

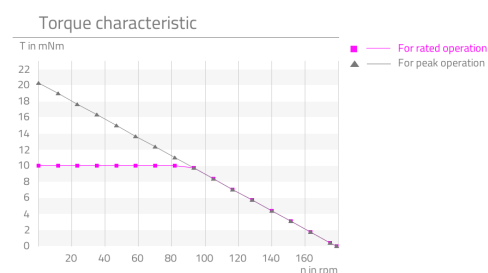


## Attributes

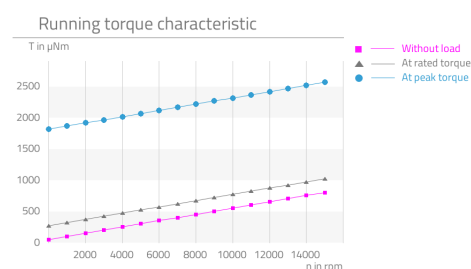
| Highlights   | Description  |
|--|--|
| <ul style="list-style-type: none"> <li>▪ <b>High speed</b></li> <li>▪ <b>Easy controllability</b></li> <li>▪ <b>Preloaded ball bearing</b></li> <li>▪ <b>Lifetime lubrication</b></li> <li>▪ <b>Use of high quality materials</b></li> </ul> | <p>The CoograDrive® SpecialFlange 10mm - type 1 micro servo actuator is driven by a DC motor with rated voltage of 12V and integrated encoder with a resolution of 256 pulses per rotation. At the heart of this durable micro positioning system is a low-backlash CoograDrive® gear with a reduction ratio of 40:1. Three axial threads serve as the mechanical interface for attaching the micro servo actuator. The application can be directly connected by means of the preloaded ball bearings on the output shaft.</p> |

## Technical parameter

P-019



P-029



# Technical Supply Specifications: CoograDrive® SpecialFlange 10mm - Type 1



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| Nr.   | Parameter  | Symbol | Value                               | Hint |
|-------|--|--------|-------------------------------------|------|
| P-003 | Ratio  | i      | 40 : 1                              |      |
| P-004 | Self-locking   |        | yes                                 |      |
| P-008 | Repeatability unidirectional                                     |        | 3 arcmin                            |      |
| P-009 | Repeatability bidirectional                                      |        | 30 arcmin                           |      |
| P-010 | Accuracy   |        | 30 arcmin                           |      |
| P-011 | Transmission accuracy  |        | 60 arcmin                           |      |
| P-012 | Resolution   |        | 0.03516 °                           |      |
| P-013 | Torsional stiffness  |        | 2.50 $\frac{\text{Nm}}{\text{rad}}$ |      |
| P-014 | Lost motion  |        | 30 arcmin                           |      |
| P-015 | Backlash   |        | 20 arcmin                           |      |
| P-016 | Rated torque   | T      | 10 mNm                              |      |
| P-017 | Peak torque  | T      | 80 mNm                              |      |
| P-018 | Momentary peak torque  | T      | 100 mNm                             |      |
| P-021 | Rated input speed  | n      | 10000 rpm                           |      |
| P-022 | Maximum input speed  | n      | 14000 rpm                           |      |
| P-023 | Rated output speed   | n      | 250 rpm                             |      |
| P-024 | Maximum output speed   | n      | 350 rpm                             |      |
| P-026 | No-load starting torque  | T      | 82.5 $\mu\text{Nm}$                 |      |
| P-027 | No-load running torque   | T      | 55 $\mu\text{Nm}$                   |      |
| P-028 | Rated running torque   | T      | 705 $\mu\text{Nm}$                  |      |
| P-034 | Lifetime for rated operation                                     |        | 500 h                               |      |
| P-035 | Radial backlash output shaft                                     |        | 0 $\mu\text{m}$                     |      |
| P-036 | Axial backlash output shaft                                      |        | 0 $\mu\text{m}$                     |      |
| P-037 | Radial stiffness   | c      | 2.3 $\text{N}/\mu\text{m}$          |      |
| P-038 | Axial stiffness  | c      | 40 $\text{N}/\mu\text{m}$           |      |
| P-039 | Max. radial load on output shaft (non-operating, constant load)  | F      | 55 N                                |      |
| P-040 | Max. radial load on output shaft (non-operating, impulsive load) | F      | 20 N                                |      |
| P-041 | Max. radial load on output shaft (operating, constant load)      | F      | 7 N                                 |      |
| P-042 | Max. radial load on output shaft (operating, impulsive load)     | F      | 7 N                                 |      |
| P-043 | Max. axial load on output shaft (non-operating, constant)        | F      | 150 N                               |      |
| P-044 | Max. axial load on output shaft (non-operating, impulsive load)  | F      | 50 N                                |      |

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| Nr.   | Parameter   | Symbol | Value                                      | Hint |
|-------|---|--------|--|------|
| P-045 | Max. axial load on output shaft (operating, constant load)  | F      | 380 N                                      |      |
| P-046 | Max. axial load on output shaft (operating, impulsive load) | F      | 127 N                                      |      |
| P-055 | Moment of inertia   | I      | $742.03 \cdot 10^{-4}$<br>gcm <sup>2</sup> |      |
| P-056 | Weight  | m      | 4.1 g                                      |      |
| P-057 | Min. permissible ambient temperature (non-operating)        | T      | -20 °C                                     |      |
| P-058 | Min. permissible ambient temperature (operating)            | T      | -20 °C                                     |      |
| P-059 | Max. permissible ambient temperature (non-operating)        | T      | 85 °C                                      |      |
| P-060 | Max. permissible ambient temperature (operating)            | T      | 65 °C                                      |      |

