

# RBE(H) Motor Series

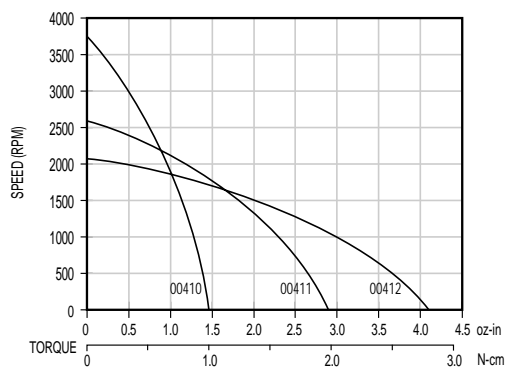
## RBE(H) 00410 MOTOR SERIES PERFORMANCE DATA

Motor Parameters	Symbols	Units	00410	00411	00412
Max Cont. Output Power at 25°C amb.	HP Rated	HP	0.019	0.027	0.032
	P Rated	Watts	14	20	24
Speed at Rated Power	N Rated	RPM	22400	15200	12550
Max Mechanical Speed	N Max	RPM	35000	35000	35000
Continuous Stall Torque at 25°C amb.	Tc	oz-in	1.54	2.93	4.13
		N-m	0.0109	0.0207	0.0292
Peak Torque	Tp	oz-in	3.49	7.13	11.0
		N-m	0.025	0.050	0.08
Max Torque for Linear KT	Tsl	oz-in	3.49	7.13	11.0
		N-m	0.025	0.050	0.078
Motor Constant	Tm	oz-in/ $\sqrt{W}$	0.65	1.09	1.46
		N-m/ $\sqrt{W}$	0.005	0.008	0.010
Thermal Resistance*	Rth	°C/Watt	8.00	7.11	6.64
Viscous Damping	Fi	oz-in/RPM	1.80E-05	3.40E-05	5.00E-05
		N-m/RPM	1.27E-07	2.40E-07	3.53E-07
Max Static Friction	Tf	oz-in	0.60	0.88	1.15
		N-m	0.0042	0.0062	0.0081
Max Cogging Torque Peak to Peak	Tcog	oz-in	0.37	0.58	0.80
		N-m	0.0026	0.0041	0.0060
Frameless Motor Inertia	Jmf	oz-in-sec <sup>2</sup>	1.70E-05	2.70E-05	3.80E-05
		Kg-m <sup>2</sup>	1.20E-07	1.91E-07	2.68E-07
Housed Motor Weight	Wtf	oz	1.1	1.6	2.0
		Kg	3.1E-02	4.4E-02	5.7E-02
Housed Motor Inertia	Jmh	oz-in-sec <sup>2</sup>	1.70E-05	2.70E-05	3.80E-05
		Kg-m <sup>2</sup>	1.20E-07	1.91E-07	2.68E-07
Housed Motor Weight	Wth	oz	1.7	2.2	2.7
		Kg	4.8E-02	6.2E-02	7.7E-02
No. of poles	P		6	6	6

Winding Constants	Symbols	Units	A	B	C	A	B	C	A	B	C
Current at Cont. Torque	Ic	Amps	2.27	1.79	3.09	2.31	1.80	3.24	2.99	2.72	1.99
Current at Peak Torque	Ip	Amps	4.33	3.43	6.13	4.86	3.86	6.88	6.88	6.13	4.33
Torque Sensitivity	Kt	oz-in/Amp	0.945	1.20	0.693	1.65	2.12	1.18	1.76	1.94	2.65
		N-m/Amp	0.00667	0.00845	0.00489	0.0116	0.0150	0.0083	0.0125	0.0137	0.0187
Back EMF constant	Kb	V/KRPM	0.699	0.885	0.513	1.22	1.57	0.870	1.30	1.44	1.96
Motor Resistance	Rm	Ohms	2.11	3.37	1.08	2.28	3.72	1.17	1.46	1.78	3.48
Motor Inductance	Lm	mH	0.18	0.29	0.096	0.26	0.43	0.13	0.20	0.24	0.45

\*Rth assumes a housed motor mounted to a 3.25" x 3.25" x 0.25" aluminum heatsink or equivalent

