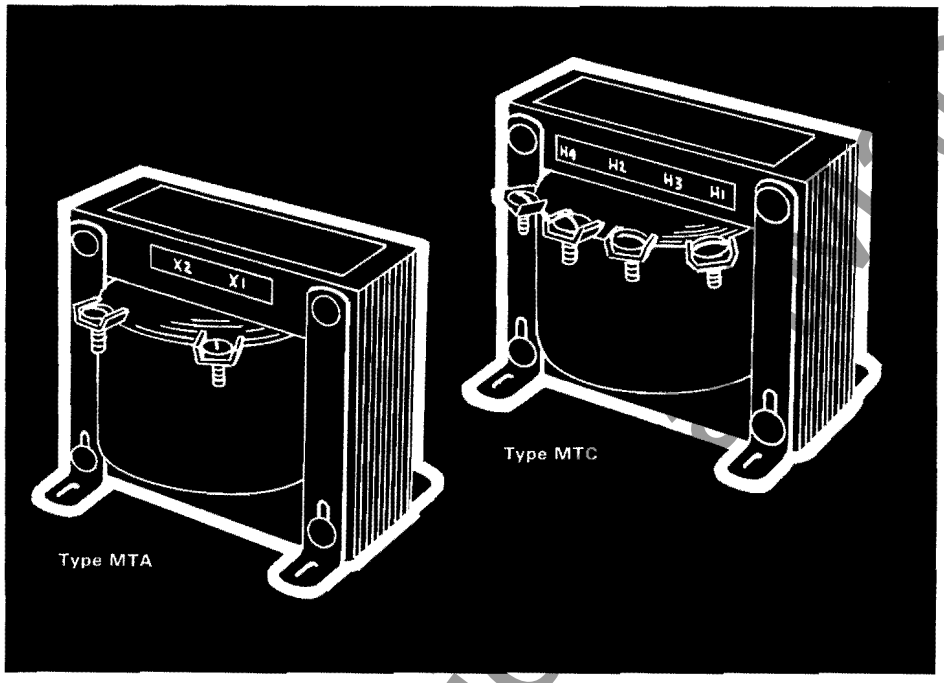
Westinghouse Electric Corporation
Specialty Transformer Division
Greenville, Pa. U.S.A. 16125

December, 1975
Supersedes 46-851 D WE A
Pages 1 & 2 dated April, 1975
Mailed to E, D, C/2071, 2072/DB

Control Transformers For Machine Tools

Types MTA and MTC



Construction Features

Core and Coil Assembly

The proportion of copper and electrical steel has been selected to provide the best performance, greatest reliability and longest life. Type "C" Hipersil® cores are used in all ratings above 750 volt-amperes.

Mounting

These transformers are designed to keep overall base and height dimensions to a minimum for space-saving panel mounting.

Insulation

For the most efficient transformer size either a class A, 55°C rise or a class B, 80°C rise insulation system is selected based upon the VA rating. The assembled core and coil is thoroughly impregnated with a special insulating varnish, Bondar® and baked so as to resist penetration of dust and moisture laden air.

Wiring

Every standard transformer has a nameplate with connection diagrams and full electrical specifications. Transformer terminals are plainly marked for ease of wiring.

Add-A-Part Fuse Holder (Fig. 1)

The Add-A-Part fuse holder is available in two different sizes: style number 257A574G01 for ratings through 750 volt-amperes (recommended fuses are ¼" x 1¼" Fusetron type MDL or MDX Slo-Blo type 3 AG); and style number 257A564G01 for ratings 1 through 3 kva (recommended fuses are 9/16" x 2" Fusetron Dual Element Buss Super-Lag).

The fuse holder is applied to the secondary side of the transformer in three simple steps:

1. Remove screw from transformer terminal that is to be fused.

2. Place fuse holder on terminal. Secure with lock washer and fuse holder screw. Turn holder to desired position before tightening.

