Types MTE and MTK

CE Marked

Type AP

7.1 Transformers

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Learn Online

Industrial Control Transformers

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Standards and Certifications

Eaton dry-type distribution transformers are approved, listed, recognized or may comply with the following standards.

Engineering Standards

Catalog Product Name	UL Standard ①	UL/cUL File Number	UL Listed Control Number	cUL Energy Efficiency File Number	CSA File Number	Insulation System Temp/°C	kVA Single-Phase	kVA Three-Phase	Applicable IEC Standard
Industrial Control Transformer									
MTE	5085	E46323	702X	—	—	105	0.025–1.5	N/A	61558
MTK	5085	E46323	702X	—	—	180	0.05–5	N/A	61558
Encapsulated Transformer									
AP	5085	E10156	591H	—	—	180	3–10	N/A	61558
AP	1561	E78389	591H	—	—	180	15	N/A	61558
EP	5085	E10156	591H	—	LR60545	180	0.05–10	N/A	61558
EP	1561	E78389	591H	EV157 ②	LR60545 ③	180	15–50	N/A	61558 ④ / 726 ⑤
EPT	5085	E10156	591H	—	LR60545	180	N/A	3–9	61558 ⑥ / 726 ⑦
EPT	1561	E78389	591H	EV157 ⑧	LR60545 ⑨	180	N/A	15–75	726
MPC	1062	E53449	591H	—	LR60546	180	3–25	15–30	—
Ventilated Transformer									
DS-3	1561	E78389	591H	—	—	220	15–167	N/A	60726
DT-3	1561	E78389	591H	—	—	220	N/A	15–750	60726
KT	1561	E78389	591H	—	—	220	N/A	9–500	N/A

Notes

① UL 5085 replaces UL 506.
② Applies to 25–50 kVA.
③ Applies to 25 kVA.
④ Applies to 15–25 kVA.
⑤ Applies to 37.5 kVA.
⑥ Applies to 3 kVA.
⑦ Applies to 5–9 kVA.
⑧ Applies to 30–75 kVA.
⑨ Applies to 30 kVA.

In addition to the above standards, Eaton dry-type distribution transformers are also manufactured in compliance with the applicable standards listed below.

Not all of the following standards apply to every transformer.

NEC: National Electrical Code®.

NEMA ST-1: Specialty Transformers (C89.1) (control transformers).

NEMA ST-20: General-Purpose Transformers.

NEMA TP-1: Guide for Determining Energy Efficiency for Distribution Transformers.

NEMA 250: Enclosures for Electrical Equipment (1000 volts maximum).

IEEE C57.12.01: General Requirements for Dry-Type Distribution and Power Transformers (including those with solid-cast and/or resin-encapsulated windings).

ANSI C57.12.70: Terminal Markings and Connections for Distribution and Power Transformers.

ANSI C57.12.91: Standard Test Code for Dry-Type Distribution and Power Transformers.

CSA C22 No. 47-M90: Air-Cooled Transformers (Dry-Type).

CSA C9-M1981: Dry-Type Transformers.

CSA C22.2 No. 66: Specialty Transformers.

CSA 802-94: Maximum Losses for Distribution, Power and Dry-Type Transformers.

NEMA TP-2: Standard Test Method for Measuring the Energy Consumption of Distribution Transformers.

NEMA TP-3

Listed

Listed

Listed

Catalog Number Selection

Industrial Control Transformers, CE Marked Control Transformers—Example: CE0250E2FCE ①

CE 0250 E 2F CE

Type	
C =	Industrial control transformer
CE =	CE Marked control transformer

VA Rating		
0025 = 25	**0350** = 350	**Type AP Only:**
0050 = 50	**0500** = 500	**0003** = 3000
0075 = 75	**0750** = 750	**0005** = 5000
0100 = 100	**1000** = 1000	**0007** = 7500
0150 = 150	**1500** = 1500	**0010** = 10000
0200 = 200	**2000** = 2000	**0015** = 15000
0250 = 250	**3000** = 3000	
0300 = 300	**5000** = 5000	

Transformer Design	
A =	MTA
C =	MTC
E =	MTE
K =	MTK
P =	AP

Voltage		Primary	Secondary
AC	=	380 x 415	24
AG	=	208/240/277/380/480	24
1B	=	120 x 240	24
2A	=	240 x 480, 230 x 460, 220 x 440	120/115/110
2B	=	240 x 480	24
2C	=	240 x 480	120 x 240
2F	=	230/460	115
2G	=	230/460	115/230
2U	=	220/380/440/550, 230/400/460/575, 240/416/480/600	23/110, 24/115, 25/120
2V	=	208/230/400/460/575	24/115/230
2W	=	208/230/400/460/575	115/230
3A	=	208/277	120
3B	=	115	24
3C	=	230/460/575	115/95
3D	=	208/380/416	115/95
4B	=	208/230/460/575	24
4C	=	550/575/600	110/115/120
4D	=	380/400/415	110 x 220
4E	=	208/230/460/575	115
4H	=	380/400/415	22/23/24
4W	=	550/575/600	22/23/24
5E	=	200/220/440, 208/230/460, 240/480	23/110, 24/115, 25/120
6U	=	240/416/480/600, 230/400/460/575, 220/380/440/550, 208/500	99/120/130, 95/115/125, 91/110/120, 85/100/110
7G (Type AP only)	=	240 x 480	120/240

Modifications

Type MTE/MTK
- **CE** = CE Marked control transformer
- **FB** = Factory-mounted two-pole primary fuse block for rejection type fuses
- **FBN** = Factory-mounted two-pole primary fuse block for non-rejection–type fuses
- **Q** = Secondary fuse clips for 1/4 x 1-1/4 inch fuses ②
- **XX** = No secondary fuse clips
- **RT** = Ring type terminals for connection to fuse block
- **ES** = Electrostatic shield
- **FS** = Factory-mounted finger-safe terminal shields

Type AP
- **B** = Bottom mounted
- **S** = Side/wall mounted
- **ES** = Electrostatic shield
- **CU** = Copper windings

Type MTA/MTC
- **FB** = Factory-mounted three-pole fuse block (two-pole primary rejection type with single-pole secondary non-rejection type)
- **ES** = Electrostatic shield
- **L** = Lead terminations

Notes

① For Eaton's dry-type transformers catalog number selection, see Volume 2, **CA08100003E**.

② Fuse clip covers not available with this option.

Contact your local Eaton sales office for voltage combinations not shown. Use table for catalog number breakdown only. Do not use to create catalog numbers because all combinations may not be valid.

Type MTE Transformer

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Type MTE

Product Description

Note: The following pages provide listings for most standard transformer ratings and styles. For other ratings or styles not shown, or for special enclosure types (including stainless steel), refer to Eaton.

- Epoxy-encapsulated coils

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.

Note: The MTG "open core-coil design" has been superseded by the epoxy-encapsulated core-coil design MTE with no change to dimensions or functionality.

Features, Benefits and Functions

- Epoxy encapsulated
- Laminations of high-quality silicon steel to minimize core losses and optimize performance
- Copper magnet wire for high-quality, efficient operation
- Secondary fuse clips where applicable
- Optional primary fusing
- Molded in terminals
- 50/60 Hz operation
- 130°C insulation system standard
- Performance meets/exceeds requirements of ANSI/NEMA ST-1
- Regulation exceeds ANSI/NEMA requirements for all ratings
- 25–1500 VA ratings
- Molded-in terminals for maximum durability

Standards and Certifications

- UL listed
- cUL listed
- RoHS compliant

Listed Listed RoHS COMPLIANT

Industry Standards

All Eaton dry-type distribution and control transformers are built and tested in accordance with applicable NEMA, ANSI and IEEE Standards. All 600 volt class transformers are UL listed unless otherwise noted.

