

RBE(H) Motor Series

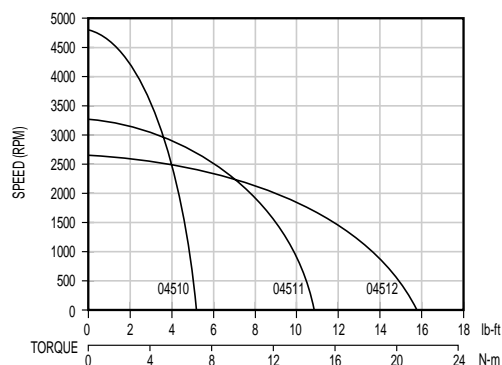
RBE(H) 04510 MOTOR SERIES PERFORMANCE DATA

Motor Parameters	Symbols	Units	04510	04511	04512
Max Cont. Output Power at 25°C amb.	HP Rated	HP	2.10	3.03	3.54
	P Rated	Watts	1568	2262	2640
Speed at Rated Power	N Rated	RPM	3240	2210	2100
Max Mechanical Speed	N Max	RPM	6000	6000	6000
Continuous Stall Torque at 25°C amb.	Tc	lb-ft	4.83	10.6	15.9
		N-m	6.55	14.4	21.5
Peak Torque	Tp	lb-ft	20.5	46.8	72.5
		N-m	27.7	63.5	98.3
Max Torque for Linear KT	Tsl	oz-in	9.83	24.9	41.1
		N-m	0.069	0.176	0.290
Motor Constant	Km	lb-ft/ \sqrt{W}	0.489	0.99	1.42
		N-m/ \sqrt{W}	0.662	1.34	1.93
Thermal Resistance*	Rth	°C/Watt	0.83	0.71	0.65
Viscous Damping	Fi	lb-ft/RPM	1.60E-04	2.90E-04	4.20E-04
		N-m/RPM	2.17E-04	3.93E-04	5.69E-04
Max Static Friction	Tf	lb-ft	0.16	0.35	0.53
		N-m	0.217	0.468	0.719
Max Cogging Torque Peak to Peak	Tcog	lb-ft	0.07	0.10	0.13
		N-m	0.096	0.133	0.169
Frameless Motor	Inertia	Jmf	1.20E-03	2.30E-03	3.40E-03
		Kg-m ²	1.63E-03	3.12E-03	4.61E-03
Weight	Wtf	lb	6.0	10.5	15.0
		Kg	2.72	4.76	6.80
Housed Motor	Inertia	Jmh	1.60E-03	2.35E-03	3.40E-03
		Kg-m ²	2.17E-03	3.19E-03	4.61E-03
Weight	Wth	lb	14.0	18.5	23.0
		Kg	6.35	8.39	10.4
No. of poles	P		12	12	12

Winding Constants	Symbols	Units	A	B	C	A	B	C	A	B	C
Current at Cont. Torque	Ic	Amps	11.7	6.20	17.1	11.3	10.3	16.4	19.5	15.9	10.9
Current at Peak Torque	Ip	Amps	80.8	48.0	114	80.8	72.0	114	144	114	80.8
Torque Sensitivity	Kt	lb-ft/Amp	0.425	0.805	0.292	0.973	1.60	0.669	0.844	1.03	1.50
		N-m/Amp	0.576	1.09	0.396	1.32	1.44	0.907	1.14	1.40	2.03
Back EMF constant	Kb	V/KRPM	60.4	114	41.5	138	151	95.0	120	146	213
Motor Resistance	Rm	Ohms	0.757	2.78	0.366	0.964	1.18	0.465	0.352	0.542	1.12
Motor Inductance	Lm	mH	3.6	13	1.7	4.6	5.4	2.2	2.2	3.3	7.0

*Rth assumes a housed motor mounted to a 13" x 12.5" x 0.5" aluminum heatsink or equivalent

