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</table>

1) Additional information www.festo.com/sp/C0232 Certificates.

#### ATEX

<table>
<thead>
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<th>Parameter</th>
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<tbody>
<tr>
<td>ATEX category for gas</td>
<td>II 2G</td>
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<tr>
<td>Type of ignition protection for gas</td>
<td>c T4</td>
</tr>
<tr>
<td>ATEX category for dust</td>
<td>II 2D</td>
</tr>
<tr>
<td>Type of ignition protection for dust</td>
<td>c 120°C</td>
</tr>
<tr>
<td>Explosion-proof ambient temperature rating</td>
<td>−20 °C &lt;= Ta &lt;= +60 °C</td>
</tr>
</tbody>
</table>

#### Forc es [N] and impact energy [J]

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>Theoretical force at 6 bar, advancing [N]</th>
<th>Theoretical force at 6 bar, retracting [N]</th>
<th>Max. impact energy in the end positions [J]</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>4712</td>
<td>4417</td>
<td>1.3</td>
</tr>
<tr>
<td>125</td>
<td>7363</td>
<td>6881</td>
<td>1.0</td>
</tr>
<tr>
<td>160</td>
<td>12064</td>
<td>11581</td>
<td>1.4</td>
</tr>
<tr>
<td>200</td>
<td>18850</td>
<td>18080</td>
<td>1.0</td>
</tr>
<tr>
<td>250</td>
<td>29452</td>
<td>28274</td>
<td>1.9</td>
</tr>
<tr>
<td>320</td>
<td>48255</td>
<td>46385</td>
<td>2.4</td>
</tr>
</tbody>
</table>

#### Permissible impact velocity:

\[
\nu\text{perm.} = \frac{2 \times E\text{perm.}}{m\text{intrinsic} + m\text{load}}
\]

#### Maximum permissible load:

\[
m\text{Load} = \frac{2 	imes E\text{perm.}}{\nu^2} - m\text{intrinsic}
\]

#### Air consumption [l]

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>Air consumption, advancing, per 10 mm stroke [l]</th>
<th>Air consumption, retracting, per 10 mm stroke [l]</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>0.549</td>
<td>0.515</td>
</tr>
<tr>
<td>125</td>
<td>0.859</td>
<td>0.803</td>
</tr>
<tr>
<td>160</td>
<td>1.407</td>
<td>1.351</td>
</tr>
<tr>
<td>200</td>
<td>2.119</td>
<td>2.111</td>
</tr>
<tr>
<td>250</td>
<td>3.436</td>
<td>3.299</td>
</tr>
<tr>
<td>320</td>
<td>5.63</td>
<td>5.412</td>
</tr>
</tbody>
</table>

Internet: www.festo.com/catalogue/...
Linear actuators DFPI-...-E-NB3...

Technical data

Weights [g]
Piston diameter  |  100 | 125 | 160 | 200 | 250 | 320
---|---|---|---|---|---|---
Basic weight with 0 mm stroke | 4900 | 7500 | 12800 | 18100 | 31100 | 57700
Additional weight per 10 mm stroke | 90 | 134 | 200 | 238 | 358 | 582
Moving mass at 0 mm stroke | 1060 | 1900 | 3700 | 4800 | 9300 | 16500
Additional moving mass per 10 mm stroke | 28 | 53 | 89 | 89 | 134 | 227

Materials
Sectional view

1. Piston rod 100 ... 320 High-alloy stainless steel
2. Bottom cover 100 ... 320 Coated die-cast aluminium
3. Cylinder barrel 100 ... 320 Smooth anodised wrought aluminium alloy
4. End cap 100 ... 320 Coated wrought aluminium alloy
   - Tie rod 100 ... 320 High-alloy stainless steel
   - Screws 100 ... 320 Coated steel
   - Piston rod wiper seal 100 TPE-U (PU) 125 ... 320 NBR
   - M12 plug DFPI-...-E-NB3M12B2 100 ... 320 Brass, nickel-plated
   - Cable connector DFPI-...-E-NB3P9B2 100 ... 320 Brass, nickel-plated
   - Air duct for characteristic value M 100 ... 320 Stainless steel pipe or plastic tubing
   - Static seals 100 ... 320 NBR
   - Note on materials 100 ... 320 RoHS-compliant
      Contains PWIS (paint-wetting impairment substances)

Max. lateral force as a function of stroke length l

The maximum lateral force (horizontal/vertical) applies to the static application. In closed-loop operation, the maximum lateral force needs to be adjusted to the type of control. If necessary, the piston rod must be guided to avoid system vibration.

Horizontal lateral force

![Horizontal lateral force graph]

Vertical lateral force

![Vertical lateral force graph]
## Linear actuators DFPI-...-E-NB3...

### Technical data

#### Dimensions

**Piston diameters 100, 125**

![Diagram of linear actuators](image)

<table>
<thead>
<tr>
<th>Piston diameter [mm]</th>
<th>A</th>
<th>B</th>
<th>BA</th>
<th>BG</th>
<th>E</th>
<th>E1</th>
<th>EA</th>
<th>EB</th>
<th>G</th>
<th>J</th>
<th>KK</th>
<th>L1</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-100</td>
<td>40</td>
<td>55</td>
<td>55</td>
<td>17</td>
<td>110</td>
<td>120</td>
<td>155</td>
<td>146</td>
<td>48</td>
<td>48</td>
<td>M20x1.5</td>
<td>179</td>
</tr>
<tr>
<td>DFPI-125</td>
<td>54</td>
<td>60</td>
<td>60</td>
<td>20</td>
<td>136</td>
<td>145</td>
<td>180</td>
<td>173</td>
<td>44.7</td>
<td>48</td>
<td>M27x2</td>
<td>200</td>
</tr>
</tbody>
</table>

### Notes

1. Supply port – tubing 8 mm
2. + = plus stroke length

### Table 1

<table>
<thead>
<tr>
<th>Piston diameter [mm]</th>
<th>L2</th>
<th>MM</th>
<th>PL</th>
<th>RT</th>
<th>TG</th>
<th>U1</th>
<th>VD</th>
<th>VA</th>
<th>WH</th>
<th>ZJ</th>
<th>=&lt;G1</th>
<th>=&lt;G2</th>
<th>=&lt;G3</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-100</td>
<td>38</td>
<td>25</td>
<td>26</td>
<td>89</td>
<td>12</td>
<td>19.2</td>
<td>4</td>
<td>51±1.8</td>
<td>229.7</td>
<td>22</td>
<td>4</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>DFPI-125</td>
<td>45.5</td>
<td>32</td>
<td>26</td>
<td>110</td>
<td>22</td>
<td>20.5</td>
<td>6</td>
<td>65±2.2</td>
<td>264.7</td>
<td>27</td>
<td>4</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Download CAD data [www.festo.com](http://www.festo.com)
Linear actuators DFPI-...-E-NB3...

Technical data

Dimensions

Piston diameters 160, 200, 250, 320

<table>
<thead>
<tr>
<th>Piston diameter [mm]</th>
<th>A</th>
<th>B</th>
<th>BA</th>
<th>BG</th>
<th>E</th>
<th>E1</th>
<th>EA</th>
<th>EB</th>
<th>G</th>
<th>J</th>
<th>KK</th>
<th>L1</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-160</td>
<td>72</td>
<td>65</td>
<td>65</td>
<td>24</td>
<td>186</td>
<td>186</td>
<td>221</td>
<td>212</td>
<td>51</td>
<td>46</td>
<td>219</td>
<td></td>
</tr>
<tr>
<td>DFPI-200</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>25</td>
<td>230</td>
<td>230</td>
<td>265</td>
<td>256</td>
<td>47.2</td>
<td>225</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFPI-250</td>
<td>84</td>
<td>90</td>
<td>90</td>
<td>28</td>
<td>347</td>
<td>342</td>
<td>378.5</td>
<td>379</td>
<td>56</td>
<td>58</td>
<td>254</td>
<td></td>
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<tr>
<td>DFPI-320</td>
<td>96</td>
<td>110</td>
<td>110</td>
<td>34</td>
<td>342</td>
<td>342</td>
<td>378.5</td>
<td>379</td>
<td>56</td>
<td>58</td>
<td>281.2</td>
<td></td>
</tr>
</tbody>
</table>

Supply port – tubing 8 mm
+ = plus stroke length

Download CAD data → www.festo.com
Linear actuators DFPI-...-E-NB3...

Technical data

Dimensions

Variants DFPI-...-E-NB3P9B2... and DFPI-...-E-NB3M12B2...

1. DFPI-...-P9B2... electrical connection: cable connector M16x1.5, 3-pin, straight plug, screw terminal
2. DFPI-...-M12B2... electrical connection: M12x1, 5-pin, straight plug, A-coded

Pneumatic connection: G3/8

<table>
<thead>
<tr>
<th>Type</th>
<th>E1</th>
<th>EA</th>
<th>EB</th>
<th>PL</th>
<th>U1</th>
<th>W1</th>
<th>W2</th>
<th>W3</th>
<th>W4</th>
<th>≤G</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-100-...P9</td>
<td>110</td>
<td>157</td>
<td>183.5</td>
<td>16</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFPI-100-...M12</td>
<td>136</td>
<td>183</td>
<td>209.5</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFPI-125-...P9</td>
<td>136</td>
<td>183</td>
<td>196</td>
<td>16</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFPI-125-...M12</td>
<td>136</td>
<td>183</td>
<td>275.5</td>
<td>14</td>
<td>2</td>
<td>23</td>
<td>17</td>
<td>16</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>DFPI-160-...P9</td>
<td>186</td>
<td>231</td>
<td>244</td>
<td>23</td>
<td>17</td>
<td>16</td>
<td>20</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFPI-160-...M12</td>
<td>230</td>
<td>272</td>
<td>298.5</td>
<td>19</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFPI-200-...P9</td>
<td>230</td>
<td>272</td>
<td>285</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFPI-200-...M12</td>
<td>270</td>
<td>322.6</td>
<td>349.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFPI-250-...P9</td>
<td>270</td>
<td>322.6</td>
<td>335.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFPI-250-...M12</td>
<td>340</td>
<td>393.5</td>
<td>420</td>
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</tbody>
</table>

Ordering data

- Linear actuators with integrated displacement encoder
- Based on ISO 15552

<table>
<thead>
<tr>
<th>Piston diameter [mm]</th>
<th>Part no.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>2185733</td>
<td>DFPI-100-...-ND2P-E-NB3P</td>
</tr>
<tr>
<td>125</td>
<td>2207685</td>
<td>DFPI-125-...-ND2P-E-NB3P</td>
</tr>
<tr>
<td>160</td>
<td>2208573</td>
<td>DFPI-160-...-ND2P-E-NB3P</td>
</tr>
<tr>
<td>200</td>
<td>2209613</td>
<td>DFPI-200-...-ND2P-E-NB3P</td>
</tr>
<tr>
<td>250</td>
<td>2210666</td>
<td>DFPI-250-...-ND2P-E-NB3P</td>
</tr>
<tr>
<td>320</td>
<td>2186271</td>
<td>DFPI-320-...-ND2P-E-NB3P</td>
</tr>
</tbody>
</table>
Linear actuators DFPI-...-C1V-NB3...

