

RBE(H) Motor Series

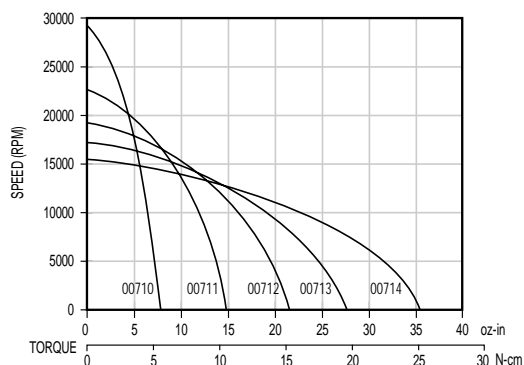
RBE(H) 00710 MOTOR SERIES PERFORMANCE DATA

Motor Parameters	Symbols	Units	00710	00711	00712	00713	00714	
Max Cont. Output Power at 25°C amb.	HP Rated	HP	0.0858	0.133	0.166	0.189	0.225	
	P Rated	Watts	64	99	124	141	168	
Speed at Rated Power	N Rated	RPM	17700	14110	12000	10800	9750	
Max Mechanical Speed	N Max	RPM	20000	20000	20000	20000	20000	
Continuous Stall Torque at 25°C amb.	Tc	oz-in	8.14	15.5	21.5	27.6	35.3	
		N-m	0.057	0.109	0.152	0.195	0.249	
Peak Torque	Tp	oz-in	22.7	43.8	63.3	84.5	114	
		N-m	0.160	0.310	0.447	0.597	0.802	
Max Torque for Linear KT	Tsl	oz-in	22.7	43.8	63.3	84.5	114	
		N-m	0.160	0.310	0.447	0.597	0.802	
Motor Constant	Km	oz-in/ \sqrt{W}	2.36	4.05	5.38	6.67	8.25	
		N-m/ \sqrt{W}	0.0166	0.029	0.038	0.047	0.058	
Thermal Resistance*	Rth	°C/Watt	5.90	4.91	4.47	4.19	3.94	
Viscous Damping	Fi	oz-in/RPM	4.40E-05	8.39E-05	1.20E-04	1.56E-04	2.00E-04	
		N-m/RPM	3.11E-07	5.93E-07	8.49E-07	1.11E-06	1.41E-06	
Max Static Friction	Tf	oz-in	0.90	1.54	2.12	2.70	3.40	
		N-m	0.0064	0.011	0.015	0.019	0.024	
Max Cogging Torque Peak to Peak	Tcog	oz-in	0.75	1.38	1.95	2.52	3.20	
		N-m	0.0053	0.0097	0.0137	0.0178	0.023	
Frameless Motor	Inertia	Jmf	oz-in-sec ²	1.30E-04	2.00E-04	2.80E-04	3.50E-04	4.40E-04
		Kg-m ²	9.18E-07	1.41E-06	1.98E-06	2.47E-06	3.11E-06	
Housed Motor	Weight	Wtf	oz	2.8	4.4	5.8	7.2	8.9
		Kg	7.94E-02	1.24E-01	1.64E-01	2.04E-01	2.52E-01	
Housed Motor	Inertia	Jmh	oz-in-sec ²	1.30E-04	2.00E-04	2.80E-04	3.60E-04	4.50E-04
		Kg-m ²	9.18E-07	1.41E-06	1.98E-06	2.54E-06	3.18E-06	
Housed Motor	Weight	Wth	oz	7.8	9.3	11	12	14
		Kg	2.21E-01	2.65E-01	3.04E-01	3.44E-01	3.91E-01	
No. of poles	P		6	6	6	6	6	

Winding Constants	Symbols	Units	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Current at Cont. Torque	Ic	Amps	4.83	3.87	6.91	4.73	3.78	6.75	4.56	3.65	6.51	4.38	3.51	6.26	4.68	3.37	6.02
Current at Peak Torque	Ip	Amps	12.6	9.99	17.8	12.6	10.0	17.8	12.6	10.0	17.8	12.6	10.0	17.8	14.2	10.0	17.8
Torque Sensitivity	Kt	oz-in/Amp	1.87	2.34	1.31	3.60	4.50	2.52	5.19	6.49	3.63	6.92	8.65	4.85	8.26	11.5	6.43
		N-m/Amp	0.0132	0.0165	0.0092	0.0254	0.0318	0.0178	0.0367	0.0458	0.0257	0.0489	0.0611	0.0342	0.0584	0.0810	0.0454
Back EMF constant	Kb	V/KRPM	1.38	1.73	0.968	2.66	3.33	1.86	3.84	4.80	2.69	5.12	6.40	3.58	6.11	8.49	4.75
Motor Resistance	Rm	Ohms	0.629	0.991	0.311	0.790	1.24	0.390	0.933	1.47	0.461	1.08	1.70	0.533	1.00	1.97	0.618
Motor Inductance	Lm	mH	0.19	0.30	0.095	0.37	0.57	0.18	0.54	0.84	0.26	0.72	1.1	0.35	0.76	1.5	0.46

