

## Solution details for

## 2250S024BX4 + 22F 4:1

Your comments

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### Your Requirements

Load transmission	Direct rotational	
Ambient temperature	22	°C
Available diameter	100	mm
Available length	400	mm
Available supply voltage	24	V
Available current	5	A
Efficiency, min.	10	%
Required load speed	1.000	1/min
Required load torque	10	mNm

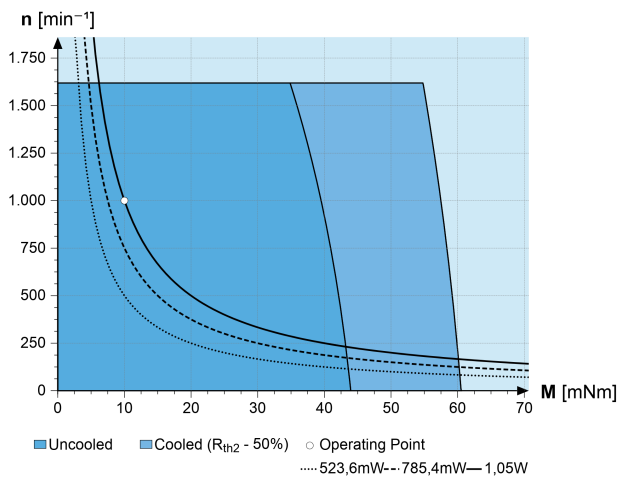
### Results of the Load Calculation

Load current	207,5	mA
Load voltage	15,65	V
Motor winding temperature	32,89	°C
Motor housing temperature	31,97	°C
Required motor torque	5,92	mNm
Required motor speed	3.705,88	1/min
Output power	1,05	W
Efficiency (over all)	32,24	%

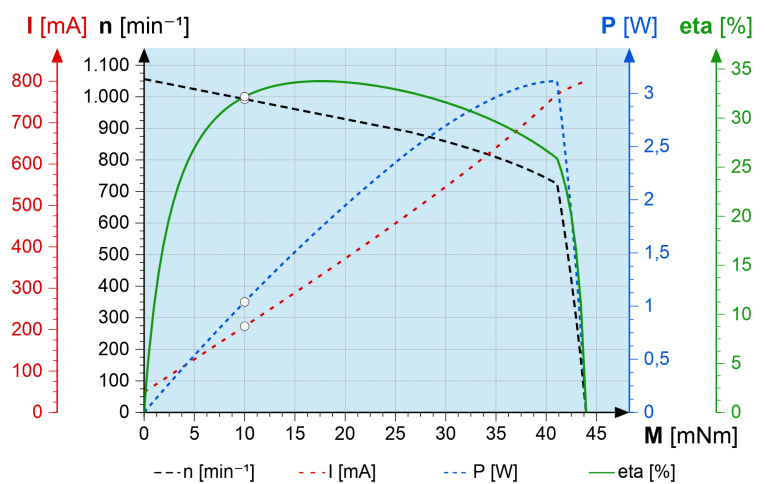
### Overall Dimensions

Diameter	22	mm
Length	78,4	mm
Mass	146	g

### Operating Area



### Characteristic curves



**Motor Characteristic Data**

Nominal voltage	$U_N$	24	V
Terminal resistance	R	5,9	$\Omega$
Torque constant	$k_M$	37,5	mNm/A
No load speed	$n_0$	6.200	1/min
Stall torque	$M_H$	151	mNm
Speed constant	$k_n$	255	1/min/V
Rotor inductance	L	0,25	mH
Slope of n-M curve	$\Delta n/\Delta M$	40,3	1/min/mNm
Rotor inertia	J	10	gcm <sup>2</sup>
Mechanical time constant	$\tau$	4,2	ms
Efficiency max.	$\eta_{max}$	77	%

**Gearhead Characteristic Data**

Housing material	steel	
Geartrain material	metal	
Backlash at no load	3,5	°
Bearings on output shaft	ball bearings	
Shaft load, max. radial	70	N
Shaft load, max. axial	100	N
Shaft press fit force, max.	100	N
Number of gear stages	1	
Reduction ratio	4	:1
Calculated reduction	3.7058823529412	:1
Continuous torque	400	mNm
Mass	41	g
Efficiency, max.	80	%
Gearshaft diameter	4	mm
Gearhead diameter	22	mm

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