



SECTION 1

INDUSTRIAL CONTROL TRANSFORMERS

PT Series and SL Series Control Transformers

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WHAT IS A CONTROL TRANSFORMER ?

What is a Control Transformer ?

A control transformer is an isolation transformer designed to provide a high degree of secondary voltage stability (regulation) during a brief period of overload condition (also referred to as “*inrush current*”). Control transformers are also known as *Machine Tool Transformers*, *Industrial Control Transformers* or *Control Power Transformers*.

When you calculate the VA requirement of a Transformer, do you use the Primary or the Secondary Voltage ?

When selecting the VA requirement, you use the Secondary Voltage.

Can you use a Control Transformer connected in reverse ?

Yes, a control transformer can be connected in reverse. However, keep in mind the output voltage will be less than its rating, due to the compensation factor of the windings.

Can a Control Transformer regulate the output voltage ?

A control transformer will not regulate the voltage. Output voltage is a function of the coil's turn ratio only, times the input voltage.

What is the benefit of “Vacuum Impregnation” on a Transformer ?

All Hammond Control Transformers are vacuum impregnated with “VT Polyester Resin” and oven cured which seals the surface and eliminates moisture. Impregnating the entire unit provides a strong mechanical bond and offers protection from environmental conditions.

Explain the “VA” or “Volt Ampere Output” Rating?

The VA or volt ampere output rating designates the output which a transformer can deliver for a specified time at its rated secondary voltage and rated frequency, without exceeding its specified temperature rise.

Insulating Materials, what are they made of and what is their purpose?

Hammond Manufacturing utilizes Mylar, Nomex and other high quality insulating materials. Insulation is used to electrically insulate turn to turn windings, layer to layer windings, primary to secondary windings and ground.

What is the effect of “Overload”?

When a transformer is continually overloaded, excessive heat develops and the insulation system will begin to breakdown. As a result, the life expectancy of the transformer is shortened due to the heat exceeding the rating of the insulation system.



CONTROL TRANSFORMER SELECTION

Selecting a Control Transformer requires that you have first hand knowledge of the application for the transformer, and that you understand some basic terms related to the selection process. By using the following information, you will be sure to select the Hammond Control Transformer which best meets your application.

The Hammond PT Series machine tool control transformers are specifically designed for high inrush applications requiring reliable output voltage stability. Designed to meet industrial applications where electromagnetic devices such as relays, solenoids, etc. are used, the Hammond PT series transformers maximize inrush capability and output voltage regulation when electromagnetic devices are initially energized.

To select the proper transformer, three characteristics of the load circuit must first be determined. They are total steady-state (sealed) VA, total inrush VA, and inrush load power factor.

A. The total steady state “sealed” VA is the amount of VA that the transformer must supply to the load circuit for an extended length of time. Simply add the total steady-state VA of all devices in your control circuit. The operating VA data of these components is available from the manufacturers.

B. The total inrush VA is the amount of VA that the transformer must supply for all components in the control circuit which are energized together. Some consideration to the start-up sequence may be required. Inrush VA should be obtained from the device manufacturer.

C. The inrush load power factor is difficult to determine without detailed vector analysis of all the control circuit components. Such information is not generally available. Therefore,

Hammond is recommending that a value of 40% power factor be utilized. Although some other control transformer manufacturers still recommend a power factor of only 20%, Hammond, through recent tests conducted on many popular brands of control devices has determined that the 40% power factor value is more accurate.

Once the above circuit variables have been determined, transformer selection is a six (6) step process.

SIX EASY STEPS

1. Determine what your Primary (supply) and Secondary (output) voltage requirements are, as well as your required frequency (i.e. 60 Hz)

2. Calculate the Total Sealed VA of your circuit. (See Step A)

3. Now calculate the Inrush VA by adding the inrush VA of all components being energized together. Remember to add the sealed VA of all components that do not have inrush VA, (lamps, timers etc.) as they do however present a load to the transformer during maximum inrush. If the inrush for the components in your circuit are not known, assume a 40% Inrush Power Factor.

