APPENDIX E

POWER FACTORS AND EFFICIENCY VALUES FOR ABB ELECTRIC MOTORS

ABB

TYPICAL PERFORMANCE DATA

ABB Premium Efficiency, Severe Duty, Squirrel Cage Induction Motors, Cast Iron Frame, 575V/3/60, NEMA Design B, 1.15 S.F., 40 deg. C ambient

Revision 1

OUTPUT	FRAME	SPEED	Current at 230 V		575 V	EFFICIENCY			POWER FACTOR			TORQUE*		
HP	NEMA	Full load rpm	Full Load A	LRC A	F.L. A	100.0% %	75.0% %	50.0% %	100.0% %	75.0% %	50.0% %	RATED lb·ft	LRT %	BDT %
0.75	143T	1150	2.6	16	1.10	84.0%	84.1%	83.5%	65.00	55.50	43.00	3.4	265	305
1	143T	3355	*	*	*	*	*	*	*	*	*	*	*	*
	143T	1730	2.8	21	1.10	86.5%	86.5%	82.5%	78.00	71.50	58.50	3.0	290	310
	145T	1140	3.4	21	1.40	84.0%	84.2%	80.0%	66.00	58.00	45.50	4.6	255	300
	182T	865	3.8	20	1.50	84.0%	84.1%	81.0%	60.00	52.00	40.50	6.1	200	265
1.5	143T	3470	3.8	32	1.50	85.5%	85.5%	83.5%	88.50	84.00	75.50	2.3	250	310
	145T	1730	4.2	32	1.70	87.5%	87.7%	86.0%	78.50	72.00	60.00	4.5	300	320
	182T	1165	4.8	35	1.90	87.5%	87.8%	85.5%	68.50	60.00	46.00	6.8	270	280
	184T	865	5.6	31	2.30	84.0%	84.2%	82.0%	60.50	51.50	41.00	9.1	200	300
2	145T	3475	5.0	48	2.00	86.5%	86.8%	85.5%	89.00	86.00	77.00	3.0	250	315
	145T	1730	5.6	43	2.30	87.5%	87.7%	85.5%	78.00	71.00	60.00	6.1	300	340
	184T	1165	5.8	46	2.30	88.5%	88.7%	86.5%	73.00	65.50	53.00	9.0	250	310
	213T	865	6.2	42	2.50	85.5%	85.5%	82.0%	71.00	63.00	50.00	12.1	240	300
3	182T	3505	7.2	64	2.90	88.5%	88.7%	87.0%	90.00	87.00	80.00	4.5	210	290
	182T	1745	7.8	64	3.10	90.2%	90.3%	89.0%	81.00	75.00	63.50	9.0	260	310
	213T	1170	8.6	60	3.50	89.5%	89.7%	87.0%	75.00	66.50	53.00	13.5	240	300
	215T	865	9.2	58	3.70	85.5%	85.5%	83.0%	72.50	64.00	51.50	18.2	220	300
5	184T	3505	11.6	92	4.70	90.2%	90.5%	89.0%	90.50	88.00	81.00	7.5	210	300
