

Brushless Flat DC-Servomotors
External rotor technology, with housing

38 mNm
20 W

Series 3216 ... BXT H

Values at 22°C and nominal voltage	3216 W	009 BXT H	012 BXT H	024 BXT H	
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}	83	84	81	%
4 No-load speed	n_0	6 060	6 230	6 250	min ⁻¹
5 No-load current, typ. (with shaft \varnothing 4 mm)	I_0	0,165	0,126	0,068	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 Slope of n-M curve	$\Delta n/\Delta M$	27,5	25,9	24,3	min ⁻¹ /mNm
10 Terminal inductance, phase-phase	L	191	331	1 290	μ H
11 Mechanical time constant	τ_m	5,28	4,97	4,66	ms
12 Rotor inertia	J	18,3	18,3	18,3	gcm ²
13 Angular acceleration	α_{max}	123	134	144	$\cdot 10^3$ rad/s ²
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		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
17 Shaft play:					
– radial	\leq	0,015			mm
– axial	$=$	0			mm
18 Mass		65,3			g
19 Direction of rotation		electronically reversible			
20 Speed up to	n_{max}	10 000			min ⁻¹
21 Number of pole pairs		7			
22 Hall sensors		digital			
23 Magnet material		NdFeB			
Rated values for continuous operation					
24 Rated torque	M_N	37	38	38	mNm
25 Rated current (thermal limit)	I_N	2,76	2,18	1,1	A
26 Rated speed	n_N	3 400	3 860	4 320	min ⁻¹
27 Rated slope of n-M curve	$\Delta n/\Delta M$	71,9	62,4	50,8	min ⁻¹ /mNm

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

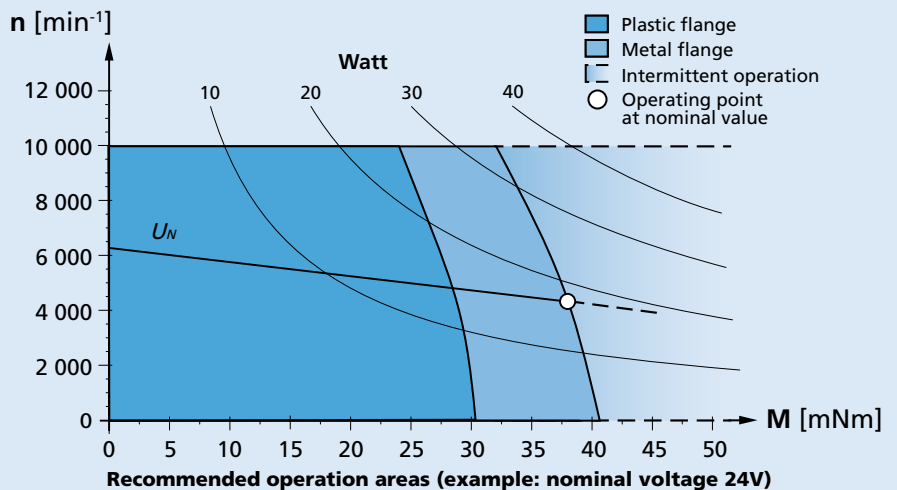
Note:

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

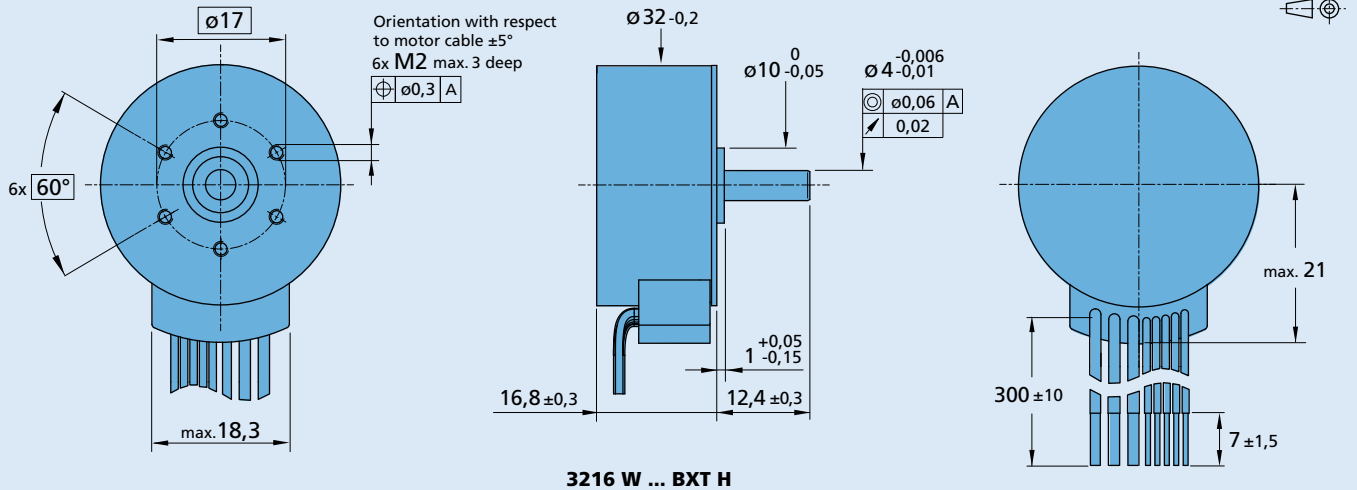
The diagram indicates the recommended speed in relation to the available torque at the output shaft.

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: **3216W012BXTH-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
26/1 R 32/3 R	IE3-1024 IE3-1024 L IERS3-500 IERS3-500 L IER3-10000 IER3-10000 L	SC 2402 P SC 2804 S MC 5004 P MC 5005 S	MBZ To view our large range of accessory parts, please refer to the "Accessories" chapter.