3. Make connection to fuse holder terminal using the transformer terminal screw.

Application

Westinghouse Control Transformers provide stepped-down voltages to machine tool control devices enabling control circuits to be isolated from all power and lighting circuits, thus allowing the use of grounded or ungrounded circuits that are independent of the power or lighting grounds. Greater safety is afforded the operator, and the more rugged 115-volt coils can be used on the control devices regardless of the line voltage. The control transformer line is particularly adaptable on applications where compact construction is demanded. Electrical performance equals or exceeds NEMA, JIC and NMTBA standards.

"Black Line" Advantages Underwriters' Laboratories, Inc., Listings

Standard 60 and 50/60 cycle units from 50 through 1000 volt-amperes are listed by Underwriters' Laboratories, Inc.

Ease of Panel Mounting

Generous lug-type terminals on the coils are designed and located for maximum accessibility and to keep the overall size of the transformer to a minimum. Slotted mounting feet offer further convenience.

100% Testing

Before packaging every transformer is given rigid tests for turns ratio, insulation, continuity and over potential.

Excellent Regulation of All Power Factor Loads

The Type MTC is designed specifically for magnetic loads requiring extremely good regulation.

Further Information

Prices: PL 46-830
For type AP encapsulated control transformers 5 thru 10 kva, refer to PL 46-830.

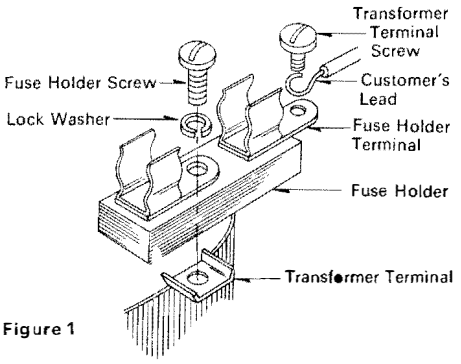


Figure 1

Ratings, Type MTA①

Volt-Amperes	Catalog Number	Frame Number	Wiring Diagram	Approx. Wt.: Lbs.
230/460 Volts to 115 Volts, 60 Hertz				
50	1 F0890	1310	1	2
75	1 F0927	1510	1	3
100	1 F0906	1512	1	4
150	1 F0907	1520	1	6
200	1 F0908	1714	1	7
250	1 F0909	1717	1	8
300	1 F0910	1723	1	10
350	1 F0911	1727	1	12
500	1 F0912	1923	1	15
750	1 F0913	1931	1	19
1000	1 F0914	C613	1	19
1500	1 F0965	C614	1	27
2000	1 F0966	C827	1	36
3000	1 F0967	C828	1	52
5000	1 F0968	C829	1	79
230/460/575 Volts to 115/95 Volts, 50/60 Hertz				
50	1 F0987	1314	2	2
75	1 F0988	1512	2	4
100	1 F0989	1517	2	5
150	1 F0990	1714	2	7
200	1 F0991	1717	2	8
250	1 F0992	1723	2	10
300	1 F0993	1730	2	12
350	1 F0994	1923	2	14
500	1 F0995	1931	2	17
750	1 F0996	1943	2	27
1000	1 F0997	C614	2	24
1500	1 F0998	C827	2	34
208/380/416 Volts to 115/95 Volts, 50/60 Hertz				
50	1 F1025	1314	2	3
100	1 F1027	1516	2	5
150	1 F1028	1714	2	7
200	1 F1029	1717	2	8
250	1 F1030	1723	2	10
300	1 F1031	1730	2	13
500	1 F1033	1931	2	18
750	1 F1034	1943	2	27
1000	1 F1035	C614	2	25
1500	1 F1036	C827	2	33
230/460 Volts to 115/230 Volts, 60 Hertz				
50	1 F2198	1310	3	2
75	1 F2185	1510	3	3
100	1 F2186	1512	3	4
150	1 F2189	1520	3	6
200	1 F2191	1714	3	7
250	1 F2034	1717	3	8
300	1 F1113	1727	3	10
350	1 F2187	1727	3	12
500	1 F2190	1930	3	15
750	1 F2188	C613	3	19
1000	1 F1687	C613	3	19
1500	1 F1688	C614	3	27
2000	1 F1696	C827	3	36
3000	1 F1690	C828	3	52
5000	1 F1701	C829	3	79

