



ANSI/NEMA MG 1-2007 Condensed

Information Guide for General Purpose Industrial AC Small and Medium Squirrel- Cage Induction Motor Standards



National Electrical Manufacturers Association
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INFORMATION GUIDE
FOR GENERAL PURPOSE
INDUSTRIAL AC
SMALL AND MEDIUM
SQUIRREL-CAGE
INDUCTION MOTOR
STANDARDS

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*Information Guide for General Purpose Industrial AC Small
and
Medium Squirrel-Cage Induction Motor Standards*

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CONTENTS

	Page
Foreword	vii
1 PURPOSE	1
2 SCOPE	1
3 DEFINITIONS	1
4 CLASSIFICATION OF DEGREES OF PROTECTION PROVIDED FOR ENCLOSURES FOR ROTATING MOTORS	3
4.1 Single Characteristic Numeral	3
4.2 Supplementary Letters	3
4.3 Letters Following Numerals	3
4.4 Letters Placed Immediately after the Letters IP	3
4.5 Degrees of Protection—First Characteristic Numeral	3
4.6 Degrees of Protection—Second Characteristic Numeral	4
5 METHODS OF COOLING	4
5.1 Arrangement of the IC Code	4
6 MECHANICAL VIBRATION—MEASUREMENT, EVALUATION, AND LIMITS OF AC MEDIUM MOTORS	4
7 SMALL (FRACTIONAL) AND MEDIUM (INTEGRAL) MOTORS RATINGS	4
7.1 Voltages	4
7.2 Frequencies	5
7.3 Horsepower and Speed Ratings	5
7.3.1 Small Induction Motors	5
7.3.2 Single-Phase Medium Motors	5
7.3.3 Polyphase Medium Induction Motors	5
7.3.4 Basis of Single-Phase Horsepower Rating	5
7.4 Horsepower Ratings of Multispeed Motors	5
7.4.1 Constant Horsepower	5
7.4.2 Constant Torque	5
7.4.3 Variable Torque	5
7.5 Rating of 60-Hertz Motors Operated on 50-Hertz Power	5
7.6 Time Ratings for Single-Phase and Polyphase Induction Motors	5
7.7 Code Letters (for Locked-Rotor kVA)—Nameplate Marking	6
7.8 Nameplate Temperature Ratings for Alternating-Current Small Motors	6
7.9 Nameplate Marking for Small Single-Phase and Polyphase Motors	6
7.9.1 Dual Voltage, Dual Frequency, and Dual Speed Motors	6
7.10 Nameplate Marking for Medium Single-Phase and Polyphase Induction Motors	7
7.11 Additional Nameplate Information for All Motors	7
8 DIMENSIONS—AC SMALL (FRACTIONAL) AND MEDIUM (INTEGRAL) MOTORS	8
8.1 System for Designating Frames	8
8.1.1 Small Motors	8
8.1.2 Medium Motors	8
8.2 Frame Assignments	9
8.3 Lettering of Dimension Sheets	9
8.4 Tolerances for Shaft Runout	9

