

Severe Duty – TEFC Motors

RGZEESD

NEMA Premium™ Efficiency TEFC motors are the motors that can pay for themselves through energy savings. According to NEMA, electric motors consume 10 to 25 times their purchase price in electricity each year of operation. It is easy to see that increases in motor efficiency can significantly reduce operating costs. These motors are ideal for severe operating atmospheres in applications such as: chemical processing, mining, foundry, pulp and paper, waste management and petro/chemical.

Performance Specifications

- 1 to 400 HP
- 1.15 service factor, 40°C ambient
- 3600, 1800 or 1200 RPM
- 3 phase, 60 Hz; 230/460 volt operation under 25 HP, 460 volt 25 HP and above; 200 and 575 volt available
- Meets or exceeds NEMA Premium™ Efficiencies
- Class F insulation, Class B temperature rise
- NEMA Design B, Continuous Duty
- 0.06 IPS vibration
- 143T through S449 frame

Features for Long Life

Frame & End Shields – Cast iron construction for exceptional structural integrity with condensation T-drains. Lifting eyebolts are included for all frames.

Rotor – A unique offset rotor bar design provides improved efficiency while larger bars and end rings reduce resistance for lower rotor losses. Each die cast aluminum rotor assembly is dynamically balanced for extended bearing life, and includes a high-strength carbon steel (C1045) shaft for maximum rotor performance.

Stator/Windings – Manufactured with premium electrical grade steel laminations and copper electrical magnet wire to lower losses for improved efficiencies. A unique stator core design lowers flux density while increasing cooling capacity. Large conductor cross section reduces resistance, also lowering stator losses.

Insulation – Proprietary inverter-rated Class F non-hygroscopic insulation system with NEMA Class B temperature rise, provides an extra margin of thermal life. Varnish system application ensures maximum wire penetration to provide protection from moisture, corrosion and electrical shock. This insulation system



meets or exceeds NEMA MG1-2003, Part 31 making all motors suitable for operation with variable frequency drives.

Cooling – A bi-directional, non-sparking fan is locked and keyed to the shaft. Its low-inertia design reduces windage losses, improves airflow, reduces noise and provides dependable cooling. Cast iron fan covers are provided on all frame sizes.

Bearings – Regreasable, oversized single shielded with cast iron inner caps. Alemite grease fittings on the inlets and pipe plugs on the relief ports for ease of routine maintenance. All motors are equipped with drive end and opposite drive end shaft V-ring slingers for added bearing protection. Provisions for Inpro/Seal® bearing isolators are standard on both ends.

Lubrication – A specially formulated, high temperature tested, polyurea based grease is used to provide more than four times the lubrication life of other polyurea greases.

Oversized Conduit Box – Cast iron construction that is larger than industry standards, diagonally-split, neoprene gasketed and rotatable in 90° increments for quick and easy connections. Includes a ground lug and non-wicking, clearly and permanently marked leads.

Corrosion Resistance – Cast iron construction, zinc-plated hardware, epoxy enamel paint and stainless steel nameplate resist rust and corrosion.

Modifiable – All Siemens motors are available with a wide variety of modifications to meet your specific motor needs.

