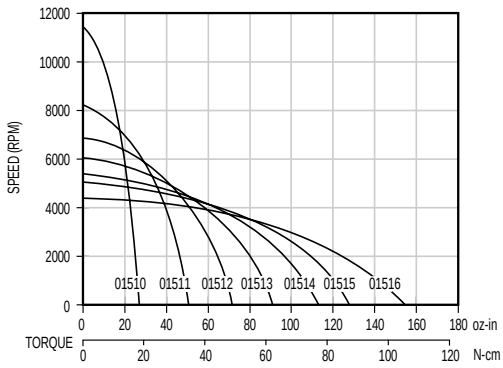
RBE(H) 01510 MOTOR SERIES PERFORMANCE DATA

Motor Parameters	Symbols	Units	01510	01511	01512	01513	01514	01515	01516
Max Cont. Output Power	HP Rated	HP	0.127	0.176	0.210	0.240	0.264	0.284	0.307
at 25°C amb.	P Rated	Watts	95	131	157	179	197	212	229
Speed at Rated Power	N Rated	RPM	7450	5400	4550	4050	3570	3400	2970
Max Mechanical Speed	N Max	RPM	16500	16500	16500	16500	16500	16500	16500
Continuous Stall Torque	Tc	oz-in	27.4	54.3	71.9	91.3	114	127	154
at 25°C amb.		N-m	0.193	0.384	0.508	0.645	0.808	0.897	1.085
Peak Torque	Tp	oz-in	78.6	162	234	313	403	540	610
		N-m	0.555	1.15	1.66	2.21	2.85	3.81	4.31
Max Torque	Tsl	oz-in	78.6	162	234	313	403	540	610
for Linear KT		N-m	0.555	1.16	1.66	2.21	2.85	3.81	4.31
Motor Constant	Km	oz-in/$\sqrt{W}$	6.38	11.6	14.8	18.2	22.1	24.1	28.6
		N-m/$\sqrt{W}$	0.0451	0.0819	0.105	0.128	0.156	0.170	0.202
Thermal Resistance*	Rth	°C/Watt	4.10	3.55	3.30	3.13	2.95	2.85	2.72
Viscous Damping	Fi	oz-in/RPM	2.74E-04	1.05E-03	1.76E-03	2.47E-03	3.32E-03	3.88E-03	5.30E-03
		N-m/RPM	1.94E-06	7.43E-06	1.24E-05	1.74E-05	2.34E-05	2.74E-05	3.74E-05
Max Static Friction	Tf	oz-in	2.00	2.93	3.77	4.62	5.63	6.31	8.00
		N-m	0.0141	0.021	0.027	0.033	0.040	0.045	0.057
Max Cogging Torque	Tcog	oz-in	0.950	1.22	1.47	1.71	2.01	2.21	2.70
Peak to Peak		N-m	0.00671	0.00862	0.0104	0.0121	0.0142	0.0156	0.019
Frameless Motor Inertia	Jmf	oz-in-sec^2	2.10E-03	3.60E-03	4.90E-03	6.20E-03	7.70E-03	8.80E-03	1.14E-02
		Kg-m^2	1.48E-05	2.54E-05	3.46E-05	4.38E-05	5.44E-05	6.21E-05	8.05E-05
Frameless Motor Weight	Wtf	oz	6.30	10.5	14.3	18.1	22.7	25.8	33.4
		Kg	1.79E-01	2.98E-01	4.06E-01	5.14E-01	6.44E-01	7.30E-01	9.47E-01
Housed Motor Inertia	Jmh	oz-in-sec^2	2.20E-03	3.70E-03	5.00E-03	6.30E-03	7.80E-03	8.90E-03	1.15E-02
		Kg-m^2	1.55E-05	2.61E-05	3.53E-05	4.45E-05	5.51E-05	6.28E-05	8.12E-05
Housed Motor Weight	Wth	oz	19.0	23.5	27.5	31.6	36.4	39.7	47.8
		Kg	5.39E-01	6.65E-01	7.80E-01	8.95E-01	1.03E+00	1.13E+00	1.38E+00
No. of poles	P		12	12	12	12	12	12	12

Winding Constants	Symbols	Units	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Current at Cont. Torque	Ic	Amps	5.10	3.71	9.06	4.85	3.53	4.98	4.44	3.23	7.90	4.22	3.07	7.50	4.62	2.94	7.18	5.13	2.83	6.91	5.18	2.59	6.34
Current at Peak Torque	Ip	Amps	14.0	9.89	25.0	14.0	9.89	16.7	14.0	9.89	25.0	14.0	9.89	25.0	15.7	9.89	25.0	21.0	9.89	25.0	19.8	9.89	25.0
Torque Sensitivity	Kt	oz-in/Amp	6.78	7.92	3.24	11.6	16.2	11.5	17.0	23.4	9.56	22.7	31.2	12.8	26.0	40.9	16.7	26.0	47.2	19.3	31.2	62.3	25.5
		N-m/Amp	0.0407	0.0559	0.0229	0.0833	0.115	0.0812	0.120	0.165	0.0675	0.160	0.220	0.0901	0.184	0.289	0.118	0.184	0.333	0.136	0.220	0.440	0.180
Back EMF constant	Kb	V/KRPM	4.26	5.86	2.40	8.73	12.0	8.50	12.6	17.3	7.07	16.8	23.1	9.43	19.2	30.2	12.4	19.2	34.9	14.3	23.1	46.1	18.9
Motor Resistance	Rm	Ohms	0.814	1.58	0.256	1.04	2.02	0.988	1.33	2.59	0.418	1.55	3.03	0.489	1.38	3.45	0.557	1.16	3.86	0.623	1.19	4.75	0.769
Motor Inductance	Lm	mH	0.32	0.61	0.101	0.58	1.1	0.55	0.87	1.6	0.27	1.2	2.3	0.38	1.1	2.6	0.47	0.99	3.3	0.55	1.1	4.4	7.4

