

RBE(H) Motor Series

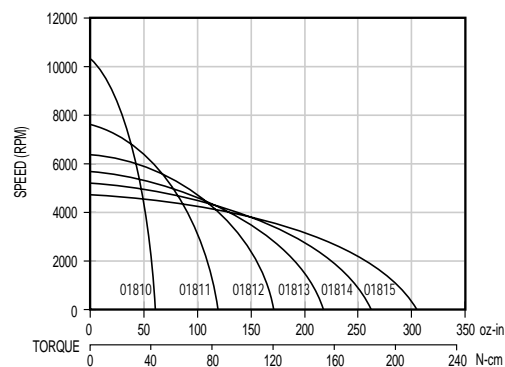
RBE(H) 01810 MOTOR SERIES PERFORMANCE DATA

Motor Parameters	Symbols	Units	01810	01811	01812	01813	01814	01815
Max Cont. Output Power at 25°C amb.	HP Rated	HP	0.280	0.402	0.488	0.572	0.611	0.646
	P Rated	Watts	209	300	364	427	456	482
Speed at Rated Power	N Rated	RPM	7040	5250	4350	3850	3520	3230
Max Mechanical Speed	N Max	RPM	14000	14000	14000	14000	14000	14000
Continuous Stall Torque at 25°C amb.	Tc	oz-in	60.8	121	173	218	262	305
		N-m	0.429	0.856	1.22	1.54	1.85	2.16
Peak Torque	Tp	oz-in	216	430	654	871	1069	1297
		N-m	1.53	3.04	4.62	6.15	7.55	9.16
Max Torque for Linear KT	Tsl	oz-in	136	273	413	554	679	825
		N-m	0.96	1.93	2.92	3.91	4.80	5.83
Motor Constant	Km	oz-in/ \sqrt{W}	11.0	19.6	26.5	32.8	37.8	43.1
		N-m/ \sqrt{W}	0.077	0.139	0.187	0.231	0.267	0.304
Thermal Resistance*	Rth	°C/Watt	2.55	2.11	1.91	1.83	1.70	1.62
Viscous Damping	Fi	oz-in/RPM	9.00E-04	1.83E-03	2.71E-03	3.56E-03	4.39E-03	5.30E-03
		N-m/RPM	6.36E-06	1.29E-05	1.91E-05	2.52E-05	3.10E-05	3.74E-05
Max Static Friction	Tf	oz-in	3.10	4.49	5.81	7.09	8.33	9.70
		N-m	0.0219	0.032	0.041	0.050	0.059	0.069
Max Cogging Torque Peak to Peak	Tcog	oz-in	1.50	1.79	2.08	2.35	2.61	2.90
		N-m	0.0106	0.0127	0.0147	0.0166	0.0184	0.020
Frameless Motor	Jmf	oz-in-sec ²	5.10E-03	8.70E-03	1.22E-02	1.55E-02	1.88E-02	2.23E-02
		Kg-m ²	3.60E-05	6.14E-05	8.62E-05	1.09E-04	1.33E-04	1.57E-04
Housed Motor	Wtf	oz	12.0	19.8	27.2	34.5	41.4	49.1
		Kg	3.40E-01	5.61E-01	7.72E-01	9.77E-01	1.17E+00	1.39E+00
Inertia	Jmh	oz-in-sec ²	5.30E-03	8.80E-03	1.24E-02	1.58E-02	1.91E-02	2.27E-02
		Kg-m ²	3.74E-05	6.21E-05	8.76E-05	1.12E-04	1.35E-04	1.60E-04
Weight	Wth	oz	30.0	38.2	46.0	53.6	60.9	69.0
		Kg	8.50E-01	1.08E+00	1.30E+00	1.52E+00	1.73E+00	1.96E+00
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	5.28	2.85	7.39	5.24	2.82	7.34	4.91	2.64	6.87	5.87	3.49	10.2	5.73	3.41	9.93	5.51	3.28	9.54
Current at Peak Torque	Ip	Amps	21.3	10.0	30.2	21.3	10.0	30.2	21.3	10.0	30.2	26.9	14.2	40.3	26.9	14.2	40.3	26.9	14.2	40.3
Torque Sensitivity	Kt	oz-in/Amp	12.1	22.5	8.64	24.0	44.5	17.1	36.4	67.5	26.0	38.4	64.5	22.2	47.1	79.2	27.2	57.2	96.1	33.0
		N-m/Amp	0.0855	0.159	0.0610	0.170	0.315	0.121	0.257	0.477	0.184	0.271	0.456	0.157	0.333	0.559	0.192	0.404	0.679	0.233
Back EMF constant	Kb	V/KRPM	8.95	16.6	6.39	17.8	32.9	12.7	26.9	50.0	19.2	28.4	47.7	16.4	34.9	58.6	20.1	42.3	71.1	24.4
Motor Resistance	Rm	Ohms	1.22	4.16	0.615	1.49	5.10	0.753	1.88	6.42	0.949	1.38	3.79	0.458	1.55	4.28	0.518	1.76	4.85	0.588
Motor Inductance	Lm	mH	0.90	3.1	0.46	1.8	6.2	0.92	2.5	8.5	1.3	1.9	5.5	0.65	2.2	6.2	0.73	2.7	7.6	0.90

