

DC-Motors

Graphite Commutation

44 mNm

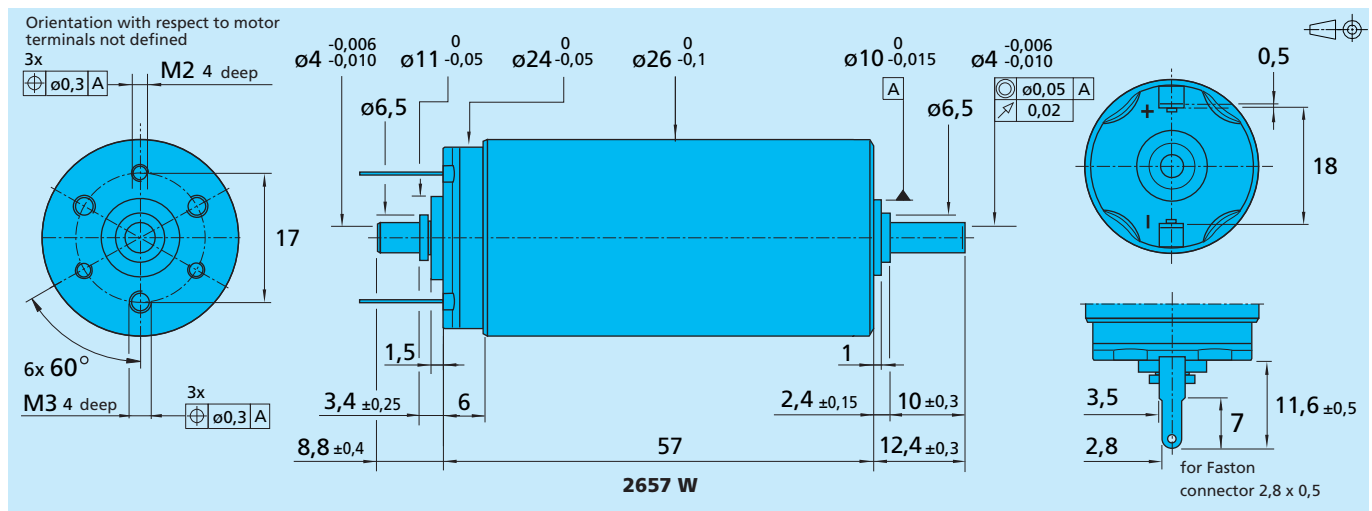
For combination with
 Gearheads: 26A, 26/1, 30/1
 Encoders: IE2 – 16 ... 512, 5500, 5540

Series 2657 ... CR

| | 2657 W | 012 CR | 024 CR | 048 CR | |
|---|-------------------------------------|---------------------------------------|--------|--------|------------------------------|
| 1 Nominal voltage | U_N | 12 | 24 | 48 | Volt |
| 2 Terminal resistance | R | 0,71 | 2,84 | 12,50 | Ω |
| 3 Output power | $P_{2 \text{ max.}}$ | 45,9 | 47,9 | 44,5 | W |
| 4 Efficiency | $\eta_{\text{ max.}}$ | 84 | 85 | 84 | % |
| 5 No-load speed | n_o | 6 300 | 6 400 | 6 400 | rpm |
| 6 No-load current (with shaft \varnothing 4,0 mm) | I_o | 0,115 | 0,058 | 0,028 | A |
| 7 Stall torque | M_H | 278 | 286 | 265 | mNm |
| 8 Friction torque | M_R | 2 | 2 | 2 | mNm |
| 9 Speed constant | k_n | 552 | 274 | 136 | rpm/V |
| 10 Back-EMF constant | k_E | 1,81 | 3,65 | 7,37 | mV/rpm |
| 11 Torque constant | k_M | 17,3 | 34,8 | 70,4 | mNm/A |
| 12 Current constant | k_I | 0,058 | 0,029 | 0,014 | A/mNm |
| 13 Slope of n-M curve | $\Delta n/\Delta M$ | 22,7 | 22,4 | 24,2 | rpm/mNm |
| 14 Rotor inductance | L | 95 | 380 | 1 550 | μH |
| 15 Mechanical time constant | τ_m | 3,9 | 3,9 | 3,9 | ms |
| 16 Rotor inertia | J | 16 | 17 | 15 | gcm^2 |
| 17 Angular acceleration | $\alpha_{\text{ max.}}$ | 170 | 170 | 170 | $\cdot 10^3 \text{ rad/s}^2$ |
| 18 Thermal resistance | $R_{\text{th} 1} / R_{\text{th} 2}$ | 1,9 / 9 | | | K/W |
| 19 Thermal time constant | τ_{w1} / τ_{w2} | 10 / 580 | | | s |
| 20 Operating temperature range: | | | | | |
| – motor | | - 30 ... + 125 | | | $^{\circ}\text{C}$ |
| – rotor, max. permissible | | + 155 | | | $^{\circ}\text{C}$ |
| 21 Shaft bearings | | ball bearings, preloaded | | | |
| 22 Shaft load max.: | | | | | |
| – with shaft diameter | | 4,0 | | | mm |
| – radial at 3 000 rpm (3 mm from bearing) | | 20 | | | N |
| – axial at 3 000 rpm | | 2 | | | N |
| – axial at standstill | | 20 | | | N |
| 23 Shaft play: | | | | | |
| – radial | \leq | 0,015 | | | mm |
| – axial | $=$ | 0 | | | mm |
| 24 Housing material | | steel, black coated | | | |
| 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 | $n_{e \text{ max.}}$ | 6 000 | 6 000 | 6 000 | rpm |
| 28 Torque up to | $M_{e \text{ max.}}$ | 44 | 44 | 44 | mNm |
| 29 Current up to (thermal limits) | $I_{e \text{ max.}}$ | 3,10 | 1,54 | 0,73 | A |



How to Order a 2657 ... CR

| Part number | Voltage | Description | Stocked items |
|-------------------|---------|-------------------------------------|---------------|
| 2657W012CR | 12 | Standard motor | yes |
| 2657W012CRIE2-512 | 12 | Standard motor with IE2-512 encoder | yes |
| 2657W024CR | 24 | Standard motor | yes |
| 2657W024CRIE2-512 | 24 | Standard motor with IE2-512 encoder | yes |
| 2657W048CR | 48 | Standard motor | no |