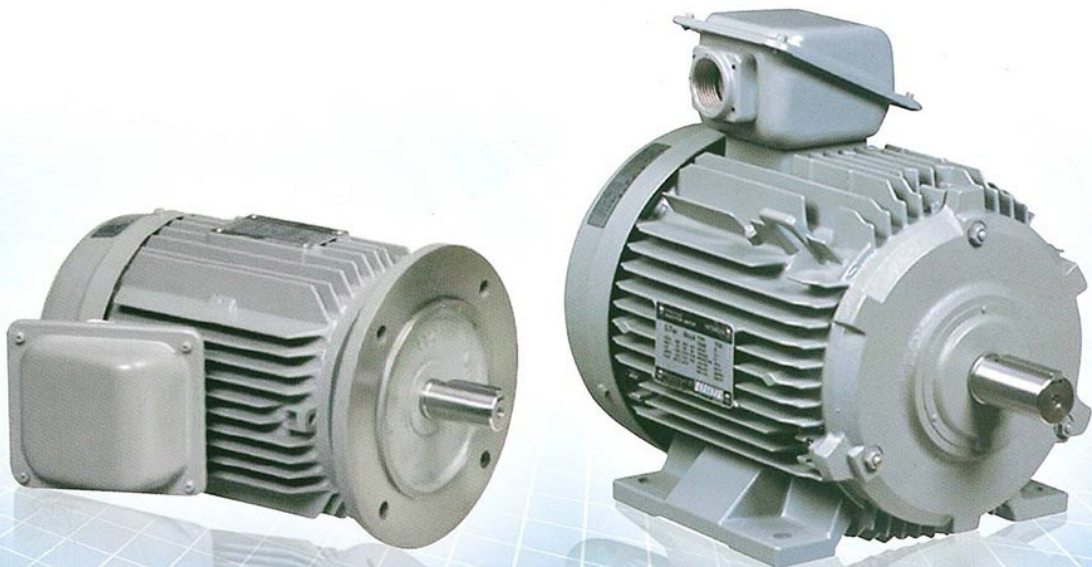




HITACHI
Inspire the Next



Hitachi Electric Motors For Industrial application



Three-Phase Induction Motors

Totally Enclosed Fan-Cooled Type (TEFC)

IP55 Series / Foot Mount Type [TFO-K(KK)]

1/7~180HP (0.1~132kW) / Left terminal box position (upto 180M)



Model:

xxHP or kW TFO-K(KK) xP IP55 TML

Output

No of pole

Item	Specifications	
Motor Output	1/7~180HP (0.1~132kW)	
Rating	Continuous [S1]	
Number of pole	2, 4, 6 pole	
Insulation Class	F type	
Enclosure	IP55 (Outdoor use)	
Voltage, Frequency	Consult to nearest representative	
Number of Cable	~5 HP 6 Wires (Direct starting 220V or 380V)	
	7.5 HP ~ 6 Wires (Star Δ - Δ Delta Starting)	
	2 pole 30 HP ~	12 Wires (Star Δ - Δ Delta Starting)
	4 pole 40 HP ~	
6 pole 50 HP ~		
Color	Alcron gray (MUNSAELL 8.9Y5.1/0.3)	
Rotation	CCW (View from motor drive end)	
Environment	Temperature	-30 ~ 40 °C Enclosed type Max 95% RH Max 1,000 m
	Humidity	
	Altitude	

