Industrial Control Transformers

Contents

Description	*Page*
Transformers	
Type MTE	**V7-T7-4**
Type MTK	**V7-T7-13**
CE Marked	**V7-T7-18**
Type AP	**V7-T7-25**

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 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.

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

Contents

Description	*Page*
Type MTE	
Product Selection	**V7-T7-5**
Accessories	**V7-T7-10**
Technical Data and Specifications	**V7-T7-10**
Wiring Diagrams	**V7-T7-11**
Type MTK	**V7-T7-13**
CE Marked	**V7-T7-18**
Type AP	**V7-T7-25**

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**.

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.

Wiring Diagrams

Diagram 1

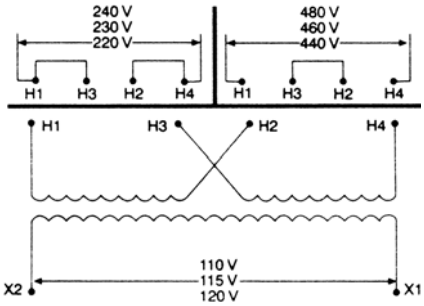

Diagram 2

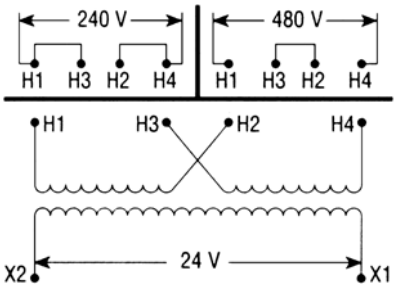

Diagram 3

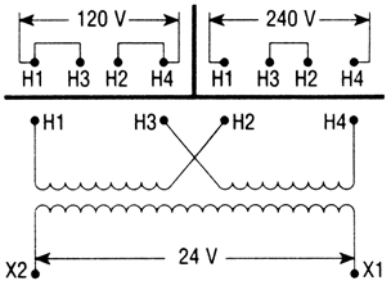

Diagram 4

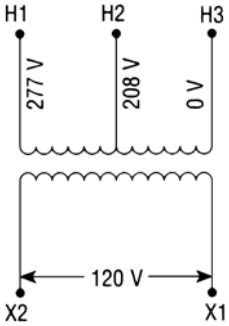

Diagram 5

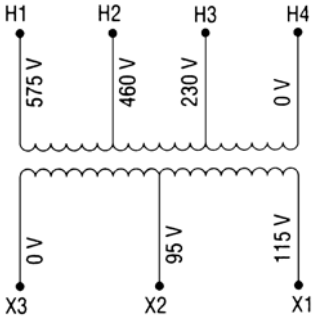

Diagram 6

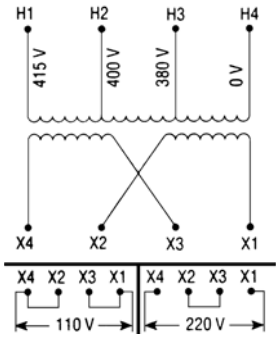

Diagram 7

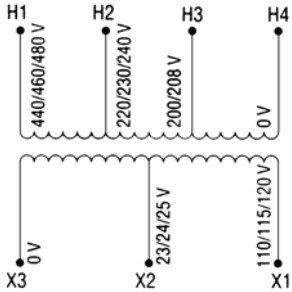
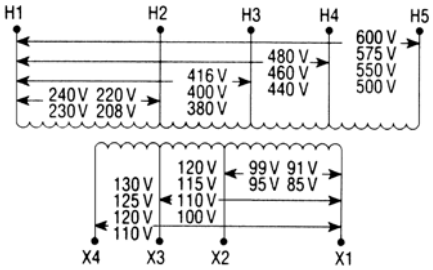
Diagram 8