Technical data

Function

- ○ Piston diameter
  100 ... 320 mm

- ● Stroke
  40 ... 990 mm

- ▼ Force
  4417 ... 46385 N

General technical data

| Stroke [mm] | 40 ... 990 |
| Mode of operation | Double-acting |
| Based on standard | ISO 15552 |
| Cushioning | No cushioning |
| Mounting position | Any |
| Design | Piston, Piston rod, Tie rod, Cylinder barrel |
| Position sensing | With integrated displacement encoder |
| Measuring principle of displacement encoder | Potentiometer |
| Pneumatic connection | With specific accessories, For tubing O.D. 8 mm, For tubing O.D. 10 mm |
| Electrical connection | With specific accessories, 5-pin, Straight plug, Screw terminal |

General electrical data

| Operating voltage range [V DC] | 21.6 ... 26.4 |
| Nominal operating voltage [V DC] | 24 |
| Setpoint input [mA] | 4 ... 20 |
| Analogue output [mA] | 4 ... 20 |
| Accuracy of analogue output [%FS] | 1 |
| Max. current consumption [mA] | 220 |
| Reverse polarity protection | For operating voltage, For setpoint value, Initialisation connection |
| Positioning accuracy [%FS] | 1 |
| Repetition accuracy [%FS] | ±1 |
| Size of dead space [%FS] | 1 |
| Hysteresis [%FS] | ±1 |
### Technical data

#### Operating and environmental conditions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure [bar]</td>
<td>3 ... 8</td>
</tr>
<tr>
<td>Nominal operating pressure [bar]</td>
<td>6</td>
</tr>
<tr>
<td>Operating medium</td>
<td>Compressed air to ISO 8573-1:2010 [7-4-4]</td>
</tr>
<tr>
<td>Note on operating/pilot medium</td>
<td>Lubricated operation possible (in which case lubricated operation will always be required)</td>
</tr>
<tr>
<td>Temperature of medium [°C]</td>
<td>–5 ... +40</td>
</tr>
<tr>
<td>Ambient temperature [°C]</td>
<td>–5 ... +50</td>
</tr>
<tr>
<td>Storage temperature [°C]</td>
<td>–5 ... +50</td>
</tr>
<tr>
<td>Relative humidity [%]</td>
<td>5 ... 100, condensing</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP65, IP67, IP69K, NEMA 4</td>
</tr>
<tr>
<td>Vibration resistance in accordance with DIN/IEC 68, Part 2-6</td>
<td>Tested to severity level 2</td>
</tr>
<tr>
<td>Continuous shock resistance in accordance with DIN/IEC 68, Part 2-82</td>
<td>Tested to severity level 2</td>
</tr>
<tr>
<td>Certification</td>
<td>RCM compliance mark</td>
</tr>
<tr>
<td>CE marking (see declaration of conformity)1)</td>
<td>To EU EMC Directive</td>
</tr>
<tr>
<td></td>
<td>To EU Explosion Protection Directive (ATEX)</td>
</tr>
</tbody>
</table>

1) Additional information www.festo.com/sp ➤ Certificates.

#### ATEX

<table>
<thead>
<tr>
<th>ATEX category for gas</th>
<th>II 3G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of ignition protection for gas</td>
<td>Ex nA IIC T4 Gc</td>
</tr>
<tr>
<td>ATEX category for dust</td>
<td>II 3D</td>
</tr>
<tr>
<td>Type of ignition protection for dust</td>
<td>Ex tc IIIC T120°C Dc</td>
</tr>
<tr>
<td>Explosion-proof ambient temperature rating</td>
<td>–5°C ≤ Ta ≤ +50°C</td>
</tr>
</tbody>
</table>
## Technical data

### Forces [N]

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>100</th>
<th>125</th>
<th>160</th>
<th>200</th>
<th>250</th>
<th>320</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical force at 6 bar, advancing</td>
<td>4712</td>
<td>7363</td>
<td>12064</td>
<td>18850</td>
<td>29452</td>
<td>48255</td>
</tr>
<tr>
<td>Theoretical force at 6 bar, retracting</td>
<td>4417</td>
<td>6881</td>
<td>11581</td>
<td>18080</td>
<td>28274</td>
<td>46385</td>
</tr>
</tbody>
</table>

### Maximum permissible load:

\[
\text{Maximum permissible load: } \quad m_{\text{load}} = \frac{2 \times F_{\text{perm.}}}{\nu^2} = m_{\text{intrinsic}} \frac{m_{\text{intrinsic}}}{m_{\text{load}}} \quad \text{Moving mass (actuator)}
\]

\[
\text{Moving payload}
\]

### Air consumption [l]

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>100</th>
<th>125</th>
<th>160</th>
<th>200</th>
<th>250</th>
<th>320</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air consumption, advancing, per 10 mm stroke</td>
<td>0.549</td>
<td>0.859</td>
<td>1.407</td>
<td>2.199</td>
<td>3.436</td>
<td>5.63</td>
</tr>
<tr>
<td>Air consumption, retracting, per 10 mm stroke</td>
<td>0.515</td>
<td>0.803</td>
<td>1.351</td>
<td>2.111</td>
<td>3.299</td>
<td>5.412</td>
</tr>
</tbody>
</table>

### Weights [g]

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>100</th>
<th>125</th>
<th>160</th>
<th>200</th>
<th>250</th>
<th>320</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic weight with 0 mm stroke</td>
<td>5280</td>
<td>7950</td>
<td>14330</td>
<td>20410</td>
<td>35370</td>
<td>57550</td>
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<tr>
<td>Additional weight per 10 mm stroke</td>
<td>90</td>
<td>134</td>
<td>200</td>
<td>238</td>
<td>358</td>
<td>582</td>
</tr>
<tr>
<td>Moving mass with 0 mm stroke</td>
<td>1060</td>
<td>1900</td>
<td>3700</td>
<td>4800</td>
<td>9300</td>
<td>16500</td>
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<tr>
<td>Additional moving mass per 10 mm stroke</td>
<td>28</td>
<td>53</td>
<td>89</td>
<td>89</td>
<td>134</td>
<td>227</td>
</tr>
</tbody>
</table>
Linear actuators DFPI-...-C1V-NB3...

Technical data

Materials

Sectional view

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<p>|   | Piston | Piston |</p>
<table>
<thead>
<tr>
<th></th>
<th>diameter</th>
<th>rod</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100 ... 320</td>
<td>High-alloy stainless steel</td>
</tr>
<tr>
<td>2</td>
<td>100 ... 320</td>
<td>Coated die-cast aluminium</td>
</tr>
<tr>
<td>3</td>
<td>100 ... 320</td>
<td>Smooth anodised wrought aluminium alloy</td>
</tr>
<tr>
<td>4</td>
<td>100 ... 320</td>
<td>Coated wrought aluminium alloy</td>
</tr>
<tr>
<td></td>
<td>100 ... 200</td>
<td>High-alloy stainless steel</td>
</tr>
<tr>
<td></td>
<td>100 ... 320</td>
<td>Coated steel</td>
</tr>
<tr>
<td></td>
<td>100 ... 320</td>
<td>High-alloy stainless steel</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>TPE-U (PU)</td>
</tr>
<tr>
<td></td>
<td>125 ... 320</td>
<td>NBR</td>
</tr>
<tr>
<td></td>
<td>100 ... 320</td>
<td>NBR</td>
</tr>
<tr>
<td></td>
<td>100 ... 320</td>
<td>RoHS-compliant</td>
</tr>
<tr>
<td></td>
<td>Contains PWIS (paint-wetting impairment substances)</td>
<td></td>
</tr>
</tbody>
</table>

Max. lateral force as a function of stroke length l

The maximum lateral force (horizontal/vertical) applies to the static application. In closed-loop operation, the maximum lateral force needs to be adjusted to the type of control. If necessary, the piston rod must be guided to avoid system vibration.

<table>
<thead>
<tr>
<th>Horizontal lateral force</th>
<th>Vertical lateral force</th>
</tr>
</thead>
</table>

| Ø 100 | Ø 125 | Ø 160, 200 | Ø 250 | Ø 320 | Ø 100 | Ø 125 | Ø 160, 200 | Ø 250 | Ø 320 |

![Graph of horizontal lateral force](image1)

![Graph of vertical lateral force](image2)
## Linear actuators DFPI-...-C1V-NB3...