Type From	Frame size	Output (HP)			Insulation	Fig. No	Dimension in mm										
		2 Pole	4 Pole	6 Pole			L	R	A	B	D	KL	KD	K	J	H	C
TO-K	63M	-	1/7	-	B	1	212	103	109	78.5	116	125	PF1/2	25	25	134.5	63 ± 0.5
	63M	-	1/4	-	B	1	212	103	109	78.5	116	125	PF1/2	25	25	134.5	63 ± 0.5
TFO-K	71M	1/2	1/2	-	B	2	236	120	116	87	145	158	PF3/4	25	30	164	71 ± 0.5
	80M	1	1	1/2	B	2	268.5	140	128.5	97	163	166	PF3/4	25	35	175	80 ± 0.5
	90L	$\frac{2}{3}$	2	1	B	3	315	168.5	146.5	116	180	168	PF3/4	49	35.5	180	90 ± 0.5
	100L	-	3	2	B	3	356	193	163	130.5	199	176	PF 1	51.5	45	199.5	100 ± 0.5
	112M	5	5	3	B	3	372	200	172	137.5	223	190	PF 1	51.5	45	223.5	112 ± 0.5
TFO-KK	132S	$\frac{7.5}{10}$	7.5	5	B	4	427.5	239	188.5	153	250	234	PF1 $\frac{1}{4}$	56	50	257	132 ± 0.5
	132M	-	10	7.5	B	4	465.5	258	207.5	172	250	234	PF1 $\frac{1}{4}$	56	50	257	132 ± 0.5
	160M	$\frac{15}{20}$	15	10	B	4	595	323	272	198	292	260	PF1 $\frac{1}{2}$	107	60	303.5	160 ± 0.5
	160L	25	20	15	B	4	595	345	250	220	292	260	PF1 $\frac{1}{2}$	107	60	303.5	160 ± 0.5
	180M	30	$\frac{25}{30}$	20	B	4	643	351.5	291.5	226.5	340	283	PF 2	75	90	350	180 ± 0.5
TFO-KK	180L	40	40	$\frac{25}{30}$	F	5	716	370.5	345.5	245.5	340	-	PF2 $\frac{1}{2}$	75	90	494	180 ± 0.5
	(200LB) 200L	50 60	50 60	40 50	F	(6) 5	(790) 820	(395.5) 425.5	394.5	(276.5) 270.5	391	-	PF2 $\frac{1}{2}$	85	110	541.5	200 ± 0.5
	(225SB) 225S	75	75	60	F	(6) 5	(826.5) 856.5	(402) 432	424.5	(283) 270.5	391	-	PF2 $\frac{1}{2}$	85	110	566.5	225 ± 0.5
	(250SD) 250S	100	100	75	F	6	(909) 939	(433.5) 463.5	475.5	(313.5) 312.5	490	-	PF2 $\frac{1}{2}$	-	100	735	250 ± 0.5
	(250MD) 250M	120	120	100	F	6	(909) 939	(452.5) 482.5	456.5	(332.5) 331.5	490	-	PF2 $\frac{1}{2}$	-	100	735	250 ± 0.5
	(280SD) 280S	150	150	120	F	6	(1008) 1068	(484) 544	524	(364) 363	550	-	PF 3	-	100	795	280 ± 1.0
	(280MD) 280M	180	180	150	F	6	(1008) 1068	(509.5) 569.5	498.5	(389.5) 388.5	550	-	PF 3	-	100	795	280 ± 1.0
	315S	-	-	180	F	6	1178	589	589	408	633	-	PF 3	-	125	865	315 ± 1.0

() : 2 pole Motor

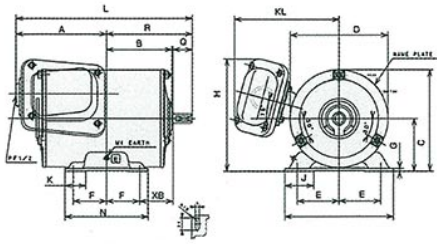


Fig.1

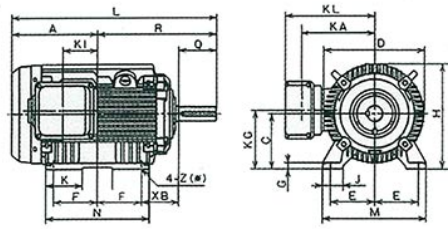


Fig.4

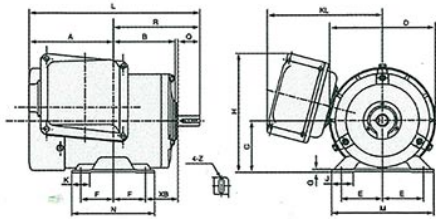
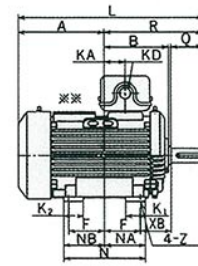


Fig.2

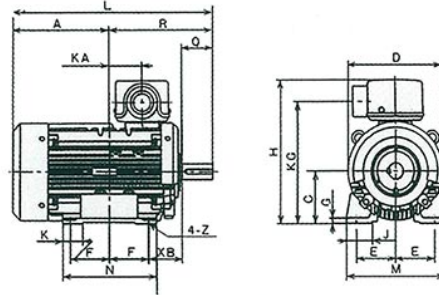


Fig.5

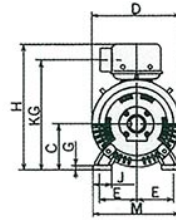


Fig.6

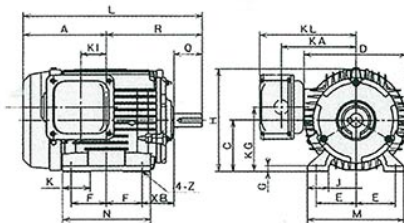
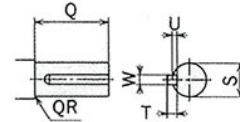


