

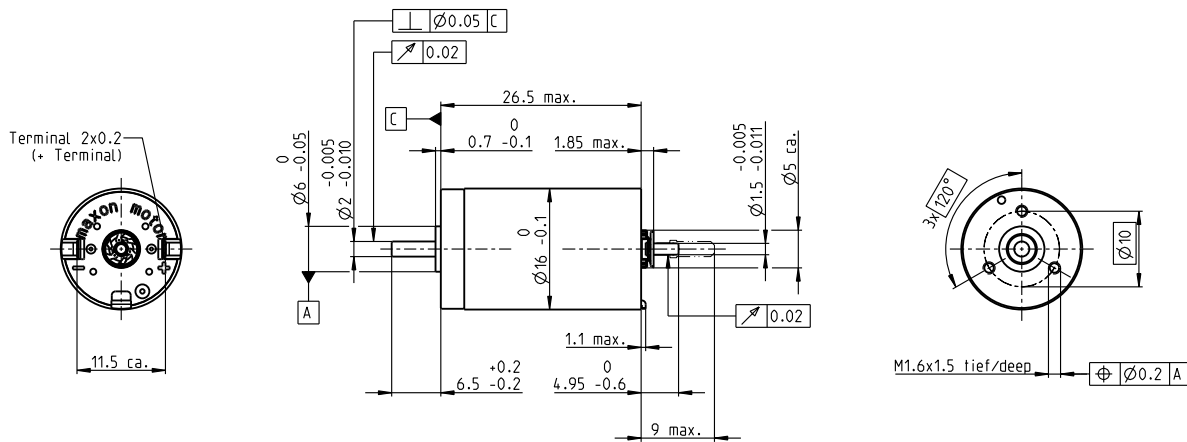
# DCX 16 S Precious Metal Brushes

## DC motor Ø16 mm

Key Data: 3/5 W, 5.3 mNm, 8680 rpm



DCX



M 1:1

### Motor Data

|                                              |                  |       |       |       |       |       |       |       |
|----------------------------------------------|------------------|-------|-------|-------|-------|-------|-------|-------|
| 1. Nominal voltage                           | V                | 3     | 4.5   | 6     | 9     | 12    | 18    | 24    |
| 2. No load speed                             | rpm              | 6320  | 6320  | 6610  | 6320  | 6260  | 6340  | 6250  |
| 3. No load current                           | mA               | 44.6  | 29.7  | 23.4  | 14.9  | 11    | 7.43  | 5.51  |
| 4. Nominal speed                             | rpm              | 3350  | 3300  | 3760  | 3270  | 3320  | 3530  | 3200  |
| 5. Nominal torque (max. continuous torque)   | mNm              | 5.15  | 5.05  | 5.36  | 5     | 5.19  | 5.45  | 4.99  |
| 6. Nominal current (max. continuous current) | A                | 1.20  | 0.784 | 0.65  | 0.389 | 0.299 | 0.211 | 0.144 |
| 7. Stall torque                              | mNm              | 11.1  | 10.7  | 12.6  | 10.6  | 11.2  | 12.5  | 10.4  |
| 8. Stall current                             | A                | 2.49  | 1.61  | 1.48  | 0.791 | 0.624 | 0.467 | 0.289 |
| 9. Max. efficiency                           | %                | 75    | 75    | 77    | 75    | 75    | 77    | 74    |
| 10. Terminal resistance                      | Ω                | 1.20  | 2.80  | 4.06  | 11.4  | 19.2  | 38.6  | 83.1  |
| 11. Terminal inductance                      | mH               | 0.036 | 0.080 | 0.131 | 0.320 | 0.581 | 1.28  | 2.32  |
| 12. Torque constant                          | mNm/A            | 4.45  | 6.67  | 8.53  | 13.3  | 18.0  | 26.7  | 36.0  |
| 13. Speed constant                           | rpm/V            | 2150  | 1430  | 1120  | 715   | 531   | 358   | 265   |
| 14. Speed/torque gradient                    | rpm/mNm          | 580   | 600   | 533   | 610   | 568   | 517   | 613   |
| 15. Mechanical time constant                 | ms               | 6.09  | 6.09  | 6.05  | 6.13  | 6.11  | 6.08  | 6.17  |
| 16. Rotor inertia                            | gcm <sup>2</sup> | 1.00  | 0.97  | 1.08  | 0.959 | 1.03  | 1.12  | 0.960 |

