

**NEW
ELEC**

MOTOR PROTECTION & CONTROL TECHNOLOGY

Typical induction motors

A South African Company to be Proud of

Typical Three-Phase Induction Motors



Rated Output kW	Frame IEC	Rated Speed rpm	Full Load Current at 380V in A	Locked Rotor Current I _L /I _n	Full Load Torque T _n Nm	Locked Rotor Torque T _L /T _n	Break-down Torque T _b /T _n	Efficiency η				Noise Level dB (A) Sound Pressure Level	Moment of Inertia J kgm ²	Allowable Time of Locked Rotor Hot/Cold S/S	Approx. weight kg		
								Power Factor cos φ									
								50	75	100	100						
3 000 RPM - 50Hz																	
0.12	63	2850	0.45	4.3	0.39	2.5	3.0	44.0	53.0	58.0	0.51	0.60	0.70	60	0.00023	17/37	6.5
0.18	63	2780	0.55	4.0	0.59	2.2	2.6	54.0	60.0	62.0	0.59	0.70	0.80	60	0.00026	13/28	6.5
0.25	63	2820	0.73	4.1	0.88	2.3	2.8	57.0	63.0	65.0	0.58	0.70	0.80	60	0.00034	10/22	6.5
0.37	71	2770	1.05	4.3	1.30	2.7	2.7	60.0	65.0	66.0	0.59	0.71	0.81	61	0.00034	10/22	9.0
0.55	71	2760	1.45	4.4	1.90	2.7	2.7	67.0	71.0	71.0	0.61	0.74	0.81	61	0.00046	8/17	10
0.75	80	2750	1.85	4.6	2.60	2.3	2.3	70.0	72.0	72.0	0.72	0.82	0.85	65	0.00112	13/28	13
1.1	80	2800	2.7	6.0	3.70	2.5	2.5	72.0	75.0	75.0	0.62	0.75	0.82	65	0.00150	7/15	13
1.5	90 S	2830	3.4	5.5	5.10	2.4	2.8	75.0	78.0	78.0	0.73	0.82	0.86	70	0.00183	11/24	18.5
2.2	90 L	2820	5.1	6.0	7.50	2.8	2.8	77.0	80.0	80.0	0.64	0.75	0.82	70	0.00200	7/15	19.5
3.0	100 L	2870	6.2	7.0	9.80	2.8	2.8	80.0	83.0	84.0	0.77	0.85	0.88	73	0.00620	7/15	31.5
4.0	112 M	2870	8.5	6.5	13.7	2.6	3.0	81.0	84.0	84.0	0.70	0.80	0.85	70	0.00690	7/15	40
5.5	132 S	2930	11	7.3	17.6	2.2	3.0	79.0	83.0	84.0	0.78	0.85	0.89	73	0.0199	6/13	59
7.5	132 S	2930	15	7.2	24.3	2.5	3.2	80.0	84.0	86.0	0.79	0.85	0.87	73	0.0226	6/13	67
9.2 **	132 M	2930	19	7.5	30.4	2.8	3.2	81.0	85.0	87.0	0.76	0.81	0.86	74	0.0252	6/13	74
11	160 M	2930	21	7.0	36.3	2.6	3.0	86.0	87.0	88.0	0.82	0.89	0.90	75	0.0403	8/18	102
