



WATTSAYER® PREMIUM EFFICIENCY MOTORS  
GENERAL PURPOSE • THREE PHASE



THREE PHASE • DRIP-PROOF • RIGID BASE  
208-230/460V

HP	RPM 60 Hz	NEMA Frame	Catalog Number	Disc. Sym.	App. Wgt. (lbs.)	Meets NEMA Premium	F.L. Amps 230V	3/4 Load Eff.	% F.L. Eff.	"C" Dim. (Inches)
1/3	1725	S56	103017	A	23	N/A	1.3	73.5	77.0	10.24
1/2	1725	S56	103018	A	26	N/A	1.8	73.8	77.0	10.74
3/4	1725	56	116738	A	30	N/A	2.4	80.4	81.5	10.86
1	3450	56	116128	A	29	✓	2.8	78.5	80.0	10.18
	1725	56	116752	A	36	✓	3.2	84.7	85.5	11.68
	1725	143T	121003	B	36	✓	3.2	84.7	85.5	12.12
	1160	145T	121517	B	41	✓	3.8	81.5	82.5	12.62
1 1/2	3450	56	116753	A	36	✓	4.0	83.5	84.0	11.84
	3450	143T	121514	B	36	✓	4.0	83.5	84.0	12.28
	1725	56	116754	A	35	✓	4.8	86.1	86.5	12.22
	1725	145T	121004	B	35	✓	4.8	86.1	86.5	12.62
	1170	182T	131971	B	70	✓	5.6	86.0	86.5	14.69
2	3450	56	116755	A	43	✓	4.8	86.8	85.5	12.18
	3450	145T	121515	B	43	✓	4.8	86.8	85.5	12.62
	1725	56H	116756	A	37	✓	5.8	86.7	86.5	13.22
	1725	145T	121005	B	37	✓	5.8	86.7	86.5	13.62
	1170	184T	131972	B	81	✓	7.2	87.5	87.5	15.19
3	3450	145T	121516	B	45	✓	7.2	85.5	86.5	12.62
	1760	182T	131519	B	75	✓	7.8	90.2	89.5	13.69
	1190	213T	171574	C	154	✓	10.0	87.5	88.5	16.38
5	3450	184T	131986	B	92	✓	12.0	86.8	86.5	15.19
	1760	184T	131520	B	86	✓	12.8	89.4	89.5	14.69
	1190	215T	171575	C	291	✓	15.0	89.5	90.2	16.38
7 1/2	3450	184T	131988	B	106	✓	17.6	88.0	88.5	16.19
	1760	213T	140470	B	133	✓	20.6	91.7	91.0	16.25
	1760	213T	170142	C	160	✓	19.8	91.7	91.0	16.38
	1170	254T	170145	C	281	✓	22.4	91.0	91.7	20.94
10	3515	213T	140753	B	160	✓	23.4	89.5	89.5	17.30
	3510	213T	170143	C	150	✓	23.6	91.0	91.0	16.38
	1760	215T	140472	B	144	✓	26.8	91.0	91.7	17.25
	1760	215T	170144	C	200	✓	25.6	91.7	91.7	17.87
	1190	256T	170146	C	305	✓	29.6	91.7	91.7	22.60
15	3510	215T	140754	B	170	✓	35.0	91.0	91.0	18.55
	3510	215T	170064	C	175	✓	34.6	91.0	91.0	17.87
	1770	254T	170065	C	279	✓	37.0	93.0	93.0	20.94
	1170	284T	170067	C	414	✓	39.4	92.4	92.4	23.54
20	3525	254T	170032	C	275	✓	46.0	93.0	93.0	20.94
	1770	256T	170006	C	324	✓	51.0	93.0	93.0	22.60
	1190	286T	170000	C	467	✓	55.0	92.4	92.4	25.00
25	3525	256T	170034	C	327	✓	57.4	93.0	93.0	22.60
	1770	284T	170009	C	404	✓	59.6	93.6	93.6	23.54
	1190	324T	170002	C	705	✓	67.0	93.0	93.0	26.02
30	3550	284TS	170036	C	396	✓	67.0	94.1	94.1	22.17
	1770	286T	170013	C	471	✓	71.0	94.5	94.1	25.00
	1190	326T	170004	C	760	✓	78.0	93.6	93.6	27.52
40	3550	286TS	170038	C	441	✓	91.2	94.1	93.6	23.62
	1780	324T	170017	C	560	✓	96.0	94.1	94.1	26.02
	1190	364T	170147	C	892	✓	103.0	94.1	94.1	28.01

All WATTSAYER® motors have normally closed thermostats for over-temperature alert.

All 180 and 210 frame Rolled Steel motors have Class F Insulation.

**SHADED FRAME INDICATES CAST IRON CONSTRUCTION**

All three phase motors, 1 HP and above, are inverter rated. Refer to page 5 for speed ranges.

THREE PHASE • TEFC • RIGID BASE  
208-230/460V

HP	RPM 60 Hz	NEMA Frame	Catalog Number	Disc. Sym.	App. Wgt. (lbs.)	Meets NEMA Premium	F.L. Amps 230V	3/4 Load Eff.	% F.L. Eff.	"C" Dim. (Inches)
1/3	1725	S56	103019	A	24	N/A	1.3	73.5	77.0	10.19
1/2	1725	S56	103020	A	27	N/A	1.8	73.8	77.0	10.69
3/4	1725	56	116739	A	31	N/A	2.4	80.2	81.5	11.31
1	3450	56	116129	A	29	✓	2.8	80.0	80.0	11.31
	1725	56	116757	A	32	✓	3.2	84.7	85.5	12.81
	1725	143T	120921	B	32	✓	3.2	84.7	85.5	13.25
	1725	143T	171640	B	50	✓	3.2	84.7	85.5	13.46
	1160	145T	121520	B	47	✓	3.8	81.5	82.5	13.75
	1140	145T	171643	B	58	✓	3.8	81.5	82.5	13.46
1 1/2	3450	56	116758	A	33	✓	4.0	83.0	84.0	12.81
	3450	143T	121518	B	33	✓	4.0	83.0	84.0	13.25
	3450	143T	171642	B	49	✓	4.0	83.0	84.0	13.46
	1725	56	116759	A	34	✓	4.8	86.1	86.5	13.31
	1725	145T	120922	B	34	✓	4.8	86.1	86.5	13.75
	1725	145T	171646	B	54	✓	4.8	86.1	86.5	13.46
	1170	182T	131980	B	89	✓	5.6	87.4	87.5	15.96
2	3450	56	116760	A	44	✓	4.8	84.8	85.5	13.31
	3450	145T	121519	B	44	✓	4.8	84.8	85.5	13.75
	3450	145T	171648	B	56	✓	4.8	84.8	85.5	13.46
	1725	56H	116761	A	45	✓	5.8	86.7	86.5	14.32
	1725	145T	120923	B	45	✓	5.8	86.7	86.5	14.76
	1725	145T	171647	B	58	✓	5.8	86.5	86.5	13.46
	1170	184T	131981	B	92	✓	7.2	88.4	88.5	15.96
3	3450	182T	131985	B	66	✓	7.6	86.1	86.5	13.96
	1760	182T	131463	B	80	✓	7.8	89.0	89.5	14.96
	1760	182T	171320	C	104	✓	7.8	89.5	90.2	16.14
	1180	213T	171378	C	170	✓	9.4	88.5	89.5	18.19
5	3450	184T	131987	B	88	✓	12.0	89.0	88.5	16.46
	1760	184T	131464	B	94	✓	12.8	90.1	89.5	15.96
	1760	184T	171322	C	109	✓	12.8	89.9	89.5	16.80
	1180	215T	171379	C	176	✓	14.4	89.5	89.5	19.61
7 1/2	3510	213T	140756	C	156	✓	17.8	89.5	90.2	19.84
	3510	213T	170158	C	147	✓	18.0	91.0	91.0	18.19
	1760	213T	140450	C	144	✓	21.4	90.6	91.7	18.70
	1760	213T	170157	C	155	✓	18.6	91.7	91.7	18.19
	1170	254T	170122	C	249	✓	22.2	91.0	91.7	23.19
10	3510	215T	140755	B	170	✓	23.6	92.4	91.7	21.09
	3510	215T	170159	C	181	✓	23.0	91.7	91.7	19.61
	1760	215T	140451	B	161	✓	26.6	91.6	91.7	19.70
	1760	215T	170140	C	177	✓	25.0	91.7	91.7	19.61
	1170	256T	170123	C	300	✓	29.0	91.7	91.7	24.92
15	3525	254T	170062	C	282	✓	34.6	92.4	92.4	23.19
	1770	254T	170066	C	280	✓	36.0	92.4	92.4	23.19
	1170	284T	170068	C	333	✓	40.6	92.0	92.4	26.26
20	3525	256T	170033	C	316	✓	46.0	92.4	92.4	24.92
	1770	256T	170007	C	322	✓	49.0	93.0	93.0	24.92
	1170	286T	170001	C	392	✓	54.0	92.4	92.4	27.83
25	3550	284TS	170035	C	383	✓	56.8	93.0	93.0	24.88
	1770	284T	170011	C	385	✓	59.0	93.6	93.6	26.26
	1190	324T	170003	C	545	✓	66.0	92.4	93.0	29.53
30	3550	286TS	170037	C	385	✓	67.6	93.6	93.0	26.46
	1770	286T	170015	C	432	✓	70.0	94.1	94.1	27.83
	1190	326T	170005	C	615	✓	77.2	93.6	93.6	31.02

All WATTSAYER® motors have normally closed thermostats for over-temperature alert.

Catalog numbers in blue are available in 3rd quarter 2008.