### Thermal data

|                                         |     |           |
|-----------------------------------------|-----|-----------|
| 17. Thermal resistance housing-ambient  | K/W | 23.5      |
| 18. Thermal resistance winding-housing  | K/W | 9.9       |
| 19. Thermal time constant winding       | s   | 9.63      |
| 20. Thermal time constant motor         | s   | 227       |
| 21. Ambient temperature ball bearings   | °C  | -40...+85 |
| 21. Ambient temperature sleeve bearings | °C  | -30...+85 |
| 22. Max. winding temperature            | °C  | 100       |

### Operating Range

n [rpm] Winding 12 V

### Mechanical data ball bearings

|                                        |     |         |
|----------------------------------------|-----|---------|
| 23. Max. speed                         | rpm | 8680    |
| 24. Axial play                         | mm  | 0...0.1 |
| 25. Radial play                        | mm  | 0.015   |
| 26. Max. axial load (dynamic)          | N   | 0.8     |
| 27. Max. force for press fits (static) | N   | 18      |
| 27. (static, shaft supported)          | N   | 300     |
| 28. Max. radial load [mm from flange]  | N   | 10 [5]  |

■ Continuous operation  
 ■ Continuous operation with reduced thermal resistance R<sub>th2</sub> 50%  
 □ Intermittent operation

### Mechanical data sleeve bearings

|                                        |     |         |
|----------------------------------------|-----|---------|
| 23. Max. speed                         | rpm | 8680    |
| 24. Axial play                         | mm  | 0...0.2 |
| 24. Preload                            | N   | 0       |
| 25. Radial play                        | mm  | 0.015   |
| 26. Max. axial load (dynamic)          | N   | 0.1     |
| 27. Max. force for press fits (static) | N   | 60      |
| 27. (static, shaft supported)          | N   | 300     |
| 28. Max. radial load [mm from flange]  | N   | 2 [5]   |

### maxon Modular System

|                  |               |                         |
|------------------|---------------|-------------------------|
| maxon gear       | Stages [opt.] | maxon sensor            |
| 331_GPX 16 A/C   | 1-2 [3-4]     | 433_ENX 10 EASY         |
| 332_GPX 16 LN/LZ | 1-2 [3-4]     | 433_ENX 10 QUAD         |
| 333_GPX 16 HP    | 2-3 [4]       | 434_ENX 10 EASY XT      |
| 335_GPX 19 A/C   | 3-4           | 436_ENX 16 EASY         |
| 336_GPX 19 LN/LZ | 3-4           | 437_ENX 16 EASY XT      |
| 337_GPX 19 HP    | 4             | 438_ENX 16 EASY Abs.    |
|                  |               | 439_ENX 16 EASY Abs. XT |
|                  |               | 443_ENX 16 RIO          |

### Details on catalog page 32

|                        |
|------------------------|
| maxon motor control    |
| 486_ESCON Module 24/2  |
| 486_ESCON 36/2 DC      |
| 496_EPOS4 Mod. 24/1.5  |
| 498_EPOS4 Comp. 24/1.5 |
| 501_EPOS4 50/5         |

### Other specifications

|                                   |     |    |
|-----------------------------------|-----|----|
| 29. Number of pole pairs          |     | 1  |
| 30. Number of commutator segments |     | 7  |
| 31. Weight of motor               | g   | 26 |
| 32. Typical noise level           | dBA | 40 |

### Configuration

Bearing: Ball bearings preloaded/sleeve bearings  
 Commutation: Precious metal brushes with CLL/graphite brushes  
 Flange front/back: Standard flange/configurable flange/no flange  
 Shaft front/back: Length/diameter/flat face  
 Electric connection: Terminals or cable/alignment of connection/cable length/connector type