Catalog Number Selection

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

Product Selection

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

Type MTE

Primary: 240 x 480, 230 x 460, 220 x 440 with Jumpers Secondary: 120/115/110 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
25	1	1.7 (0.8)	**C0025E2A** ②
50	1	2.6 (1.2)	**C0050E2A** ②
75	1	3.5 (1.6)	**C0075E2A** ②
100	1	4.2 (1.9)	**C0100E2A** ②
150	1	6.7 (3.0)	**C0150E2A**
200	1	8.5 (3.9)	**C0200E2A**
250	1	10.0 (4.5)	**C0250E2A**
300	1	11.3 (5.1)	**C0300E2A**
350	1	13.6 (6.2)	**C0350E2A**
500	1	19.2 (8.7)	**C0500E2A**
750	1	28.1 (12.8)	**C0750E2A**
1000	1	29.5 (13.4)	**C1000E2A**
1500	1	40.0 (18.1)	**C1500E2A**

Primary: 240 x 480 with Jumpers Secondary: 24 with Fuse Clips for 13/32 x 1-1/2 Fuses (through 500 VA)

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	2	2.7 (1.2)	**C0050E2B** ②
75	2	3.5 (1.6)	**C0075E2B** ②
100	2	4.2 (1.9)	**C0100E2B** ②
150	2	6.7 (3.0)	**C0150E2B**
200	2	8.5 (3.9)	**C0200E2B**
250	2	10.1 (4.6)	**C0250E2B**
300	2	11.4 (5.2)	**C0300E2B**
350	2	13.4 (6.1)	**C0350E2B**
500	2	17.5 (7.9)	**C0500E2B**
750	2	28.1 (12.8)	**C0750E2B**

Primary: 120 X 240 with Jumpers Secondary: 24 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	3	2.6 (1.2)	**C0050E1B** ②
75	3	3.6 (1.6)	**C0075E1B** ②
100	3	4.4 (2.0)	**C0100E1B** ②
150	3	6.7 (3.0)	**C0150E1B**
200	3	8.3 (3.8)	**C0200E1B**
250	3	10.1 (4.6)	**C0250E1B**
300	3	11.2 (5.1)	**C0300E1B**
350	3	13.2 (6.0)	**C0350E1B**
500	3	17.5 (7.9)	**C0500E1B**

Primary: 208/277 Secondary: 120 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	4	2.9 (1.3)	**C0050E3A** ②
75	4	3.8 (1.7)	**C0075E3A** ②
100	4	4.5 (2.0)	**C0100E3A** ②
150	4	6.9 (3.1)	**C0150E3A**
200	4	8.7 (3.9)	**C0200E3A**
250	4	10.2 (4.6)	**C0250E3A**
300	4	11.4 (5.2)	**C0300E3A**
350	4	13.7 (6.2)	**C0350E3A**
500	4	17.2 (7.8)	**C0500E3A**
750	4	25.7 (11.7)	**C0750E3A**

Notes

① See **Page V7-T7-11** for wiring diagrams.
② 105°C insulation system.

Primary: 240 x 480 with Jumpers
Secondary: 120 x 240 with Jumpers, Secondary Fuse Clips Not Applicable

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	11	2.6 (1.2)	**C0050E2CXX** ②
75	11	3.5 (1.6)	**C0075E2CXX** ②
100	11	4.2 (1.9)	**C0100E2CXX** ②
150	11	6.7 (3.1)	**C0150E2CXX**
200	11	8.5 (3.9)	**C0200E2CXX**
250	11	10.0 (4.6)	**C0250E2CXX**
300	11	11.8 (5.4)	**C0300E2CXX**
350	11	13.6 (6.2)	**C0350E2CXX**
500	11	17.5 (8.0)	**C0500E2CXX**
750	11	26.4 (12.0)	**C0750E2CXX**

Primary: 550/575/600
Secondary: 110/115/120 with for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	10	2.7 (1.2)	**C0050E4C** ②
75	10	3.6 (1.6)	**C0075E4C** ②
100	10	4.2 (1.9)	**C0100E4C** ②
150	10	6.8 (3.1)	**C0150E4C**
200	10	8.4 (3.8)	**C0200E4C**
250	10	10.0 (4.6)	**C0250E4C**
300	10	11.3 (5.1)	**C0300E4C**
350	10	13.6 (6.2)	**C0350E4C**
500	10	16.8 (7.6)	**C0500E4C**
750	10	25.7 (11.7)	**C0750E4C**

Primary: 380/400/415
Secondary: 22/23/24 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	13	2.5 (1.1)	**C0050E4H** ②
75	13	3.5 (1.6)	**C0075E4H** ②
100	13	4.0 (1.8)	**C0100E4H** ②
150	13	6.5 (3.0)	**C0150E4H**
200	13	8.2 (3.7)	**C0200E4H**
250	13	10.0 (4.5)	**C0250E4H**
300	13	11.0 (5.0)	**C0300E4H**
350	13	13.6 (6.2)	**C0350E4H**
500	13	17.7 (8.0)	**C0500E4H**

Primary: 550/575/600
Secondary: 22/23/24 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	12	2.5 (1.1)	**C0050E4W** ②
75	12	3.5 (1.6)	**C0075E4W** ②
100	12	4.0 (1.8)	**C0100E4W** ②
150	12	6.5 (3.0)	**C0150E4W**
200	12	8.2 (3.7)	**C0200E4W**
250	12	10.0 (4.5)	**C0250E4W**
300	12	11.0 (5.0)	**C0300E4W**
350	12	13.6 (6.2)	**C0350E4W**
500	12	17.7 (8.0)	**C0500E4W**
750	12	28.0 (12.7)	**C0750E4WXX** ③

Primary: 230/460/575
Secondary: 115/95 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	5	3.5 (1.6)	**C0050E3C** ②
75	5	4.5 (2.0)	**C0075E3C** ②
100	5	6.0 (2.7)	**C0100E3C** ②
150	5	7.7 (3.5)	**C0150E3C**
200	5	9.0 (4.1)	**C0200E3C**
250	5	9.7 (4.4)	**C0250E3C**
300	5	11.7 (5.3)	**C0300E3C**
350	5	16.5 (7.5)	**C0350E3C**
500	5	21.5 (9.8)	**C0500E3C**
750	5	28.0 (12.7)	**C0750E3C**

Primary: 380/400/415
Secondary: 110 x 220 with Jumpers; Fuse Clips Not Applicable

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	6	3.0 (1.4)	**C0050E4D** ②
75	6	4.0 (1.8)	**C0075E4D** ②
100	6	5.2 (2.4)	**C0100E4D** ②
150	6	7.0 (3.2)	**C0150E4D**
200	6	8.7 (3.9)	**C0200E4D**
250	6	10.2 (4.6)	**C0250E4D**
300	6	11.0 (5.0)	**C0300E4D**
350	6	13.0 (5.9)	**C0350E4D**
500	6	20.0 (9.1)	**C0500E4D**
750	6	28.0 (12.7)	**C0750E4D**

Notes

① See **Page V7-T7-11** for wiring diagrams.
② 105°C insulation system.
③ Secondary fuse clips are not available on this catalog number.

Primary: 200/220/440, 208/230/460, 240/480 Secondary: 23/110, 24/115, 25/120 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	7	3.4 (1.5)	**C0050E5E** ②
75	7	4.8 (2.2)	**C0075E5E** ②
100	7	5.9 (2.7)	**C0100E5E** ②
150	7	7.9 (3.6)	**C0150E5E**
200	7	10.6 (4.8)	**C0200E5E**
250	7	13.9 (6.3)	**C0250E5E**
300	7	15.5 (7.0)	**C0300E5E**
350	7	16.8 (7.6)	**C0350E5E**
500	7	23.4 (10.6)	**C0500E5E**

Universal Design (MTE Epoxy Encapsulated) Primary: 240/416/480/600, 230/400460/575, 220/380/440/550, 208/500 Secondary: 99/120/130, 95/115/125, 91/110/120, 85/100/110 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	8	4.0 (1.8)	**C0050E6U** ②③
100	8	6.6 (3.0)	**C0100E6U** ②③
150	8	8.8 (4.0)	**C0150E6U** ②④
250	8	14.7 (6.7)	**C0250E6U** ②④
350	8	18.6 (8.4)	**C0350E6U** ②④
500	8	25.6 (11.6)	**C0500E6U** ②④
750	8	30.5 (13.8)	**C0750E6U** ②④

Transformers with Primary Fuse Blocks

Primary: 240 x 480, 230 x 460, 220 x 440 with Jumpers and Two-Pole Primary Fuse Block for Rejection-Type Fuses Secondary: 120/115/110 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	1	2.8 (1.3)	**C0050E2AFB** ②
75	1	3.7 (1.7)	**C0075E2AFB** ②
100	1	4.4 (2.0)	**C0100E2AFB** ②
150	1	6.9 (3.1)	**C0150E2AFB**
200	1	8.7 (3.9)	**C0200E2AFB**
250	1	10.2 (4.6)	**C0250E2AFB**
300	1	11.5 (5.2)	**C0300E2AFB**
350	1	13.8 (6.3)	**C0350E2AFB**
500	1	19.4 (8.8)	**C0500E2AFB**
750	1	28.3 (12.8)	**C0750E2AFB**
1000	1	29.7 (13.4)	**C1000E2AFB**
1500	1	40.2 (18.1)	**C1500E2AFB**

Primary: 240 x 480 with Jumpers and Two-Pole Primary Fuse Block for Rejection-Type Fuses Secondary: 24 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	2	2.8 (1.3)	**C0050E2BFB** ②
75	2	3.8 (1.7)	**C0075E2BFB** ②
100	2	4.4 (2.1)	**C0100E2BFB** ②
150	2	6.9 (3.1)	**C0150E2BFB**
200	2	8.7 (3.9)	**C0200E2BFB**
250	2	10.3 (4.7)	**C0250E2BFB**
300	2	11.6 (5.3)	**C0300E2BFB**
350	2	13.6 (6.2)	**C0350E2BFB**
500	2	17.7 (8.0)	**C0500E2BFB**

Notes

① See **Page V7-T7-11** for wiring diagrams.
② 105°C insulation system.
③ Type MTG open core-coil universal design has been superseded by Type MTE epoxy encapsulated universal design with no changes to form, fit or function.
④ Type MTE epoxy encapsulated universal design.