*Rth assumes a housed motor mounted to a 4" x 3.25" x 0.25" aluminum heatsink or equivalent

Continuous Duty Capability for 130°C Rise — RBE - 01510 Series



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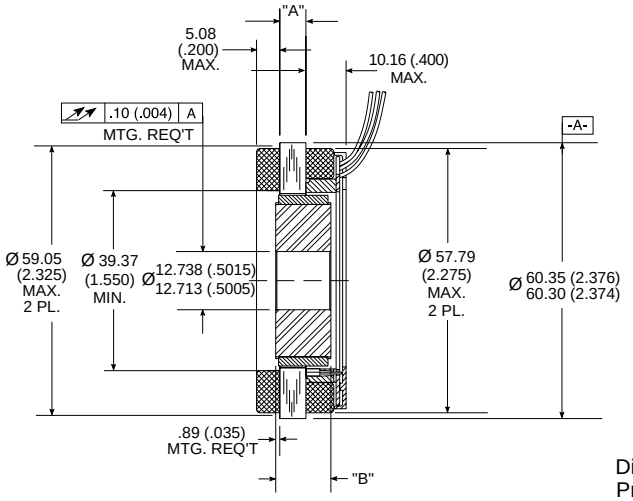
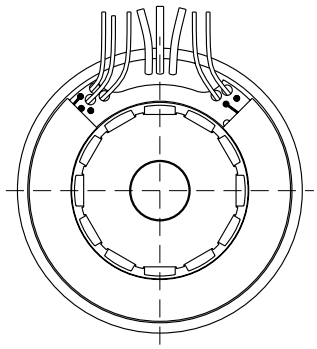


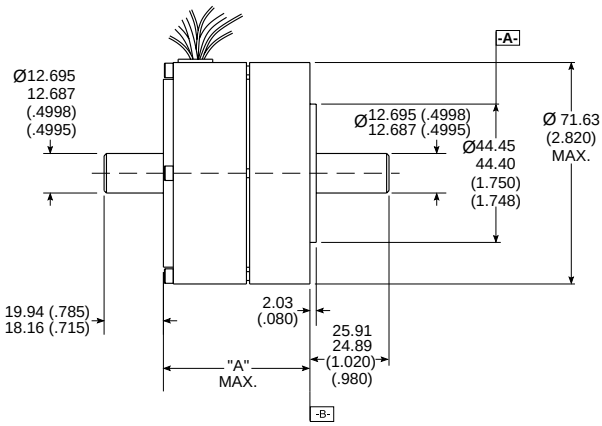


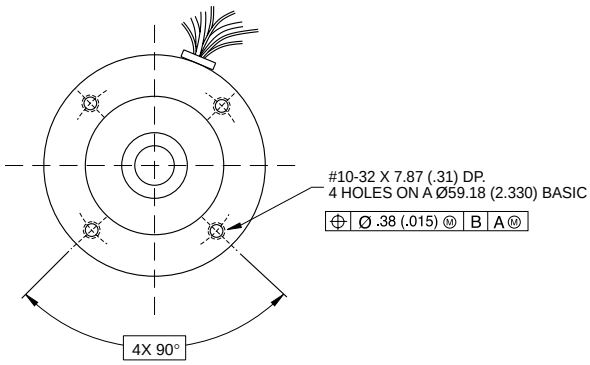
Dimensions in mm (inches).
Product designed in inches.
Metric conversions provided for reference only.

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 60.35 (2.376) and Ø 59.06 (2.325) on both sides.

MODEL NUMBER	RBE-01510	RBE-01511	RBE-01512	RBE-01513	RBE-01514	RBE-01515	RBE-01516
"A" Dimension	5.72 (0.225)	12.7 (0.500)	19.05 (0.750)	25.4 (1.000)	33.02 (1.300)	38.1 (1.500)	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)	44.45 (1.750)	57.15 (2.250)
Tolerance ± .010 on "A" Dimension.							

RBEH-0151X-X00





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

Notes:
1) Shaft end play: with a 11 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-01510	RBEH-01511	RBEH-01512	RBEH-01513	RBEH-01514	RBEH-01515	RBEH-01516
"A" Dimension	47.75 (1.880)	54.74 (2.155)	61.09 (2.405)	67.44 (2.655)	75.06 (2.955)	80.14 (3.155)	92.84 (3.655)

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.