

NEW

Brushless DC-Flat Motors

External rotor technology, without housing

41 mNm

30 W

Series 3216 ... BXT R

Values at 22°C and nominal voltage		3216 W	009 BXT R	012 BXT R	024 BXT R	
1	Nominal voltage	U_N	9	12	24	V
2	Terminal resistance, phase-phase	R	0,55	0,88	3,26	Ω
3	Efficiency, max.	η_{max}	82	83	82	%
4	No-load speed	n_0	6 020	6 240	6 200	min ⁻¹
5	No-load current, typ. (with shaft $\varnothing$ 4 mm)	I_0	0,179	0,129	0,084	A
6	Starting torque	M_A	225	245	263	mNm
7	Speed constant	k_n	691	530	267	min ⁻¹ /V
8	Back-EMF constant	k_E	1,45	1,89	3,75	mV/min ⁻¹
9	Torque constant	k_M	13,8	18	35,8	mNm/A
10	Current constant	k_I	0,0724	0,0555	0,0279	A/mNm
11	Slope of n-M curve	$\Delta n / \Delta M$	27,5	25,9	24,3	min ⁻¹ /mNm
12	Terminal inductance, phase-phase	L	191	331	1 290	μH
13	Mechanical time constant	τ_m	5,28	4,97	4,66	ms
14	Rotor inertia	J	18,3	18,3	18,3	gcm ²
15	Angular acceleration	α_{max}	123	134	144	·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	4				mm
	– radial at 3 000 min ⁻¹ (5 mm from mounting flange)	15				N
	– axial at 3 000 min ⁻¹ (push / pull)	3				N
	– axial at standstill (push / pull)	50				N
19	Shaft play:					
	– radial	≤ 0,015				mm
	– axial	= 0				mm
20	Mass	57,9				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	39,5	40	41	mNm
27	Rated current (thermal limit)	I_N	2,87	2,28	1,17	A
28	Rated speed	n_N	3 320	3 750	4 150	min ⁻¹
29	Rated slope of n-M curve	$\Delta n / \Delta M$	68,4	62,3	50	min ⁻¹ /mNm

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

Note:

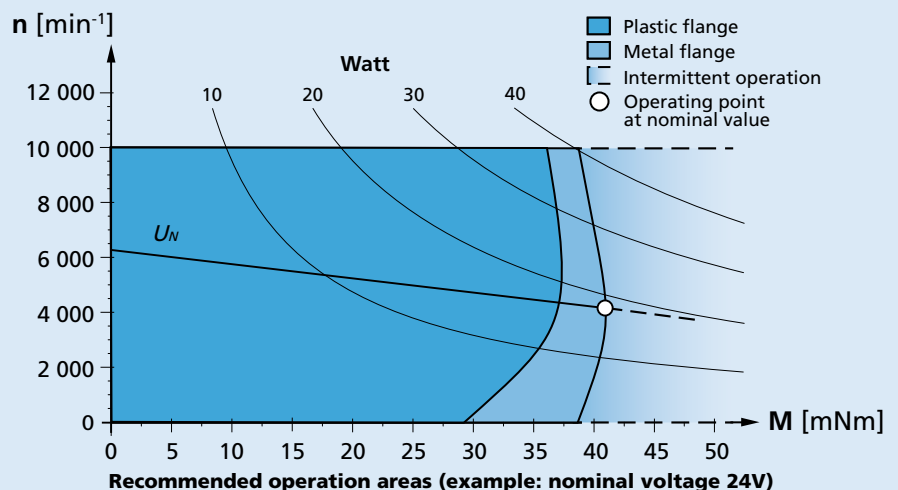
The display shows the range of possible operation points of the drives at a given ambient temperature of 22°C.

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

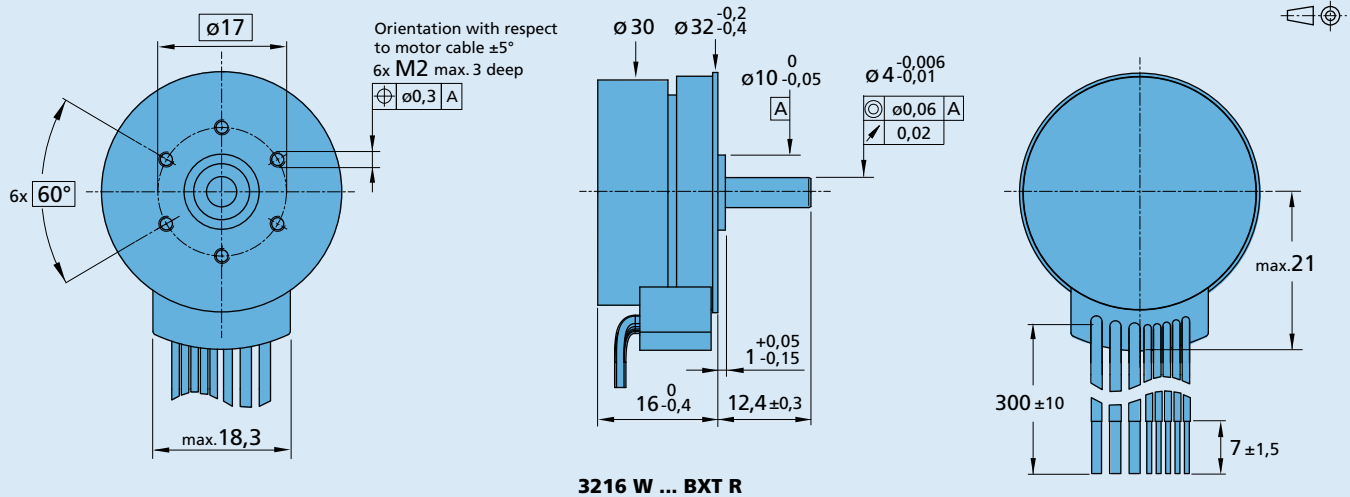
It includes the assembly on a plastic- as well as on a metal flange (assembly method: IM B 5).

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: **3216W012BXT R-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
26A 26/1R 32GPT 32/3R		SC 2402 P SC 2804 S	To view our large range of accessory parts, please refer to the "Accessories" chapter.