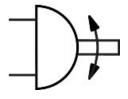
## Semi-rotary drive DFPD-N-20-RP-90-RD-F04-R3-EP Part number: 8066408

**FESTO** 





## **Data sheet**

Feature	Value
Size of valve actuator	20
Flange hole pattern	F04
Swivel angle	90 deg
End-position adjustment range at 0°	-5 deg5 deg
End-position adjustment range at nominal swivel angle	-5 deg5 deg
Shaft connection depth	12 mm
Fitting connection conforms to standard	ISO 5211
Mounting position	optional
Mode of operation	Double-acting Double-acting
Design	Rack and pinion
Closing direction	Closes to the right
Valve connection conforms to standard	VDI/VDE 3845 (NAMUR)
Connection point for positioner and position sensor conforms to standard	VDI/VDE 3845 size AA 1
Device type according to VDMA 66413	Safety device
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.
Safety Integrity Level (SIL)	To SIL 2 Low Demand mode Up to SIL 3 in a redundant architecture 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) Product can be used in SRP/CS up to SIL 1 (High Demand) Up to SIL 3 in a redundant architecture
Burst pressure	24 bar
Operating pressure	0.2 MPa0.8 MPa 2 bar8 bar 29 psi116 psi
Nominal operating pressure	0.55 MPa 5.5 bar 79.75 psi
Maritime classification	See certificate
CE mark (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)

Explosion protection certification outside the EU  EXPLOSION protection  Explosion protection  Zone 1 (MEX) Zone 1 (MEX) Zone 2 (MEX) Z	Feature	Value
Explosion protection  Explosion is a control (NEX)  Zone 2 (ANEX)  Explosion is authority  Explosion is prition protection type for gas  Explosion is prition protection type for gas  Explosion is prition protection type for dust  Explosion is prition protection type for gas  Explosion is prition protection type for dust  Explosion is prition protection type for dust  Explosion is prition protection for the prition protection for the medium  Librarial solation for the medium  Librarial control to the medium	UKCA marking (see declaration of conformity)	To UK EX instructions
Zone 1 (MEK)   Zone 2 (ATEX)	Explosion protection certification outside the EU	` '
German Technical Control Board (TÜV) Rheinland 968/V 1106.01/2023 ATEX category gas  ATEX category dust  II 2D  Explosion ignition protection type for gas  Ex h IIC T4 Gb X  Explosion ignition protection type for dust  Explosion ignition protection type for dust  Explosion ambient temperature  -20 °C <= Ta <= +80 °C  Operating medium  Note on operating and pilot medium  Dew point at least 10 °C below the ambient temperature and temperature of the medium ubricated operation possible (in which case lubricated operation will always be required)  LABS (PWIS) conformity  VDMA24364-B1/B2-L  Storage temperature  -20 °C60 °C  Ambient temperature  -20 °C60 °C  Ambient temperature  -20 °C80 °C  Torque at nominal operating pressure and 0° swivel angle  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.  Mean time to dangerous failure (MTTFd)  1126 years  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  Alt consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  1275 g  Shaft connection  111  Pheumatic connection  1126 years  Product weight  1275 g  Shaft connection  119 Pheumatic connection  Material sub-base  Die-cast aluminium, coated  Material sub-base  Material sub-base  Material bousing  Material bousing  Material bousing  Material bousing  Material bousing  Material bousing  Material bearing  Material bearing  Material bearing  Material bearing  Material screws  High-alloy stainless steel	Explosion protection	Zone 1 (UKEX) Zone 2 (ATEX) Zone 21 (ATEX) Zone 21 (UKEX)
