

RBE(H) Motor Series

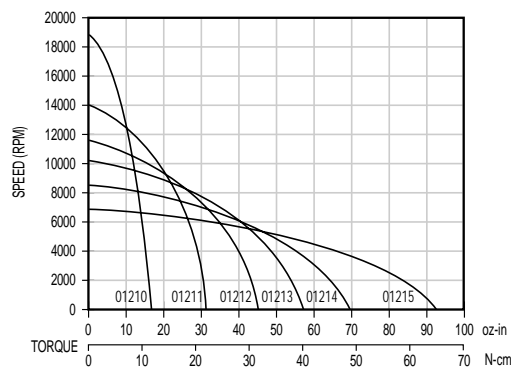
RBE(H) 01210 MOTOR SERIES PERFORMANCE DATA

Motor Parameters	Symbols	Units	01210	01211	01212	01213	01214	01215
Max Cont. Output Power at 25°C amb.	HP Rated	HP	0.142	0.204	0.243	0.272	0.290	0.310
	P Rated	Watts	106	152	181	203	216	231
Speed at Rated Power	N Rated	RPM	13800	9680	8100	7152	6230	5100
Max Mechanical Speed	N Max	RPM	18000	18000	18000	18000	18000	18000
Continuous Stall Torque at 25°C amb.	Tc	oz-in	16.4	31.6	43.5	54.8	66.2	90.4
		N-m	0.115	0.223	0.307	0.387	0.467	0.639
Peak Torque	Tp	oz-in	48.4	114	168	222	282	435
		N-m	0.342	0.806	1.18	1.57	1.99	3.07
Max Torque for Linear KT	Tsl	oz-in	48.4	114	168	222	282	435
		N-m	0.342	0.806	1.18	1.57	1.99	3.07
Motor Constant	Tm	oz-in/ \sqrt{W}	4.00	7.12	9.50	11.7	13.9	18.4
		N-m/ \sqrt{W}	0.028	0.050	0.067	0.083	0.098	0.130
Thermal Resistance*	Rth	°C/Watt	4.25	3.86	3.68	3.55	3.44	3.27
Viscous Damping	Fi	oz-in/RPM	1.30E-04	2.96E-04	4.46E-04	5.97E-04	7.78E-04	1.20E-03
		N-m/RPM	9.18E-07	2.09E-06	3.15E-06	4.22E-06	5.49E-06	8.48E-06
Max Static Friction	Tf	oz-in	1.70	2.13	2.53	2.92	3.40	4.50
		N-m	0.0120	0.015	0.018	0.021	0.024	0.032
Max Cogging Torque Peak to Peak	Tcog	oz-in	0.41	0.66	0.88	1.10	1.37	2.00
		N-m	0.0029	0.0046	0.0062	0.0078	0.0097	0.014
Frameless Motor	Inertia Jmf	oz-in-sec ²	7.30E-04	1.20E-03	1.70E-03	2.10E-03	2.70E-03	4.00E-03
		Kg-m ²	5.15E-06	8.47E-06	1.20E-05	1.48E-05	1.91E-05	2.82E-05
Housed Motor	Weight Wtf	oz	4.5	7.2	9.6	12.1	15.1	22.0
		Kg	1.26E-01	2.03E-01	2.74E-01	3.44E-01	4.28E-01	6.24E-01
Housed Motor	Inertia Jmh	oz-in-sec ²	7.60E-04	1.30E-03	1.80E-03	2.20E-03	2.80E-03	4.20E-03
		Kg-m ²	5.37E-06	9.18E-06	1.27E-05	1.55E-05	1.98E-05	2.97E-05
Housed Motor	Weight Wth	oz	11.3	14.2	16.8	19.5	22.6	30.0
		Kg	3.20E-01	4.02E-01	4.77E-01	5.52E-01	6.41E-01	8.50E-01
No. of poles	P		8	8	8	8	8	8

Winding Constants	Symbols	Units	A			B			C			A			B			C		
Current at Cont. Torque	Ic	Amps	5.41	3.89	6.95	5.81	3.63	9.06	5.42	3.38	8.45	5.77	4.00	8.88	6.15	3.73	8.61	5.46	3.31	7.64
Current at Peak Torque	Ip	Amps	15.0	10.6	18.9	20.0	10.6	26.8	20.0	10.6	26.8	22.5	13.4	30.1	25.3	13.4	35.8	25.3	13.4	35.8
Torque Sensitivity	Kt	oz-in/Amp	3.34	4.64	2.60	5.80	9.30	3.72	8.49	13.6	5.45	10.0	14.5	6.50	11.3	18.7	8.08	17.4	28.7	12.4
		N-m/Amp	0.0236	0.0328	0.0183	0.0410	0.0657	0.0263	0.0600	0.0962	0.0385	0.0707	0.102	0.0459	0.0799	0.132	0.0571	0.123	0.203	0.0878
Back EMF constant	Kb	V/KRPM	2.47	3.43	1.92	4.29	6.88	2.75	6.28	10.1	4.03	7.41	10.7	4.81	8.36	13.8	5.97	12.9	21.2	9.19
Motor Resistance	Rm	Ohms	0.698	1.38	0.431	0.664	1.75	0.276	0.803	2.11	0.334	0.733	1.55	0.307	0.666	1.82	0.336	0.890	2.43	0.450
Motor Inductance	Lm	mH	0.280	0.54	0.17	0.32	0.83	0.13	0.44	1.1	0.18	0.47	0.97	0.20	0.48	1.3	0.25	0.71	1.9	0.36

