

Type AP Transformer



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Type AP

Product Description

- Encapsulated designs

Application Description

Transformers provide stepped-down voltages to machine tool control devices, enabling control circuits to be isolated from all power and lighting circuits. This allows the use of grounded or ungrounded circuits that are independent of the power or lighting grounds; thus, greater safety is afforded the operator. The control transformer line is particularly adaptable on applications where compact construction is demanded.

Features, Benefits and Functions

- Resin encapsulated
- 60 Hz operation
- 180°C insulation system
- 115°C rise standard; 80°C rise optional
- Convenient screw-type terminal board
- Bottom or side/wall-mounting designs
- Performance meets/exceeds requirements of ANSI/NEMA ST-1
- Regulation exceeds ANSI/NEMA requirements for all ratings

Standards and Certifications

- UL recognized



Industry Standards

All Eaton dry-type distribution and control transformers are built and tested in accordance with applicable NEMA, ANSI and IEEE Standards.

**Catalog Number Selection**

Please refer to **Page V7-T7-3**.

**Product Selection**

Additional Product Selection information is available in Volume 2, **CA08100003E**.

**240/480 Volts to 120/240 Volts, 60 Hz**

kVA	Mounting	Frame	Wiring Diagram ①	Weight Lbs (kg)	Style Number
3	Bottom	FR133	5	65 (29.5)	<b>C0003P7GB</b>
5	Bottom	FR99	5	104 (47.2)	<b>C0005P7GB</b>
7.5	Bottom	FR100	5	129 (58.6)	<b>C0007P7GB</b>
10	Bottom	FR101	5	148 (67.2)	<b>C0010P7GB</b>
15	Bottom	FR134	5	197 (89.4)	<b>C0015P7GB</b>
3	Side/Wall	FR292	5	65 (29.5)	<b>C0003P7GS</b>
5	Side/Wall	FR256	5	104 (47.2)	<b>C0005P7GS</b>
7.5	Side/Wall	FR257	5	129 (58.6)	<b>C0007P7GS</b>
10	Side/Wall	FR258	5	148 (67.2)	<b>C0010P7GS</b>
15	Side/Wall	FR259	5	197 (89.4)	<b>C0015P7GS</b>

**Technical Data and Specifications****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.

**Sound Levels**

All Eaton 600 volt class general-purpose dry-type distribution transformers are designed to meet NEMA ST-20 levels.

**Winding Terminations**

Eaton recommends external cables be rated 90°C (sized at 75°C ampacity) for encapsulated 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.

For additional information, please refer to Volume 2, **CA08100003E**.

**Note:** For additional information, refer to Eaton’s Industrial Control Transformer Binder B1228A. For other ratings or styles not shown, or for special enclosure types (including stainless steel), refer to Eaton.

**Note**

① See **Page V7-T7-22** for wiring diagrams.