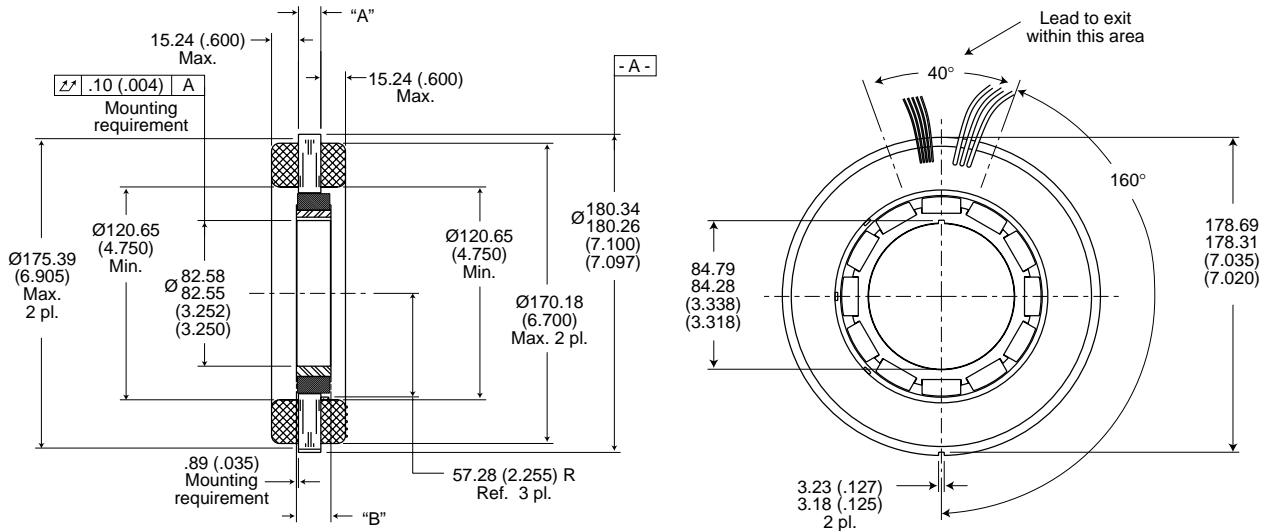
Continuous Duty Capability for 130°C Rise — RBE - 04510 Series



RBE(H) Motor Series

DIMENSIONS

RBE-0451X-X00



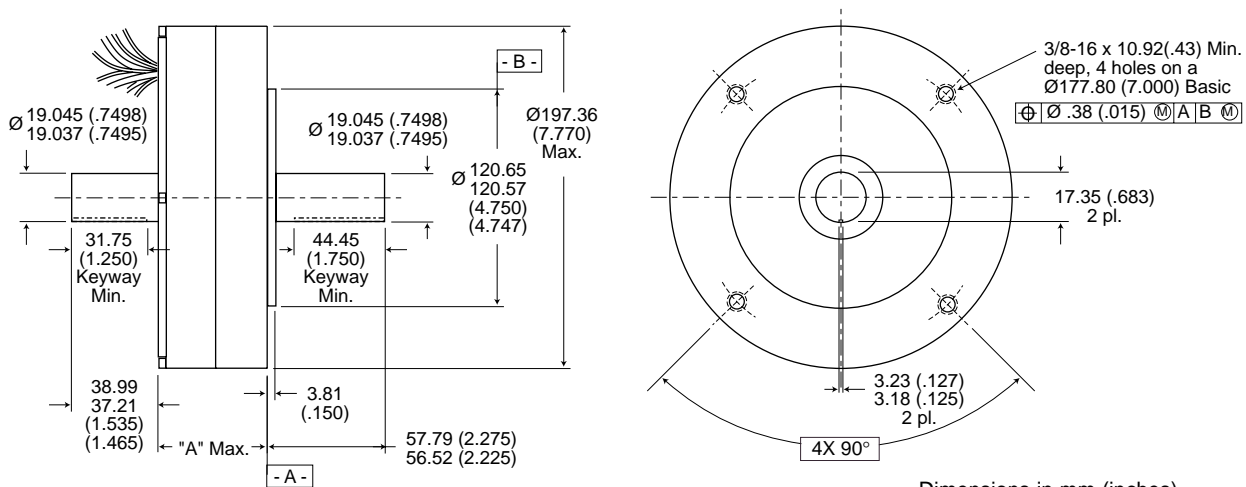
Dimensions in mm (inches).
Product designed in inches.
Metric conversions provided for reference only.

Notes:

- 2) For a C.W. rotation, as viewed from lead end, energize per excitation sequence table.
- 4) 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.
- 5) Mounting surface is between $\varnothing 175.39$ (6.905) and $\varnothing 180.31$ (7.099) on both sides.

MODEL NUMBER	RBE-04510	RBE-04511	RBE-04512
"A"	12.7	29.21	45.72
Dimension	(0.500)	(1.150)	(1.800)
"B"	19.56	36.07	52.58
Dimension	(0.770)	(1.420)	(2.070)
Tolerance $\pm .010$ on "A" Dimension.			

RBEH-0451X-X00



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

Notes:

- 1) Shaft end play: with a 34 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-04510	RBEH-04511	RBEH-04512
"A"	76.45	92.96	109.47
Dimension	(3.010)	(3.660)	(4.310)

RBE/RBEH LEADWIRE

Motor Leads: #14 AWG type Teflon coated per MIL-W-22759/11, 3 leads, 152 (6.00) min. long each 1-black, 1-red, 1-white.

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