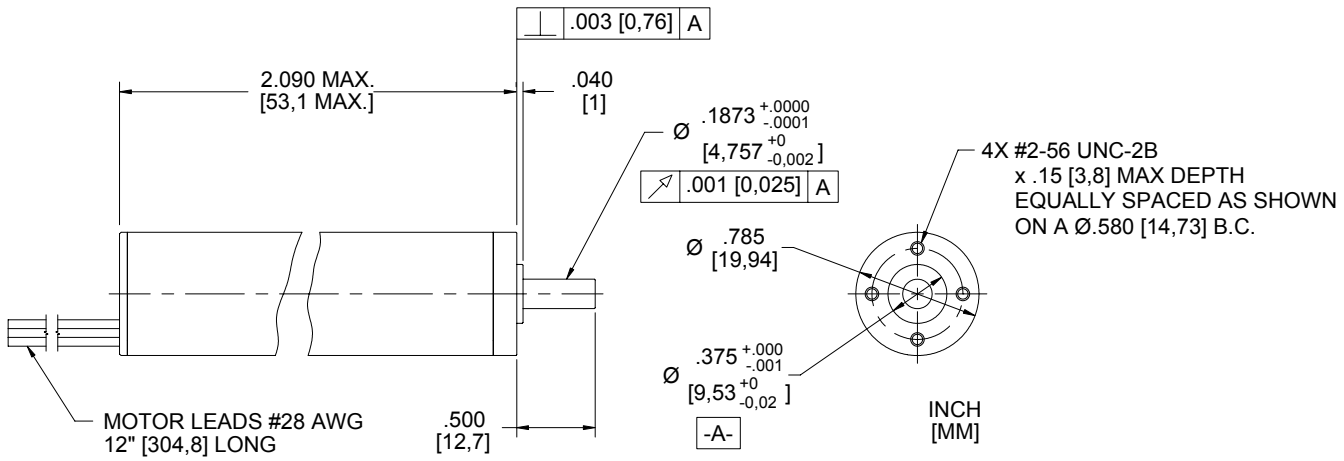
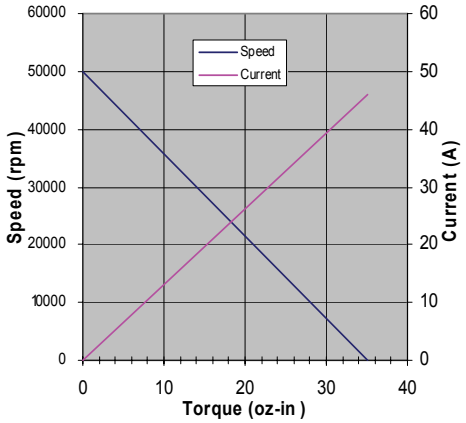
ϕ0.8” (ϕ20mm) SERIES SLOTLESS BLDC MOTOR



Motor Data	Symbol	Units	Part Number Designation	
			BI-08-075-0.56	BI-08-075-1.1
Supply Voltage (Reference)	V_s	V	28	28
Continuous Torque[3]	T_c	oz-in	1.8	2.1
		Ncm	1.3	1.5
Speed @ Cont. Torque	S_c	rpm	47500	24265
Current @ Cont. Torque	I_c	A	2.5	1.5
Continuous Output Power[3]	$P_{o,c}$	W	63	38
Motor Constant	K_M	oz-in/√W	0.98	1.09
		Ncm/√W	0.69	0.77
Torque Constant	K_T	oz-in/A	0.76	1.42
		Ncm/A	0.53	1.00
Voltage Constant	K_E	V/krpm	0.56	1.05
		V s/rad	0.005	0.010
Terminal Resistance	R_{mt}	Ω	0.6	1.71
Inductance	L	mH	0.03	0.10
No-Load Current	I_{nl}	A	0.10	0.07
No-Load Speed	S_{nl}	rpm	50000	26665
Peak Current (Stall)[2]	I_{pk}	A	46	16
Peak Torque (Stall)[2]	T_{pk}	oz-in	35	23
		Ncm	24.7	16.2
Electrical Time Constant	τ_e	ms	0.050	0.058
Mechanical Time Constant	τ_m	ms	4.4	3.6
Thermal Resistance[3]	R_{th}	°C/W	13	13
Max. Winding Temperature	θ_{max}	°C	105	105
Rotor Inertia	J_r	oz-in-sec^2	$3.0x10^{-5}$	$3.0x10^{-5}$
		kg m^2	$2.1x10^{-7}$	$2.1x10^{-7}$
Motor Weight (Mass)	w_M	oz	2.8	2.8
		g	79	79

Performance (BI-08-075-0.56)



Standard Features

- Shielded Ball Bearings
- 4-Pole Rotor
- Neodymium Magnets
- 3-Phase Stator
- Hall Sensors
- Stainless Construction

Complementary Products

- Planetary Gearbox
- 48134 Controller
- Optical Encoder
- 48140 Controller

Connection Chart	
Color/Pin	Function
Black	Motor ϕC
Violet	Vcc
Blue	Sensor 3
Green	Sensor 2
Yellow	Sensor 1
Orange	Ground
Red	Motor ϕA
White	Motor ϕB
120° Electrical Spacing	

Notes:

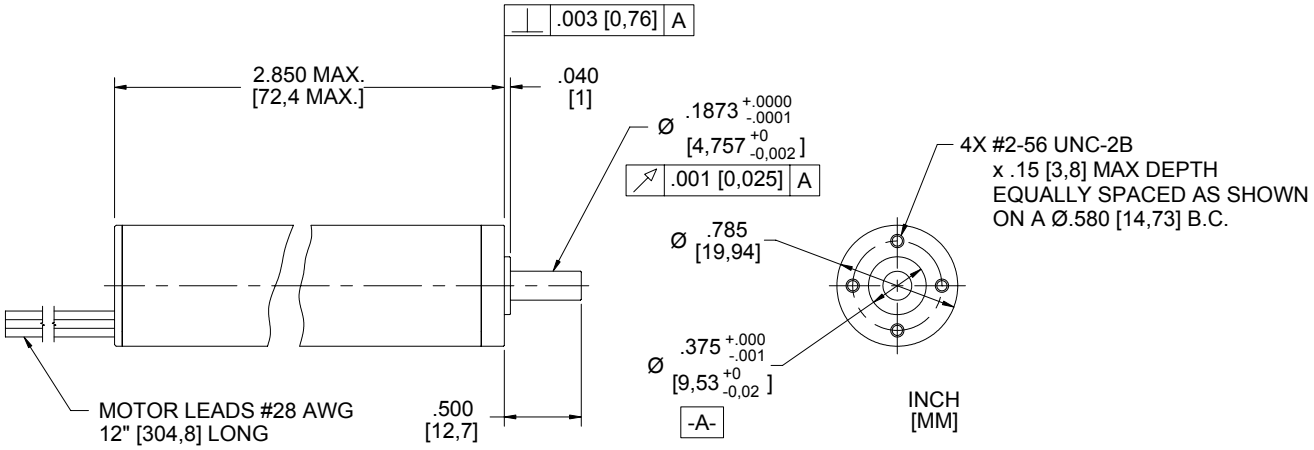
[1] All values specified at 25°C ambient temperature and without heat sink.

[2] Peak values are theoretical and supplied for reference only.

[3] Recorded at max. winding temperature at 25°C ambient, mounted to a 5”x5”x0.25” heatsink.

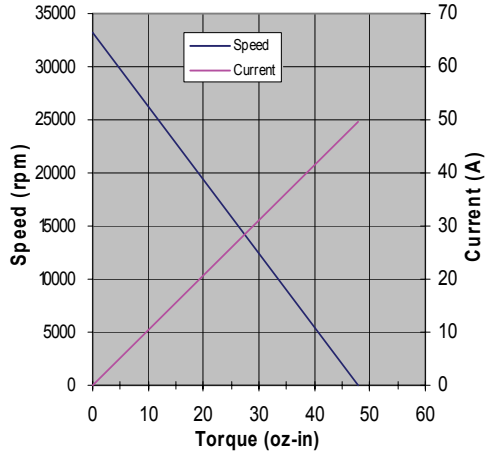
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www.ametektip.com

ϕ0.8” (ϕ20mm) SERIES SLOTLESS BLDC MOTOR



Motor Data	Symbol	Units	Part Number Designation	
			BI-08-150-0.72	BI-08-150-2.00
Supply Voltage (Reference)	V_s	V	24	28
Continuous Torque[3]	T_c	oz-in	3.4	4.3
		Ncm	2.4	3.0
Speed @ Cont. Torque	S_c	rpm	30950	9720
Current @ Cont. Torque	I_c	A	3.6	1.7
Continuous Output Power[3]	$P_{o,c}$	W	77	31
Motor Constant	K_M	oz-in/√W	1.4	1.6
		Ncm/√W	0.99	1.13
Torque Constant	K_T	oz-in/A	0.97	2.70
		Ncm/A	0.69	1.91
Voltage Constant	K_E	V/krpm	0.72	2.00
		V s/rad	0.007	0.019
Terminal Resistance	R_{mt}	Ω	0.483	2.85
Inductance	L	mH	0.034	0.223
No-Load Current	I_{nl}	A	0.10	0.07
No-Load Speed	S_{nl}	rpm	33300	12000
Peak Current (Stall)[2]	I_{pk}	A	49.5	8.5
Peak Torque (Stall)[2]	T_{pk}	oz-in	34	16
		Ncm	33.4	4.3
Electrical Time Constant	τ_e	ms	0.070	0.078
Mechanical Time Constant	τ_m	ms	4.3	3.3
Thermal Resistance[3]	R_{th}	°C/W	9.0	9.0
Max. Winding Temperature	θ_{max}	°C	105	105
Rotor Inertia	J_r	oz-in-sec^2	$5.9x10^{-5}$	$5.9x10^{-5}$
		kg m^2	$4.2x10^{-7}$	$4.2x10^{-7}$
Motor Weight (Mass)	w_M	oz	3.8	3.8
		g	108	108

Performance (BI-08-150-0.72)



Standard Features

- Shielded Ball Bearings
- 4-Pole Rotor
- Neodymium Magnets
- 3-Phase Stator
- Hall Sensors
- Stainless Construction

Complementary Products

- Planetary Gearbox
- 48134 Controller
- Optical Encoder
- 48140 Controller

Connection Chart	
Color/Pin	Function
Black	Motor ϕC
Violet	Vcc
Blue	Sensor 3
Green	Sensor 2
Yellow	Sensor 1
Orange	Ground
Red	Motor ϕA
White	Motor ϕB
120° Electrical Spacing	

Notes:

[1] All values specified at 25°C ambient temperature and without heat sink.

[2] Peak values are theoretical and supplied for reference only.

[3] Recorded at max. winding temperature at 25°C ambient, mounted to a 5”x5”x0.25” heatsink.

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