Fig.3



Shaft Dimension

Dimension in mm													Approx Weight (kg)			Approx Packing Dimension (cm)
F	E	N	M	G	Z	XB	S	W	U	T	Q	QR	2 Pole	4 Pole	6 Pole	H x W x L
40	50	100	130	3.2	7x21	40	11 ⁰ _{-0.011}	-	1	-	23	1.5	8	8.5	-	
40	50	100	130	3.2	7x21	40	11 ⁰ _{-0.011}	-	1	-	23	1.5	8	8.5	-	
45	56	115	140	3.2	7x20	45	14 ^{+0.008} _{-0.003}	5	3	5	30	1.0	8	8.5	-	16 x 22 x 27
50	62.5	125	160	3.2	10x25	50	19 ^{+0.009} _{-0.004}	6	3.5	6	40	0.3	10	12	12	18 x 24 x 31
62.5	70	155	170	10	10	56	24 ^{+0.009} _{-0.004}	8	4	7	50	0.3	15 16	16	16	20 x 27 x 37
70	80	175	195	12.5	12	63	28 ^{+0.009} _{-0.004}	8	4	7	60	0.5	-	21	23	25 x 29 x 39
70	95	175	224	14	12	70	28 ^{+0.009} _{-0.004}	8	4	7	60	0.5	27.5	28	30	27 x 32 x 41
70	108	175	250	16	12	89	38 ^{+0.018} _{+0.002}	10	5	8	80	0.5	39 44	40	41	34.2 x 45.5 x 57.5
89	108	212	250	16	12	89	38 ^{+0.018} _{+0.002}	10	5	8	80	0.5	-	48	52	34.2 x 45.5 x 57.5
105	127	300	300	18	14.5	108	42 ^{+0.018} _{+0.002}	12	5	8	110	1	70 79	73	75	39 x 51 x 72.5
127	127	300	300	18	14.5	108	42 ^{+0.018} _{+0.002}	12	5	8	110	1	85	85	90	39 x 51 x 72.5
120.5	139.5	300	350	20	14.5	121	48 ^{+0.018} _{+0.002}	14	5.5	9	110	1.5	115	120 130	130	53 x 60 x 73
139.5	139.5	335	350	20	14.5	121	55 ^{+0.030} _{+0.011}	16	6	10	110	1.5	140	155	150 160	64 x 45 x 86
152.5	159	365	400	23	18.5	133	(55 ^{+0.030} _{+0.011}) 60 ^{+0.030} _{+0.011}	(16) 18	(6) 7	(10) 11	(110) 140	(-) 1.5	200 210	210 230	220 240	67 x 50 x 91
143	178	350	450	23	18.5	149	(55 ^{+0.030} _{+0.011}) 65 ^{+0.030} _{+0.011}	(16) 18	(6) 7	(10) 11	(110) 140	(-) 2.5	235	260	265	72 x 56 x 96
155.5	203	428	500	30	24	168	(55 ^{+0.030} _{+0.011}) 75 ^{+0.030} _{+0.011}	(16) 20	(6) 7.5	(10) 12	(110) 140	-	430	450	420	84 x 63 x 108
174.5	203	428	500	30	24	168	(55 ^{+0.030} _{+0.011}) 75 ^{+0.030} _{+0.011}	(16) 20	(6) 7.5	(10) 12	(110) 140	-	450	515	500	84 x 63 x 108
184	228.5	501	550	30	24	190	(55 ^{+0.030} _{+0.011}) 85 ^{+0.030} _{+0.011}	(16) 22	(6) 9	(10) 14	(110) 170	-	610	625	630	94 x 70 x 123
209.5	228.5	501	550	30	24	190	(55 ^{+0.030} _{+0.011}) 85 ^{+0.030} _{+0.011}	(16) 22	(6) 9	(10) 14	(110) 170	-	630	680	720	94 x 70 x 123
203	254	540	615	28	28	216	95 ^{+0.035} _{+0.013}	25	9	14	170	-	-	-	930	97 x 73 x 134