	184T	1745	12.8	92	5.10	90.2%	90.4%	89.1%	82.50	77.00	66.00	15.1	260	300
	215T	1170	13.8	92	5.50	89.5%	89.8%	87.5%	78.00	71.00	60.00	22.5	240	300
	254T	875	15.0	80	6.00	89.5%	89.8%	88.2%	70.00	65.50	51.00	30.0	180	220
7.5	213T	3500	18.0	127	7.20	90.2%	90.5%	89.5%	88.00	85.50	79.00	11.3	200	270
	213T	1750	18.2	127	7.30	91.0%	91.3%	90.2%	86.00	83.00	74.00	22.5	230	260
	254T	1170	20.2	127	8.10	91.7%	92.0%	91.5%	77.00	72.00	61.50	33.7	200	240
	256T	875	22.6	110	9.10	89.5%	89.8%	88.5%	70.50	66.00	52.00	45.0	180	220
10	215T	3500	23.0	162	9.20	91.7%	91.9%	90.5%	89.00	87.00	83.50	15.0	220	270
	215T	1750	23.8	162	9.50	91.7%	91.9%	90.5%	87.00	84.00	75.00	30.0	225	255
	256T	1170	26.4	162	10.60	91.7%	92.1%	91.7%	79.00	74.50	65.00	44.9	200	240
	284T	880	30.0	162	12.00	91.0%	91.3%	89.5%	70.00	63.00	51.00	59.7	210	250
15	254T	3510	34.6	232	13.80	91.0%	91.0%	90.2%	91.00	90.00	86.00	22.5	210	270
	254T	1760	37.0	232	14.80	92.4%	92.7%	92.5%	83.00	80.00	72.50	44.8	210	230
	284T	1170	38.8	232	15.50	92.4%	92.6%	91.3%	80.00	75.50	66.30	67.3	210	230
	286T	880	42.4	232	17.00	91.7%	92.0%	91.0%	73.00	66.00	54.00	89.6	200	230
20	256T	3510	46.0	290	18.40	91.0%	91.4%	90.5%	91.00	90.00	87.50	29.9	210	280
	256T	1760	49.0	290	19.60	93.0%	93.4%	91.5%	83.50	79.50	71.50	59.7	220	235
	286T	1170	51.0	290	20.40	92.4%	92.8%	91.5%	81.00	78.00	70.00	89.8	210	225
	324T	880	56.6	290	22.70	91.7%	91.9%	91.0%	73.00	66.50	55.00	119.4	210	230
25	284TS	3520	57.4	365	23.00	91.7%	91.7%	91.4%	90.50	90.00	87.00	37.3	230	250
	284T	1765	60.0	365	24.00	93.6%	93.8%	93.2%	84.00	81.00	73.00	74.4	200	220
	324T	1175	60.4	365	24.20	93.0%	93.1%	92.2%	85.00	81.00	71.00	111.8	210	250
	326T	880	71.0	365	28.40	91.7%	92.1%	91.0%	73.00	67.00	55.00	149.4	220	250

