

Brushless DC-Servomotors

4 Pole Technology

162 mNm

150 W

Series 3274 ... BP4

Values at 22°C and nominal voltage		3274 G	024 BP4	
1	Nominal voltage	U_N	24	V
2	Terminal resistance, phase-phase	R	0,25	Ω
3	Efficiency, max.	η_{max}	89	%
4	No-load speed	n_0	8 700	min ⁻¹
5	No-load current, typ. (with shaft $\varnothing$ 5 mm)	I_0	0,384	A
6	Stall torque	M_H	2 697	mNm
7	Friction torque, static	C_0	2,9	mNm
8	Friction torque, dynamic	C_V	$8,2 \cdot 10^{-4}$	mNm/min ⁻¹
9	Speed constant	k_n	336	min ⁻¹ /V
10	Back-EMF constant	k_E	2,97	mV/min ⁻¹
11	Torque constant	k_M	28,4	mNm/A
12	Current constant	k_I	0,035	A/mNm
13	Slope of n-M curve	$\Delta n / \Delta M$	3	min ⁻¹ /mNm
14	Terminal inductance, phase-phase	L	60	μ H
15	Mechanical time constant	τ_m	1,5	ms
16	Rotor inertia	J	48	gcm ²
17	Angular acceleration	α_{max}	562	$\cdot 10^3$ rad/s ²
18	Thermal resistance	R_{th1} / R_{th2}	0,7 / 8	K/W
19	Thermal time constant	τ_{w1} / τ_{w2}	14 / 965	s
20	Operating temperature range:			
	– motor		-40 ... +125	°C
	– winding, max. permissible		+150	°C
21	Shaft bearings		ball bearings, preloaded	
22	Shaft load max.:			
	– with shaft diameter	5		mm
	– radial at 3 000 min ⁻¹ (5 mm from mounting flange)	50		N
	– axial at 3 000 min ⁻¹ (push / pull)	5		N
	– axial at standstill (push / pull)	50		N
23	Shaft play:			
	– radial	$\leq$	0,015	mm
	– axial	$=$	0	mm
24	Housing material		stainless steel	
25	Mass		320	g
26	Direction of rotation		electronically reversible	
27	Speed up to	n_{max}	16 000	min ⁻¹
28	Number of pole pairs		2	
29	Hall sensors		digital	
30	Magnet material		NdFeB	
Rated values for continuous operation				
31	Rated torque	M_N	162	mNm
32	Rated current (thermal limit)	I_N	6,9	A
33	Rated speed	n_N	8 260	min ⁻¹

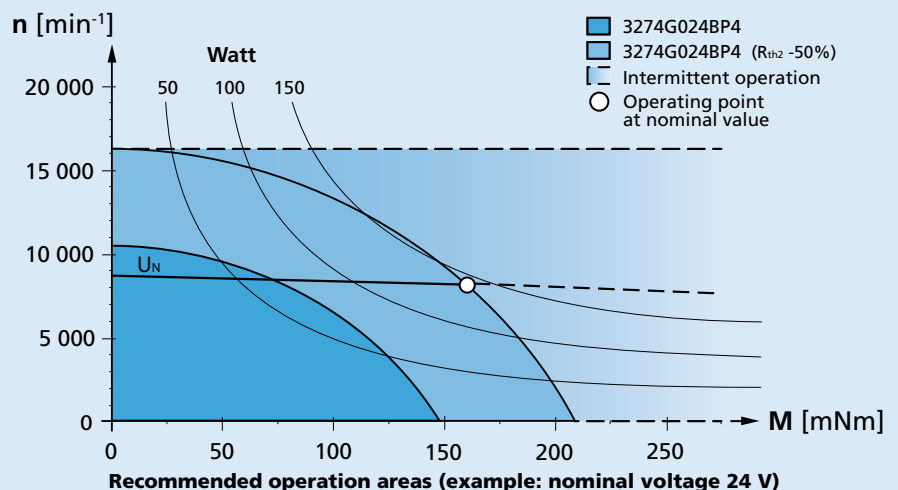
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The R_{th2} value has been reduced by 50%.

