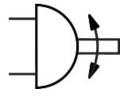
Semi-rotary drive DFPD-N-20-RP-90-RD-F05-R3-EP Part number: 8066409

FESTO





Data sheet

Feature	Value
Size of valve actuator	20
Flange hole pattern	F05
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
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 (NEX) Explosion is authority Explosion is protection type for gas Explosion is prition protection type for gas Explosion is prition protection type for dust Explosion is prition protection for type for dust Explosion is prition protection for type for for the actuator for the medium Explosion for the medium Explosion for the medium Lubricated operation possible (in which case lubricated operation will always be required) Explosion for the medium for the medium for the medium for the medi	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 bearing POM Material bearing	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 Die-cast aluminium, coated Material sub-base Die-cast aluminium, coated Material seals NBR Material bousing Die-cast aluminium, coated Material piston Die-cast aluminium, coated Material piston Material bearing POM Material bearing High-alloy stainless steel Migh-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 stanes Material stanes Material com Material com Material stanes Ma	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 steels Migh-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
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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