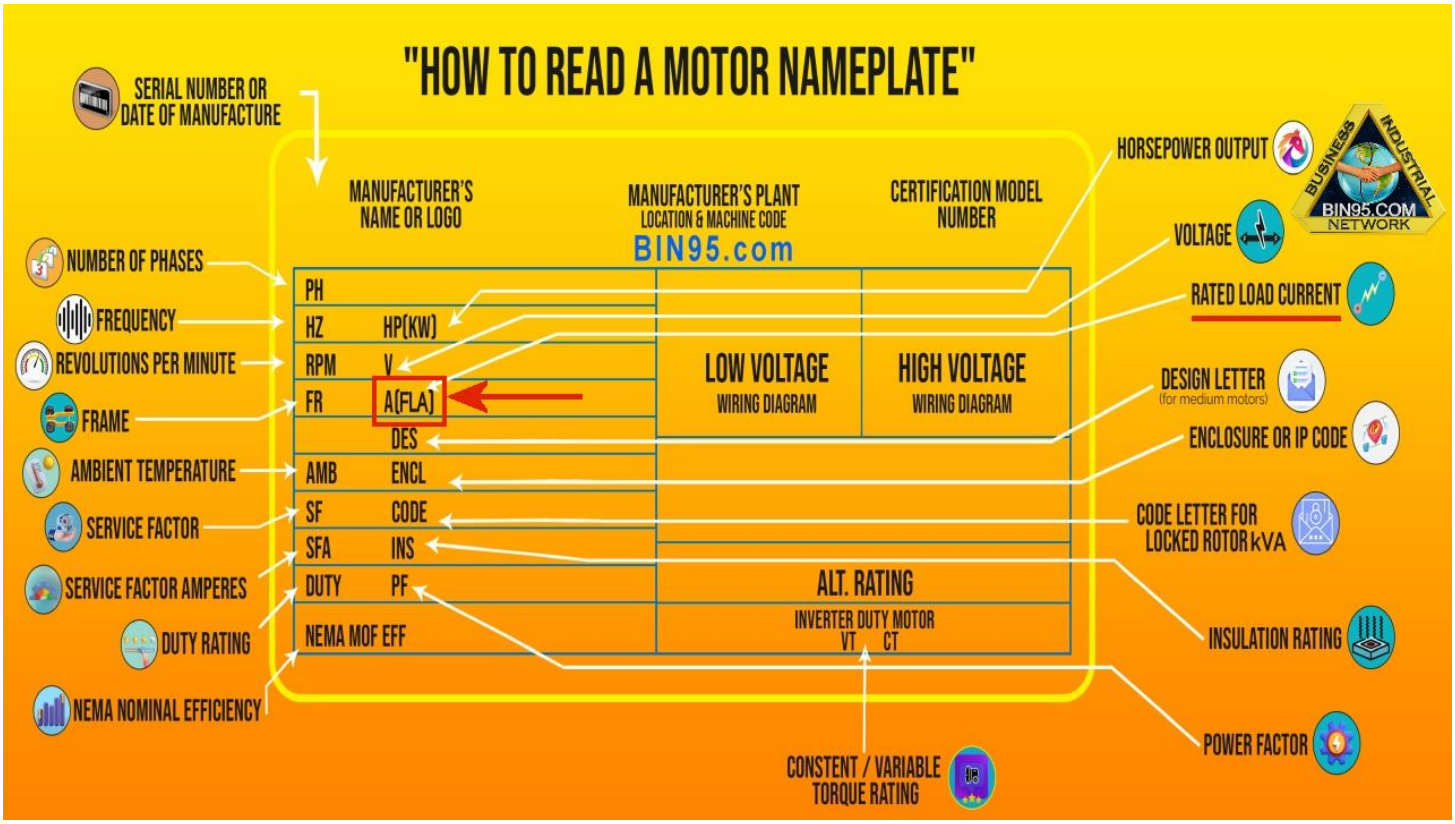
Motor Nameplate Details PDF

How to Read Motor Nameplate

This Motor Nameplate Details PDF is to supplement our article at https://bin95.com/articles/electrical/motor-nameplate-fla.htm In that article, we cover the use of one field in the electric motor nameplate, the “FLA” (A for Amp) field.