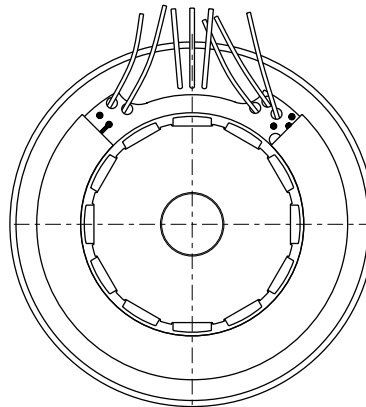
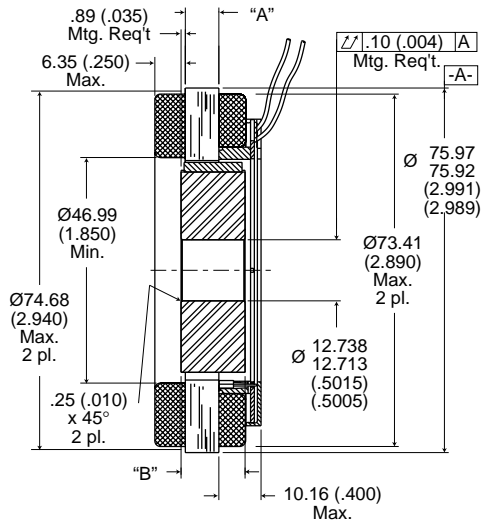
*Rth assumes a housed motor mounted to a 7" x 7.5" x 0.75" aluminum heatsink or equivalent

Continuous Duty Capability for 130°C Rise — RBE - 01810 Series



DIMENSIONS

RBE-0181X-X00



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

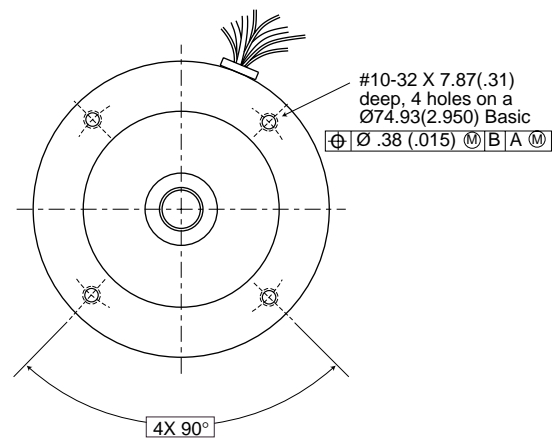
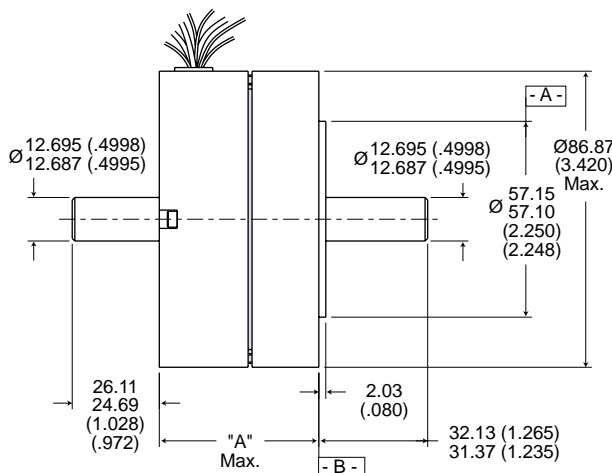
Notes:

- 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 74.68 (2.940) and Ø 75.95 (2.990) on both sides.

MODEL NUMBER	RBE-01810	RBE-01811	RBE-01812	RBE-01813	RBE-01814	RBE-01815
"A" Dimension	6.99 (0.275)	15.24 (0.600)	23.11 (0.910)	30.73 (1.210)	38.10 (1.500)	46.23 (1.820)
"B" Dimension	13.34 (0.525)	21.59 (0.850)	29.46 (1.160)	37.08 (1.460)	44.45 (1.750)	52.58 (2.070)

Tolerance ± .010 on "A" Dimension.

RBEH-0181X-X00



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

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.

MODEL NUMBER	RBEH-01810	RBEH-01811	RBEH-01812	RBEH-01813	RBEH-01814	RBEH-01815
"A" Dimension	47.17 (1.857)	55.42 (2.182)	63.30 (2.492)	70.92 (2.792)	78.28 (3.082)	86.41 (3.402)

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.