Ratings, Type MTA①

Volt-Amperes	Catalog Number	Frame Number	Wiring Diagram	Approx. Wt.: Lbs.
115 Volts to 12 Volts, 50/60 Hertz				
50	1 F3050	1310	4	2
100	1 F3051	1513	4	4
115 Volts to 24 Volts, 50/60 Hertz				
50	1 F3052	1310	4	2
100	1 F3053	1513	4	4
200	1 F3054	1714	4	7

Diagrams

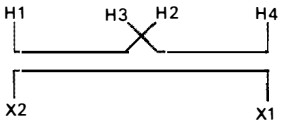


Figure 1

Volts	Conn	Line
460	H2 H3	H1-H4
230	H1 H3-H2 H4	H1-H4
115		X1-X2

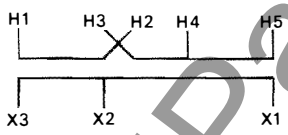


Figure 2

Volts		Conn	Line
575	416	H2 H3	H1-H5
460	380	H2 H3	H1-H4
230		H1 H3-H2 H4	H1-H4
115	115		X1-X3
95	95		X1-X2
	208	H1 H3-H2 H5	H1-H5

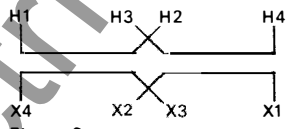


Figure 3

Volts	Conn	Line
460	H2 H3	H1-H4
230	H1 H3-H2 H4	H1-H4
230	X2 X3	X1-X4
115	X1 X3-X2 X4	X1-X4

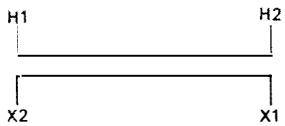


Figure 4

Volts		Line
115	115	H1-H2
12	24	X1-X2

Ratings, Type MTC①

Volt-Amperes	Catalog Number	Frame Number	Wiring Diagram	Approx. Wt.: Lbs.
240/480-120 Volts, 60 Hertz 230/460-115 Volts, 50/60 Hertz 220/440-110 Volts, 50/60 Hertz				
50	1 F0890	1310	1	2
75	1 F0891	1314	1	3
100	1 F0892	1413	1	3
150	1 F0893	1517	1	6
200	1 F0894	1714	1	7
250	1 F0895	1717	1	8
300	1 F0896	1722	1	10
350	1 F0897	1726	1	11
500	1 F0898	1931	1	20
750	1 F0899	1943	1	28
1000	1 F0900	2236	1	34
1500	1 F0901	C822	1	35
2000	1 F0902	C823	1	38
3000	1 F0903	C824	1	53
5000	1 F0904	C825	1	82

Regulation Data—Type MTC

Continuous Nominal Volt-Amperes	Inrush Volt-Amperes at 20% Power Factor			
	Secondary Voltage			
	100%	95%	90%	85%
50	146	207	379	556
75	211	318	419	518
100	254	405	547	686
150	408	755	1,079	1,394
200	682	1,208	1,680	2,128
250	1,020	1,623	2,275	2,898
300	1,212	2,193	3,075	3,912
350	1,750	3,171	4,449	5,663
500	3,315	6,010	8,465	10,820
750	4,560	8,595	12,345	15,975
1000	7,410	13,880	19,860	25,640
1500	9,195	17,790	25,800	33,510
2000	10,780	20,420	29,580	38,520
3000	19,350	36,150	52,950	69,810
5000	27,150	54,400	83,350	114,200

①For dimensions refer to Technical Certification Section 46-870, page 77

Westinghouse Electric Corporation
Specialty Transformer Division
Greenville, Pa. U.S.A. 16125

