

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

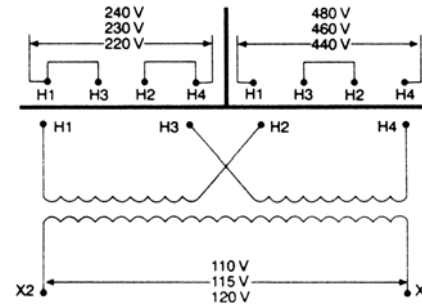


Diagram 2

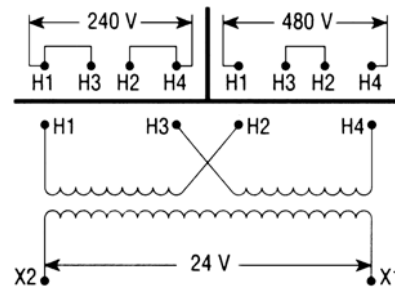


Diagram 3

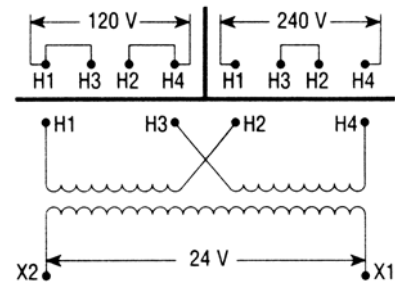
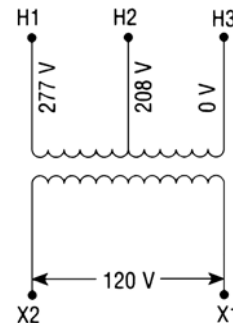