SIEMENS

Global network of innovation

Performance Specifications

460 Volts, NEMA Design B, 40°C Ambient

HP	Synch RPM	F.L. RPM	Frame	Current (A)			kVA/ HP Code	Nominal Efficiency				Power Factor			Torque		
				No Load	Full Load	Lckd Rotor		1/2	3/4	Full Load	Guarn Min	1/2	3/4	Full Load	Full Ld [Lb-Ft]	Locked Rotor	Break-Down
1	3600	3495	143T	0.6	1.3	11	K	78.7%	81.9%	82.5%	81.5%	71%	82%	88%	1.5	230%	360%
1	1800	1760	143T	1.0	1.5	12	L	82.0%	84.8%	85.5%	84.0%	52%	65%	73%	3.0	275%	400%
1	1200	1160	145T	1.0	1.6	11	K	79.4%	82.2%	82.5%	81.5%	48%	61%	69%	4.5	220%	310%
1.5	3600	3495	143T	0.9	1.9	17	L	83.0%	85.3%	85.5%	84.0%	73%	83%	88%	2.3	270%	400%
1.5	1800	1755	145T	1.4	2.2	19	L	83.8%	86.2%	86.5%	85.5%	53%	66%	74%	4.5	260%	400%
1.5	1200	1175	182T	1.5	2.3	20	M	83.3%	86.3%	87.5%	86.5%	49%	62%	70%	6.7	290%	460%
2	3600	3495	145T	1.1	2.4	23	L	84.4%	86.4%	86.5%	85.5%	74%	85%	90%	3.0	280%	400%
2	1800	1755	145T	1.6	2.8	22	K	84.0%	86.4%	86.5%	85.5%	56%	69%	77%	6.0	260%	380%
2	1200	1175	184T	1.6	2.9	24	L	86.0%	88.1%	88.5%	87.5%	55%	67%	74%	8.9	280%	440%
3	3600	3505	182T	1.6	3.6	32	K	84.3%	86.5%	86.5%	85.5%	77%	88%	90%	4.5	280%	360%
3	1800	1770	182T	2.0	4.0	32	K	86.9%	89.0%	89.5%	88.5%	59%	72%	79%	9.0	260%	320%
3	1200	1180	213T	2.4	4.3	32	K	86.5%	89.0%	89.5%	88.5%	54%	66%	73%	13	250%	300%
5	3600	3485	184T	1.8	5.7	46	J	88.0%	89.1%	88.5%	87.5%	83%	89%	92%	7.5	260%	320%
5	1800	1765	184T	3.0	6.4	46	J	88.9%	89.9%	89.5%	88.5%	65%	76%	82%	15	260%	320%
5	1200	1175	215T	3.8	6.9	46	J	87.8%	89.2%	89.5%	88.5%	56%	68%	75%	22	220%	320%
7.5	3600	3535	213T	2.9	8.6	64	H	88.7%	90.4%	89.5%	88.5%	78%	87%	91%	11	220%	320%
7.5	1800	1770	213T	4.3	9.5	64	H	90.2%	91.6%	91.7%	91.0%	66%	76%	81%	21	210%	290%
7.5	1200	1180	254T	5.9	10.5	64	H	89.3%	90.9%	91.0%	90.2%	55%	67%	75%	33	160%	260%
10	3600	3520	215T	3.3	11.4	81	H	89.7%	90.7%	90.2%	89.5%	81%	88%	91%	15	220%	290%
10	1800	1770	215T	5.5	12.5	81	H	91.3%	92.1%	91.7%	91.0%	66%	77%	82%	30	210%	290%
10	1200	1180	256T	7.0	13.8	81	H	89.9%	91.2%	91.0%	90.2%	56%	68%	75%	45	170%	260%
15	3600	3530	254T	5.0	17	116	G	89.5%	91.1%	91.0%	90.2%	83%	89%	91%	22	190%	260%
15	1800	1770	254T	8.0	19	116	G	92.0%	92.6%	92.4%	91.7%	67%	77%	81%	45	200%	260%
15	1200	1180	284T	11.0	21	116	G	90.9%	91.8%	91.7%	91.0%	53%	66%	73%	67	150%	240%
20	3600	3525	256T	7.4	23	145	G	90.3%	91.2%	91.0%	90.2%	81%	87%	90%	30	180%	260%
20	1800	1770	256T	9.5	24	145	G	93.1%	93.3%	93.0%	92.4%	69%	79%	83%	59	200%	270%
20	1200	1180	286T	13.0	27	145	G	91.2%	92.0%	91.7%	91.0%	57%	69%	76%	89	150%	240%
25	3600	3525	284TS	8.0	29	183	G	92.0%	92.2%	91.7%	91.0%	80%	85%	88%	37	160%	250%
25	1800	1775	284T	11	30	183	G	93.5%	94.0%	93.6%	93.0%	71%	80%	84%	74	180%	250%
25	1200	1185	324T	14	33	183	G	92.7%	93.2%	93.0%	92.4%	62%	72%	76%	111	170%	240%
30	3600	3525	286TS	9.5	34	218	G	92.0%	92.2%	91.7%	91.0%	84%	89%	90%	45	160%	250%
30	1800	1775	286T	12	35	218	G	93.9%	94.1%	93.6%	93.0%	73%	82%	85%	89	180%	250%
30	1200	1185	326T	15	39	218	G	93.1%	93.5%	93.0%	92.4%	64%	73%	77%	133	170%	220%
40	3600	3535	324TS	12	45	290	G	94.0%	94.1%	93.6%	93.0%	80%	87%	89%	60	150%	250%
