

# Brushless DC-Gearmotors

with integrated Speed Controller

100 mNm

## Series 2622 ... B SC

	2622 S		006 B	012 B	SC
1 Nominal voltage	U <sub>N</sub>		6	12	Volt
2 Terminal resistance, phase-phase	R		7,0	28,2	Ω
3 Output power	P <sub>2 max.</sub>		1,92	1,91	W
4 Efficiency	η <sub>max.</sub>		78	78	%
5 No-load speed	n <sub>0</sub>		6 200	6 200	rpm
6 No-load current	I <sub>0</sub>		0,012	0,006	A
7 Stall torque	M <sub>H</sub>		7,73	7,68	mNm
8 Friction torque, static	C <sub>0</sub>		0,025	0,025	mNm
9 Friction torque, dynamic	C <sub>v</sub>		1,35 · 10 <sup>-5</sup>	1,35 · 10 <sup>-5</sup>	mNm/rpm
10 Speed constant	k <sub>n</sub>		1 055	528	rpm/V
11 Back-EMF constant	k <sub>E</sub>		0,948	1,895	mV/rpm
12 Torque constant	k <sub>M</sub>		9,05	18,1	mNm/A
13 Current constant	k <sub>I</sub>		0,111	0,055	A/mNm
14 Slope of n-M curve	Δn/ΔM		816	822	rpm/mNm
15 Terminal inductance, phase-phase	L		480	1 940	μH
16 Mechanical time constant	τ <sub>m</sub>		69	70	ms
17 Rotor inertia	J		8,1	8,1	gcm <sup>2</sup>
18 Angular acceleration	α <sub>max.</sub>		9,5	9,5	· 10 <sup>3</sup> rad/s <sup>2</sup>
19 Thermal resistance	R <sub>th 1</sub> / R <sub>th 2</sub>	33 / 27			K/W
20 Thermal time constant	τ <sub>w1</sub> / τ <sub>w2</sub>	20 / 230			s

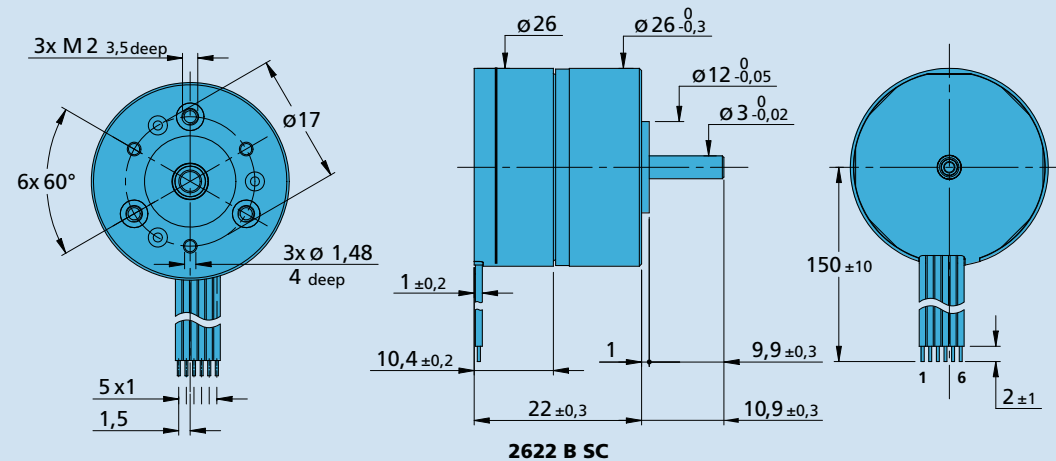
### Integrated Gearhead

Housing material		plastic	
Geartrain material		metal	
Backlash, at no-load	≤	4	°
Bearings on output shaft		ball bearing	
Shaft load max.:			
– radial (5 mm from mounting face)	≤	15	N
– axial	≤	5	N
Shaft press fit force, max.	≤	10	N
Shaft play:			
– radial (5 mm from mounting face)	≤	0,03	mm
– axial	≤	0,25	mm
Operating temperature range		– 25 ... + 80	°C

### Specifications

reduction ratio (rounded)	output speed up to n <sub>max</sub> rpm	weight with motor g	output torque		direction of rotation (reversible)	efficiency %
			continuous operation M <sub>max</sub> mNm	intermittent operation M <sub>max</sub> mNm		
8 : 1	635	25	9	30	=	81
22 : 1	223	26	23	75	≠	73
33 : 1	151	26	30	100	=	60
112 : 1	44	27	93	180	≠	59
207 : 1	24	27	100	180	=	53
361 : 1	14	27	100	180	=	53
814 : 1	6	28	100	180	=	43
1 257 : 1	4	29	100	180	=	43

**2622 S ... B SC**


**Option**

- connector variants AWG 28 / PVC ribbon cable with connector Picoblade

connector pin assignment:


**Connection**

No.	Function
1	Up
2	U <sub>mot</sub>
3	GND
4	Unsoll
5	DIR
6	FG

Speed Controller	006 B	012 B	SC
PWM switching frequency	96	96	kHz
Efficiency	95	95	%
Max. continuous output current <sup>1)</sup>	0,8	0,8	A
Max. peak output current	1,6	1,6	A
Total standby current	0,020		A
Speed range electronic	500 ... 60 000 <sup>2)</sup>		rpm
Scanning range	500		µs

<sup>1)</sup> at 22°C ambient temperature and max. 60°C motor temperature respectively

<sup>2)</sup> speed depend on motor operating voltage

Connection information		006 B	012 B	SC
Connection 1 "U <sub>P</sub> ":	power supply electronic	U <sub>P</sub> = 4 ... 18 V		
Connection 2 "U <sub>mot</sub> ":	power supply electronic coil	U <sub>mot</sub> = 1,7 ... 18 V		
Connection 3 "GND":	ground	ground		
Connection 4 "Unsoll":				
- analog input	input voltage	U <sub>in</sub> = 0 ... 10V (max. U <sub>P</sub> )		
	input resistance	R <sub>in</sub> ≥ 8 kΩ		
	set speed value	per 1V   1 000	1 000	rpm
		U <sub>in</sub> < 0,15V » motor stops		
		U <sub>in</sub> > 0,3V » motor starts		
Connection 5 "DIR":				
- analog input	direction of rotation	to ground or level < 0,5V » counterclockwise		
		open or level > 3V » clockwise (max. U <sub>P</sub> )		
	input resistance	R <sub>in</sub> ≥ 10 kΩ		
Connection 6 "FG":				
- digital output	frequency output	with max. U <sub>P</sub> » I <sub>max</sub> = 15 mA; open collector with 22 kΩ pull-up resistor		
		6 lines per revolution		

**Features**

In this variant, the brushless DC-Micromotors have an integrated Speed Controller. The motor is commutated using Hall sensors integrated into the motor. 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.

Using the "FAULHABER Motion Manager" software, the customer can modify the Speed Controller to special conditions of use.

The following parameters can be changed: current limit and regulator parameters.

**Full product description**

- Examples:

**2622S006B SC**
**2622S012B SC**