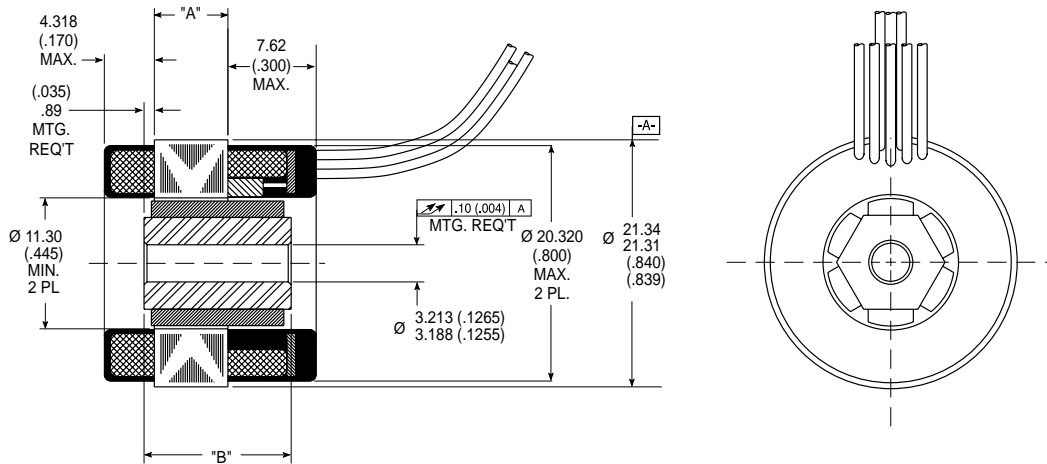
### Continuous Duty Capability for 130°C Rise — RBE - 00410 Series



# RBE(H) Motor Series

## DIMENSIONS

### RBE-0041X-X00



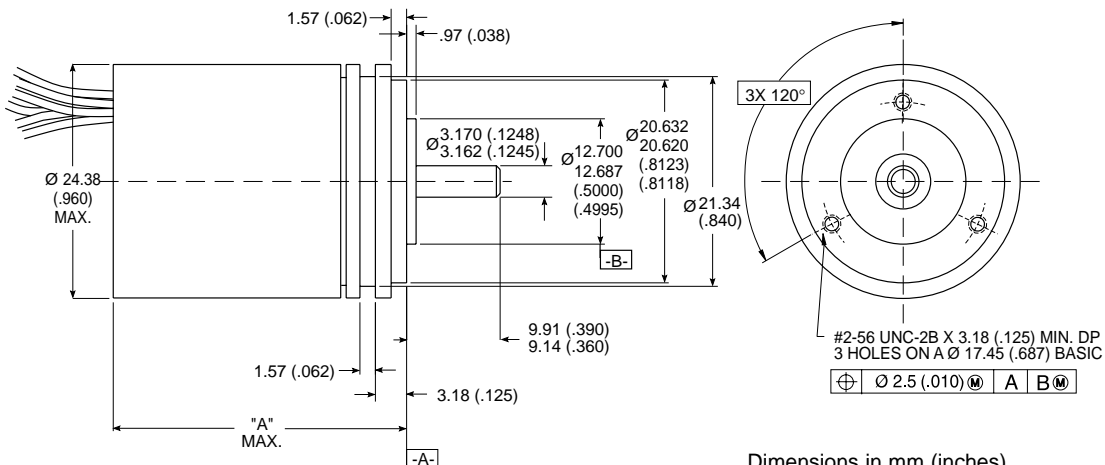
Dimensions in mm (inches).  
Product designed in inches.  
Metric conversions provided for reference only.

MODEL NUMBER	RBE-00410	RBE-00411	RBE-00412
"A"	6.35	12.70	19.05
Dimension	(0.250)	(0.500)	(0.750)
"B"	12.70	19.05	25.40
Dimension	(0.500)	(0.750)	(1.000)
Tolerance ± .010 on "A" Dimension.			

**Notes:**

- 1) For a C.W. rotation, as viewed from lead end, energize per excitation sequence table.
- 2) V-AB, V-BC and V-CA is back EMF of motor phases AB, BC and CA respectively, aligned with sensor output as shown for C.W. rotation only.
- 3) Sensors optimized for bi-directional rotation.

### RBEH-0041X-X00



Dimensions in mm (inches).  
Product designed in inches.  
Metric conversions provided for reference only.

MODEL NUMBER	RBEH-00410	RBEH-00411	RBEH-00412
"A"	31.50	37.85	44.20
Dimension	(1.240)	(1.490)	(1.740)

**Notes:**

- 1) Shaft end play: with a 1 lb reversing load, the axial displacement shall be .015-.152 (0.006-.006).
- 2) For a C.C.W. rotation, as viewed from pilot end, energize per excitation sequence table.
- 3) V-AB, V-BC and V-CA is back EMF of motor phases AB, BC and CA respectively, aligned with sensor output as shown for C.C.W. rotation only.

**RBE/RBEH LEADWIRE**

Motor Leads: #26 AWG type "ET" Teflon coated per MIL-W-16878, 3 leads, 152 (6.00) min lg. ea. 1-black, 1-white, 1-red.

Sensor Leads: #26 AWG type "ET" Teflon coated per MIL-W-16878, 5 leads, 152 (6.00) min lg. ea. 1-yellow, 1-green, 1-orange, 1-blue, 1-brown.