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

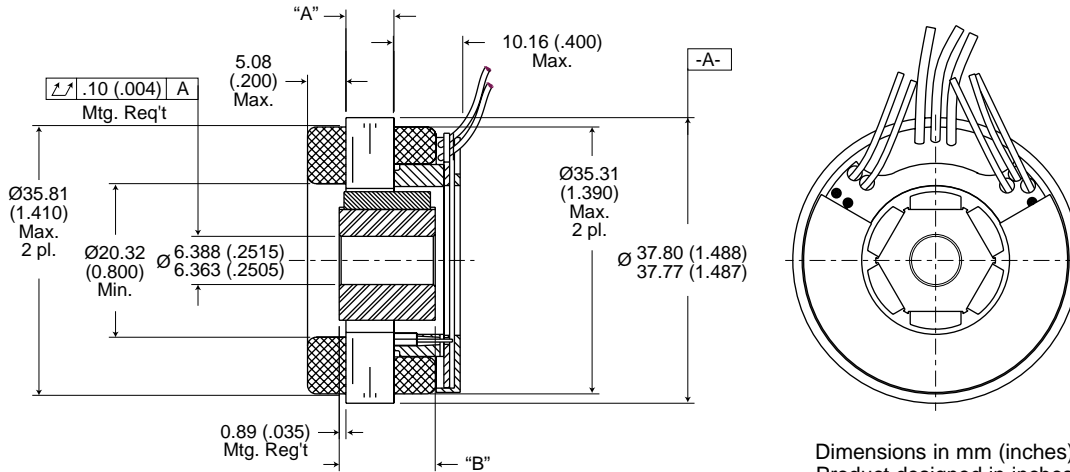
Continuous Duty Capability for 130°C Rise — RBE - 00710 Series



RBE(H) Motor Series

DIMENSIONS

RBE-0071X-X00



Dimensions in mm (inches).
Product designed in inches.

Metric conversions provided for reference only.

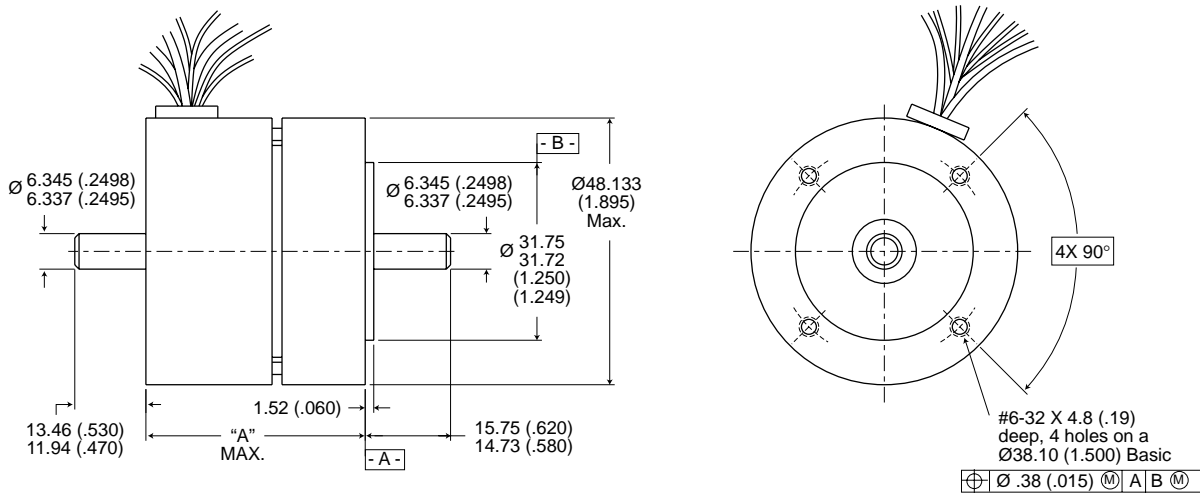
Notes:

- 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 Ø 35.81 (1.410) and Ø 37.80 (1.488) on both sides.

MODEL NUMBER	RBE-00710	RBE-00711	RBE-00712	RBE-00713	RBE-00714
"A" Dimension	6.35 (0.250)	12.7 (0.500)	19.05 (0.750)	25.4 (1.000)	33.02 (1.300)
"B" Dimension	12.7 (0.500)	19.05 (0.750)	25.40 (1.000)	31.75 (1.250)	39.37 (1.550)

Tolerance ± .010 on "A" Dimension.

RBEH-0071X-X00



Dimensions in mm (inches).
Product designed in inches.

Metric conversions provided for reference only.

Notes:

- 1) Shaft end play: with a 6 lb reversing load, the axial displacement shall be .013-.15 (.0005-.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.

MODEL NUMBER	RBEH-00710	RBEH-00711	RBEH-00712	RBEH-00713	RBEH-00714
"A" Dimension	39.83 (1.568)	46.18 (1.818)	52.53 (2.068)	58.88 (2.318)	66.50 (2.618)

RBE/RBEH LEADWIRE

Motor Leads: #24 AWG Teflon coated per MIL-W-22759/11, 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-blue, 1-brown, 1-green, 1-orange, 1-yellow.