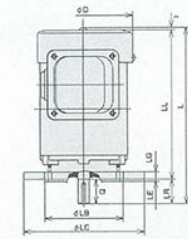


Fig.1

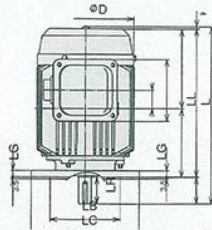


Fig.2

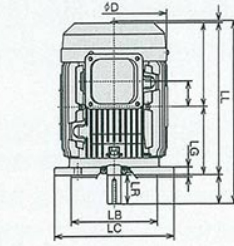


Fig.3

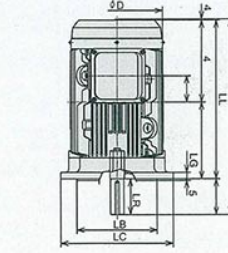


Fig.4

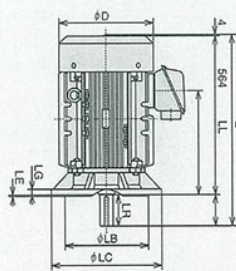


Fig.5

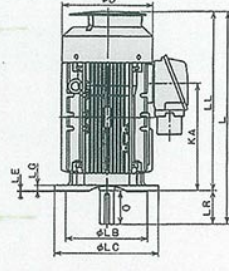


Fig.6

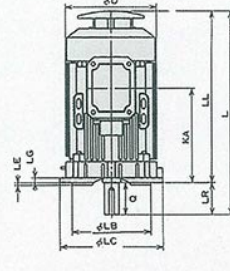


Fig.7

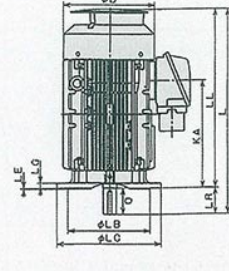
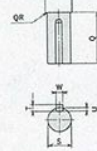


Fig.8

Shaft Dimension



Dimension in mm										Approx Weight (kg)			Approx Packing Dimension (cm)
LL	KD	KL	LR	S	W	U	T	Q	QR	2 Pole	4 Pole	6 Pole	H x W x L
230	PF 3/4	148	30	14 ^{+0.008} / _{-0.003}	5	3	5	30	1	10.5	9	-	32 x 25 x 28
247	PF 3/4	156	40	19 ^{+0.009} / _{-0.004}	6	3.5	6	40	0.3	15.5	14.4	17.5	34 x 30 x 32
277	PF 3/4	168	50	24 ^{+0.009} / _{-0.004}	8	4	7	50	0.3	17 18	18	17	40 x 30 x 33
300	PF 1	176	60	28 ^{+0.009} / _{-0.004}	8	4	7	60	0.5	-	24	25	41 x 35 x 37
316	PF 1	166.5	60	28 ^{+0.009} / _{-0.004}	8	4	7	60	0.5	30	32	32	47 x 35 x 37
351.5	PF 1 1/4	197	80	38 ^{+0.018} / _{+0.002}	10	5	8	80	0.5	43 48	44	45	55 x 41 x 43
389.5	PF 1 1/4	197	80	38 ^{+0.018} / _{+0.002}	10	5	8	80	0.5	-	52	57	59 x 41 x 43
489	PF 1 1/2	259.5	110	42 ^{+0.018} / _{+0.002}	12	5	8	110	1.0	83 89	85	82	70 x 42 x 52
489	PF 1 1/2	259.5	110	42 ^{+0.018} / _{+0.002}	12	5	8	110	1.0	90	90	96	70 x 42 x 52
564	PF 2	282.5	110	48 ^{+0.018} / _{+0.002}	14	5.5	9	110	1.0	130	130 140	140	80 x 50 x 56
637	PF 2 1/2	317.5	110	55 ^{+0.030} / _{+0.011}	16	6	10	110	1.5	140	165	160 170	87 x 50 x 59
680	PF 2 1/2	341.5	(110) 140	(55 ^{+0.030} / _{+0.011}) 60 ^{+0.030} / _{+0.011}	(16) 18	(6) 7	(10) 11	(110) 140	(-) 1.5	210 220	220 240	230 250	(90 x 53 x 64) 93 x 53 x 64
716.5	PF 2 1/2	341.5	(110) 140	(55 ^{+0.030} / _{+0.011}) 65 ^{+0.030} / _{+0.011}	(16) 18	(6) 7	(10) 11	(110) 140	(-) 2.5	245	270	275	(93 x 65 x 68) 96 x 65 x 68
799	PF 2 1/2	485	(110) 140	(55 ^{+0.030} / _{+0.011}) 75 ^{+0.030} / _{+0.011}	(16) 20	(6) 7.5	(10) 12	(110) 140	-	470 490	490 540	490 550	(103 x 71 x 91) 106 x 71 x 91
(902) 898	PF 3	515	(110) 170	(55 ^{+0.030} / _{+0.011}) 85 ^{+0.035} / _{+0.013}	(16) 22	(6) 9	(10) 14	(110) 170	-	660 680	675 730	680 750	(113 x 81 x 100) 119 x 81 x 100
1058	PF 3	550	170	95 ^{+0.035} / _{+0.013}	25	9	14	170	-	-	-	980	135 x 96 x 110

