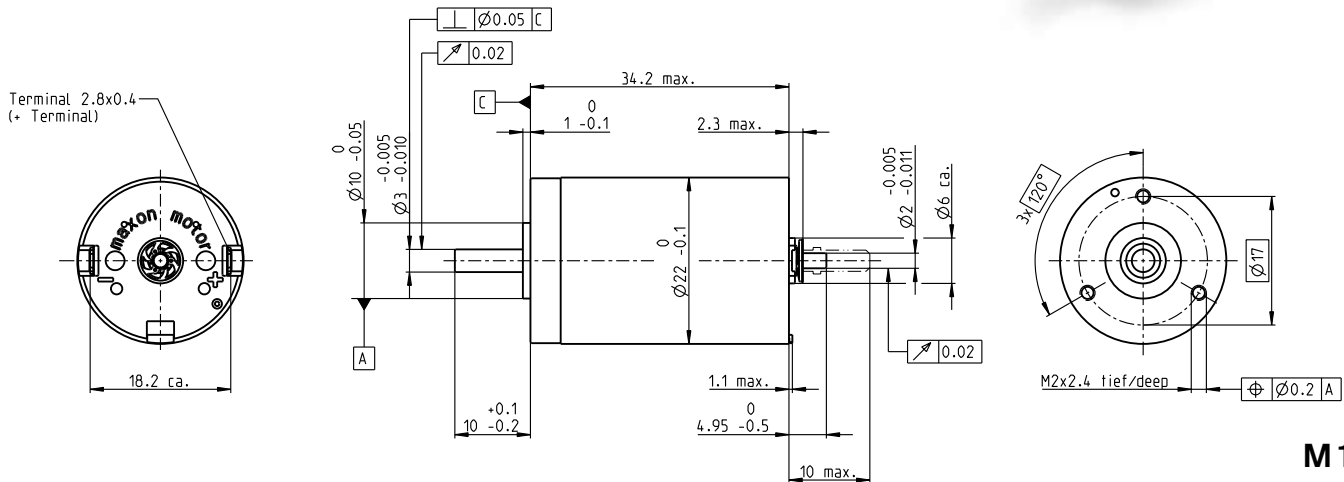


# DCX 22 S Ø22 mm, precious metal brushes, DC motor

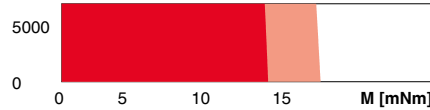
Key Data: 6/10 W, 14.5 mNm, 7160 rpm

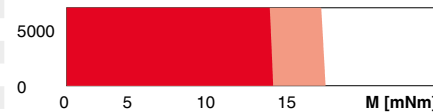


DCX



M 1:1

| Motor Data                      |                                           |         |          |                  |               |                         |                             |                                                                                      |                             |
|---------------------------------|-------------------------------------------|---------|----------|------------------|---------------|-------------------------|-----------------------------|--------------------------------------------------------------------------------------|-----------------------------|
| 1_                              | Nominal voltage                           | V       | 6        | 12               | 18            | 24                      | 36                          | 48                                                                                   |                             |
| 2_                              | No load speed                             | rpm     | 6200     | 6200             | 6110          | 6340                    | 6550                        | 5890                                                                                 |                             |
| 3_                              | No load current                           | mA      | 39.2     | 19.6             | 12.8          | 10.1                    | 7.09                        | 4.55                                                                                 |                             |
| 4_                              | Nominal speed                             | rpm     | 4960     | 4670             | 4560          | 4700                    | 4940                        | 4240                                                                                 |                             |
| 5_                              | Nominal torque (max. continuous torque)   | mNm     | 10.7     | 14.7             | 14.5          | 13.6                    | 13.8                        | 13.6                                                                                 |                             |
| 6_                              | Nominal current (max. continuous current) | A       | 1.20     | 0.817            | 0.531         | 0.388                   | 0.272                       | 0.180                                                                                |                             |
| 7_                              | Stall torque                              | mNm     | 53.7     | 59.7             | 57.5          | 52.7                    | 56.5                        | 48.6                                                                                 |                             |
| 8_                              | Stall current                             | A       | 5.85     | 3.25             | 2.06          | 1.47                    | 1.08                        | 0.63                                                                                 |                             |
| 9_                              | Max. efficiency                           | %       | 84       | 85               | 85            | 84                      | 85                          | 84                                                                                   |                             |
| 10_                             | Terminal resistance                       | Ω       | 1.02     | 3.69             | 8.75          | 16.3                    | 33.3                        | 76.2                                                                                 |                             |
| 11_                             | Terminal inductance                       | mH      | 0.058    | 0.231            | 0.535         | 0.881                   | 1.86                        | 4.08                                                                                 |                             |
| 12_                             | Torque constant                           | mNm/A   | 9.18     | 18.4             | 28.0          | 35.9                    | 52.2                        | 77.2                                                                                 |                             |
| 13_                             | Speed constant                            | rpm/V   | 1040     | 520              | 342           | 266                     | 183                         | 124                                                                                  |                             |
| 14_                             | Speed/torque gradient                     | rpm/mNm | 116      | 104              | 107           | 121                     | 117                         | 122                                                                                  |                             |
| 15_                             | Mechanical time constant                  | ms      | 6.14     | 6.07             | 6.09          | 5.93                    | 6.15                        | 6.19                                                                                 |                             |
| 16_                             | Rotor inertia                             | gcm²    | 5.05     | 5.55             | 5.44          | 4.67                    | 5.03                        | 4.84                                                                                 |                             |
| Thermal data                    |                                           |         |          |                  |               |                         |                             | Operating Range                                                                      |                             |
| 17_                             | Thermal resistance housing-ambient        | K/W     | 16       | n [rpm]          |               |                         |                             |                                                                                      | Winding 18 V                |
| 18_                             | Thermal resistance winding-housing        | K/W     | 7        |                  |               |                         |                             |                                                                                      |                             |
| 19_                             | Thermal time constant winding             | s       | 20       |                  |               |                         |                             |                                                                                      |                             |
| 20_                             | Thermal time constant motor               | s       | 528      | 20000            |               |                         |                             |                                                                                      |                             |
| 21_                             | Ambient temperature ball bearings         | °C      | -40...85 |                  |               |                         |                             |                                                                                      |                             |
