

Transformers

Open Core and Coil Transformers

Machine Tool and Control Power

0.05-3.0kVA, Single-Phase

Product Description

Core and coil transformers for machine tools are used to provide voltage to control devices in applications where regulation and minimum space are important. Welded cores provide the highest quality electrical performance and quiet operation.

Standards: Type IP transformers conform to NEMA ST20

Listings: UL listed under UL-506, File E2739
CSA Certified under C22.2, Number 66, File 3272

Insulation Classes: 150VA and below: 105°C insulation class,
55°C Rise

200VA and above: 185°C (NEMA)
180°C (UL) insulation class, 115°C Rise

Frequency: 60 Hz standard; 50 Hz optional.

Voltage Regulation: All designs 2.0 kVA and below are compensated for voltage drop. Compensation ranges from 10% in the smallest rating to 3% for the largest. All machine tool designs meet or exceed NMTBA regulation requirements.

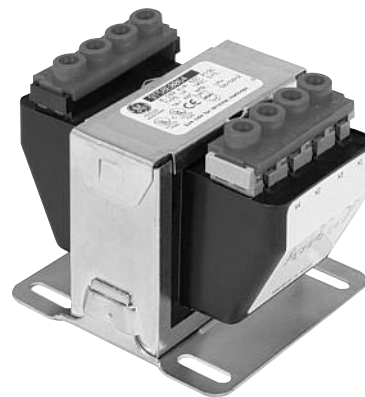
Series-Multiple Secondary Connections: Transformers with 120/240 V secondaries (series-multiple) may be connected for 120 V, 240 V or 240/120 V three-wire. Jumpers are provided.

Overcurrent Protection: Type IP transformers are low impedance transformers that require overcurrent protection for most applications. They provide for optional integral primary and/or secondary fusing.

Mounting Dimensions: Type IP transformers are lightweight, small, and designed for minimum mounting dimensions. Many units will fit competitors mounting footprints.



Core and Coil Transformer, Optional Leads Out Connection



Core and Coil Transformer, Terminal Board Connection

Advantages—Terminal Board Connection

- Fully encapsulated coil is impervious to moisture
- Finger-safe terminals offer added protection and safety
- Pressure plate terminals ensure secure connections
- Terminal board is anchored in the epoxy for greater reliability
- Wide variety of fusing options

Key Features—Terminal Board Connection

- Rugged, high-impact plastic terminal board
- Full head #8 brass screws assure quick, easy terminations with maximum connection integrity
- Copper windings
- Flexible design allows input or output voltage to match any application
- CUL, CE, UL approvals
- Available fuse-clips offer simple, low-cost fusing with terminal block models



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Machine Tool Applications

Single-Phase

Section 8

60 Hz Terminal Board Connection

Input Voltage	Output Voltage	kVA	Inrush VA @ .20 PF, 95% Sec. Volt	Wiring Diagram No. ¹	Approx. Net Weight (Lbs)	Frame Size	Product Number
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	0.05	193	1	3	6100	9T58K0042
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	0.075	303	1	3	6125	9T58K0043
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	0.1	396	1	4	8100	9T58K0044
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	0.15	724	1	5	8150	9T58K0045
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	0.2	821	1	6	8175	9T58K0046
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	0.25	1034	1	7	8200	9T58K0047
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	0.3	1037	1	8	8250	9T58K0048
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	0.375	1441	1	8	8250	9T58K0049
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	0.5	2027	1	12	10225	9T58K0050
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	0.75	3092	1	16	12225	9T58K0051
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	1	4494	1	19	12300	9T58K0052
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	1.5	5156	1	28	14225	9T58K0053
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	2	9193	1	34	14300	9T58K0054
220x440, 230x460,240x480 Volts	110, 115, 120 Volts	3	14513	1	45	14475	9T58K0055