15	160 M	2920	28	7.3	44.0	2.5	3.3	86.0	87.0	89.0	0.85	0.89	0.90	75	0.0515	6.5/14	114
18.5	160 L	2930	35	7.1	59.8	2.5	3.1	86.0	89.0	89.4	0.86	0.89	0.89	75	0.0605	6/13	134
22	180 M	2960	43	7.2	70.6	3.0	2.9	88.0	89.0	90.0	0.75	0.83	0.87	80	0.1381	6/13	165
30	200 L	2930	57	6.9	98.1	2.7	2.6	89.0	90.0	90.5	0.80	0.86	0.88	80	0.1926	8/18	232
37	200 L	2970	71	6.9	118	2.6	2.7	89.0	90.0	91.0	0.84	0.86	0.87	80	0.2055	8/18	249
45	225 S/M	2960	85	7.1	147	2.5	2.7	89.0	90.0	92.0	0.84	0.87	0.87	80	0.4030	13/29	385
55	250 S/M	2970	104	7.1	177	3.0	3.0	89.0	91.0	92.7	0.83	0.86	0.87	80	0.4601	12/26	470
75	250 S/M	2980	137	8.3	245	2.7	3.0	89.0	91.0	92.5	0.84	0.88	0.90	84	0.9284	15/33	470
75	280 S/M	2980	139	6.9	245	2.7	3.3	89.0	91.0	92.5	0.85	0.88	0.89	86	1.0730	11/24	705
100	280 S/M	2960	167	6.9	294	2.0	2.3	90.0	91.5	92.8	0.83	0.86	0.88	86	1.2255	19/41	735
110	315 S/M	2950	200	7.2	353	2.1	3.2	90.5	92.0	93.5	0.87	0.89	0.89	86	1.3701	21/46	820
132 *	315 S/M	2950	240	7.2	432	1.8	2.5	90.8	92.0	93.8	0.87	0.88	0.89	86	1.4985	18/39	895
150 *	315 S/M	2950	265	7.1	476	1.5	2.0	90.0	91.0	93.8	0.87	0.89	0.90	86	1.8400	14.31	1076
160 *	315 S/M	2950	280	7.1	520	1.5	2.0	90.9	92.0	93.8	0.87	0.89	0.90	86	1.8400	15/33	1076
185 **	315 S/M	2970	338	7.0	589	2.1	2.8	91.0	92.0	94.0	0.86	0.88	0.88	86	1.8400	30/50	1077
200 *	315 S/M	2965	367	6.5	645	1.9	2.3	91.0	92.0	94.0	0.87	0.88	0.88	86	1.8400	28/46	1077
220	355 M/L	2970	391	5.9	707	1.1	2.1	93.9	94.9	94.9	0.88	0.89	0.90	92	3.1400	20/35	1280
250	355 M/L	2970	445	5.9	799	1.1	2.1	94.0	95.0	95.0	0.88	0.89	0.90	92	3.9800	20/35	1634
275	355 M/L	2975	488	5.9	882	1.1	2.1	94.1	95.1	95.1	0.88	0.89	0.90	92.8	4.3700	20/36	1800
315 *	355 M/L	2980	558	6.0	1000	1.1	2.1	94.3	95.3	95.3	0.89	0.89	0.90	93.5	5.020	23/39	2100
355	400 M/L	2980	661	6.0	1140	1.0	2.0	94.4	95.4	95.4	0.90	0.90	0.91	93.5	12.000	23/39	2600
400 *	400 M/L	2980	699	6.0	1280	1.0	2.0	94.5	95.5	95.5	0.90	0.90	0.91	93.5	13.500	23/40	2850

