

RBE(H) Motor Series

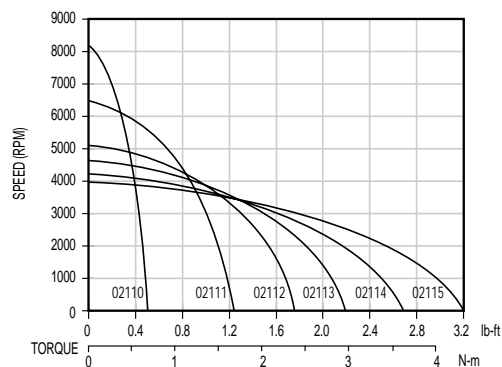
RBE(H) 02110 MOTOR SERIES PERFORMANCE DATA

Motor Parameters	Symbols	Units	02110	02111	02112	02113	02114	02115
Max Cont. Output Power at 25°C amb.	HP Rated	HP	0.323	0.672	0.761	0.854	0.944	1.07
	P Rated	Watts	241	501	568	637	704	796
Speed at Rated Power	N Rated	RPM	5300	4242	3500	3050	2770	2650
Max Mechanical Speed	N Max	RPM	12000	12000	12000	12000	12000	12000
Continuous Stall Torque at 25°C amb.	Tc	lb-ft	0.703	1.23	1.77	2.20	2.69	3.20
		N-m	0.952	1.67	2.40	2.99	3.64	4.33
Peak Torque	Tp	lb-ft	1.87	3.37	5.10	6.80	8.27	10.2
		N-m	2.55	4.57	6.92	9.22	11.2	13.8
Max Torque for Linear KT	Tsl	lb-ft	1.26	2.56	3.75	5.00	6.37	7.49
		N-m	1.72	3.47	5.08	6.78	8.64	10.2
Motor Constant	Tm	lb-ft/√W	0.102	0.175	0.243	0.293	0.345	0.394
		N-m/√W	0.139	0.237	0.329	0.396	0.467	0.534
Thermal Resistance*	Rth	°C/Watt	1.70	1.60	1.50	1.40	1.30	1.20
Viscous Damping	Fi	lb-ft/RPM	1.04E-05	2.36E-05	3.59E-05	4.82E-05	6.06E-05	7.29E-05
		N-m/RPM	1.41E-05	3.19E-05	4.87E-05	6.54E-05	8.21E-05	9.88E-05
Max Static Friction	Tf	lb-ft	0.026	0.052	0.077	0.10	0.13	0.15
		N-m	0.035	0.071	0.104	0.136	0.171	0.203
Max Cogging Torque Peak to Peak	Tcog	lb-ft	0.016	0.039	0.061	0.082	0.104	0.125
		N-m	0.022	0.053	0.083	0.111	0.141	0.169
Frameless Motor	Inertia	Jmf	5.50E-05	9.70E-05	1.40E-04	1.74E-04	2.13E-04	2.66E-04
		Kg-m ²	7.46E-05	1.32E-04	1.90E-04	2.36E-04	2.89E-04	3.61E-04
Housed Motor	Weight	Wtf	1.29	2.21	3.07	3.94	4.80	5.66
		Kg	0.585	1.00	1.41	1.77	2.18	2.59
Housed Motor	Inertia	Jmh	5.60E-05	1.10E-04	1.41E-04	1.75E-03	2.14E-04	2.62E-04
		Kg-m ²	7.59E-05	1.49E-04	1.91E-04	2.37E-03	2.90E-04	3.55E-04
Housed Motor	Weight	Wth	2.00	3.22	4.37	5.51	6.66	7.80
		Kg	0.907	1.46	2.00	2.50	3.04	3.54
No. of poles	P		12	12	12	12	12	12

Winding Constants	Symbols	Units	A			B			C			A			B			C		
Current at Cont. Torque	Ic	Amps	6.34	2.53	10.6	5.71	2.27	9.74	5.42	2.17	9.03	5.07	2.03	8.46	8.13	3.95	3.05	8.67	3.98	1.77
Current at Peak Torque	Ip	Amps	25.3	10.0	40.2	25.3	10.0	40.2	25.3	10.0	40.2	25.3	10.0	40.3	40.3	20.1	15.9	45.3	20.1	10.6
Torque Sensitivity	Kt	lb-ft/Amp	0.115	0.287	0.0690	0.225	0.566	0.132	0.341	0.851	0.204	0.454	1.14	0.272	0.347	0.714	0.925	0.386	0.840	1.89
		N-m/Amp	0.156	0.390	0.0935	0.305	0.768	0.179	0.462	1.15	0.277	0.62	1.54	0.37	0.471	0.968	1.24	0.523	1.14	2.56
Back EMF constant	Kb	V/KRPM	16.3	40.8	9.80	31.9	80.4	18.7	48.4	121	29.1	64.5	161	38.6	49.2	101	130	54.8	119	268
Motor Resistance	Rm	Ohms	1.27	8.05	0.479	1.66	10.6	0.611	1.97	12.5	0.743	2.40	15.2	0.904	1.01	4.17	6.83	0.961	4.74	23.2
Motor Inductance	Lm	mH	1.7	10	0.60	3.2	20	1.1	5.1	32	1.8	6.2	39	2.2	2.8	12	20	3.0	14	72