How to Read Motor Nameplate:



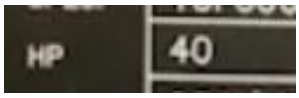
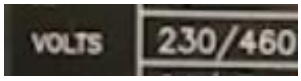
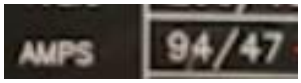
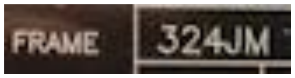
How to Read Motor Nameplate

In how to read motor nameplates, the infographic above highlights the area where the motor FLA is on the nameplate. Standardized electric motor nameplate formats help electricians and technicians quickly identify essential information. Information includes horsepower rating, voltage rating, efficiency class, operating speed range, insulation class, and other critical specifications.

The motor nameplate data will vary slightly based on the manufacturer, country/standards, motor type and model, and other factors.

10 Key Electric Motor Nameplate Fields

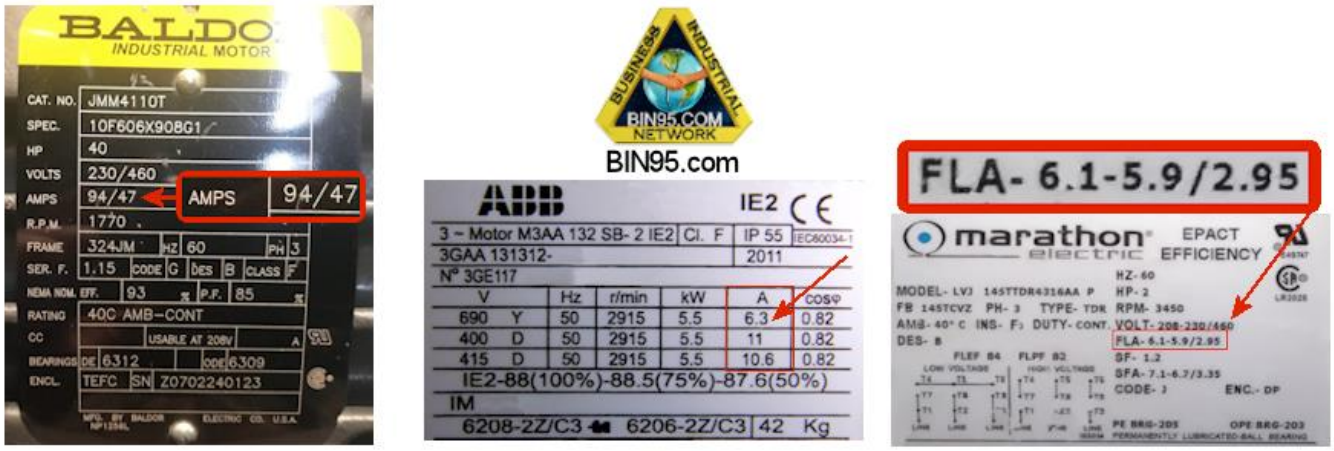
When it comes to electric motors, the nameplate provides valuable information about its specifications and capabilities. Understanding the various fields on an electric motor nameplate is essential for proper installation, maintenance, and troubleshooting. Here is a comprehensive list of key fields commonly found on electric motor nameplates:

	1. Motor Manufacturer: The name or logo of the company that manufactured the motor.
	2. Model or Type: The specific model or type designation assigned to the motor.
	3. Horsepower (HP): Indicates the motor's power output in horsepower.
	4. Voltage (V): The rated voltage required to operate the motor effectively.
	5. Current (A): The rated current drawn by the motor during operation. (FLA)
	6. Frequency (Hz): The motor's AC frequency, usually 50Hz or 60Hz.
	7. Speed (RPM): Specifies the rotational speed of the motor shaft in revolutions per minute.
	8. Frame Size: Refers to a standardized dimension that determines mounting compatibility with other mechanical components.
	9. Insulation Class: Indicates the thermal protection level the construction insulation materials provide.
	10. Duty Cycle: Describes how long and often a motor can operate under specific conditions without overheating.