Typical Three-Phase Induction Motors

1 500 RPM - 50HZ



0.12	63	1415	0.47	3.8	0.78	2.5	2.8	46.0	54.0	58.0	0.48	0.58	0.67	44	0.00046	21/46	6.5
0.18	63	1400	0.66	3.8	1.30	2.4	2.7	52.0	58.0	61.0	0.47	0.58	0.68	44	0.00057	16/35	7.0
0.25	71	1380	0.79	3.8	1.80	2.3	2.4	56.0	61.0	63.0	0.55	0.67	0.76	45	0.00057	19/39	9.0
0.37	71	1405	1.2	4.4	2.60	2.5	2.7	59.0	65.0	67.0	0.48	0.61	0.70	45	0.0008	17/37	10
0.55	80	1420	1.6	5.0	3.70	2.6	2.8	65.0	70.0	71.0	0.50	0.63	0.73	47	0.00212	12/26	13
0.75	80	1420	1.95	5.0	5.00	2.6	2.8	70.0	74.0	75.0	0.53	0.68	0.78	47	0.00265	9/20	13
1.1	90 S	1385	2.7	5.0	7.60	2.6	2.6	73.0	75.0	75.0	0.62	0.75	0.82	52	0.00402	10/22	18
1.5	90 L	1400	3.5	5.2	9.80	2.6	2.6	74.0	76.0	76.0	0.63	0.77	0.85	53	0.00516	7/15	21.5
2.2	100 L	1415	4.8	6.0	14.7	2.7	2.8	77.0	79.0	79.0	0.72	0.82	0.88	55	0.00704	9/20	28.5
3.0	100 L	1405	6.5	6.2	20.6	2.7	2.8	80.0	81.0	81.0	0.71	0.82	0.87	55	0.0086	6/13	30
4.0	112 M	1425	8.7	6.5	26.5	2.8	3.0	80.0	83.0	83.0	0.69	0.78	0.84	60	0.01557	7/15	45
5.5	132 S	1450	12	7.0	36.3	2.4	2.5	81.0	83.0	85.0	0.68	0.77	0.82	61	0.0407	10/22	56
7.5	132 M	1450	15	6.9	49.0	2.5	2.8	84.0	85.0	86.5	0.68	0.79	0.86	61	0.0465	7/15	64
9.2 **	160 M	1460	19	7.0	59.8	2.0	2.6	84.0	86.0	87.0	0.69	0.79	0.86	65	0.0612	8/17	91
11	160 M	1460	22	7.0	71.6	2.0	2.7	84.0	89.0	90.0	0.71	0.80	0.85	65	0.0722	6/13	101
15	160 L	1460	30	7.0	98.1	2.1	2.6	84.0	87.0	89.7	0.71	0.80	0.86	65	0.0832	6/13	110
18.5	180 M	1460	35	7.0	118	2.9	2.7	87.0	89.0	90.0	0.79	0.86	0.89	70	0.1506	7/15	174
22	180 L	1470	45	6.0	147	2.8	2.8	86.0	88.0	90.2	0.66	0.77	0.83	71	0.1773	7/15	185
30	200 L	1460	60	7.0	196	2.8	2.6	85.0	88.0	90.7	0.76	0.83	0.84	71	0.2936	10/22	240
37	225 S/M	1460	70	6.5	245	2.4	2.5	88.0	90.0	91.8	0.85	0.86	0.87	76	0.6759	11/24	344
45	225 S/M	1480	85	6.2	294	2.2	2.5	89.0	91.2	92.5	0.82	0.86	0.87	76	0.7866	9.5/21	378
55	250 S/M	1480	105	6.7	353	2.9	2.9	90.0	92.6	92.8	0.81	0.85	0.86	76	0.9483	8.5/19	440
75	250 S/M	1480	142	8.5	471	2.6	2.6	87.0	90.0	92.8	0.76	0.84	0.87	80	1.8495	13/28	510
90	280 S/M	1480	173	6.6	579	2.0	2.4	90.0	92.0	93.1	0.80	0.84	0.86	80	2.2306	12/26	724
110	280 S/M	1480	218	7.7	716	2.4	2.4	90.0	91.5	93.5	0.75	0.81	0.84	80	2.5985	18/39	860
132	315 S/M	1480	240	6.9	853	2.4	2.7	91.2	92.7	94.3	0.82	0.87	0.88	80	3.3535	18/39	990
150	315 S/M	1480	297	7.0	949	2.5	2.5	91.0	93.0	94.0	0.82	0.84	0.87	80	3.3535	21/47	1000
160	315 S/M	1480	318	7.0	1030	2.5	2.5	91.5	93.2	94.4	0.82	0.84	0.86	80	3.3535	22/48	1003
185 **	315 S/M	1480	344	7.0	1177	2.7	3.1	91.0	93.2	95.0	0.75	0.82	0.86	80	3.3536	20/34	1005
200 *	315 S/M	1485	380	7.0	1295	2.0	2.5	91.4	93.5	95.0	0.72	0.81	0.84	80	1.3536	20/35	1010
220	355 M/L	1480	414	6.5	1420	1.0	2.1	93.8	94.8	94.8	0.82	0.83	0.85	86	5.4000	20/36	1490
250	355 M/L	1480	470	6.5	1600	1.1	2.1	94.0	95.0	95.0	0.82	0.84	0.85	86	6.2800	20/36	1600
275	355 M/L	1480	510	6.6	1774	1.1	2.1	94.3	95.3	95.3	0.83	0.85	0.86	86	7.0000	20/37	1700
315 *	355 M/L	1480	582	6.6	2015	1.0	2.1	94.5	95.5	95.5	0.83	0.85	0.86	86	7.7100	20/38	1800
355 *	355 M/L	1480	648	6.7	2285	1.0	2.1	94.6	95.6	95.6	0.83	0.85	0.87	86.5	8.6800	20/39	2100
400	400 M/L	1480	722	6.7	2560	0.9	2.0	94.7	95.7	95.7	0.84	0.87	0.88	86.5	13.000	23/40	2500
450 *	400 M/L	1480	801	6.7	2880	0.9	2.0	94.8	95.8	95.8	0.84	0.87	0.89	86.5	14.500	23/40	2680