THREE PHASE • DRIP-PROOF • RIGID BASE  
208-230/460V • CONTINUED

THREE PHASE • TEFC • RIGID BASE  
208-230/460V • CONTINUED

HP	RPM 60 Hz	NEMA Frame	Catalog Number	Disc. Sym.	App. Wgt. (lbs.)	Meets NEMA Premium	F.L. Amps 230V	3/4 Load Eff.	% F.L. Eff.	"C" Dim. (Inches)
50	3550	324TS	170040	C	548	✓	112.0	95.0	94.1	24.53
	1780	326T	170021	C	614	✓	118.0	94.5	94.5	27.52
	1190	365T	170148	C	918	✓	128.0	94.7	94.5	31.18
60	3550	326TS	170042	C	590	✓	136.0	95.0	94.1	26.02
	1780	364T	170025	C	716	✓	139.0	95.0	95.4	28.01
	1190	404T	170149	C	1031	✓	159.0	94.0	94.5	32.76
75	3570	364TS	170044	C	720	✓	176.0	94.5	93.6	26.89
	1780	365T	170029	C	766	✓	172.0	95.4	95.4	31.18
	1190	405T	170150	C	1095	✓	196.0	94.0	94.5	34.25
100	3570	365TS	170151	C	775	✓	234.0	94.5	94.5	29.06
	1780	404T	170152	C	1141	✓	225.0	95.4	95.4	32.76
	1190	444T	170255*	C	1975	✓	118.0♦	95.4	95.4	40.00
125	3570	404TS	170154	C	1015	✓	284.0	94.5	94.5	29.76
	1780	405T	170155	C	1236	✓	280.0	95.4	95.4	34.25
	1190	445T	170259*	C	2022	✓	148.0♦	95.8	95.8	40.00
150	3570	405TS	171449*	C	1085	✓	169.0♦	94.5	94.5	31.26
	1780	444T	171522*	C	2000	✓	164.0♦	95.8	95.8	40.00
	1190	445T	171576*	C	2040	✓	206.0♦	95.8	95.8	40.00
200	3570	444TS	171573*	C	1765	✓	216.0♦	95.4	95.4	36.25
	1780	445T	171523*	C	2037	✓	220.0♦	95.8	95.8	40.00
	1190	447T	171577*	C	2820	✓	239.0♦	95.8	96.2	43.12

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HP	RPM 60 Hz	NEMA Frame	Catalog Number	Disc. Sym.	App. Wgt. (lbs.)	Meets NEMA Premium	F.L. Amps 230V	3/4 Load Eff.	% F.L. Eff.	"C" Dim. (Inches)
40	3550	324TS	170039	C	504	✓	90.0	93.6	93.6	28.03
	1780	324T	170019	C	528	✓	92.0	93.6	94.1	29.53
	1180	364T	170096	C	636	✓	102.0	94.1	94.1	32.64
50	3550	326TS	170041	C	554	✓	111.0	95.0	94.5	29.53
	1780	326T	170023	C	587	✓	117.0	94.5	94.5	31.02
	1180	365T	170097	C	672	✓	124.0	94.1	94.1	33.62
60	3570	364TS	170043	C	735	✓	136.0	93.6	94.1	30.51
	1780	364T	170027	C	666	✓	137.0	95.0	95.4	32.64
	1190	404T	170098	C	870	✓	142.0	94.5	94.5	36.42
75	3570	365TS	170045	C	780	✓	169.0	94.5	94.5	31.50
	1780	365T	170031	C	733	✓	171.0	95.8	95.8	33.62
	1190	405T	170099	C	975	✓	176.0	95.0	95.0	37.91
100	3570	405TS	170160	C	955	✓	218.0	94.5	95.0	34.92
	1780	405T	170087	C	1070	✓	225.0	95.4	95.4	37.91
	1190	444T	170256*	C	1457	✓	121.0♦	95.0	95.0	42.87
125	1790	444T	170369*	C	1950	✓	137.5♦	95.4	95.4	42.87
	1190	445T	170260*	C	1596	✓	155.0♦	95.4	95.4	44.88
	3570	444TS	171580*	C	1316	✓	132.0	94.5	95.0	39.10
150	1790	445T	170371*	C	1627	✓	163.0♦	95.8	95.8	44.88
	1190	447T	171315*	C	2230	✓	185.5♦	95.8	95.8	48.00
	3570	445TS	171578*	C	1445	✓	161.0	94.5	95.0	44.88
200	1790	447T	170352*	C	2227	✓	216.0♦	96.2	96.2	48.00
	1190	449T	171316*	C	2542	✓	241.5♦	95.8	95.8	52.80
	3570	447TS	171579*	C	1977	✓	216.5	95.0	95.4	48.00

All WATTS AVER® motors have normally closed thermostats for over-temperature alert.

\* 460V only  
♦ Full Load Amps 460V

SHADED FRAME INDICATES CAST IRON CONSTRUCTION

All three phase motors, 1 HP and above, are inverter rated. Refer to page 5 for speed ranges.



WATTS AVER® PREMIUM EFFICIENCY MOTORS  
GENERAL PURPOSE • THREE PHASE



THREE PHASE • DRIP-PROOF • C FACE LESS BASE  
208-230/460V

THREE PHASE • DRIP-PROOF • C FACE WITH BASE  
208-230/460V

HP	RPM 60 Hz	NEMA Frame	Catalog Number	Disc. Sym.	App. Wgt. (lbs.)	Meets NEMA Premium	F.L. Amps 230V	3/4 Load Eff.	% F.L. Eff.	"C" Dim. (Inches)
1/3	1725	S56C	102695	A	22	N/A	1.3	73.5	77.0	10.24
1/2	1725	S56C	102200	A	25	N/A	1.8	73.8	77.0	10.74
3/4	1725	56C	114934	A	29	N/A	2.4	80.4	81.5	10.86
1	1725	56C	116740	A	32	✓	3.4	84.7	85.5	11.68
	1725	143TC	121064	B	32	✓	3.4	84.7	85.5	12.12
1 1/2	1725	56C	116741	A	36	✓	5.6	86.1	86.5	12.68
	1725	145TC	121063	B	36	✓	5.6	86.1	86.5	13.12
2	1725	56C	116742	A	41	✓	5.8	86.7	86.5	13.18
	1725	145TC	121071	B	41	✓	5.8	86.7	86.5	13.62
3	1760	182TC	131518	B	75	✓	7.8	90.2	89.5	14.20
5	1760	184TC	131517	B	96	✓	12.8	90.1	89.5	15.20
7 1/2	1760	213TC	140483	B	132	✓	20.6	91.7	91.0	16.25
10	1760	215TC	140485	B	144	✓	26.8	92.2	91.7	17.25

HP	RPM 60 Hz	NEMA Frame	Catalog Number	Disc. Sym.	App. Wgt. (lbs.)	Meets NEMA Premium	F.L. Amps 230V	3/4 Load Eff.	% F.L. Eff.	"C" Dim. (Inches)
1/3	1725	S56C	103021	A	23	N/A	1.3	73.5	77.0	10.24
1/2	1725	S56C	103022	A	26	N/A	1.8	73.8	77.0	10.74
3/4	1725	56C	116762	A	30	N/A	2.4	80.4	81.5	10.86
1	1725	56C	116763	A	33	✓	3.4	84.7	85.5	11.68
	1725	143TC	121674	B	34	✓	3.4	84.7	85.5	12.12
1 1/2	1725	56C	116764	A	37	✓	5.6	86.1	86.5	12.68
	1725	145TC	121675	B	37	✓	5.6	86.1	86.5	13.12
2	1725	56HC	116765	A	42	✓	5.8	86.7	86.5	13.18
	1725	145TC	121676	B	42	✓	5.8	86.7	86.5	13.62
3	1760	182TC	132081	B	76	✓	7.8	90.2	89.5	14.20
5	1760	184TC	132082	B	97	✓	12.8	90.1	89.5	15.20
7 1/2	1760	213TC	140767	B	132	✓	20.6	91.7	91.0	16.25
10	1760	215TC	140768	B	144	✓	26.8	91.7	91.7	17.25

All WATTS AVER® motors have normally closed thermostats for over-temperature alert.

All WATTS AVER® motors have normally closed thermostats for over-temperature alert.



THREE PHASE • TEFC • C FACE LESS BASE  
208-230/460V

THREE PHASE • TEFC • C FACE WITH BASE  
208-230/460V

HP	RPM 60 Hz	NEMA Frame	Catalog Number	Disc. Sym.	App. Wgt. (lbs.)	Meets NEMA Premium	F.L. Amps 230V	3/4 Load Eff.	% F.L. Eff.	"C" Dim. (Inches)
1/3	1725	S56C	102696	A	22	N/A	1.3	73.5	77.0	10.19
1/2	1725	S56C	101780	A	25	N/A	1.8	73.8	77.0	10.69
3/4	1725	56C	114213	A	27	N/A	2.7	80.2	81.5	11.31
1	3450	56C	116748	A	29	✓	2.8	80.0	80.0	11.31
	1725	56C	114638	A	34	N/A	3.4	84.7	85.5	12.81
	1725	143TC	121067	B	36	✓	3.4	84.7	85.5	13.25
	1160	56C	116749	A	47	✓	3.8	81.5	82.5	13.75
1 1/2	3450	56C	116750	A	33	✓	4.0	83.0	84.0	13.25
	1725	56C	116743	A	41	✓	4.8	86.1	86.5	13.31
2	1725	145TC	121066	B	41	✓	5.6	86.1	86.5	13.75
	3450	56C	116751	A	44	✓	4.8	84.8	85.5	14.25
2	1725	56C	116744	A	45	✓	5.8	86.7	86.5	13.82
	1725	145TC	121065	B	45	✓	5.8	86.7	86.5	14.26
3	1760	182TC	131503	B	72	✓	7.8	89.0	89.5	14.96
5	1760	184TC	131501	B	90	✓	12.8	90.1	89.5	15.97
7 1/2	1760	213TC	140486	B	144	✓	21.4	90.6	91.7	18.70
10	1760	215TC	140484	B	160	✓	26.6	91.6	91.7	19.70

