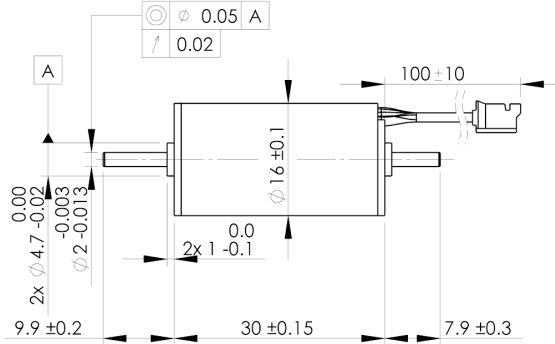
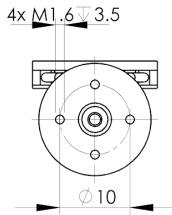
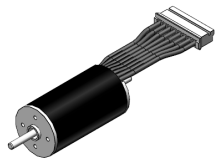
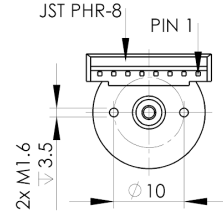


716-402 Brushless motor Slotless (inrunner)

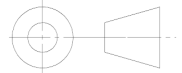
Ø16 x 30mm / with dual shafts / with sensors / fit for gearbox and encoder



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



3RD ANGLE PROJECTION



PIN	Description
1	3-18 VDC
2	Hall a
3	Hall b
4	Hall c
5	GND
6	Phase 1
7	Phase 2
8	Phase 3

Design and accessories	Units	Samples available	Manufacturable on request	Custom design
		716-402	716-600	716-XXX
A Availability		Stocked design	8 weeks	8 weeks
B Motor Type		Brushless	Brushless	Brushless
C Commutation		Digital Hall	Digital Hall	Sensored / sensorless
D Shafts		Dual	Dual	Dual / single
E Encoder		Not fitted	Not fitted	Magnetic / optical
F Gearbox		Not fitted	Not fitted	Range 1:4 ~ 1:3373
G Connections		8-pinned JST PHR-8	8-pinned JST PHR-8	To requirement
H Cable		100mm x AWG26	100mm x AWG26	To requirement
I Housing Material		Aluminium alloy	Aluminium alloy	Aluminium alloy
J Body diameter	mm	16	16	
K Body length	mm	30	30	
L Weight	g	25.0	25.0	

Performance characteristics				This motor can be wound for nominal voltages in a 12 ~ 24V range. Nominal load, no load, and stall points, and efficiency will depend on the winding design. Please contact support@pmdri.com	
1	Nominal voltage	v	12		18
2	No load speed	rpm	22 680		23 470
3	No load current	A	0.13		0.11
4	Nominal speed	rpm	17 070		17 270
5	Nominal torque	mNm	4.80		4.70
6	Nominal current	A	1.11		0.78
7	Stall torque	mNm	20.06		18.59
8	Stall current	A	4.10		2.65
9	Maximum efficiency	%	67.9		63.4

Winding specific characteristics				Winding dependent	
10	Terminal resistance	Ω	2.93		6.80
11	Terminal inductance	mH	0.11		0.23
12	Torque constant (Kt)	mNm/A	4.90		7.02
13	Speed constant (Kv)	rpm/V	1 950		1 360
14	Speed / torque gradient	rpm/mNm	1 167		1 317
15	Mechanical time constant	ms	5.9		6.6
16	Rotor inertia	g·cm ²	0.48	0.48	

Motor body characteristics			Operating range (based on ambient 25°C)	
17	Thermal resistance housing-ambient	°C/W	20.0	716-402
18	Thermal resistance winding-housing	°C/W	8.8	
19	Thermal time constant winding	s	8	
20	Thermal time constant motor	s	236	
21	Ambient temperature	min °C	-30	
		max °C	+100	
22	Max. permissible winding temperature	°C	+150	
23	Max. permissible rotor speed	rpm	30 000	
24	Axial play at axial load	mm	0.3 max	
25	Radial play		Preloaded	
26	Max. axial load (dynamic)	N	1.3	
27	Max. force for press fits (static)	N	15.0	
	with shaft supported	N	350	
28	Max. radial loading (5mm from flange)	N	5.0	
29	Number of pole pairs		1	
30	Number of winding phases		3	