### Technical data

#### Dimensions

**Piston diameters 100, 125**

<table>
<thead>
<tr>
<th>Piston diameter [mm]</th>
<th>A</th>
<th>B</th>
<th>BA</th>
<th>BS</th>
<th>E</th>
<th>E1</th>
<th>EA</th>
<th>EB</th>
<th>G</th>
<th>J</th>
<th>KK</th>
<th>L1</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-100</td>
<td>40</td>
<td>55</td>
<td>55</td>
<td>17</td>
<td>110</td>
<td>120</td>
<td>155</td>
<td>146</td>
<td>48</td>
<td>44</td>
<td>M20x1.5</td>
<td>258.9</td>
</tr>
<tr>
<td>DFPI-125</td>
<td>54</td>
<td>60</td>
<td>60</td>
<td>20</td>
<td>136</td>
<td>145</td>
<td>180</td>
<td>173</td>
<td>44.7</td>
<td>44</td>
<td>M27x2</td>
<td>254.4</td>
</tr>
</tbody>
</table>

1. Supply port – tubing 8 mm
2. Exhaust air – tubing 10 mm

+ = plus stroke length

---

**Piston diameter [mm]**

<table>
<thead>
<tr>
<th>Piston diameter [mm]</th>
<th>L2</th>
<th>MM</th>
<th>PL</th>
<th>RT</th>
<th>TG</th>
<th>U1</th>
<th>VA</th>
<th>WH</th>
<th>ZJ</th>
<th>&lt;(\alpha)1</th>
<th>&lt;(\alpha)2</th>
<th>&lt;(\alpha)3</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-100</td>
<td>38</td>
<td>25</td>
<td>22</td>
<td>M10</td>
<td>89</td>
<td>12</td>
<td>19.2</td>
<td>4</td>
<td>51±1.8</td>
<td>309.9</td>
<td>22</td>
<td>4</td>
</tr>
<tr>
<td>DFPI-125</td>
<td>45.5</td>
<td>32</td>
<td>22</td>
<td>M12</td>
<td>110</td>
<td>2</td>
<td>20.5</td>
<td>6</td>
<td>65±2.2</td>
<td>319.4</td>
<td>27</td>
<td>8</td>
</tr>
</tbody>
</table>

---

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### Technical data

#### Linear actuators DFPI-...-C1V-NB3...

**Dimensions**

Piston diameters 160, 200, 250, 320

**Diagram:**

- Supply port – tubing 8 mm
- Exhaust air – tubing 10 mm
- + = plus stroke length

**Table:**

<table>
<thead>
<tr>
<th>Piston diameter (mm)</th>
<th>A</th>
<th>B</th>
<th>BA</th>
<th>BG</th>
<th>E</th>
<th>E1</th>
<th>EA</th>
<th>EB</th>
<th>G</th>
<th>J</th>
<th>KK</th>
<th>L1</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-160</td>
<td>72</td>
<td>65</td>
<td>65</td>
<td>24</td>
<td>186</td>
<td>186</td>
<td>221</td>
<td>212</td>
<td>51</td>
<td>46</td>
<td>M36x2</td>
<td>291.8</td>
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<td>DFPI-200</td>
<td>75</td>
<td>75</td>
<td>230</td>
<td>230</td>
<td>265</td>
<td>256</td>
<td>47.2</td>
<td>48.5</td>
<td>M42x2</td>
<td>324.4</td>
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<tr>
<td>DFPI-250</td>
<td>84</td>
<td>90</td>
<td>90</td>
<td>25</td>
<td>284</td>
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<td>312</td>
<td>52</td>
<td>52</td>
<td>M48x2</td>
<td>351.4</td>
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<tr>
<td>DFPI-320</td>
<td>96</td>
<td>110</td>
<td>110</td>
<td>28</td>
<td>347</td>
<td>342</td>
<td>378.5</td>
<td>379</td>
<td>56</td>
<td>46</td>
<td>M48x2</td>
<td>351.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Piston diameter (mm)</th>
<th>L2</th>
<th>MM</th>
<th>PL</th>
<th>RT</th>
<th>TG</th>
<th>U1</th>
<th>VD</th>
<th>VA</th>
<th>WH</th>
<th>ZI</th>
<th>≤C1</th>
<th>≤C2</th>
<th>≤C3</th>
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</thead>
<tbody>
<tr>
<td>DFPI-160</td>
<td>60</td>
<td>40</td>
<td>22</td>
<td>M16</td>
<td>140</td>
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<td>6</td>
<td>80</td>
<td>371.8</td>
<td>36</td>
<td>4</td>
<td>24</td>
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<tr>
<td>DFPI-200</td>
<td>70</td>
<td>50</td>
<td>22</td>
<td>M20</td>
<td>220</td>
<td>22</td>
<td>13.7</td>
<td>10</td>
<td>105</td>
<td>429.2</td>
<td>46</td>
<td>42</td>
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</tr>
<tr>
<td>DFPI-250</td>
<td>80</td>
<td>50</td>
<td>22.5</td>
<td>M24</td>
<td>270</td>
<td>52</td>
<td>10.7</td>
<td>120</td>
<td>471.4</td>
<td>55</td>
<td>50</td>
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<tr>
<td>DFPI-320</td>
<td>90</td>
<td>63</td>
<td>22.5</td>
<td>M24</td>
<td>270</td>
<td>52</td>
<td>10.7</td>
<td>120</td>
<td>471.4</td>
<td>55</td>
<td>50</td>
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</tbody>
</table>

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## Linear actuators DFPI-...-C1V-NB3...

### Technical data

#### Ordering data

<table>
<thead>
<tr>
<th>Piston diameter [mm]</th>
<th>Part no.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>2184841</td>
<td>DFPI-100-...-ND2P-C1V-NB3P-A</td>
</tr>
<tr>
<td>125</td>
<td>2180905</td>
<td>DFPI-125-...-ND2P-C1V-NB3P-A</td>
</tr>
<tr>
<td>160</td>
<td>2201101</td>
<td>DFPI-160-...-ND2P-C1V-NB3P-A</td>
</tr>
<tr>
<td>200</td>
<td>2206373</td>
<td>DFPI-200-...-ND2P-C1V-NB3P-A</td>
</tr>
<tr>
<td>250</td>
<td>2200311</td>
<td>DFPI-250-...-ND2P-C1V-NB3P-A</td>
</tr>
<tr>
<td>320</td>
<td>2185309</td>
<td>DFPI-320-...-ND2P-C1V-NB3P-A</td>
</tr>
</tbody>
</table>

#### Safety position advancing

- Linear actuators with integrated positioner
- Based on ISO 15552

#### Safety position retracting

- Linear actuators with integrated positioner
- Based on ISO 15552

### Diagrams

- [Diagram of Linear actuators with integrated positioner](image)

### Notes

- 2019/04 – Subject to change
### Linear actuators DFPI-...-E...-G2

#### Technical data

**Function**
- Piston diameter: 100 … 320 mm
- Stroke: 40 … 990 mm
- Force: 4417 … 48255 N

#### General technical data

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>Stroke [mm]</th>
<th>Stroke reserve [mm]</th>
<th>Mode of operation</th>
<th>Connection to process valve to standard</th>
<th>Flange hole pattern</th>
<th>Cushioning</th>
<th>Mounting position</th>
<th>Design</th>
<th>Position sensing</th>
<th>Measuring principle of displacement encoder</th>
<th>Pneumatic connection</th>
<th>Electrical connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>40 … 990</td>
<td>3</td>
<td>Double-acting</td>
<td>DIN EN ISO 5210</td>
<td>F07, F10</td>
<td>No cushioning</td>
<td>Any</td>
<td>Piston</td>
<td>With integrated displacement encoder</td>
<td>Potentiometer</td>
<td>With specific accessories</td>
<td>3-pin</td>
</tr>
<tr>
<td>125</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Piston rod, tie rod, cylinder barrel</td>
<td></td>
<td>Straight plug</td>
<td></td>
<td></td>
</tr>
<tr>
<td>160</td>
<td></td>
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<td>Profile barrel</td>
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<td>200</td>
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<td>250</td>
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</tr>
</tbody>
</table>

#### General electrical data

<table>
<thead>
<tr>
<th>Operating voltage range [V DC]</th>
<th>0 … 15</th>
</tr>
</thead>
</table>

Resistance value of displacement encoder (on the TET) dependent on the stroke length\(^1\)

| ≤ 290 mm | [kΩ] | 5 |
| > 290 … 590 mm | [kΩ] | 10 |
| > 590 … 990 mm | [kΩ] | 20 |

Displacement encoder

<table>
<thead>
<tr>
<th>Recommended loop current [μA]</th>
<th>&lt; 0.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. short-time loop current [mA]</td>
<td>10</td>
</tr>
<tr>
<td>Independent linearity [%]</td>
<td>±0.04</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>±0.12</td>
</tr>
<tr>
<td>Hysteresis [mm]</td>
<td>0.33</td>
</tr>
</tbody>
</table>

\(^1\) TET = theoretical electrical travel
Linear actuators DFPI-....-E-....-G2

Technical data

<table>
<thead>
<tr>
<th>Operating and environmental conditions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure [bar]</td>
<td>3 … 8</td>
</tr>
<tr>
<td>Nominal operating pressure [bar]</td>
<td>6</td>
</tr>
<tr>
<td>Operating medium</td>
<td>Compressed air to ISO 8573-1:2010 [7:4-4]</td>
</tr>
<tr>
<td>Note on operating/pilot medium</td>
<td>Lubricated operation possible (in which case lubricated operation will always be required)</td>
</tr>
<tr>
<td>Ambient temperature [°C]</td>
<td>−20 ... +60</td>
</tr>
<tr>
<td>Storage temperature [°C]</td>
<td>−20 ... +60</td>
</tr>
<tr>
<td>Relative humidity [%]</td>
<td>5 ... 100, condensing</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP65, IP67, IP69K, NEMA 4</td>
</tr>
<tr>
<td>Continuous shock resistance to DIN/IEC 68 Part 2-82</td>
<td>Tested to severity level 2</td>
</tr>
<tr>
<td>Vibration resistance to DIN/IEC 68 Part 2-6</td>
<td>Tested to severity level 2</td>
</tr>
<tr>
<td>CE marking (see declaration of conformity)1)</td>
<td>To EU Explosion Protection Directive (ATEX)</td>
</tr>
</tbody>
</table>

1) Additional information www.festo.com/sp > Certificates.