Note:

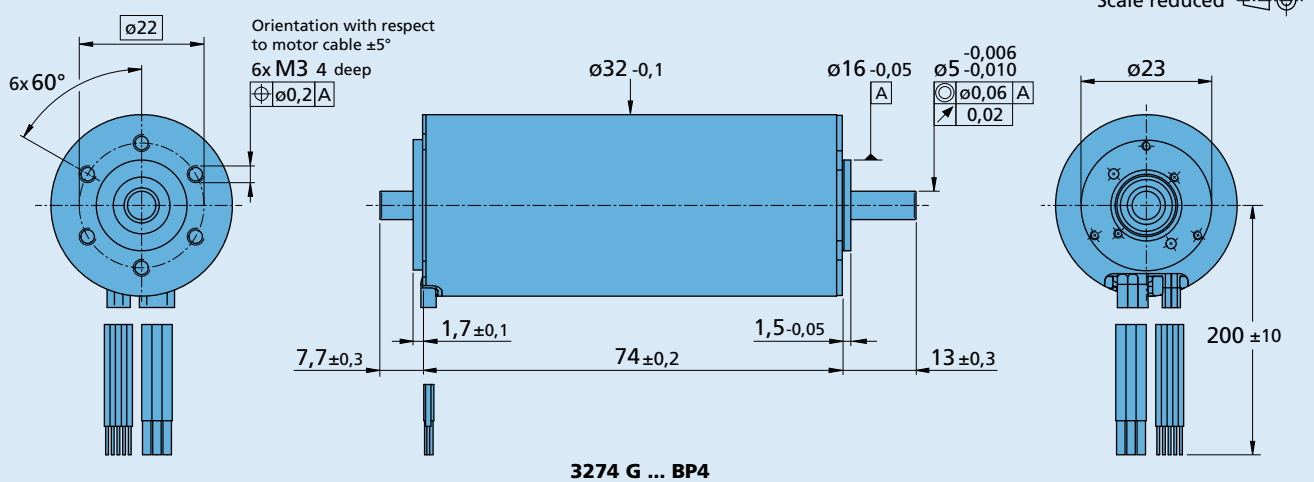
The diagram indicates the recommended speed in relation to the available torque at the output shaft for a given ambient temperature of 22°C.

The diagram shows the motor in a completely insulated as well as thermally coupled condition (R_{th2} 50% reduced).

The nominal voltage (U_N) curve shows the operating point at nominal voltage in the insulated and thermally coupled condition. Any points of operation above the curve at nominal voltage will require a higher operating voltage. Any points below the nominal voltage curve will require less voltage.



Dimensional drawing



Option, cable and connection information

Example product designation: **3274G024BP4-3692**

Option	Type	Description	Connection	
Y158	Shaft end	Motor without second shaft end	Function	Colour
3692	Controller combination	Analog Hall sensors for combination with Motion Controller MC 5010	Phase C	yellow
			Phase B	orange
			Phase A	brown
			GND	black
			U _{DD} (+5V)	red
			Hall sensor C	grey
			Hall sensor B	blue
			Hall sensor A	green
			Standard cable	
			3 single wires, material FEP, AWG 18, Phase A/B/C	
			5 single wires, material PTFE, AWG 26, Hall A/B/C, U _{DD} , GND	

Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
32A 32ALN 32GPT 32/3 32/3R 38A 38/1 38/1 S 38/2 38/2 S 42GPT	IE3-1024 IE3-1024 L IERS3-500 IERS3-500 L IER3-10000 IER3-10000 L AES-4096 L	SC 5008 S MC 5010 S	MBZ To view our large range of accessory parts, please refer to the "Accessories" chapter.