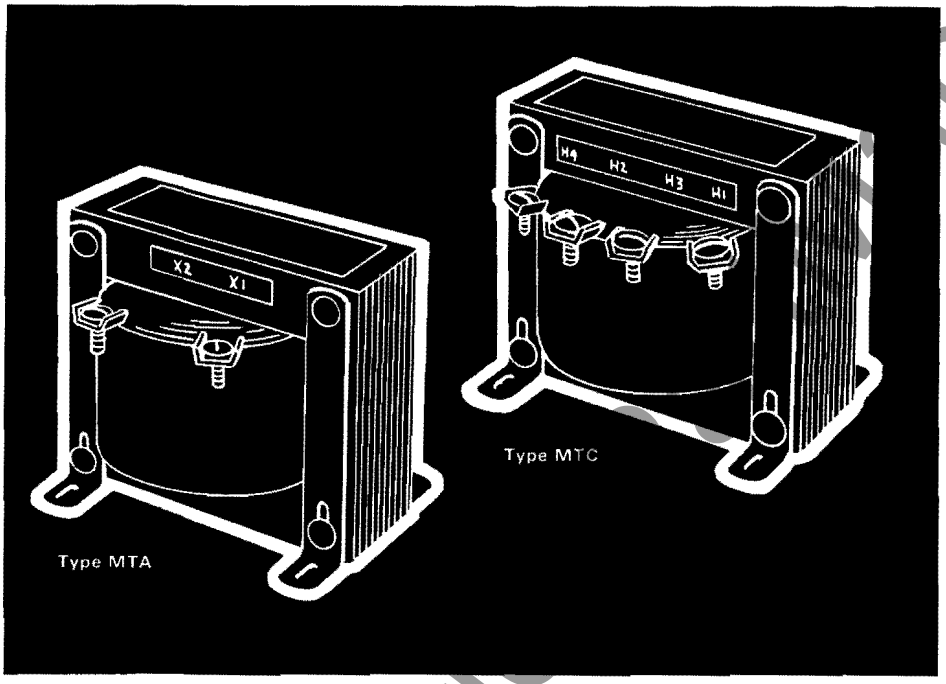
Printed in U.S.A.

Westinghouse Electric Corporation
Specialty Transformer Division
Greenville, Pa. U.S.A. 16125

April, 1975
Supersedes DB 46-851
Pages 1-8 dated May, 1967
Mailed to E, D, C/2071, 2072/DB

Control Transformers For Machine Tools

Types MTA and MTC



Construction Features

Core and Coil Assembly

The proportion of copper and electrical steel has been selected to provide the best performance, greatest reliability and longest life. Type "C" Hipersil® cores are used in all ratings above 750 volt-amperes.

Mounting

These transformers are designed to keep overall base and height dimensions to a minimum for space-saving panel mounting.

Insulation

For the most efficient transformer size either a class A, 55°C rise or a class B, 80°C rise insulation system is selected based upon the VA rating. The assembled core and coil is thoroughly impregnated with a special insulating varnish, Bondar® and baked so as to resist penetration of dust and moisture laden air.

Wiring

Every standard transformer has a nameplate with connection diagrams and full electrical specifications. Transformer terminals are plainly marked for ease of wiring.

Add-A-Part Fuse Holder (Fig. 1)

The Add-A-Part fuse holder is available in two different sizes: style number 257A574G01 for ratings through 750 volt-amperes (recommended fuses are ¼" x 1¼" Fusetron type MDL or MDX Slo-Blo type 3 AG); and style number 257A564G01 for ratings 1 through 3 kva (recommended fuses are 9/16" x 2" Fusetron Dual Element Buss Super-Lag).

The fuse holder is applied to the secondary side of the transformer in three simple steps:

1. Remove screw from transformer terminal that is to be fused.

2. Place fuse holder on terminal. Secure with lock washer and fuse holder screw. Turn holder to desired position before tightening.

