

NEMA STANDARD SERIES

NEMA PREMIUM

NEMA PREMIUM EFFICIENCY THREE-PHASE INDUCTION MOTOR (DESIGN B)

Totally enclosed fan-cooled squirrel-cage induction motor built to NEMA MG 1, Design B, at NEMA Premium efficiency.



1-500 ^{HP}

RATED OUTPUT

143T-586/7T

NEMA FRAME

60 ^{Hz}

RATED FREQUENCY

IP54/55

DEGREE OF
PROTECTION

SERIES

NEMA-Premium

REVISION

A01

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DESCRIPTION

NEMA standard three-phase induction motors are totally enclosed fan-cooled machines designed and built to the American NEMA standard. NEMA divides motors into Designs A, B, C and D; this series covers the high-efficiency Design A and Design B machines.

The series suits applications with no special requirement and is used as the power unit for general machinery. Motors can be built to a customer's particular requirement.

TECHNICAL SPECIFICATION

Insulation class	F
Degree of protection	IP54 (IP55)
Altitude	Not exceeding 3,300 ft (1,000 m)
Ambient temperature	-15 °C to +40 °C (5 °F to 104 °F)
Duty type	Continuous
Mounting arrangements	T (foot), TC (C-face), TD (D-flange), TCRD / TDRD (vertical)

STANDARDS

NEMA MG 1	Design B, three-phase induction motor
NEMA Premium	Efficiency level
CSA 259277	Canadian certification
CC006A	United States efficiency certification

MODEL DESIGNATION

Frames follow the NEMA T-frame series of **NEMA MG 1**. A shaft-type suffix distinguishes the standard shaft from the short shaft, and a mounting suffix gives the mounting arrangement.

BJPE	10	12	256T
TYPE CODE	OUTPUT	POLES	FRAME
Nameplate TYPE field BJPE for this series	Rated output in HP	Pole number code	NEMA T-frame number

BJPE10-12-256T = a 10 HP, frame 256T motor. The same machine is supplied to Worldwide Electric as **PEWWE10-12-256T**; the nameplate TYPE field reads BJPE in both cases.

READING A DESIGNATION

Motors are fixed at the non-drive end. Frame 250T and above are supplied with grease inlet and outlet fittings.

TYPICAL APPLICATIONS

- General machinery drives
- Fans
- Pumps
- Compressors

NOTES

SERVICE FACTOR

1.0, 1.15 and 1.25.

VOLTAGE

230/460 V, 460 V or 575 V at 60 Hz. CSA-certified motors are built in these three voltages only.

TERMINAL BOX

Mounted at the middle of the frame, with 3, 6, 9 or 12 leads connected to MG 1-2.62. A grounding mark and screw are fitted inside.

RATED DATA

Values are for 60 Hz operation. Where the rated voltage is not 460 V or 575 V, full-load current is inversely proportional to the current shown for that voltage.

RATED OUTPUT BY FRAME AND SYNCHRONOUS SPEED

FRAME	3600 R/MIN	1800 R/MIN	1200 R/MIN	900 R/MIN
143T	0.75	0.75	1.1(145T:1.5)	—
145T	—	1.5	0.75	—
182T	2.2	2.2	1.0	—
184T	3.7	3.7	1.5	—
213T	5.5	5.5	2.2	—
215T	7.5	7.5	3.7	2.2
254T	11	11	5.5	3.7
256T	15	15	7.5	5.5
284T TS	18.5	18.5	11	7.5
286T TS	22	22	15	11
324T TS	30	30	18.5	15
326T TS	37	37	22	18.5
364T TS	45	45	30	22
365T TS	55	55	37	30
404T TS	—	—	45	37
405T TS	75	75	55	45
444T TS	90	90	75	55
445T TS	110	110	90	75
447T TS	150	150	110	90
449T TS	185	—	—	110
449T	—	—	—	150
504/5T	—	—	110	—
449T / 504/5T	—	185	150	—
449T / 586/7T	—	220	185	—
449T / 586/7T	—	260	220	—
586/7T	220	300	300	185
586/7T	260	335	335	220
586/7T	300	370	370	260
586/7T	335	—	—	—
586/7T	370	—	—	—

