

# Brushless DC-Servomotors

with integrated Speed Controller  
4 Pole Technology

45 mNm

24 W

## 3242 ... BX4 SCDC

Values at 22°C and nominal voltage	3242 G	012 BX4 SCDC	024 BX4 SCDC
Supply voltage (CW)	$U_{mot+}$	6,5 ... 30	6,5 ... 30
Supply voltage (CCW)	$U_{mot-}$	6,5 ... 30	6,5 ... 30
Nominal voltage for motor	$U_N$	12	24
No-load speed (at $U_N$ )	$n_0$	5 300	5 500
Peak torque (S2 operation for max. 5s/14s)	$M_{max.}$	78	90
Torque constant	$k_M$	21	42,1
PWM switching frequency	$f_{PWM}$	96	96
Efficiency electronic	$\eta$	95	95
Standby current for electronic (at $U_N$ )	$I_{el}$	0,017	0,01
Speed range (up to 24V / 30V)		400 ... 11 200	400 ... 7 000
Shaft bearings		ball bearings, preloaded	
Shaft load max.:			
- with shaft diameter	5		mm
- radial at 3 000 min <sup>-1</sup> (3 mm from mounting flange)	50		N
- axial at 3 000 min <sup>-1</sup> (push / pull)	5		N
- axial at standstill (push / pull)	50		N
Shaft play:			
- radial	$\leq 0,015$		mm
- axial	= 0		mm
Operating temperature range		-40 ... +85	°C
Housing material		stainless steel	
Mass		189	g

### Rated values for continuous operation

Rated torque	$M_N$	39	45	mNm
Rated current (thermal limit)	$I_N$	2,1	1,22	A
Rated speed	$n_N$	4 050	4 300	min <sup>-1</sup>

### Interface / range of functions

	... SCDC
Operating modes	Motor variant with integrated speed controller with two-wire interface without communication possibility; commutation via digital Hall sensors. Fixed speed control using integrated PI controller. Direction of rotation changeover through reversing the supply voltage polarity.
Speed range	Digital Hall = from 400 min <sup>-1</sup>
Additional functions	Integrated current limitation to protect against thermal overload. Short-time operation (S2) with up to double the continuous current. Voltage controller substituting DC motors in certain applications. Customer-specific firmware available on request.

#### Note:

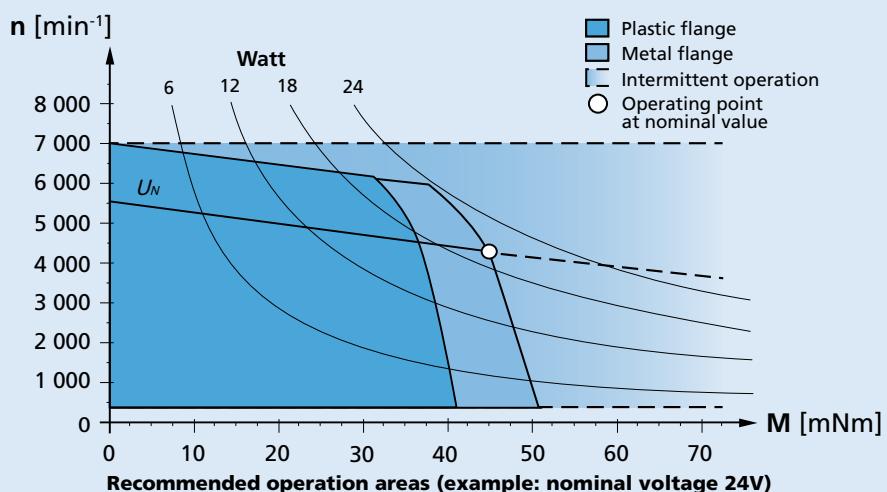
The display shows the range of possible operation points of the drives at a given ambient temperature of 22°C.

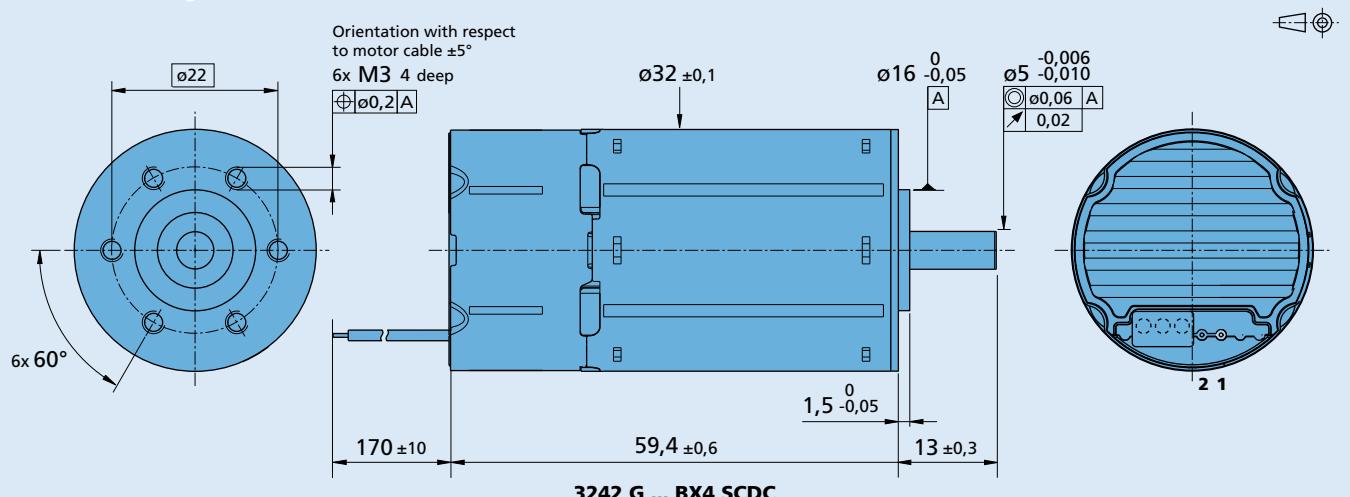
The diagram indicates the recommended speed in relation to the available torque at the output shaft.

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: **3242G024BX4SCDC-4140**

Option	Type	Description	Connection		
			No.	Function	Description
4140	Connector	AWG 24 / PVC ribbon cable with connector MOLEX Microfit 3.0, 43025-0200, recommended mating connector 43020-0200	1	Mot +	positive power supply
			2	Mot -	negative power supply
			<b>Standard cable</b> PVC ribbon cable 2 x AWG 24, 2,54 mm		
			<b>Note:</b> For details on the connection assignment, see device manual for the SCS.		

**Product combination**

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
32A 32ALN 32GPT 32/3 32/3R 38A 38/1 38/1 S 38/2 38/2 S 42GPT		Integrated	To view our large range of accessory parts, please refer to the "Accessories" chapter.