Primary: 120 x 240 with Jumpers and Two-Pole Primary Fuse Block for Rejection-Type Fuses Secondary: 24 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	3	2.8 (1.3)	**C0050E1BFB** ②
75	3	3.8 (1.7)	**C0075E1BFB** ②
100	3	4.6 (2.1)	**C0100E1BFB** ②
150	3	6.9 (3.1)	**C0150E1BFB**
200	3	8.5 (3.9)	**C0200E1BFB**
250	3	10.3 (4.7)	**C0250E1BFB**
300	3	11.4 (5.2)	**C0300E1BFB**
350	3	13.4 (6.1)	**C0350E1BFB**
500	3	17.7 (8.0)	**C0500E1BFB**

Primary: 208/277 with Two-Pole Primary Fuse Block for Rejection-Type Fuses Secondary: 120 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	4	3.1 (1.4)	**C0050E3AFB** ②
75	4	4.0 (1.8)	**C0075E3AFB** ②
100	4	4.7 (2.1)	**C0100E3AFB** ②
150	4	7.1 (3.2)	**C0150E3AFB**
200	4	8.9 (4.0)	**C0200E3AFB**
250	4	10.4 (4.7)	**C0250E3AFB**
300	4	11.6 (5.3)	**C0300E3AFB**
350	4	13.9 (6.3)	**C0350E3AFB**
500	4	17.4 (7.9)	**C0500E3AFB**

Primary: 550/575/600 with Two-Pole Primary Fuse Block for Rejection-Type Fuses Secondary: 110/115/120 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	10	2.9 (1.3)	**C0050E4CFB** ②
75	10	3.8 (1.7)	**C0075E4CFB** ②
100	10	4.4 (2.0)	**C0100E4CFB** ②
150	10	7.0 (3.2)	**C0150E4CFB**
200	10	8.6 (3.9)	**C0200E4CFB**
250	10	10.2 (4.6)	**C0250E4CFB**
300	10	11.5 (5.2)	**C0300E4CFB**
350	10	13.8 (6.3)	**C0350E4CFB**
500	10	17.0 (7.7)	**C0500E4CFB**
750	10	25.9 (11.8)	**C0750E4CFB**

Primary: 380/400/415 with Two-Pole Primary Fuse Block for Rejection-Type Fuses Secondary: 22/23/24 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	13	2.6 (1.2)	**C0050E4HFB** ②
75	13	3.7 (1.7)	**C0075E4HFB** ②
100	13	4.2 (1.9)	**C0100E4HFB** ②
150	13	6.7 (3.0)	**C0150E4HFB**
200	13	8.4 (3.8)	**C0200E4HFB**
250	13	10.2 (4.6)	**C0250E4HFB**

Primary: 550/575/600 with Two-Pole Primary Fuse Block for Rejection-Type Fuses Secondary: 22/23/24 with Fuse Clips for 13/32 x 11/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	12	2.7 (1.2)	**C0050E4WFB** ②
75	12	3.7 (1.7)	**C0075E4WFB** ②
100	12	4.2 (1.9)	**C0100E4WFB** ②
150	12	6.7 (3.0)	**C0150E4WFB**
200	12	8.4 (3.8)	**C0200E4WFB**
250	12	10.2 (4.6)	**C0250E4WFB**

Primary: 230/460/575 with Two-Pole Primary Fuse Block for Rejection-Type Fuses Secondary: 115/95 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	5	3.7 (1.7)	**C0050E3CFB** ②
75	5	4.7 (2.1)	**C0075E3CFB** ②
100	5	6.2 (2.8)	**C0100E3CFB** ②
150	5	7.9 (3.6)	**C0150E3CFB**
200	5	9.2 (4.2)	**C0200E3CFB**
250	5	9.9 (4.5)	**C0250E3CFB**
300	5	11.9 (5.4)	**C0300E3CFB**
350	5	16.7 (7.6)	**C0350E3CFB**
500	5	21.7 (9.9)	**C0500E3CFB**

Notes

① See **Page V7-T7-11** for wiring diagrams.

② 105°C insulation system.

Primary: 380/400/415 with Two-Pole Primary Fuse Block for Rejection-Type Fuses Secondary: 110 x 220 with Jumpers; Fuse Clips Not Available

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	6	3.2 (1.5)	**C0050E4DFB** ②
75	6	4.2 (1.9)	**C0075E4DFB** ②
100	6	5.4 (2.5)	**C0100E4DFB** ②
150	6	7.2 (3.3)	**C0150E4DFB**
200	6	8.9 (4.0)	**C0200E4DFB**
250	6	10.4 (4.7)	**C0250E4DFB**
300	6	11.2 (5.1)	**C0300E4DFB**
350	6	13.2 (6.0)	**C0350E4DFB**
500	6	20.2 (9.2)	**C0500E4DFB**

Primary: 200/220/440, 208/230/460, 240/480 with Two-Pole Primary Fuse Block for Rejection-Type Fuses Secondary: 23/110, 24/115, 25/120 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	7	3.6 (1.6)	**C0050E5EFB** ②
75	7	5.0 (2.3)	**C0075E5EFB** ②
100	7	6.1 (2.8)	**C0100E5EFB** ②
150	7	8.1 (3.7)	**C0150E5EFB**
200	7	10.8 (4.9)	**C0200E5EFB**
250	7	14.1 (6.4)	**C0250E5EFB**
300	7	15.7 (7.1)	**C0300E5EFB**
350	7	17.0 (7.7)	**C0350E5EFB**
500	7	23.6 (10.7)	**C0500E5EFB**

Universal Design (MTE Epoxy Encapsulated) Primary: 240/416/480/600, 230/400/460/575, 220/380/440/550, 208/500 with Two-Pole Primary Fuse Block for Rejection-Type Fuses Secondary: 99/120/130, 95/115/125, 91/110/120, 85/100/110 with Fuse Clips for 13/32 x 1-1/2 Fuses

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	8	4.2 (1.9)	**C0050E6UFB** ②③
100	8	6.8 (3.1)	**C0100E6UFB** ②③
150	8	9.0 (4.1)	**C0150E6UFB** ②④
250	8	14.9 (6.8)	**C0250E6UFB** ②④
350	8	18.8 (8.5)	**C0350E6UFB** ②④
500	8	25.8 (11.7)	**C0500E6UFB** ②④

Notes

① See **Page V7-T7-11** for wiring diagrams.
② 105°C insulation system.
③ Type MTG open core-coil universal design has been superseded by Type MTE epoxy encapsulated universal design with no changes to form, fit or function.
④ Type MTE epoxy encapsulated universal design.

Accessories

Primary Fuse Kit

The primary fuse kit includes a two-pole class CC fuse block, instructions, and all associated mounting and wiring hardware. Fuses are not included. When installed, the primary fuse kit will add a maximum of 11/16 inch to the transformer depth and 1-15/16 inches to the transformer height.

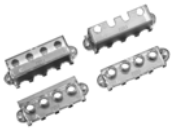
Primary Fuse Kit

Description	Catalog Number
Primary fuse kit	**PFK1**

Finger-Safe Terminal Covers (Optional)

- Fits CE Marked designs 50–750 VA
- Fits MTE designs 0.25–750 VA

Finger-Safe Terminal Covers

	Description	Catalog Number
FSK4 	Four terminal transformers	**FSK4**
	Four terminal Series 2 transformers only	**FSK4S2**
FSK6	Six terminal transformers	**FSK6**

Finger-Safe Primary Fuse Block Covers

- Fits two-pole primary fuse blocks on MTE designs
- No fuse block covers are available for transformers with suffix "FBQ"

Finger-Safe Primary Fuse Block Covers

	Description	Catalog Number
FSKFB	Primary fuse block covers	**FSKFB**

Secondary Fuse Clip Cover

Secondary Fuse Clip Cover

Description	Catalog Number
Fits 500 VA and smaller models	**SFCS**
Fits models greater than 500 VA	**SFCL**

Technical Data and Specifications

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.

