

# Semi-rotary actuator

## DFPD-120-RP-90-RS45-F07-R3-C-VDE2

Part number: 8102825

FESTO



### Data sheet

| Feature  | Value  |
|--|--|
| Size of actuator   | 120  |
| Flange hole pattern  | F07  |
| Swivel angle   | 90 deg   |
| End-position adjustment range at 0°                                | -5 ... 5 deg   |
| End-position adjusting range at nominal swivel angle               | -5 ... 5 deg   |
| Shaft connection depth   | 19 mm  |
| Fitting connection conforms to standard                            | ISO 5211   |
| Assembly position  | Any  |
| Mode of operation  | single-acting  |
| Design structure   | Rack and pinion  |
| Closing direction  | right-closing  |
| Valve connection conforms to standard                              | VDI/VDE 3845 (NAMUR)   |
| Connection for positioner and position sensor conforms to standard | VDI/VDE 3845 size AA 1   |
| Component suitable for safety functions                            | Safety device  |
| Safety function  | The safety function consists of the actuator switching to the specified safety switching position when the compressed air is switched off and the spring chamber is exhausted.<br>This switching movement is achieved through the spring force of the spring assembly. |
| Safety Integrity Level (SIL)                                       | Product can be used in SRP/CS up to SIL 2 low demand<br>Up to SIL 3 in redundant architecture<br>up to SIL 1 high demand mode  |
| 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 1 high demand mode<br>Up to SIL 3 in redundant architecture  |
| Operating pressure MPa   | 0.2 ... 0.8 MPa  |
| Working pressure   | 2 ... 8 bar  |
| Operating pressure   | 29 ... 116 psi   |
| Nominal operating pressure   | 0.45 MPa   |
| Nominal working pressure   | 4.5 bar  |
| Nominal operating pressure (psi)                                   | 65.25 psi  |
| Maritime classification  | see certificate  |
| CE symbol (see declaration of conformity)                          | according to EU-Ex protection guideline (ATEX)   |
| UKCA marking (see declaration of conformity)                       | To UK EX instructions  |
| Explosion protection certification outside the EU                  | EPL Db (GB)<br>EPL Gb (GB)   |
| Certificate issuing department                                     | DNV TAP00001CE<br>German Technical Control Board (TÜV) Rheinland 968/V 1106.01/2023  |
| ATEX category Gas  | II 2G  |
| ATEX category Dust   | II 2D  |
| Explosion ignition protection type Gas                             | Ex h IIC T4 Gb X   |
| Explosion ignition protection type Dust                            | Ex h IIIC T105°C Db X  |
| Explosion-proof ambient temperature                                | -20°C ≤ Ta ≤ +80°C   |
| Operating medium   | Compressed air in accordance with ISO8573-1:2010 [7:4:4]   |
| Note on operating and pilot medium                                 | Pressure dew point 10°C below ambient temperature/temperature of medium  |

| Feature   | Value  |
|---|--|
|   | Lubricated operation possible (subsequently required for further operation)  |
| Corrosion resistance classification CRC   | 1 - Low corrosion stress   |
| PWIS conformity   | VDMA24364-B1/B2-L  |
| Storage temperature   | -20 ... 60 °C  |
| Ambient temperature   | -20 ... 80 °C  |
| Torque at rated working pressure and 0° rotation angle                          | 64.5 Nm  |
| Torque at nominal operating pressure with 90° swivel angle                      | 33.6 Nm  |
| Note about the 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 with 0° swivel angle                                       | 31.6 Nm  |
| Spring return torque at 90°   | 62.5 Nm  |
| Mean Time to Dangerous Failure (MTTFd)  | 1126 years   |
| Probability of Failure per Hour in [1/h].                                       | 1.01E-07   |
| PFD (Probability of Failure on Demand)  | 7.8E-04  |
| Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0° | 4.3 l  |
| Product weight  | 5,581 g  |
| Shaft connection  | T17  |
| Pneumatic connection  | G1/4   |
| Materials note  | Conforms to RoHS   |
| Material of connecting plate  | Anodised wrought aluminium alloy   |
| Material cover  | Coated die-cast aluminium  |
| Material seals  | NBR  |
| Material spring   | Spring steel   |
| Material housing  | Anodised wrought aluminium alloy   |
| Material piston   | Aluminum die cast  |
| Material bearing  | POM  |
| Material cam  | High alloy steel, non-corrosive  |
| Material screws   | High alloy steel, non-corrosive  |
| Material shaft  | High alloy steel, non-corrosive  |