Characteristics and Performance of Three Phase Motor

1. The figures are reference data. If you need guaranteed performance data, please contact (Sales agent)
2. Only torque (full-load, starting, maximum, accelerating) and starting current are actual measurement value. Other data are equivalent circuit measures.
3. Not only current but also other characteristics may be changed under different voltage specifications. Please contact (Sales agent), if required any clarification.

2 pole 50Hz

Rated Output	HP	kW	Volt	Hz	Rated Speed (min ⁻¹)	Torque			Current				Efficiency			Power Factor			Moment of Inertia J (kg - m ²)
						Rated (Nm)	Start (%)	Max (%)	50% (A)	75% (A)	100% (A)	Start (A)	50% (%)	75% (%)	100% (%)	50% (%)	75% (%)	100% (%)	
1/2	0.4		220	50	2910	1.34	265	295	1.3	1.5	1.8	11.0	68.0	72.5	73.5	61.5	74.5	83.5	0.000675
			380		2910	1.34	265	295	0.73	0.84	1.0	6.5	68.0	72.5	73.5	61.5	74.5	83.5	
			415		2920	1.33	320	350	0.82	0.90	1.0	7.0	63.0	69.0	71.5	54.0	67.0	76.5	
1	0.75		220	50	2900	2.51	210	275	1.9	2.4	3.0	19.0	76.0	78.0	77.5	67.0	79.5	86.0	0.000973
			380		2900	2.51	210	275	1.1	1.4	1.7	11.0	76.0	78.0	77.5	67.0	79.5	86.0	
			415		2900	2.49	255	335	1.3	1.5	1.7	12.0	71.5	76.0	77.0	58.0	71.0	79.5	
2	1.5		220	50	2900	5.03	220	260	3.3	4.3	5.4	33.0	80.5	81.5	80.5	73.5	84.0	89.5	0.00170
			380		2900	5.03	220	260	1.9	2.5	3.1	19.0	80.5	81.5	80.5	73.5	84.0	89.5	
			415		2900	5.05	265	310	2.1	2.5	3.0	21.0	78.0	81.0	81.0	64.0	76.5	84.0	
3	2.2		220	50	2860	7.41	300	290	5.0	6.3	8.0	61.0	83.5	84.0	83.0	70.0	82.0	87.5	0.00190
			380		2860	7.41	300	290	2.9	3.6	4.6	35.0	83.5	84.0	83.0	70.0	82.0	87.5	
			415		2870	7.34	370	355	3.5	4.0	4.8	39.0	79.5	82.0	82.0	55.5	69.5	78.0	
5	3.7		220	50	2860	12.4	270	300	7.1	9.7	12.5	90.0	84.0	85.0	84.5	81.5	88.5	91.5	0.00520
			380		2860	12.4	270	300	4.1	5.6	7.2	52.0	84.0	85.0	84.5	81.5	88.5	91.5	
			415		2890	12.7	335	375	4.5	5.7	6.9	58.0	82.0	84.0	84.5	69.5	80.0	86.0	
7.5	5.5		380	50	2890	17.9	250	300	5.9	8.1	10.7	76.0	87.5	88.5	88.5	81.0	87.0	89.5	0.00920
			415		2900	17.8	310	380	6.4	8.1	10.7	85.0	86.0	88.0	88.5	70.0	80.0	85.0	
10	7.5		380	50	2900	24.3	240	275	7.7	10.7	14.0	105.0	88.5	90.0	89.5	83.5	89.0	90.5	0.0111
			415		2910	24.2	300	345	8.2	10.7	13.7	120.0	87.5	89.5	89.5	73.0	82.0	86.5	
15	11		380	50	2900	35.7	260	295	11.7	16.0	21	150.0	88.5	90.0	90.0	80.5	87.0	89.5	0.0193
			415		2910	35.6	320	365	13.2	16.6	21	165.0	87.0	89.0	89.5	66.5	77.5	83.0	
20	15		380	50	2900	49.0	300	325	15.8	21.6	28	210.0	90.5	91.0	90.5	80.0	87.0	89.5	0.0234
			415		2910	48.8	375	410	17.9	22.5	28	235.0	89.0	90.5	90.5	65.5	77.0	82.5	
25	18.5		380	50	2910	59.9	300	320	19.0	26.2	34	260.0	90.5	91.5	91.5	81.5	88.0	90.5	0.0264
			415		2930	59.8	375	395	21.5	27.2	34	290.0	89.0	91.0	91.0	67.0	78.0	83.5	
30	22		380	50	2920	71.0	280	330	23.5	31.8	41	320.0	89.5	91.0	91.0	79.5	86.5	89.5	0.0537
			415		2920	70.8	340	405	26.6	33.1	41	350.0	87.0	89.5	90.5	66.0	77.0	83.0	
40	30		380	50	2920	97.6	245	280	30.0	42.0	55	385.0	89.0	90.0	89.5	85.5	90.5	92.0	0.0613
			415		2930	97.3	290	335	33.2	42.9	54	420.0	87.5	89.5	89.5	72.0	81.5	86.0	
50	37		380	50	2930	120	230	230	37.3	52.4	69	445.0	88.5	90.0	90.5	85.0	89.0	90.0	0.111
			415		2940	120	230	280	40.7	53.1	67	490.0	87.5	90.0	90.5	72.0	81.0	84.5	
60	45		380	50	2920	146	250	245	45.3	63.5	84	575.0	88.5	90.0	90.5	85.0	89.5	90.5	0.120
			415		2930	146	305	300	49.1	64.0	81	635.0	88.0	90.0	90.5	72.5	81.5	85.5	
75	55		380	50	2920	178	275	270	53.8	76.0	100	730.0	90.5	92.0	91.5	85.5	90.0	91.0	0.140
			415		2940	178	340	340	58.6	76.8	98	805.0	90.0	91.5	91.5	72.5	81.5	85.5	

