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.	$\eta_{max.}$		89	%
4	No-load speed	n_0		8 700	min^{-1}
5	No-load current, typ. (with shaft ø 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	µH
15	Mechanical time constant	τ_m		1,5	ms
16	Rotor inertia	J		48	gcm^2
17	Angular acceleration	$\alpha_{max.}$		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	≤	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}

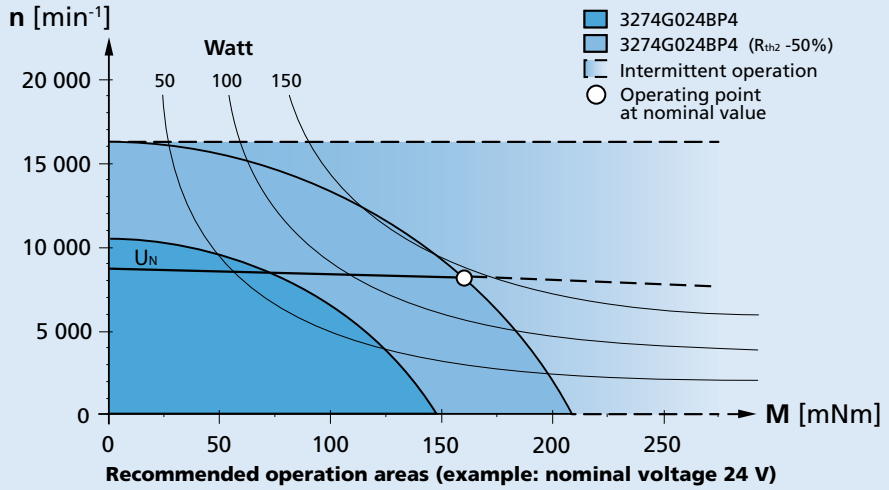
Note: Rated values are calculated with nominal voltage and at a 22°C ambient temperature. The R_{th2} value has been reduced by 50%.

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).

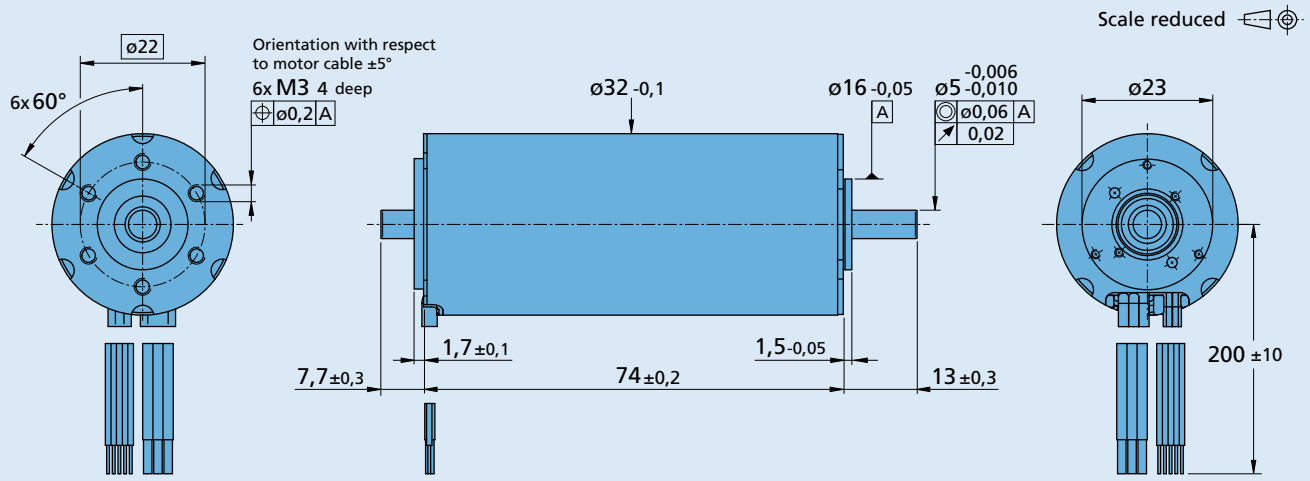
The nominal voltage (U_N) curve shows the operating point at nominal voltage in the insulated and thermally coupled condition. Any points of operation above the curve at nominal voltage will require a higher operating voltage. Any points below the nominal voltage curve will require less voltage.



Recommended operation areas (example: nominal voltage 24 V)

For notes on technical data and lifetime performance refer to "Technical Information".

Dimensional drawing



3274 G ... BP4

Option, cable and connection information

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

Option	Type	Description
Y158	Shaft end	Motor without second shaft end
3692	Controller combination	Analog Hall sensors for combination with Motion Controller MC 5010

Connection

Function	Colour
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 32/3 32/3 R 38A 38/1 38/1 S 38/2 38/2 S BS32-2.0	IE3-1024 IE3-1024 L IERS3-500 IERS3-500 L IER3-10000 IER3-10000 L	SC 5008 S MC 5010 S	MBZ To view our large range of accessory parts, please refer to the “Accessories” chapter.