

Article No. : 1FK2104-4AF00-2SB0-Z  
B22+M01+R20



Figure similar

Client order no. :  
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| Basic data of geared motor                                     |                                                                                                   |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Motor type                                                     | Permanent-magnet synchronous motor, Planetary gearbox, Natural cooling, Degree of protection IP64 |
| Motor type                                                     | High Dynamic                                                                                      |
| Static torque at output $M_{2,0}$                              | 23.50 Nm                                                                                          |
| Static current $I_0$                                           | 1.2 A                                                                                             |
| Maximum torque at output $M_{2max}^{1)}$                       | 53.00 Nm                                                                                          |
| Maximum output speed $n_{2max}$                                | 360 rpm                                                                                           |
| Moment of inertia motor + gearbox (related to the input) $J_1$ | 0.447 kgcm <sup>2</sup>                                                                           |
| Mass $m$                                                       | 3.76 kg                                                                                           |
| Lubrication                                                    | Standard                                                                                          |

| Rated data of geared motor                       |          |
|--------------------------------------------------|----------|
| SINAMICS S120, BLM/SLM 3AC 400V                  |          |
| Rated speed related to the gear output $n_{2N}$  | 150 rpm  |
| Rated torque related to the gear output $M_{2N}$ | 19.90 Nm |
| Rated power $P_N$                                | 0.313 kW |

| Basic data of gearbox                                                                     |                          |
|-------------------------------------------------------------------------------------------|--------------------------|
| Gearbox type and size                                                                     | Planetary gearbox NRK070 |
| Transmission ratio $i$                                                                    | 1 : 20 (Output to input) |
| Number of gear stages $z$                                                                 | 2                        |
| Output torque (fatigue strength) $M_{2N,G}$                                               | 33.0 Nm                  |
| Maximum permissible output torque (short-time, end of fatigue strength) $M_{2max,G}^{2)}$ | 53.0 Nm                  |
| Emergency off output moment (1000 cycles) $M_{2Em,Off}$                                   | 88.0 Nm                  |
| Torsional backlash related to the output $\varphi_2$                                      | 12 '                     |
| Torsional stiffness related to the output $c_{T2}$                                        | 5.7 Nm/°                 |
| Maximum static radial force $F_{Rmax}$                                                    | 1,650 N                  |
| Max. average radial force for 20000 h $F_{Req}^{3)}$                                      | 1,050 N                  |
| Maximum static axial force $F_{Amax}$                                                     | 2,100 N                  |
| Max. average axial force for 20000 h $F_{Aeq}^{4)}$                                       | 1,350 N                  |
| Max. average breakdown torque $M_K$                                                       | 42 Nm                    |
| Max. bending moment on the flange to the motor $M_B$                                      | 12 Nm                    |
| Efficiency $\eta_G$                                                                       | 0.95                     |
| Degree of protection gearbox                                                              | IP64                     |
| Gearbox shaft end                                                                         | Fitted key               |

| Basic motor data                                                                     |                                                      |
|--------------------------------------------------------------------------------------|------------------------------------------------------|
| Maximum average torque (incl. derating due to mounted gearing) $M_{0,M}$             | 1.18 Nm                                              |
| Maximum average continuous current (incl. derating due to mounted gearing) $I_{0,M}$ | 1.11 A                                               |
| Maximum acceleration torque $M_{max,M}^{2)}$                                         | 3.58 Nm                                              |
| Maximum short-time permissible current $I_{max,M}$                                   | 4.20 A                                               |
| Degree of protection motor                                                           | IP64                                                 |
| Connection type                                                                      | Double cable connection for S120                     |
| Connector size                                                                       | M17                                                  |
| Encoder system                                                                       | Encoder AS22DQC: Absolute encoder single turn 22 bit |
| Color of the housing                                                                 | Standard (Anthracite, similar to RAL 7016)           |

<sup>1)</sup>Fatigue limit range - for max. 30 000 revolutions of the output shaft, utilization only with service life calculation

<sup>2)</sup>The maximum acceleration torque  $M_{max,M}$  x of transmission ratio  $i$  is greater than the maximum permitted output torque (short-time fixed)  $M_{2max,G}$ . Depending on the load conditions, a torque limitation and service life calculation may be necessary.

<sup>3)</sup>based on an output speed of 100 rpm and a force application point in the center of the shaft

<sup>4)</sup>based on an output speed of 100 rpm