## Motor data: DC-Motor RE 10 12V 0.75W

| Nr.   | Parameter  | Symbol           | Value      | Hint |
|-------|--|------------------|------------|------|
| P-100 | Motortype  |                  | DC         |      |
| P-102 | Maximum speed of motor                               | n                | 14000 rpm  |      |
| P-104 | Speed constant of motor                              | Kn               | 1000 rpm/V |      |
| P-106 | Stall torque of motor                                | T                | 1.01 mNm   |      |
| P-107 | Torque constant of motor                             | Km               | 9.55 mNm/A |      |
| P-108 | No-load current of motor                             | I                | 5.37 mA    |      |
| P-110 | Max. continuous current of motor                     | I                | 81 mA      |      |
| P-111 | Rated voltage of motor                               | U                | 12 V       |      |
| P-112 | Phase resistance of motor                            | R                | 114 ohm    |      |
| P-113 | Inductance of motor                                  | L                | 0.92 mH    |      |
| P-114 | Amplitude BEMF of motor                              | U                | 1 mV/rpm   |      |
| P-118 | Max. coil temperature of motor                       | T                | 85 °C      |      |
| P-119 | Thermal resistance of motor between coil and housing | R <sub>th1</sub> | 19.5 K/W   |      |
| P-120 | Thermal resistance of motor between housing and air  | R <sub>th2</sub> | 45.5 K/W   |      |
| P-121 | Thermal time constant of the coil of the motor       | T <sub>w1</sub>  | 3160 ms    |      |
| P-122 | Thermal time constant of the housing of the motor    | T <sub>w2</sub>  | 108000 ms  |      |

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## Encoder data

| Nr.   | Parameter                          | Symbol | Value        | Hint |
|-------|------------------------------------|--------|--------------|------|
| P-201 | Impulses per revolution of encoder |        | 256          |      |
| P-202 | Channels of encoder                |        | A, A\, B, B\ |      |
| P-203 | Frequency range of encoder         | f      | 320 kHz      |      |
| P-204 | Operating voltage of encoder       | U      | 5 ±0.2 V     |      |
| P-206 | Output current of encoder          | I      | 5 mA         |      |
| P-207 | Signal/phase shifting of encoder   |        | 90±45 °      |      |

## Material information

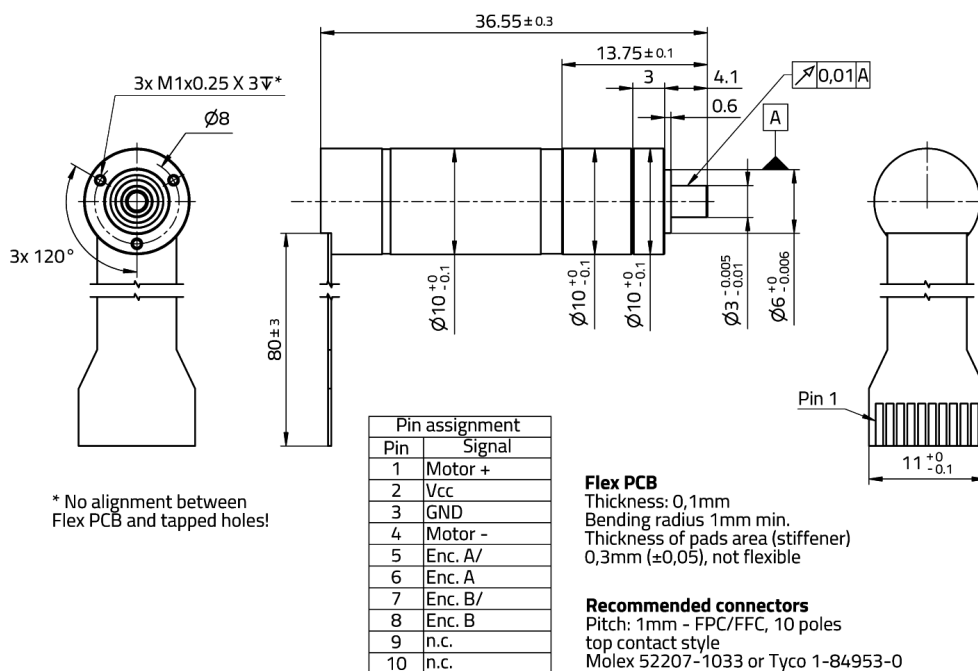
| Nr.   | Parameter                             | Symbol | Value               | Hint |
|-------|---------------------------------------|--------|---------------------|------|
| P-900 | RoHS compliant                        |        | yes                 |      |
| P-901 | Lubrication of output bearing gearbox |        | Longtime PD2        |      |
| P-903 | Lubrication of gear component set     |        | Molykote BR 2 plus  |      |
| P-908 | Material of gear component set        |        | NiFe                |      |
| P-909 | Material of output bearing gearbox    |        | 1.4108 DIN EN       |      |
| P-911 | Material of bearing motor             |        | Stainless steel     |      |
| P-912 | Material of gearbox output side       |        | 1.4305 DIN EN       |      |
| P-914 | Material of motor housing             |        | Steel, black coated |      |

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## Technical drawing



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