

NEW

Brushless DC-Servomotors

with integrated Speed Controller

4 Pole Technology

58 mNm

For combination with
Gearheads:
32A

Series 3268 ... BX4 SCDC

	3268 G	024 BX4	SCDC
1 Nominal voltage	U_N	24	Volt
2 Terminal resistance, phase-phase	R	1,45	Ω
3 Output power ¹⁾	$P_{2 \text{ max.}}$	32,7	W
4 Efficiency	$\eta_{\text{ max.}}$	79,5	%
5 No-load speed	n_0	5 300	rpm
6 No-load current	I_0	0,210	A
7 Stall torque	M_H	137	mNm
8 Friction torque, static	C_0	1,7	mNm
9 Friction torque, dynamic	C_v	$1,3 \cdot 10^{-3}$	mNm/rpm
10 Speed constant	k_n	220	rpm/V
11 Back-EMF constant	k_E	4,555	mV/rpm
12 Torque constant	k_M	43,5	mNm/A
13 Current constant	k_I	0,0230	A/mNm
14 Slope of n-M curve	$\Delta n / \Delta M$	7,3	rpm/mNm
15 Terminal inductance, phase-phase	L	110	μH
16 Mechanical time constant	τ_m	4,6	ms
17 Rotor inertia	J	60	gcm^2
18 Angular acceleration	$\alpha_{\text{ max.}}$	23	$\cdot 10^3 \text{ rad/s}^2$
19 Thermal resistance	$R_{\text{th} 1} / R_{\text{th} 2}$	1,9 / 9,6	K/W
20 Thermal time constant	τ_{w1} / τ_{w2}	17 / 1 060	s
21 Operating temperature range		- 40 ... + 100	$^{\circ}\text{C}$
22 Shaft bearings		ball bearings, preloaded	
23 Shaft load max.:			
– radial at 3 000 rpm (4,5 mm from mounting flange)		50	N
– axial at 3 000 rpm		5	N
– axial at standstill		50	N
24 Shaft play:			
– radial	\leq	0,015	mm
– axial	$=$	0	mm
25 Housing material		stainless steel	
26 Weight		305	g
27 Direction of rotation		electronically reversible	
28 Number of pole pairs		2	
Recommended values - mathematically independent of each other			
29 Speed up to	$n_{e \text{ max.}}$	6 500	rpm
30 Torque up to ^{1) 2)}	$M_{e \text{ max.}}$	37 / 58	mNm
31 Current up to ^{1) 2)}	$I_{e \text{ max.}}$	1,11 / 1,60	A

¹⁾ at 5000 rpm

²⁾ thermal resistance $R_{\text{th} 2}$ not reduced / thermal resistance $R_{\text{th} 2}$ by 55% reduced

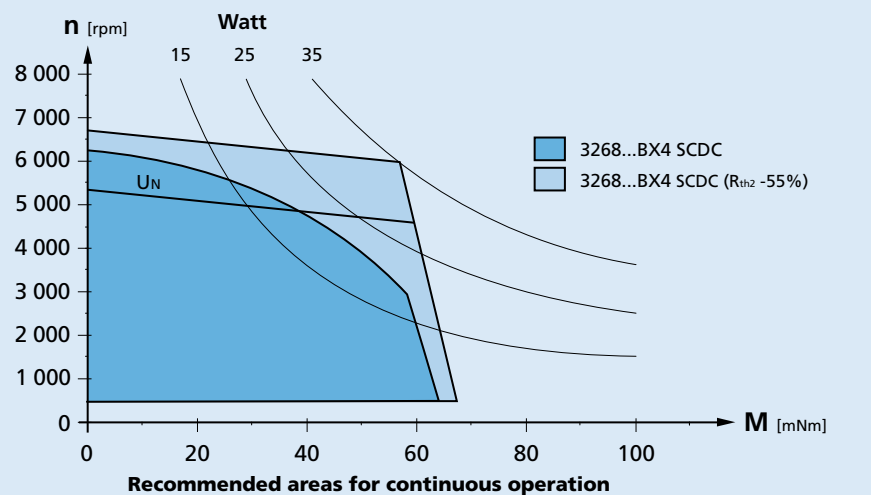
Note:

The diagram indicates the recommended speed in relation to the available torque at the output shaft for a given ambient temperature of 22°C.

