

Solution details for 2224R012SR + 22/2 173:1

Your comments

Your Requirements

Motor-, Gearhead- or Encoder preselection (optional)

Motor series	2224R012SR
Gear series	22/2 173:1
Encoder series	Without encoder

Global settings

Ambient temperature	22	°C
Available diameter, max.	30	mm
Available length, max.	100	mm
Available supply voltage, max.	24	V

Advanced settings

Available current, max.	5	A
Efficiency, min.	10	%
RTH2 Reduction	Default of motor. See info.	%
Encoder: Steps per revolution, min.	16	i

Your entries

Load transmission	Direct rotational
Required load speed	10 1/min
Required load torque	0,04 Nm

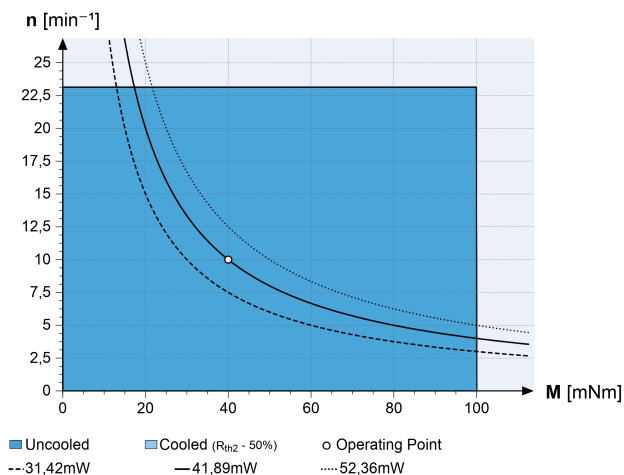
Results of the Load Calculation

Load current	40,62	mA
Load voltage	2,98	V
Motor winding temperature	23,08	°C
Motor housing temperature	23,01	°C
Required motor torque	0,39	mNm
Required motor speed	1.728,86	1/min
Output power	41,89	mW
Efficiency (over all)	34,64	%

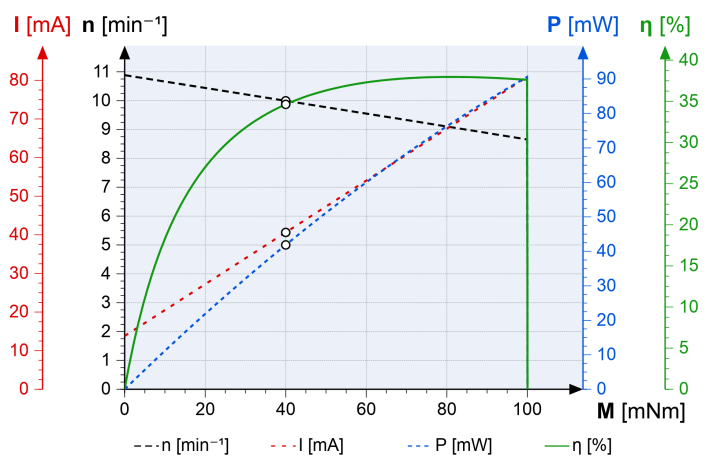
Overall Dimensions

Diameter	23,8	mm
Length	59,4	mm
Mass	128	g

Operating Area



Characteristic curves



Motor Characteristic Data

Nominal voltage	U_N	12	V
Terminal resistance	R	8,71	Ω
Torque constant	k_M	14,5	mNm/A
No load speed	n_0	7.800	1/min
Stall torque	M_H	19,8	mNm
Speed constant	k_n	657	1/min/V
Rotor inductance	L	0,2	mH
Slope of n-M curve	$\Delta n/\Delta M$	394	1/min/mNm
Rotor inertia	J	2,7	gcm ²
Mechanical time constant	τ	11	ms
Efficiency max.	η_{max}	82	%

Gearhead Characteristic Data

Housing material	metal		
Geartrain material	metal		
Backlash at no load	3		°
Bearings on output shaft	sintered bearings, ball bearings, preloaded		
Shaft load, max. radial	3		N
Shaft load, max. axial	5		N
Shaft press fit force, max.	50		N
Number of gear stages	6		
Reduction ratio	173		:1
Calculated reduction	172.88631687243		:1
Continuous torque	100		mNm
Mass	82		g
Efficiency, max.	66		%
Gearshaft diameter	4		mm
Gearhead diameter	23,8		mm

Contact

Do you have any questions regarding FAULHABER Products, our Services, or other Drive System related issues?
Please contact your local representative or fill out our contact form.
<https://www.faulhaber.com/contact/>

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