

Z20000 Series Can-Stack Rotary Motors

Economically designed rotary motors

Sleeve or Ball Bearing

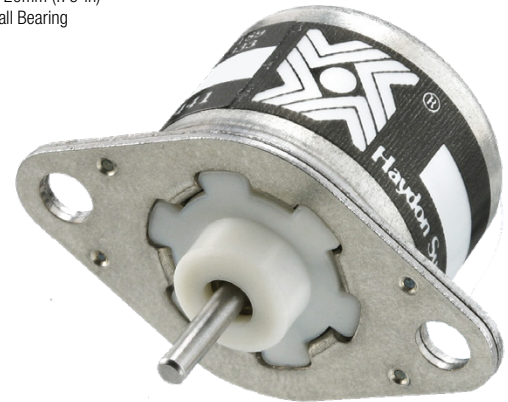
Specifications

Ø 20 mm (3/4- .79 inch) Z Series Rotary Motors		
Wiring	Bipolar	
Part No. (Sleeve)	Z20540-05*	Z20540-12*
Step Angle	15°	
Winding Voltage	5 VDC	12 VDC
Current (RMS)/phase	250 mA	100 mA
Resistance/phase	20 Ω	118 Ω
Inductance/phase	5.5 mH	32 mH
Hold Torque	.65 oz-in. (.46 Ncm)	
Detent Torque	.17 oz-in. (.12 Ncm)	
Power Consumption	2.5 W	
Rotor Inertia	1.13 gcm ²	
Weight	.80 oz. (22.7 g)	
Insulation Resistance	20 MΩ	
Insulation Class	Class B	

*For Ball Bearings, add "-999" to the end of this number.



Ø 20mm (.79-in)
Ball Bearing



Ø 20mm (.79-in)
Sleeve Bearing

Identifying the Rotary Motor Number Codes when Ordering

Z	20	5	4	0	05	001
Prefix	Series Number Designation	Style	Coils	Code ID Resolution Travel/Step	Voltage	Suffix
Z = Economy Series	20 = 20000 (Series numbers represent approximate diameters of motor body)	5 = 15°	4 = Bipolar	0 = Rotary Motor	05 = 5 VDC 12 = 12 VDC Custom V available	-999 = Ball bearings -001 = Ball bearings for Z Series Rotary Stepper Motors -000 = Sleeve bearings -XXX = Proprietary suffix assigned to a specific customer application. Identifier can apply to either a standard or custom part.

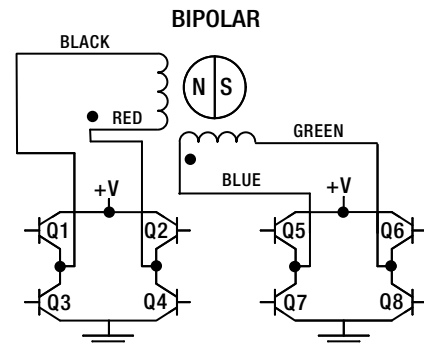
NOTE: Dashes must be included in Part Number (-) as shown above. For assistance call our Engineering Team at 203 756 7441.

Rotary Motors: Stepping Sequence

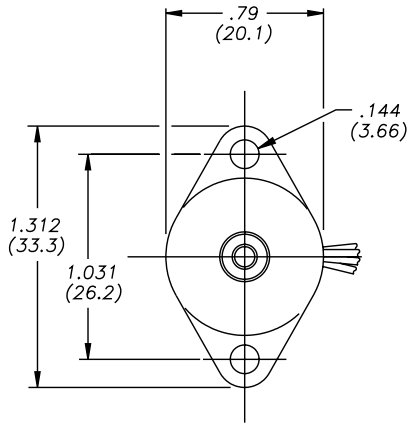
Bipolar	Q2-Q3	Q1-Q4	Q6-Q7	Q5-Q8
Step				
1	ON	OFF	ON	OFF
2	OFF	ON	ON	OFF
3	OFF	ON	OFF	ON
4	ON	OFF	OFF	ON
1	ON	OFF	ON	OFF

Note: Half stepping is accomplished by inserting an off state between transitioning phases. Shaft rotation as viewed from the output shaft.