50/60 Hz Terminal Board Connection

Input Voltage	Output Voltage	kVA	Inrush VA @ .20 PF, 95% Sec. Volt	Wiring Diagram No. ¹	Approx. Net Weight (Lbs)	Frame Size	Product Number
230/460/575 Volts	115/95 Volts	0.05	196	2	4	6150	9T58K0062
230/460/575 Volts	115/95 Volts	0.075	278	2	4	8100	9T58K0063
230/460/575 Volts	115/95 Volts	0.1	445	2	5	8150	9T58K0064
230/460/575 Volts	115/95 Volts	0.15	663	2	7	8200	9T58K0065
230/460/575 Volts	115/95 Volts	0.2	864	2	7	8200	9T58K0066
230/460/575 Volts	115/95 Volts	0.25	1137	2	8	8250	9T58K0067
230/460/575 Volts	115/95 Volts	0.3	1412	2	12	10225	9T58K0068
230/460/575 Volts	115/95 Volts	0.375	1670	2	12	10225	9T58K0069
230/460/575 Volts	115/95 Volts	0.5	1822	2	12	10225	9T58K0070
230/460/575 Volts	115/95 Volts	0.75	3524	2	19	12300	9T58K0071
230/460/575 Volts	115/95 Volts	1	4392	2	28	14225	9T58K0072
230/460/575 Volts	115/95 Volts	1.5	6753	2	34	14300	9T58K0073
230/460/575 Volts	115/95 Volts	2	11563	2	45	14475	9T58K0074
208/277/380 Volts	115/95 Volts	0.05	217	3	4	6150	9T58K0082
208/277/380 Volts	115/95 Volts	0.075	322	3	4	8100	9T58K0083
208/277/380 Volts	115/95 Volts	0.1	464	3	5	8150	9T58K0084
208/277/380 Volts	115/95 Volts	0.15	761	3	7	8200	9T58K0085
208/277/380 Volts	115/95 Volts	0.2	837	3	7	8200	9T58K0086
208/277/380 Volts	115/95 Volts	0.25	1198	3	8	8250	9T58K0087
208/277/380 Volts	115/95 Volts	0.3	1409	3	12	10225	9T58K0088
208/277/380 Volts	115/95 Volts	0.375	1674	3	12	10225	9T58K0089
208/277/380 Volts	115/95 Volts	0.5	1821	3	12	10225	9T58K0090
208/277/380 Volts	115/95 Volts	0.75	3771	3	19	12300	9T58K0091
208/277/380 Volts	115/95 Volts	1	4234	3	28	14225	9T58K0092
208/277/380 Volts	115/95 Volts	1.5	7091	3	34	14300	9T58K0093
208/277/380 Volts	115/95 Volts	2	11729	3	45	14475	9T58K0094

¹See page 8-68 for wiring diagrams.

Factory- or Field-Installed Options

Secondary Fusing—Factory- or field-installed secondary fuse clips are available. They are restricted to units with terminal strips and a single secondary voltage or secondary with one tap.

Dual Primary and Secondary Fusing—Factory- or field-installed dual primary and secondary fusing is available on all units, including leads out and multiple secondary voltages.

Leads Out—Terminal strip is replaced by rugged primary and secondary leads emanating from the top of the encapsulated coil.



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Options and Fusing Guide

Encapsulated Transformer Options

Accessory Type	Fuse Type	Product Number
Terminal Links (Standard Terminal Blocks)	—	9T58K0000G01
Fuse Blocks Mounted on Top of Transformer	Dual 9/16" x 2" H/K Fuses	9T58K0000G05
Fuse Clips Mounted on Terminals	Single 1/4" x 1 1/4" Glass Fuse	9T58K0000G09 ¹
Fuse Blocks Mounted on Top of Transformer	Single 9/16" x 2" H/K Fuses	9T58K0000G10
Fuse Blocks Mounted on Top of Transformer	Dual 13/32" x 1 1/2" Class CC Fuses with Single 9/16" x 2" H/K Fuse	9T58K0000G18
Fuse Blocks Mounted on Top of Transformer	Single 1/4" x 1 1/4" Glass Fuse	9T58K0000G24
Fuse Blocks Mounted on Top of Transformer	Dual 13/32" x 1 1/2" Class CC Fuses with Single 13/32" x 1 1/2" Midget Fuse	9T58K0000G38
Fuse Blocks Mounted on Top of Transformer	Single 13/32" x 1 1/2" Midget Fuse	9T58K0000G42
Fuse Blocks Mounted on Top of Transformer	Dual 13/32" x 1 1/2" Class CC Fuses with Single 1/4" x 1 1/4" Glass Fuse	9T58K0000G48

¹Terminal Block cover is standard on CE marked designs.