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**.

Wiring Diagrams

Diagram 1

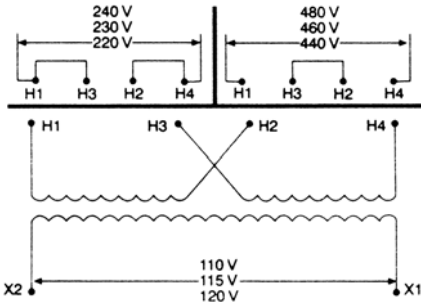


Diagram 2

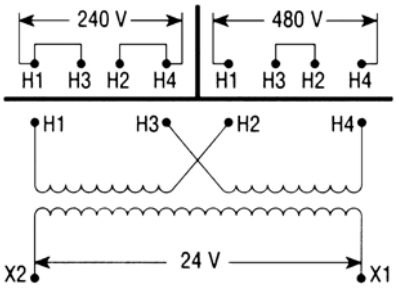


Diagram 3

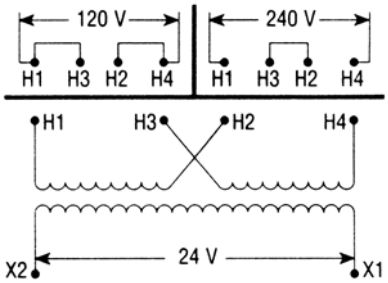


Diagram 4

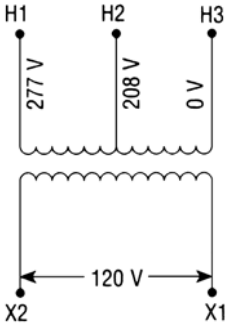


Diagram 5

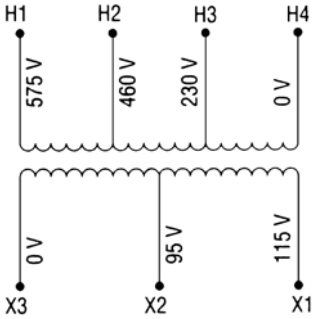
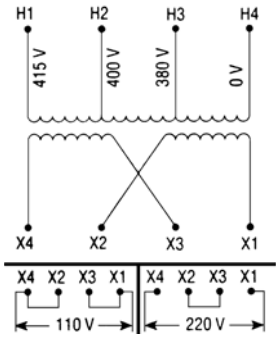


Diagram 6



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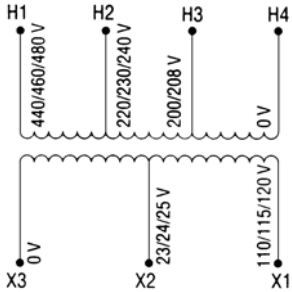

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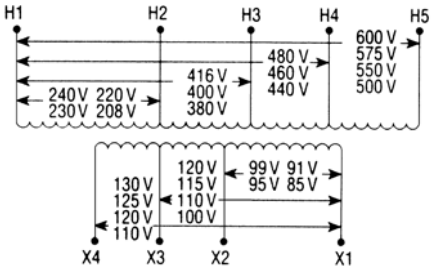

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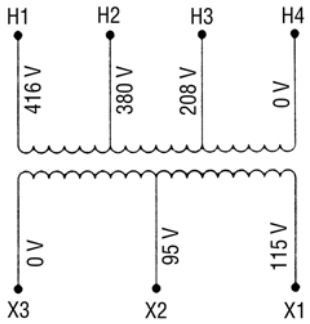


Diagram 10

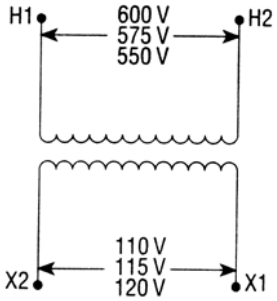
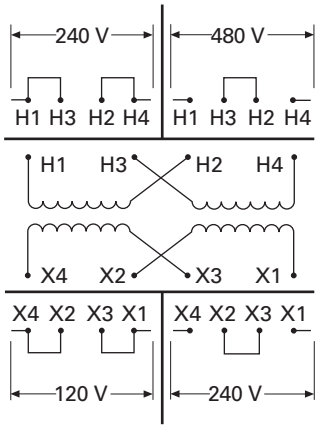


Diagram 11



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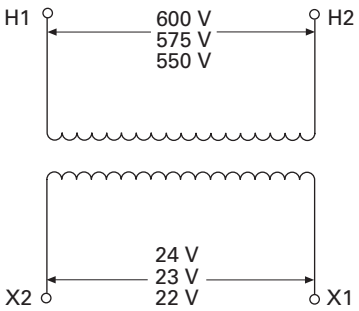


Diagram 13

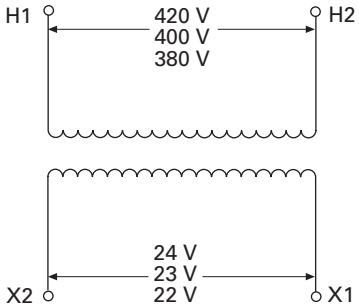


Diagram 14

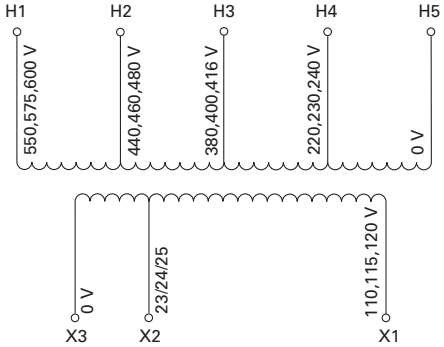


Diagram 15

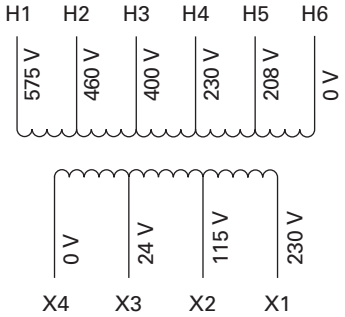
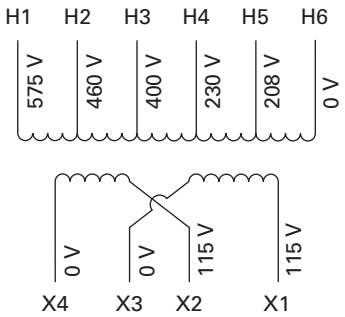


Diagram 16



Type MTK Transformer

Contents

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Type MTK	
Product Selection	**V7-T7-14**
Technical Data and Specifications	**V7-T7-15**
Wiring Diagrams	**V7-T7-15**
CE Marked	**V7-T7-18**
Type AP	**V7-T7-25**

Type MTK

Product Description

Note: The following pages provide listings for most standard transformer ratings and styles. For other ratings or styles not shown, or for special enclosure types (including stainless steel), refer to Eaton.

- Epoxy resin-impregnated coil
- Economical solution for high inrush applications

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

- Epoxy resin impregnated coil design
- Copper magnet wire for high-quality, efficient operation
- 50/60 Hz operation
- 180°C insulation system
- Performance meets/exceeds requirements of ANSI/NEMA ST-1
- Regulation exceeds ANSI/NEMA requirements for all ratings
- 500–5000 VA ratings

Standards and Certifications

- UL listed
- cUL listed
- RoHS compliant

Listed Listed

Industry Standards

All Eaton dry-type distribution and control transformers are built and tested in accordance with applicable NEMA, ANSI and IEEE Standards. All 600 volt class transformers are UL listed unless otherwise noted.

