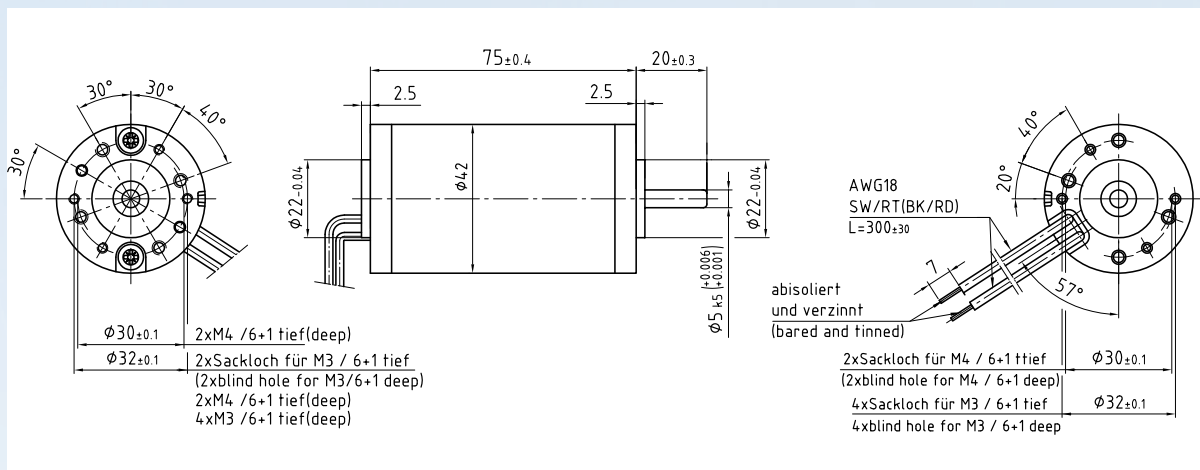


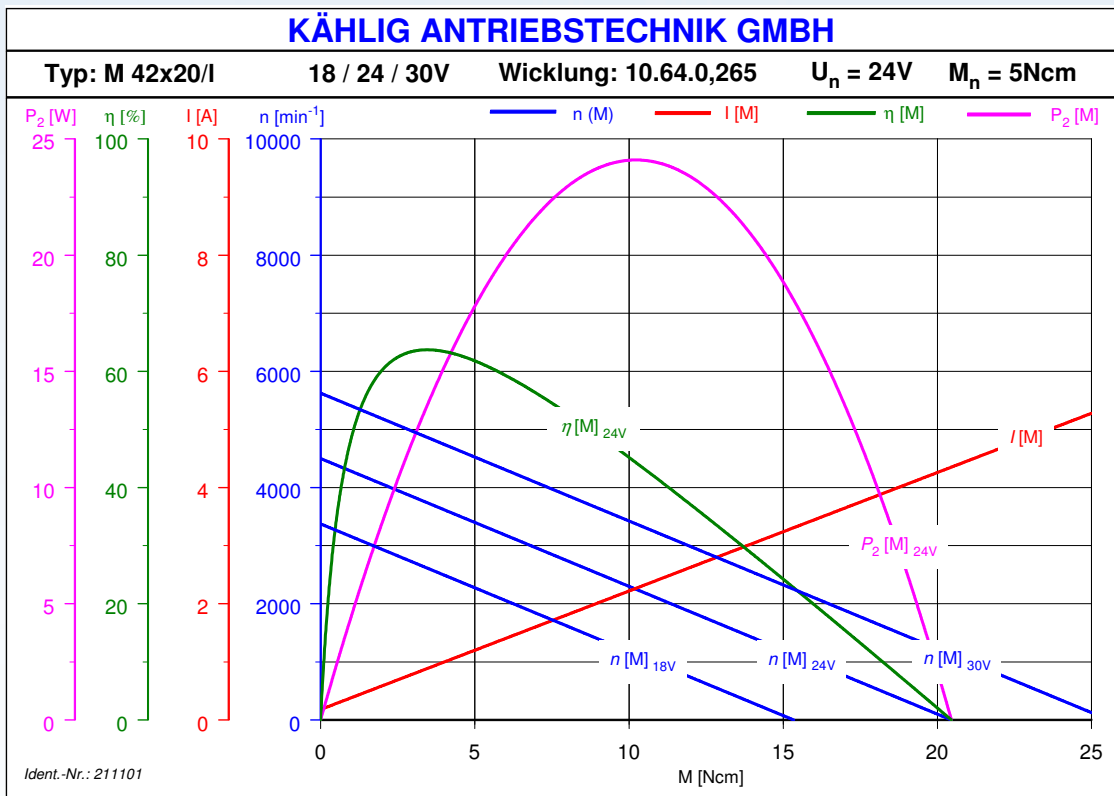
# DC-Motor M42x20/I (24V)