|                                 | Ambient temperature sleeve bearings       | °C      | -30...85 | 15000            |               |                         |                             |                                                                                      |                             |
| 22_                             | Max. winding temperature                  | °C      | 100      |                  |               |                         |                             |                                                                                      |                             |
| Mechanical data ball bearings   |                                           |         |          |                  |               |                         |                             |  |                             |
| 23_                             | Max. speed                                | rpm     | 7160     | 10000            |               |                         |                             |                                                                                      |                             |
| 24_                             | Axial play                                | mm      | 0...0.1  |                  |               |                         |                             |                                                                                      |                             |
|                                 | Preload                                   | N       | 2.5      | 5000             |               |                         |                             |                                                                                      |                             |
| 25_                             | Radial play                               | mm      | 0.02     |                  |               |                         |                             |                                                                                      |                             |
| 26_                             | Max. axial load (dynamic)                 | N       | 2.5      |                  |               |                         |                             |                                                                                      |                             |
| 27_                             | Max. force for press fits (static)        | N       | 30       |                  |               |                         |                             |                                                                                      |                             |
|                                 | (static, shaft supported)                 | N       | 440      |                  |               |                         |                             |                                                                                      |                             |
| 28_                             | Max. radial load [mm from flange]         | N       | 16 [5]   |                  |               |                         |                             |                                                                                      |                             |
| Mechanical data sleeve bearings |                                           |         |          |                  |               |                         |                             | maxon Modular System                                                                 | Details on catalog page 34  |
| 23_                             | Max. speed                                | rpm     | 7160     | maxon gear       | Stages [opt.] | maxon sensor            | maxon motor control         |                                                                                      |                             |
| 24_                             | Axial play                                | mm      | 0...0.2  | 349_GPX 22 A/C   | 1-2 [3-4]     | 447_ENX 10 EASY         | 500_ESCON Module 24/2       |                                                                                      |                             |
|                                 | Preload                                   | N       | 0        | 350_GPX 22 LN/LZ | 1-2 [3-4]     | 447_ENX 10 QUAD         | 500_ESCON 36/2 DC           |                                                                                      |                             |
| 25_                             | Radial play                               | mm      | 0.02     | 351_GPX 22 HP    | 2-3 [4]       | 448_ENX 10 EASY XT      | 501_ESCON Module 50/5       |                                                                                      |                             |
| 26_                             | Max. axial load (dynamic)                 | N       | 0.1      | 352_GPX 22 UP    | 1-4           | 450_ENX 16 EASY         | 503_ESCON 50/5              |                                                                                      |                             |
| 27_                             | Max. force for press fits (static)        | N       | 80       | 354_GPX 26 A/C   | 3             | 451_ENX 16 EASY XT      | 509_EPOS4 Micro 24/5        |                                                                                      |                             |
|                                 | (static, shaft supported)                 | N       | 440      | 355_GPX 26 LN/LZ | 3             | 452_ENX 16 EASY Abs.    | 510_EPOS4 Mod./Comp. 24/1.5 |                                                                                      |                             |
| 28_                             | Max. radial load [mm from flange]         | N       | 3 [5]    | 356_GPX 26 HP    | 4             | 453_ENX 16 EASY Abs. XT | 510_EPOS4 Mod./Comp. 50/5   |                                                                                      |                             |
| Other specifications            |                                           |         |          |                  |               |                         |                             | 458_ENX 16 RiO                                                                       | 511_EPOS4 Comp. 24/5 3-axes |
| 29_                             | Number of pole pairs                      |         | 1        |                  |               | 485_ENC AEDL 5810       | 515_EPOS4 50/5              |                                                                                      |                             |
| 30_                             | Number of commutator segments             |         | 9        |                  |               | 486_ENC 30 HEDS 5540    | 516_EPOS4 Disk 60/8         |                                                                                      |                             |
| 31_                             | Weight of motor                           | g       | 66       |                  |               | 492_ENC 30 HEDL 5540    | 520_EPOS2 P 24/5            |                                                                                      |                             |
| 32_                             | Typical noise level                       | dBA     | 48       | Configuration    |               |                         |                             |                                                                                      |                             |