4. Calculate the Total Inrush VA using one of the two methods:

A. Total Inrush VA = $\sqrt{(VA \text{ sealed})^2 + (VA \text{ inrush})^2}$

OR

B. Total Inrush VA = **VA Sealed + VA Inrush**

Note: method B will result in a slightly larger transformer being selected.

5. If the nominal supply voltage does not fluctuate more than 5%, then reference the 90% secondary voltage column in the Regulation Data Table for the correct VA rating.

If the supply voltage varies upwards of 10%, the 95% secondary voltage column should be used to size the transformer.

Current standards require electromagnetic devices to operate reliably at a minimum of 85% of their rated voltage. However, contact life may be affected with continuous start-ups at that voltage level. Therefore, the minimum 85% secondary voltage column should only be used as a reference.

6. Using the regulation data tables below, select the appropriate VA rated transformer:

- A) with a continuous VA rating that is equal to or greater than the value in Step 3.
- B) with a maximum inrush VA equal to or greater than the value obtained in Step 5.

To determine the correct Hammond Transformer and its Catalog Number, just refer to the tables in this catalog for the voltage ratings, frequency and corresponding VA required.

“PT” TRANSFORMERS
REGULATION DATA TABLE

| Continuous VA Transformer Nameplate Rating | Inrush VA @ 40% Power Factor | | |
|---|------------------------------|-----------------------------|-----------------------------|
| | 85% Secondary Voltage | 90% Secondary Voltage | 95% Secondary Voltage |
| 25 | 160 | 130 | 95 |
| 50 | 270 | 210 | 160 |
| 75 | 435 | 365 | 255 |
| 100 | 655 | 520 | 370 |
| 150 | 1300 | 1010 | 700 |
| 200 | 1975 | 1500 | 1020 |
| 250 | 2680 | 2030 | 1340 |
| 350 | 3665 | 2820 | 1895 |
| 500 | 6300 | 5035 | 3305 |
| 750 | 10555 | 7920 | 5050 |
| 1000 | 15225 | 11160 | 6000 |

It is recommended that a Control Transformer be sized at a 40% Power Factor. Some components in a circuit, such as electromagnetic devices, typically operate at that level due to their inherently lower power factor. Selecting a transformer at 40% Power Factor will more than adequately size the unit for all the various loads in the circuit.

