

Brushless DC-Servomotors

4 Pole Technology

56 mNm

For combination with
 Gearheads:
 30/1(S), 32A, 32ALN, 32/3(S), 38/1(S), 38/2(S)
 Encoders:
 3242...BX4 + Encoder
 Drive Electronics:
 Speed Controller

Series 3242 ... BX4

	3242 G	012 BX4	024 BX4	
1 Nominal voltage	U_N	12	24	Volt
2 Terminal resistance, phase-phase	R	0,89	3,6	Ω
3 Output power ¹⁾	$P_{2 \text{ max.}}$	21,7	21,7	W
4 Efficiency	$\eta_{\text{ max.}}$	77,4	77,3	%
5 No-load speed	n_0	5 500	5 500	rpm
6 No-load current	I_0	0,206	0,103	A
7 Stall torque	M_H	282	279	mNm
8 Friction torque, static	C_0	1,3	1,3	mNm
9 Friction torque, dynamic	C_v	$5,2 \cdot 10^{-4}$	$5,2 \cdot 10^{-4}$	mNm/rpm
10 Speed constant	k_n	455	227	rpm/V
11 Back-EMF constant	k_E	2,199	4,409	mV/rpm
12 Torque constant	k_M	21,0	42,1	mNm/A
13 Current constant	k_I	0,0476	0,0238	A/mNm
14 Slope of n-M curve	$\Delta n / \Delta M$	19,3	19,4	rpm/mNm
15 Terminal inductance, phase-phase	L	60	240	μH
16 Mechanical time constant	τ_m	6,1	6,1	ms
17 Rotor inertia	J	30	30	gcm^2
18 Angular acceleration	$\alpha_{\text{ max.}}$	94	93	$\cdot 10^3 \text{ rad/s}^2$
19 Thermal resistance	$R_{\text{th} 1} / R_{\text{th} 2}$	1,6 / 11,9		K/W
20 Thermal time constant	τ_{w1} / τ_{w2}	9 / 780		s
21 Operating temperature range		- 40 ... + 100		$^{\circ}\text{C}$
22 Shaft bearings		ball bearings, preloaded		
23 Shaft load max.:				
– radial at 3 000 rpm (4,5 mm from mounting flange)		50		N
– axial at 3 000 rpm		5		N
– axial at standstill		50		N
24 Shaft play:				
– radial	\leq	0,015		mm
– axial	$=$	0		mm
25 Housing material		stainless steel		
26 Weight		177		g
27 Direction of rotation		electronically reversible		
28 Number of pole pairs		2		
Recommended values - mathematically independent of each other				
29 Speed up to	$n_e \text{ max.}$	14 500	14 500	rpm
30 Torque up to ^{1) 2)}	$M_e \text{ max.}$	33 / 56	33 / 56	mNm
31 Current up to ^{1) 2)}	$I_e \text{ max.}$	1,95 / 3,19	0,97 / 1,59	A

¹⁾ at 5 000 rpm

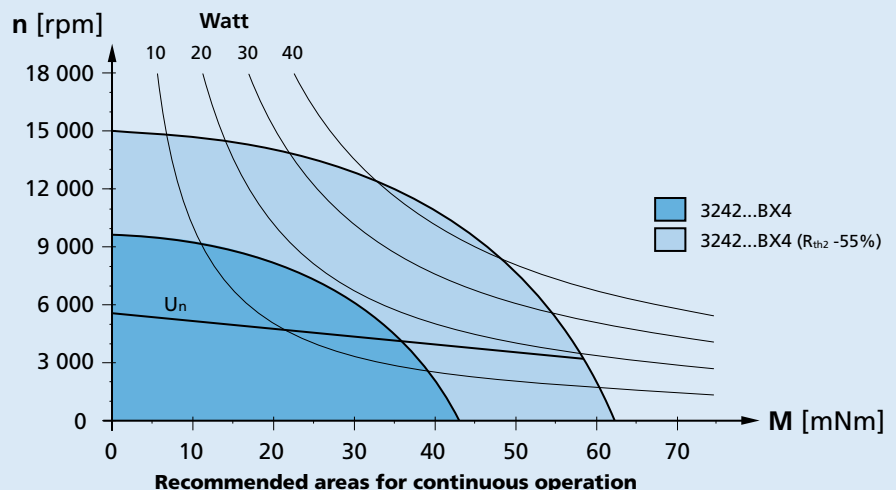
²⁾ thermal resistance $R_{\text{th} 2}$ not reduced / thermal resistance $R_{\text{th} 2}$ by 55% reduced

Note:

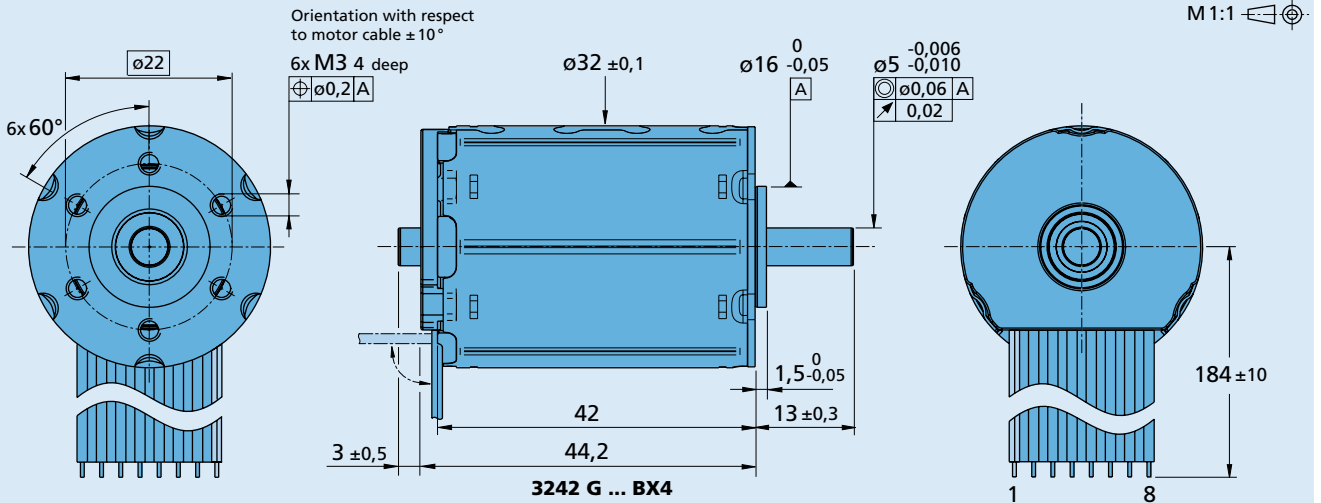
The diagram indicates the recommended speed in relation to the available torque at the output shaft for a given ambient temperature of 22°C.

The diagram shows the motor in a completely insulated as well as thermally coupled condition ($R_{\text{th} 2}$ 55% 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



Options

- Connector variant (Option no. 3830)

Motor:
 AWG 24 / PVC ribbon cable
 with connector Micro-Fit



- Analog Hall sensors (Option no. 3692)

Full product description

- Examples:
3242G012BX4
3242G024BX4

Cable and connection information

