

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	$\eta_{\ max.}$	78	78	%
5 No-load speed	n_o	6 200	6 200	min ⁻¹
6 No-load current	I_o	0,012	0,006	A
7 Stall torque	M_H	7,73	7,68	mNm
8 Friction torque, static	C_o	0,025	0,025	mNm
9 Friction torque, dynamic	C_v	$1,35 \cdot 10^{-5}$	$1,35 \cdot 10^{-5}$	mNm/min ⁻¹
10 Speed constant	k_n	1 055	528	min ⁻¹ /V
11 Back-EMF constant	k_E	0,948	1,895	mV/min ⁻¹
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	$\Delta n / \Delta M$	816	822	min ⁻¹ /mNm
15 Terminal inductance, phase-phase	L	480	1 940	μ H
16 Mechanical time constant	τ_m	69	70	ms
17 Rotor inertia	J	8,1	8,1	gcm ²
18 Angular acceleration	$\alpha_{\ max.}$	9,5	9,5	$\cdot 10^3$ rad/s ²
19 Thermal resistance	R_{th1} / R_{th2}	33 / 27		K/W
20 Thermal time constant	τ_{w1} / τ_{w2}	20 / 230		s
21 Number of pole pairs		2		

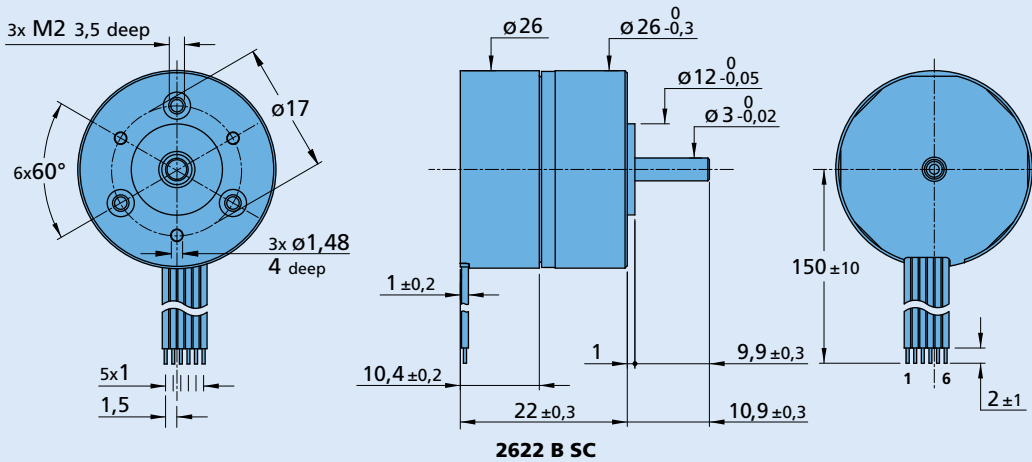
Integrated Gearhead

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 $n_{\ max}$ min ⁻¹	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 min⁻¹ input speed. Based on motor 2610 ... B.

2622 S ... B SC

Cable

Jacket Material: PVC
8 conductors, AWG 28
grid 1,0 mm
wires tinned

Note:

Hallsensors digital

Connection

No.	Function
1	U _P
2	U _{mot}
3	GND
4	U _{nsoll}
5	DIR
6	FG

Speed Controller

PWM switching frequency	f_{PWM}	96	kHz
Efficiency	η	95	%
Max. continuous output current ¹⁾	I_{dauer}	0,8	A
Max. peak output current	I_{max}	1,6	A
Total standby current	I_{el}	0,020	A
Speed range:			
– standard » Hall sensors (digital)		500 ... 60 000 ²⁾	min ⁻¹
Scanning range		500	μ s

¹⁾ at 22°C ambient temperature and max. 60°C motor temperature at the nominal voltage of motor and electronics

²⁾ speed depend on motor operating voltage

Connection information

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 "U_{nsoll}":		
– analog input	input voltage input resistance set speed value	U _{in} = 0 ... 10V (max. U _P) R _{in} ≥ 8 kΩ per 1V » 1 000 min ⁻¹ U _{in} < 0,15V » motor stops U _{in} > 0,3V » motor starts
Connection 5 "DIR":		
– digital input	direction of rotation input resistance	to ground or level < 0,5V » counterclockwise open or level > 3V » clockwise (max. U _P) 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

Option

■ connector variants
(Option no. 4257)
AWG 28 / PVC ribbon cable with connector Picoblade