HP	RPM 60 Hz	NEMA Frame	Catalog Number	Disc. Sym.	App. Wgt. (lbs.)	Meets NEMA Premium	F.L. Amps 230V	3/4 Load Eff.	% F.L. Eff.	"C" Dim. (Inches)
1/3	1725	S56C	102697	A	22	N/A	1.3	73.5	77.0	10.19
1/2	1725	S56C	102024	A	23	N/A	1.8	73.8	77.0	10.69
3/4	1725	56C	114624	A	25	N/A	2.7	80.2	81.5	11.31
1	1725	56C	116745	A	34	✓	3.4	84.7	85.5	12.81
	1725	143TC	121179	B	34	✓	3.4	84.7	85.5	13.25
1 1/2	3450	143TC	121672	B	33	✓	3.6	83.0	84.0	13.25
	1725	56C	116746	A	37	✓	5.6	86.1	86.5	13.31
2	1725	145TC	121180	B	37	✓	5.6	86.1	86.5	13.75
	3450	145TC	121673	B	44	✓	4.8	84.8	85.5	13.75
2	1725	56HC	116747	A	43	✓	5.8	86.7	86.5	13.82
	1725	145TC	121181	B	43	✓	5.8	86.7	86.5	14.26
3	3450	182TC	132079	B	70	✓	7.6	86.1	86.5	13.96
	1760	182TC	131504	B	75	✓	7.8	89.0	89.5	14.96
5	3450	184TC	132080	B	100	✓	12.8	88.0	88.5	16.46
	1760	184TC	131502	B	99	✓	12.8	90.1	89.5	15.97
7 1/2	3450	213TC	140770	B	160	✓	17.8	89.5	90.2	19.64
	1760	213TC	140521	B	144	✓	21.4	90.6	91.7	18.70
10	3510	215TC	140769	B	175	✓	23.6	92.4	91.7	21.09
	1760	215TC	140522	B	160	✓	26.6	91.6	91.7	19.70
15	3525	254TC	171586	C	292	✓	34.6	92.0	92.4	23.19
	1770	254TC	171587	C	290	✓	36.0	92.4	92.4	23.19
20	3525	256TC	171588	C	326	✓	46.0	93.0	92.4	24.92
	1770	256TC	171589	C	332	✓	49.0	93.0	93.0	24.92
25	3550	284TSC	171590	C	393	✓	56.8	93.3	93.0	24.88
	1770	284TC	171591	C	395	✓	59.0	94.0	93.6	26.26
30	1770	286TC	171592	C	442	✓	70.0	94.1	94.1	27.83
40	1780	324TC	171593	C	538	✓	92.0	94.0	94.1	29.53
50	1780	326TC	171594	C	597	✓	117.0	94.6	94.5	31.02
60	1780	364TC	171595	C	676	✓	137.0	95.0	95.4	32.64
75	1780	365TC	171596	C	743	✓	170.0	95.8	95.8	33.62
100	1780	405TC	171597	C	1002	✓	225.0	95.4	95.4	37.91

All WATTS AVER® motors have normally closed thermostats for over-temperature alert.

All WATTS AVER® motors have normally closed thermostats for over-temperature alert.

All 180 and 210 frame Rolled Steel motors have Class F Insulation.

SHADED FRAME INDICATES CAST IRON CONSTRUCTION

All three phase motors, 1 HP and above, are inverter rated. Refer to page 5 for speed ranges.

All WATTS AVER® motors have normally closed thermostats for over-temperature alert.

FHP MOTORS FOR AC DRIVES

- Compact 48-frame design with keyed shaft
- Class F insulation
- 20:1 Constant torque rated
- Inverter IRIS™ insulation system
- 1/2" diameter keyed shaft with 48-C Face
- 115/230V 3-phase design optimized for FHP drives



THREE PHASE • TEFC • C FACE WITH BASE

HP	RPM 60 Hz	NEMA Frame	Catalog Number	Disc. Sym.	App. Wgt. (lbs.)	FL. Amps 230V	% F.L. Eff.	"C" Dim. (Inches)
<b>1/6</b>	1725	48CZ	<b>102792</b>	A	25	1.25	56.0	8.94
<b>1/4</b>	1725	48CZ	<b>102793</b>	A	26	1.4	58.0	8.94
<b>1/3</b>	1725	48CZ	<b>102794</b>	A	28	1.6	64.3	9.19
<b>1/2</b>	1725	48CZ	<b>102795</b>	A	30	1.8	77.0	10.19

All three phase motors, 1 HP and above, are inverter rated. Refer to page 5 for speed ranges.

**SPEEDMASTER®  
INVERTER-DUTY/  
VECTOR DUTY MOTORS**

2000:1 CONSTANT TORQUE



**Features:**

- Class H inverter-rated IRIS™ insulation system
- Constant torque operation from 0 to base RPM rating on Vector Drives
- Constant HP operation to twice base RPM rating for 143T-256T frame, 1.5 x base RPM for all other sizes
- Designed for optimum performance with IGBT inverters – not for across-the-line starting
- C-face with rigid base through 100HP
- Normally closed thermostats (one per phase)
- Continuous duty at 40° C ambient
- 1.0 Service Factor (Class “B” rise on TEBC motors)
- Premium quality, cast iron frame and endbells
- 284T and larger are blower-cooled with a separately powered three-phase blower motor to provide added cooling at low speeds
- Ball bearings (Roller bearings available 360-frame and larger)
- Field convertible to F2 mounting
- Encoder provisions included on opposite drive end (See Encoder Kits this page)
- UL Recognized and CSA Certified
- Three-year warranty
- Meets NEMA MG1, parts 30 and 31

**Applications:**

Designed for inverter or vector applications where up to a 2000:1 constant torque speed range is required. Typical uses include: material handling, machine tools, conveyors, crane and hoist, metal processing, test stands, pumps, compressors, textile processing, and other industrial machinery installed in dusty or dirty environments.

**THREE PHASE • TOTALLY ENCLOSED • RIGID BASE**

HP	RPM 60 Hz	NEMA Frame	Catalog Number	Disc. Sym.	App. Wgt. (lbs.)	Voltage	F.L. Amps 230V	RPM Max.†	“C” Dim. (Inches)
1	1725	143TC	<b>810548●</b>	C	61	230/460	3.0	5400	13.68
1½	1725	145TC	<b>810547●</b>	C	68	230/460	4.6	5400	14.68
2	1750	145TC	<b>810546●</b>	C	70	230/460	6.0	5400	14.68
3	1750	182TC	<b>811320●</b>	C	110	230/460	8.0	5400	16.68
5	1750	184TC	<b>811322●</b>	C	118	230/460	13.4	5400	17.69
7½	1760	213TC	<b>810157●</b>	C	180	230/460	21.0	4200	20.56
10	1760	215TC	<b>810140●</b>	C	290	230/460	26.0	4200	22.74
15	1765	254TC	<b>810066●</b>	C	320	230/460	39.0	4200	25.12
	1170	284TC	<b>810068</b>	C	440	230/460	40.0	3600	37.48
20	1765	256TC	<b>810007●</b>	C	435	230/460	52.0	4200	27.13
	1170	286TC	<b>810001</b>	C	450	230/460	52.4	3600	37.48
25	1770	284TC	<b>810011</b>	C	438	230/460	65.0	3600	37.48
	1180	324TC	<b>810003</b>	C	620	230/460	67.0	3600	40.41
30	1780	286TC	<b>810015</b>	C	520	230/460	74.0	4200	38.98
	1180	326TC	<b>810005</b>	C	700	230/460	82.0	3600	41.91
40	1775	324TC	<b>810019</b>	C	620	230/460	100.0	3600	40.41
	1185	364TC	<b>810096</b>	C	975	230/460	104.0	2700	42.78
50	1780	326TC	<b>810023</b>	C	640	230/460	120.0	3600	41.91
	1185	365TC	<b>810097</b>	C	1029	230/460	180.0	2700	43.78
60	1780	364TC	<b>810027</b>	C	975	230/460	147.0	2700	42.78
	1185	404TC	<b>810098</b>	C	1322	230/460	142.0	2700	46.72
75	1780	365TC	<b>810031</b>	C	1050	230/460	180.0	2700	43.78
	1185	405TC	<b>810099</b>	C	1350	230/460	180.0	2700	49.28
100	1780	405TC	<b>810087</b>	C	1400	230/460	230.0	2700	49.28
	1185	444TC	<b>811367+</b>	C	2050	230/460	250.0	2700	52.72
125	1780	444T	<b>811369+</b>	C	2000	460	138.0①	2700	52.72
150	1780	445T	<b>811371+</b>	C	2321	460	170.0①	2700	54.72
200	1785	445T	<b>810503+</b>	C	2450	460	230.0①	2700	54.72
250	1780	449T	<b>811516+</b>	C	3210	460	295.0①	2700	63.21
300	1785	449T	<b>811529+</b>	C	3410	460	330.0①	2700	63.21
350	1785	449T	<b>811530+</b>	C	3520	460	385.0①	2700	63.21

- These motors are Totally Enclosed, Non-Ventilated (TENV) – Others are Totally Enclosed Blower-Cooled (TEBC).
- † Contact LEESON for applications requiring higher speeds.
- + Contact LEESON for production leadtime on these items.
- ① Amps at 460 volts

**ENCODER KITS\* FOR SPEEDMASTER® 2000:1 MOTORS**

Description	Enclosure	Frame	Brand/Model	PPR	Catalog Number	Disc. Sym.
<b>Encoders</b>						
Modular Mount, 5-15 VDC, with EPIC connector	TENV	143-256T	Northstar SL56	1024	<b>E175927</b>	C
Shaft Mount, 5-26 VDC, with 10 pin connector	TENV	143-256T	Dynapar HS35	1024	<b>E175928</b>	C
Shaft Mount, 5-26 VDC, with 10 pin connector	TENV	143-256T	BEI HS35	1024	<b>E175929</b>	C
Shaft Mount, 5-26 VDC, with 10 pin connector	TENV	143-256T	Dynapar HS35	2048	<b>E175930</b>	C
Shaft Mount, 5-26 VDC, with 10 pin connector	TENV	143-256T	BEI HS35	2048	<b>E175931</b>	C
Modular Mount, 5-15 VDC (Encoder Conduit Box Required)	TEBC	284-449T	Northstar SL56	1024	<b>E175921</b>	C
Shaft Mount, 5-26 VDC (Encoder Conduit Box Required)	TEBC	284-449T	Dynapar HS35	1024	<b>E175922</b>	C
Shaft Mount, 5-26 VDC (Encoder Conduit Box Required)	TEBC	284-449T	BEI HS35	1024	<b>E175923</b>	C
Shaft Mount, 5-26 VDC (Encoder Conduit Box Required)	TEBC	284-449T	Dynapar HS35	2048	<b>E175924</b>	C
Shaft Mount, 5-26 VDC (Encoder Conduit Box Required)	TEBC	284-449T	BEI HS35	2048	<b>E175925</b>	C
Conduit Box Required for all TEBC Units	—	—	—	—	<b>ECB175926</b>	C

\* Shipped separately for field installation.