8.5	Grounding Means for Field Wiring	9
9	TESTS AND PERFORMANCE—AC SMALL AND MEDIUM MOTORS.....	9
9.1	Routine Tests for Polyphase Medium Induction Motors	9
9.2	High-Potential Test Voltages for Induction Motors [MG 1-12.3]	9
9.3	Test Methods.....	10
9.4	Performance Characteristics.....	10
9.5	Torque Characteristics of Single-Phase General-Purpose Induction Motors	10
9.5.1	Breakdown Torque of Single-Phase Motors	10
9.5.2	Locked-Rotor Torque of Single-Phase Small Motors	10
9.5.3	Locked-Rotor Torque of Single-Phase Medium Motors	10
9.5.4	Pull-Up Torque of Single-Phase Medium Motors	10
9.6	Locked-Rotor Current Characteristics of Single-Phase and Polyphase General-Purpose Induction Motors.....	10
9.6.1	Locked-Rotor Current of Single-Phase Small Motors, Designs N, O, and General Purpose.	10
9.6.2	Locked-Rotor Current of Single-Phase Medium Motors, Designs L and M.....	10
9.6.3	Locked-Rotor Current of 3-Phase 60-Hertz Small and Medium Squirrel-Cage Induction Motors Rated at 230 Volts	11
9.7	Torque Characteristics of Polyphase General-Purpose Induction Motors	11
9.7.1	Breakdown Torque Characteristics of Polyphase Small Motors.....	11
9.7.2	Locked-Rotor Torque of Single-Speed Polyphase Squirrel-Cage Medium Motors with Continuous Rating	11
9.7.3	Breakdown Torque of Single-Speed Polyphase Squirrel-Cage Medium Motors with Continuous Ratings	11
9.7.4	Pull-Up Torque of Single-Speed Polyphase Squirrel-Cage Medium Motors with Continuous Ratings.....	11
9.8	Temperature Rise for Small and Medium Single-Phase and Polyphase Induction Motors	11
9.9	Variations from Rated Voltage and Rated Frequency	12
9.9.1	Running	12
9.9.2	Starting	12
9.10	Voltage Unbalance	12
9.11	Variation from Rated Speed.....	12
9.12	Variation from Nameplate Amperes—Alternating-Current Medium Motors.....	12
9.13	Occasional Excess Current.....	12
9.14	Stall Time	13
9.15	Service Factor of Alternating-Current Motors	13
9.15.1	General-Purpose Alternating-Current Motors of the Open Type	13
9.16	Overspeeds for Squirrel-Cage Motors	13
9.16.1	General Purpose Squirrel-Cage Induction Motors.....	13
9.16.2	General-Purpose Design A and B Direct-Coupled Squirrel-Cage Induction Motors	13
9.17	Machine Sound (Medium Induction Motors)	14
9.17.1	General	14
9.17.2	Sound Measurement.....	14
9.17.3	Sound Power Levels of Polyphase Squirrel-Cage Induction Motors at No Load	14
9.17.4	Sound Power Levels of Polyphase Squirrel-Cage Induction Motors at Rated Load	14

9.18	Number of Starts	14
9.19	Thermal Protection of Medium Motors.....	15
9.19.1	Winding Temperature.....	15
9.20	Overtemperature Protection of Medium Motors Not Meeting the Definition of “Thermally Protected”	15
9.20.1	Type 1—Winding Running and Locked Rotor Overtemperature Protection.....	15
9.20.2	Type 2—Winding Running Overtemperature Protection	16
9.20.3	Type 3—Winding Overtemperature Protection, Nonspecific Type	16
9.21	Efficiency	16
9.21.1	Determination of Motor Efficiency and Losses	16
9.21.2	Efficiency of Polyphase Squirrel-Cage Medium Motors with Continuous Ratings.....	17
9.21.3	Efficiency Levels of Energy Efficient Polyphase Squirrel-Cage Induction Motors.....	17
9.21.4	Efficiency Levels of NEMA Premium® Efficiency Electric Motors	17
9.21.5	Effects of Load on Motor Efficiency	17
10	APPLICATION DATA—AC SMALL AND MEDIUM MOTORS	18
10.1	Service Conditions	18
11	APPLICATION CONSIDERATIONS FOR CONSTANT SPEED DESIGN A AND B INDUCTION MOTORS USED ON A SINUSOIDAL BUS WITH HARMONIC CONTENT	18
11.1	Efficiency	18
11.2	Derating for Harmonic Content	18
11.2.1	Harmonic Voltage Factor (HVF) Defined	18
11.3	Power Factor Correction	19
12	APPLICATION CONSIDERATIONS FOR GENERAL PURPOSE DESIGN a AND b INDUCTION MOTORS USED WITH ADJUSTABLE-VOLTAGE OR ADJUSTABLE-FREQUENCY CONTROLS OR BOTH.....	19
12.1	Torque	19
12.1.1	Motor Torque During Operation Below Base Speed	19
12.1.2	Torque Derating at Reduced Speeds	19
12.1.3	Motor Torque During Operation Above Base Speed	19
12.2	Current	20
12.2.1	Running Current.....	20
12.2.2	Starting Current.....	20
12.3	Efficiency	20
12.4	Maximum Safe Operating Speeds	20
12.5	Sound.....	20
12.6	Resonances, Sound, Vibration	21
12.7	Voltage Stress.....	21
12.8	Power Factor Correction	21
12.9	Operation in Hazardous (Classified) Locations	21