40	1800	1780	324T	15	46	290	G	94.0%	94.3%	94.1%	93.6%	75%	83%	86%	118	180%	230%
40	1200	1185	365T	18	49	290	G	94.0%	94.4%	94.1%	93.6%	70%	79%	81%	177	190%	220%
50	3600	3535	326TS	15	55	363	G	94.1%	94.2%	93.6%	93.0%	82%	89%	91%	74	150%	250%
50	1800	1780	326T	19	58	363	G	94.8%	95.0%	94.5%	94.1%	74%	82%	85%	148	170%	230%
50	1200	1185	365T	24	62	363	G	94.0%	94.3%	94.1%	93.6%	67%	76%	80%	222	190%	220%
60	3600	3565	364TS	19	68	435	G	93.8%	94.1%	93.6%	93.0%	80%	86%	88%	89	160%	250%
60	1800	1780	364T	21	68	435	G	95.2%	95.4%	95.0%	94.5%	77%	85%	87%	177	180%	240%
60	1200	1185	404T	28	74	435	G	94.2%	94.7%	94.5%	94.1%	65%	76%	80%	266	180%	220%
75	3600	3565	365TS	22	85	543	G	93.7%	94.3%	94.1%	93.6%	81%	86%	88%	111	160%	260%
75	1800	1780	365T	25	85	543	G	95.6%	95.8%	95.4%	95.0%	78%	85%	87%	221	180%	240%
75	1200	1185	405T	34	93	543	G	94.7%	94.9%	94.5%	94.1%	68%	77%	80%	332	180%	220%
100	3600	3570	405TS	19	108	725	G	94.6%	94.7%	94.1%	93.6%	90%	92%	92%	147	120%	200%
100	1800	1780	405T	30	113	725	G	95.8%	96.0%	95.4%	95.0%	80%	86%	87%	295	180%	200%
100	1200	1185	444T	39	117	725	G	95.1%	95.3%	95.0%	94.5%	73%	81%	84%	443	160%	200%
125	3600	3575	444TS	32	138	908	G	94.5%	95.1%	95.0%	94.5%	84%	88%	89%	184	120%	200%
125	1800	1785	444T	45	143	908	G	95.4%	95.6%	95.4%	95.0%	78%	84%	86%	368	160%	200%
125	1200	1185	445T	48	144	908	G	95.1%	95.4%	95.0%	94.5%	74%	82%	85%	554	160%	200%
150	3600	3575	445TS	37	164	1085	G	94.8%	95.2%	95.0%	94.5%	84%	89%	90%	220	120%	200%
150	1800	1785	445T	52	170	1085	G	95.7%	96.0%	95.8%	95.4%	78%	84%	86%	441	150%	200%
150	1200	1190	447T	59	172	1085	G	95.6%	96.0%	95.8%	95.4%	73%	82%	85%	662	140%	200%
200	3600	3575	447TS	44	216	1450	G	95.3%	95.6%	95.4%	95.0%	88%	90%	91%	294	120%	200%
200	1800	1785	447T	70	226	1450	G	96.2%	96.5%	96.2%	95.8%	76%	84%	86%	588	160%	200%
200	1200	1190	449T	73	227	1450	G	95.6%	96.2%	95.8%	95.4%	75%	83%	86%	883	125%	200%
250	3600	3570	449TS	45	269	1825	G	95.7%	96.0%	95.8%	95.4%	89%	91%	91%	368	120%	200%
250	1800	1785	449T	90	281	2100	H*	96.1%	96.3%	96.2%	95.8%	80%	85%	87%	735	140%	200%
250	1200	1190	449T	86	281	2050	H*	95.7%	96.0%	95.8%	95.4%	81%	86%	87%	1104	120%	200%
300	3600	3575	449TS	68	323	2200	G	95.2%	95.8%	95.8%	95.4%	86%	90%	91%	441	100%	200%
300	1800	1785	449T	120	346	2200	G	96.1%	96.3%	96.2%	95.8%	75%	82%	84%	882	120%	200%
300	1200	1185	S449	116	342	2400	H*	96.0%	96.1%	95.8%	95.4%	82%	85%	86%	1329	105%	200%
350	3600	3570	S449SS	68	372	2550	G	95.8%	96.1%	95.8%	95.4%	89%	91%	92%	515	80%	200%
350	1800	1785	S449	130	392	2800	H*	95.8%	96.3%	96.2%	95.8%	77%	84%	86%	1029	100%	200%
400	3600	3570	S449SS	80	422	2900	G	94.6%	96.1%	95.8%	95.4%	89%	92%	93%	588	80%	200%
400	1800	1785	S449	140	454	2900	G	96.0%	96.4%	96.2%	95.8%	77%	84%	86%	1176	100%	200%

Minimum Guaranteed Full Load Efficiencies are based on NEMA MG1-12.54 10% Loss Difference.

Typical performance data shown. For certified data, contact Siemens.

* NEMA Design A

Siemens Energy & Automation, Inc.
3333 Old Milton Parkway, Alpharetta, GA 30005

Tel: 800-964-4114
www.sea.siemens.com

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