SYNCHRONOUS SPEED 3600 R/MIN · 60 HZ

FRAME	HP	RATED OUTPUT kW	SPEED r/min	CURRENT AT 460 V A	CONNECTION	CURRENT AT 575 V A	CONNECTION	POWER FACTOR cos φ	EFFICIENCY FL 100% %	EFFICIENCY FL 75% %	KVA code	LOCKED- ROTOR TORQUE %	MAXIMUM TORQUE %
143T	1.0	0.75	3480	1.56	2Y/Y	1.25	Y	0.78	77.0	78.0	N	175	250
143T	1.5	1.1	3490	2.09	2Y/Y	1.67	Y	0.80	84.0	84.5	M	175	250
145T	2.0	1.5	3495	2.74	2Y/Y	2.19	Y	0.80	85.5	85.0	L	170	240
182T	3	2.2	3490	3.82	2Y/Y	3.06	Y	0.85	86.5	87.0	K	160	230
184T	5	3.7	3490	6.01	2Y/Y	4.81	Y	0.88	88.5	89.8	J	150	215
213T	7.5	5.5	3505	9.45	2△/△	7.56	Y	0.83	89.5	89.7	H	140	200
215T	10	7.5	3500	12.2	2△/△	9.77	Y	0.85	90.2	90.7	H	135	200
254T	15	11	3540	17.5	2△/△	14.0	Y	0.88	91.0	91.5	G	130	200
256T	20	15	3540	23.1	2△/△	18.5	Y	0.89	91.0	91.5	G	130	200
284TS	25	18.5	3550	29.3	2△/△	23.5	△	0.87	91.7	92.1	G	130	200
286TS	30	22	3550	34.8	2△/△	27.8	△	0.88	91.7	92.4	G	130	200
324TS	40	30	3545	46.1	2△/△	36.8	△	0.88	92.4	92.8	G	125	200
326TS	50	37	3545	56.6	2△/△	45.3	△	0.89	93.0	93.4	G	120	200
364TS	60	45	3560	70.6	2Y/△	56.5	△	0.85	93.6	93.8	G	120	200
365TS	75	55	3560	88.3	2△/△	70.6	△	0.85	93.6	93.6	G	105	200
405TS	100	75	3575	111	2△/△	88.4	△	0.90	94.1	94.3	G	105	200
444TS	125	90	3575	137	2△/△	110	△	0.90	95.0	95.2	G	100	200
445TS	150	110	3575	164	2△/△	131	△	0.90	95.0	95.0	G	100	200
447TS	200	150	3575	216	2△/△	173	△	0.91	95.4	95.5	G	100	200
449TS	250	185	3585	269	△	215	△	0.91	95.8	95.9	G	70	125
586/7TS	300	220	3580	322	△	258	△	0.91	95.8	95.8	G	70	125
586/7TS	350	260	3580	376	△	301	△	0.91	95.8	95.8	G	70	125
586/7TS	400	295	3580	430	△	344	△	0.91	95.8	95.8	G	70	125
586/7TS	450	300	3580	478	△	383	△	0.92	95.8	95.8	G	70	125
586/7TS	500	370	3580	531	△	425	△	0.92	95.8	95.8	G	70	125

SYNCHRONOUS SPEED 1800 R/MIN · 60 HZ

FRAME	HP	RATED OUTPUT kW	SPEED r/min	CURRENT A	EFFICIENCY %
143T	1.0	0.75	1755	1.63	85.5
143T	1.5	1.1	1755	2.22	86.5
145T	2	1.5	1755	2.97	86.5
182T	3	2.2	1755	4.08	89.5
184T	5	3.7	1755	6.3	89.5
213T	7.5	5.5	1760	9.23	91.7
215T	10	7.5	1760	12.2	91.7
254T	15	11	1765	18.1	92.4

SYNCHRONOUS SPEED 1800 R/MIN · 60 HZ (CONTINUED)

FRAME	HP	RATED OUTPUT kW	SPEED r/min	CURRENT A	EFFICIENCY %
256T	20	15	1765	23.7	93.0
284T	25	18.5	1770	29.4	93.6
286T	30	22	1770	35.3	93.6
324T	40	30	1775	46.8	94.1
326T	50	37	1775	57.6	94.5
364T	60	45	1780	71.2	95.0
365T	75	55	1780	88.7	95.4
405T	100	75	1785	114	95.4
444T	125	90	1790	146	95.4
445T	150	110	1790	175	95.8
447T	200	150	1790	229	96.2
449T	250	185	1790	280	96.2
449T	300	220	1790	336	96.2
504/5T	250	185	1790	280	96.2
586/7T	300	220	1790	324	96.2
586/7T	350	260	1790	374	96.2
586/7T	400	300	1790	428	96.2
586/7T	450	330	1790	481	96.2
586/7T	500	370	1790	535	96.2

