# DC-Micromotors

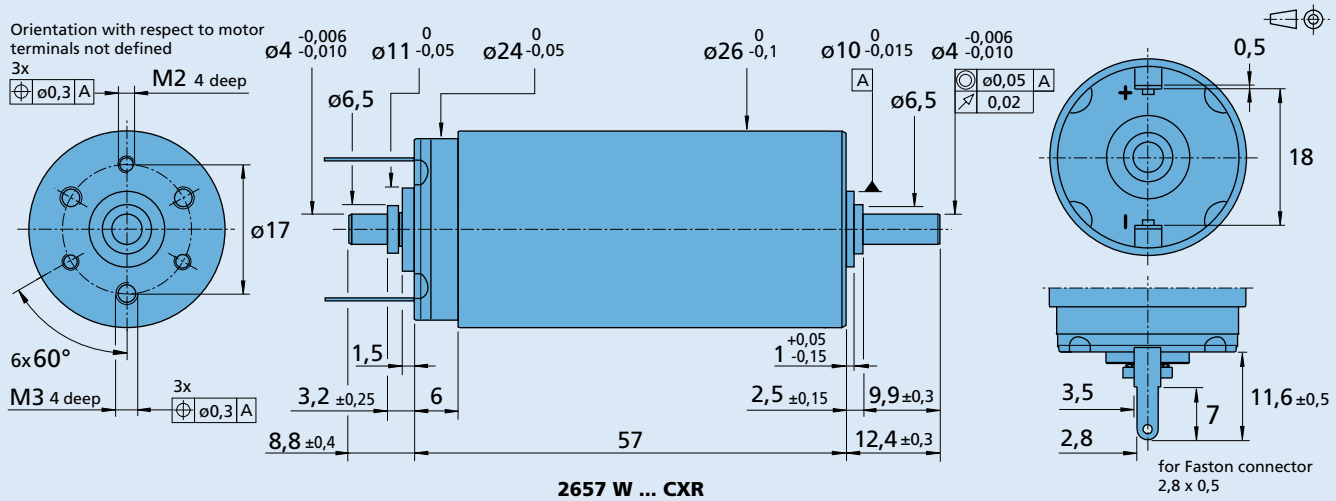
## Graphite Commutation

# 35 mNm

**For combination with**
Gearheads:
26/1(S), 26A, 30/1(S), 32A
Encoders:
IE3-1024(L)

## Series 2657 ... CXR

| | | 2657 W | | | 012 CXR | 024 CXR | 048 CXR | |
|---|---|---|---|---|---|---|---|---|
| 1 | Nominal voltage | $U_N$ | | | 12 | 24 | 48 | V |
| 2 | Terminal resistance | R | | | 0,72 | 2,98 | 12,61 | Ω |
| 3 | Output power | $P_{2\ max.}$ | | | 45,3 | 45,7 | 44,1 | W |
| 4 | Efficiency, max. | $\eta_{max.}$ | | | 81 | 83 | 83 | % |
| 5 | No-load speed | $n_0$ | | | 5 600 | 5 800 | 5 800 | rpm |
| 6 | No-load current (with shaft ø 4 mm) | $I_0$ | | | 0,104 | 0,052 | 0,026 | A |
| 7 | Stall torque | $M_H$ | | | 306,7 | 302,9 | 283,1 | mNm |
| 8 | Friction torque | $M_R$ | | | 2 | 2 | 2 | mNm |
| 9 | Speed constant | $k_n$ | | | 494 | 247 | 122 | rpm/V |
| 10 | Back-EMF constant | $k_E$ | | | 2,024 | 4,05 | 8,205 | mV/rpm |
| 11 | Torque constant | $k_M$ | | | 19,33 | 38,67 | 78,35 | mNm/A |
| 12 | Current constant | $k_I$ | | | 0,052 | 0,026 | 0,013 | A/mNm |
| 13 | Slope of n-M curve | Δn/ΔM | | | 18,4 | 19 | 19,6 | rpm/mNm |
| 14 | Rotor inductance | L | | | 90 | 365 | 1 500 | µH |
| 15 | Mechanical time constant | $\tau_m$ | | | 3,3 | 3,4 | 3,5 | ms |
| 16 | Rotor inertia | J | | | 17 | 17 | 17 | gcm² |
| 17 | Angular acceleration | $\alpha_{max.}$ | | | 180 | 178 | 172 | ·10³rad/s² |
| 18 | Thermal resistance | $R_{th\,1}$ / $R_{th\,2}$ | 4,4 / 12,6 | | | | | K/W |
| 19 | Thermal time constant | $\tau_{w1}$ / $\tau_{w2}$ | 28 / 810 | | | | | s |
| 20 | Operating temperature range: | | | | | | | |
| | – motor | | -30 ... +100 | | | | | °C |
| | – rotor, max. permissible | | +125 | | | | | °C |
| 21 | Shaft bearings | | sintered bearings | ball bearings, preloaded | | | | |
| 22 | Shaft load max.: | | (standard) | (optional version) | | | | |
| | – with shaft diameter | | 4 | 4 | | | | mm |
| | – radial at 3 000 rpm (3 mm from bearing) | | 10 | 20 | | | | N |
| | – axial at 3 000 rpm | | 2 | 2 | | | | N |
| | – axial at standstill | | 50 | 20 | | | | N |
| 23 | Shaft play | | | | | | | |
| | – radial | ≤ | 0,03 | 0,015 | | | | mm |
| | – axial | ≤ | 0,2 | 0 | | | | mm |
| 24 | Housing material | | steel, zinc galvanized and passivated | | | | | |
| 25 | Weight | | 156 | | | | | g |
| 26 | Direction of rotation | | clockwise, viewed from the front face | | | | | |
| **Recommended values** - mathematically independent of each other | | | | | | | | |
| 27 | Speed up to | $n_{e\ max.}$ | | | 6 000 | 6 000 | 6 000 | rpm |
| 28 | Torque up to | $M_{e\ max.}$ | | | 33 | 34 | 35 | mNm |




**2657 W ... CXR**

For notes on technical data and lifetime performance refer to "Technical Information".

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Specifications subject to change without notice.

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