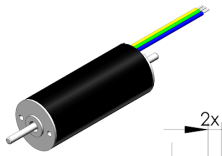
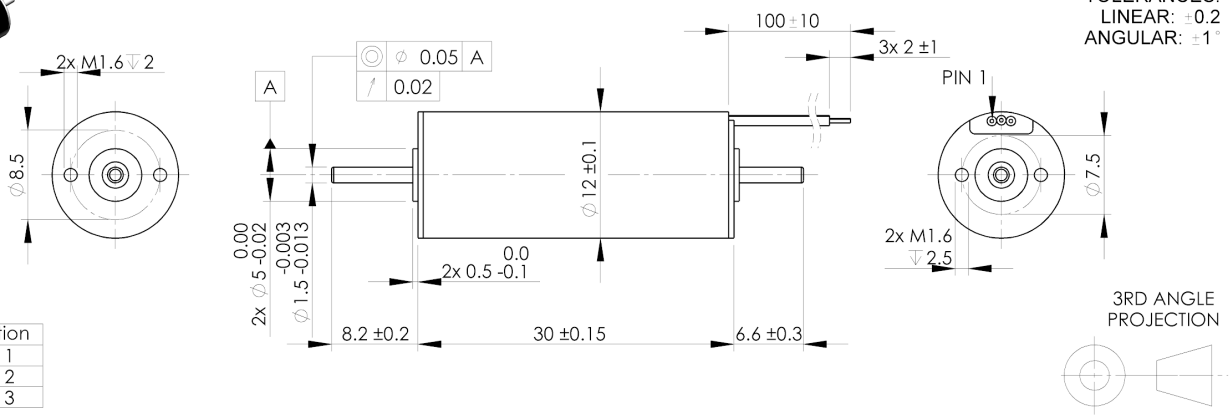
712-401 Brushless motor Slotless (inrunner)

Ø12 x 30mm / with dual shafts / sensorless / fit for gearbox and encoder

PRECISION MICRODRIVES ™





PIN	Description
1	Phase 1
2	Phase 2
3	Phase 3

			Samples available	Manufacturable on request		Custom design
Design and accessories		**Units**	**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 ~ 1:6016
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	24 240	22 810	24 800	
3	No load current	A	0.10	0.19	0.15	
4	Nominal speed	rpm	20 170	18 910	20 520	
5	Nominal torque	mNm	3.13	2.80	2.83	
6	Nominal current	A	0.78	1.34	0.99	
7	Stall torque	mNm	19.09	16.84	16.91	
8	Stall current	A	4.14	6.90	5.03	
9	Maximum efficiency	%	71.3	69.4	68.4	
Winding specific characteristics						
10	Terminal resistance	Ω	2.90	0.87	1.79	Winding dependent
11	Terminal inductance	mH	0.09	0.02	0.04	
12	Torque constant (Kt)	mNm/A	4.61	2.44	3.36	
13	Speed constant (Kv)	rpm/V	2 070	3 910	2 840	
14	Speed / torque gradient	rpm/mNm	1 301	1 393	1 512	
15	Mechanical time constant	ms	4.4	4.7	5.1	
16	Rotor inertia	g·cm²	0.32	0.32	0.32	

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. permissable winding temperature		°C	+125
23	Max. permissable rotor speed		rpm	50 000
24	Axial play at axial load		mm	0.6 max
25	Radial play			Preloaded
26	Max. axial load (dynamic)		N	0.3
27	Max. force for press fits (static)		N	11.0
	with shaft supported		N	200
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)

712-401