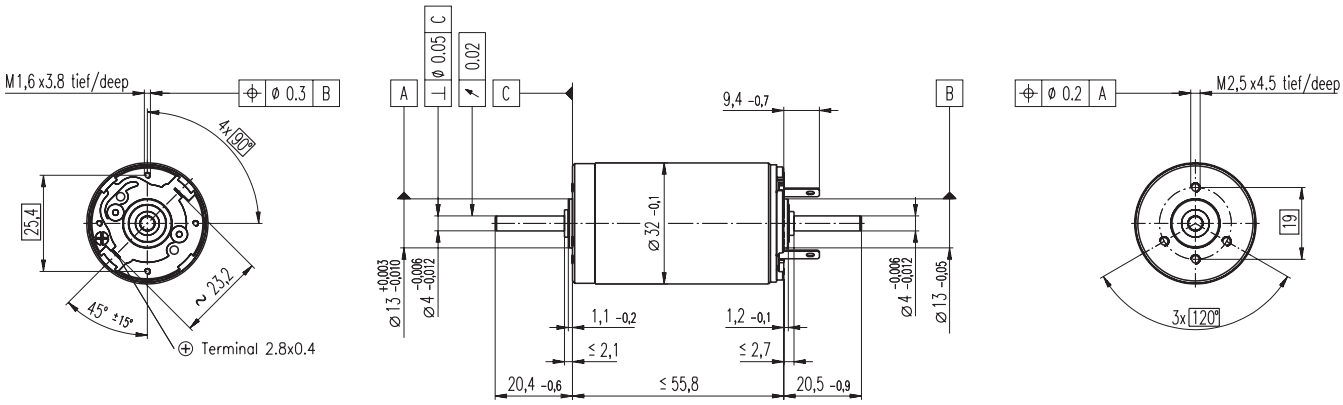
S 2332 ∅32 mm, Graphite Brushes, 15 Watt, CE approved



M 1:2

Stock program
Standard program
Special program (on request)

Order Number

2332. ... -51.236-200 (Insert winding number)

			Winding number	960	963	964	965	966	967	968	969	970	971	972	973
Motor Data															
	Values at nominal voltage														
1	Nominal voltage	Volt		6.0	9.0	12.0	12.0	12.0	18.0	24.0	30.0	36.0	42.0	48.0	48.0
2	No load speed	rpm		5810	5310	6650	5870	4880	5380	5750	6000	5710	5270	4860	3950
3	No load current	mA		110	63.9	65.0	54.6	42.4	32.1	26.3	22.3	17.3	13.3	10.4	7.96
4	Nominal speed	rpm		4560	3780	5040	4230	3250	3880	4280	4530	4250	3790	3370	2440
5	Nominal torque (max. continuous torque)	mNm		13.2	22.7	24.3	25.9	26.5	28.6	29.1	28.9	29.3	29.2	29.3	29.4
6	Nominal current (max. continuous current)	A		1.50	1.50	1.50	1.40	1.19	0.939	0.763	0.633	0.508	0.399	0.323	0.263
7	Stall torque	mNm		89.1	91.1	116	104	85.6	109	119	122	118	106	97.1	78.2
8	Starting current	A		9.45	5.79	6.87	5.42	3.72	3.46	3.02	2.59	1.97	1.41	1.04	0.682
9	Max. efficiency	%		73	77	79	79	78	81	82	82	82	81	81	80
	Characteristics														
10	Terminal resistance	Ω		0.635	1.56	1.75	2.21	3.22	5.21	7.94	11.6	18.2	29.8	46.1	70.3
11	Terminal inductance	mH		0.0883	0.246	0.283	0.363	0.526	0.985	1.54	2.22	3.53	5.64	8.65	13.1
12	Torque constant	mNm / A		9.43	15.7	16.9	19.1	23.0	31.5	39.3	47.2	59.6	75.3	93.3	115
13	Speed constant	rpm / V		1010	607	566	500	415	303	243	202	160	127	102	83.3
14	Speed / torque gradient	rpm / mNm		68.3	60.0	58.7	57.9	58.2	50.2	49.0	49.6	49.1	50.3	50.6	51.1
15	Mechanical time constant	ms		23.6	17.2	16.4	16.0	15.5	14.6	14.3	14.1	14.0	13.9	13.8	13.8
16	Rotor inertia	gcm²		33.0	27.4	26.7	26.4	25.5	27.9	27.8	27.2	27.1	26.4	26.1	25.9

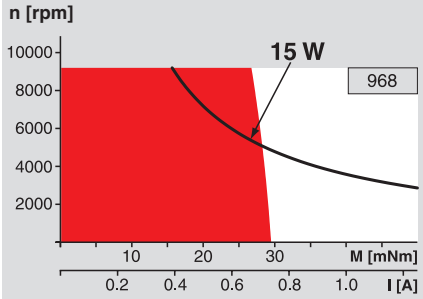
Specifications

	Thermal data	
17	Thermal resistance housing-ambient	12.5 K / W
18	Thermal resistance winding-housing	1.9 K / W
19	Thermal time constant winding	10.9 s
20	Thermal time constant motor	1440 s
21	Ambient temperature	-20 ... +100°C
22	Max. permissible winding temperature	+125°C
	Mechanical data (ball bearings)	
23	Max permissible speed	9200 rpm
24	Axialspiel	0.5 - 0.15 mm
25	Radial play	0.025 mm
26	Max. axial load (dynamic)	5.6 N
27	Max. force for press fits (static)	113 N
	(static, shaft supported)	1200 N
28	Max. radial loading, 5 mm from flange	28 N
	Other specifications	
29	Number of pole pairs	1
30	Number of commutator segments	13
31	Weight of motor	230 g

Values listed in the table are nominal.
Explanation of the figures on page 47.