ATEX category dust Explosion ignition protection type for gas Exh III CT4 6b X Explosion ignition protection type for dust Explosion ignition protection type for dust Explosion ambient temperature 20 °C <= Ta <= 80 °C Operating medium Compressed air to ISO 8573-1:2010 [7:4:4] Note on operating and pilot medium Unbricated operating and embient temperature and temperature of the medium Unbricated operation possible (in which case lubricated operation will always be required)  LABS (PWIS) conformity VDMA2 136-81 [82-1] Storage temperature 20 °C60 °C Ambient temperature 20 °C60 °C Ambient temperature 20 °C80 °C Torque at nominal operating pressure and 0° swivel angle 20.1 Nm Torque at nominal operating pressure and 90° swivel angle 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.  Mean time to dangerous failure (MTTFd) 1126 years Probability of Failure per Hour (PFH) 1.01E-07 Probability of Failure on Demand (PFD) Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0° Product weight 1275 g Shaft connection 111 Pneumatic connection 118 NPT Note on materials RoH5-compliant Material sub-base Die-cast aluminium, coated Material sub-base Die-cast aluminium, coated Material soals NBR Material lousing Die-cast aluminium, coated Material lousing Die-cast aluminium, coated Material lousing Material louring Material louring Material bearing POM Material louring Material bearing Material bearing POM Material soare Material soare Material soare Material soaring Material bearing Material bearing Material soaring M	Certificate issuing authority	
Exhibition protection type for gas  Exhill CT4 Gb X  Explosion ignition protection type for dust  Explosion ambient temperature  -20 °C <= Ta <= +80 °C  Compressed air to ISO 8573-1:2010 [7:4:4]  Note on operating and pilot medium  Dew point at least 10 °C below the ambient temperature and temperature of the medium Lubricated operation possible (in which case lubricated operation will always be required)  LABS (PWIS) conformity  YDMA24364-81/182-L  Storage temperature  -20 °C60 °C  Ambient temperature  -20 °C80 °C  Torque at nominal operating pressure and 0° swivel angle  20.1 Nm  Torque at nominal operating pressure and 90° swivel angle  20.1 Nm  Note on torque  Mean time to dangerous failure (MTTFd)  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  0.00142  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle of failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle of the actuation must not be incompliant on the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Material sub-base  Die-cast aluminium, coated  Material sub-base  Material sub-base  Material seals  NBR  Material bousing  Die-cast aluminium, coated  Material bearing  Material bearing  Material bearing  Material bearing  Material seases  Material bearing  Material bearing  Material serves  Material serves  High-alloy stainless steel	ATEX category gas	II 2G
Explosion ignition protection type for dust  Explosion ambient temperature  20 °C <= Ta <= +80 °C  Operating medium  Note on operating and pilot medium  Dew point at least 10 °C below the ambient temperature and temperature of the medium Lubricated operation possible (in which case lubricated operation will always be required)  LABS (PWIS) conformity  VDMA24364-B1/B2-L  Storage temperature  20 °C60 °C  Ambient temperature  Torque at nominal operating pressure and 0° swivel angle  Torque at nominal operating pressure and 90° swivel angle  Torque at nominal operat	ATEX category dust	II 2D
Explosion ambient temperature  -20 °C <= Ta <= +80 °C  Compressed air to ISO 8573-1:2010 [7:4:4]  Note on operating medium  Note on operating and pilot medium  temperature of the medium  Lubricated operation possible (in which case lubricated operation will always be required)  LABS (PWIS) conformity  VDMA24364-81/B2-L  Storage temperature  -20 °C60 °C  -20 °C80 °C  Torque at nominal operating pressure and 0° swivel angle  20.1 Nm  Torque at nominal operating pressure and 90° swivel angle  20.1 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.  Mean time to dangerous failure (MTTFd)  1126 years  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°-nomital swivel angle-0°-nomital swivel angle-0°-nomital swivel angle-0°-nomital swivel angle-0°-nometion  T11  Preumatic connection  T11  Preumatic connection  T11  Preumatic connection  Material base  Die-cast aluminium, coated  Material seals  NBR  Material lousing  Die-cast aluminium, coated  Material sealis  Material lousing  Die-cast aluminium, coated  Material piston  Material bearing  POM  Material searus  High-alloy stainless steel	Explosion ignition protection type for gas	Ex h IIC T4 Gb X