Tables

1	MOTORS COVERED BY THIS GUIDE	22
2	ALTERNATING CURRENT MEDIUM MOTOR	22
3	DEGREES OF PROTECTION INDICATED BY THE FIRST AND SECOND CHARACTERISTIC NUMERALS	23
4	TYPICAL METHODS OF COOLING (IC CODE)	24
5	UNFILTERED VIBRATION LIMITS	24
6	HORSEPOWER AND SPEED RATINGS, SMALL INDUCTION MOTORS	24
7	HORSEPOWER AND SPEED RATINGS, SINGLE-PHASE MEDIUM MOTORS	25
8	HORSEPOWER AND SPEED RATINGS, POLYPHASE MEDIUM INDUCTION MOTORS	26
9	BREAKDOWN TORQUE FOR INDUCTION MOTORS	27
10	BREAKDOWN TORQUE FOR PERMANENT-SPLIT CAPACITOR MOTORS	28
11	TYPICAL CHARACTERISTICS AND APPLICATIONS OF FIXED FREQUENCY SMALL AND MEDIUM AC SQUIRREL-CAGE INDUCTION MOTORS	29
12	CODE LETTERS (FOR LOCKED-ROTOR KVA)—NAMEPLATE MARKING	30
13	MEDIUM MACHINE FRAME NUMBERING	30
14	FRAME DESIGNATIONS FOR SINGLE-PHASE, DESIGN L, HORIZONTAL AND VERTICAL MOTORS, 60 HERTZ, CLASS B INSULATION SYSTEM, OPEN TYPE, 1.15 SERVICE FACTOR, 230 VOLTS AND LESS	31
15	FRAME DESIGNATIONS FOR POLYPHASE, SQUIRREL-CAGE, DESIGNS A AND B HORIZONTAL AND VERTICAL MOTORS, 60 HERTZ, CLASS B INSULATION SYSTEM, OPEN TYPE, 1.15 SERVICE FACTOR, 575 VOLTS AND LESS	31
16	FRAME DESIGNATIONS FOR POLYPHASE, SQUIRREL-CAGE, DESIGNS A AND B HORIZONTAL AND VERTICAL MOTORS, 60 HERTZ, CLASS B INSULATION SYSTEM, TOTALLY-ENCLOSED FAN-COOLED TYPE, 1.00 SERVICE FACTOR, 575 VOLTS AND LESS	32
17	FRAME DESIGNATIONS FOR POLYPHASE, SQUIRREL-CAGE, DESIGN C, HORIZONTAL AND VERTICAL MOTORS, 60 HERTZ, CLASS B INSULATION SYSTEM, OPEN TYPE, 1.15 SERVICE FACTOR, 575 VOLTS AND LESS	32
18	FRAME DESIGNATIONS FOR POLYPHASE, SQUIRREL-CAGE, DESIGN C, HORIZONTAL AND VERTICAL MOTORS, 60 HERTZ, CLASS B INSULATION SYSTEM, TOTALLY ENCLOSED FAN-COOLED TYPE, 1.0 SERVICE FACTOR, 575 VOLTS AND LESS	33
19	LETTERING OF DIMENSION SHEETS	34
20	DIMENSIONS FOR ALTERNATING-CURRENT FOOT-MOUNTED MOTORS WITH SINGLE STRAIGHT-SHAFT EXTENSION	35
21	SHAFT EXTENSIONS AND KEY DIMENSIONS FOR ALTERNATING-CURRENT FOOT- MOUNTED MOTORS WITH SINGLE TAPERED OR DOUBLE STRAIGHT/TAPERED SHAFT EXTENSION [MG 1-4.4.2]	37
23	DIMENSIONS FOR TYPE D FLANGE-MOUNTING FOOT OR FOOTLESS ALTERNATING-CURRENT MOTORS	39
24	DIMENSIONS FOR TYPE FC FACE MOUNTING FOR ACCESSORIES ON END OPPOSITE DRIVE END OF ALTERNATING-CURRENT MOTORS	40
25	TOLERANCES FOR TYPE C FACE FACE-MOUNTING AND TYPE D FLANGE- MOUNTING MOTORS, MAXIMUM ECCENTRICITY OF MOUNTING RABBET	40
26	MINIMUM SIZE GROUNDING CONDUCTOR TERMINATION	40
27	LOCKED-ROTOR TORQUE OF SINGLE-PHASE SMALL MOTORS	41
28	LOCKED-ROTOR TORQUE OF SINGLE-PHASE MEDIUM MOTORS	41
29	LOCKED-ROTOR CURRENT OF SINGLE-PHASE SMALL MOTORS, DESIGNS O AND N	41