ATEX

| ATEX category for gas                         | II 2G |
| Type of ignition protection for gas          | c T4 X |
| ATEX category for dust                       | II 2D |
| Type of ignition protection for dust         | c 120°C X |
| Explosion-proof ambient temperature rating  | −20 °C <= Ta <= +60 °C |
## Linear actuators DFPI-...-E-...-G2

### Technical data

#### Forces [N] and air consumption [l]

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>100</th>
<th>125</th>
<th>160</th>
<th>200</th>
<th>250</th>
<th>320</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical force at 6 bar, advancing</td>
<td>4712</td>
<td>7363</td>
<td>12064</td>
<td>18850</td>
<td>29452</td>
<td>48255</td>
</tr>
<tr>
<td>Theoretical force at 6 bar, retracting</td>
<td>4417</td>
<td>6881</td>
<td>11581</td>
<td>18080</td>
<td>28698</td>
<td>47501</td>
</tr>
<tr>
<td>Air consumption, advancing, per 10 mm stroke</td>
<td>0.5498</td>
<td>0.859</td>
<td>1.4074</td>
<td>2.119</td>
<td>3.4361</td>
<td>5.6297</td>
</tr>
<tr>
<td>Air consumption, retracting, per 10 mm stroke</td>
<td>0.5153</td>
<td>0.8027</td>
<td>1.3511</td>
<td>2.111</td>
<td>3.3482</td>
<td>5.5418</td>
</tr>
</tbody>
</table>

#### Weights

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>100</th>
<th>125</th>
<th>160</th>
<th>200</th>
<th>250</th>
<th>320</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic weight with 0 mm stroke [g]</td>
<td>3476</td>
<td>5530</td>
<td>6529</td>
<td>13946</td>
<td>22569</td>
<td>35359</td>
</tr>
<tr>
<td>Additional moving mass per 10 mm stroke [g]</td>
<td>27</td>
<td>52</td>
<td>52</td>
<td>87</td>
<td>87</td>
<td>87</td>
</tr>
<tr>
<td>Moving mass with 0 mm stroke [g]</td>
<td>1228</td>
<td>1944</td>
<td>2250</td>
<td>4722</td>
<td>7059</td>
<td>11417</td>
</tr>
<tr>
<td>Additional weight per 10 mm stroke [g]</td>
<td>80</td>
<td>145</td>
<td>159</td>
<td>187</td>
<td>325</td>
<td>399</td>
</tr>
</tbody>
</table>

#### Materials

<table>
<thead>
<tr>
<th>Sectional view</th>
<th>Piston diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Piston rod</td>
</tr>
<tr>
<td>2</td>
<td>Bottom cover</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cylinder barrel</td>
</tr>
<tr>
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<tr>
<td>4</td>
<td>End cap</td>
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## Linear actuators DFPI-...,E-...,G2

### Technical data

#### Dimensions

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>AM</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>D4</th>
<th>D5</th>
<th>H1</th>
<th>KK</th>
<th>L1+</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 mm</td>
<td>32</td>
<td>109</td>
<td>119</td>
<td>70</td>
<td>M8</td>
<td>25</td>
<td>131</td>
<td>M16x1.5</td>
<td>118.5</td>
</tr>
<tr>
<td>125 mm</td>
<td>54</td>
<td>135</td>
<td>147</td>
<td>102</td>
<td>M10</td>
<td>32</td>
<td>163</td>
<td>M27x2</td>
<td>119</td>
</tr>
<tr>
<td>160 mm</td>
<td>170</td>
<td>182</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>199</td>
<td></td>
<td>126.5</td>
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</table>

Sealing plug

+ = plus stroke length

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>L5</th>
<th>L8</th>
<th>L9</th>
<th>W1</th>
<th>W2</th>
<th>WH</th>
<th>ZB+</th>
<th>=Ø1</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 mm</td>
<td>15</td>
<td>48.8</td>
<td>1</td>
<td>45°</td>
<td>90°</td>
<td>16</td>
<td>134.5</td>
<td>22</td>
</tr>
<tr>
<td>125 mm</td>
<td>18</td>
<td>48.8</td>
<td></td>
<td>45°</td>
<td>90°</td>
<td>24</td>
<td>150.5</td>
<td>27</td>
</tr>
<tr>
<td>160 mm</td>
<td></td>
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## Linear actuators DFPI-...-E...-G2

### Technical data

#### Dimensions

**Piston diameter 200 ... 320**

<table>
<thead>
<tr>
<th>Piston diameter [mm]</th>
<th>AM -2</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>D4</th>
<th>D5</th>
<th>D6</th>
<th>D7</th>
<th>H1</th>
<th>H2</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-200</td>
<td>72</td>
<td>63</td>
<td>25.6</td>
<td>6.5</td>
<td>216</td>
<td>140</td>
<td>102</td>
<td>M10</td>
<td>40</td>
<td>M16</td>
<td>210</td>
<td>270</td>
<td>232</td>
</tr>
<tr>
<td>DFPI-250</td>
<td>72</td>
<td>82</td>
<td>25.6</td>
<td>6.5</td>
<td>260</td>
<td>140</td>
<td>102</td>
<td>M10</td>
<td>40</td>
<td>M16</td>
<td>254</td>
<td>308</td>
<td>268</td>
</tr>
<tr>
<td>DFPI-320</td>
<td>126</td>
<td>126</td>
<td>25.6</td>
<td>6.5</td>
<td>332</td>
<td>140</td>
<td>102</td>
<td>M10</td>
<td>40</td>
<td>M16</td>
<td>325</td>
<td>378</td>
<td>338</td>
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</table>

<table>
<thead>
<tr>
<th>Piston diameter [mm]</th>
<th>KK</th>
<th>L1+</th>
<th>L5</th>
<th>L6 min.</th>
<th>L8</th>
<th>L9</th>
<th>WH</th>
<th>W1</th>
<th>W2</th>
<th>W3</th>
<th>ZB+</th>
<th>≤C1</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-200</td>
<td>M36x2</td>
<td>152.5</td>
<td>20</td>
<td>24</td>
<td>48.8</td>
<td>30</td>
<td>90</td>
<td>30</td>
<td>182.5</td>
<td>36</td>
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<tr>
<td>DFPI-250</td>
<td>M36x2</td>
<td>152.2</td>
<td>20</td>
<td>25</td>
<td>48.8</td>
<td>30</td>
<td>90</td>
<td>30</td>
<td>182.2</td>
<td>36</td>
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<tr>
<td>DFPI-320</td>
<td>M36x2</td>
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<td>20</td>
<td>24</td>
<td>48.8</td>
<td>30</td>
<td>90</td>
<td>30</td>
<td>190</td>
<td>36</td>
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</tbody>
</table>

1. Sealing plug
2. + = plus stroke length

---

Internet: www.festo.com/catalogue/...
## Linear actuators DFPI-....-E-....-G2

**Technical data**

### Ordering data

<table>
<thead>
<tr>
<th>Piston diameter (mm)</th>
<th>Part no.</th>
<th>Type</th>
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<tbody>
<tr>
<td>100</td>
<td>1808236</td>
<td>DFPI-100-....-ND2P-E-P-G2</td>
</tr>
<tr>
<td>125</td>
<td>1808239</td>
<td>DFPI-125-....-ND2P-E-P-G2</td>
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<tr>
<td>160</td>
<td>1808242</td>
<td>DFPI-160-....-ND2P-E-P-G2</td>
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<tr>
<td>200</td>
<td>1808245</td>
<td>DFPI-200-....-ND2P-E-P-G2</td>
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<tr>
<td>250</td>
<td>1808253</td>
<td>DFPI-250-....-ND2P-E-P-G2</td>
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<tr>
<td>320</td>
<td>1808263</td>
<td>DFPI-320-....-ND2P-E-P-G2</td>
</tr>
</tbody>
</table>

- Linear actuators with integrated displacement encoder
- Based on DIN EN ISO 5210

### Note

**Stroke length of the actuator**

The stroke length of the actuator should generally at least correspond to the nominal diameter of the process valve so that the process valve can be fully opened and closed. The system tolerances can lead to a greater stroke range than the specified nominal stroke range of the linear actuator. The adjustable rod clevis enables adjustment of the system.
### Linear actuators DFPI-...-C1V-...

**Technical data**

#### Function
- **Piston diameter**
  - 100 ... 320 mm
- **Stroke**
  - 40 ... 990 mm
- **Force**
  - 4417 ... 48255 N

#### General technical data

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>100</th>
<th>125</th>
<th>160</th>
<th>200</th>
<th>250</th>
<th>320</th>
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<tbody>
<tr>
<td>Stroke</td>
<td>40 ... 990</td>
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<tr>
<td>Stroke reserve</td>
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<td>4</td>
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<tr>
<td>Mode of operation</td>
<td>Double-acting</td>
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<tr>
<td>Connection to process valve to standard</td>
<td>DIN EN ISO 5210</td>
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<tr>
<td>Flange hole pattern</td>
<td>F07</td>
<td>F10</td>
<td>F10, F14</td>
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<td>Cushioning</td>
<td>No cushioning</td>
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<td>Mounting position</td>
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<td>Design</td>
<td>Piston</td>
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<td>Piston rod</td>
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<td>Profile barrel</td>
<td>Tie rod, cylinder barrel</td>
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<td>Pneumatic connection</td>
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<td>Electrical connection</td>
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<tr>
<td>Operating voltage range</td>
<td>21.6 ... 26.4</td>
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<tr>
<td>Nominal operating voltage</td>
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<td>Setpoint input</td>
<td>4 ... 20</td>
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<td>Analogue output</td>
<td>4 ... 20</td>
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<td>Accuracy of analogue output</td>
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<td>Max. current consumption</td>
<td>220</td>
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<tr>
<td>Reverse polarity protection</td>
<td>For operating voltage</td>
<td>For setpoint value</td>
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<td>Initialisation connection</td>
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<td>Positioning accuracy</td>
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<td>Repetition accuracy</td>
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<td>Size of dead space</td>
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<td>Hysteresis</td>
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### Linear actuators DFPI-....-C1V-...