*Rth assumes a housed motor mounted to a 4.0" x 3.75" x 0.25" aluminum heatsink or equivalent

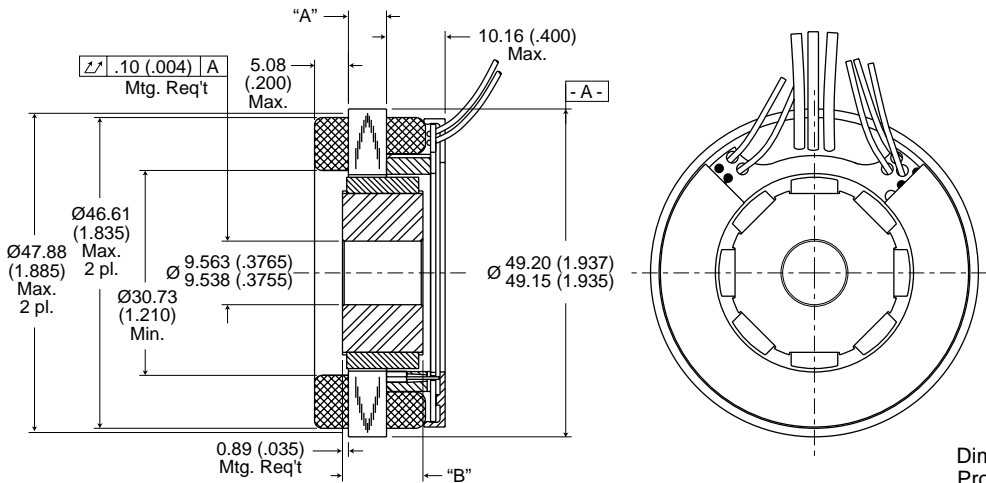
Continuous Duty Capability for 130°C Rise — RBE - 01210 Series



RBE(H) Motor Series

DIMENSIONS

RBE-0121X-X00



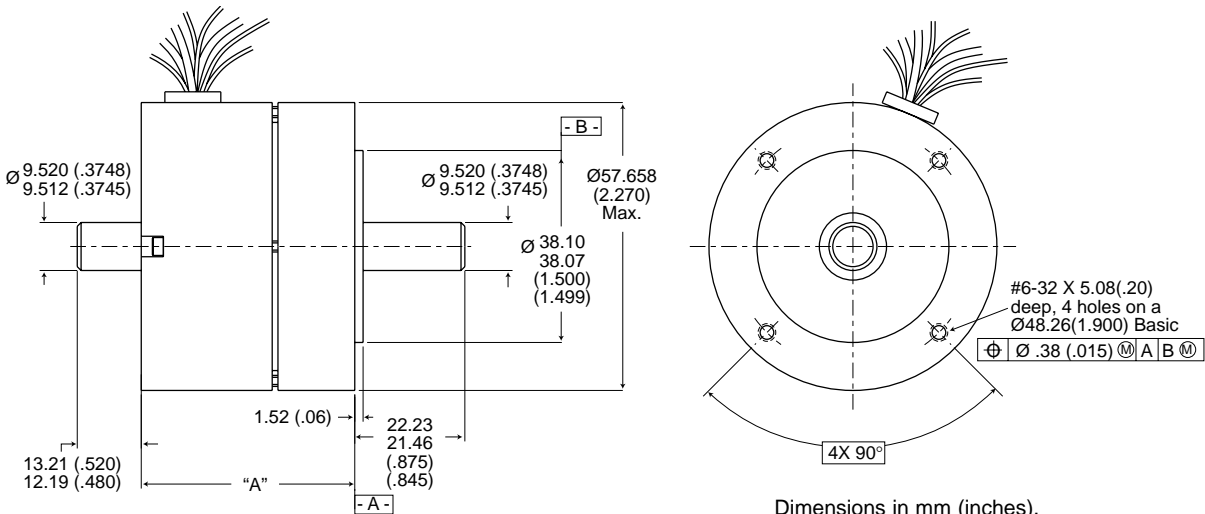
Dimensions in mm (inches).
Product designed in inches.
Metric conversions provided for reference only.

MODEL NUMBER	RBE-01210	RBE-01211	RBE-01212	RBE-01213	RBE-01214	RBE-01215
"A" Dimension	5.72 (0.225)	12.7 (0.500)	19.05 (0.750)	25.4 (1.000)	33.02 (1.300)	50.8 (2.000)
"B" Dimension	12.07 (0.475)	19.05 (0.750)	25.4 (1.000)	31.75 (1.250)	39.37 (1.550)	57.15 (2.250)
Tolerance \pm .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) Mounting surface is between \varnothing 47.88 (1.885) and \varnothing 49.17 (1.936) on both sides.

RBEH-0121X-X00



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

MODEL NUMBER	RBEH-01210	RBEH-01211	RBEH-01212	RBEH-01213	RBEH-01214	RBEH-01215
"A" Dimension	43.05 (1.695)	50.04 (1.970)	56.39 (2.220)	62.74 (2.470)	70.36 (2.770)	88.14 (3.470)

Notes:

- 1) Shaft end play: with a 9 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.

RBE/RBEH LEADWIRE

Motor Leads: #20 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.