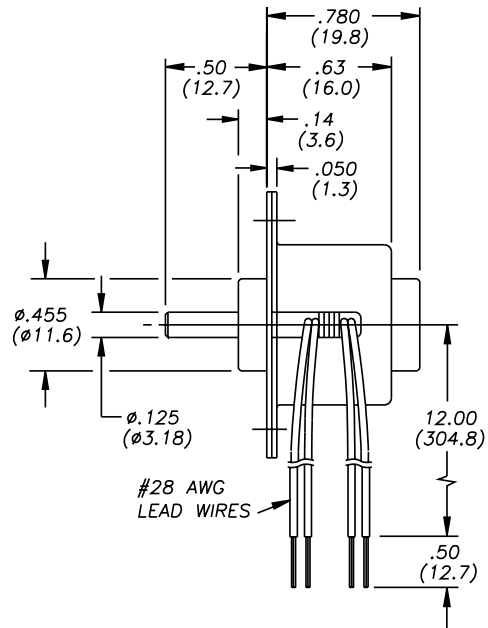
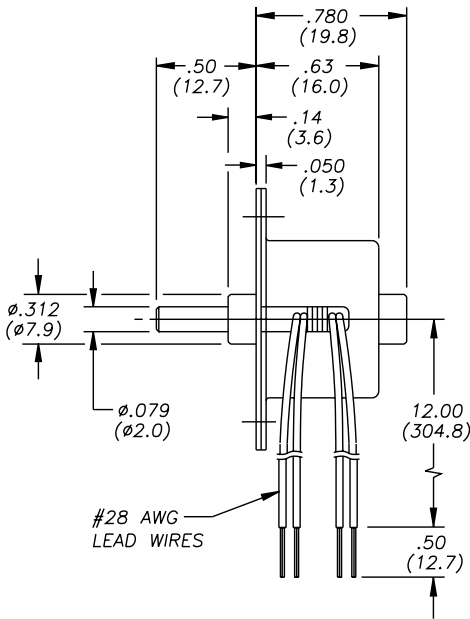
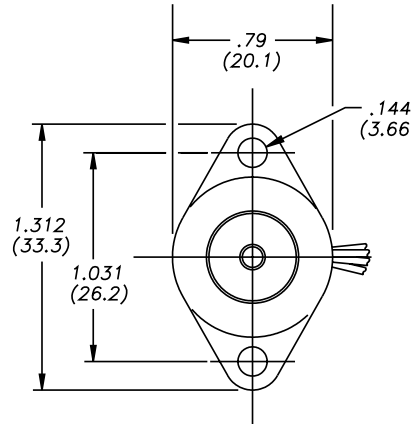
Rotary Motors: Wiring



Sleeve Bearing



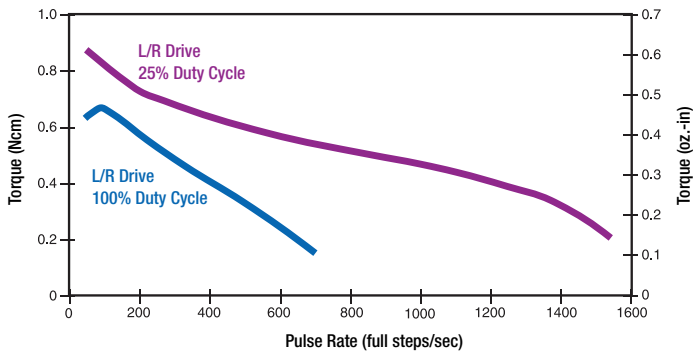
Ball Bearing



Z20000 Series Can-Stack Rotary Motors • Performance Curves

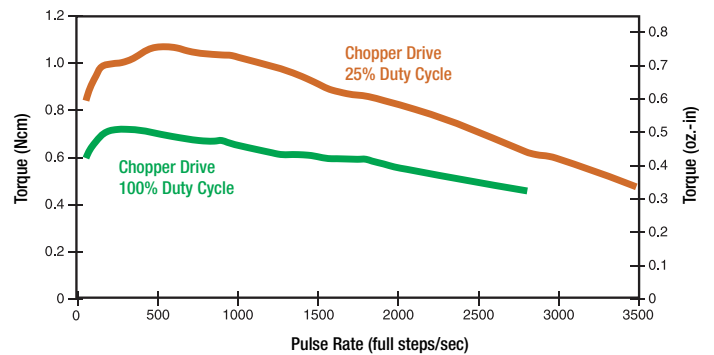
TORQUE vs. PULSE RATE

– L/R Drive – Bipolar – 15% Step Angle



TORQUE vs. PULSE RATE

– Chopper Drive – Bipolar – 15% Step Angle



25% duty cycle is obtained by a special winding or running a standard motor at double the rated voltage.

NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.