



# MGM TRANSFORMER COMPANY

5701 SMITHWAY STREET • CITY OF COMMERCE, CALIF. 90040

(323) 726-0888 • FAX (323) 726-8224

www.mgm-transformer.com



NEMA Standard TP-1 was originally developed to promote the use of higher efficiency transformers in support of the Department of Energy’s (DOE) guidelines for more efficient electrical devices that reduce energy consumption. Studies sponsored by the Environmental Protection Agency (EPA) show that the typical loading of low voltage (600V and below) dry-type distribution transformers averages around 35% of the transformers full load rating over a 24 hour period. NEMA TP-1 established minimum efficiencies for 600V-class distribution transformers at 35% of the transformer’s full load rating. At 35% load, when compared to standard transformers, NEMA TP- I transformers are the most efficient transformer. The EPA adopted the minimum efficiencies set forth in NEMA Standard TP- 1 and incorporated them into their highly successful Energy Star® Program.

In applications where the average load over a 24 hour period is 35% of the transformer’s full load rating, the energy savings that can be attained by installing a NEMA TP- 1 (or Energy Star® labeled) transformer are significant. The EPA estimates that the payback period for the difference in price between a standard 150°C rise model and the NEMA TP-1 model is only 3 to 5 years. The expected life of a transformer is 20 years, or more, so the total financial savings available over the life of the transformer are significant.

The following table lists the NEMA TP- 1 minimum efficiency levels for low voltage dry type distribution transformers:

Single-Phase Efficiency		Three-Phase Efficiency	
Rated Capacity (kVA)	Minimum Efficiency (%)	Rated Capacity (kVA)	Minimum Efficiency (%)
15	97.7	15	97.0
25	98.0	30	97.5
37.5	98.2	45	97.7
50	98.3	75	98.0
75	98.5	112.5	98.2
100	98.6	150	98.3
167	98.7	225	98.5
		300	98.6
		500	98.7
		750	98.8



# MGM TRANSFORMER COMPANY

5701 SMITHWAY STREET • CITY OF COMMERCE, CALIF. 90040

(323) 726-0888 • FAX (323) 726-8224

[www.mgm-transformer.com](http://www.mgm-transformer.com)

Several agencies and local governments have mandated the use of NEMA TP-1 compliant or Energy Star® labeled transformers. Section 161 of the Energy Policy Act of 1992 encourages federal agencies to procure energy efficient products. Additionally, Executive Order 12902 and FAR Section 23.704 direct agencies to purchase products that are in the upper 25% of energy efficiency. Many states have passed laws mandating the installation of NEMA TP-1 transformers as well. Massachusetts and Minnesota were the first to pass such laws. Recently, New York State adopted changes to its Energy Code that mandate installation of these transformers. California has likewise adopted legislation, Title 20, which requires all low voltage dry type distribution transformers manufactured on or after March 1, 2003 to meet the minimum efficiency levels set forth in NEMA TP-1. More states will surely pass similar legislation in the near future in anticipation of the passage of the 1992 Energy Act (House Resolution 776) which will require distribution transformers across the country to meet the NEMA TP- 1 efficiency standards.

NEMA Standard TP-1, as well as most state and federal legislation, specifically excludes a broad range of transformers classified as “specialty transformers”. Among the products excluded from the NEMA standard are: transformers rated less than 15kVA, drives transformers (Type MD transformers), autotransformers, non-distribution transformers (such as UPS transformers), transformers designed for high harmonics (such as K-factor rated transformers), machine tool transformers, sealed and non-ventilated transformers (encapsulated transformers), transformers rated other than 60 Hz, and retrofit transformers. Check the specific legislation in your area for exclusions that are incorporated in your area.

As an Energy Star® partner, MGM Transformer Co. is a leader in the marketplace with solutions that save on electricity costs while at the same time help to protect the environment. MGM Transformer Co. offers a complete line of both single-phase and three-phase dry type distribution transformers that meet or exceed NEMA TP-1 efficiency levels. Models that comply with this standard bear the TP-1 and Energy Star® symbol.

The same options and modifications are available for NEMA TP- I transformers as are for the standard transformer offering; copper windings, special primary and or secondary voltages, 150°C, 115°C, or 80°C temperature rise, stainless steel enclosures, low sound, etc.