Catalog Number Selection

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

Product Selection

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

Type MTK

Primary: 240 x 480, 230 x 460, 220 x 440 Secondary: 120/115/110

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
500	1	13.0 (5.9)	**C0500K2A**
750	1	19.5 (8.9)	**C0750K2A**
1000	1	29.8 (13.6)	**C1000K2A**
1500	1	30.0 (13.6)	**C1500K2A**
2000	1	38.0 (17.3)	**C2000K2A**
3000	1	53.0 (24.1)	**C3000K2A**
5000	1	89.0 (40.5)	**C5000K2A**

Primary: 208/277 Secondary: 120

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
1000	4	29.0 (13.1)	**C1000K3A**
1500	4	33.0 (15.0)	**C1500K3A**
2000	4	43.0 (19.5)	**C2000K3A**
3000	4	64.0 (29.0)	**C3000K3A**
5000	4	102.0 (46.3)	**C5000K3A**

Primary: 230/460/575 Secondary: 115/95

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
1000	5	29.2 (13.3)	**C1000K3C**
1500	5	33.5 (15.2)	**C1500K3C**
2000	5	42.5 (19.3)	**C2000K3C**
3000	5	63.7 (29.0)	**C3000K3C**
5000	5	102.0 (46.4)	**C5000K3C**

Primary: 208/380/416 Secondary: 115/95

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
1000	9	29.0 (13.1)	**C1000K3D**
1500	9	43.0 (19.5)	**C1500K3D**
2000	9	55.0 (25.0)	**C2000K3D**
3000	9	74.0 (33.5)	**C3000K3D**
5000	9	108.0 (49.0)	**C5000K3D**

Primary: 550/575/600 Secondary: 110/115/120

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
1000	10	29.0 (13.1)	**C1000K4C**
1500	10	33.0 (15.0)	**C1500K4C**
2000	10	43.0 (19.5)	**C2000K4C**
3000	10	64.0 (29.0)	**C3000K4C**
5000	10	102.0 (46.3)	**C5000K4C**

Primary: 380/400/415 Secondary: 110 x 220

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
1000	6	28.0 (12.7)	**C1000K4D**
1500	6	33.0 (15.0)	**C1500K4D**
2000	6	43.0 (19.5)	**C2000K4D**
3000	6	64.0 (29.0)	**C3000K4D**
5000	6	102.0 (46.3)	**C5000K4D**

Primary: 240 x 480 with Jumpers Secondary: 120 x 240 with Jumpers, Secondary Fuse Clips Not Applicable

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
1000	11	26.4 (12.0)	**C1000K2CXX**
1500	11	31.0 (14.1)	**C1500K2CXX**
2000	11	40.0 (18.2)	**C2000K2CXX**
3000	11	56.0 (25.5)	**C3000K2CXX**
5000	11	85.5 (28.9)	**C5000K2CXX**

Primary: 120 x 240 with Jumpers Secondary: 24

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
750	3	19.0 (8.6)	**C0750K1B**
1000	3	26.4 (12.0)	**C1000K1B**

Primary: 240/416/480/600, 230/400/460/575, 220/380/440/550, 208/500 Secondary: 99/120/130, 95/115/125, 91/110/120, 85/100/110

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
1000	8	26.5 (12.0)	**C1000K6U**
1500	8	38.5 (17.5)	**C1500K6U**
2000	8	52.0 (23.6)	**C2000K6U**
3000	8	68.0 (30.9)	**C3000K6U**
5000	8	105.0 (47.7)	**C5000K6U**

Note

① See **Page V7-T7-15** for wiring diagrams.

Technical Data and Specifications

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.

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**.

Wiring Diagrams

Diagram 1

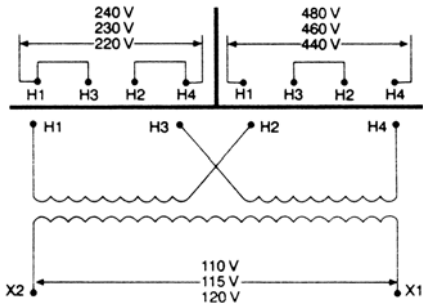


Diagram 2

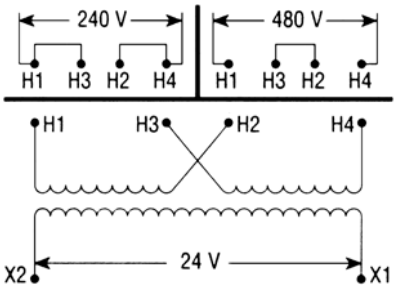


Diagram 3

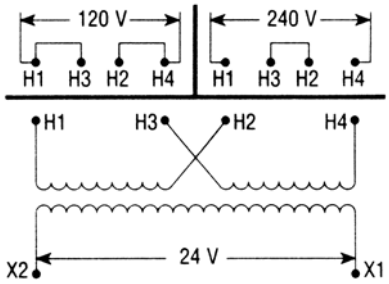


Diagram 4

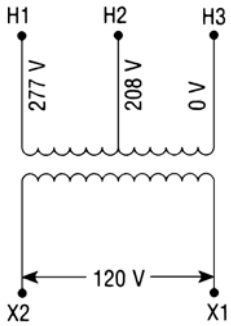


Diagram 5

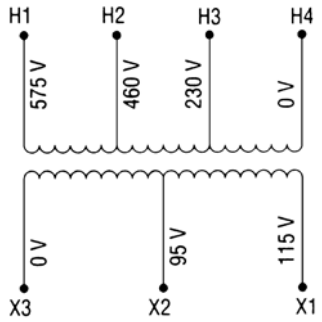


Diagram 6

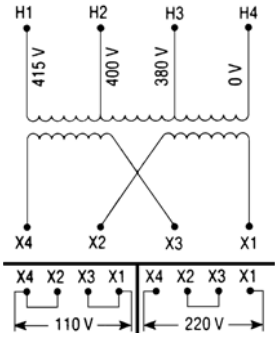


Diagram 7

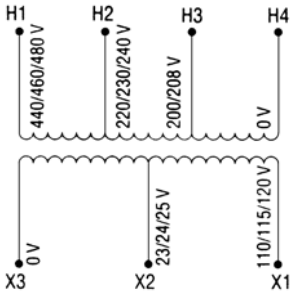


Diagram 8

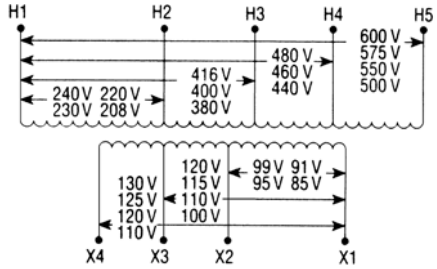


Diagram 9

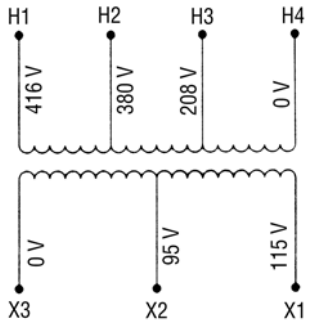


Diagram 10

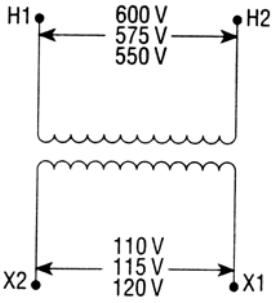


Diagram 11

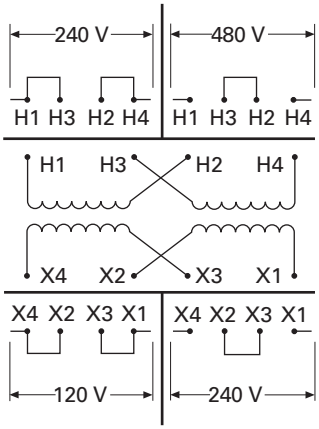


Diagram 12

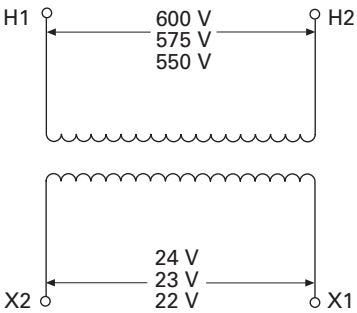


Diagram 13

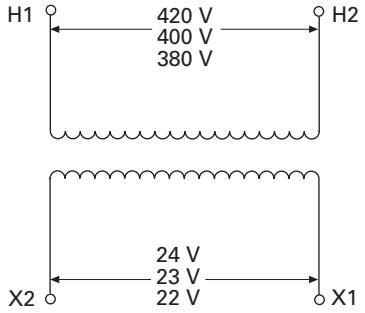


Diagram 14

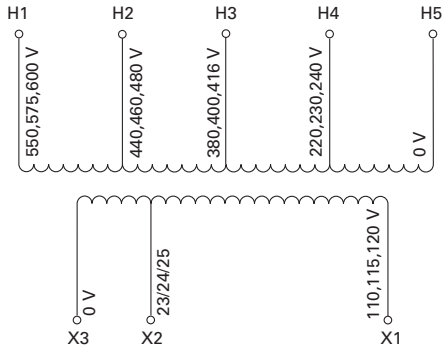


Diagram 15

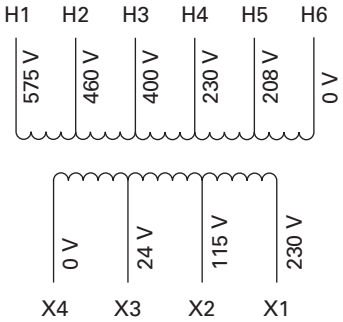
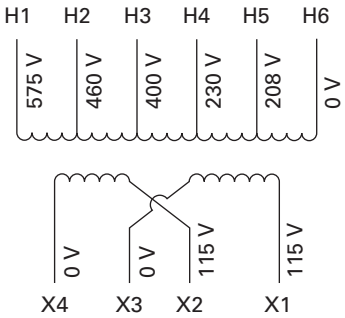


Diagram 16



Type MTE CE-Marked CPT

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Description	*Page*
Type MTE	**V7-T7-4**
Type MTK	**V7-T7-13**
CE Marked	
Product Selection	**V7-T7-19**
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Type AP	**V7-T7-25**

CE Marked

Product Description

Note: The following pages provide listings for most standard transformer ratings and styles. For other ratings or styles not shown, or for special enclosure types (including stainless steel), refer to Eaton.