#### Technical data

<table>
<thead>
<tr>
<th>Operating and environmental conditions</th>
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<tbody>
<tr>
<td><strong>Operating pressure</strong> [bar]</td>
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<tr>
<td><strong>Nominal operating pressure</strong> [bar]</td>
</tr>
<tr>
<td><strong>Operating medium</strong></td>
</tr>
<tr>
<td><strong>Note on operating/pilot medium</strong></td>
</tr>
<tr>
<td><strong>Temperature of medium</strong> [°C]</td>
</tr>
<tr>
<td><strong>Storage temperature</strong> [°C]</td>
</tr>
<tr>
<td><strong>Ambient temperature</strong> [°C]</td>
</tr>
<tr>
<td><strong>Relative humidity</strong> [%]</td>
</tr>
<tr>
<td><strong>Degree of protection</strong></td>
</tr>
<tr>
<td><strong>Continuous shock resistance to</strong></td>
</tr>
<tr>
<td><strong>Vibration resistance to</strong></td>
</tr>
<tr>
<td><strong>Certification</strong></td>
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<tr>
<td><strong>CE marking (see declaration of conformity)</strong></td>
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\(^1\) Additional information www.festo.com/sp Certificates.

\(^2\) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp Certificates.

If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

#### ATEX

<table>
<thead>
<tr>
<th>ATEX category for gas</th>
<th>II 3G</th>
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<tbody>
<tr>
<td>Type of ignition protection for gas</td>
<td>Ex nA IIC T4 X Gc</td>
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<table>
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<tr>
<th>ATEX category for dust</th>
<th>II 3D</th>
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<tr>
<td>Type of ignition protection for dust</td>
<td>Ex tr II2C T120°C X Dc</td>
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</table>

| Explosion-proof ambient temperature rating | –5°C ≤ Ta ≤ +50°C |

#### Forces [N] and air consumption [l]

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>100</th>
<th>125</th>
<th>160</th>
<th>200</th>
<th>250</th>
<th>320</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical force at 6 bar, advancing</td>
<td>4712</td>
<td>7363</td>
<td>12064</td>
<td>18850</td>
<td>29452</td>
<td>48255</td>
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<tr>
<td>Theoretical force at 6 bar, retracting</td>
<td>4417</td>
<td>6881</td>
<td>11581</td>
<td>18080</td>
<td>28698</td>
<td>47501</td>
</tr>
<tr>
<td>Air consumption, retracting, per 10 mm stroke</td>
<td>0.5153</td>
<td>0.8027</td>
<td>1.3511</td>
<td>2.111</td>
<td>3.3482</td>
<td>5.5418</td>
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<tr>
<td>Air consumption, advancing, per 10 mm stroke</td>
<td>0.5498</td>
<td>0.859</td>
<td>1.4074</td>
<td>2.119</td>
<td>3.4361</td>
<td>5.6297</td>
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</table>

Internet: www.festo.com/catalogue/...
### Linear actuators DFPI-...-C1V-...

#### Technical data

**Weights**

<table>
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<th>160</th>
<th>200</th>
<th>250</th>
<th>320</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic weight with 0 mm stroke</td>
<td>4671</td>
<td>7693</td>
<td>9099</td>
<td>18358</td>
<td>29956</td>
<td>45200</td>
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<tr>
<td>Moving mass with 0 mm stroke</td>
<td>1228</td>
<td>1944</td>
<td>2250</td>
<td>4722</td>
<td>7059</td>
<td>11417</td>
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<tr>
<td>Additional weight per 10 mm stroke</td>
<td>80</td>
<td>145</td>
<td>159</td>
<td>187</td>
<td>325</td>
<td>399</td>
</tr>
<tr>
<td>Additional weight of moving mass per 10 mm stroke</td>
<td>27</td>
<td>52</td>
<td>87</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Additional weight of displacement encoder per 10 mm stroke</td>
<td>2</td>
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</tbody>
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**Materials**

#### Sectional view

<table>
<thead>
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<th>Sectional view</th>
</tr>
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<tbody>
<tr>
<td>1</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>100 ... 320</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Piston rod</td>
</tr>
<tr>
<td>2</td>
<td>Bottom cover</td>
</tr>
<tr>
<td>3</td>
<td>Cylinder barrel</td>
</tr>
<tr>
<td>4</td>
<td>End cap</td>
</tr>
<tr>
<td>5</td>
<td>Tie rod</td>
</tr>
<tr>
<td>6</td>
<td>Screws</td>
</tr>
<tr>
<td>7</td>
<td>Piston rod wiper seal</td>
</tr>
<tr>
<td>8</td>
<td>Static seals</td>
</tr>
<tr>
<td>9</td>
<td>Note on materials</td>
</tr>
</tbody>
</table>

*Note on materials: 100 ... 320 RoHS-compliant Contains PWIS (paint-wetting impairment substances)*

---

Internet: www.festo.com/catalogue/...
Linear actuators DFPI-...-C1V-...

### Technical data

#### Dimensions

**Piston diameter 100 ... 160**

Shown without adhesive seals

![Diagram](DFPI-ND2P-C1V-A)

1. Sealing plug
   - `+` = plus stroke length

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>AM [-2]</th>
<th>B1</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>D4</th>
<th>D5</th>
<th>D6</th>
<th>H1 ±2</th>
<th>H2</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-100- ... -C1V-A</td>
<td>32</td>
<td>131</td>
<td>109</td>
<td>G1/4</td>
<td>70</td>
<td>M8</td>
<td>25</td>
<td>119</td>
<td>79</td>
<td>18.3</td>
</tr>
<tr>
<td>DFPI-125- ... -C1V-A</td>
<td>54</td>
<td>163</td>
<td>135</td>
<td>G1/4</td>
<td>102</td>
<td>M10</td>
<td>32</td>
<td>147</td>
<td>79</td>
<td>18.3</td>
</tr>
<tr>
<td>DFPI-160- ... -C1V-A</td>
<td>199</td>
<td>170</td>
<td></td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>H3</th>
<th>KK</th>
<th>L1+</th>
<th>L5</th>
<th>L8</th>
<th>L9</th>
<th>WH</th>
<th>ZB+</th>
<th>&lt;C1</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFPI-100- ... -C1V-A</td>
<td>21.2</td>
<td>M16x1.5</td>
<td>218.5</td>
<td>15</td>
<td>28.8</td>
<td>1</td>
<td>16</td>
<td>234.5</td>
<td>22</td>
</tr>
<tr>
<td>DFPI-125- ... -C1V-A</td>
<td>21.2</td>
<td>M27x2</td>
<td>221</td>
<td>18</td>
<td>28.8</td>
<td>-</td>
<td>24</td>
<td>245</td>
<td>27</td>
</tr>
<tr>
<td>DFPI-160- ... -C1V-A</td>
<td>227.5</td>
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<td>227.5</td>
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</table>

<table>
<thead>
<tr>
<th>Piston diameter</th>
<th>AM [-2]</th>
<th>B1</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>D4</th>
<th>D5</th>
<th>D6</th>
<th>H1</th>
<th>H2</th>
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<tbody>
<tr>
<td>DFPI-100- ... -C1V-P-A</td>
<td>32</td>
<td>131</td>
<td>109</td>
<td>G1/4</td>
<td>70</td>
<td>M8</td>
<td>25</td>
<td>119</td>
<td>-</td>
<td>18.3</td>
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<td>DFPI-125- ... -C1V-P-A</td>
<td>54</td>
<td>163</td>
<td>135</td>
<td>G1/4</td>
<td>102</td>
<td>M10</td>
<td>32</td>
<td>147</td>
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<td>199</td>
<td>170</td>
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<table>
<thead>
<tr>
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<th>H3</th>
<th>KK</th>
<th>L1+</th>
<th>L5</th>
<th>L8</th>
<th>L9</th>
<th>WH</th>
<th>ZB+</th>
<th>&lt;C1</th>
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<tbody>
<tr>
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<td>21.2</td>
<td>M16x1.5</td>
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<td>1</td>
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<td>M27x2</td>
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<td>-</td>
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### Linear actuators DFPI-...-C1V-...