²Use G24 when the transformer is a series multiple or multitapped winding with no open terminals.

Fuse Guide

Midget Class CC Rejection Fuse

Primary Voltage	Encapsulated Transformer Continuous Power Rating (VA)								
	50	75	100	150	200	250	300	375	500
	Fuse Rating (Amperes)								
100	1.50	2.00	3.00	4.00	3.00	4.00	5.00	6.00	8.00
110	1.25	2.00	2.50	4.00	5.00	3.00	4.00	5.00	7.00
120	1.25	1.60	2.50	3.00	5.00	3.00	4.00	5.00	6.00
200	0.75	1.00	1.50	2.00	3.00	3.00	4.00	5.00	4.00
208	0.60	1.00	1.25	2.00	2.50	3.00	4.00	5.00	4.00
220	0.60	1.00	1.25	2.00	2.50	3.00	4.00	5.00	3.00
230	0.60	0.80	1.25	1.60	2.50	3.00	3.00	4.00	3.00
240	0.60	0.80	1.25	1.60	2.50	3.00	3.00	4.00	3.00
277	0.50	0.80	1.00	1.60	2.00	2.50	3.00	4.00	5.00
380	0.30	0.50	0.75	1.00	1.50	1.60	2.00	2.50	3.00
400	0.30	0.50	0.75	1.00	1.50	1.60	2.00	2.50	3.00
416	0.30	0.50	0.60	1.00	1.25	1.60	2.00	2.50	3.00
440	0.30	0.50	0.60	1.00	1.25	1.60	2.00	2.50	3.00
460	0.30	0.40	0.60	0.80	1.25	1.60	1.60	2.00	3.00
480	0.30	0.40	0.60	0.80	1.25	1.50	1.60	2.00	3.00
550	0.25	0.40	0.50	0.80	1.00	1.25	1.60	2.00	2.50
575	0.25	0.30	0.50	0.75	1.00	1.25	1.50	1.60	2.50
600	0.25	0.30	0.50	0.75	1.00	1.25	1.50	1.60	2.50

For motor control circuits fusing, refer to NEC 430-72.

Secondary Fuse Selection

Glass Fuse

Secondary Voltage	Encapsulated Transformer Continuous Power Rating (VA)													
	50	75	100	150	200	250	300	375	500	750	1000	1500	2000	3000
	Fuse Rating (Amperes)													
12	6.00	10.00	12.00	15.00	20.00	25.00	30.00	—	—	—	—	—	—	—
24	3.00	5.00	6.00	10.00	12.00	12.00	15.00	—	25.00	—	—	—	—	—
36	2.00	3.00	4.00	6.00	8.00	10.00	12.00	—	15.00	—	—	—	—	—
48	1.50	2.50	3.00	5.00	6.00	8.00	10.00	12.00	12.00	—	—	—	—	—
95	0.80	1.25	1.60	2.50	3.00	4.00	5.00	6.00	8.00	12.00	15.00	20.00	25.00	—
110	0.75	1.00	1.50	2.00	3.00	3.00	4.00	5.00	7.00	10.00	12.00	20.00	25.00	30.00
115	0.60	1.00	1.25	2.00	2.50	3.00	4.00	5.00	7.00	10.00	12.00	20.00	20.00	30.00
120	0.60	1.00	1.25	2.00	2.50	3.00	4.00	5.00	6.00	10.00	12.00	15.00	20.00	30.00
208	0.40	0.60	0.80	1.00	1.60	2.00	2.00	3.00	4.00	6.00	8.00	12.00	15.00	20.00
220	0.30	0.50	0.75	1.00	1.50	1.60	2.00	2.50	3.00	5.00	7.00	10.00	12.00	20.00
230	0.30	0.50	0.60	1.00	1.25	1.60	2.00	2.50	3.00	5.00	7.00	10.00	12.00	20.00
240	0.30	0.50	0.60	1.00	1.25	1.60	2.00	2.50	3.00	5.00	6.00	10.00	12.00	15.00