30	LOCKED-ROTOR CURRENT OF SINGLE-PHASE MEDIUM MOTORS, DESIGNS L AND M ...	42
31	LOCKED-ROTOR CURRENT OF 3-PHASE 60-HERTZ SMALL AND MEDIUM SQUIRREL-CAGE INDUCTION MOTORS RATED AT 230 VOLTS	42
32	LOCKED-ROTOR TORQUE OF DESIGN A AND B MOTORS	43
33	LOCKED-ROTOR TORQUE OF DESIGN C MOTORS	43
34	BREAKDOWN TORQUE OF DESIGN A AND B MOTORS.....	44
35	BREAKDOWN TORQUE OF DESIGN C MOTORS.....	45
36	PULL-UP TORQUE OF DESIGN A AND B MOTORS	45
37	PULL-UP TORQUE OF DESIGN C MOTORS	46
38	TEMPERATURE RISE FOR SMALL AND MEDIUM SINGLE-PHASE AND POLYPHASE INDUCTION MOTORS	47
39	SERVICE FACTORS OF GENERAL-PURPOSE ALTERNATING-CURRENT MOTORS OF THE OPEN TYPE	48
40	OVERSPEEDS FOR SQUIRREL-CAGE MOTORS.....	48
41	CONTINUOUS SPEED CAPABILITY FOR GENERAL-PURPOSE SQUIRREL-CAGE INDUCTION MOTORS IN DIRECT COUPLED APPLICATIONS, EXCEPT THOSE MOTORS IN 9.16.2.....	49
42	CONTINUOUS SPEED CAPABILITY FOR GENERAL-PURPOSE DESIGN A AND B DIRECT COUPLED (TS SHAFT FOR MOTORS ABOVE THE 250 FRAME SIZE) SQUIRREL-CAGE INDUCTION MOTORS	50
43	MAXIMUM A-WEIGHTED SOUND POWER LEVELS, L_{wa} (dB), AT NO-LOAD	51
44	INCREMENTAL EXPECTED INCREASE OVER NO-LOAD CONDITION, IN A- WEIGHTED SOUND POWER LEVELS ΔL_{wa} (dB), FOR RATED LOAD CONDITION FOR SINGLE-SPEED, THREE-PHASE, SQUIRREL-CAGE, INDUCTION MOTORS.....	52
45	REFERENCE LOAD WK^2 FOR NUMBER OF STARTS OF SQUIRREL-CAGE INDUCTION MOTORS	52
46	WINDING TEMPERATURES UNDER RUNNING LOAD CONDITIONS	53
47	WINDING TEMPERATURE UNDER LOCKED-ROTOR CONDITIONS	53
48	WINDING TEMPERATURES UNDER RUNNING LOAD CONDITIONS	53
49	SPECIFIED TEMPERATURE FOR WINDING RESISTANCE CORRECTION WHEN RATED LOAD TEMPERATURE IS NOT MEASURED	53
50	EFFICIENCY LEVELS	54
51	FULL-LOAD EFFICIENCIES OF ENERGY EFFICIENT MOTORS.....	55
52	FULL-LOAD EFFICIENCIES FOR 60 Hz NEMA PREMIUM® EFFICIENCY ELECTRIC MOTORS RATED 600 VOLTS OR LESS (RANDOM WOUND).....	56
53	FULL-LOAD EFFICIENCIES FOR 60HZ NEMA PREMIUM® EFFICIENCY ELECTRIC MOTORS RATED 5000 VOLTS OR LESS (FORM WOUND.....	57
54	FULL-LOAD EFFICIENCIES FOR 50 HZ NEMA PREMIUM® EFFICIENCY ELECTRIC MOTORS RATED 600 VOLTS OR LESS (RANDOM WOUND).....	58
55-4	MAXIMUM SAFE OPERATING SPEED FOR STANDARD DESIGN A AND B DIRECT DRIVE (TS SHAFT FOR FRAMES OVER 250) SQUIRREL-CAGE INDUCTION MOTORS	60

