

**NEW**

# Brushless Flat DC-Servomotors

External rotor technology, without housing

10,2 mNm  
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	$\Omega$
3 Efficiency, max.	$\eta_{max}$	72	73	70	%
4 No-load speed	$n_0$	5 740	6 500	6 960	min <sup>-1</sup>
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 <sup>-1</sup> /V
8 Back-EMF constant	$k_E$	1	1,78	3,37	mV/min <sup>-1</sup>
9 Slope of n-M curve	$\Delta n/\Delta M$	252	229	238	min <sup>-1</sup> /mNm
10 Terminal inductance, phase-phase	$L$	271	884	3 150	$\mu$ H
11 Mechanical time constant	$\tau_m$	8,7	7,92	8,22	ms
12 Rotor inertia	$J$	3,3	3,3	3,3	gcm <sup>2</sup>
13 Angular acceleration	$\alpha_{max}$	71,1	88,2	89,7	$\cdot 10^3$ rad/s <sup>2</sup>
14 Operating temperature range:					
– motor		-40 ... +100			°C
– winding, max. permissible		+125			°C
15 Shaft bearings		ball bearings, preloaded			
16 Shaft load max.:					
– with shaft diameter		3			mm
– radial at 3 000 min <sup>-1</sup> (5 mm from mounting flange)		6			N
– axial at 3 000 min <sup>-1</sup> (push / pull)		2			N
– axial at standstill (push / pull)		50			N
17 Shaft play:					
– radial	$\leq$	0,015			mm
– axial	$=$	0			mm
18 Mass		25,5			g
19 Direction of rotation		electronically reversible			
20 Speed up to	$n_{max}$	10 000			min <sup>-1</sup>
21 Number of pole pairs		7			
22 Hall sensors		digital			
23 Magnet material		NdFeB			
<b>Rated values for continuous operation</b>					
24 Rated torque	$M_N$	9,5	10	10,2	mNm
25 Rated current (thermal limit)	$I_N$	1,18	0,66	0,368	A
26 Rated speed	$n_N$	1 200	2 590	2 600	min <sup>-1</sup>
27 Rated slope of n-M curve	$\Delta n/\Delta M$	478	391	427	min <sup>-1</sup> /mNm

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

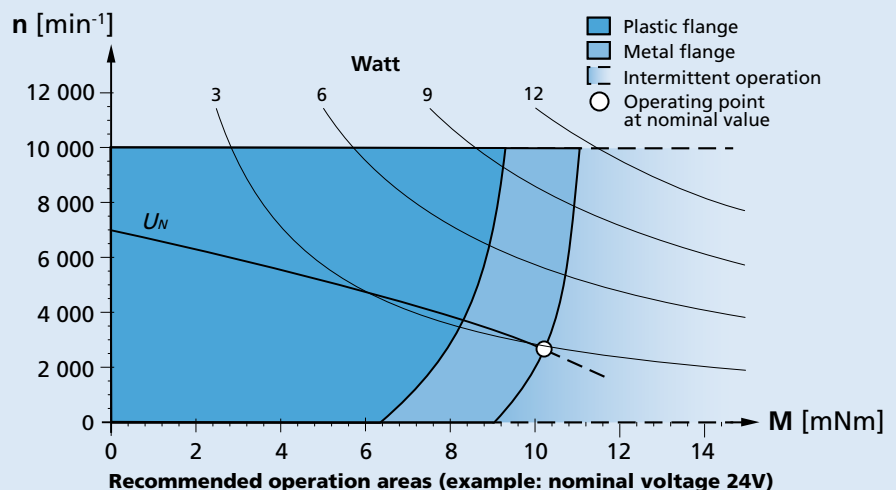
**Note:**

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

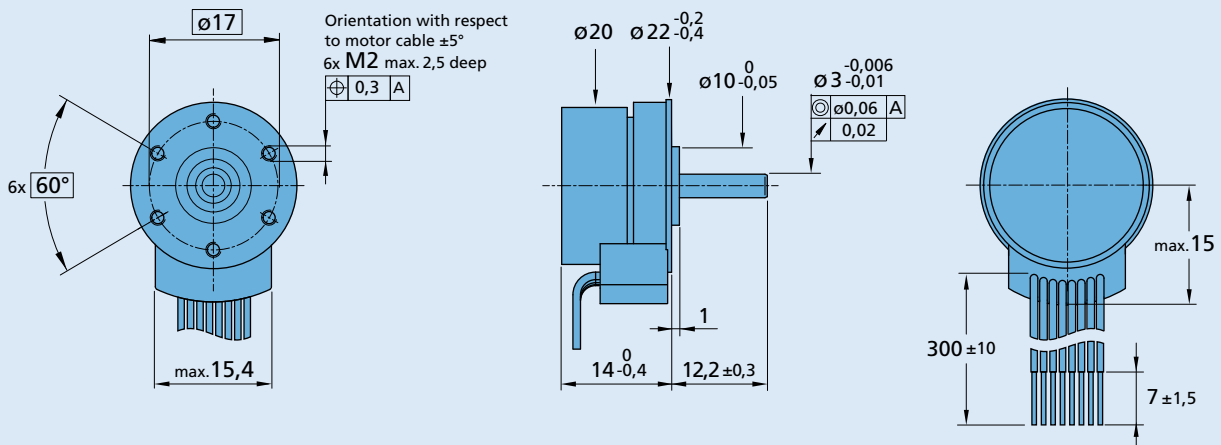
The diagram indicates the recommended speed in relation to the available torque at the output shaft.

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: **2214S012BXT H-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 <sub>DD</sub> (+5V)	red
			Hall sensor C	grey
			Hall sensor B	blue
			Hall sensor A	green
			<b>Standard cable</b>	
			Single wires, material PVC, AWG 26, Phase A/B/C	
			AWG 26, Hall A/B/C, U <sub>DD</sub> , GND	

### Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
22F 26/1 R		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.