

Brushless DC-Gearmotors

with integrated Speed Controller

100 mNm

Series 2622 ... B SC

	2622 S		006 B	012 B	SC
1 Nominal voltage	U _N		6	12	Volt
2 Terminal resistance, phase-phase	R		7,0	28,2	Ω
3 Output power	P _{2 max.}		1,92	1,91	W
4 Efficiency	η _{max.}		78	78	%
5 No-load speed	n ₀		6 200	6 200	rpm
6 No-load current	I ₀		0,012	0,006	A
7 Stall torque	M _H		7,73	7,68	mNm
8 Friction torque, static	C ₀		0,025	0,025	mNm
9 Friction torque, dynamic	C _v		1,35 · 10 ⁻⁵	1,35 · 10 ⁻⁵	mNm/rpm
10 Speed constant	k _n		1 055	528	rpm/V
11 Back-EMF constant	k _E		0,948	1,895	mV/rpm
12 Torque constant	k _M		9,05	18,1	mNm/A
13 Current constant	k _I		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 _m		69	70	ms
17 Rotor inertia	J		8,1	8,1	gcm ²
18 Angular acceleration	α _{max.}		9,5	9,5	· 10 ³ rad/s ²
19 Thermal resistance	R _{th 1} / R _{th 2}	33 / 27			K/W
20 Thermal time constant	τ _{w1} / τ _{w2}	20 / 230			s

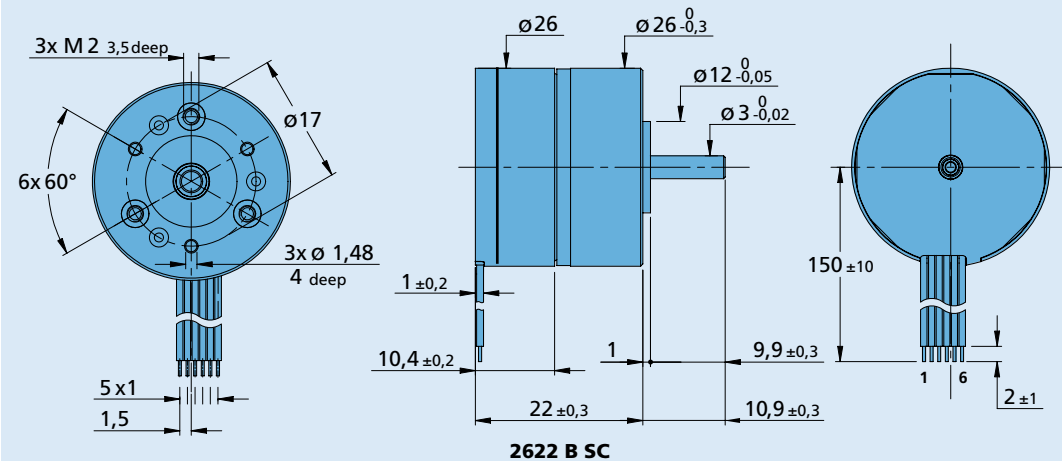
Integrated Gearhead

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 _{max} rpm	weight with motor g	output torque		direction of rotation (reversible)	efficiency %
			continuous operation M _{max} mNm	intermittent operation M _{max} 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

Note: output speed at 5000 rpm input speed. Based on motor 2610 ... B.

2622 S ... B SC
 M 1:1

Option

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

connector pin assignment:


Connection

No.	Function
1	Up
2	U _{mot}
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 ¹⁾	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 ²⁾		rpm
Scanning range	500		µs

¹⁾ at 22°C ambient temperature and max. 60°C motor temperature respectively

²⁾ speed depend on motor operating voltage

Connection information	006 B	012 B	SC
Connection 1 "U_P": power supply electronic	U _P = 4 ... 18 V		
Connection 2 "U_{mot}": power supply electronic coil	U _{mot} = 1,7 ... 18 V		
Connection 3 "GND": ground	ground		
Connection 4 "Unsoll":			
– analog input	input voltage	U _{in} = 0 ... 10V (max. U _P)	
	input resistance	R _{in} ≥ 8 kΩ	
	set speed value	per 1V 1 000 1 000	rpm
		U _{in} < 0,15V » motor stops	
		U _{in} > 0,3V » motor starts	
Connection 5 "DIR":			
– digital input	direction of rotation	to ground or level < 0,5V » counterclockwise	
		open or level > 3V » clockwise (max. U _P)	
	input resistance	R _{in} ≥ 10 kΩ	
Connection 6 "FG":			
– digital output	frequency output	with max. U _P » I _{max} = 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 22:1
2622S012B SC 33:1