Typical Three-Phase Induction Motors



Rated Output kW	Frame IEC	Rated Speed rpm	Full Load Current at 380 V in A	Locked Rotor Current I _L /I _n	Full Load Torque T _n Nm	Locked Rotor Torque T _L /T _n	Break-down Torque T _b /T _n	Efficiency η			Power Factor cos φ			Noise Level dB (A) Sound Pressure Level	Moment of Inertia J kgm ²	Allowable Time of Locked Rotor Hot/Cold S / S	Approx. weight kg
								% of full load			%						
								50	75	100	50	75	100				
1 000 RPM - 50Hz																	
0.12	63	920	0.55	3.3	1.30	2.4	2.4	40.0	46.0	50.0	0.47	0.57	0.66	41	0.0006	18/39	8.0
0.18	71	880	0.83	3.0	2.00	1.9	1.9	42.0	48.0	50.0	0.46	0.56	0.66	41	0.0008	25/54	10
0.25	71	880	0.95	3.0	2.70	1.9	1.9	53.0	59.0	60.0	0.46	0.58	0.67	42	0.0009	22/48	12
0.37	80	920	1.2	3.0	3.80	1.9	1.9	58.0	62.0	62.0	0.51	0.65	0.75	42	0.00229	18/39	12
0.55	80	920	1.75	4.0	5.70	2.3	2.5	62.0	66.0	67.0	0.50	0.61	0.71	42	0.00318	11/24	15
0.75	90 S	940	2.2	4.2	7.60	2.5	2.6	68.0	72.0	72.0	0.50	0.62	0.72	47	0.00459	16/35	20
1.1	90 L	920	3.0	4.5	12.0	2.6	2.7	70.0	74.0	73.0	0.58	0.70	0.76	47	0.00689	11/24	22.5
1.5	100 L	940	4.0	4.5	16.0	2.1	2.5	71.0	75.0	75.0	0.57	0.70	0.76	54	0.01148	10/22	29
2.2	112 M	940	5.8	4.5	26.0	2.0	2.4	75.0	78.0	78.0	0.57	0.67	0.74	55	0.0165	13/30	38.5
3.0	132 S	950	7.5	6.1	30.0	2.0	2.5	77.0	79.0	80.0	0.58	0.71	0.79	57	0.0305	8.5/19	56
4.0	132 M	950	9.8	6.4	40.0	2.0	2.8	80.0	82.0	83.0	0.57	0.69	0.74	58	0.0437	6/13	63
5.5	132 M	960	12	6.4	55.0	2.2	3.0	80.0	82.0	84.0	0.60	0.75	0.88	58	0.0610	11/24	80
9.2**	160 L	970	22	6.1	90.0	2.9	3.0	84.0	85.0	86.0	0.63	0.68	0.74	61	0.0970	6/13	130
11	160 L	960	24	6.5	108	2.2	2.3	84.0	86.0	87.0	0.64	0.73	0.80	61	0.1079	7/15	138
15	180 L	970	30	6.4	147	2.7	3.2	82.0	86.0	88.0	0.74	0.84	0.87	61	0.2696	11/24	180