Option
Sleeve bearings in place of ball bearings
Pigtails in place of terminals

Operating Range



Comments

Continuous operation
In observation of above listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient.
= Thermal limit.

Short term operation
The motor may be briefly overloaded (recurring).

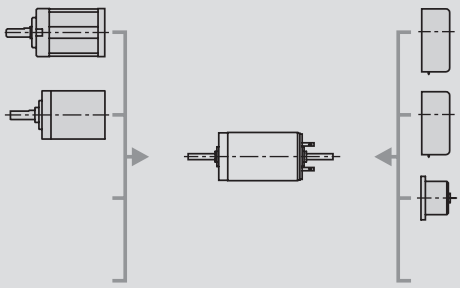
Assigned power rating

maxon Modular System

Overview on page 16 - 21

Planetary Gearhead
∅32 mm
0.4 - 2.0 Nm
Page 228

Planetary Gearhead
∅32 mm
0.75 - 4.5 Nm
Page 229

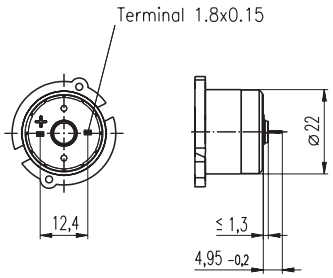


Encoder HEDS 5540
500 CPT,
3 channels
Page 255

Encoder HEDL 5540
500 CPT,
3 channels
Page 257

DC-Tacho DCT
∅22 mm
0.52 V
Page 263

DC-Tacho DCT 22, 0.52 Volt



Important Information

- Tacho with moving coil, maxon system.
- Tacho with precious metal commutation.
- To establish total inertia add motor and tacho inertias.
- With the output shaft turning CW as seen from the mounting surface, the tacho output voltage will be positive at the + terminal.
- A high impedance load is recommended at tacho terminals.
- The tacho current should be kept low.
- The indicated resonance frequency refers to the motor-tacho rotor system.

Stock program
Standard program
Special program (on request)

Order Number	118908	118909	118910
Type			
Shaft diameter (mm)	2	3	4

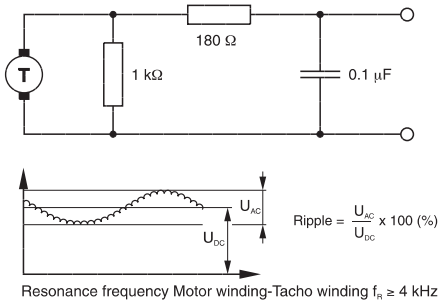
Combination

+ Motor	Page	+ Gearhead	Page	Overall length [mm] / ● see: + Gearhead		
RE 25, 10 W	76			76.8		
RE 25, 10 W	76	GP 26, 0.5 - 2.0 Nm	226	●		
RE 25, 10 W	76	GP 32, 0.4 - 2.0 Nm	228	●		
RE 25, 10 W	76	GP 32, 0.75 - 4.5 Nm	229	●		
RE 25, 10 W	76	GP 32, 1.0 - 6.0 Nm	231	●		
RE 25, 20 W	78			76.8		
RE 25, 20 W	78	GP 26, 0.5 - 2.0 Nm	226	●		
RE 25, 20 W	78	GP 32, 0.4 - 2.0 Nm	228	●		
RE 25, 20 W	78	GP 32, 0.75 - 4.5 Nm	229	●		
RE 25, 20 W	78	GP 32, 1.0 - 6.0 Nm	231	●		
RE 26, 18 W	79			79.8		
RE 26, 18 W	79	GP 26, 0.5 - 2.0 Nm	226	●		
RE 26, 18 W	79	GP 32, 0.4 - 2.0 Nm	228	●		
RE 26, 18 W	79	GP 32, 0.75 - 4.5 Nm	229	●		
RE 26, 18 W	79	GP 32, 1.0 - 6.0 Nm	231	●		
RE 35, 90 W	81				89.0	
RE 35, 90 W	81	GP 32, 0.75 - 4.5 Nm	230		●	
RE 35, 90 W	81	GP 32, 1.0 - 6.0 Nm	231		●	
RE 35, 90 W	81	GP 32, 8 Nm	233		●	
RE 35, 90 W	81	GP 42, 3.0 - 15 Nm	235		●	
RE 36, 70 W	82				89.3	
RE 36, 70 W	82	GP 32, 0.4 - 2.0 Nm	228		●	
RE 36, 70 W	82	GP 32, 0.75 - 4.5 Nm	230		●	
RE 36, 70 W	82	GP 32, 1.0 - 6.0 Nm	231		●	
RE 36, 70 W	82	GP 42, 3.0 - 15 Nm	235		●	

Technical Data

Output voltage per 1000 rpm	0.52 V	Max. recommended current	10 mA
Terminal resistance tacho	56.6 Ω	Tolerance of the output voltage	± 15 %
Typical peak to peak ripple	≤ 6 %	Rotor inertia (tacho only)	< 3 gcm²
Ripple frequency per turn	14	Resonance frequency with motors on p. 76 - 79	> 2 kHz
Linearity between 500 and 5000 rpm unloaded	± 0.2 %	with motors on pages 86, 88	> 3 kHz
Linearity with 10 kΩ load resistance	± 0.7 %	with motors on pages 81, 82	> 4.5 kHz
Reversal error	± 0.1 %	Temperature range	-20 ... +65°C
Temperature coefficient of EMF (magnet)	-0.02 % /°C		
Temperature coefficient of coil resistance	+0.4 % /°C	Option: Pigtails in place of solder terminals.	

Connection example



Resonance frequency Motor winding-Tacho winding $f_R \geq 4$ kHz