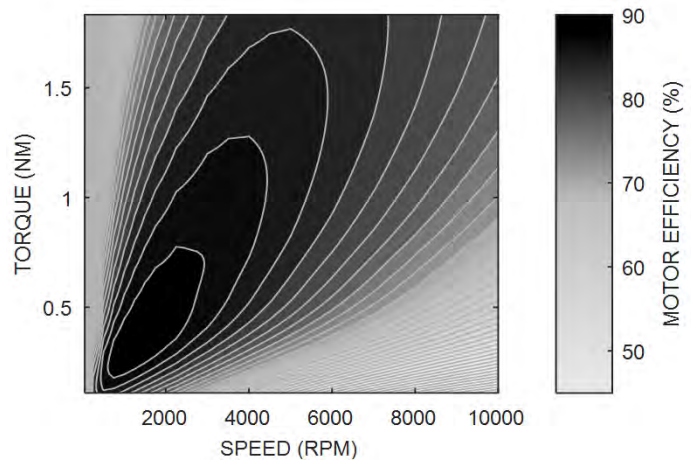
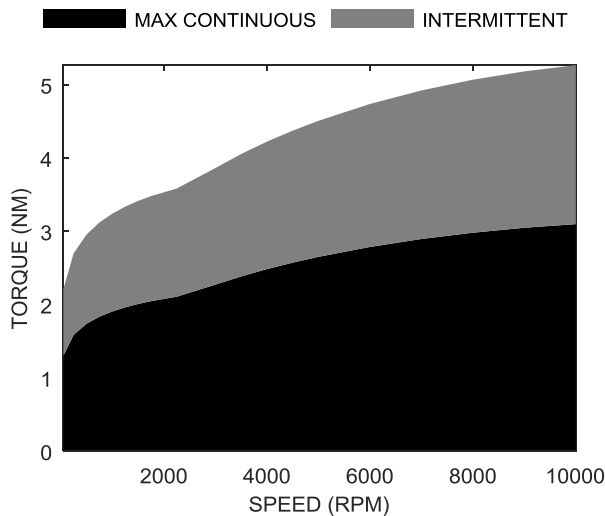


TG713X

BRUSHLESS PERMANENT MAGNET MACHINE

PERFORMANCE	
Max continuous torque	Nm 2.98
Max permissible speed	RPM 13700
Max continuous shaft power	kW 2.50
Max efficiency	% 90%
Max stator temperature	C 120
Peak Torque - 1s (3s)	Nm 10.88 (6.85)

REGION OF OPERATION	EFFICIENCY MAP
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MODEL SPECIFICATIONS		TG7130	TG7131	TG7132	TG7133	SYM
Winding configuration		Series Y	Series Δ	Parallel Y	Parallel Δ	I
Max continuous current	Arms	27.4	41.1	54.8	82.2	I
Voltage constant	Vpkl-I/(rad/s)	0.105	0.061	0.053	0.030	Ke
Voltage constant	Vpkl-I/kRPM	11.0	6.4	5.5	3.2	Ke
Torque constant	Nm/Arms	0.129	0.086	0.064	0.043	Kt
Motor Constant	Nm/√W	0.217	0.217	0.217	0.217	Km
Terminal resistance	Ω	0.236	0.079	0.059	0.020	R
Terminal inductance	μH	20.5	6.8	5.1	1.7	L
Motor drive voltage	Vbus	(RPM*Kv*π/30+Torque/Kt*R)*1.2				
Generator terminal voltage	Vrms	(RPM*Kv*π/30-Torque/Kt*R)/Sqrt(2)				

NOTES

- All ThinGap machines can operate as a motor or generator and can be purchased with or without frame
- When operated as a motor best performance is obtained with high frequency sinusoidal drives
- 70μH per phase of external inductance is recommended when operated with conventional <40kHz drives
- Contact ThinGap for drive compatibility and applications engineering

MODEL NUMBER

Machine series TG71 X X - X010
 Rotor configuration ↑ ↑ ↑ ↑
 Winding configuration ↑ ↑ ↑ ↑
 Mounting option (M-Framed, P-Frameless Part Set) ↑ ↑ ↑ ↑