## Ident-Nr. 211101

- Brushed DC motor with permanent magnet
- Ball bearings
- Lead wires
- Closed zinc-plated housing with zinc-die-cast bearing flanges
- Direction of rotation CW / CCW
- Power output in rated operation: 17,8 Watt
- Multiple combination possibilities with gears, encoders and brakes



Application on request



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# DC-Motor M42x20/I (24V)

## Ident-Nr. 211101

## Performance

|  | Sign          | Unit                                | Value           | Tolerances |
|--|---------------|-------------------------------------|-----------------|------------|
| Rated voltage                                | $U_N$         | V                                   | 24              |            |
| Rated torque <sup>1)</sup>                   | $M_N$         | Ncm                                 | 5               |            |
| Rated speed <sup>1)</sup>                    | $n_N$         | min <sup>-1</sup>                   | 3400            | ±10%       |
| Rated current <sup>1)</sup>                  | $I_N$         | A                                   | 1.2             | ±20%       |
| No load speed <sup>1)</sup>                  | $n_o$         | min <sup>-1</sup>                   | 4500            | ±15%       |
| No load current <sup>1)</sup>                | $I_o$         | A                                   | 0.18            | ±50%       |
| Rated power output <sup>1)</sup>             | $P_{2N}$      | W                                   | 17.8            |            |
| Rated power input <sup>1)</sup>              | $P_{1N}$      | W                                   | 28.8            |            |
| Rated efficiency <sup>1)</sup>               | $\eta_N$      | %                                   | 61.8            |            |
| Maximum power output <sup>2)3)</sup>         | $P_{2max}$    | W                                   | 24.1            |            |
| Maximum continuous torque <sup>2)3)</sup>    | $M_{max}$     | Ncm                                 | 5.0             |            |
| Maximum continuous current <sup>2)3)</sup>   | $I_{max}$     | A                                   | 1.2             |            |
| Maximum speed <sup>1)3)</sup>                | $n_{max}$     | min <sup>-1</sup>                   | 10000           |            |
| Stall torque <sup>1)</sup>                   | $M_H$         | Ncm                                 | 20.5            |            |
| Stall current <sup>1)</sup>                  | $I_H$         | A                                   | 4.4             |            |
| Demagnetization current                      | $I_E$         | A                                   | 10.9            |            |
| Connecting resistance <sup>1)</sup>          | R             | Ω                                   | 5.51            |            |
| Armature resistance <sup>1)</sup>            | $R_A$         | Ω                                   | 4.75            | ±5%        |
| Armature inductance [1 kHz] <sup>1)</sup>    | $L_A$         | mH                                  | 4.08            |            |
| Rise of speed-characteristic <sup>1)</sup>   | $k_D$         | min <sup>-1</sup> /Ncm              | 220             |            |
| Torque constant <sup>1)</sup>                | $k_M$         | Ncm/A                               | 4.9             |            |
| Voltage constant <sup>1)</sup>               | $k_E$         | V/10 <sup>3</sup> min <sup>-1</sup> | 5.3             |            |
| Friction torque <sup>1)</sup>                | $M_R$         | Ncm                                 | -0.9            |            |
| Mechanical time constant <sup>1)</sup>       | $T_M$         | ms                                  | 14.6            |            |
| Electrical time constant <sup>1)</sup>       | $T_e$         | ms                                  | 0.7             |            |
| Rotor inertia                                | $J_R$         | gcm <sup>2</sup>                    | 74              |            |
| Maximum case temperature <sup>2)</sup>       | $\vartheta_G$ | °C                                  | 80              |            |
| Starting voltage <sup>1)</sup>               | $U_A$         | V                                   | 2               |            |
| Permissible axial shaft loads <sup>3)</sup>  | $F_{axial}$   | N                                   | 40              |            |
| Permissible radial shaft loads <sup>3)</sup> | $F_{radial}$  | N                                   | 100             |            |
| Protection class DIN VDE 0530                |               |                                     | IP 40           |            |
| Duty cycle DIN VDE 0530                      |               |                                     | S1              |            |
| Insulation class DIN VDE 0530                |               |                                     | E               |            |
| Lifetime at rated torque [h] <sup>1)</sup>   |               |                                     | 3000            |            |
| Ambient temperature                          |               |                                     | -30°C to +40°C  |            |
| Bearing                                      |               |                                     | 2 ball bearings |            |
| Interference suppression                     |               |                                     | optional        |            |

1)  $\vartheta_w$  Winding temperature ≈ 20°C    2)  $\Delta\vartheta_w$  allowable = 100K  
 3) The operating at maximum levels reduces the lifespan

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