**SHADED FRAME INDICATES CAST IRON CONSTRUCTION**



# SUB-FHP AC GEARMOTORS INVERTER RATED

## Design Specifications:

Three phase motors totally enclosed for continuous duty, general purpose applications.



Standard on all these ratings is the exclusive Inverter Rated Insulation System (IRIS). This provides superior protection against voltage spikes induced by variable frequency drives.

Many superior mechanical features for both the motor and gearbox. Double shielded ball bearings in the motor. Needle bearings in the parallel shaft gearboxes and ball bearings in the Right angle (worm) gearboxes. Steel conduit box provided as Standard. Complete gearmotor furnished with high gloss hardened black enamel paint.

## Application Notes:

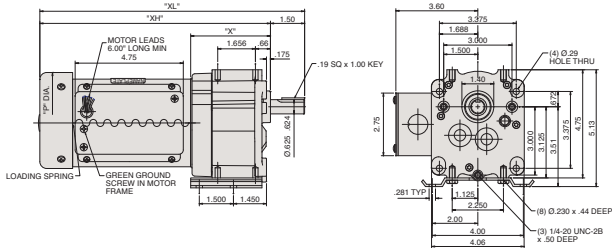
These motors are designed with high temp insulation (Class F) to avoid over heating when operated with a PWM inverter down to a 10:1 speed range from the printed gearmotor output RPM.

Refer to pages 104 to 106 detailing non-horizontal mounting.

The torque values listed are the recommended full load torque values for reasonable gear life.

Overhung load capacities shown are at the center of the output shaft. See page 107 for optional "L" bracket kits for PZ and PE350 units. Please contact LEESON for output speeds not listed.

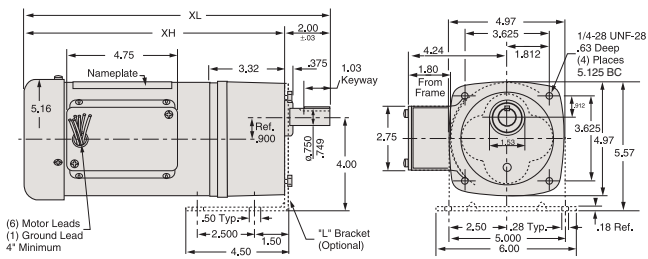
## P240 SERIES – AC



## P240 SERIES AC GEARMOTORS THREE PHASE • 230V • TEFC

Output RPM	F.L. Torque (Lb.in.)	Input HP	Catalog Number	Gearmotor Type & Frame	Ratio to 1	F.L. Amps 230V AC	Overhung Load (Lb.)	DIMENSIONS			
								P	X	XL	XH
16	391	1/6	M1145122	P243-38	103	0.72	399	4.43	3.50	11.63	10.13
30	295	1/6	M1145123	P243-38	58	0.72	330	4.43	3.50	11.63	10.13
60	157	1/6	M1145124	P242-38	29	0.72	268	4.43	3.50	11.63	10.13
90	103	1/6	M1145125	P242-38	19	0.72	330	4.43	3.50	11.63	10.13
156	60	1/6	M1145126	P242-38	10.6	0.72	330	4.43	3.50	11.63	10.13

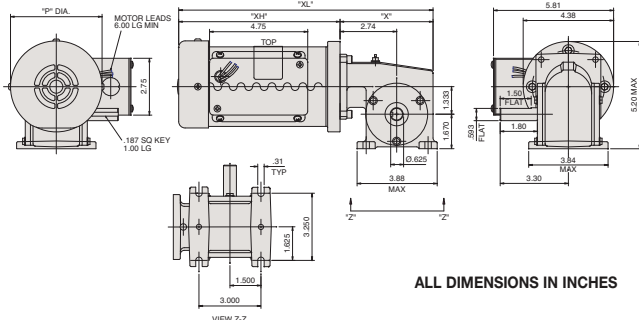
## PE350 THREE PHASE



## PE350 SERIES AC GEARMOTORS THREE PHASE • 230/460V • TEFC

Output RPM	F.L. Torque (Lb.in.)	Input HP	Catalog Number	Gearmotor Type & Frame	Ratio to 1	F.L. Amps 230V AC	Overhung Load (Lb.)	DIMENSIONS			
								P	X	XL	XH
9	341	1/6	096065	PE353-42	180	1.0	491	5.16	3.32	12.57	10.57
29	300	1/4	096066	PE353-42	58	1.2	327	5.16	3.32	13.07	11.07
58	244	1/4	096067	PE353-42	30	1.2	300	5.16	3.32	13.07	11.07
85	165	1/4	096068	PE352-42	20	1.2	300	5.16	3.32	13.07	11.07
173	92	1/4	096069	PE352-42	10	1.2	300	5.16	3.32	13.07	11.07
345	50	1/4	096070	PE352-42	5	1.2	300	5.16	3.32	13.07	11.07

## 13 SERIES – AC



## RIGHT ANGLE SERIES AC GEARMOTORS THREE PHASE • 230V • TEFC

Output RPM	F.L. Torque (Lb.in.)	Input HP	Catalog Number	Gearmotor Type & Frame	Ratio to 1	F.L. Amps 230V AC	Overhung Load (Lb.)	DIMENSIONS			
								P	X	XL	XH
29	238	3/8	M1145127	13F60-38	60	1.3	235	4.43	4.50	12.31	7.81
43	228	3/8	M1145128	13F40-38	40	1.3	235	4.43	4.50	12.31	7.81
86	138	3/8	M1145129	13F20-38	20	1.3	235	4.43	4.50	12.31	7.81
172	105	3/8	M1145130	13F10-38	10	1.3	235	4.43	4.50	12.31	7.81
345	54	3/8	M1145131	13F05-38	5	1.3	235	4.43	4.50	12.31	7.81

▲ Use "S" discount symbol.

**Design Specifications:**

Three phase motors totally enclosed for continuous duty, general purpose applications.

Standard on all these ratings is the exclusive Inverter Rated Insulation System (IRIS). This provides superior protection against voltage spikes induced by variable frequency drives.

Many superior mechanical features double shielded ball bearings, welded-on base, steel conduit box provided as standard, furnished with high gloss hardened black enamel paint.

**Application Notes:**

These motors are designed with high temp insulation (Class F) to avoid overheating when operated with a PWM inverter down to a 10:1 speed range from the motor's base speed.

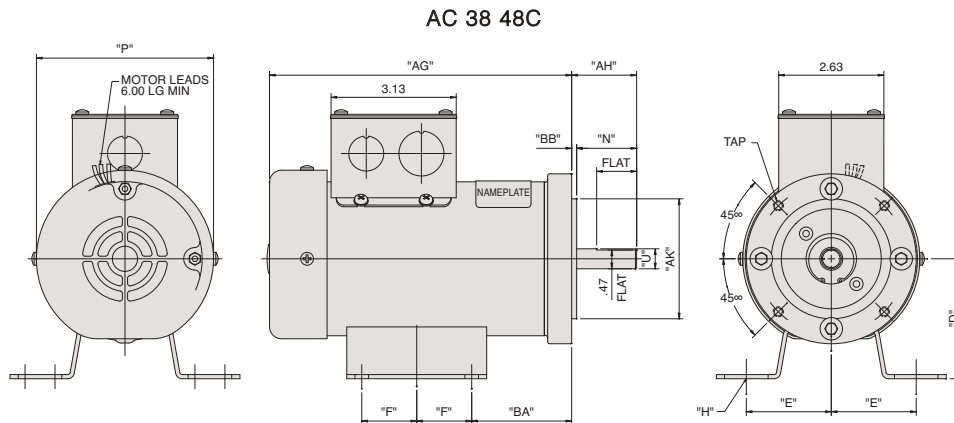
230 VOLT • THREE PHASE  
1.0 SERVICE FACTOR • TOTALLY ENCLOSED

HP	RPM 60 Hz	Frame	Catalog Number	Disc. Sym.	Voltage	F.L. Amps 230V
1/15	1725	38	M1140171*	S	230	.4
1/6	1725	38	M1140173*	S	230	.72
1/4	1725	38	M1140172	S	230	1.1

\* TENV enclosure

38 FRAME NEMA C-FACE WITH BASE DIMENSIONS

Catalog Number	AG	P	U	AH	BB	AJ	TAP	R	AK	BB	D	BA	E	F	H
M1140171	5.14	3.85	.5000	1.63	1.00	3.75	1/4-20	4.25	3.00	.13	3.0	2.50	2.125	1.375	11/32 Slot
M1140173	6.14	3.85	.5000	1.63	1.00	3.75	1/4-20	4.25	3.00	.13	3.0	2.50	2.125	1.375	11/32 Slot
M1140172	7.56	4.43	.5000	1.63	1.00	3.75	1/4-20	4.25	3.00	.13	3.0	2.50	2.125	1.375	11/32 Slot



ALL DIMENSIONS IN INCHES

Both motors only and gearmotors will have inverter rated printed on the nameplate.  
UL and CSA recognition for both motors only and gearmotors



**LEESON'S Inverter Rated Insulation System (IRIS™)** provides superior protection against voltage spikes induced by variable frequency drives. This *total insulation system* protects better than spike-resistant magnet wire alone. Sleeved connections (from the leads all the way

into the turns), and deep-penetrating, non-hygroscopic, high temperature varnish are just a few features contributing to extra protection. All this plus second generation spike-resistant magnet wire. The IRIS™ *total insulation system* is standard at no extra cost.