3. Make connection to fuse holder terminal using the transformer terminal screw.

Application

Westinghouse Control Transformers provide stepped-down voltages to machine tool control devices enabling control circuits to be isolated from all power and lighting circuits, thus allowing the use of grounded or ungrounded circuits that are independent of the power or lighting grounds. Greater safety is afforded the operator, and the more rugged 115-volt coils can be used on the control devices regardless of the line voltage. The control transformer line is particularly adaptable on applications where compact construction is demanded. Electrical performance equals or exceeds NEMA, JIC and NMTBA standards.

"Black Line" Advantages Underwriters' Laboratories, Inc., Listings

Standard 60 and 50/60 cycle units from 50 through 1000 volt-amperes are listed by Underwriters' Laboratories, Inc.

Ease of Panel Mounting

Generous lug-type terminals on the coils are designed and located for maximum accessibility and to keep the overall size of the transformer to a minimum. Slotted mounting feet offer further convenience.

100% Testing

Before packaging every transformer is given rigid tests for turns ratio, insulation, continuity and over potential.

Excellent Regulation of All Power Factor Loads

The Type MTC is designed specifically for magnetic loads requiring extremely good regulation.

Further Information

Prices: PL 46-830
For type AP encapsulated control transformers 5 thru 10 kva, refer to PL 46-830.

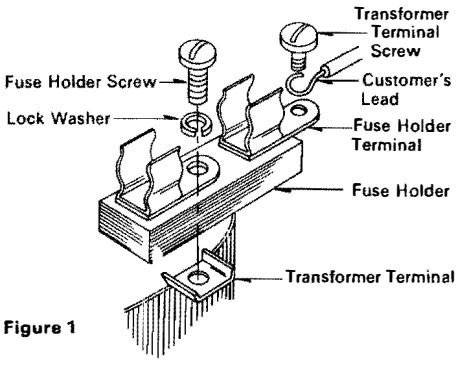


Figure 1

Ratings, Type MTA①

Volt-Amperes	Catalog Number	Frame Number	Wiring Diagram	Approx. Wt.: Lbs.
230/460 Volts to 115 Volts, 60 Hertz				
50	1 F0890	1310	1	2
75	1 F0927	1510	1	3
100	1 F0906	1512	1	4
150	1 F0907	1520	1	6
200	1 F0908	1714	1	7
250	1 F0909	1717	1	8
300	1 F0910	1723	1	10
350	1 F0911	1727	1	12
500	1 F0912	1923	1	15
750	1 F0913	1931	1	19
1000	1 F0914	C613	1	19
1500	1 F0965	C614	1	27
2000	1 F0966	C827	1	36
3000	1 F0967	C828	1	52
5000	1 F0968	C829	1	79
230/460/575 Volts to 115/95 Volts, 50/60 Hertz				
50	1 F0987	1314	2	2
75	1 F0988	1512	2	4
100	1 F0989	1517	2	5
150	1 F0990	1714	2	7
200	1 F0991	1717	2	8
250	1 F0992	1723	2	10
300	1 F0993	1730	2	12
350	1 F0994	1923	2	14
500	1 F0995	1931	2	17
750	1 F0996	1943	2	27
1000	1 F0997	C614	2	24
1500	1 F0998	C827	2	34
208/380/416 Volts to 115/95 Volts, 50/60 Hertz				
50	1 F1025	1314	2	3
100	1 F1027	1516	2	5
150	1 F1028	1714	2	7
200	1 F1029	1717	2	8
250	1 F1030	1723	2	10
300	1 F1031	1730	2	13
500	1 F1033	1931	2	18
750	1 F1034	1943	2	27
1000	1 F1035	C614	2	25
1500	1 F1036	C827	2	33
230/460 Volts to 115/230 Volts, 60 Hertz				
50	1 F2198	1310	3	2
75	1 F2185	1510	3	3
100	1 F2186	1512	3	4
150	1 F2189	1520	3	6
200	1 F2191	1714	3	7
250	1 F2034	1717	3	8
300	1 F1113	1727	3	10
350	1 F2187	1727	3	12
500	1 F2190	1930	3	15
750	1 F2188	C613	3	19
1000	1 F1687	C613	3	19
1500	1 F1688	C614	3	27
2000	1 F1696	C827	3	36
3000	1 F1690	C828	3	52
5000	1 F1701	C829	3	79