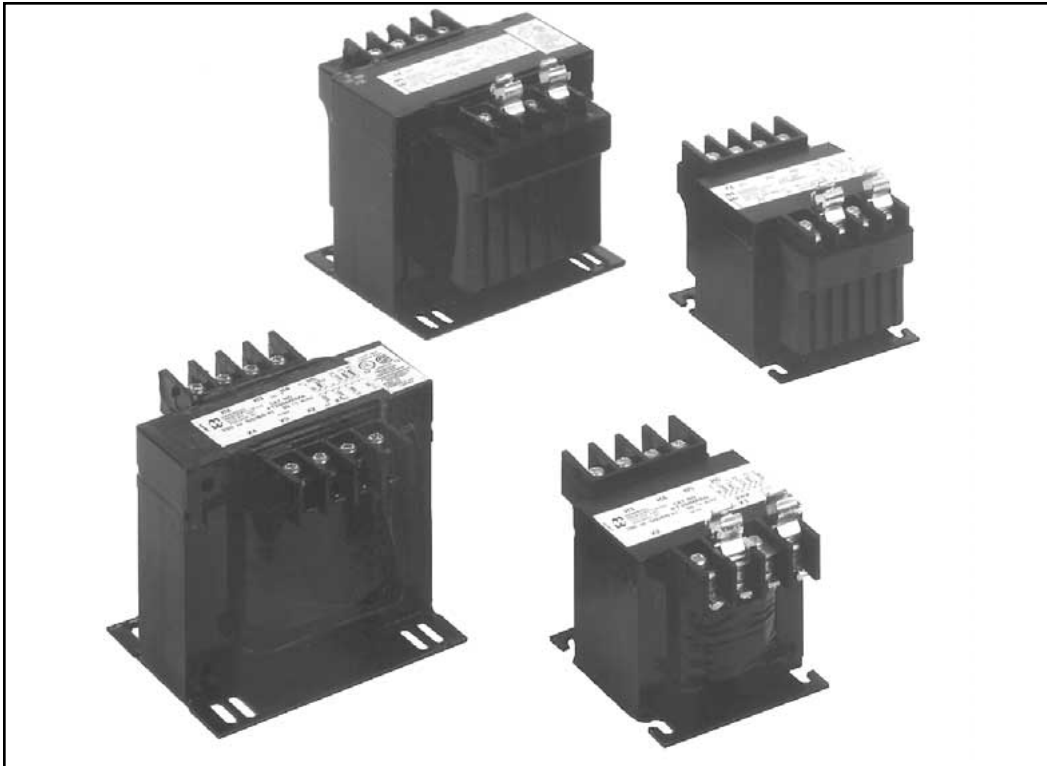


PT Series Control Transformer - Applications



The Hammond "PT" series of machine tool transformers, now 'CE Marked', are specifically designed for high inrush applications requiring reliable output voltage stability. Designed to meet industrial applications where electromagnetic devices such as relays, solenoids, etc. are used, the Hammond "PT" series transformers maximize inrush capability and output voltage regulation when electromagnetic devices are initially energized.

SECTION 1



STANDARDS

Hammond Industrial and Machine Tool Control and Instrument Transformers meet or exceeds the standards established by UL, CSA, IRC, ANSI, NEMA.

| <u>Standard</u> | <u>File #</u> | <u>VA Size</u> |
|--------------------|---------------|-----------------|
| UL (ANSI/UL 506) | E50394 | All PT |
| CSA (C22-2 No. 66) | LR3902 | All PT |
| IEC 989 | | All Molded PT's |
| NEMA (ST-1) | | All PT |

At HAMMOND, we rate the VA capacity of our transformers at the output where it counts. Other transformer manufacturers rate their capacity on the input side of the transformer, which can result in a 5% to 20% lower actual VA at the output.





Features

CORE & COILS

- High quality, high permeability silicon steel laminations.
- All-welded construction.
- Computer designed copper wound coils with optimum turns ratio.

INSULATION

- Mylar, Nomex and other insulating materials are used for phase to phase and layer to layer insulation.
- The “PT” series transformers have the following insulation systems:
 - Up to 200 VA ; class A, 55°C rise, 105°C class.
 - 250 to 1000 VA ; class B, 80°C rise, 150°C class.
 - 1500 VA and up ; class F, 115°C rise, 180°C class.

VACUUM IMPREGNATION

- All Hammond Control Transformers are Vacuum Impregnated with “VT” (vinyl-toluene) Polyester Resin”.
- Oven cured after vacuum impregnating.

MOLDED CONSTRUCTION

- All PT series transformers, up to 1000 VA, are molded in a UL 94 flame retardant polyester compound.
- These units have a thermal plastic, injection molded cover with distinctive cooling fins.

TERMINAL BLOCKS

- Fabricated from molded “high-impact” resin, finished in black.
- Combination Phillips (#2) and Robertson (# 2) Red terminal screws with #9 head, 8-32 UNF threads.
- Terminals are tinned brass and chrome plated, and all connections are soldered.
- Terminals are torque tested with automatic drivers.

NAMEPLATE

- Black letters on white background including terminal markings, schematic and CE mark..
- Polyester, nonconductive material.

MOUNTING PLATE

- Offers an unique Universal Mounting Plate made of heavy steel, welded to the core.

FINGER SAFE TERMINAL COVERS

- Finger safe terminal covers for both fused and unfused terminals, in a clear, see through finish, are available for all molded PT series units.

STANDARD SECONDARY FUSE CLIPS

- Each “PT” series transformer, that has a single secondary, comes with a factory installed secondary fuse kit (fuses not included).

Benefits

CORE & COILS

- Provides optimum performance and reliability.
- Rugged one-piece assembly with low noise.
- Enhanced voltage regulation with excellent thermal characteristics.

INSULATION

- Provides the best insulated control transformer in the industry.
- Insulation materials are of the highest rating available for the temperature class.
- Assures long life and reliable performance.

VACUUM IMPREGNATION

- Impregnating the entire unit provides a strong mechanical bond and offers protection against environmental conditions.
- Seals the surface and eliminates moisture.