#### Technical data

**Dimensions**

Piston diameter 200 ... 320

<table>
<thead>
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<th>AM</th>
<th>B1</th>
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<th>B3</th>
<th>B4</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>D4</th>
<th>D5</th>
<th>D6</th>
<th>D7</th>
<th>D8</th>
<th>H1 ±2</th>
<th>H2</th>
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<tbody>
<tr>
<td>DFPI-200-...-C1V-A</td>
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<td>270</td>
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<td>6.5</td>
<td>216</td>
<td>G1/4</td>
<td>102</td>
<td>M10</td>
<td>40</td>
<td>M16</td>
<td>210</td>
<td>140</td>
<td>79</td>
<td>18.3</td>
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<tr>
<td>DFPI-250-...-C1V-A</td>
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<td>268</td>
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<td>6.5</td>
<td>260</td>
<td>G1/4</td>
<td>102</td>
<td>M10</td>
<td>40</td>
<td>M16</td>
<td>254</td>
<td>325</td>
<td>140</td>
<td>79</td>
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<tr>
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<td>6.5</td>
<td>332</td>
<td>G1/4</td>
<td>102</td>
<td>M10</td>
<td>40</td>
<td>M16</td>
<td>254</td>
<td>325</td>
<td>140</td>
<td>79</td>
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<table>
<thead>
<tr>
<th>Piston diameter [mm]</th>
<th>H3</th>
<th>H4</th>
<th>KK</th>
<th>L1+</th>
<th>L5</th>
<th>L6 min.</th>
<th>L8</th>
<th>L9</th>
<th>=C1</th>
<th>WH</th>
<th>W1</th>
<th>W2</th>
<th>W3</th>
<th>ZB+</th>
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<tbody>
<tr>
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<td>63</td>
<td>M36x2</td>
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<td>10</td>
<td>36</td>
<td>30</td>
<td>45°</td>
<td>90°</td>
<td>30°</td>
<td>285.5</td>
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<tr>
<td>DFPI-250-...-C1V-A</td>
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<td>28.8</td>
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<td>36</td>
<td>30</td>
<td>45°</td>
<td>90°</td>
<td>30°</td>
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<table>
<thead>
<tr>
<th>Piston diameter [mm]</th>
<th>AM</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>D4</th>
<th>D5</th>
<th>D6</th>
<th>D7</th>
<th>D8</th>
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<th>H3</th>
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<td>270</td>
<td>232</td>
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<td>6.5</td>
<td>216</td>
<td>G1/4</td>
<td>102</td>
<td>M10</td>
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<td>M16</td>
<td>210</td>
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<td>21.2</td>
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<tr>
<td>DFPI-250-...-C1V-P-A</td>
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<td>308</td>
<td>268</td>
<td>24.5</td>
<td>6.5</td>
<td>260</td>
<td>G1/4</td>
<td>102</td>
<td>M10</td>
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<td>M16</td>
<td>254</td>
<td>325</td>
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</tr>
<tr>
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<td>6.5</td>
<td>332</td>
<td>G1/4</td>
<td>102</td>
<td>M10</td>
<td>40</td>
<td>M16</td>
<td>254</td>
<td>325</td>
<td>140</td>
<td>18.3</td>
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<table>
<thead>
<tr>
<th>Piston diameter [mm]</th>
<th>H4</th>
<th>KK</th>
<th>L1+</th>
<th>L5</th>
<th>L6 min.</th>
<th>L8</th>
<th>L9</th>
<th>=C1</th>
<th>WH</th>
<th>W1</th>
<th>W2</th>
<th>W3</th>
<th>ZB+</th>
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</thead>
<tbody>
<tr>
<td>DFPI-200-...-C1V-P-A</td>
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<td>M36x2</td>
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<td>20</td>
<td>24</td>
<td>48.8</td>
<td>10</td>
<td>36</td>
<td>30</td>
<td>45°</td>
<td>90°</td>
<td>30°</td>
<td>285.5</td>
</tr>
<tr>
<td>DFPI-250-...-C1V-P-A</td>
<td>82</td>
<td>M36x2</td>
<td>255</td>
<td>20</td>
<td>25</td>
<td>48.8</td>
<td>25</td>
<td>36</td>
<td>30</td>
<td>45°</td>
<td>90°</td>
<td>30°</td>
<td>285</td>
</tr>
<tr>
<td>DFPI-320-...-C1V-P-A</td>
<td>126</td>
<td>M36x2</td>
<td>262</td>
<td>20</td>
<td>25</td>
<td>48.8</td>
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<td>30</td>
<td>45°</td>
<td>90°</td>
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</table>
## Technical data

### Linear actuators DFPI-...-C1V-...

#### Technical data

<table>
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<tr>
<th>Piston diameter [mm]</th>
<th>Part no.</th>
<th>Type</th>
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<tbody>
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<tr>
<td>125</td>
<td>1548020</td>
<td>DFPI-125-...-ND2P-C1V-A</td>
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<td>160</td>
<td>1548026</td>
<td>DFPI-160-...-ND2P-C1V-A</td>
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<td>200</td>
<td>1548030</td>
<td>DFPI-200-...-ND2P-C1V-A</td>
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<td>250</td>
<td>1548037</td>
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<td>320</td>
<td>1548041</td>
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#### Variant with protected pneumatic and electrical connections

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<th>Part no.</th>
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<td>1548021</td>
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<td>1548028</td>
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<td>200</td>
<td>1548032</td>
<td>DFPI-200-...-ND2P-C1V-P-A</td>
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<td>250</td>
<td>1548039</td>
<td>DFPI-250-...-ND2P-C1V-P-A</td>
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<td>320</td>
<td>1548044</td>
<td>DFPI-320-...-ND2P-C1V-P-A</td>
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</tbody>
</table>

### Note

**Stroke length of the actuator**

The stroke length of the actuator should generally at least correspond to the nominal diameter of the process valve so that the process valve can be fully opened and closed. The system tolerances can lead to a greater stroke range than the specified nominal stroke range of the linear actuator. During initialisation, the integrated positioner learns the stroke length used and ensures that the slide gate moves to the required positions in a controlled way – at most to the end positions learned during initialisation.
Linear actuators DFPI

Accessories

Connecting cable NHSB

- Pre-assembled connecting cable
- Suitable for linear actuators DFPI-...-E-P-... and DFPI-...-C1V-P-...
- Cable lengths 5, 10 and 15 m

General technical data

<table>
<thead>
<tr>
<th>Connecting cable</th>
<th>[mm²]</th>
<th>3x 0.75</th>
<th>5x 0.75</th>
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</thead>
<tbody>
<tr>
<td>Mounting position</td>
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<tr>
<td>Electrical connection 1</td>
<td>Straight plug connector, 3-pin</td>
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<td>Straight plug, 5-pin</td>
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<tr>
<td>Electrical connection 2</td>
<td>Open end, 3-wire</td>
<td></td>
<td>Open end, 5-wire</td>
</tr>
<tr>
<td>Min. cable bending radius [mm]</td>
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<td></td>
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</tr>
<tr>
<td>Pneumatic connection</td>
<td>For tubing Ø 0.8 mm</td>
<td></td>
<td>For tubing Ø 1.0 mm</td>
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</tbody>
</table>

Operating and environmental conditions

<table>
<thead>
<tr>
<th></th>
<th>°C</th>
<th>-20 ... +60</th>
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<tbody>
<tr>
<td>Ambient temperature</td>
<td></td>
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</tr>
<tr>
<td>Ambient temperature with flexible cable installation</td>
<td></td>
<td>-5 ... +60</td>
</tr>
<tr>
<td>Operating voltage range [V DC]</td>
<td>0 ... 30</td>
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<tr>
<td>Operating medium</td>
<td>Compressed air to ISO 8573-1:2010 [7:4:4]</td>
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<tr>
<td>Note on operating/pilot medium</td>
<td>Lubricated operation possible</td>
<td></td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP65, IP67, IP69K, NEMA 4</td>
<td></td>
</tr>
<tr>
<td>Relative humidity [%]</td>
<td>5 ... 100, condensing</td>
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</tbody>
</table>

Materials

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Protective conduit</td>
<td>PA</td>
</tr>
<tr>
<td>Protective conduit fitting</td>
<td>PA</td>
</tr>
<tr>
<td>Cable sheath</td>
<td>PVC</td>
</tr>
<tr>
<td>Seals</td>
<td>TPE</td>
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<tr>
<td>Note on materials</td>
<td>RoHS-compliant</td>
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Operating pressure [bar] as a function of operating temperature [°C]

NHSB-A1...
Linear actuators DFPI

Accessories

Dimensions

3-wire

![3-wire diagram]

<table>
<thead>
<tr>
<th>Type</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>D4</th>
<th>D5</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>( \approx ) 1</th>
<th>( \approx ) 2</th>
<th>( \approx ) 3</th>
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</thead>
<tbody>
<tr>
<td>NHSB-A1-0.6-BLG3-LE3-PUB-2xBB</td>
<td>( \varnothing ) 32x1.5</td>
<td>37</td>
<td>28.5</td>
<td>8</td>
<td>8</td>
<td>1400</td>
<td>600</td>
<td>82</td>
<td>36</td>
<td>34</td>
<td>41</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>6100</td>
<td>5000</td>
<td>11100</td>
<td>10000</td>
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<tr>
<td>NHSB-A1-10-BLG3-LE3-PUB-2xBB</td>
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<td>15000</td>
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Dimensions

5-wire

![5-wire diagram]

<table>
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<tr>
<th>Type</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>D4</th>
<th>D5</th>
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<th>L2</th>
<th>L3</th>
<th>( \approx ) 1</th>
<th>( \approx ) 2</th>
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<tbody>
<tr>
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<td>( \varnothing ) 32x1.5</td>
<td>37</td>
<td>28.5</td>
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<td>8</td>
<td>6100</td>
<td>5000</td>
<td>82</td>
<td>36</td>
<td>34</td>
<td>41</td>
</tr>
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<td>( \varnothing )</td>
<td></td>
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<td>( \varnothing )</td>
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<td></td>
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Ordering data – Connecting cable

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<tr>
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<th>Electrical connection 2</th>
<th>Length [m]</th>
<th>Cable composition [mm²]</th>
<th>Weight [g]</th>
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<th>Type</th>
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<tbody>
<tr>
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<td>Straight plug, 3-pin</td>
<td>0.6</td>
<td>3x 0.75</td>
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<td>3673475</td>
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<td></td>
<td>1250</td>
<td>1686608</td>
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<td>2500</td>
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<td></td>
<td></td>
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<td>3750</td>
<td>1686610</td>
<td>NHSB-A1-15-BLG3-LE3-PUB-2xBB</td>
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</table>

| 5-wire, for DFPI: … -C1V-P-… | Straight plug, 5-pin | 5 | 5x 0.75 | 1250 | 1585793 | NHSB-A1-5-BLG5-LE5-PUB-2xBB |
| | | 10 | | 2500 | 1585794 | NHSB-A1-10-BLG5-LE5-PUB-2xBB |
| | | 15 | | 3750 | 1585795 | NHSB-A1-15-BLG5-LE5-PUB-2xBB |

Download CAD data → www.festo.com

Technical data → Internet: nhsb

2019/04 – Subject to change

Internet: www.festo.com/catalogue/…
Linear actuators DFPI

Accessories

Foot mounting HNC/CRHNC

Material:
HNC: Galvanised steel
CRHNC: High-alloy steel
Free of copper and PTFE

Material:
HNC: Galvanised steel
CRHNC: High-alloy steel
Free of copper and PTFE

Dimensions

<table>
<thead>
<tr>
<th>For Φ [mm]</th>
<th>AB</th>
<th>AH</th>
<th>AO</th>
<th>AT</th>
<th>AU</th>
<th>SA</th>
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Ordering data

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1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Corrosion resistance class CRC 4 to Festo standard FN 940070
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, for instance in the chemical or food industries. These applications may need to be supported by special tests (also FN 940082) using appropriate media.