Diagram 4



7.1

Industrial Control Transformers

Transformers

7

Diagram 5

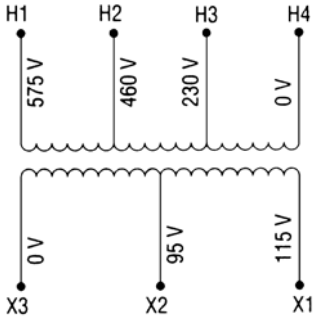


Diagram 9

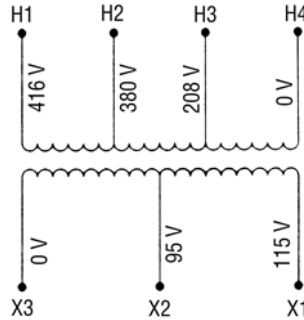


Diagram 6

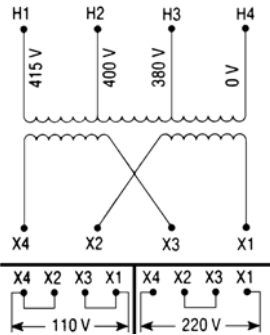


Diagram 10

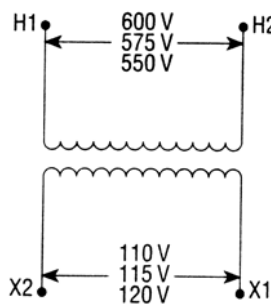


Diagram 7

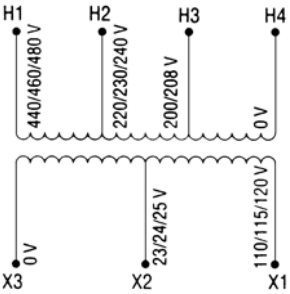


Diagram 11

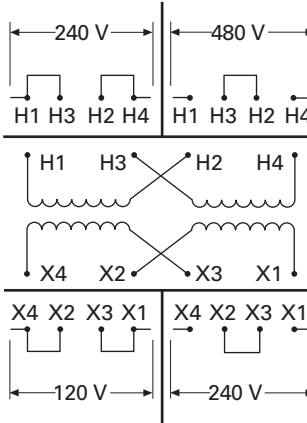


Diagram 8

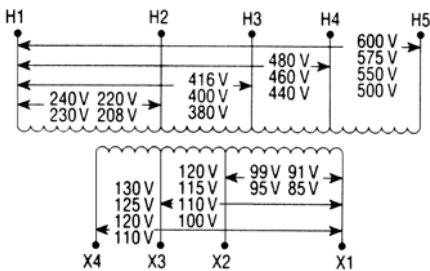


Diagram 12

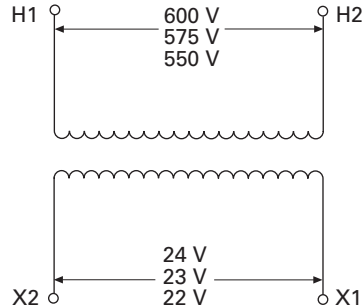


Diagram 13

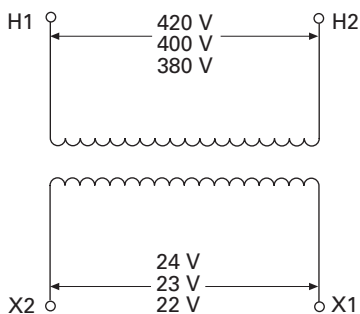


Diagram 14

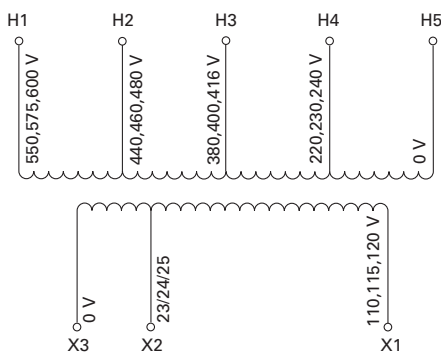


Diagram 15

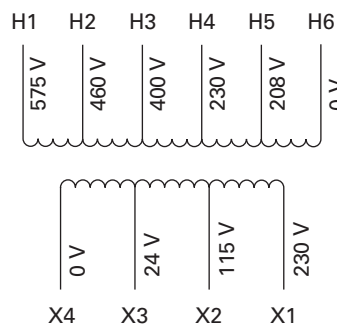
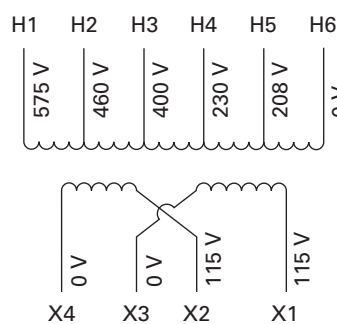


Diagram 16



Type MTE CE-Marked CPT



Contents

<i>Description</i>	<i>Page</i>
Type MTE	V7-T7-4
Type MTK	V7-T7-13
CE Marked	
Product Selection	V7-T7-19
Accessories	V7-T7-21
Technical Data and Specifications	V7-T7-21
Wiring Diagrams	V7-T7-22
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



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.

7.1

Industrial Control Transformers

Transformers

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)	CE0300K2VCEFS
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
	Four terminal transformers	FSK4
	Four terminal Series 2 transformers only	FSK4S2
	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
	Primary fuse block covers	FSKFB

Secondary Fuse Clip

Secondary Fuse Clip

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**.