MOLDED CONSTRUCTION

- Completes the protection process by sealing the core and coils against moisture, dirt and other airborne contaminants.
- Strong and durable, yet still dissipates heat quickly and efficiently.

TERMINAL BLOCKS

- Easy access to terminals while separation barriers prevent unintentional contact.
- Versatile screw head with optimum torque and retention ability.
- Assures integrity and strength of connections and terminals
- Withstands any manual installation method.

NAMEPLATE

- Ease of readability results in easier installation.
- Safe for other conductors, even in close proximity.

MOUNTING PLATE

- Provides direct interchangeability with many other popular control transformers.

FINGER SAFE TERMINAL COVERS

- This ensures your protection against electric shock or accidental contact of any kind, and complies with IEC and CE requirements.

STANDARD SECONDARY FUSE CLIPS

- Accommodates 13/32” X 1 1/2” Midget Fuse.



SECTION 1 PT SERIES CONTROL TRANSFORMERS



For detailed mounting dimensions by VA size, please refer to diagrams on Page 46.

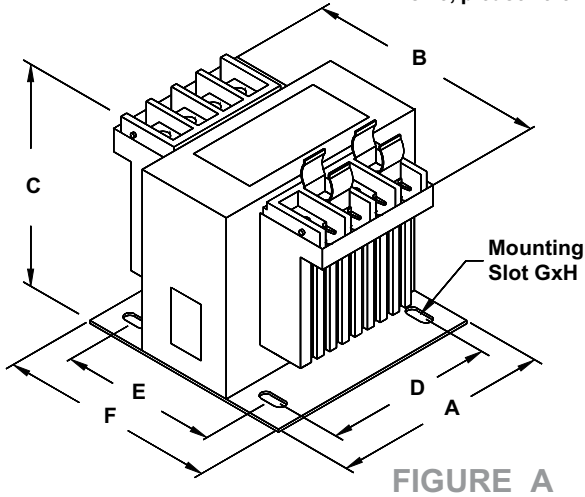


FIGURE A

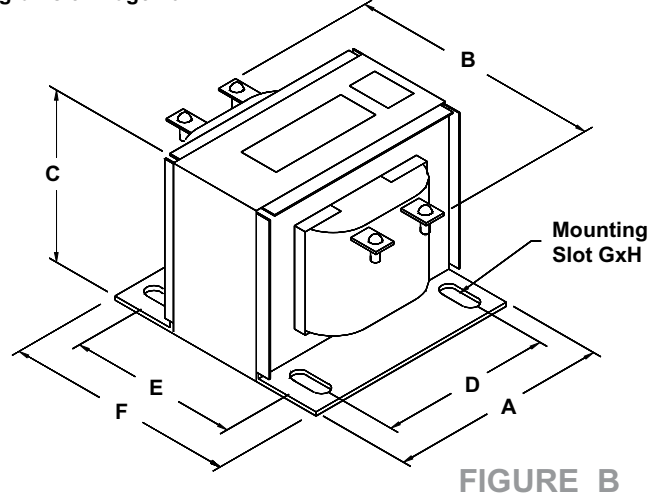


FIGURE B

SECTION 1

Group AA

| | |
|--------------------------|---------------------------|
| Primary Voltage | 240/480, 230/460, 220/440 |
| Secondary Voltage | 120, 115, 110 |