18.5	200 L	980	38	6.2	177	2.0	2.6	86.0	88.0	89.0	0.70	0.78	0.83	63	0.3287	16/35	230
22	200 L	980	46	6.4	216	2.1	2.7	87.0	88.0	89.5	0.71	0.80	0.82	63	0.3554	11/24	232
30	225 S/M	980	61	6.5	294	1.9	2.3	89.0	90.0	90.7	0.75	0.80	0.82	66	0.9635	20/44	368
37	250 S/M	980	73	6.1	363	1.8	2.0	90.0	90.8	91.4	0.79	0.83	0.84	67	1.1560	17/37	424
45	250 S/M	980	87	6.5	432	2.7	2.9	89.0	91.0	91.7	0.76	0.81	0.85	75	2.2492	18/39	540
55	280 S/M	990	109	6.5	530	2.7	2.7	90.4	91.5	92.5	0.70	0.78	0.83	80	2.5290	20/44	647
75	280 S/M	980	144	7.2	716	2.4	2.5	90.0	91.0	92.4	0.72	0.81	0.84	80	2.9020	13/29	698
90	315 S/M	980	180	6.2	873	3.0	3.0	91.2	92.5	93.1	0.71	0.80	0.82	80	3.3364	15/33	818
110	315 S/M	990	225	6.3	1059	3.0	2.8	91.4	92.5	93.2	0.72	0.78	0.80	80	4.6245	18/39	986
132	315 S/M	980	264	7.0	1285	2.3	2.8	91.5	92.5	93.1	0.70	0.78	0.82	80	4.6245	20/35	987
150	355 M/L	990	294	6.0	1430	1.3	2.2	92.5	93.5	93.5	0.76	0.82	0.83	84	6.9400	20/36	1460
160	355 M/L	990	313	6.0	1541	1.3	2.2	92.5	93.5	93.5	0.76	0.82	0.84	84	7.4000	20/36	1500
185**	355 M/L	990	357	6.0	1780	1.2	2.2	92.7	93.7	93.7	0.77	0.83	0.84	84	8.5600	20/35	1570
200	355 M/L	990	385	6.0	1929	1.2	2.2	93.0	94.0	94.0	0.77	0.83	0.84	85	8.8000	20/37	1680
220	355 M/L	990	421	6.0	2122	1.2	2.1	93.0	94.5	94.5	0.77	0.83	0.84	85	9.3400	20/36	1720
250	355 M/L	990	472	6.0	2410	1.1	2.1	93.0	94.7	94.7	0.78	0.84	0.85	85	10.400	20/36	1775
275*	355 M/L	990	517	6.0	2633	1.1	2.1	94.0	95.0	95.0	0.78	0.84	0.85	85	13.200	20/36	1870
300*	355 M/L	990	563	6.0	2894	1.1	2.1	94.2	95.2	95.2	0.80	0.84	0.85	85	14.140	20/38	1950
315	400 M/L	990	590	6.1	3040	1.1	2.1	94.5	95.3	95.3	0.82	0.84	0.85	86	18.000	23/40	2200
355	400 M/L	990	656	6.1	3420	1.0	2.1	94.7	95.5	95.5	0.82	0.85	0.86	86	20.000	23/40	2400
400*	400 M/L	990	730	6.1	3855	0.9	2.0	94.7	95.7	95.7	0.82	0.85	0.87	86	23.000	23/39	3000