2) Suitable for ATEX

Foot mounting HNG

Material:
Galvanised steel
Free of copper and PTFE

Dimensions and ordering data

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1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
Linear actuators DFPI

Accessories

Foot mounting HNG

Material:
Galvanised steel
Free of copper and PTFE

---

**Dimensions and ordering data**

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1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
Linear actuators DFPI

Accessories

Flange mounting FNC/CRFNG

Material:
FNC: Galvanised steel
CRFNG: High-alloy steel
Free of copper and PTFE
RoHS-compliant

[Image]

Material:
FNC: Galvanised steel
CRFNG: High-alloy steel
Free of copper and PTFE
RoHS-compliant

+ = plus stroke length

Dimensions

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<th>MF</th>
<th>R</th>
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Ordering data

For CRC1) [mm]

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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).

2) Suitable for ATEX

Flange mounting FNG

Material:
Painted spheroidal graphite cast iron
Free of copper and PTFE

[Image]

+ = plus stroke length

Dimensions and ordering data

For CRC1) [mm]

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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).
Linear actuators DFPI

Accessories

Trunnion flange ZNCF/CRZNG

Material:
ZNCF: Stainless steel casting
CRZNG: Electropolished stainless steel casting
Free of copper and PTFE
RoHS-compliant

Dimensions

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Ordering data

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1) Corrosion resistance class CRC 2 to Festo standard FN 940070
   Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
   Corrosion resistance class CRC 4 to Festo standard FN 940070
   Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, for instance in the chemical or food industries. These applications may need to be supported by special tests (also FN 940082) using appropriate media.

2) Suitable for ATEX

+ = plus stroke length

Internet: www.festo.com/catalogue/...
Linear actuators DFPI
Accessories

Trunnion support LNZG

Mounting material:
Diameter 100, 125: Anodised wrought aluminium alloy
Diameter 160 ... 320: Galvanised steel
Material of bearing:
Diameter 100 ... 200: Plastic
Diameter 250, 320: Bronze
Free of copper and PTFE
RoHS-compliant

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<td>±0.1</td>
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1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Trunnion support CRLNZG

Material:
High-alloy steel
Free of copper and PTFE
RoHS-compliant

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1) Corrosion resistance class CRC 4 to Festo standard FN 940070
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, for instance in the chemical or food industries. These applications may need to be supported by special tests (also FN 940082) using appropriate media.
### Linear actuators DFPI

#### Accessories

**Swivel flange SNC**

Material:  
Die-cast aluminium  
RoHS-compliant

![Swivel flange SNC](image)

**Dimensions and ordering data**

<table>
<thead>
<tr>
<th>[mm]</th>
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<th>E</th>
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<th>L</th>
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<sup>1</sup> 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).

<sup>2</sup> Suitable for ATEX

**Swivel flange SNG**

Material:  
Die-cast aluminium  
RoHS-compliant

![Swivel flange SNG](image)

**Dimensions and ordering data**

<table>
<thead>
<tr>
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<sup>1</sup> Corrosion resistance class CRC 2 to Festo standard FN 940070  
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

<sup>2</sup> Suitable for ATEX


2019/04 – Subject to change
Linear actuators DFPI
Accessories

Swivel flange
SNCB/SNCB-...-R3

Material:
SNCB: Die-cast aluminium
SNCB-...-R3: Die-cast aluminium with protective coating,
high corrosion protection
Free of copper and PTFE
RoHS-compliant

Dimensions

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Ordering data

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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).

Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Swivel flange SNGB
for clevis foot LN/LSN

Material:
Die-cast aluminium

Dimensions and ordering data

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<th>FL Ø</th>
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<tr>
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<td>110</td>
<td>268</td>
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<td>70</td>
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<td>338</td>
<td>45 H9</td>
<td>80</td>
<td>52</td>
<td>45</td>
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<td>1</td>
<td>26636</td>
<td>157513</td>
<td>SNGB-320</td>
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</table>

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).

Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
Linear actuators DFPI

Swivel flange SNCS

Material:
Wrought aluminium alloy
Free of copper and PTFE
RoHS-compliant

Material:
Wrought aluminium alloy
Free of copper and PTFE
RoHS-compliant

+ = plus stroke length

Dimensions and ordering data

<table>
<thead>
<tr>
<th>For Ø</th>
<th>CN</th>
<th>E</th>
<th>EP</th>
<th>EX</th>
<th>FL</th>
<th>LT</th>
<th>MS</th>
<th>TG</th>
<th>XC</th>
<th>CRC 1)</th>
<th>Weight</th>
<th>Part no.</th>
<th>Type</th>
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</thead>
<tbody>
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<td>[mm]</td>
<td></td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
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<td></td>
<td></td>
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<tr>
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<td>109</td>
<td>18</td>
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<td>41</td>
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<td>30</td>
<td>89</td>
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<td>683</td>
<td>174402</td>
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<td>125</td>
<td>30</td>
<td>132</td>
<td>25</td>
<td>37</td>
<td>50</td>
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<td>39</td>
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<td>314.7</td>
<td>2</td>
<td>1369</td>
<td>174403</td>
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1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
Linear actuators DFPI
Accessories

Swivel flange SNCL

Material:
Die-cast aluminium
Free of copper and PTFE
RoHS-compliant

Dimensions and ordering data

<table>
<thead>
<tr>
<th>Ø [mm]</th>
<th>CD</th>
<th>E</th>
<th>EW</th>
<th>FL</th>
<th>L</th>
<th>MS</th>
<th>TG</th>
<th>XC</th>
<th>CRC1)</th>
<th>Weight [g]</th>
<th>Part no.</th>
<th>Type</th>
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</thead>
<tbody>
<tr>
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<td>20</td>
<td>110–0.3/–0.8</td>
<td>60</td>
<td>41</td>
<td>27</td>
<td>20</td>
<td>72</td>
<td>270.7</td>
<td>1</td>
<td>606</td>
<td>174409</td>
<td>SNCL-100</td>
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<tr>
<td>125</td>
<td>25</td>
<td>131–0.8</td>
<td>70</td>
<td>50</td>
<td>30</td>
<td>25</td>
<td>89</td>
<td>314.7</td>
<td>1</td>
<td>1335</td>
<td>174410</td>
<td>SNCL-125</td>
</tr>
</tbody>
</table>

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).

Swivel flange SNGL

Material:
Die-cast aluminium
Free of copper and PTFE

Dimensions and ordering data

<table>
<thead>
<tr>
<th>Ø [mm]</th>
<th>CD</th>
<th>E</th>
<th>EW</th>
<th>FL</th>
<th>L</th>
<th>MS</th>
<th>TG</th>
<th>XC</th>
<th>CRC1)</th>
<th>Weight [g]</th>
<th>Part no.</th>
<th>Type</th>
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</thead>
<tbody>
<tr>
<td>160</td>
<td>30</td>
<td>179.5</td>
<td>90</td>
<td>55</td>
<td>35</td>
<td>25</td>
<td>140</td>
<td>353.6</td>
<td>2</td>
<td>2358</td>
<td>151534</td>
<td>SNGL-160</td>
</tr>
<tr>
<td>200</td>
<td>30</td>
<td>219.5</td>
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<td>380</td>
<td>2</td>
<td>3713</td>
<td>151535</td>
<td>SNGL-200</td>
</tr>
</tbody>
</table>

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmos-
phere typical for industrial applications.
Linear actuators DFPI

Accessories

Adapter kit DADG-AK-F6-A2

For direct mounting of a positioner on the linear actuator DFPI-ND2P-E-NB3P

General technical data

<table>
<thead>
<tr>
<th></th>
<th>°C</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>-20</td>
<td>+80</td>
</tr>
<tr>
<td>Corrosion resistance class CRC</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

1) Note operating range of proximity sensors and cylinder
2) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

Materials

<table>
<thead>
<tr>
<th>Component</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting bracket</td>
<td>High-alloy stainless steel</td>
</tr>
<tr>
<td>Screws</td>
<td>High-alloy stainless steel</td>
</tr>
<tr>
<td>Note on materials</td>
<td>Contains PWIS (paint-wetting impairment substances)</td>
</tr>
</tbody>
</table>

Dimensions

Mounting bracket for mounting a positioner with interface according to VDI/VDE 3845 sheet 1:2010-09

<table>
<thead>
<tr>
<th>Type</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>D4</th>
<th>H1</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
</tr>
</thead>
<tbody>
<tr>
<td>DADG-1</td>
<td>96</td>
<td>32</td>
<td>3</td>
<td>50</td>
<td>7</td>
<td>6</td>
<td>6.3</td>
<td>48</td>
<td>140</td>
<td>24</td>
<td>12</td>
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</tbody>
</table>

Socket head screw DIN 912-M6x10-A2-70

The adapter can also be turned 180° during mounting
Mounting bracket for mounting a positioner with hole spacing of 150 mm

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Download CAD data ➔ <a href="http://www.festo.com">www.festo.com</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>B1</td>
</tr>
<tr>
<td>DADG-2</td>
<td>165</td>
</tr>
</tbody>
</table>

1. Socket head screw DIN 912-M5x10-A2-70
2. The adapter can also be turned 180° during mounting

Ordering data – Adapter kit

<table>
<thead>
<tr>
<th>Description</th>
<th>Part no.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>For 100 ... 320 mm For direct mounting of an external positioner on the actuator</td>
<td>3179433</td>
<td>DADG-AK-F6-A2</td>
</tr>
</tbody>
</table>
### Linear actuators DFPI

#### Accessories

<table>
<thead>
<tr>
<th>Designation</th>
<th>For ( \varnothing )</th>
<th>Part no.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clevis foot LN/LNG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>33895</td>
<td>LNG-100</td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>33896</td>
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<td></td>
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<tr>
<td>160</td>
<td>9037</td>
<td>LN-160</td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>33898</td>
<td>LNG-200</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>9039</td>
<td>LN-250</td>
<td></td>
</tr>
<tr>
<td>320</td>
<td>9040</td>
<td>LN-320</td>
<td></td>
</tr>
<tr>
<td>Clevis foot LSNG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>31745</td>
<td>LSNG-100</td>
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<tr>
<td>125</td>
<td>31746</td>
<td>LSNG-125</td>
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<td>160</td>
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<td></td>
</tr>
<tr>
<td>200</td>
<td>152600</td>
<td>LSNG-200</td>
<td></td>
</tr>
<tr>
<td>Clevis foot LBG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>31766</td>
<td>LBG-100</td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>31767</td>
<td>LBG-125</td>
<td></td>
</tr>
</tbody>
</table>

