

Brushless DC-Flat Motors

External rotor technology, with housing

9,7 mNm
6 W

Series 2214 ... BXT H

Values at 22°C and nominal voltage		2214 S	006 BXT H	012 BXT H	024 BXT H	
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	74	69	%
4	No-load speed	n_0	5 760	6 500	6 970	min ⁻¹
5	No-load current, typ. (with shaft \varnothing 3 mm)	I_0	0,061	0,04	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		28,9			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	9,4	9,7	9,7	mNm
27	Rated current (thermal limit)	I_N	1,16	0,653	0,36	A
28	Rated speed	n_N	1 260	2 630	2 710	min ⁻¹
29	Rated slope of n-M curve	$\Delta n/\Delta M$	479	399	439	min ⁻¹ /mNm

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

Note:

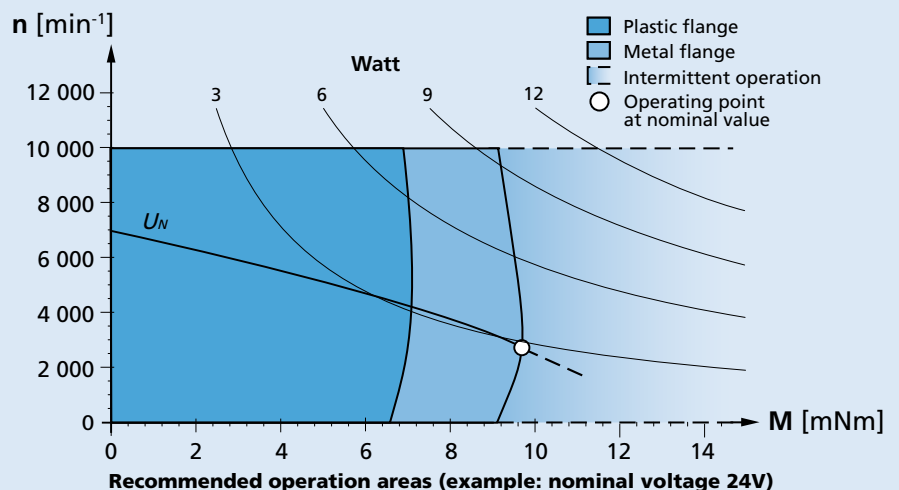
The display shows the range of possible operation points of the drives at a given ambient temperature of 22°C.

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

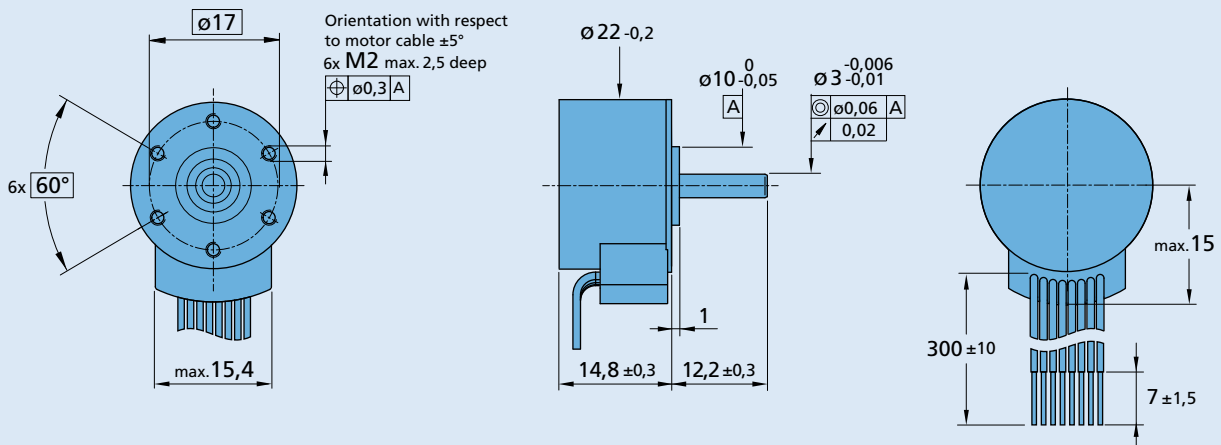
It includes the assembly on a plastic- as well as on a metal flange (assembly method: IM B 5).

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 H

Option, cable and connection information

Example product designation: **2214S012BXT H-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	IE3-1024 IE3-1024 L IEF3-4096 IEF3-4096 L IERS3-500 IERS3-500 L IER3-10000 IER3-10000 L	SC 1801 P SC 1801 S SC 2402 P SC 2804 S MC 3001 B MC 3001 P MC 3603 S MC 5004 P MC 5005 S	To view our large range of accessory parts, please refer to the "Accessories" chapter.