Typical Three-Phase Induction Motors

750 RPM - 50HZ



0.12	71	650	0.65	2.5	1.80	1.9	2.1	37.0	44.0	47.0	0.45	0.52	0.60	41	0.00080	30/60	10
0.18	80	690	0.89	2.5	2.40	1.7	1.8	40.0	48.0	50.0	0.43	0.53	0.62	42	0.00247	18/38	13.5
0.25	80	680	1.0	2.5	3.50	1.7	1.7	49.0	55.0	57.0	0.43	0.56	0.66	42	0.00300	15/30	14.5
0.37	90 S	690	1.25	3.5	5.10	2.0	2.0	60.0	65.0	66.0	0.45	0.58	0.68	47	0.00460	27/56	19
0.55	90 L	680	1.9	3.3	7.70	1.9	1.9	65.0	67.0	67.0	0.45	0.58	0.66	47	0.00632	16/34	21.5
0.75	100 L	690	2.25	3.2	10.8	1.6	1.9	65.0	71.0	71.0	0.52	0.64	0.71	53	0.00979	17/35	27
1.1	100 L	690	3.2	3.5	15.7	1.6	1.9	71.0	74.0	74.0	0.53	0.63	0.71	53	0.01325	20/42	30
1.5	112 M	700	4.4	4.0	20.6	2.6	2.9	72.0	74.0	74.0	0.50	0.63	0.70	53	0.02384	18/38	45
2.2	132 S	720	6.4	5.4	29.4	2.4	2.5	70.0	73.0	75.0	0.45	0.58	0.70	55	0.0658	18/39	68
3.0	132 M	710	8.1	4.4	40.2	2.2	2.2	73.0	76.0	77.0	0.48	0.61	0.71	56	0.0737	23/50	75
4.0	160 M	720	12	6.8	53.0	2.7	3.1	76.0	78.0	79.0	0.40	0.58	0.63	58	0.0788	6.5/14	110
5.5	160 M	730	14	6.9	71.6	1.9	2.4	78.0	80.0	81.0	0.50	0.63	0.74	58	0.0970	6/13	115
7.5*	160 L	720	21	6.5	98.1	2.0	2.7	78.0	81.0	82.0	0.55	0.62	0.66	59	0.0970	6/13	127
9.2**	180 L	730	24	6.7	118	2.1	2.8	81.0	83.0	84.0	0.50	0.62	0.69	61	0.2374	7/15	160
11	180 L	730	29	6.6	147	2.5	3.1	81.0	83.0	85.0	0.50	0.63	0.69	62	0.2696	8/18	177
15	200 L	730	35	4.4	196	1.8	2.0	83.0	85.0	86.0	0.71	0.75	0.76	63	0.3287	11/22	225
18.5	225 S/M	740	44	5.7	235	1.5	2.8	84.0	87.0	88.5	0.50	0.68	0.72	65	0.8538	12/26	330
22	225 S/M	740	51	6.5	284	2.1	3.5	85.0	88.2	89.5	0.62	0.71	0.73	65	0.9670	11/24	360
30	250 S/M	730	63	6.0	392	1.7	2.9	85.4	88.7	90.3	0.76	0.79	0.80	65	1.1560	11/24	425
37	280 S/M	730	78	5.7	481	1.7	2.8	87.0	89.5	90.8	0.71	0.76	0.79	72	2.2141	26/57	595
45	280 S/M	730	94	6.3	589	1.6	2.8	87.0	89.6	91.0	0.70	0.76	0.80	72	2.4920	16/35	644
55	315 S/M	730	113	5.3	716	1.6	2.3	88.3	90.4	91.8	0.65	0.75	0.81	72	2.8611	30/60	689
75*	315 S/M	730	153	5.0	981	1.4	2.2	89.5	91.5	92.3	0.73	0.80	0.81	72	3.8762	30/60	888
90*	315 S/M	730	180	6.0	1177	1.7	2.6	90.0	91.7	92.5	0.71	0.79	0.82	72	4.6145	23/48	988
110	315 S/M	730	222	7.0	1442	1.4	2.4	90.0	91.5	92.5	0.74	0.80	0.81	72	4.6145	18/32	988
132	355 M/L	730	259	5.8	1725	1.1	2.1	93.0	94.0	94.4	0.73	0.77	0.82	79	12.500	20/35	1710
150	355 M/L	740	294	5.8	1935	1.1	2.1	93.5	94.5	94.5	0.73	0.77	0.82	79	13.000	20/36	1750
160	355 M/L	740	313	5.8	2063	1.1	2.1	93.7	94.7	94.7	0.73	0.78	0.82	79	13.800	20/36	1780
185**	355 M/L	740	357	5.8	2390	1.1	2.1	93.8	94.8	94.8	0.73	0.78	0.83	79	14.200	20/38	1850
200	355 M/L	740	385	6.0	2581	1.1	2.1	94.1	95.1	95.1	0.74	0.78	0.83	79	15.200	20/37	1900
220	355 M/L	740	422	6.0	2900	1.0	2.0	94.3	95.3	95.3	0.74	0.78	0.83	79	18.800	20/37	1920
250	400 M/L	740	478	6.0	3224	1.0	2.0	94.6	95.6	95.6	0.74	0.78	0.83	80	20.600	23/39	2700
275	400 M/L	740	526	6.1	3610	0.9	2.0	94.7	95.7	95.7	0.75	0.79	0.83	80	23.500	23/40	2870
315*	400 M/L	740	602	6.1	4065	0.9	1.9	94.8	95.8	95.8	0.75	0.80	0.83	80	25.000	23/40	2980