

# Quarter turn actuator DFPD-3500-...

Part number: 8042197

**FESTO**



## Data sheet

| Feature                                                                  | Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Size of valve actuator                                                   | 3500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Flange hole pattern                                                      | F16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Swivel angle                                                             | 90 deg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| End-position adjustment range at 0°                                      | -5 deg...5 deg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| End-position adjustment range at nominal swivel angle                    | -5 deg...5 deg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Shaft connection depth                                                   | 48 mm...50 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Fitting connection conforms to standard                                  | ISO 5211                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Mounting position                                                        | optional                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Mode of operation                                                        | Double-acting<br>Single-acting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Design                                                                   | Scotch yoke system<br>Rack and pinion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Closing direction                                                        | Closes to the right<br>Closes to the left                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Valve connection conforms to standard                                    | VDI/VDE 3845 (NAMUR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Connection point for positioner and position sensor conforms to standard | VDI/VDE 3845 size AA 2<br>VDI/VDE 3845 size AA 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Safety function                                                          | The safety function consists of the drive switching to the defined safety switching position. This switching movement is realised by pressurising the relevant pressure chamber with compressed air. The value of the torque generated depends on the pressure difference between the two pressure chambers separated by the piston.<br>The safety function consists of the drive switching to the defined safety switching position when the compressed air is switched off and the spring chamber is exhausted. This switching movement is realised by the spring force of the spring assembly. |
| Safety Integrity Level (SIL)                                             | To SIL 2 Low Demand mode<br>Up to SIL 3 in a redundant architecture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Certified for safety function to ISO 13849 and IEC 61508 (SIL)           | Product can be used in SRP/CS up to SIL 2 (Low Demand)<br>Up to SIL 3 in a redundant architecture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Burst pressure                                                           | 24 bar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Operating pressure                                                       | 0.2 MPa...0.8 MPa<br>2 bar...8 bar<br>29 psi...116 psi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Feature                                                                         | Value                                                                                                                                                                                  |
|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal operating pressure                                                      | 0.3 MPa...0.6 MPa<br>3 bar...6 bar<br>43.5 psi...87 psi                                                                                                                                |
| CE mark (see declaration of conformity)                                         | To EU Explosion Protection Directive (ATEX)                                                                                                                                            |
| UKCA marking (see declaration of conformity)                                    | To UK EX instructions                                                                                                                                                                  |
| Explosion protection certification outside the EU                               | EPL Db (GB)<br>EPL Gb (GB)                                                                                                                                                             |
| Explosion protection                                                            | Zone 1 (ATEX)<br>Zone 1 (UKEX)<br>Zone 2 (ATEX)<br>Zone 21 (ATEX)<br>Zone 21 (UKEX)<br>Zone 22 (ATEX)                                                                                  |
| Certificate issuing authority                                                   | German Technical Control Board (TÜV) Rheinland 968/V 2959.00/2025                                                                                                                      |
| ATEX category gas                                                               | II 2G                                                                                                                                                                                  |
| ATEX category dust                                                              | II 2D                                                                                                                                                                                  |
| Explosion ignition protection type for gas                                      | Ex h IIC T6 Gb                                                                                                                                                                         |
| Explosion ignition protection type for dust                                     | Ex h IIIC T85°C Db                                                                                                                                                                     |
| Explosion ambient temperature                                                   | -20 °C ≤ Ta ≤ +80 °C                                                                                                                                                                   |
| Operating medium                                                                | Compressed air to ISO 8573-1:2010 [7:3:4]                                                                                                                                              |
| Note on operating and pilot medium                                              | Dew point at least 10 °C below the ambient temperature and temperature of the medium<br>Lubricated operation possible (in which case lubricated operation will always be required)     |
| LABS (PWIS) conformity                                                          | VDMA24364 zone III                                                                                                                                                                     |
| Storage temperature                                                             | -20 °C...60 °C                                                                                                                                                                         |
| Ambient temperature                                                             | -20 °C...80 °C                                                                                                                                                                         |
| Torque at nominal operating pressure and 0° swivel angle                        | 1052 Nm...3993.9 Nm                                                                                                                                                                    |
| Torque at nominal operating pressure and 90° swivel angle                       | 764 Nm...3993.9 Nm                                                                                                                                                                     |
| Note on torque                                                                  | The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling. |
| Spring return torque at 0° swivel angle                                         | 710 Nm...1627 Nm                                                                                                                                                                       |
| Spring return torque at 90° swivel angle                                        | 997 Nm...2822 Nm                                                                                                                                                                       |
| Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0° | 91.7 l...314.37 l                                                                                                                                                                      |
| Product weight                                                                  | 75500 g...174000 g                                                                                                                                                                     |
| Shaft connection                                                                | T46                                                                                                                                                                                    |
| Pneumatic connection                                                            | G1/2                                                                                                                                                                                   |
| Note on materials                                                               | RoHS-compliant                                                                                                                                                                         |
| Material end cap                                                                | Spheroidal graphite cast iron                                                                                                                                                          |
| Material stop screw                                                             | Steel                                                                                                                                                                                  |
| Material sub-base                                                               | Anodised wrought aluminium alloy                                                                                                                                                       |
| Material cover                                                                  | Painted die-cast aluminium                                                                                                                                                             |
| Material seals                                                                  | NBR                                                                                                                                                                                    |
| Material spring                                                                 | Spring steel                                                                                                                                                                           |
| Material spring rod                                                             | Steel                                                                                                                                                                                  |
| Material housing                                                                | Anodised aluminium<br>Spheroidal graphite cast iron                                                                                                                                    |
| Material number housing                                                         | EN AW-6005                                                                                                                                                                             |
| Material piston                                                                 | Die-cast aluminium<br>Spheroidal graphite cast iron                                                                                                                                    |
| Material piston rod                                                             | Steel                                                                                                                                                                                  |
| Material bearing                                                                | POM                                                                                                                                                                                    |
| Material screws                                                                 | High-alloy stainless steel                                                                                                                                                             |
| Material shaft                                                                  | Nickel-plated steel                                                                                                                                                                    |
| Material tie rod                                                                | Steel                                                                                                                                                                                  |

| Feature                  | Value |
|--------------------------|-------|
| Material cylinder barrel | Steel |