Ratings, Type MTA①

Volt-Amperes	Catalog Number	Frame Number	Wiring Diagram	Approx. Wt.: Lbs.
115 Volts to 12 Volts, 50/60 Hertz				
50	1 F3050	1310	4	2
100	1 F3051	1513	4	4
115 Volts to 24 Volts, 50/60 Hertz				
50	1 F3052	1310	4	2
100	1 F3053	1513	4	4
200	1 F3054	1714	4	7

Diagrams

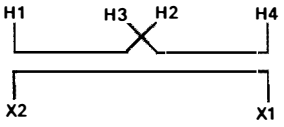


Figure 1

Volts	Conn	Line
460	H2 H3	H1-H4
230	H1 H3-H2 H4	H1-H4
115		X1-X2

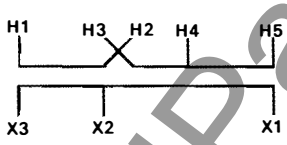


Figure 2

Volts		Conn	Line
575	416	H2 H3	H1-H5
460	380	H2 H3	H1-H4
230	208	H1 H3-H2 H4	H1-H4
115	115		X1-X3
95	95		X1-X2

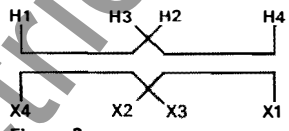


Figure 3

Volts	Conn	Line
460	H2 H3	H1-H4
230	H1 H3-H2 H4	H1-H4
230	X2 X3	X1-X4
115	X1 X3-X2 X4	X1-X4

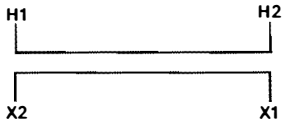


Figure 4

Volts		Line
115	115	H1-H2
12	24	X1-X2

Ratings, Type MTC①

Volt-Amperes	Catalog Number	Frame Number	Wiring Diagram	Approx. Wt.: Lbs.
240/480-120 Volts, 60 Hertz **230/460-115 Volts, 50/60 Hertz** **220/440-110 Volts, 50/60 Hertz**				
50	1 F0890	1310	1	2
75	1 F0891	1314	1	3
100	1 F0892	1413	1	3
150	1 F0893	1517	1	6
200	1 F0894	1714	1	7
250	1 F0895	1717	1	8
300	1 F0896	1722	1	10
350	1 F0897	1726	1	11
500	1 F0898	1931	1	20
750	1 F0899	1943	1	28
1000	1 F0900	2236	1	34
1500	1 F0901	C822	1	35
2000	1 F0902	C823	1	38
3000	1 F0903	C824	1	53
5000	1 F0904	C825	1	82

Regulation Data—Type MTC

Continuous Nominal Volt-Amperes	Inrush Volt-Amperes at 20% Power Factor			
	Secondary Voltage			
	100%	95%	90%	85%
50	146	207	379	556
75	211	318	419	518
100	254	405	547	686
150	408	755	1,079	1,394
200	682	1,208	1,680	2,128
250	1,020	1,623	2,275	2,898
300	1,212	2,193	3,075	3,912
350	1,750	3,171	4,449	5,663
500	3,315	6,010	8,465	10,820
750	4,560	8,595	12,345	15,975
1000	7,410	13,880	19,860	25,640
1500	9,195	17,790	25,800	33,510
2000	10,780	20,420	29,580	38,520
3000	19,350	36,150	52,950	69,810
5000	27,150	54,400	83,350	114,200

①For dimensions refer to Technical Certification Section 46-870, page 77

Westinghouse Electric Corporation
Specialty Transformer Division
Greenville, Pa. U.S.A. 16125