

NEMA Premium efficient transformers
 General purpose, K-Factor, Harmonic mitigating



Reduces energy consumption, resulting in decreased operating costs and lower harmful emissions

Eaton's family of NEMA Premium® efficiency transformers provides **30 percent less losses** than similarly sized NEMA® TP-1 efficiency models. In the United States, Department of Energy regulation 10 CFR Part 431 requires low voltage dry-type distribution transformers to meet NEMA TP-1 efficiency levels. Installing lower-loss NEMA Premium transformers reduces energy consumption, resulting in lower operating costs while reducing harmful emissions. Eaton® is one of the original manufacturers who supported and joined NEMA's Premium efficiency transformers program.

Like NEMA TP-1 efficient transformers, the recognized efficiency of NEMA Premium efficient transformers is measured at 75°C and with a linear load of 35 percent of full load rating. The table below shows the difference between the various transformer efficiency levels that have become common over the past few years.

Low voltage dry-type distribution transformer efficiency levels for three-phase transformers

kVA	NEMA TP-1 efficiency	NEMA Premium efficiency	NEMA TP-1 losses (at 35% load and 75°C) (watts)	NEMA Premium losses (at 35% load and 75°C) (watts)	NEMA Premium improvement in losses
15.0	97.0%	97.90%	162.4	112.6	30.7%
30.0	97.5%	98.25%	269.2	187.0	30.5%
45.0	97.7%	98.39%	370.8	257.7	30.5%
75.0	98.0%	98.60%	535.7	372.7	30.4%
112.5	98.2%	98.74%	721.7	502.5	30.4%
150.0	98.3%	98.81%	907.9	632.2	30.4%
225.0	98.5%	98.95%	1199.2	835.6	30.3%
300.0	98.6%	99.02%	1490.9	1039.2	30.3%
500.0	98.7%	99.09%	2305.0	1607.1	30.3%

For additional information on NEMA's Premium efficiency transformers program, visit NEMA at: www.nema.org/prod/pwr/trans/transformersprogram.cfm.

All NEMA Premium efficient transformers manufactured by Eaton are designed, manufactured and tested per applicable standards, including UL® 1561, NEMA ST20, NEMA TP-1, DOE 10 CFR Part 431 and the NEMA Premium efficiency transformers program. The results of all industry-standard production tests are electronically stored so the results can be retrieved at a later date. Along with other data, Eaton also records the no-load losses of every transformer that is shipped.



Eaton's NEMA Premium product family

Eaton's NEMA Premium efficiency transformers are manufactured in an ANSI 61 gray polyester powder-coat-painted NEMA Type 2 enclosure, which is easily converted to NEMA 3R when fitted with a weathershield kit.

General purpose

- Three-phase 15–500 kVA
- Aluminum windings (copper optional)
- 220°C insulation system and 150°C rise (115°C or 80°C rise optional)
- 200°C insulation system and 130°C rise (115°C or 80°C optional)

K-Factor

- Three-phase 15–300 kVA
- K-4, K-9 or K-13 ratings
- Aluminum windings (copper optional)
- 220°C insulation system and 150°C rise (115°C or 80°C rise optional)
- Single electrostatic shield between primary and secondary winding
- 200 percent rated neutral