Notes:
1. The above are typical values based on test.
2. Actual test data per IEEE 112 - Method B.
3. Current for 460 V, divide 230V values by 2.
4. For 200 HP and larger are 460 V only.

ALL DATA SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

1/27/00

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TYPICAL PERFORMANCE DATA

**ABB Premium Efficiency, Severe Duty, Squirrel Cage Induction Motors,
Cast Iron Frame, 575V/3/60, NEMA Design B, 1.15 S.F., 40 deg. C ambient**

Revision 1

OUTPUT	FRAME	SPEED	Current at 230 V		575 V	EFFICIENCY			POWER FACTOR			TORQUE		
HP	NEMA	Full load	Full Load	LRC	F.L.	100.0%	75.0%	50.0%	100.0%	75.0%	50.0%	RATED	LRT	BDT
		rpm	A	A	A	%	%	%	%	%	%	lb·ft	%	%
30	286TS	3525	68.2	435	27.30	92.4%	92.7%	91.7%	91.00	90.00	87.00	44.7	235	260
	286T	1765	72.0	435	28.80	93.6%	93.9%	92.5%	84.00	81.50	75.00	89.3	200	230
	326T	1175	72.0	435	28.80	93.0%	93.3%	92.5%	85.50	81.50	72.00	134.1	215	255
	364T	880	83.2	435	33.30	92.4%	92.6%	91.5%	74.00	69.00	58.00	179.2	210	240
40	324TS	3530	93.4	580	37.40	93.0%	93.3%	92.4%	88.00	87.00	83.00	59.5	180	240
	324T	1770	94.8	580	38.00	95.0%	95.3%	94.4%	84.50	82.00	76.00	118.7	200	215
	364T	1180	96.0	580	38.40	94.5%	94.7%	93.7%	84.00	82.00	75.00	178.1	200	220
	365T	880	108.0	580	43.20	92.4%	92.7%	91.7%	76.00	72.50	62.50	239.0	210	225
50	326TS	3550	114.0	725	45.60	93.6%	93.8%	92.5%	88.50	87.00	83.00	74.4	180	240
	326T	1770	118.0	725	47.20	95.0%	95.3%	94.5%	84.50	82.50	75.00	148.4	200	220
	365T	1180	120.0	725	48.00	94.5%	94.8%	94.3%	84.00	83.00	75.50	222.6	200	230
	404T	880	134.0	725	53.60	93.0%	93.4%	92.5%	76.00	70.00	60.00	298.7	200	230
60	364TS	3565	136.0	870	54.40	94.1%	94.3%	93.5%	89.00	86.00	80.50	88.5	160	220
	364T	1770	143.0	870	57.20	95.0%	95.2%	94.3%	84.00	81.00	78.00	178.0	200	240
	404T	1180	148.0	870	59.20	95.0%	95.1%	94.3%	82.00	79.50	72.00	267.1	200	240
	405T	880	158.0	870	63.20	93.6%	93.8%	92.9%	77.00	72.00	62.00	358.5	200	240
75	365TS	3565	168.0	1085	67.20	94.5%	94.6%	93.5%	89.00	87.50	83.50	110.6	160	220
	365T	1770	180.0	1085	72.00	95.0%	95.3%	94.5%	84.00	81.40	75.50	222.6	200	240
	405T	1180	181.0	1085	72.40	95.0%	95.3%	94.5%	83.00	80.50	73.00	333.8	200	240
	444T	885	196.0	1085	78.40	94.1%	94.2%	92.5%	77.00	72.00	60.00	445.6	210	230
100	405TS	3540	228.0	1450	91.20	94.5%	94.5%	93.4%	88.00	87.00	82.50	148.4	160	240
	405T	1775	240.0	1450	96.00	95.0%	95.3%	93.5%	83.00	78.00	67.00	295.9	200	250
	444T	1180	242.0	1450	96.80	95.0%	95.1%	94.2%	82.50	80.50	73.00	445.1	200	250
	445T	885	256.0	1450	102.40	94.5%	94.8%	93.0%	78.00	74.00	64.00	594.1	200	240
125	444TS	3550	290.0	1815	116.00	94.5%	94.7%	93.5%	86.50	84.50	77.00	184.9	160	220
	444T	1775	286	1815	114.40	95.8%	96.0%	95.0%	87.00	85.00	81.00	369.9	180	230
	445T	1180	300	1815	120.00	95.4%	95.7%	94.5%	83.00	81.00	74.00	556.4	200	240
	447T	890	318	1815	127.00	94.5%	94.7%	93.5%	78.50	75.00	66.00	756.1	190	230
150	445TS	3550	346	2170	138.40	94.5%	94.6%	93.6%	87.00	84.50	78.00	221.9	160	220
	445T	1780	338	2170	135.20	95.8%	96.0%	95.1%	88.00	87.00	83.00	442.6	180	230
	447T	1180	356.0	2170	142.40	95.8%	96.0%	95.1%	83.50	81.00	73.50	667.7	200	240
200 [4]	447TS	3560	228.0	1450	182.40	95.0%	95.0%	93.7%	87.50	85.50	79.00	295.1	160	220
	447T	1780	220.0	1450	176.00	96.2%	96.4%	95.5%	89.00	87.50	83.00	590.1	180	230
	449T	1185	234.0	1450	187.00	95.8%	95.9%	95.0%	84.00	82.00	75.00	887.3	190	210

Notes:
1. The above are typical values based on test.
2. Actual test data per IEEE 112 - Method B.
3. Current for 460 V, divide 230V values by 2.
4. For 200 HP and larger are 460 V only.