EXAMPLE: TG7132 - P010

TG713X

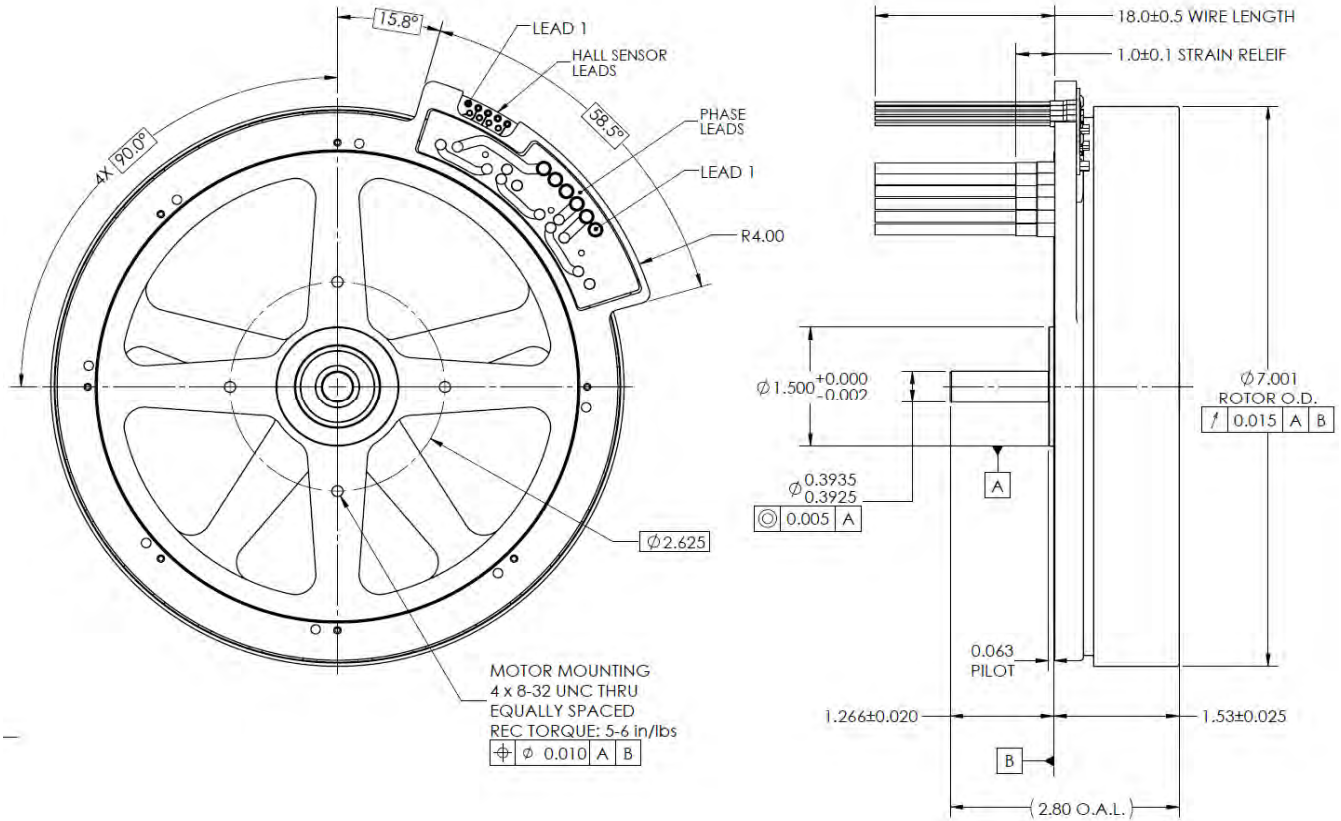
BRUSHLESS PERMANENT MAGNET MACHINE

MECHANICAL SPECIFICATIONS

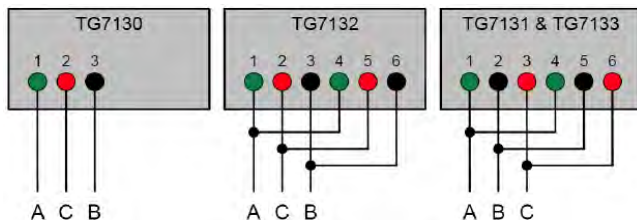
Max outer diameter	in (mm)	7.003 (178)
Through hole diameter	in (mm)	6.341 (161)
Total axial height	in (mm)	1.539 (39)
Rotor mass	lbs (kg)	0.854 (0.387)
Stator mass	lbs (kg)	0.504 (0.228)
Partset mass (rotor & stator)	lbs (kg)	1.358 (0.616)
Total motor assembly mass	lbs (kg)	2.6 (1.179)
Rotor Inertia	lbm-ft ² (kg-m ²)	6.69E-2 (2.82E-3)

MACHINE ASSEMBLY DRAWING

SHOWN WITH M010 MOUNTING OPTION



POWER CONNECTION



MOTOR EXCITATION

PHASE	EXCITATION STEP						
	1	2	3	4	5	6	1
A	+	-	-	-	+	+	
B		+	+	-	-		
C	-	-	+	+	-		

Hall Sensor Lead Identification

Lead #	Color	Description
1	YEL	V+
2	GRY	COM -
3	BRN	HALL A
4	BLU	HALL B
5	ORN	HALL C