SYNCHRONOUS SPEED 1200 R/MIN · 60 HZ

FRAME	HP	RATED OUTPUT kW	SPEED r/min	CURRENT A	EFFICIENCY %
145T	1.0	0.75	1160	1.75	82.5
182T	1.5	1.1	1180	2.36	87.5
184T	2	1.5	1175	2.98	88.5
213T	3	2.2	1175	4.48	89.5
215T	5	3.7	1175	7.27	89.5
254T	7.5	5.5	1175	9.41	91.0
256T	10	7.5	1185	12.5	91.0
284T	15	11	1185	19.4	91.7
286T	20	15	1185	25.5	91.7
324T	25	18.5	1185	32.7	93.0
326T	30	22	1185	38.7	93.0
364T	40	30	1185	49.1	94.1
365T	50	37	1185	60.7	94.1
404T	60	45	1190	71.6	94.5

SYNCHRONOUS SPEED 1200 R/MIN · 60 HZ (CONTINUED)

FRAME	HP	RATED OUTPUT kW	SPEED r/min	CURRENT A	EFFICIENCY %
405T	75	55	1190	88.5	94.5
444T	100	75	1190	122	95
445T	125	90	1190	152	95
447T	150	110	1190	179	95.8
449T	200	150	1190	244	95.8
449T	250	185	1190	302	—
449T	300	220	1190	353	95.8
504/5T	150	110	1190	169	95.8
504/5T	200	150	1190	225	95.8
586/7T	250	185	1190	287	95.8
586/7T	300	220	1190	341	95.8
586/7T	350	260	1190	398	95.8
586/7T	400	300	1190	449	95.8
586/7T	450	330	1190	506	95.8
586/7T	500	370	1190	562	95.8

SYNCHRONOUS SPEED 900 R/MIN · 60 HZ

FRAME	HP	RATED OUTPUT kW	SPEED r/min	CURRENT A	EFFICIENCY %
215T	3.0	2.2	970	4.83	85.5
254T	5	3.7	865	7.31	86.5
256T	7.5	5.5	865	10.8	86.5
284T	10	7.5	875	13.8	89.5
286T	15	11	875	20.1	89.5
324T	20	15	875	26.3	90.2
326T	25	18.5	875	32.9	90.2
364T	30	220	885	40.8	91.7
365T	30	30	885	54.5	91.7
404T	50	37	890	66.7	92.4
405T	60	45	890	80.0	92.4
444T	75	55	890	101	93.6
445T	100	75	890	135	93.6
447T	125	90	890	168	94.1
449T	150	110	890	194	94.1
449T	200	150	890	257	94.5
586/7T	250	185	890	312	95
586/7T	300	220	890	374	95

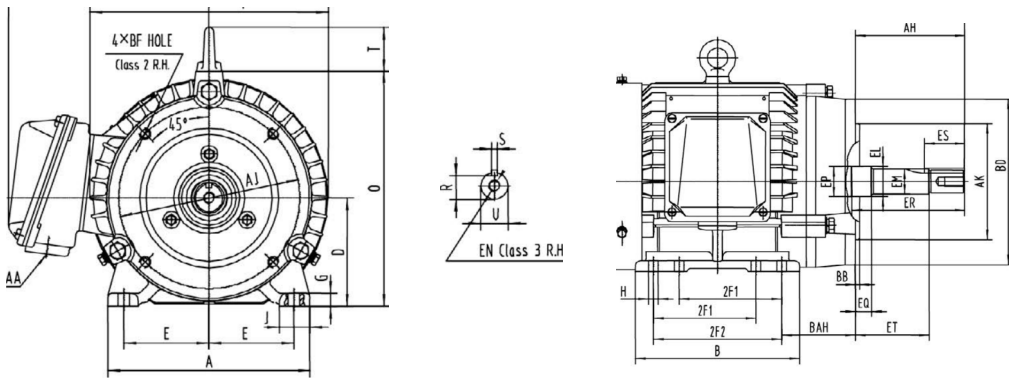
SYNCHRONOUS SPEED 900 R/MIN · 60 HZ (CONTINUED)

FRAME	HP	RATED OUTPUT kW	SPEED r/min	CURRENT A	EFFICIENCY %
586/7T	350	260	890	431	—

MOUNTING ARRANGEMENTS

The series is supplied in the following arrangements to IEC 60034-7. Letters on the drawings are the dimension symbols used in the outline and mounting dimension schedule.

