

NEW

Brushless Flat DC-Servomotors

External rotor technology, without housing

134 mNm
100 W

Series 4221 ... BXT R

Values at 22°C and nominal voltage	4221 G	018 BXT R	024 BXT R	048 BXT R	
1 Nominal voltage	U_N	18	24	48	V
2 Terminal resistance, phase-phase	R	0,46	0,74	2,6	Ω
3 Efficiency, max.	η_{max}	88	87	88	%
4 No-load speed	n_0	5 670	5 960	6 070	min ⁻¹
5 No-load current, typ. (with shaft \varnothing 5 mm)	I_0	0,181	0,186	0,074	A
6 Starting torque	M_A	1 170	1 220	1 390	mNm
7 Speed constant	k_n	320	253	127	min ⁻¹ /V
8 Back-EMF constant	k_E	3,13	3,95	7,87	mV/min ⁻¹
9 Torque constant	k_M	29,8	37,7	75,2	mNm/A
10 Current constant	k_I	0,0335	0,0265	0,0133	A/mNm
11 Slope of n-M curve	$\Delta n/\Delta M$	4,93	4,97	4,4	min ⁻¹ /mNm
12 Terminal inductance, phase-phase	L	396	664	2 550	μ H
13 Mechanical time constant	τ_m	3,56	3,59	3,18	ms
14 Rotor inertia	J	69	69	69	gcm ²
15 Angular acceleration	α_{max}	169	177	201	$\cdot 10^3$ rad/s ²
16 Operating temperature range:					
– motor		-40 ... +100			°C
– winding, max. permissible		+125			°C
17 Shaft bearings		ball bearings, preloaded			
18 Shaft load max.:					
– with shaft diameter		5			mm
– radial at 3 000 min ⁻¹ (5 mm from mounting flange)		25			N
– axial at 3 000 min ⁻¹ (push / pull)		4			N
– axial at standstill (push / pull)		50			N
19 Shaft play:					
– radial	\leq	0,015			mm
– axial	$=$	0			mm
20 Mass		127			g
21 Direction of rotation		electronically reversible			
22 Speed up to	n_{max}	10 000			min ⁻¹
23 Number of pole pairs		7			
24 Hall sensors		digital			
25 Magnet material		NdFeB			
Rated values for continuous operation					
26 Rated torque	M_N	122	127	134	mNm
27 Rated current (thermal limit)	I_N	3,6	3,17	1,66	A
28 Rated speed	n_N	3 690	4 180	4 390	min ⁻¹
29 Rated slope of n-M curve	$\Delta n/\Delta M$	16,3	14	12,5	min ⁻¹ /mNm

Note: Rated values are measured at nominal voltage and 22°C ambient temperature.

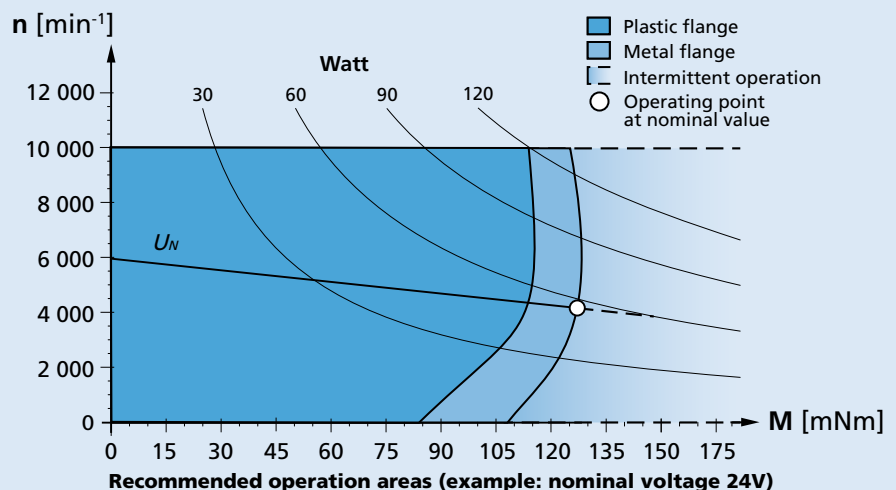
Note:

The display shows the range of possible operation points of the drives at a given ambient temperature of 22°C.

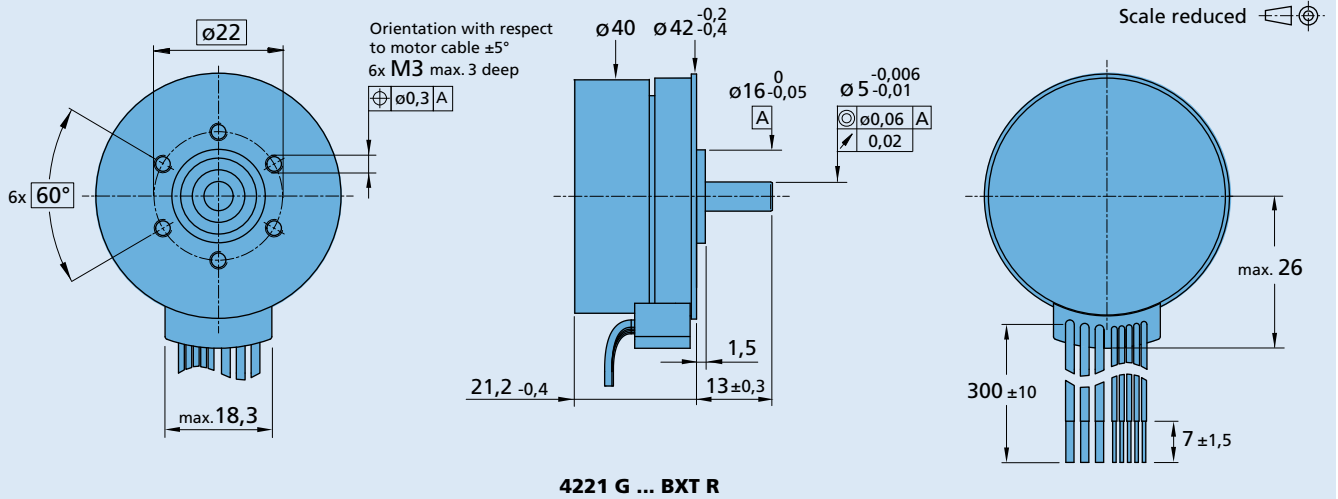
The diagram indicates the recommended speed in relation to the available torque at the output shaft.

It includes the assembly on a plastic- as well as on a metal flange (assembly method: IM B 5).

The nominal voltage linear slope describes the maximal achievable operating points at nominal voltage. Any points of operation above this linear slope will require a supply voltage $U_{mot} > U_N$.




Dimensional drawing



Option, cable and connection information

Example product designation: **4221G018BXTR-3830**

Option	Type	Description	Connection	
			Function	Colour
3830	Connector 	Standard cable with connector MOLEX Microfit 3.0, 43025-0800, recommended mating connector 43020-0800	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	
			Single wires, material PVC, AWG 20, Phase A/B/C, AWG 26, Hall A/B/C, U _{DD} , GND	

Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
32A 38/1 38/1 S 38/2 38/2 S		SC 2804 S SC 5004 P SC 5008 S	To view our large range of accessory parts, please refer to the "Accessories" chapter.