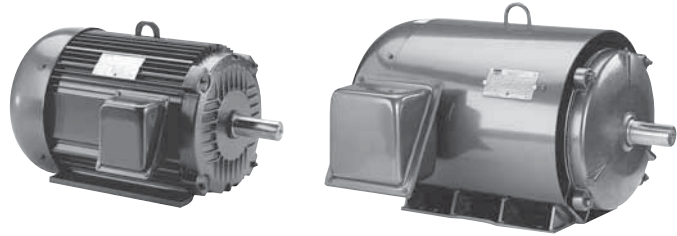


# TEFC 15 TO 60 HZ CONSTANT TORQUE INVERTER DUTY

**230/460 & 460 VOLTS • 3-PHASE  
FOOT MOUNT & C-FACE  
1/3 TO 400 HP**

### Features:

- 4:1 Constant torque speed range at continuous duty of 15-60 Hz.
- Variable torque speed range with open loop drive of 0-60 Hz.
- Constant horsepower speed range of 2x base speed (56-256T frames) or 1.5x base speed\* (284T-449T frames).
- Wider speed ranges possible on intermittent duty
- Ultimate Spike Defense™ Insulation System
- 1.00 service factor on PWM waveform, 1.15 service factor or better on sine-wave power.
- Precision dynamic balanced rotor assembly
- Thermal overload protection (Class F thermostats)
- Warranty: 42 months from date of manufacture and 36 months from date of installation which ever period expires first.
- Made in the U.S.A.



### Applications:

For use in constant torque (conveyors, machine tools) or variable torque (pumps, fans) variable speed applications within the stated speed range of the motor.

In a very small percentage of installations, bearing currents can develop in motors operated by PWM-based adjustable-speed drives. Contact your local sales office to review ways of eliminating bearing currents.

\* Actual speed not to exceed "RPM MAX" listed for specific motor.

## FOOT MOUNT

HP	SYN RPM @ 60 Hz	RPM Max	Frame	FL Nom Eff (%)	Volts	Model Number	Product Number	Notes (see page 306)	Approx Shpg Wght (lbs)	Mult Sym
1/3	1800	4000	56	72.0	230/460	SRF4S0.33T61Q40	<b>LM22644</b>		28	LS-1
1/2	3600	4000	56	70.0	230/460	SRF2S0.5T61Q40	<b>LM22646</b>		28	LS-1
	1800	4000	56	74.0	230/460	SRF4S0.5T61Q40	<b>LM22648</b>		28	LS-1
	1200	4000	56	70.0	230/460	SRF6S0.5T61Q40	<b>LM22650</b>		28	LS-1
3/4	3600	4000	56	74.0	230/460	SRF2S0.75T61Q40	<b>LM22652</b>		28	LS-1
	1800	4000	56	77.0	230/460	SRF4S0.75T61Q40	<b>LM22654</b>		28	LS-1
	1200	4000	56	72.0	230/460	SRF6S0.75T61Q40	<b>LM22656</b>		36	LS-1
1	3600	4000	56	75.5	230/460	SRF2S1T61Q40	<b>LM22658</b>		28	LS-1
	1800	4000	56	78.5	230/460	SRF4S1T61Q40	<b>LM22660</b>		28	LS-1
	1800	4000	143T	82.5	230/460	SSF4P1T61Q40	<b>LM26097</b>		46	LS-1
	1200	4000	145T	80.0	230/460	SSF6P1T61Q40	<b>LM26383</b>		51	LS-1
1 1/2	3600	4000	56	78.5	230/460	SRF2S1.5T61Q40	<b>LM22662</b>		28	LS-1
	3600	4000	143T	82.5	230/460	SSF2P1.5T61Q40	<b>TBD</b>		46	LS-1
	1800	4000	56H	80.0	230/460	SRF4S1.5T61Q40	<b>LM22664</b>		28	LS-1
	1800	4000	145T	84.0	230/460	SSF4P1.5T61Q40	<b>LM26098</b>		51	LS-1
	1200	4000	182T	85.5	230/460	AAF6P1.5T61Q40	<b>LM21188</b>		83	LS-1
2	3600	4000	56H	78.5	230/460	SRF2S2T61Q40	<b>LM22666</b>		36	LS-1
	3600	4000	145T	84.0	230/460	SSF2P2T61Q40	<b>TBD</b>		51	LS-1
	1800	4000	145T	84.0	230/460	SSF4P2T61Q40	<b>LM25991</b>		51	LS-1
	1200	4000	184T	86.5	230/460	AAF6P2T61Q40	<b>LM21191</b>		92	LS-1
3	3600	4000	182T	85.5	230/460	AAF2P3T61Q40	<b>LM21189</b>		83	LS-1
	1800	4000	182T	87.5	230/460	AAF4P3T61Q40	<b>LM21190</b>		83	LS-1
	1200	4000	213T	87.5	230/460	AF6P3T61Q40	<b>LM21194</b>		127	LS-1
5	3600	4000	184T	87.5	230/460	AAF2P5T61Q40	<b>LM21192</b>		92	LS-1
	1800	4000	184T	87.5	230/460	AAF4P5T61Q40	<b>LM21193</b>		92	LS-1
	1200	4000	215T	87.5	230/460	AAF6P5T61Q40	<b>LM21197</b>		138	LS-1

Prices and data subject to change without notice.

**Product numbers in red are STOCK items.**

# TEFC 15 TO 60 HZ CONSTANT TORQUE INVERTER DUTY



**230/460 & 460 VOLTS • 3-PHASE  
FOOT MOUNT & C-FACE  
1/3 TO 400 HP**

## FOOT MOUNT (cont'd)

HP	SYN RPM @ 60 Hz	RPM Max	Frame	FL Nom Eff (%)	Volts	Model Number	Product Number	Notes (see page 306)	Approx Shpg Wght (lbs)	Mult Sym
7 1/2	3600	4600	G213T	88.5	230/460	AF2P7.5T61Q40	LM21195		127	LS-1
	1800	4600	213T	89.5	230/460	AF4P7.5T61Q40	LM21196		127	LS-1
	1200	4400	254T	89.5	230/460	AAF6P7.5T61Q40	LM21200		209	LS-1
10	3600	4600	G215T	89.5	230/460	AF2P10T61Q40	LM21198		138	LS-1
	1800	4600	215T	89.5	230/460	AF4P10T61Q40	LM21199		138	LS-1
	1200	4400	256T	89.5	230/460	AAF6P10T61Q40	LM21203		236	LS-1
15	3600	4400	G254T	90.2	230/460	AAF2P15T61Q40	LM21201		209	LS-1
	1800	4400	254T	91.0	230/460	AF4P15T61Q40	LM21202		209	LS-1
	1200	4200	284T	90.2	230/460	AF6P15T61YQ40	LM21206		363	LS-1
20	3600	4400	256T	90.2	230/460	AF2P20T61Q40	LM21204		236	LS-1
	1800	4400	256T	91.0	230/460	AF4P20T61Q40	LM21205		236	LS-1
	1200	4200	286T	90.2	230/460	AF6P20T61YQ40	LM21209		408	LS-1
25	3600	4200	284TS	91.0	230/460	AF2P25TS61YQ40	LM21207		363	LS-1
	1800	4200	284T	92.4	230/460	AF4P25T61YQ40	LM21208		363	LS-1
	1200	4000	324T	91.7	230/460	SF6P25T61YQ40	LM21212		504	LS-1
30	3600	4200	286TS	91.0	230/460	AF2P30TS61YQ40	LM21210		408	LS-1
	1800	4200	286T	92.4	230/460	AF4P30T61YQ40	LM21211		408	LS-1
	1200	4000	326T	91.7	230/460	SF6P30T61YQ40	LM21215		570	LS-1
40	3600	4000	324TS	91.7	230/460	SF2P40TS61YQ40	LM21213		504	LS-1
	1800	4000	324T	93.0	230/460	SF4P40T61YQ40	LM21214		504	LS-1
	1200	3800	364T	93.0	230/460	SF6P40T61YQ40	LM21218		765	LS-1
50	3600	4000	326TS	92.4	230/460	SF2P50TS61YQ40	LM21216		558	LS-1
	1800	4000	326T	93.0	230/460	SF4P50T61YQ40	LM21217		558	LS-1
	1200	3800	365T	93.0	230/460	SF6P50T61YQ40	LM21221		822	LS-1
60	3600	3800	364TS	93.0	230/460	SF2P60TS61YQ40	LM21219		765	LS-1
	1800	3800	364T	93.6	230/460	SF4P60T61YQ40	LM21220		765	LS-1
	1200	3600	404T	93.6	230/460	SF6P60T61YQ40	LM21224		918	LS-1
75	3600	3800	365TS	93.0	230/460	SF2P75TS61YQ40	LM21222		822	LS-1
	1800	3800	365T	94.1	230/460	SF4P75T61YQ40	LM21223		822	LS-1
	1200	3600	405T	93.6	230/460	SF6P75T61YQ40	LM21225		1002	LS-1
100	3600	3600	405TS	93.6	230/460	SF2P100TS61YQ40	LM21226		1002	LS-1
	1800	3600	405T	94.5	230/460	SF4P100T61YQ40	LM21227		1002	LS-1
	1200	3000	444T	94.1	460	SF6P100T64YQ40	LM21228		1351	LS-1
125	3600	3600	444TS	94.5	460	SF2P125TS64YQ40	LM21229		1351	LS-1
	1800	3000	444T	94.5	460	SF4P125T64YQ40	LM21230		1351	LS-1
	1200	3000	445T	94.1	460	SF6P125T64YQ40	LM21231		1504	LS-1
150	3600	3600	445TS	94.5	460	SF2P150TS64YQ40	LM21232		1504	LS-1
	1800	3000	445T	95.0	460	SF4P150T64YQ40	LM21233		1504	LS-1
	1200	3000	445T	95.0	460	SF6P150T64YQ40	LM21234		1504	LS-1
200	3600	3600	445TS	95.0	460	SF2P200TS64YQ40	LM21235		1504	LS-1
	1800	3000	445T	95.0	460	SF4P200T64YQ40	LM21236		1504	LS-1
	1200	3000	447T	95.0	460	SF6P200T64YQ40	LM21237		1812	LS-1
250	3600	3600	449TS	95.4	460	SF2P250TS64YQ40	LM21240		2185	LS-1
	1800	2800	447T	95.0	460	SF4P250T64YQ40	LM21238		1812	LS-1

Prices and data subject to change without notice.