50/60 Hertz

| SCHEMATIC | CONNECTIONS | | |
|---|---------------|-------------------------|-------------------------------|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | 240 | H1, H4 | H1-H3, H2-H4 |
| | 230 | H1, H4 | H1-H3, H2-H4 |
| | 220 | H1, H4 | H1-H3, H2-H4 |
| | 480 | H1, H4 | H3-H2 |
| | 460 | H1, H4 | H3-H2 |
| <th>Sec. Volts</th> <th>Load Lines Connect To</th> <th>Install Jumpers Between Lines</th> | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | 120 | X2, XF | |
| | 115 | X2, XF | |
| 110 | X2, XF | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|-------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25MQMJ | A | 0.22 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PT50MQMJ | A | 0.43 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.41 | .22 X .75 | 3.60 |
| 75 | PT75MQMJ | A | 0.65 | 3.00 | 4.00 | 2.75 | 2.50 | 2.44 | 3.31 | .22 X .50 | 4.35 |
| 100 | PT100MQMJ | A | 0.87 | 3.00 | 4.50 | 2.75 | 2.50 | 2.63 | 3.50 | .22 X .50 | 5.15 |
| 150 | PT150MQMJ | A | 1.30 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 6.15 |
| 200 | PT200MQMJ | A | 1.74 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 7.75 |
| 250 | PT250MQMJ | A | 2.17 | 4.50 | 4.50 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 9.50 |
| 300 | PT300MQMJ | A | 2.61 | 4.50 | 4.75 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 x .75 | 10.75 |
| 350 | PT350MQMJ | A | 3.04 | 5.00 | 5.00 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | .22 X .75 | 11.75 |
| 500 | PT500MQMJ | A | 4.35 | 5.25 | 5.00 | 4.50 | 3.75/4.38 | 4.00 | 5.00 | .31 X .75 | 14.75 |
| 750 | PT750MQMJ | A | 6.52 | 5.63 | 5.88 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | .31 X 1.13 | 21.95 |
| 1000 | PT1000MQMJ | A | 8.70 | 5.63 | 6.88 | 4.50 | 4.38/5.31 | 5.50 | 7.00 | .31 X 1.13 | 28.70 |
| 1500 | PT1500MQMJ | B | 13.04 | 7.00 | 5.75 | 5.50 | 4.50/6.00 | 5.13 | 6.50 | .38 x 1.00 | 33.00 |
| 2000 | PT2000MQMJ | B | 17.39 | 7.00 | 7.50 | 5.50 | 4.50/6.00 | 6.13 | 7.50 | .38 x 1.00 | 41.50 |
| 3000 | PT3000MQMJ | B | 26.09 | 7.50 | 8.88 | 6.38 | 4.50/6.00 | 7.00 | 8.38 | .38 x 1.00 | 71.50 |
| 5000 | PT5000MQMJ | B | 43.48 | 9.00 | 10.00 | 7.63 | 5.25/7.00 | 7.25 | 8.75 | .44 x 1.00 | 106.00 |

Height dimension (C) does not include fuse clip (applicable up to 1000VA Primary jumpers are included. Secondary fuse clips for 13/32" X 1 1/2" fuse included up to 1000VA. Open style units (1500VA to 5000VA) do not carry the CE mark.

The output amps listed above are based on a 115V secondary. All dimensions in inches unless otherwise specified.





Group BB

| | |
|--------------------------|---------------|
| Primary Voltage | 575, 460, 230 |
| Secondary Voltage | 115, 95 |
| 50/60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-------------------|------------------------------|--------------------------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 575 460 230 | H1, H4 H1, H3 H1, H2 | |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 115 95 | X1, X3 X1, X2 | | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|-------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25MBMH | A | 0.22 | 3.00 | 3.50 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PT50MBMH | A | 0.43 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.41 | .22 X .75 | 3.60 |
| 75 | PT75MBMH | A | 0.65 | 3.00 | 4.00 | 2.75 | 2.50 | 2.44 | 3.31 | .22 X .50 | 4.35 |
| 100 | PT100MBMH | A | 0.87 | 3.00 | 4.50 | 2.75 | 2.50 | 2.63 | 3.50 | .22 X .50 | 5.15 |
| 150 | PT150MBMH | A | 1.30 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 6.15 |
| 200 | PT200MBMH | A | 1.74 | 4.50 | 4.00 | 3.85 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 7.75 |
| 250 | PT250MBMH | A | 2.17 | 4.50 | 4.75 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 9.50 |
| 300 | PT300MBMH | A | 2.61 | 4.50 | 4.75 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 x .75 | 10.75 |
| 350 | PT350MBMH | A | 3.04 | 5.00 | 5.50 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | .22 X .75 | 11.75 |
| 500 | PT500MBMH | A | 4.35 | 5.25 | 5.00 | 4.50 | 3.75/4.38 | 4.00 | 5.00 | .31 X .75 | 14.75 |
| 750 | PT750MBMH | A | 6.52 | 5.63 | 6.38 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | .31 X 1.13 | 21.75 |
| 1000 | PT1000MBMH | A | 8.70 | 6.00 | 6.88 | 5.07 | 4.38/5.31 | 5.50 | 7.00 | .31 X 1.13 | 28.95 |
| 1500 | PT1500MBMH | B | 13.05 | 7.00 | 6.25 | 5.50 | 4.50/6.00 | 5.13 | 6.50 | .38 x 1.00 | 33.00 |
| 2000 | PT2000MBMH | B | 17.39 | 7.00 | 7.50 | 5.50 | 4.50/6.00 | 6.13 | 7.50 | .38 x 1.00 | 41.50 |
| 3000 | PT3000MBMH | B | 26.09 | 7.50 | 9.25 | 6.38 | 4.50/6.00 | 7.00 | 8.38 | .38 x 1.00 | 73.50 |
| 5000 | PT5000MBMH | B | 43.48 | 9.00 | 10.25 | 7.63 | 5.25/7.00 | 7.25 | 8.75 | .44 x 1.00 | 111.00 |