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

Type MTE

- Epoxy encapsulated coil design
- Copper magnet wire for high-quality, efficient operation
- Laminations of high-quality silicon steel to minimize core losses and optimize performance
- Molded-in terminals
- 50/60 Hz operation
- 130°C insulation system standard
- Performance meets/exceeds requirements of ANSI/NEMA ST-1
- Regulation exceeds ANSI/NEMA requirements for all ratings
- Non-short circuit-proof transformer, isolation type

Type MTK

- Epoxy resin-impregnated coil design
- Copper magnet wire for high-quality, efficient operation
- 50/60 Hz operation
- 180°C insulation system
- Performance meets/exceeds requirements of ANSI/NEMA ST-1
- Regulation exceeds ANSI/NEMA requirements for all ratings
- 500–5000 VA ratings

Standards and Certifications

- UL listed
- cUL listed
- CE Marked units comply with IEC EN-61558-2
- RoHS compliant

Listed Listed

RoHS COMPLIANT

Industry Standards

All Eaton dry-type distribution and control transformers are built and tested in accordance with applicable NEMA, ANSI and IEEE Standards. All 600 volt class transformers are UL listed unless otherwise noted.

Catalog Number Selection

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

Product Selection

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

Type MTE CE Marked IP00

Primary: 240 x 480, 230 x 460, 220 x 440 with Jumpers
Secondary: 120/115/110

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	1	3.5 (1.6)	**CE0050E2ACE** ②
75	1	4.8 (2.2)	**CE0075E2ACE** ②
100	1	5.9 (2.7)	**CE0100E2ACE** ②
150	1	8.5 (3.9)	**CE0150E2ACE**
200	1	10.6 (4.8)	**CE0200E2ACE**
250	1	11.3 (5.1)	**CE0250E2ACE**
300	1	13.2 (6.0)	**CE0300E2ACE**
350	1	14.9 (6.8)	**CE0350E2ACE**
500	1	21.0 (9.5)	**CE0500E2ACE**
750	1	29.8 (13.5)	**CE0750E2ACE**

Primary: 550/575/600
Secondary: 110/115/1204

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	10	3.5 (1.6)	**CE0050E4CCE** ②
75	10	4.8 (2.2)	**CE0075E4CCE** ②
100	10	5.9 (2.7)	**CE0100E4CCE** ②
150	10	8.5 (3.9)	**CE0150E4CCE**
200	10	10.6 (4.8)	**CE0200E4CCE**
250	10	11.3 (5.1)	**CE0250E4CCE**
300	10	13.2 (6.0)	**CE0300E4CCE**
350	10	14.9 (6.8)	**CE0350E4CCE**
500	10	21.0 (9.5)	**CE0500E4CCE**
750	10	29.8 (13.5)	**CE0750E4CCE**

Primary: 240 x 480 with Jumpers
Secondary: 24

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	2	3.4 (1.5)	**CE0050E2BCE** ②
75	2	4.2 (1.9)	**CE0075E2BCE** ②
100	2	5.9 (2.7)	**CE0100E2BCE** ②
150	2	8.5 (3.9)	**CE0150E2BCE**
200	2	10.6 (4.5)	**CE0200E2BCE**
250	2	11.3 (5.1)	**CE0250E2BCE**
300	2	13.2 (6.0)	**CE0300E2BCE**
350	2	14.9 (6.8)	**CE0350E2BCE**
500	2	19.2 (8.7)	**CE0500E2BCE**
750	2	28.1 (12.8)	**CE0750E2BCE**

Primary: 380/400/415
Secondary: 110 x 220 with Jumpers

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	6	3.5 (1.6)	**CE0050E4DCE** ②
75	6	4.8 (2.2)	**CE0075E4DCE** ②
100	6	5.9 (2.7)	**CE0100E4DCE** ②
150	6	8.5 (3.9)	**CE0150E4DCE**
200	6	10.6 (4.8)	**CE0200E4DCE**
250	6	11.3 (5.1)	**CE0250E4DCE**
300	6	13.2 (6.0)	**CE0300E4DCE**
350	6	15.2 (6.9)	**CE0350E4DCE**
500	6	21.0 (9.5)	**CE0500E4DCE**
750	6	29.8 (13.5)	**CE0750E4DCE**

Primary: 120 x 240 with Jumpers
Secondary: 24

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	3	3.4 (1.5)	**CE0050E1BCE** ②
75	3	4.2 (1.9)	**CE0075E1BCE** ②
100	3	5.9 (2.7)	**CE0100E1BCE** ②
150	3	8.5 (3.9)	**CE0150E1BCE**
200	3	10.6 (4.5)	**CE0200E1BCE**
250	3	11.3 (5.1)	**CE0250E1BCE**
300	3	13.2 (6.0)	**CE0300E1BCE**
350	3	14.9 (6.8)	**CE0350E1BCE**
500	3	19.2 (8.7)	**CE0500E1BCE**
750	3	29.8 (13.5)	**CE0750E1BCE**

Primary: 200/220/440, 208/230/460, 240/480
Secondary: 23/110, 24/115, 25/120

VA	Wiring Diagram ①	Weight Lbs (kg)	Style Number
50	7	4.2 (1.9)	**CE0050E5ECE** ②
75	7	5.9 (2.7)	**CE0075E5ECE** ②
100	7	7.9 (3.6)	**CE0100E5ECE** ②
150	7	10.0 (4.5)	**CE0150E5ECE**
200	7	12.8 (5.8)	**CE0200E5ECE**
250	7	15.2 (6.9)	**CE0250E5ECE**
300	7	16.8 (7.6)	**CE0300E5ECE**
350	7	19.2 (8.7)	**CE0350E5ECE**
500	7	27.0 (12.3)	**CE0500E5ECE**

Notes

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

② 105°C insulation system.

Transformers are designed to operate in a maximum ambient of 40°C. Contact your local Eaton sales office for availability on additional CE Marked control transformers. For other ratings or styles not shown, refer to Eaton.

Type MTK CE Marked with Factory Mounted Finger-Safe Terminal Covers IP20

Primary: 240 x 480, 230 x 460, 220 x 440 with Jumpers
Secondary: 120/115/110

VA	Terminal Type	Wiring Diagram ①	Weight Lbs (kg)	Style Number
250	A	1	8.8 (4.0)	**CE0250K2ACEFS**
300	A	1	11.0 (5.0)	**CE0300K2ACEFS**
350	A	1	11.2 (5.1)	**CE0350K2ACEFS**
500	A	1	14.8 (6.7)	**CE0500K2ACEFS**
750	A	1	18.0 (8.2)	**CE0750K2ACEFS**
1000	A	1	26.3 (11.9)	**CE1000K2ACEFS**
1500	C	1	40.0 (18.1)	**CE1500K2ACEFS**
2000	C	1	45.1 (20.5)	**CE2000K2ACEFS**
3000	C	1	65.2 (29.6)	**CE3000K2ACEFS**
5000	C	1	104.8 (47.5)	**CE5000K2ACEFS**

Primary: 240 x 480 with Jumpers
Secondary: 24

VA	Terminal Type	Wiring Diagram ①	Weight Lbs (kg)	Style Number
250	C	2	8.2 (3.7)	**CE0250K2BCEFS**
300	C	2	9.5 (4.3)	**CE0300K2BCEFS**
350	C	2	12.2 (5.5)	**CE0350K2BCEFS**
500	C	2	14.4 (6.5)	**CE0500K2BCEFS**
750	C	2	19.5 (8.9)	**CE0750K2BCEFS**
1000	C	2	26.2 (11.9)	**CE1000K2BCEFS**

Primary: 120 x 240 with Jumpers
Secondary: 24

VA	Terminal Type	Wiring Diagram ①	Weight Lbs (kg)	Style Number
250	C	3	8.3 (3.8)	**CE0250K1BCEFS**
300	C	3	9.3 (4.2)	**CE0300K1BCEFS**
350	C	3	12.0 (5.4)	**CE0350K1BCEFS**
500	C	3	14.4 (6.5)	**CE0500K1BCEFS**
750	C	3	19.5 (8.9)	**CE0750K1BCEFS**
1000	C	3	25.2 (11.4)	**CE1000K1BCEFS**