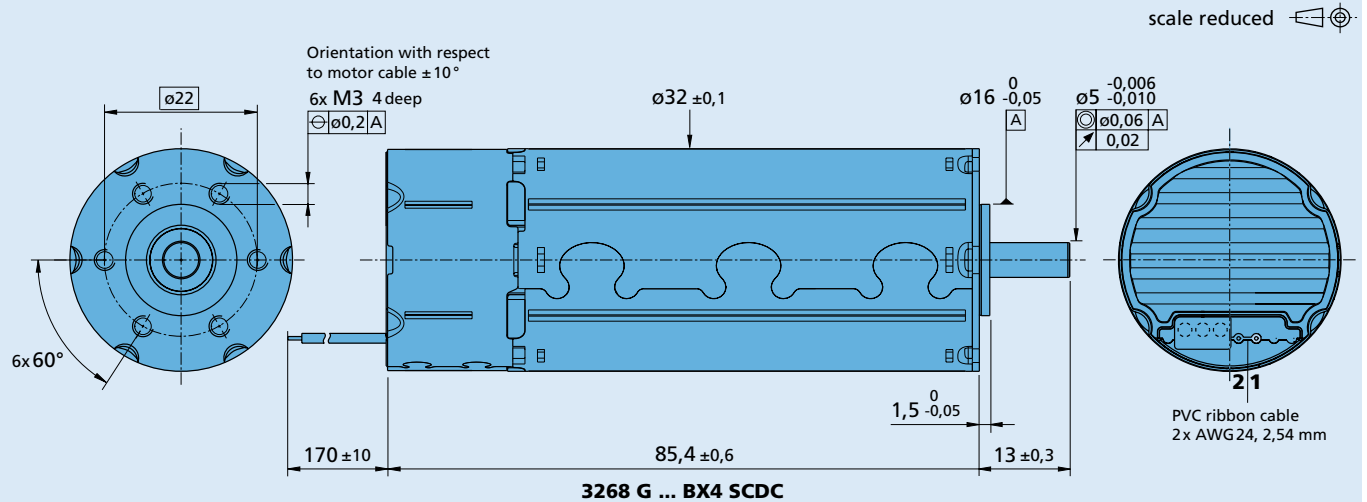
The diagram shows the motor in a completely insulated as well as thermally coupled condition ($R_{\text{th} 2} \geq 55\%$ reduced).

The motor is factory pre-configured to perform at the recommended continuous current. Non-standard configurations are only possible upon request from the manufacturer.

The nominal voltage (U_N) curve shows the operating point at nominal voltage in the insulated and thermally coupled condition. Any points of operation above the curve at nominal voltage will require a higher operating voltage. Any points below the nominal voltage curve will require less voltage.



Dimensional drawing



Speed Controller		024 BX4	SCDC
Power supply electronic	U_p	6,5 ... 30	V DC
Power supply motor	U_{mot}	6,5 ... 30	V DC
PWM switching frequency	f_{PWM}	96	kHz
Efficiency	η	95	%
Max. continuous output current ¹⁾	I_{dauer}	2	A
Max. peak output current	I_{max}	4	A
Total standby current at U_N	I_{el}	10	mA
Speed range, electronics		400 ... 50 000 ²⁾	rpm
Scanning rate		500	μ s

¹⁾ at 22°C ambient temperature

²⁾ speed is dependent on the motor operating voltage

Connection information

Connection 1 "Mot +": positive power supply

Connection 2 "Mot -": negative power supply

Features

In this version, the brushless DC servomotors have an integrated Speed Controller. The motor is commutated using the integrated digital hall sensors. Speed control is via a PI regulator.

The Speed Controller has a current limiting device which limits the maximum motor current if the thermal load is too high. Twice the continuous current is possible over a short time.

The direction of rotation is dependent on the polarity of the voltage.

Full product description

■ Examples:
3268G024BX4 SCDC

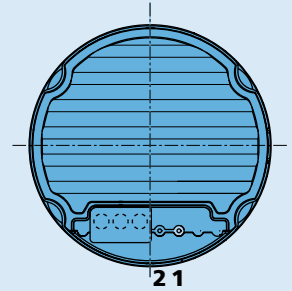
Connection information

Options

- Connector variants (Option no. 4140)
AWG 24 / PVC ribbon cable
with connector Micro-Fit
connector pin assignment:



Cable connection



Connection

No.	Function
1	Mot +
2	Mot -