■ Continuous operation  
■ Continuous operation with reduced thermal resistance  $R_{th2}$  50%  
■ Intermittent operation

| maxon Modular System                   |     |         |                  | Details on catalog page 34 |                             |
|----------------------------------------|-----|---------|------------------|----------------------------|-----------------------------|
| 23. Max. speed                         | rpm | 7160    | maxon gear       | maxon sensor               | maxon motor control         |
| 24. Axial play                         | mm  | 0...0.2 | 349_GPX 22 A/C   | 447_ENX 10 EASY            | 500_ESCON Module 24/2       |
| 25. Radial play                        | mm  | 0.02    | 350_GPX 22 LN/LZ | 447_ENX 10 QUAD            | 500_ESCON 36/2 DC           |
| 26. Max. axial load (dynamic)          | N   | 0.1     | 351_GPX 22 HP    | 448_ENX 10 EASY XT         | 501_ESCON Module 50/5       |
| 27. Max. force for press fits (static) | N   | 80      | 352_GPX 22 UP    | 450_ENX 16 EASY            | 503_ESCON 50/5              |
| (static, shaft supported)              | N   | 440     | 354_GPX 26 A/C   | 451_ENX 16 EASY XT         | 509_EPOS4 Micro 24/5        |
| 28. Max. radial load [mm from flange]  | N   | 3 [5]   | 355_GPX 26 LN/LZ | 452_ENX 16 EASY Abs.       | 510_EPOS4 Mod./Comp. 24/1.5 |
|                                        |     |         | 356_GPX 26 HP    | 453_ENX 16 EASY Abs. XT    | 510_EPOS4 Mod./Comp. 50/5   |
|                                        |     |         |                  | 458_ENX 16 RIO             | 511_EPOS4 Comp. 24/5 3-axes |
|                                        |     |         |                  | 485_ENC AEDL 5810          | 515_EPOS4 50/5              |
|                                        |     |         |                  | 486_ENC 30 HEDS 5540       | 516_EPOS4 Disk 60/8         |
|                                        |     |         |                  | 492_ENC 30 HEDL 5540       | 520_EPOS2 P 24/5            |

## Configuration

Bearing: Ball bearings preloaded/sleeve bearings  
 Commutation: Precious metal brushes with or without CLL/graphite brushes/EMI filter  
 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

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