Primary: 200/220/440, 208/230/460, 240/480
Secondary: 23/110, 24/115, 25/120

VA	Terminal Type	Wiring Diagram ①	Weight Lbs (kg)	Style Number
250	B	7	12.5 (5.7)	**CE0250K5ECEFS**
300	B	7	14.0 (6.3)	**CE0300K5ECEFS**
350	B	7	15.3 (6.9)	**CE0350K5ECEFS**
500	B	7	20.8 (9.4)	**CE0500K5ECEFS**
750	C	7	29.8 (13.5)	**CE0750K5ECEFS**
1000	C	7	30.2 (13.7)	**CE1000K5ECEFS**

Primary: 220/380/440/550, 230/400/460/575, 240/416/480/600
Secondary: 23/110, 24/115, 25/120

VA	Terminal Type	Wiring Diagram ①	Weight Lbs (kg)	Style Number
250	B	14	14.3 (6.5)	**CE0250K2UCEFS**
300	B	14	15.8 (7.2)	**CE0300K2UCEFS**
350	B	14	16.5 (7.5)	**CE0350K2UCEFS**
500	B	14	20.5 (9.3)	**CE0500K2UCEFS**
750	C	14	28.8 (13.1)	**CE0750K2UCEFS**
1000	C	14	39.4 (17.9)	**CE1000K2UCEFS**

Primary: 208/230/400/460/575
Secondary: 24 ②/115/230

VA	Terminal Type	Wiring Diagram ①	Weight Lbs (kg)	Style Number
250	B	15	14.9 (6.8)	**CE0250K2VCEFS**
300	B	15	17.4 (7.9)	**CE0300K2VCEF**
350	B	15	17.8 (8.1)	**CE0350K2VCEFS**
500	B	15	26.6 (12.1)	**CE0500K2VCEFS**
750	B	15	32.5 (14.7)	**CE0750K2VCEFS**
1000	C	15	44.0 (20.0)	**CE1000K2VCEFS**
1500	C	15	45.4 (20.6)	**CE1500K2WCEFS**
2000	C	16	58.6 (26.6)	**CE2000K2WCEFS**
3000	C	16	92.9 (42.1)	**CE3000K2WCEFS**
5000	C	16	127.4 (57.8)	**CE5000K2WCEFS**

Primary: 240/416/480/600, 230/400/460/575, 220/380/440/550, 208/500
Secondary: 99/120/130, 95/115/125, 91/110/120, 85/100/110

VA	Terminal Type	Wiring Diagram ①	Weight Lbs (kg)	Style Number
250	A	8	11.4 (5.2)	**CE0250K6UCEFS**
300	A	8	13.6 (6.2)	**CE0300K6UCEFS**
350	A	8	14.2 (6.4)	**CE0350K6UCEFS**
500	A	8	17.4 (7.9)	**CE0500K6UCEFS**
750	A	8	27.5 (12.5)	**CE0750K6UCEFS**
1000	A	8	27.9 (12.6)	**CE1000K6UCEFS**
1500	A	8	43.1 (19.5)	**CE1500K6UCEFS**
2000	B	8	56.0 (25.4)	**CE2000K6UCEFS**
3000	B	8	76.2 (34.6)	**CE3000K6UCEFS**

Notes

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

② 24 volt secondary only available through 1000 VA.

Accessories

Protection Index IP00

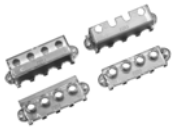
When terminal covers are installed on primary and secondary, and fuse block covers are used, the protection index is IP20.

Finger-Safe Terminal Covers (Optional)

- Fits CE Marked designs 50–750 VA
- Fits MTE designs 0.25–750 VA

Finger-Safe Terminal Covers

	Description	Catalog Number
FSK4	Four terminal transformers	**FSK4**
	Four terminal Series 2 transformers only	**FSK4S2**
FSK6	Six terminal transformers	**FSK6**



Finger-Safe Primary Fuse Block Covers

- Fits two-pole primary fuse blocks on MTE designs

Finger-Safe Primary Fuse Block Covers

	Description	Catalog Number
FSKFB	Primary fuse block covers	**FSKFB**

Secondary Fuse Clip Cover

Secondary Fuse Clip Cover

Description	Catalog Number
Fits 500 VA and smaller models	**SFCS**
Fits models greater than 500 VA	**SFCL**

Technical Data and Specifications

Overload Capability

Short-term overload is designed into transformers as required by ANSI. Basically, 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.

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**.