4 pole

50Hz

Rated Output		Volt	Hz	Rated Speed (min ⁻¹)	Torque			Current				Efficiency			Power Factor			Moment of Inertia J (kg - m ²)
HP	kW				Rated	Start	Max	50%	75%	100%	Start	50%	75%	100%	50%	75%	100%	
1/2	0.4	220	50	1410	2.77	245	260	1.4	1.6	1.9	8.0	70.0	73.0	72.5	55.5	69.5	79.0	0.000973
		380		1410	2.77	245	260	0.78	0.90	1.1	4.5	70.0	73.0	72.5	55.5	69.5	79.0	
		415		1425	2.72	300	320	0.88	1.0	1.1	5.0	65.5	70.5	72.0	48.0	61.0	71.0	
1	0.75	220	50	1410	5.10	220	265	1.9	2.4	3.0	15.0	79.0	80.0	78.0	64.5	76.5	83.0	0.000213
		380		1410	5.10	220	265	1.1	1.4	1.7	8.5	79.0	80.0	78.0	64.5	76.5	83.0	
		415		1425	5.03	270	330	1.2	1.4	1.7	9.5	76.5	79.0	78.5	57.0	70.0	78.0	
2	1.5	220	50	1420	10.3	225	250	4.0	4.9	6.1	31.0	79.5	80.5	78.0	61.5	74.5	82.0	0.00330
		380		1420	10.3	225	250	2.3	2.9	3.5	18.0	79.5	80.5	78.0	61.5	74.5	82.0	
		415		1435	10.2	275	305	2.6	3.0	3.5	20.0	76.5	79.0	78.5	51.5	65.5	74.5	
3	2.2	220	50	1430	15.1	230	250	5.5	6.9	8.5	48.0	82.5	82.5	80.5	64.0	76.5	83.0	0.00570
		380		1430	15.1	230	250	3.2	4.0	4.9	28.0	82.5	82.5	80.5	64.0	76.5	83.0	
		415		1440	14.9	280	310	3.6	4.2	4.8	31.0	80.0	82.0	81.0	54.0	67.5	76.0	
5	3.7	220	50	1410	25.4	220	240	8.4	10.8	13.9	80.0	84.5	84.0	81.5	69.0	80.0	85.5	0.0110
		380		1410	25.4	220	240	4.8	6.3	8.0	46.0	84.5	84.0	81.5	69.0	80.0	85.5	
		415		1430	25.1	270	300	5.5	6.6	8.0	52.0	81.5	83.0	82.0	57.0	70.5	78.5	
7.5	5.5	380	50	1435	36.1	240	290	6.7	8.8	11.5	67.0	87.5	88.0	87.0	70.5	81.0	86.0	0.0171
		415		1440	35.9	285	345	7.5	9.1	11.5	73.0	85.5	87.0	87.0	59.5	72.5	80.0	
10	7.5	380	50	1430	49.1	275	295	9.0	11.8	15.5	98.0	88.5	89.0	88.0	71.5	82.0	86.5	0.0214
		415		1440	48.9	335	365	9.9	12.1	15.5	105.0	86.5	88.0	88.0	61.0	73.5	80.5	
15	11	380	50	1440	71.8	240	265	12.9	17.1	22	135.0	88.5	89.0	88.0	73.0	82.0	86.0	0.0345