Figures

1	[MG 1 Figure 1-1] PROBE	61
2	[MG 1 Figure 1-2] PROBE	61
3	[MG 1 Figure 4-2] LETTER SYMBOLS FOR FOOT-MOUNTED MACHINES—DRIVE END VIEW	62
4	[MG 1 Figure 4-1] LETTERING OF DIMENSION SHEETS FOR FOOT-MOUNTED MACHINES, SIDE VIEW.....	63
5	[MG 1 Figure 4-3] LETTERING OF DIMENSION SHEETS FOR TYPE C FACE- MOUNTING FOOT OR FOOTLESS MACHINES.....	64
6	[MG 1-4.4.5]	65
7	[MG 1 Figure 14-1] MEDIUM MOTOR DERATING FACTOR DUE TO UNBALANCED VOLTAGE	65
8	[MG 1 Figure 14-2] TYPICAL EFFICIENCY VERSUS LOAD CURVES FOR 1800 RPM THREE-PHASE 60-HERTZ DESIGN B SQUIRREL-CAGE INDUCTION MOTORS.....	66
9	[MG 1 Figure 30-1] DERATING CURVE FOR HARMONIC VOLTAGES.....	66

Foreword

In the preparation of this Publication, input of users and other interested parties has been sought and evaluated. Inquiries, comments, and proposed or recommended revisions should be submitted to the concerned NEMA product Subdivision by contacting the:

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1 PURPOSE

This is a condensation of the standards on motors included in NEMA Standards Publication *Motors and Generators*, MG 1-2006. Some standards are reprinted in their entirety while others have been combined or abbreviated. The numbers placed at the end of many of the paragraphs in this condensation (e.g. MG 1 Part 6) refer to the complete standard in MG 1.

2 SCOPE

The standards in this guide cover alternating-current squirrel-cage motors up to and including the ratings built in frames corresponding to the continuous open-type ratings given in Table 1.

3 DEFINITIONS

ambient temperature: The temperature of the surrounding air which comes into contact with the heated parts of the apparatus. [MG 1-1.56]

capacitor motor: A single-phase induction motor with main winding arranged for direct connection to power source and auxiliary winding connected in series with a capacitor. There are three types of capacitor motors: capacitor start, in which capacitor phase is in circuit only during starting; permanent-split capacitor which has the same capacitance for both starting and running; two-value capacitor motor in which there are different values of effective capacitance for starting and running. [MG 1-1.20.3.3]

current:

locked-rotor current: The steady-state current taken from the line, with the rotor locked and with rated voltage and rated frequency applied to the motor. [MG 1-1.53]

no-load current: The current flowing through a line terminal of a winding when rated voltage is applied at a rated frequency with no connected load. [MG 1-1.54]

design letters: Identifies specific performance requirements for starting and operating characteristics. See Table 8. [MG 1-1.19.1]

dimensions: Dimension are indicated by the NEMA letters given in Table 19. [MG 1-4.1]

dripproof motor: An open motor in which the ventilating openings are so constructed that successful operation is not interfered with when drops of liquid or solid particles strike or enter the enclosure at any angle from 0 to 15 degrees downward from the vertical. [MG 1-1.25.1]

dripproof guarded motor: A dripproof motor whose ventilating openings are guarded. [MG 1-1.25.5]

energy efficient polyphase squirrel-cage induction motor: An induction motor having an efficiency in accordance with 9.21.3. [MG 1-1.41.2]

frame number: The frame number for small motors is the "D" dimension in inches multiplied by 16. The frame number for medium motors consists of three or four digits. The first two digits are equal to four times the "D" dimension in inches. When this product is not a whole number, the first two digits of the frame number are the next higher whole number. The third and, when required, fourth digit of the frame number is obtained from the value of the "2F" dimension in inches as shown in the columns headed 1 to 15, inclusive, in the Table 13. [MG 1-4.2]

general-purpose motor: A squirrel-cage induction motor, rated 500 horsepower and less, open or enclosed construction. It is designed in standard ratings with standard operating characteristics and mechanical construction for use under usual service conditions without restriction to a particular application or type of application. [MG 1-1.6]

guarded motor: An open motor in which all openings giving direct access to live metal or rotating parts (except smooth rotating surfaces) are limited in size by the structural parts or by screens, baffles, grilles, expanded metal, or other means to prevent accidental contact with hazardous parts. Openings giving direct access to such live or rotating parts shall not permit the passage of a cylindrical rod 0.75 inch in diameter.