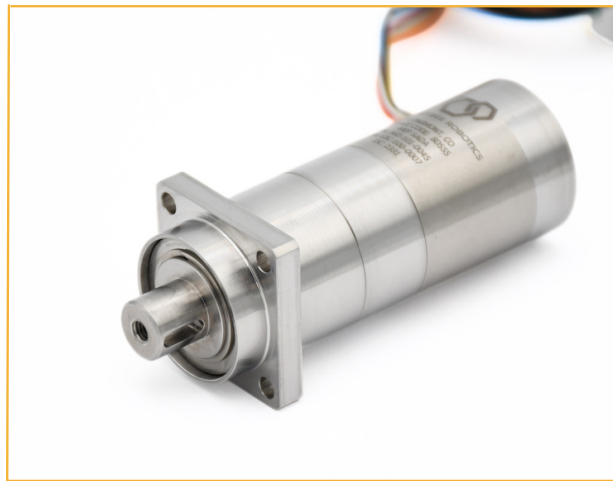


GEARED STEPPER MOTORS

Stepper motors are popular for applications requiring high torque density, simple control, and unpowered holding torque. This integrated actuator solution incorporates low-backlash planetary gearing and an output position sensor. Our qualified motor and gearing configurations easily integrate with standard interfaces to provide a high-performance turnkey solution that minimizes cost and lead times. Honeybee can accommodate a broader range of performance requirements through custom configurations.



HONEYBEE ROBOTICS

[SUBMIT AN INQUIRY](#)

HONEYBEE ROBOTICS

ACTUATORS & DAMPERS



GEARED STEPPER MOTORS

RELEASE DATE: 2024-04-10

MOTOR TYPE		C-SIZE STEPPER 2-PHASE SIMPLEX, 36:1	C-SIZE STEPPER 2-PHASE REDUNDANT, 36:1	C-SIZE STEPPER 3-PHASE SIMPLEX, 36:1
PART NUMBER		560-101-0052	560-101-0051	560-101-0050
MECHANICAL PARAMETERS		UNITS		
Frame Size	-	C	C	C
Axial Length	inches [mm]	3.0 [76.2]	3.28 [83.31]	3.26 [82.85]
Maximum OD ⁶	inches [mm]	1.0 [25.4]	1.0 [25.4]	1.0 [25.4]
Mass	lbm [kg]	0.45 [.21]	0.45 [.21]	0.45 [.21]
Rotor Inertia	oz-in-sec ² x10 ⁻³ [g-cm ²]	0.038 [2.71]	0.038 [2.71]	0.038 [2.71]
Operating Temperature Range	°C	-60 TO +200	-60 TO +200	-60 TO +200
MOTOR PARAMETERS		UNITS		
Drive Type	-	Bipolar	Bipolar	6 Step or 2 Legs Tied
Number of Phases	-	2	2	3
Number of Pole Pairs	-	3	3	4
Redundancy	-	Simplex	Redundant	Simplex
Full Step Size ⁵	degrees/pulse [rad/pulse]	0.83 [0.014]	0.83 [0.014]	0.42 [.0073]
No Load Response Rate ^{1,2,5}	pulses/sec	326	299	559
	degrees/sec [rad/s]	271 [4.72]	250 [4.36]	233 [4.06]
Torque at Low Pulse Rate ^{1,5}	lbf-in [N·m]	4.05 [0.45]	2.38 [0.27]	8.96 [1.01]
Powered Holding Torque ^{1,5}	lbf-in [N·m]	5.73 [0.65]	4.75 [0.71]	12.67 [1.43]
Unpowered Holding Torque ⁵	lbf-in [N·m]	1.2 [0.135]	1.2 [0.135]	1.0 [0.113]
Resistance ³	Ohms	144 - 176	207 - 253	94 - 116
Inductance ³	mH	42	30	14
Maximum Winding Temperature	°C	200	200	200
GEARBOX PARAMETERS		UNITS		
Gearbox Type	-	Planetary	Planetary	Planetary
Gear Reduction	-	36:1	36:1	36:1
Number of Stages	-	2	2	2
Typical Mechanical Efficiency ⁴	%	81%	81%	81%
Typical Backlash	°	1°	1°	1°

1 - Assuming 28 VDC bus voltage at 22°C, full step mode
 2 - Assuming 1:1 inertia factor (driven inertia/rotor inertia). Contact Honeybee Robotics for inertia factored response rate
 3 - Line to Line for 3-phase, per-phase for 2-phase
 4 - Total efficiency of both stages.
 5 - At the actuator output (motor + gearbox)
 6 - Mounting flange not included. See ICD for details.