		415		1450	71.5	285	315	14.6	17.9	22	145.0	86.0	88.0	88.0	61.0	73.0	79.5	
20	15	380	50	1450	98.3	260	295	17.2	22.8	29	195.0	90.5	90.5	89.5	73.5	82.5	86.5	0.0446
		415		1450	97.8	315	355	19.3	23.7	29	215.0	88.0	89.5	89.0	61.5	74.0	80.5	
25	18.5	380	50	1455	121	245	265	21.5	28.4	37	240.0	89.0	90.0	89.5	73.5	82.5	86.5	0.0876
		415		1455	120	295	320	25.0	30.3	37	265.0	86.5	88.5	89.0	59.5	72.0	78.5	
30	22	380	50	1455	143	275	300	24.9	33.2	43	305.0	90.0	91.0	90.5	74.5	83.0	86.5	0.101
		415		1460	142	335	370	27.9	34.5	43	340.0	88.0	90.0	90.5	62.0	74.0	80.0	
40	30	380	50	1460	196	275	310	33.1	44.5	58	420.0	90.5	91.0	90.5	76.0	84.5	87.5	0.127
		415		1460	195	340	385	36.9	46.0	57	465.0	89.5	90.5	90.5	63.5	75.0	81.0	
50	37	380	50	1450	240	245	270	40.8	55.0	72	470.0	90.5	91.5	91.0	76.0	84.0	86.5	0.208
		415		1460	239	300	335	44.6	56.1	70	520.0	89.5	91.0	91.0	64.5	75.5	81.0	
60	45	380	50	1450	292	235	265	48.5	66.0	86	570.0	91.0	92.0	91.5	77.0	84.5	87.0	0.230
		415		1465	292	285	330	53.0	67.1	84	630.0	90.0	91.5	91.5	65.5	76.5	81.5	
75	55	380	50	1455	356	280	275	60.2	81.1	105	735.0	92.0	93.0	92.5	75.0	83.5	86.5	0.280
		415		1460	355	340	340	70.1	86.3	107	810.0	90.5	92.0	92.0	60.0	72.0	78.5	
100	75	380	50	1470	486	295	300	72.7	102.3	135	1124	92.0	93.0	93.0	85.5	90.0	91.5	1.00
		415		1475	484	365	375	72.6	97.9	130	1248	91.5	92.5	93.0	78.5	86.0	89.0	
120	90	380	50	1470	579	355	405	86.3	121.3	160	1547	93.5	94.5	94.5	85.0	89.5	91.0	1.25
		415		1475	578	440	505	86.3	116.3	150	1720	92.5	94.0	94.0	78.0	86.0	89.0	
150	110	380	50	1475	712	345	305	105.2	148.8	200	1548	93.0	94.0	93.5	85.0	89.5	91.0	1.98
		415		1480	710	430	380	104.4	141.9	185	1710	92.5	93.5	94.0	79.0	86.0	89.0	
175	132	380	50	1475	855	385	345	125.9	177.6	240	2002	93.5	94.0	94.0	85.0	90.0	91.5	2.30
		415		1480	852	480	410	123.8	168.4	220	2213	93.5	94.0	94.5	79.5	86.5	89.5	