**Product numbers in red are STOCK items.**



# TEFC 15 TO 60 HZ CONSTANT TORQUE INVERTER DUTY

**230/460 & 460 VOLTS • 3-PHASE  
FOOT MOUNT & C-FACE  
1/3 TO 400 HP**

## FOOT MOUNT (cont'd)

HP	SYN RPM @ 60 Hz	RPM Max	Frame	FL Nom Eff (%)	Volts	Model Number	Product Number	Notes (see page 306)	Approx Shpg Wght (lbs)	Mult Sym
300	3600	3600	449TS	95.4	460	SF2P300TS64YQ40	LM21242		2185	LS-1
	1800	2800	449T	95.4	460	SF4P300T64YQ40	LM21239		2185	LS-1
350	3600	3600	449TS	95.8	460	SF2B350TS64YQ40	LM21243		2185	LS-1
	1800	2800	449T	95.4	460	SF4P350T64YQ40	LM21244		2185	LS-1
400	1800	2800	449T	96.2	460	SF4B400T64YQ40	TBD		TBD	TBD

## C-FACE WITH FEET

HP	SYN RPM @ 60 Hz	RPM Max	Frame	FL Nom Eff (%)	Volts	Model Number	Product Number	Notes (see page 306)	Approx Shpg Wght (lbs)	Mult Sym
1/3	1800	4000	56C	72.0	230/460	SRF4S0.33TC61Q40	LM22645		33	LS-1
1/2	3600	4000	56C	70.0	230/460	SRF2S0.5TC61Q40	LM22647		33	LS-1
	1800	4000	56C	74.0	230/460	SRF4S0.5TC61Q40	LM22649		33	LS-1
	1200	4000	56C	70.0	230/460	SRF6S0.5TC61Q40	LM22651		33	LS-1
3/4	3600	4000	56C	74.0	230/460	SRF2S0.75TC61Q40	LM22653		33	LS-1
	1800	4000	56C	77.0	230/460	SRF4S0.75TC61Q40	LM22655		33	LS-1
	1200	4000	56C	72.0	230/460	SRF6S0.75TC61Q40	LM22657		28	LS-1
1	3600	4000	56C	75.5	230/460	SRF2S1TC61Q40	LM22659		33	LS-1
	1800	4000	56C	78.5	230/460	SRF4S1TC61Q40	LM22661		28	LS-1
	1800	4000	143TC	82.5	230/460	SSF4P1TC61Q40	LM26081		52	LS-1
	1200	4000	145TC	80.0	230/460	SSF6P1TC61Q40	LM26323		57	LS-1
1 1/2	3600	4000	56C	78.5	230/460	SRF2S1.5TC61Q40	LM22663		28	LS-1
	3600	4000	143TC	82.5	230/460	SSF2P1.5TC61Q40	TBD		52	LS-1
	1800	4000	56HC	80.0	230/460	SRF4S1.5TC61Q40	LM22665		36	LS-1
	1800	4000	145TC	84.0	230/460	SSF4P1.5TC61Q40	LM26008		57	LS-1
	1200	4000	182TC	85.5	230/460	AAF6P1.5TC61Q40	LM22822		95	LS-1
2	3600	4000	56HC	78.5	230/460	SRF2S2TC61Q40	LM22667		36	LS-1
	3600	4000	145TC	84.0	230/460	SSF2P2TC61Q40	TBD		57	LS-1
	1800	4000	145TC	84.0	230/460	SSF4P2TC61Q40	LM25962		57	LS-1
	1200	4000	184TC	86.5	230/460	AAF6P2TC61Q40	LM22825		104	LS-1
3	3600	4000	182TC	85.5	230/460	AAF2P3TC61Q40	LM22826		95	LS-1
	1800	4000	182TC	87.5	230/460	AAF4P3TC61Q40	LM22827		95	LS-1
	1200	4600	213TC	87.5	230/460	AF6P3TC61Q40	LM22828		138	LS-1
5	3600	4000	184TC	87.5	230/460	AAF2P5TC61Q40	LM22829		104	LS-1
	1800	4000	184TC	87.5	230/460	AAF4P5TC61Q40	LM22830		104	LS-1
	1200	4600	215TC	87.5	230/460	AF6P5TC61Q40	LM31434		149	LS-1
7 1/2	3600	4600	G213TC	88.5	230/460	AF2P7.5TC61Q40	LM22832		138	LS-1
	1800	4600	213TC	89.5	230/460	AAF4P7.5TC61Q40	LM22833		138	LS-1
	1200	4400	254TC	89.5	230/460	AF6P7.5TC61Q40	LM22834		221	LS-1
10	3600	4600	G215TC	89.5	230/460	AF2P10TC61Q40	LM22835		149	LS-1
	1800	4600	215TC	89.5	230/460	AF4P10TC61Q40	LM22836		149	LS-1
	1200	4400	256TC	89.5	230/460	AF6P10TC61Q40	LM22837		248	LS-1
15	3600	4400	G254TC	90.2	230/460	AF2P15TC61Q40	LM22838		221	LS-1
	1800	4400	254TC	91.0	230/460	AF4P15TC61Q40	LM22839		221	LS-1
20	3600	4400	256TC	90.2	230/460	AF2P20TC61Q40	LM22840		248	LS-1
	1800	4400	256TC	91.0	230/460	AF4P20TC61Q40	LM22841		248	LS-1

Prices and data subject to change without notice.

**Product numbers in red are STOCK items.**

# ODP • 30 TO 60 HZ CONSTANT TORQUE INVERTER DUTY



**230/460 & 460 VOLTS • 3-PHASE  
FOOT MOUNT & C-FACE  
1/3 TO 400 HP**

## Features:

- **10:1 Constant torque speed range at continuous duty of 6-60 Hz.**
- **Variable torque speed range with open loop drive of 0-60 Hz.**
- **Constant horsepower speed range of 2x base speed (56-256T frames) or 1.5x base speed\* (284T-449T frames).**
- Ultimate Spike Defense™ Insulation System
- 1.00 service factor on PWM waveform,  
1.15 service factor or better on sine-wave power.
- Precision dynamic balanced rotor assembly
- Thermal overload protection (Class F thermostats)
- Warranty: 42 months from date of manufacture and 36 months from date of installation which ever period expires first.
- Made in the U.S.A.



## Applications:

For use in constant torque (conveyors, machine tools) or variable torque (pumps, fans) variable speed applications within the stated speed range of the motor.

\* Actual speed not to exceed "RPM MAX" listed for specific motor.

## FOOT MOUNT

HP	SYN RPM @ 60 Hz	RPM Max	Frame	FL Nom Eff (%)	Volts	Model Number	Product Number	Notes (see page 306)	Approx Shpg Wght (lbs)	Mult Sym
1	1800	5000	143T	82.5	230/460	SSD4P1T61Q40	<b>LM21148</b>	D	55	LS-1
1 1/2	1800	5000	145T	84.0	230/460	SSD4P1.5T61Q40	<b>LM21151</b>	D	68	LS-1
2	1800	5000	145T	84.0	230/460	SSD4P2T61Q40	<b>LM21153</b>	D	68	LS-1
3	1800	4800	182T	86.5	230/460	SSD4P3T61Q40	<b>LM21157</b>	D	82	LS-1
5	1800	4800	184T	87.5	230/460	SSD4P5T61Q40	<b>LM21159</b>		71	LS-1
7 1/2	1800	4600	213T	88.5	230/460	SSD4P7.5T61Q40	<b>LM21162</b>	D	141	LS-1
10	1800	4600	215T	89.5	230/460	SSD4P10T61Q40	<b>LM21165</b>	D	168	LS-1
	1200	4400	256T	90.2	230/460	SSD6P10T61Q40	<b>LM21170</b>	D	255	LS-1
15	1800	4400	254T	91.0	230/460	SSD4P15T61Q40	<b>LM21168</b>	D	245	LS-1
20	1800	4400	256T	91.0	230/460	SSD4P20T61Q40	<b>LM21171</b>		255	LS-1
	1800	4000	284T	91.7	230/460	SD4P25T61YQ40	<b>LM21174</b> ❖	D	N/A	LS-1
25	1800	4000	284T	91.7	230/460	CCD4P25T61YQ40	<b>LM29579</b>		350	LS-1
	1800	4000	286T	92.4	230/460	SD4P30T61YQ40	<b>LM21177</b> ❖	D	N/A	LS-1
30	1800	4000	286T	92.4	230/460	CCD4P30T61YQ40	<b>LM29936</b>		400	LS-1
	1800	4000	324T	93.0	230/460	SD4P40T61YQ40	<b>LM21180</b>	D	469	LS-1
40	1800	4000	324T	93.0	230/460	SD4P40T61YQ40	<b>LM21180</b>	D	469	LS-1
50	1800	4000	326T	93.0	230/460	SD4P50T61YQ40	<b>LM21118</b>	D	522	LS-1
75	1800	3800	365T	94.1	230/460	SD4P75T61YQ40	<b>LM21124</b>		763	LS-1
100	1800	3600	404T	94.1	230/460	SD4P100T61YQ40	<b>LM21127</b>		882	LS-1
125	1800	3600	405T	94.5	230/460	SD4P125T61YQ40	<b>LM30727</b>		958	LS-1

Prices and data subject to change without notice.

