

Brushless DC-Flat Motors

10,2 mNm

External rotor technology, without housing

9 W

Series 2214 ... BXT R

Values at 22°C and nominal voltage		2214 S	006 BXT R	012 BXT R	024 BXT R	
1	Nominal voltage	U_N	6	12	24	V
2	Terminal resistance, phase-phase	R	2,42	6,95	25,9	Ω
3	Efficiency, max.	η_{max}	72	73	70	%
4	No-load speed	n_0	5 740	6 500	6 960	min ⁻¹
5	No-load current, typ. (with shaft \varnothing 3 mm)	I_0	0,062	0,039	0,016	A
6	Starting torque	M_A	23,5	29,1	29,6	mNm
7	Speed constant	k_n	997	561	296	min ⁻¹ /V
8	Back-EMF constant	k_E	1	1,78	3,37	mV/min ⁻¹
9	Torque constant	k_M	9,58	17	32,2	mNm/A
10	Current constant	k_I	0,104	0,0588	0,031	A/mNm
11	Slope of n-M curve	$\Delta n/\Delta M$	252	229	238	min ⁻¹ /mNm
12	Terminal inductance, phase-phase	L	271	884	3 150	μ H
13	Mechanical time constant	τ_m	8,7	7,92	8,22	ms
14	Rotor inertia	J	3,3	3,3	3,3	gcm ²
15	Angular acceleration	α_{max}	71,1	88,2	89,7	$\cdot 10^3$ 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		3			mm
	– radial at 3 000 min ⁻¹ (5 mm from mounting flange)		6			N
	– axial at 3 000 min ⁻¹ (push / pull)		2			N
	– axial at standstill (push / pull)		50			N
19 Shaft play:						
	– radial	\leq	0,015			mm
	– axial	$=$	0			mm
20 Mass						
			25,5			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	9,5	10	10,2	mNm
27	Rated current (thermal limit)	I_N	1,18	0,66	0,368	A
28	Rated speed	n_N	1 200	2 590	2 600	min ⁻¹
29	Rated slope of n-M curve	$\Delta n/\Delta M$	478	391	427	min ⁻¹ /mNm

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

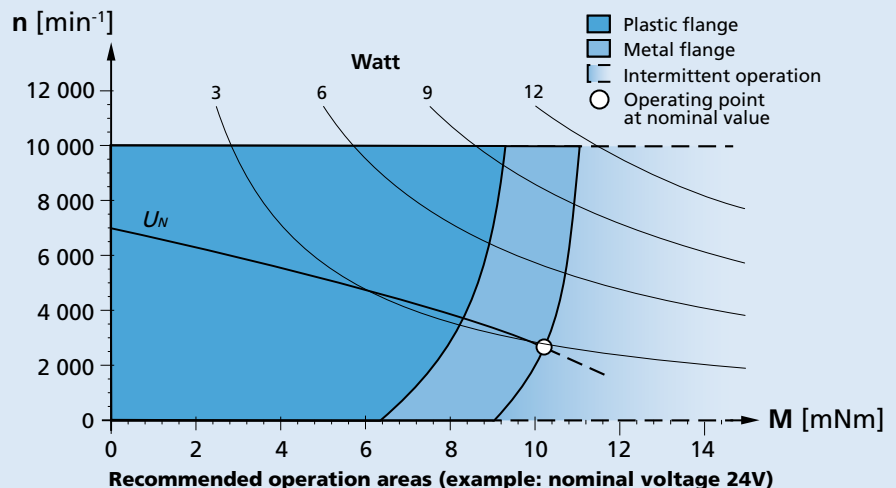
Note:

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

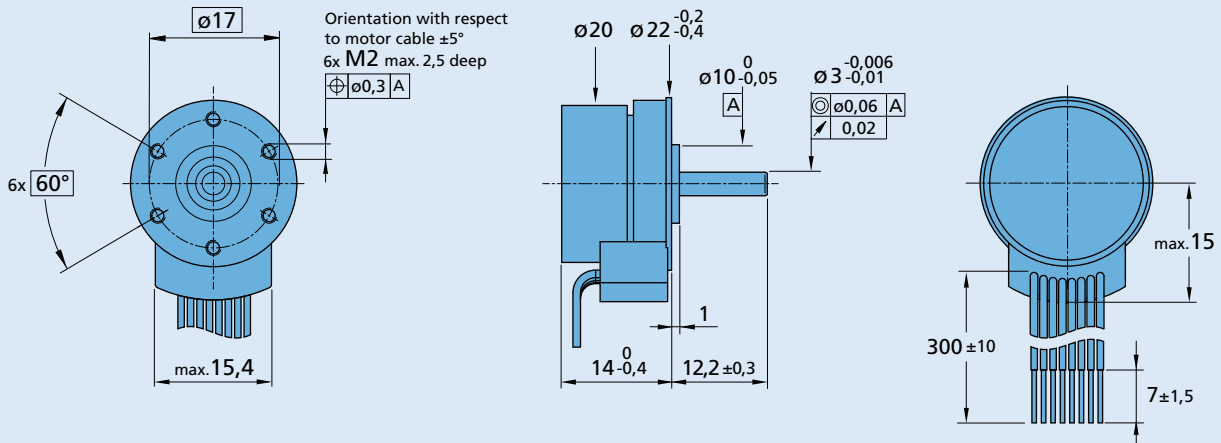
The diagram indicates the recommended speed in relation to the available torque at the output shaft.

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



2214 S ... BXT R

Option, cable and connection information

Example product designation: **2214S012BXTR-3830**

Option	Type	Description	Connection		
			No.	Function	Colour
3830	Connector 	Standard cable with connector MOLEX Microfit 3.0, 43025-0800, recommended mating connector 43020-0800	1	Phase C	yellow
4337	Gearhead combination	For combination with gearhead 20/1R	2	Phase B	orange
			3	Phase A	brown
			4	GND	black
			5	U _{DD} (+5V)	red
			6	Hall sensor C	grey
			7	Hall sensor B	blue
			8	Hall sensor A	green
			Standard cable Single wires, material PVC, AWG 26, Phase A/B/C AWG 26, Hall A/B/C, U _{DD} , GND		

Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
20/1R 22GPT 26/1R 22L ... ML 22L ... SB 22L ... PB		SC 1801 P SC 1801 S SC 2402 P SC 2804 S	To view our large range of accessory parts, please refer to the "Accessories" chapter.