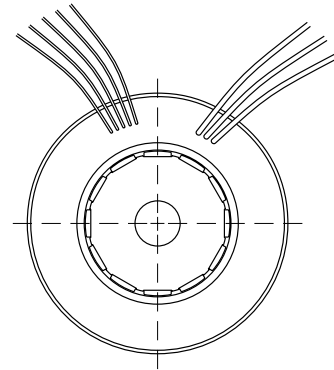
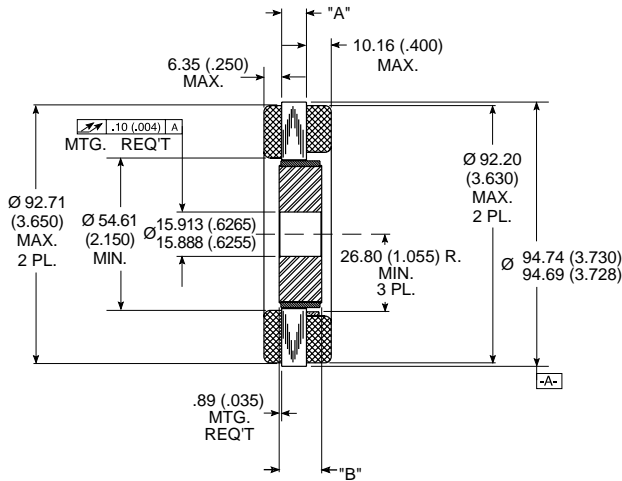
*Rth assumes a housed motor mounted to a 7" x 7.5" x 0.75" aluminum heatsink or equivalent

Continuous Duty Capability for 130°C Rise — RBE - 02110 Series



DIMENSIONS

RBE-0211X-X00



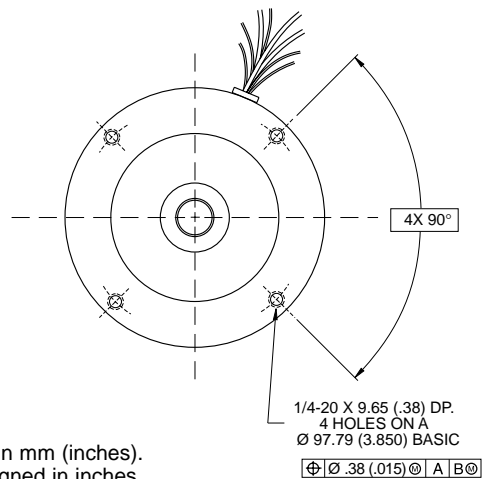
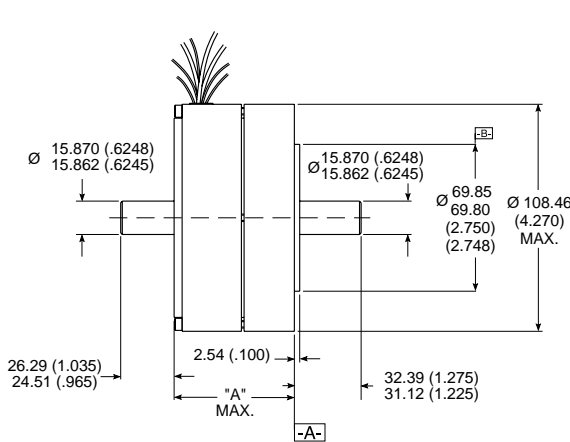
Dimensions in mm (inches).
Product designed in inches.
Metric conversions provided for reference only.

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) Mounting surface is between $\varnothing 92.71$ (3.650) and $\varnothing 94.72$ (3.729) on both sides.

MODEL NUMBER	RBE-02110	RBE-02111	RBE-02112	RBE-02113	RBE-02114	RBE-02115
"A" Dimension	8.89 (0.350)	19.05 (0.750)	28.58 (1.125)	38.1 (1.500)	47.63 (1.875)	57.15 (2.250)
"B" Dimension	15.24 (0.600)	25.4 (1.000)	34.93 (1.375)	44.45 (1.750)	53.98 (2.125)	63.5 (2.500)
Tolerance $\pm .010$ on "A" Dimension.						

RBEH-0211X-00



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

Notes:

- 1) Shaft end play: with a 18 lb reversing load, the axial displacement shall be .013-.13 (.0005-.005).
- 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.

MODEL NUMBER	RBEH-02110	RBEH-02111	RBEH-02112	RBEH-02113	RBEH-02114	RBEH-02115
"A" Dimension	57.86 (2.278)	68.02 (2.678)	77.55 (3.053)	87.07 (3.428)	96.60 (3.803)	106.12 (4.178)

RBE/RBEH LEADWIRE

Motor Leads: #18 AWG Teflon coated per MIL-W-22759/11, 3 leads, 152 (6.00) min lg. ea. 1-black, 1-red, 1-white.

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