Operating medium  Compressed air to ISO 8573-1:2010 [7:4:4]  Note on operating and pilot medium  Dew point at least 10 °C below the ambient temperature and temperature of the medium Lubricated operation possible (in which case lubricated operation will always be required)  LABS (PWIS) conformity  VDMA24364-81/B2-L  Storage temperature 20 °C80 °C  Ambient temperature 20 °C80 °C  Torque at nominal operating pressure and 0° swivel angle 20.1 Nm  Torque at nominal operating pressure and 90° swivel angle 20.1 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.  Mean time to dangerous failure (MTTFd) 1126 years  Probability of Failure per Hour (PFH) 1.01E-07  Probability of Failure on Demand (PFD) Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight 1275 g  Shaft connection T11  Pneumatic connection T11  Pneumatic connection T11  Pneumatic connection T11  Note on materials RoHS-compliant  Material sub-base Die-cast aluminium, coated  Material seals NBR  Material bousing Die-cast aluminium, coated  Material seals NBR  Material bousing Die-cast aluminium Material bearing POM  Material bearing POM  Material sears High-alloy stainless steel	Explosion ignition protection type for dust	Ex h IIIC T105°C Db X
Note on operating and pilot medium  Dew point at least 10 °C below the ambient temperature and temperature of the medium Lubricated operation will always be required)  LABS (PWIS) conformity  VDMA24364-B1/B2-L  Storage temperature  -20 °C60 °C  Ambient temperature  -20 °C80 °C  Torque at nominal operating pressure and 0° swivel angle  Torque at nominal operating pressure and 90° swivel angle  Torque at nominal operating pressure and 90° swivel angle  Torque at nominal operating pressure and 90° swivel angle  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.  Mean time to dangerous failure (MTTFd)  1126 years  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  1275 g  Shaft connection  1/8 NPT  Note on materials  MoHs-conpoliant  Die-cast aluminium, coated  Material seals  Material seals  NBR  Material seals  NBR  Material housing  Die-cast aluminium, coated  Material piston  Die-cast aluminium, coated  Material piston  Material piston  Material piston  Material cam  High-alloy stainless steel  Migh-alloy stainless steel	Explosion ambient temperature	-20 °C <= Ta <= +80 °C
temperature of the medium Lubricated operation possible (in which case lubricated operation will always be required)  LABS (PWIS) conformity  VDMA24364-B1/B2-L  Storage temperature  -20 °C60 °C  Ambient temperature  -20 °C80 °C  Torque at nominal operating pressure and 0° swivel angle  20.1 Nm  Torque at nominal operating pressure and 90° swivel angle  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.  Mean time to dangerous failure (MTTFd)  1126 years  Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  1275 g  Shaft connection  T11  Preumatic connection  T11  Preumatic connection  1/8 NPT  Note on materials  RoHS-compliant  Material sub-base  Die-cast aluminium, coated  Material seals  NBR  Material housing  Die-cast aluminium, coated  Material bearing  POM  Material bearing  POM  Material cam  High-alloy stainless steel  High-alloy stainless steel	Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Storage temperature -20 °C60 °C Ambient temperature -20 °C60 °C Torque at nominal operating pressure and 0° swivel angle Torque at nominal operating pressure and 90° swivel angle Torque at nominal operating pressure and 90° swivel angle 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.  Mean time to dangerous failure (MTTFd) 1126 years Probability of Failure per Hour (PFH) 1.01E-07 Probability of Failure on Demand (PFD) 3.00142 Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0° Product weight 1275 g Shaft connection T11 Pneumatic connection T11 Pneumatic connection 1/8 NPT Note on materials RoHS-compliant Material sub-base Die-cast aluminium, coated Material seals MBR Material seals MBR Material housing Die-cast aluminium, coated Material bearing POM Material cam High-alloy stainless steel High-alloy stainless steel	Note on operating and pilot medium	temperature of the medium Lubricated operation possible (in which case lubricated operation will