T FOOT MOUNTING, NEMA T-FRAME



ABOUT THESE DRAWINGS

The drawings show a representative frame for each arrangement and are not to scale. Dimensions for a specific frame size are given in the outline and mounting dimension schedule.

OUTLINE AND MOUNTING DIMENSIONS

Principal dimensions are given below. The complete dimension schedule, including tolerances and flange details, is issued on request.

PRINCIPAL OUTLINE AND MOUNTING DIMENSIONS (INCH)

FRAME	MAX A	MAX B	C	D	E	2F1	2F	G	H	J	N-W	O	P	R	S	T	U	MIN V	MIN ES	AA	AB	BA
143T	7	5.6	12.5	3.5	2.75	—	4	0.43	0.34	1.0	2.25	7.6	7.8	0.771	0.188	1.42	0.874	2	1.41	3/4	6.7	2.25
145T	7	6.6	13.5	3.5	2.75	4	5	0.43	0.34	1.0	2.25	7.6	7.8	0.768	0.188	1.42	0.874	2.50	1.78	3/4	8	2.75
182T	9	6	15	4.5	3.75	—	4.5	0.6	0.41	2	2.75	9.5	9.7	...	...	...	...	...	...	...	...	...
213T	10.5	7.5	18	5.25	4.25	—	5.5	0.71	0.41	2.4	3.38	10.6	10.4	1.201	0.312	1.73	1.375	3.12	2.41	1	8.5	3.5
254T	12.5	10.3	23.5	6.25	5	—	8.25	0.79	0.53	2.4	4	12.9	12.6	1.416	0.375	2.05	1.625	3.75	2.91	1-1/2	10.5	4.25
284T/ 284TS	14	12.4/1 3.9	26.6/2 8.1	7	5.5	—	9.5/11	0.87	0.53	2.8	4.62/3 .25	14.3	14	1.591	0.5	2.05	1.875	4.38	3.28	1-1/2	11.5	4.75
324T/ 324TS	16	13.5	29.6/2 8.1	8	6.25	—	10.5	0.99	0.66	2.8	5.25/3 .75	16	15.7	1.845	0.5	2.44	2.125	5/3.5	3.91/2 .03	2	14.5	5.25
364T/ 365T	18	15~16	32.6~ 33.6	9	7	—	11.25 ~12.2 5	1.18	0.66	3	5.88/3 .75	18.8	19.1	2.021	0.625/ 0.5	2.44	2.375/ 1.875	5/3.5	5.65/2 .03	3	16.5	5.88
404T~ 449T	20~22	15.5~ 31	36.5~ 58	10~11	8~9	—	12.25 ~25	1.18~ 1.58	0.81	3.2~3. 4	7.25~ 8.5	21.1~ 23	21.5~ 24	2.45~ 2.88	0.75~ 0.875	2.84~ 3.47	2.375 ~3.37 5	4.5~8. 25	2.78~ 6.91	2×3~3	19~20	6.62~ 7.5
504/5 T	24.72	26	54	12.5	10	16	18	1.87	0.94	4.72	10.62 5	25.3	25	3.134	0.875	4.25	3.625	10.37 5	—	2×3	22	8.5
586/7 T(S)	28	33.85/ ...	67/60	14.5	11.5	22	25	2.05/1 .125	5.00	—	11.62 5	28.9	28.2	3.309/ 2.021	1/0.62 5	5	3.875/ 2.375	11.37 5/4.52 5	10/3.0 3	2×3	25	10

MANUFACTURER

CHINA HEADQUARTERS

SHANDONG LIJIU ELECTRICAL
MACHINERY CO., LTD

No.22, Shanhai Road, Rushan City, Shandong, China
Email: info@leadgomotor.com

THAILAND FACILITY

LEADGO MOTOR TECHNOLOGY
THAILAND CO LTD

Rojana Bowin 2 Industrial Estate, Si Racha,
Chonburi, Thailand
Email: info@leadgomotor.com

WEBSITE www.leadgomotor.com

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