Understanding these fields will enable technicians and engineers to select, install, and maintain electric motors effectively based on their specific requirements and operating conditions.

What is a motor nameplate? FLA Examples:

Below are examples of the FLA rating in Amps on electric motors by various manufacturers and types. The one thing most common is the FLA on the nameplate displayed as “A” for amps.



What is motor FLA on electrical motor nameplates? A, AMP, or FLA field.

The first thing you might have noticed in the electrical motor nameplate examples above is that FLA was used to indicate full load amperage on the motor template by only one of the three motor manufacturers. The other two used only “A” or the whole word “AMP” to indicate the field with the full load amperage(s). Using the letter “A” is by far the most common. The different ways it is displayed may be why, when someone runs into FLA, they ask what the letters FLA on a motor nameplate stand for.

NEC Table 430-150

FLC
(Calculated Current)

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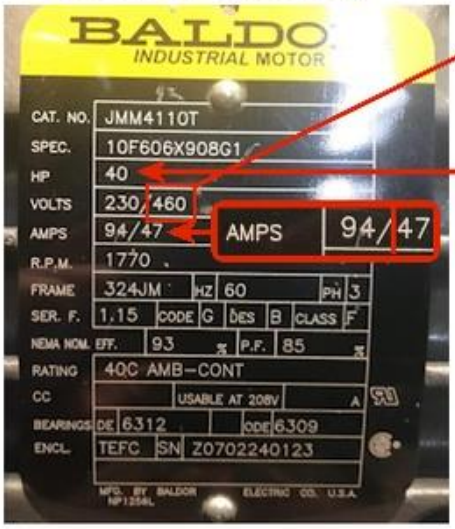
FLA
(Actual Current)



	Induction Type Squirrel Cage and Wound Rotor Amperes						
HP	115 Volts	200 Volts	208 Volts	230 Volts	460 Volts	575 Volts	2300 Volts
½	4.4	2.5	2.4	2.2	1.1	0.9	-
¾	6.4	3.7	3.5	3.2	1.6	1.3	-
1	8.4	4.8	4.6	4.2	2.1	1.7	-
1½	12.0	6.9	6.6	6.0	3.0	2.4	-
2	13.6	7.8	7.5	6.8	3.4	2.7	-
3	-	11.0	10.6	9.6	4.8	3.9	-
5	-	17.5	16.7	15.2	7.6	6.1	-
7½	-	25.3	24.2	22	11	9	-
10	-	32.2	30.8	28	14	11	-
15	-	48.3	46.2	42	21	17	-
20	-	62.1	59.4	54	27	22	-
25	-	78.2	74.8	68	34	27	-
30	-	92	88	80	40	32	-
40	-	120	114	104	**52**	41	-
50	-	150	143	130	65	52	-
60	-	177	169	154	77	62	16
75	-	221	211	192	96	77	20
100	-	285	273	248	124	99	26
125	-	359	343	312	156	125	31
150	-	414	396	360	180	144	37
200	-	552	528	480	240	192	49
250	-	-	-	-	302	242	60
300	-	-	-	-	361	289	72
350	-	-	-	-	414	336	83
400	-	-	-	-	477	382	95
450	-	-	-	-	515	412	103
500	-	-	-	-	590	472	118

For 90% power factor, multiply table values by 1.1, and for 80% power factor, by 1.25.

I always say there are exceptions to every rule. The exceptions for using the nameplate FLA when sizing wires and other conductors, ground fault protection, and disconnects are:

- Motors are built to operate under 1,200 rpm.
- Motors that have high torques (and thus higher FLCs).
- Multispeed motors (FLC varies with speed).
- A listed motor-operated appliance.

Other than the above four exceptions, use the nameplate FLA for sizing separate motor overload protection [430.6(A)(2)].

In our article, see more details on the differences between an electric motor nameplate and NEC Tables: What do the letters FLA on a motor nameplate stand for?

Related Course: Motor Controls Training Course.