Wiring Diagrams

Diagram 1

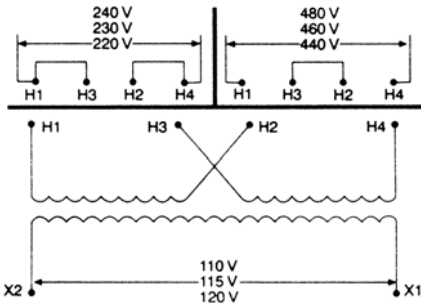


Diagram 2

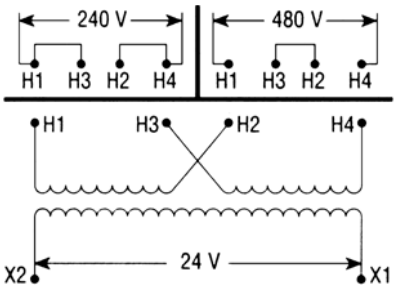


Diagram 3

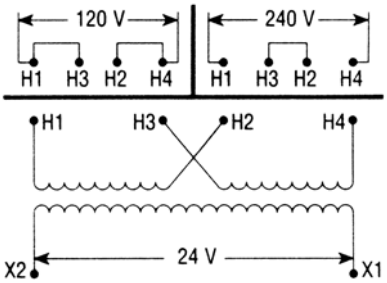


Diagram 4

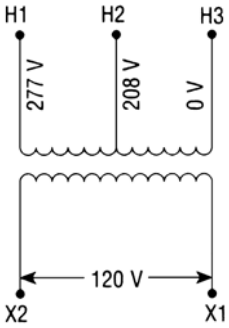


Diagram 5

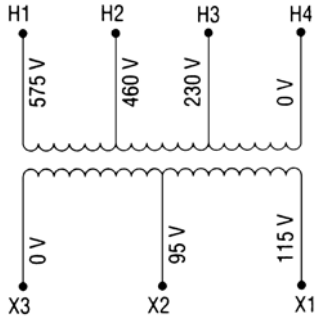


Diagram 6

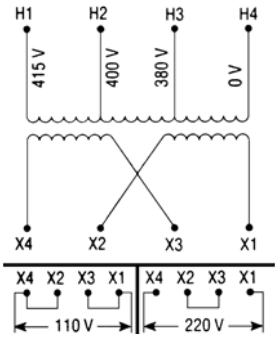


Diagram 7

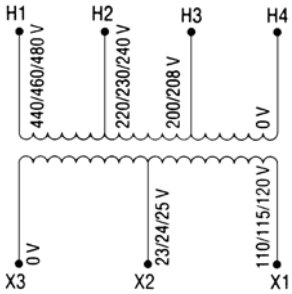


Diagram 8

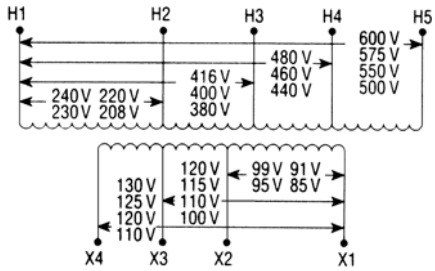


Diagram 9

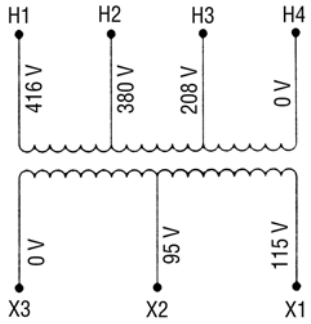


Diagram 10

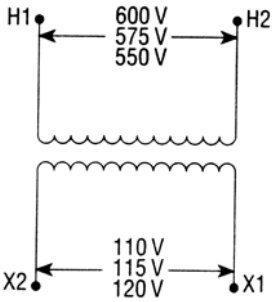


Diagram 11

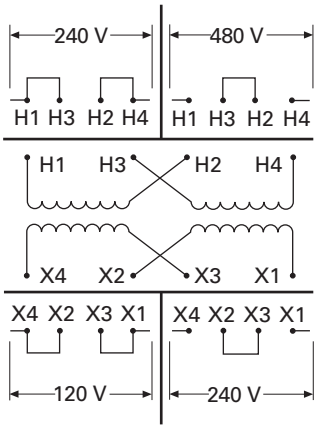


Diagram 12

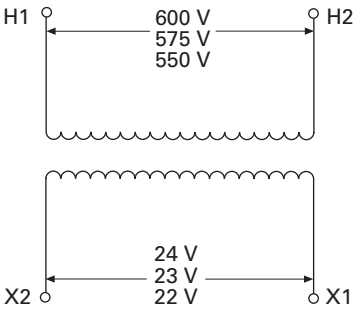


Diagram 13

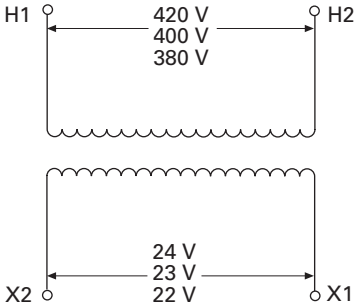


Diagram 14

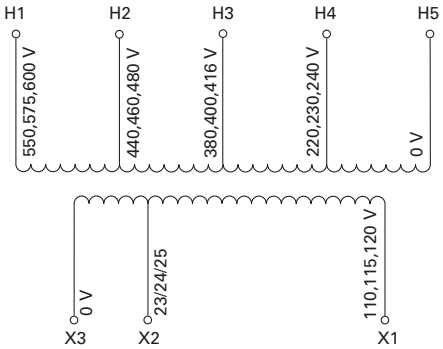


Diagram 15

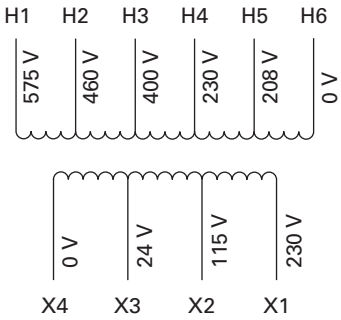
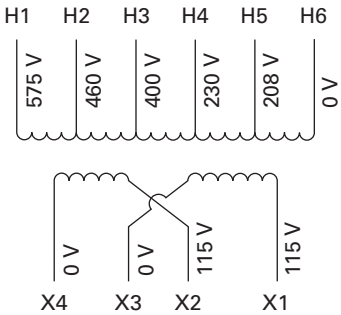


Diagram 16



Acceptable Rating of Primary Overcurrent Protection for CE Marked Control Transformers ①

Fuses 13/32 x 1-1/2 Inches (10 x 38 mm) Timelag (IEC 269)

Sec. Voltage	50	75	100	150	200	250	300	350	500	750
115	2.0	2.0	4.0	4.0	6.0	6.0	8.0	10.0	12.0	20.0
120	2.0	2.0	4.0	4.0	6.0	6.0	8.0	10.0	12.0	20.0
200	1.0	2.0	2.0	4.0	4.0	4.0	4.0	6.0	8.0	12.0
208	1.0	2.0	2.0	4.0	4.0	4.0	4.0	6.0	8.0	12.0
220	1.0	1.0	2.0	4.0	4.0	4.0	4.0	6.0	6.0	10.0
230	1.0	1.0	2.0	4.0	4.0	4.0	4.0	6.0	6.0	10.0
240	1.0	1.0	2.0	4.0	4.0	4.0	4.0	4.0	6.0	10.0
277	0.5	1.0	1.0	2.0	4.0	4.0	4.0	4.0	6.0	8.0
380	0.5	1.0	1.0	2.0	2.0	4.0	4.0	4.0	6.0	6.0
400	0.5	0.5	1.0	2.0	2.0	4.0	4.0	4.0	4.0	6.0
415	0.5	0.5	1.0	1.0	2.0	4.0	4.0	4.0	4.0	6.0
440	0.5	0.5	1.0	1.0	2.0	2.0	4.0	4.0	4.0	6.0
460	0.5	0.5	1.0	1.0	2.0	2.0	4.0	4.0	4.0	6.0
480	0.5	0.5	0.5	1.0	2.0	2.0	4.0	4.0	4.0	6.0
550	0.5	0.5	0.5	1.0	1.0	2.0	2.0	4.0	4.0	4.0
575	0.5	0.5	0.5	1.0	1.0	2.0	2.0	4.0	4.0	4.0
600	0.5	0.5	0.5	1.0	2.0	2.0	2.0	4.0	4.0	4.0

Acceptable Maximum Rating of Secondary Overcurrent Protection ①

Miniature Fuses 5 x 20 mm Timelag (IEC 127-2/III)

Sec. Voltage	50	75	100	150	200	250	300	350	500	750
23	2.50	4.00	5.00	8.00	10.0	12.00	16.00	16.00	25.00	—
24	2.50	4.00	5.00	8.00	10.0	12.00	16.00	16.00	25.00	32.00
25	2.50	4.00	5.00	8.00	10.0	12.00	16.00	16.00	25.00	32.00
90	0.63	1.00	1.25	2.00	2.50	3.15	4.00	4.00	6.30	10.00
95	0.63	0.80	1.25	1.60	2.50	3.15	4.00	4.00	6.30	8.00
100	0.50	0.80	1.00	1.60	2.00	2.50	3.15	4.00	5.00	8.00
110	0.50	0.80	1.00	1.60	2.00	2.50	3.15	4.00	5.00	8.00
115	0.50	0.80	1.00	1.60	2.00	2.50	3.15	3.15	5.00	8.00
120	0.50	0.63	1.00	1.25	2.00	2.50	2.50	3.15	5.00	6.30
220	0.25	0.40	0.50	0.80	1.00	1.25	1.60	1.60	2.50	4.00
230	0.25	0.40	0.50	0.80	1.00	1.25	1.60	1.60	2.50	4.00
240	0.25	0.32	0.50	0.63	1.00	1.25	1.25	1.60	2.50	3.15

Regulation Data Chart

Transformer VA Rating	Inrush VA at 20% Power Factor NEMA/IEC 95% Sec. Voltage	NEMA/IEC 90% Sec. Voltage	NEMA/IEC 85% Sec. Voltage
25 ②	100/—	130/—	150/—
50 ②	170/190	200/220	240/270
75 ②	310/350	410/460	450/600
100 ②	370/410	540/600	730/810
150 ③	780/850	930/1030	1150/1270
200 ③	810/900	1150/1270	1450/1600
250 ③	1400/1540	1900/2090	2300/2530
300 ③	1900/2090	2700/2970	3850/4240
350 ③	3100/3410	3650/4020	4800/5280
500 ③	4000/4400	5300/5830	7000/7700
750 ③	8300/9130	11,000/12,100	14,000/15,400
1000 ③	15,000/16,500	21,000/23,000	27,000/29,500
1000 ④	9000/9900	13,000/14,300	18,500/20,300
1500 ④	10,500/11,500	15,000/16,500	20,500/22,500
2000 ④	17,000/18,900	25,500/27,300	34,000/36,400
3000 ④	24,000/25,700	36,000/38,500	47,500/50,200
5000 ④	55,000/58,800	92,500/98,900	115,000/122,000

Notes

① For values over 6.3A, use 10 x 38 mm timelag (IEC - 269-3-1). T_a = 40°C control type.
② For units with Class 105°C insulation system.
③ For units with Class 130°C insulation system.
④ For units with Class 180°C insulation system.

To comply with NEMA standards that require all magnetic devices to operate successfully at 85% of rated voltage, the 90% secondary column is most often used in selecting a transformer. No comparable requirement is available for IEC.

Type AP Transformer

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Description	*Page*
Type MTE	**V7-T7-4**
Type MTK	**V7-T7-13**
CE Marked	**V7-T7-18**
Type AP	
Catalog Number Selection	**V7-T7-26**
Product Selection	**V7-T7-26**
Technical Data and Specifications	**V7-T7-26**

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)	**C0003P7GB**
5	Bottom	FR99	5	104 (47.2)	**C0005P7GB**
7.5	Bottom	FR100	5	129 (58.6)	**C0007P7GB**
10	Bottom	FR101	5	148 (67.2)	**C0010P7GB**
15	Bottom	FR134	5	197 (89.4)	**C0015P7GB**
3	Side/Wall	FR292	5	65 (29.5)	**C0003P7GS**
5	Side/Wall	FR256	5	104 (47.2)	**C0005P7GS**
7.5	Side/Wall	FR257	5	129 (58.6)	**C0007P7GS**
10	Side/Wall	FR258	5	148 (67.2)	**C0010P7GS**
15	Side/Wall	FR259	5	197 (89.4)	**C0015P7GS**

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.