

## Accessories

Please refer to Section 9.7 **Page 319**.

## Technical Data and Specifications

### Frequency

Eaton standard dry-type distribution transformers are designed for 60 Hz operation. Transformers required for other frequencies are available and must be specifically designed.

### Overload Capability

Short-term overload is designed into transformers as required by ANSI. Dry-type distribution transformers will deliver 200% nameplate load for one-half hour, 150% load for one hour and 125% load for four hours without being damaged, provided that a constant 50% load precedes and follows the overload. See ANSI C57.96-01.250 for additional limitations.

Continuous overload capacity is not deliberately designed into a transformer because the design objective is to be within the allowed winding temperature rise with nameplate loading.

### Insulation System and Temperature Rise

Industry standards classify insulation systems and rise as shown below:

#### Insulation System Classification

Ambient	+ Winding Rise	+ Hot Spot	= Temp. Class
40°C	55°C	10°C	105°C
40°C	80°C	30°C	150°C
25°C	135°C	20°C	180°C
40°C	115°C	30°C	185°C
40°C	150°C	30°C	220°C

The design life of transformers having different insulation systems is the same—the lower-temperature systems are designed for the same life as the higher-temperature systems.

### Enclosures

Eaton encapsulated transformers, Types EP and EPT, use a NEMA 3R rated enclosure as standard.

### Winding Terminations

Primary and secondary windings are terminated in the wiring compartment. Encapsulated units have copper leads or stabs brought out for connections. Ventilated transformers have leads brought out to aluminum pads that are pre-drilled to accept Cu/Al lugs.

**Lugs are not supplied with these transformers.** Eaton recommends that external cables be rated 90°C (sized at 75°C ampacity) for encapsulated designs and 75°C for ventilated designs.

### Series-Multiple Windings

Series-multiple windings consist of two similar coils in each winding that can be connected in series or parallel (multiple). Transformers with series-multiple windings are designated with an "x" or "/" between the voltage ratings, such as voltages of "120/240" or "240 x 480." If the series-multiple winding is designated by an "x," the winding can be connected only for a series or parallel. With the "/" designation, a mid-point also becomes available in addition to the series or parallel connection. As an example, a 120 x 240 winding can be connected for either 120 (parallel) or 240 (series), but a 120/240 winding can be connected for 120 (parallel), 240 (series) or 240 with a 120 mid-point.

### Sound Levels

All Eaton 600 volt class general-purpose dry-type distribution transformers are designed to meet NEMA ST-20 sound levels listed here. These are the sound levels measured in a soundproof environment. Actual sound levels measured at an installation will likely be higher due to

electrical connections and environmental conditions. Lower sound levels are available and should be specified when the transformer is going to be installed in an area where sound may be a concern.

For additional information, please refer to Section 9.7 **Page 322**.

### Average Sound Levels <sup>①</sup>

#### NEMA ST-20 Average Sound Level in dB

kVA	Up to 1.2 kV		Above 1.2 kV Ventilated
	Ventilated	Encapsulated	
0–9	40	45	45
10–50	45	50	50
51–150	50	55	55
151–300	55	57	58
301–500	60	59	60
501–700	62	61	62
701–1000	64	63	64
1001–1500	65	64	65

#### Notes

<sup>①</sup> Currently being reviewed and revised by NEMA.

For other ratings or styles not shown, or for special enclosure types (including stainless steel), refer to Eaton.