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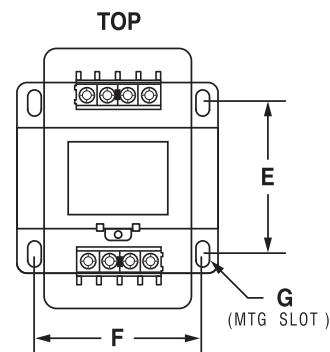
Open Core and Coil Transformers

Outlines and Dimensions

6, 8 and 10 Frame

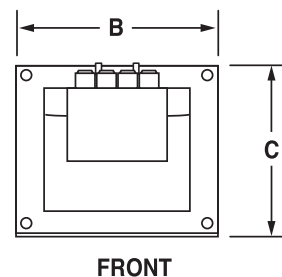
Terminal Board Connection Style

Frame Size	kVA	Approx. Net Weight (Lbs.)	A Depth (in.)	B Width (in.)	C Height (in.)	Mounting Depth E (in.)	Mounting Width F (in.)	Mounting Slot (in.)
6100	0.05	2.6	4	3.06	2.68	2.16	2.5	.219 x .750
6125	0.075	3	4.25	3.06	2.68	2.41	2.5	.219 x .750
8100	0.1	3.9	4.12	3.81	3.28	2.16	3.12	.219 x .750
8150	0.15	5.5	4.62	3.81	3.28	2.66	3.12	.219 x .750
8175	0.2	6.3	4.88	3.81	3.28	2.91	3.12	.219 x .750
8200	0.25	7	5.12	3.81	3.28	3.16	3.12	.219 x .750
8250	0.375	8.3	5.62	3.81	3.28	3.66	3.12	.219 x .750
10225	0.5	11.6	5.75	4.56	3.9	3.38	3.75	.297 x .580
12225	0.75	13	5.81	5.31	4.56	3.38	4	.297 x .580
12300	1	17.5	6.56	5.31	4.56	4.13	4	.297 x .580
14225	1.5	29	6.31	6.81	5.81	3.38	5.5	.297 x .580
14300	2	35.5	7.06	6.81	5.81	4.13	5.5	.297 x .580
14475	3	51.5	8.81	6.81	5.81	5.88	5.5	.297 x .580

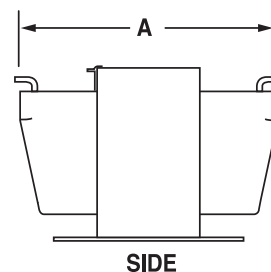
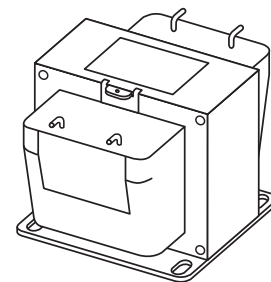


Leads Out Connection Style

Frame Size	kVA	Approx. Net Weight (Lbs.)	A Depth (in.)	B Width (in.)	C Height (in.)	Mounting Depth E (in.)	Mounting Width F (in.)	Mounting Slot (in.)
6100	0.05	2.6	3.25	3.06	2.68	2.16	2.5	.219 x .750
6125	0.075	3	3.5	3.06	2.68	2.41	2.5	.219 x .750
8100	0.1	3.9	3.42	3.81	3.28	2.16	3.12	.219 x .750
8150	0.15	5.5	3.92	3.81	3.28	2.66	3.12	.219 x .750
8175	0.2	6.3	4.18	3.81	3.28	2.91	3.12	.219 x .750
8200	0.25	7	4.42	3.81	3.28	3.16	3.12	.219 x .750
8200	0.3	7	4.42	3.81	3.28	3.16	3.12	.219 x .750
8250	0.375	8.3	4.92	3.81	3.28	3.66	3.12	.219 x .750
10225	0.5	11.6	5.75	4.56	3.9	3.38	3.75	.297 x .580
10225	0.75	13	5.81	5.31	4.56	3.38	4	.297 x .580
12300	1	17.5	6.56	5.31	4.56	4.13	4	.297 x .580
14225	1.5	29	6.31	6.81	5.81	3.38	5.5	.297 x .580
14300	2	35.5	7.06	6.81	5.81	4.13	5.5	.297 x .580
14475	3	51.5	8.81	6.81	5.81	5.88	5.5	.297 x .580



Terminal Board Connection Style



Leads Out Connection Style