❖ Contact your local sales office for availability.

**Product numbers in red are STOCK items.**

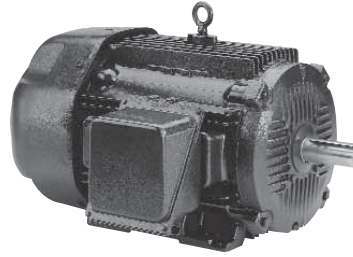


TEFC • CAST IRON SEVERE DUTY  
15 TO 60 HZ CONSTANT TORQUE • INVERTER DUTY

230/460 & 460 VOLTS • 3-PHASE  
FOOT MOUNT & C-FACE  
1 TO 350 HP

**Features:**

- 10:1 Constant torque speed range of 6-60 Hz at continuous duty.
- Variable torque speed range of 0-60 Hz.
- Constant horsepower speed range of 2x base speed (56-256T frames) or 1.5x base speed\* (284T-449T frames).
- Wider speed ranges possible on intermittent duty
- Severe Duty – full cast iron construction
- Ultimate Spike Defense™ Insulation System
- 1.00 service factor on PWM waveform, 1.15 service factor or better on sine-wave power.
- Precision dynamic balanced rotor assembly
- Thermal overload protection (Class F thermostats)
- Warranty: 42 months from date of manufacture and 36 months from date of installation which ever period expires first.
- Made in the U.S.A.



**Applications:**

For use in constant torque (conveyors, machine tools) or variable torque (pumps, fans) variable speed applications within the stated speed range of the motor.

**Supporting Materials:**

Dimensions: contact your local sales office  
Performance: contact your local sales office

\* Actual speed not to exceed "RPM MAX" listed for specific motor.

**FOOT MOUNT**

HP	SYN @ 60 Hz	Frame	FL Nom Eff (%)	SF	Volts	Model Number	Product Number	Notes (see page 306)	Approx Shpg Wght (lbs)	Mult Sym
1	1800	143T	82.5	1.00	230/460	CS4P1T61Q40	LM21525	D	74	LS-1
	1200	145T	84.0	1.00	230/460	CS6B1T61Q40	LM21585	D	83	LS-1
1 1/2	1800	145T	84.0	1.00	230/460	CS4P1.5T61Q40	LM21528	D	83	LS-1
5	1800	184T	87.5	1.00	230/460	CCS4P5T61Q40	LM21537	D	133	LS-1
7 1/2	1800	213T	89.5	1.00	230/460	CCS4P7.5T61Q40	LM21540	D	188	LS-1
10	1800	215T	89.5	1.00	230/460	CCS4P10T61Q40	LM21543	D	205	LS-1
20	1800	256T	91.0	1.00	230/460	CCS4P20T61Q40	LM21549	D	378	LS-1
25	1800	284T	92.4	1.00	230/460	CCS4P25T61YQ40	LM21552	D	531	LS-1
30	3600	286TS	93.0	1.00	230/460	CCS2B30TS61YQ40	LM21613	D	571	LS-1
	1800	286T	92.4	1.00	230/460	CCS4P30T61YQ40	LM21555	D	571	LS-1
300	3600	449TS	95.4	1.00	460	CCS2P300TS64YQ40	LM21582		2883	LS-1
	1800	447T	96.2	1.00	460	CCS4B300T64YQ40	LM21643	D	2572	LS-

**C-FACE**

HP	SYN @ 60 Hz	Frame	FL Nom Eff (%)	SF	Volts	Model Number	Product Number	Notes (see page 306)	Approx Shpg Wght (lbs)	Mult Sym
3	1800	182T	87.5	1.00	230/460	CCS4P3TC61Q40	LM22854		152	LS-1

Prices and data subject to change without notice.

Product numbers in red are STOCK items.

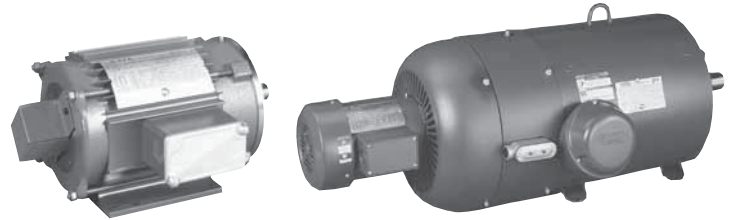
# TOTALLY ENCLOSED • 0 TO 60 HZ CONSTANT TORQUE INVERTER DUTY CTAC®



**230/460 & 460 VOLTS • 3-PHASE  
FOOT MOUNT & C-FACE  
1/3 TO 200 HP**

## Features:

- 2000:1 constant torque speed range of 0-60 Hz at continuous duty (range on RF models is 6-60Hz).
- Variable torque speed range of 0-60 Hz.
- Constant horsepower speed range of 2x base speed (56-256T frames) or 1.5x base speed\* (284T-445T frames).
- Wider speed ranges possible on intermittent duty
- Ultimate Spike Defense™ Insulation System
- Ideally suited for IGBT power
- 1.00 SF, 40°C ambient on PWM waveform
- C-Face standard on frames 56-256T
- Precision dynamic balanced rotor assembly
- Over temperature protection (Class F thermostat)
- Provision for mounting feedback device - Q10 models
- TEBC - 3 phase blower motor standard
- Warranty on CTAC motor, 42 months from date of manufacture and 36 months from date of installation which ever period expires first.
- Warranty on TEBC blower motor 30 months from date of manufacture and 24 months from date of installation which ever period expires first.
- Made In U.S.A.



## Applications:

Suitable for use in extruders, conveyors, machine tools and other process industries with constant torque, variable speed loads.

In a very small percentage of installations, bearing currents can develop in motors operated by PWM-based adjustable-speed drives. Contact your local sales office to review ways of eliminating bearing currents.

\* Actual speed not to exceed "RPM MAX" listed for specific motor.

## C-FACE WITH FEET (56-256T)

HP	SYN RPM @ 60 Hz	RPM Max	Frame	Enclosure	Volts	Model Number	Product Number	Notes (see page 306)	Approx Shpg Wght (lbs)	Mult Sym
1/3	1800	4000	56C	TEFC	230/460	SRF4S0.33TC61Q20	LM10336		26	LS-1
1/2	1800	4000	56C	TEFC	230/460	SRF4S0.5TC61Q20	LM10337		28	LS-1
	1200	4000	56HC	TEFC	230/460	SRF6S0.5TC61Q20	LM10338		41	LS-1
3/4	1800	4000	56HC	TEFC	230/460	SRF4S0.75TC61Q20	LM10339		36	LS-1
1	1800	4000	56HC	TEFC	230/460	SRF4S1TC61Q20	LM10340		41	LS-1
	1800	5000	145TC	TENV	230/460	SSN4S1TC61Q10	LM26359		62	LS-1
	1200	4800	182TC	TENV	230/460	AAN6S1TC61Q10	LM06103		78	LS-1
1 1/2	900	4800	184TC	TENV	230/460	AAN8S1TC61Q10	LM06105		90	LS-1
	1800	5000	145TC	TENV	230/460	SSN4S1.5TC61Q10	LM26233		65	LS-1
	1200	4800	184TC	TENV	230/460	AAN6S1.5TC61Q10	LM06109		90	LS-1
2	900	4600	213TC	TENV	230/460	AN8S1.5TC61Q10	LM06111		121	LS-1
	1800	4800	182TC	TENV	230/460	AAN4S2TC61Q10	LM06113		74	LS-1
	1200	4600	213TC	TENV	230/460	AN6S2TC61Q10	LM06115		121	LS-1
	900	4600	215TC	TENV	230/460	AN8S2TC61Q10	LM06117		121	LS-1

Prices and data subject to change without notice.

Product numbers in red are STOCK items.