1) Suitable for ATEX

<table>
<thead>
<tr>
<th>Designation</th>
<th>For ( \varnothing )</th>
<th>Part no.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
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<td>Clevis foot LSN</td>
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<td>5566</td>
<td>LSN-100</td>
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<tr>
<td>125</td>
<td>6987</td>
<td>LSN-125</td>
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<td>160</td>
<td>6988</td>
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<td>200</td>
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<td>250</td>
<td>6990</td>
<td>LSN-250</td>
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<tr>
<td>320</td>
<td>6991</td>
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<tr>
<td>Clevis foot LSNSG</td>
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<tr>
<td>100</td>
<td>31752</td>
<td>LSNSG-100</td>
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</tr>
<tr>
<td>125</td>
<td>31753</td>
<td>LSNSG-125</td>
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</tr>
<tr>
<td>Right-angle clevis foot LQG</td>
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<tr>
<td>100</td>
<td>31773</td>
<td>LQG-100</td>
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<tr>
<td>125</td>
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<td>LQG-125</td>
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</table>

#### Ordering data – Mounting components, corrosion-resistant

<table>
<thead>
<tr>
<th>Designation</th>
<th>For ( \varnothing )</th>
<th>Part no.</th>
<th>Type</th>
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<tbody>
<tr>
<td>Clevis foot CRLNG</td>
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<tr>
<td>100</td>
<td>161845</td>
<td>CRLNG-100</td>
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<td>125</td>
<td>176951</td>
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**Technical data → Internet: clevis foot**
## Linear actuators DFPI

### Accessories

#### Ordering data – Piston-rod attachments

<table>
<thead>
<tr>
<th>Designation</th>
<th>For Ø</th>
<th>Part no.</th>
<th>Type</th>
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<tbody>
<tr>
<td>Rod eye SGS</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>100</td>
<td>9264</td>
<td>SGS-M20x1,5</td>
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<tr>
<td>125</td>
<td>10774</td>
<td>SGS-M27x2</td>
<td></td>
</tr>
<tr>
<td>160, 200</td>
<td>10775</td>
<td>SGS-M36x2</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>10776</td>
<td>SGS-M42x2</td>
<td></td>
</tr>
<tr>
<td>320</td>
<td>10777</td>
<td>SGS-M48x2</td>
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<table>
<thead>
<tr>
<th>Rod clevis SGA(1)</th>
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<th></th>
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<tbody>
<tr>
<td>100</td>
<td>10769</td>
<td>SGA-M20x1,5</td>
<td></td>
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<tr>
<td>125</td>
<td>10770</td>
<td>SGA-M27x2</td>
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<tr>
<td>160, 200</td>
<td>10771</td>
<td>SGA-M36x2</td>
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<table>
<thead>
<tr>
<th>Self-aligning rod coupler FK(1)</th>
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<tbody>
<tr>
<td>100</td>
<td>6143</td>
<td>FK-M20x1,5</td>
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<td>125</td>
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<td>160, 200</td>
<td>10746</td>
<td>FK-M36x2</td>
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<table>
<thead>
<tr>
<th>Coupling piece KSG(1)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>32966</td>
<td>KSG-M20x1,5</td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>32967</td>
<td>KSG-M27x2</td>
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</tr>
</tbody>
</table>

1) Suitable for ATEX

#### Ordering data – Piston-rod attachments, corrosion-resistant

<table>
<thead>
<tr>
<th>Designation</th>
<th>For Ø</th>
<th>Part no.</th>
<th>Type</th>
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</thead>
<tbody>
<tr>
<td>Rod eye CRSGS</td>
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<td>195586</td>
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<table>
<thead>
<tr>
<th>Self-aligning rod coupler CRFK</th>
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</thead>
<tbody>
<tr>
<td>100</td>
<td>254567</td>
<td>CRFK-M20x1,5</td>
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</tbody>
</table>

1) Suitable for ATEX

#### Technical data

- Internet: piston-rod attachment

---

**Subject to change – 2019/04**
### Linear actuators DFPI

#### Accessories

**Ordering data – Proximity sensor for T-slot, magnetoresistive**

<table>
<thead>
<tr>
<th>Switching output</th>
<th>Electrical connection</th>
<th>Cable length [m]</th>
<th>Part no.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/O contact</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contactless</td>
<td>2-wire</td>
<td>5</td>
<td>574341</td>
<td>SMT-8M-A-ZS-24V-E-5,0-OE-EX2</td>
</tr>
<tr>
<td>PNP</td>
<td>3-pin</td>
<td>0.3</td>
<td>574342</td>
<td>SMT-8M-A-PS-24V-E-0,3-M8D-EX2</td>
</tr>
</tbody>
</table>

**Technical data** ➔ Internet: smt-8

**Ordering data – Proximity sensor for T-slot, corrosion-resistant**

<table>
<thead>
<tr>
<th>Switching output</th>
<th>Electrical connection</th>
<th>Cable length [m]</th>
<th>Part no.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/O contact</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PNP</td>
<td>Cable, 3-wire</td>
<td>5</td>
<td>574380</td>
<td>CRSMT-8M-PS-24V-K-5,0-OE</td>
</tr>
</tbody>
</table>

**Technical data** ➔ Internet: crsmt

**Ordering data – Proximity sensor for T-slot, NAMUR**

<table>
<thead>
<tr>
<th>Switching output</th>
<th>Electrical connection</th>
<th>Cable length [m]</th>
<th>Part no.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/O contact</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAMUR</td>
<td>Cable, 2-wire</td>
<td>5</td>
<td>579071</td>
<td>SDBT-MS-20NL-ZN-E-5-LE-EX6</td>
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<td>579072</td>
<td>SDBT-MS-20NL-ZN-E-10-LE-EX6</td>
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</tbody>
</table>

**Technical data** ➔ Internet: sdbt

**Ordering data – Slot cover for T-slot**

<table>
<thead>
<tr>
<th>Assembly</th>
<th>Length [m]</th>
<th>Part no.</th>
<th>Type</th>
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</thead>
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<td>Insertable</td>
<td>2x 0.5</td>
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<td>ABP-5-S</td>
</tr>
</tbody>
</table>

**Technical data** ➔ Internet: abp

**Ordering data – Mounting kits for proximity sensors SMT/CRSMT/SDBT**

<table>
<thead>
<tr>
<th>For Ø</th>
<th>Materials</th>
<th>Part no.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Rail: anodised wrought aluminium alloy Screws: high-alloy stainless steel Free of copper and PTFE</td>
<td>537806</td>
<td>SMBZ-8-32/100</td>
</tr>
<tr>
<td>125</td>
<td></td>
<td>1451483</td>
<td>DASP-M4-125-A</td>
</tr>
<tr>
<td>160, 200</td>
<td></td>
<td>1553813</td>
<td>DASP-M4-160-A</td>
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<tr>
<td>250</td>
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<td>DASP-M4-250-A</td>
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<td>320</td>
<td></td>
<td>3015256</td>
<td>DASP-M4-320-A</td>
</tr>
</tbody>
</table>

**Technical data** ➔ Internet: smbz, dasp
### Linear actuators DFPI

#### Accessories

**Ordering data – Connecting cables**

<table>
<thead>
<tr>
<th>Electrical connection, left</th>
<th>Electrical connection, right</th>
<th>Cable length [m]</th>
<th>Part no.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight socket, M8x1, 3-pin</td>
<td>Cable, open end, 3-wire</td>
<td>2.5</td>
<td>541333</td>
<td>NEBU-M8G3-K-2.5-LE3</td>
</tr>
<tr>
<td>Straight socket, M8x1, 3-pin</td>
<td>Cable, open end, 3-wire</td>
<td>5</td>
<td>541334</td>
<td>NEBU-M8G3-K-5-LE3</td>
</tr>
<tr>
<td>Straight socket, M12x1, 5-pin</td>
<td>Cable, open end, 3-wire</td>
<td>2.5</td>
<td>541363</td>
<td>NEBU-M12G5-K-2.5-LE3</td>
</tr>
<tr>
<td>Straight socket, M12x1, 5-pin</td>
<td>Cable, open end, 3-wire</td>
<td>5</td>
<td>541364</td>
<td>NEBU-M12G5-K-5-LE3</td>
</tr>
<tr>
<td>Angled socket, M8x1, 3-pin</td>
<td>Cable, open end, 3-wire</td>
<td>2.5</td>
<td>541338</td>
<td>NEBU-M8W3-K-2.5-LE3</td>
</tr>
<tr>
<td>Angled socket, M8x1, 3-pin</td>
<td>Cable, open end, 3-wire</td>
<td>5</td>
<td>541341</td>
<td>NEBU-M8W3-K-5-LE3</td>
</tr>
<tr>
<td>Angled socket, M12x1, 5-pin</td>
<td>Cable, open end, 3-wire</td>
<td>2.5</td>
<td>541367</td>
<td>NEBU-M12W5-K-2.5-LE3</td>
</tr>
<tr>
<td>Angled socket, M12x1, 5-pin</td>
<td>Cable, open end, 3-wire</td>
<td>5</td>
<td>541370</td>
<td>NEBU-M12W5-K-5-LE3</td>
</tr>
</tbody>
</table>

**Ordering data – Rectangular proximity sensor, pneumatic**

<table>
<thead>
<tr>
<th>Assembly</th>
<th>Pneumatic connection</th>
<th>Part no.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/2-way valve, normally closed</td>
<td>With accessories</td>
<td>Barbed fitting for tubing I.D. 3 mm</td>
<td>31008</td>
</tr>
</tbody>
</table>

**Ordering data – Mounting kit for proximity sensor SMPO-1**

<table>
<thead>
<tr>
<th>Assembly</th>
<th>Part no.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Ø32 ... 100 mm</td>
<td>On the cylinder barrel using clamping strap</td>
<td>151226</td>
</tr>
</tbody>
</table>