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- EQUIPMENT DEMOS
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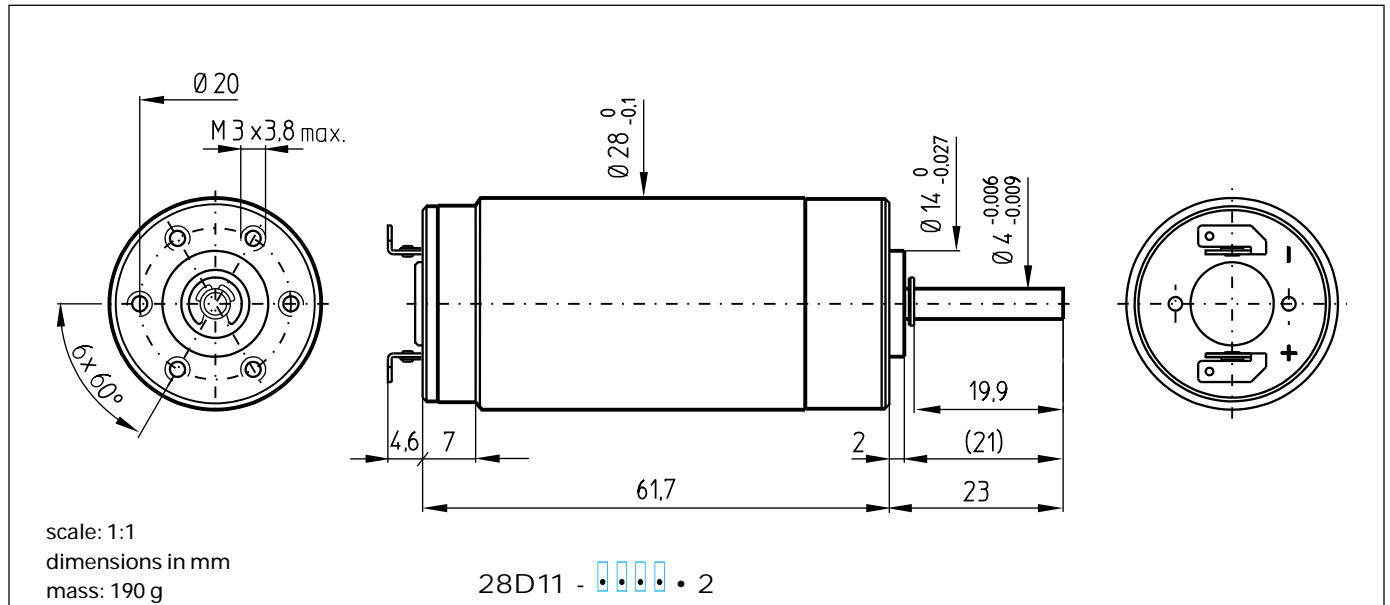
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Winding types			28D11-...•2				
				-222P	-219P	-222E	-219E
Measured values							
1	Measuring voltage	V		9	12	18	24
2	No-load speed	rpm		5300	5800	5300	6000
3	Stall torque	mNm (oz-in)		97 (13.75)	94 (13.27)	101 (14.26)	95 (13.47)
4	Average no-load current	mA		50	40	25	20
5	Typical starting voltage	V		0.1	0.15	0.2	0.3
Max. recommended values							
6	Max. continuous current	A		1.5	1.5	1.17	0.9
7	Max. continuous torque	mNm (oz-in)		23.5 (3.32)	28.5 (4.04)	37.1 (5.26)	33.7 (4.76)
8	Max. angular acceleration	10 ³ rad/s ²		46	48	47	48
Intrinsic parameters							
9	Back-EMF constant	V/1000 rpm		1.70	2.05	3.40	3.95
10	Torque constant	mNm/A (oz-in/A)		16.2 (2.29)	19.5 (2.76)	32.5 (4.60)	37.7 (5.33)
11	Terminal resistance	ohm		1.5	2.5	5.8	9.5
12	Motor regulation R/k ²	10 ³ /Nms		5.7	6.6	5.5	6.7
13	Rotor inductance	mH		0.2	0.3	0.75	1.1
14	Rotor inertia	kgm ² · 10 ⁻⁷		19.8	17.6	19.8	17.6
15	Mechanical time constant	ms		11	12	11	12
Thermal parameters							
16	Thermal time constant	rotor	s	20	18	20	18
17		stator	s	630	630	630	630
18	Thermal resistance	rotor-body	°C/W	4	4	4	4
19		body-ambient	°C/W	8	8	8	8

Preferred Standard On request

This motor series is also available in the following combinations:

- with DC tachometer (motor-tachometer unit 28GD11), see p. 41
- with reduction gearbox as shown below:

28D11

-222P

-219P

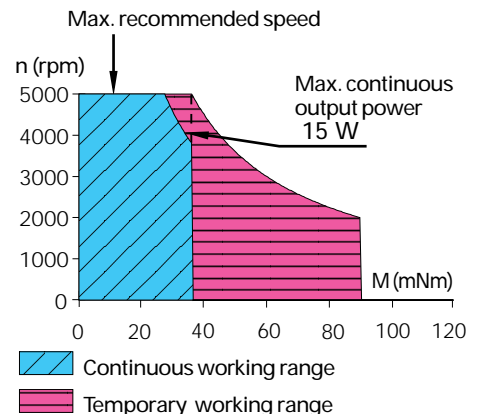
-222E

-219E

see page

R32

- Motor fitted with sleeve bearings (ball bearings optional)
- Viscous damping constant: 1 x 10⁻⁶ Nms
- Max. rated coil temperature: 100 °C (210 °F)
- Recom. ambient temperature range: -30 °C to +65 °C (-22 °F to +150 °F)
- Max. axial static force for press-fit: 500 N
- End play: ≤ 150 μm
- Radial play: ≤ 25 μm
- Shaft runout: ≤ 10 μm
- Max. side load at 5 mm from mounting face: sleeve bearings 8 N, ball bearings 10 N





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