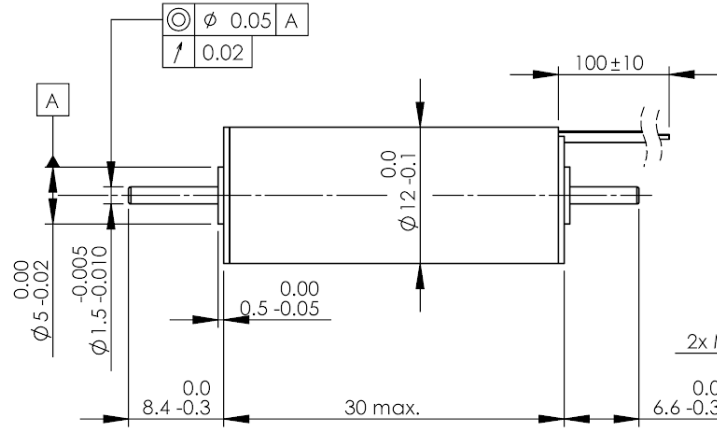
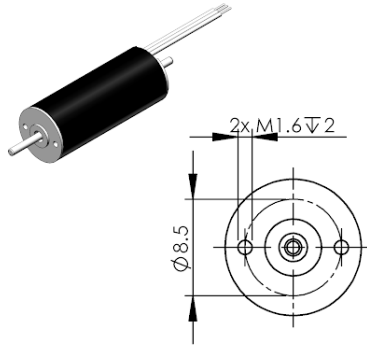


712-401 Brushless motor Slotless (inrunner)

Ø12 x 30mm / with dual shafts / sensorless



DIMENSIONS ARE IN mm
SURFACE FINISH: N7
TOLERANCES:
LINEAR: ±0.2
ANGULAR: ±1°

PIN	Description
1	Phase 1
2	Phase 2
3	Phase 3

Design and accessories	Units	Samples available	Manufacturable on request		Custom design
		712-401	712-202	712-300	712-XXX

A	Availability		Stocked design	8 weeks	8 weeks	8 weeks
B	Motor Type		Brushless	Brushless	Brushless	Brushless
C	Commutation		Sensorless	Sensored / sensorless	Sensored / sensorless	Sensored / sensorless
D	Shafts		Dual	Dual	Dual	Dual / single
E	Encoder		Not fitted	Not fitted	Not fitted	Magnetic / optical
F	Gearbox		Not fitted	Not fitted	Not fitted	Range 1:4 ~ 1:3560
G	Connections		Tinned	Tinned	Tinned	To requirement
H	Cable		100mm x AWG28	100mm x AWG28	100mm x AWG28	To requirement
I	Housing Material		Aluminium alloy	Aluminium alloy	Aluminium alloy	Aluminium alloy
J	Body diameter	mm	12	12	12	
K	Body length	mm	30	30	30	
L	Weight	g	16.3	16.3	16.3	

Performance characteristics

1	Nominal voltage	v	12	6	9	This motor can be wound for nominal voltages in a 6 ~ 12V range. Nominal load, no load, and stall points, and efficiency will depend on the winding design. Please contact support@pmdri.com
2	No load speed	rpm	24 675	25070	24780	
3	No load current	A	0.11	0.20	0.15	
4	Nominal speed	rpm	19 990	20150	20170	
5	Nominal torque	mNm	3.13	3.21	3.05	
6	Nominal current	A	0.70	1.45	0.91	
7	Stall torque	mNm	17.02	16.65	16.89	
8	Stall current	A	3.77	7.5	5.03	
9	Maximum efficiency	%	73.80	74.6	73.4	

Winding specific characteristics

10	Terminal resistance	Ω	3.18	0.80	1.79	Winding dependent
11	Terminal inductance	mH	0.08	0.02	0.04	
12	Torque constant (Kt)	mNm/A	4.51	2.22	3.36	
13	Speed constant (Kv)	rpm/V	2 120	4 290	2 840	
14	Speed / torque gradient	rpm/mNm	1 490	1 530	1 512	
15	Mechanical time constant	ms	5.0	5.1	5.1	
16	Rotor inertia	mNm ²	0.032	0.032	0.032	

Motor body characteristics

17	Thermal resistance housing-ambient	°C/W	28.4
18	Thermal resistance winding-housing	°C/W	7.1
19	Thermal time constant winding	s	4
20	Thermal time constant motor	s	240
21	Ambient temperature	min °C	-30
		max °C	+100
22	Max. permissible winding temperature	°C	+125
23	Max. permissible rotor speed	rpm	50 000
24	Axial play at axial load	< 0.8N mm	0.0
		> 0.8N mm	0.3 max
25	Radial play	Preloaded	
26	Max. axial load (dynamic)	N	0.3
27	Max. force for press fits (static) with shaft supported	N	11.0
28	Max. radial loading (5mm from flange)	N	4.3
29	Number of pole pairs		1
30	Number of winding phases		3

Operating range (based on ambient 25°C)