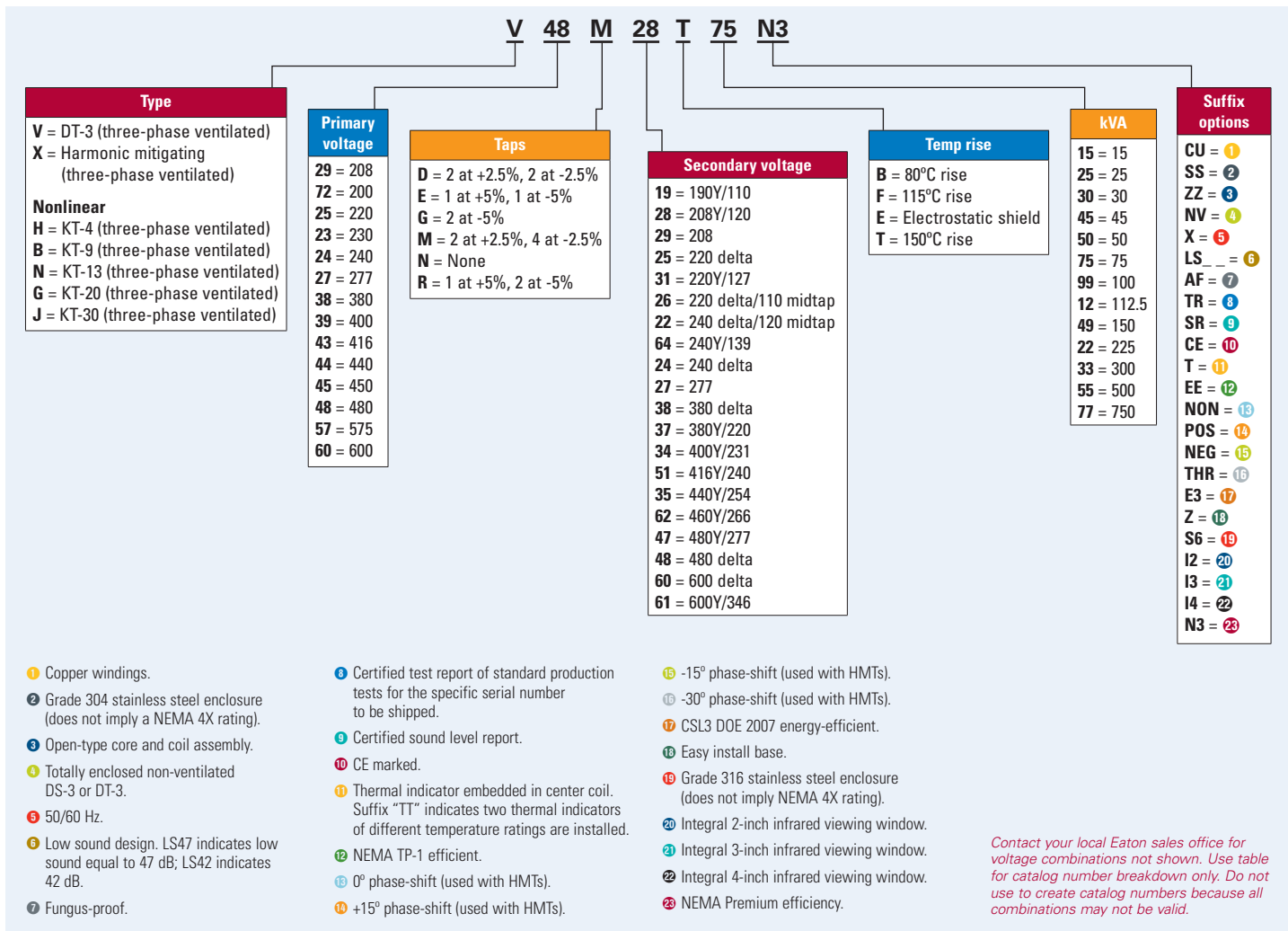
Harmonic mitigating

- Three-phase 15–300 kVA
- 0°, -15°, +15° or 30° phase shift
- Aluminum windings (copper optional)
- 220°C insulation system and 150°C rise (115°C or 80°C rise optional)
- Single electrostatic shield between primary and secondary winding
- 200 percent rated neutral

Additional factory-installed options

- Surge protective device installed on primary or secondary (120 kA or 160 kA)
- Infrared viewing window (3", 4" or 5")
- Stainless steel enclosure (grade 304 or 316)
- Core-coil only
- CE mark
- Custom paint colors

Catalog number configuration—product selection



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As a partner in the NEMA Premium transformer program, Eaton has determined that this product meets the NEMA Premium efficiency specifications for premium energy efficiency.

NEMA Premium is a trademark of the National Electrical Manufacturers Association.

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