TOTALLY ENCLOSED • 0 TO 60 HZ CONSTANT TORQUE  
INVERTER DUTY CTAC®

**230/460 & 460 VOLTS • 3-PHASE  
FOOT MOUNT & C-FACE  
1/3 TO 200 HP**

C-FACE WITH FEET (56-256T) & FOOT MOUNT (284T-445T)

HP	SYN RPM @ 60 Hz	RPM Max	Frame	Enclosure	Volts	Model Number	Product Number	Notes (see page 306)	Approx Shpg Wght (lbs)	Mult Sym
3	1800	4800	184TC	TENV	230/460	AAN4S3TC61Q10	LM06119		86	LS-1
	1200	4600	215TC	TENV	230/460	AN6S3TC61Q10	LM06121		135	LS-1
	900	4400	254TC	TENV	230/460	AN8S3TC61Q10	LM06123		186	LS-1
5	1800	4600	213TC	TENV	230/460	AN4S5TC61Q10	LM06125		115	LS-1
	1200	4400	254TC	TENV	230/460	AN6S5TC61Q10	LM06127		200	LS-1
	900	4400	256TC	TENV	230/460	AN8S5TC61Q10	LM06129		219	LS-1
7 1/2	1800	4600	215TC	TENV	230/460	AN4S7.5TC61Q10	LM06131		115	LS-1
	1200	4400	256TC	TENV	230/460	AN6S7.5TC61Q10	LM06133		219	LS-1
10	1800	4400	256TC	TENV	230/460	AN4S10TC61Q10	LM06135		211	LS-1
15	1200	4200	284T	TEBC	230/460	SB6H15T61Q10	LM03140		350	LS-1
20	1200	4200	286T	TEBC	230/460	SB6H20T61Q10	LM03156		420	LS-1
25	1800	4200	284T	TEBC	230/460	SB4H25T61Q10	LM03188		350	LS-1
	1200	4000	324T	TEBC	230/460	SB6H25T61Q10	LM03204		490	LS-1
30	1800	4200	286T	TEBC	230/460	SB4H30T61Q10	LM03236		420	LS-1
	1200	4000	326T	TEBC	230/460	SB6H30T61Q10	LM03252		550	LS-1
40	1800	4000	324T	TEBC	230/460	SB4H40T61Q10	LM03284		420	LS-1
	1200	3800	364T	TEBC	230/460	SB6H40T61Q10	LM03300		670	LS-1
50	1800	4000	326T	TEBC	230/460	SB4H50T61Q10	LM03332		490	LS-1
	1200	3800	365T	TEBC	230/460	SB6H50T61Q10	LM03348		740	LS-1
60	1800	3800	364T	TEBC	230/460	SB4H60T61Q10	LM03376		670	LS-1
	1200	3600	404T	TEBC	230/460	SB6H60T61Q10	LM03396		880	LS-1
75	1800	3800	365T	TEBC	230/460	SB4H75T61Q10	LM03424		740	LS-1
	1200	3600	405T	TEBC	230/460	SB6H75T61Q10	LM03444		1000	LS-1
100	1800	3600	405T	TEBC	230/460	SB4H100T61Q10	LM03472		1000	LS-1
	1200	3000	444T	TEBC	460	SB6H100T64YQ10	LM03490		1290	LS-1
125	1800	3000	444T	TEBC	460	SB4H125T64YQ10	LM03516		1290	LS-1
	1200	3000	445T	TEBC	460	SB6H125T64YQ10	LM03536		1480	LS-1
150	1800	3000	445T	TEBC	460	SB4H150T64YQ10	LM03564		1480	LS-1
200	1800	3000	445T	TEBC	460	SB4H200T64YQ10	LM03596		1480	LS-1

Prices and data subject to change without notice.

Product numbers in red are STOCK items.

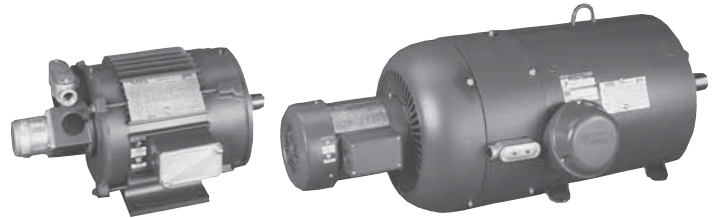
# TOTALLY ENCLOSED • 0 TO 60 HZ CONSTANT TORQUE VECTOR DUTY CTAC®



**FOOT MOUNT & C-FACE  
1/3 TO 200 HP**

**Features:**

- 2000:1 constant torque speed range of 0-60 Hz at continuous duty with closed-loop drive.
- Variable torque speed range of 0-60 Hz.
- Constant horsepower speed range of 2x base speed (56-256T frames) or 1.5x base speed\* (284T-445T frames).
- Ultimate Spike Defense™ Insulation System
- Ideally suited for IGBT power
- 1.00 SF, 40°C ambient on PWM waveform
- C-Face standard on frames 56-256T
- Precision dynamic balanced rotor assembly
- Over temperature protection (Class F thermostat)
- 1024 ppr encoder with differential line driver
- Separate terminal box or conduit with terminal block for feedback termination
- TEBC – 3 phase blower motor standard
- Warranty: (CTAC motor) 42 months from date of manufacture and 36 months from date of installation which ever period expires first. Feedback device and blower motor (TEBC) 30 months from date of manufacture and 24 months from date of installation which ever period expires first.
- Made In U.S.A.



**Applications:**

For use in demanding industrial applications where premium construction and performance are required. Suitable for use in extruders, conveyors, machine tools and other process industries with constant torque, variable speed loads.

In a very small percentage of installations, bearing currents can develop in motors operated by PWM-based adjustable-speed drives. Contact your local sales office to review ways of eliminating bearing currents.

\* Actual speed not to exceed "RPM MAX" listed for specific motor.

**C-FACE WITH FEET (56-256T)**

HP	SYN RPM @ 60 Hz	RPM Max	Frame	Enclosure	Volts	Model Number	Product Number	Notes (see page 306)	Approx Shpg Wght (lbs)	Mult Sym
1/3	1800	5000	56C	TENV	230/460	SRN4S0.33TC61Q15	LM10346		43	LS-1
1/2	1800	5000	56C	TENV	230/460	SRN4S0.5TC61Q15	LM10347		43	LS-1
	1200	5000	56HC	TENV	230/460	SRN6S0.5TC61Q15	LM10348		43	LS-1
3/4	1800	5000	56HC	TENV	230/460	SRN4S0.75TC61Q15	LM10349		54	LS-1
1	1800	5000	56HC	TENV	230/460	SRN4S1TC61Q15	LM10350		54	LS-1
	1800	5000	145TC	TENV	230/460	SSN4S1TC61Q15	LM26109		82	LS-1
	1200	4800	182TC	TENV	230/460	AAN6S1TC61Q15	LM03973		98	LS-1
	900	4800	184TC	TENV	230/460	AAN8S1TC61Q15	LM03975		110	LS-1
1 1/2	1800	5000	145TC	TENV	230/460	SSN4S1.5TC61Q15	LM26278		85	LS-1
	1200	4800	184TC	TENV	230/460	AAN6S1.5TC61Q15	LM03981		110	LS-1
	900	4600	213TC	TENV	230/460	AN8S1.5TC61Q15	LM03983		141	LS-1
2	1800	4800	182TC	TENV	230/460	AAN4S2TC61Q15	LM03987		98	LS-1
	1200	4600	213TC	TENV	230/460	AN6S2TC61Q15	LM03989		141	LS-1
	900	4600	215TC	TENV	230/460	AAN8S2TC61Q15	LM03991		141	LS-1

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TOTALLY ENCLOSED • 0 TO 60 HZ CONSTANT TORQUE  
VECTOR DUTY CTAC®

**FOOT MOUNT & C-FACE**  
**1/3 TO 200 HP**

**C-FACE WITH FEET (56-256T) & FOOT MOUNT (284T-445T)**

HP	SYN RPM @ 60 Hz	RPM Max	Frame	Enclosure	Volts	Model Number	Product Number	Notes (see page 306)	Approx Shpg Wght (lbs)	Mult Sym
3	1800	4800	184TC	TENV	230/460	AAN4S3TC61Q15	LM03995		110	LS-1
	1200	4600	215TC	TENV	230/460	AN6S3TC61Q15	LM03997		155	LS-1
	900	4400	254TC	TENV	230/460	AN8S3TC61Q15	LM03999		206	LS-1
5	1800	4600	213TC	TENV	230/460	AAN4S5TC61Q15	LM04003		115	LS-1
	1200	4400	254TC	TENV	230/460	AN6S5TC61Q15	LM04005		220	LS-1
	900	4400	256TC	TENV	230/460	AN8S5TC61Q15	LM04007		239	LS-1
7 1/2	1800	4600	215TC	TENV	230/460	AN4S7.5TC61Q15	LM31463		155	LS-1
	1200	4400	256TC	TENV	230/460	AN6S7.5TC61Q15	LM04013		239	LS-1
10	1800	4400	256TC	TENV	230/460	AN4S10TC61Q15	LM30572		235	LS-1
15	1200	4200	284T	TEBC	230/460	CCB6S15T61Q15	LM31961		490	LS-1
20	1200	4200	286T	TEBC	230/460	SB6H20T61Q15	LM03157		420	LS-1
25	1800	4200	284T	TEBC	230/460	SB4H25T61Q15	LM03189		350	LS-1
	1200	4000	324T	TEBC	230/460	SB6H25T61Q15	LM03205		490	LS-1
30	1800	4200	286T	TEBC	230/460	SB4H30T61Q15	LM03237		420	LS-1
	1200	4000	326T	TEBC	230/460	SB6H30T61Q15	LM03253		550	LS-1
40	1800	4000	324T	TEBC	230/460	SB4H40T61Q15	LM03285		550	LS-1
	1200	3800	364T	TEBC	230/460	SB6H40T61Q15	LM03301		670	LS-1
50	1800	4000	326T	TEBC	230/460	SB4H50T61Q15	LM03333		550	LS-1
	1200	3800	365T	TEBC	230/460	SB6H50T61Q15	LM03349		740	LS-1
60	1800	3800	364T	TEBC	230/460	SB4H60T61Q15	LM03377		690	LS-1
	1200	3600	404T	TEBC	230/460	SB6H60T61Q15	LM03397		1000	LS-1
75	1800	3800	365T	TEBC	230/460	SB4H75T61Q15	LM03425		740	LS-1
	1200	3600	405T	TEBC	230/460	SB6H75T61Q15	LM03445		1000	LS-1
100	1800	3600	405T	TEBC	230/460	SB4H100T61Q15	LM03473		1000	LS-1
	1200	3000	444T	TEBC	460	SB6H100T64YQ15	LM03491		1290	LS-1
125	1800	3000	444T	TEBC	460	SB4H125T64YQ15	LM03517		1290	LS-1
	1200	3000	445T	TEBC	460	SB6H125T64YQ15	LM03537		1480	LS-1
150	1800	3000	445T	TEBC	460	SB4H150T64YQ15	LM03565		1490	LS-1
200	1800	3000	445T	TEBC	460	SB4H200T64YQ15	LM03597		1500	LS-1

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