6 pole

50Hz

Rated Output		Volt	Hz	Rated Speed (min ⁻¹)	Torque			Current				Efficiency			Power Factor			Moment of Inertia J (kg - m ²)
HP	kW				Rated	Start	Max	50%	75%	100%	Start	50%	75%	100%	50%	75%	100%	
1/2	0.4	220	50	940	4.13	225	270	1.6	1.8	2.1	9.0	66.5	70.5	70.5	49.0	62.5	72.5	0.00215
		380		940	4.13	225	270	0.93 [*]	1.0	1.2	5.0	66.5	70.5	70.5	49.0	62.5	72.5	
		415		950	4.06	280	330	1.0	1.1	1.2	5.5	63.5	69.0	70.5	43.5	56.0	66.0	
1	0.75	220	50	930	7.97	220	240	2.9	3.2	3.8	15.0	68.5	71.0	69.5	50.5	64.0	73.5	0.00460
		380		930	7.97	220	240	1.7	1.9	2.2	8.5	68.5	71.0	69.5	50.5	64.0	73.5	
		415		940	7.97	260	285	1.9	2.0	2.3	9.5	64.0	69.0	69.5	43.5	56.0	66.0	
2	1.5	220	50	930	15.4	210	240	4.6	5.5	6.6	32.0	76.5	77.5	74.5	56.0	69.5	77.0	0.00870
		380		930	15.4	210	240	2.7	3.2	3.8	18.0	76.5	77.5	74.5	56.0	69.5	77.0	
		415		930	15.4	250	285	3.0	3.4	3.9	19.0	71.5	74.5	73.5	49.0	62.5	71.5	
3	2.2	220	50	940	22.5	260	270	6.2	7.4	9.4	52.0	80.0	81.5	80.0	58.5	72.0	79.5	0.0132
		380		940	22.5	260	270	3.6	4.3	5.4	30.0	80.0	81.5	80.0	58.5	72.0	79.5	
		415		950	22.2	325	340	4.0	4.5	5.4	33.0	77.0	80.0	80.0	50.0	63.5	72.5	
5	3.7	220	5	930	38.2	210	255	8.9	11.4	14.5	80.0	85.0	84.5	82.0	64.5	76.0	81.0	0.0256
		380		930	38.2	210	255	5.1	6.6	8.4	46.0	85.0	84.5	82.0	64.5	76.0	81.0	
		415		940	38.5	265	320	5.6	6.7	8.2	52.0	83.0	84.0	83.0	55.0	68.0	75.5	
7.5	5.5	380	50	940	54.9	265	285	7.6	9.7	12.7	71.0	88.0	88.0	86.5	62.5	73.5	78.5	0.0343
		415		950	54.5	315	340	8.6	10.2	12.6	77.0	85.0	87.0	86.5	52.5	65.0	72.0	
10	7.5	380	50	960	73.2	245	340	10.3	12.8	16.5	115.0	87.0	88.0	87.0	63.5	76.0	82.5	0.0551
		415		960	72.9	305	425	12.1	14.0	17.0	125.0	83.0	85.5	86.0	51.5	65.5	74.0	
15	11	380	50	960	108	250	345	13.7	17.6	23	160.0	89.0	89.0	88.0	68.5	80.0	85.0	0.0727
		415		960	107	310	430	15.3	18.4	23	175.0	86.5	88.0	88.0	57.5	71.0	78.5	
20	15	380	50	965	146	235	265	18.3	23.9	31	190.0	90.5	90.5	90.0	69.0	79.0	83.0	0.140
		415		965	145	285	315	20.8	25.1	31	205.0	87.0	89.0	89.0	57.5	70.0	76.5	
25	18.5	380	50	965	181	240	265	22.1	29.0	38	220.0	89.5	90.0	89.5	71.0	80.5	84.5	0.164
		415		965	180	295	325	24.6	30.1	37	245.0	87.0	89.0	89.0	60.0	72.0	78.5	
30	22	380	50	965	214	265	295	26.4	34.5	45	280.0	90.0	90.5	90.0	70.5	80.0	84.5	0.190
		415		965	213	325	370	29.9	36.2	44	310.0	87.5	89.5	89.5	58.5	71.0	77.5	
40	30	380	50	965	291	225	280	36.2	47.1	61	380.0	90.5	91.5	91.0	69.5	79.5	84.0	0.333
		415		970	291	275	345	41.3	49.7	61	420.0	88.5	90.5	90.5	57.0	69.5	76.5	
50	37	380	50	970	360	230	275	43.8	57.5	74	455.0	91.5	92.0	91.5	70.0	80.0	84.0	0.382
		415		970	359	285	340	49.0	59.7	74	505.0	90.0	91.0	91.0	58.5	71.0	77.5	
60	45	380	50	970	438	250	275	50.8	67.8	88	535.0	92.0	92.0	91.0	73.5	82.5	86.0	0.430
		415		975	437	300	330	57.8	71.1	88	590.0	90.0	91.0	91.0	60.0	72.5	79.0	
75	55	380	50	975	533	255	265	58.7	80.1	105	695.0	93.0	93.0	92.5	76.5	84.0	86.5	0.880
		415		975	532	310	325	62.4	79.9	105	770.0	92.0	93.0	92.5	66.5	77.0	82.0	