7.1

Industrial Control Transformers

Transformers

Wiring Diagrams

Diagram 1

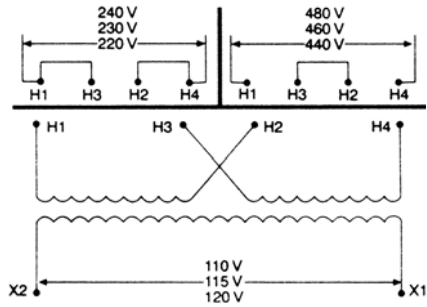


Diagram 5

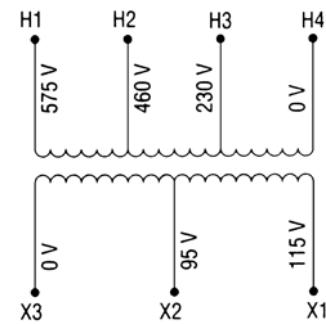


Diagram 2

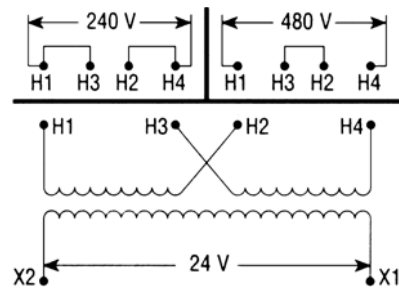


Diagram 6

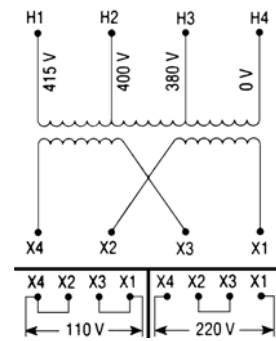


Diagram 3

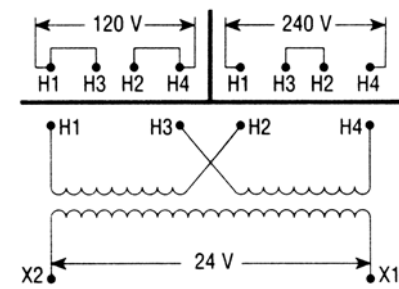


Diagram 7

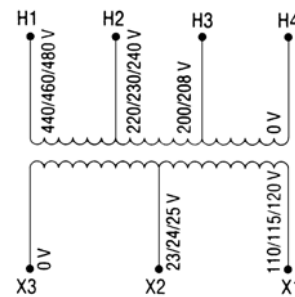


Diagram 4

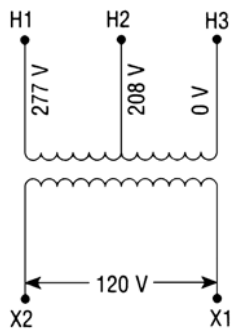


Diagram 8

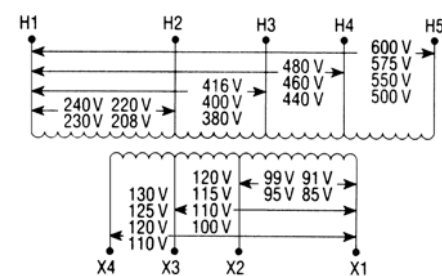


Diagram 9

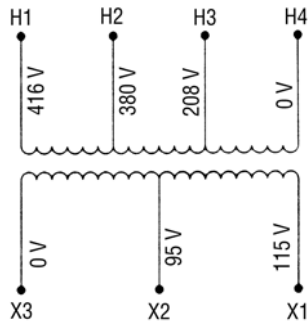


Diagram 13

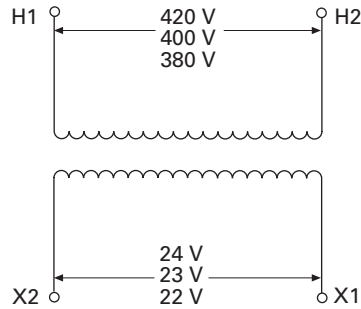


Diagram 10

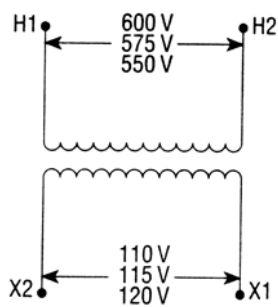


Diagram 14

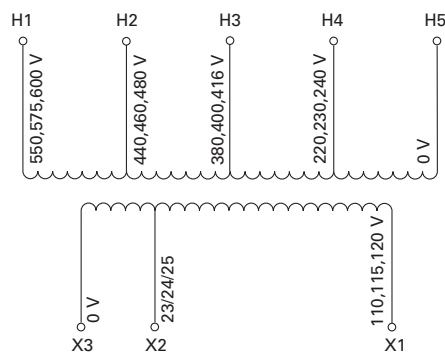


Diagram 11

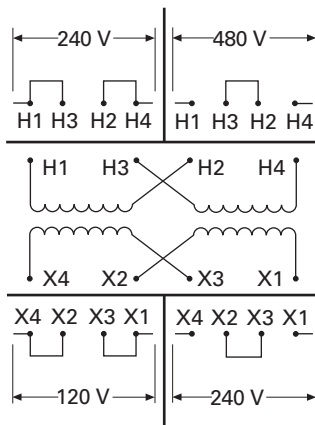


Diagram 15

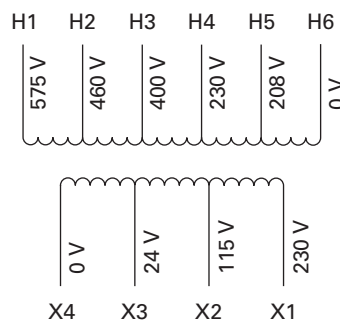


Diagram 12

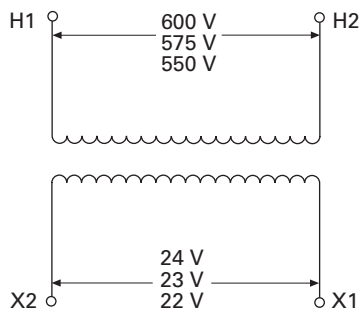
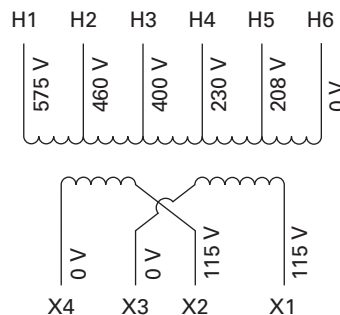


Diagram 16



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



Contents

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.