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.	$\eta_{max.}$		72	74	69	%
4	No-load speed	n_0		5 760	6 500	6 970	min^{-1}
5	No-load current, typ. (with shaft ø 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	µH
13	Mechanical time constant	τ_m		8,7	7,92	8,22	ms
14	Rotor inertia	J		3,3	3,3	3,3	gcm²
15	Angular acceleration	$\alpha_{max.}$		71,1	88,2	89,7	·10³rad/s²
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	≤	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

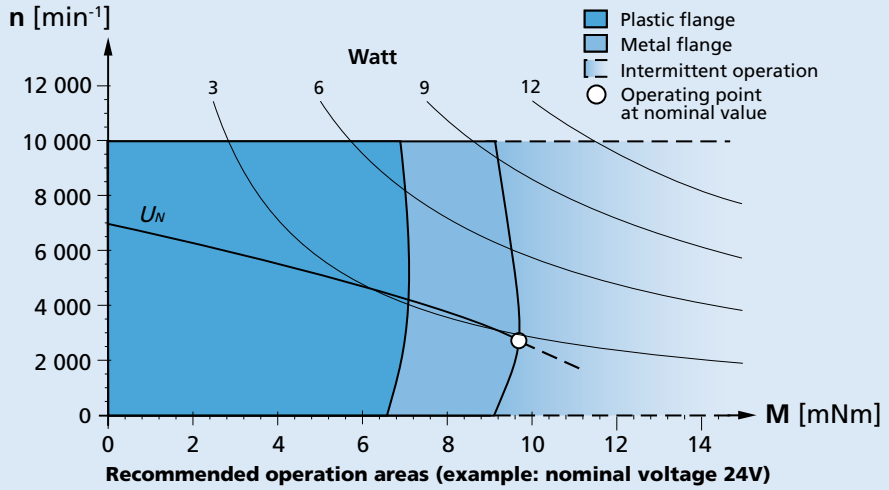
Note: Rated values are measured at nominal voltage and 22°C ambient temperature.

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 $U_{mot} > U_N$.



Recommended operation areas (example: nominal voltage 24V)

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

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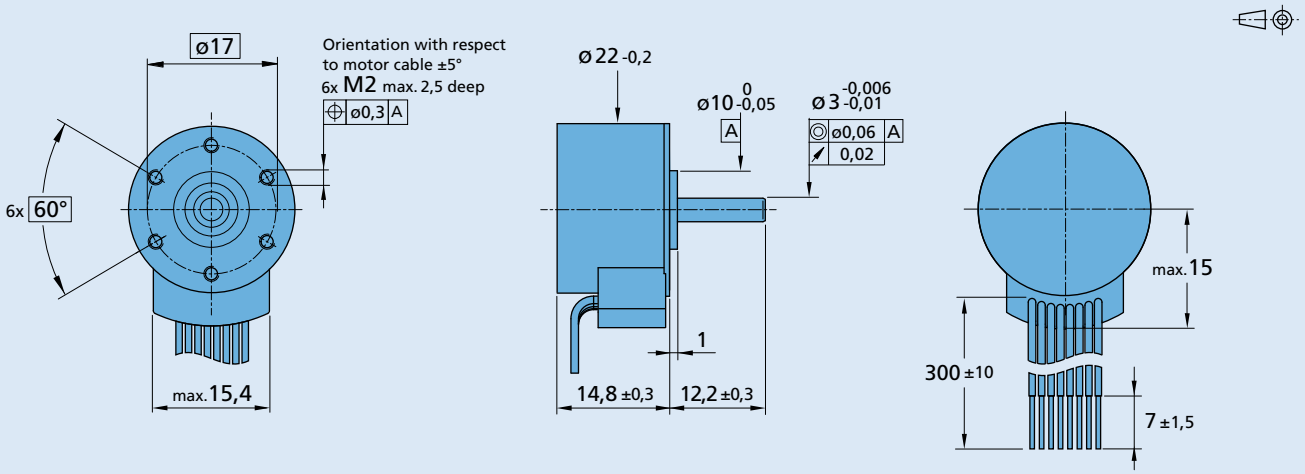
Dimensional drawing



2214 S ... BXT H

Option, cable and connection information

Example product designation: **2214S012BXTH-3830**

Option	Type	Description
3830	Connector 	Standard cable with connector MOLEX Microfit 3.0, 43025-0800, recommended mating connector 43020-0800
4337	Gearhead combination	For combination with gearhead 20/1R

Connection

No.	Function	Colour
1	Phase C	yellow
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 22GPT HT 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 IERF3-16384 L	SC 1801 P SC 1801 S SC 2402 P SC 2804 S MC 3001 B MC 3001 P MC 3602 B MC 3603 S MC 5004 P MC 5005 S	To view our large range of accessory parts, please refer to the “Accessories” chapter.