Ambient temperature	LABS (PWIS) conformity	VDMA24364-B1/B2-L
Torque at nominal operating pressure and 0° swivel angle Torque at nominal operating pressure and 90° swivel angle Torque at nominal operating pressure and 90° swivel angle 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.  Mean time to dangerous failure (MTTFd) 1126 years Probability of Failure per Hour (PFH) 1.01E-07 Probability of Failure on Demand (PFD) 0.00142 Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0° Product weight 1275 g Shaft connection T11 Pneumatic connection 1/8 NPT Note on materials RoHS-compliant Material sub-base Die-cast aluminium, coated Material cover Die-cast aluminium, coated Material fousing Die-cast aluminium, coated Material piston Die-cast aluminium Material bearing POM Material cam High-alloy stainless steel Migh-alloy stainless steel	Storage temperature	-20 °C60 °C
Torque at nominal operating pressure and 90° swivel angle  Note on torque  Note on torque  Note on torque  Note on torque  Mean time to dangerous failure (MTTFd)  Probability of Failure per Hour (PFH)  Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  Shaft connection  T11  Preumatic connection  Note on materials  Material sub-base  Material cover  Material seals  Material housing  Material piston  Material cam  Material cam  Material screws  Material screws  Material screws  Material screws  Material screws  Material screws  Die-cast aluminium  Material screws  Migh-alloy stainless steel  High-alloy stainless steel	Ambient temperature	-20 °C80 °C
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.  Mean time to dangerous failure (MTTFd)  Probability of Failure per Hour (PFH)  Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  1275 g  Shaft connection  T11  Pneumatic connection  1/8 NPT  Note on materials  RoHS-compliant  Material sub-base  Die-cast aluminium, coated  Material cover  Material seals  NBR  Material housing  Die-cast aluminium, coated  Material piston  Die-cast aluminium  Material bearing  POM  Material screws  High-alloy stainless steel  Migh-alloy stainless steel	Torque at nominal operating pressure and 0° swivel angle	20.1 Nm
maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Mean time to dangerous failure (MTTFd)  1126 years  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  1275 g  Shaft connection  T11  Pneumatic connection  1/8 NPT  Note on materials  RoHS-compliant  Material sub-base  Die-cast aluminium, coated  Material cover  Material seals  NBR  Material housing  Die-cast aluminium, coated  Material piston  Material piston  Material bearing  Material com  Material com  Material com  Material bearing  Material com  Material com  Material bearing  Material com  Material com  Material seass  Material bearing  Material com  Material com  Material seass  Material bearing  Material com  Material com  Material com  Material seass  Material bearing  Material seass steel  High-alloy stainless steel	Torque at nominal operating pressure and 90° swivel angle	20.1 Nm
Probability of Failure per Hour (PFH) Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0° Product weight 1275 g Shaft connection T11 Pneumatic connection 1/8 NPT Note on materials Material sub-base Die-cast aluminium, coated Material cover Die-cast aluminium, coated Material housing Material piston Die-cast aluminium Material bearing Die-cast aluminium Material bearing POM Material com Material bearing Material stanes Material com Material stanes Material com Material stanes Material sta	Note on torque	maximum permissible torque listed in ISO 5211, with reference to the
Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  1275 g  Shaft connection  T11  Pneumatic connection  Note on materials  Material sub-base  Die-cast aluminium, coated  Material cover  Material seals  Material housing  Material piston  Material piston  Material bearing  POM  Material cam  Migh-alloy stainless steel  Migh-alloy stainless steel  Material steel  Material screws  O.00142  1.8 I  2.8 I  3.8 I  3.8 I  3.8 I  3.8 I  3.8 NPT  Authorized  Die-cast aluminium, coated  Die-cast aluminium, coated  Material piston  Material piston  Material piston  Material scares  High-alloy stainless steel	Mean time to dangerous failure (MTTFd)	1126 years
Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  1275 g  Shaft connection  T11  Pneumatic connection  1/8 NPT  Note on materials  RoHS-compliant  Material sub-base  Die-cast aluminium, coated  Material cover  Die-cast aluminium, coated  Material seals  NBR  Material housing  Die-cast aluminium, coated  Material piston  Die-cast aluminium  Material bearing  POM  Material cam  High-alloy stainless steel  Material screws  High-alloy stainless steel	Probability of Failure per Hour (PFH)	1.01E-07
angle-0°  Product weight  Shaft connection  T11  Pneumatic connection  Note on materials  Material sub-base  Material cover  Material seals  Material housing  Material piston  Material bearing  Material cam  Material screws  Material screws  Die-cast aluminium, coated  Migh-alloy stainless steel  Migh-alloy stainless steel	Probability of Failure on Demand (PFD)	0.00142
Shaft connection T11 Pneumatic connection 1/8 NPT Note on materials RoHS-compliant Material sub-base Die-cast aluminium, coated Material cover Die-cast aluminium, coated Material seals NBR Material housing Die-cast aluminium, coated Material piston Die-cast aluminium Material bearing POM Material cam High-alloy stainless steel Material screws High-alloy stainless steel	Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°	1.81
Pneumatic connection 1/8 NPT  Note on materials RoHS-compliant  Material sub-base Die-cast aluminium, coated  Material cover Die-cast aluminium, coated  Material seals NBR  Material housing Die-cast aluminium, coated  Material piston Die-cast aluminium  Material bearing POM  Material cam High-alloy stainless steel  Material screws High-alloy stainless steel	Product weight	1275 g
Note on materials  Material sub-base  Die-cast aluminium, coated  Material cover  Die-cast aluminium, coated  Material seals  NBR  Material housing  Die-cast aluminium, coated  Material piston  Die-cast aluminium  Material bearing  POM  Material cam  High-alloy stainless steel  Material screws  High-alloy stainless steel	Shaft connection	T11
Material sub-base Die-cast aluminium, coated Material cover Die-cast aluminium, coated Material seals NBR Material housing Die-cast aluminium, coated Material piston Die-cast aluminium Material bearing POM Material cam High-alloy stainless steel Material screws High-alloy stainless steel	Pneumatic connection	1/8 NPT
Material cover Die-cast aluminium, coated  Material seals NBR  Material housing Die-cast aluminium, coated  Material piston Die-cast aluminium  Material bearing POM  Material cam High-alloy stainless steel  Material screws High-alloy stainless steel	Note on materials	RoHS-compliant
Material seals  Material housing  Die-cast aluminium, coated  Material piston  Die-cast aluminium  Material bearing  POM  Material cam  High-alloy stainless steel  Material screws  Migh-alloy stainless steel	Material sub-base	Die-cast aluminium, coated
Material housing  Die-cast aluminium, coated  Material piston  Die-cast aluminium  Material bearing  POM  Material cam  High-alloy stainless steel  Material screws  High-alloy stainless steel	Material cover	Die-cast aluminium, coated
Material piston  Material bearing  POM  Material cam  High-alloy stainless steel  Material screws  High-alloy stainless steel	Material seals	NBR
Material bearing POM  Material cam High-alloy stainless steel  Material screws High-alloy stainless steel	Material housing	Die-cast aluminium, coated
Material cam High-alloy stainless steel Material screws High-alloy stainless steel	Material piston	Die-cast aluminium
Material screws High-alloy stainless steel	Material bearing	POM
	Material cam	High-alloy stainless steel
Material shaft High-alloy stainless steel	Material screws	High-alloy stainless steel
	Material shaft	High-alloy stainless steel