Primary jumpers and Secondary fuse clips are not applicable. Secondary jumpers are included. Open style units (1500VA to 5000VA) do not carry the CE mark.

The output amps listed above are based on a 115V secondary. All dimensions in inches unless otherwise specified.

Group CC

| | |
|--------------------------|---------|
| Primary Voltage | 240/480 |
| Secondary Voltage | 24 |
| 50/60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-------------------|------------------------------|--------------------------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 480 240 | H1, H4 H1, H4 | H2-H3 H1-H3, H2-H4 |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 24 | X2, XF | | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25QG | A | 1.04 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PT50QG | A | 2.08 | 3.00 | 3.75 | 2.75 | 2.50 | 2.25 | 3.41 | .22 X .75 | 3.60 |
| 75 | PT75QG | A | 3.13 | 3.00 | 4.00 | 2.75 | 2.50 | 2.44 | 3.31 | .22 X .50 | 4.35 |
| 100 | PT100QG | A | 4.17 | 3.00 | 4.50 | 2.75 | 2.50 | 2.63 | 3.50 | .22 X .50 | 5.15 |
| 150 | PT150QG | A | 6.25 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 6.15 |
| 200 | PT200QG | A | 8.33 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 7.75 |
| 250 | PT250QG | A | 10.40 | 4.50 | 4.50 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 9.50 |
| 300 | PT300QG | A | 12.50 | 4.50 | 4.75 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 x .75 | 10.75 |
| 350 | PT350QG | A | 14.60 | 5.00 | 5.00 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | .22 X .75 | 11.75 |
| 500 | PT500QG | A | 20.80 | 5.25 | 5.00 | 4.50 | 3.75/4.38 | 4.00 | 5.00 | .31 X .75 | 14.75 |
| 750 | PT750QG | A | 31.30 | 5.63 | 5.88 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | .31 X 1.13 | 21.95 |

Height dimension (C) does not include secondary fuse clip. Primary jumpers and Secondary fuse clips for 13/32" X 1 1/2" fuse are included.

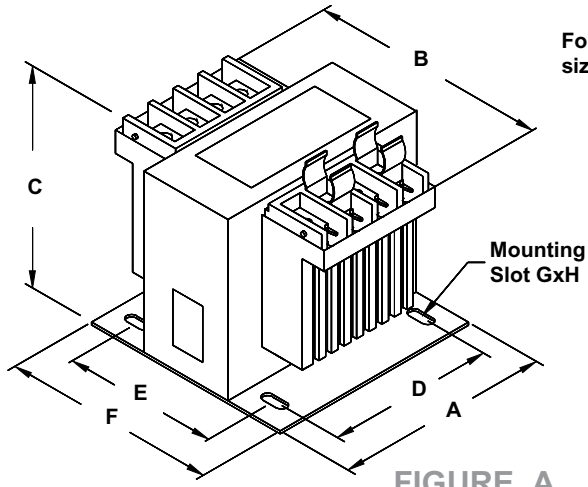
All dimensions in inches unless otherwise specified.

SECTION 1

SECTION 1 PT SERIES CONTROL TRANSFORMERS



SECTION 1

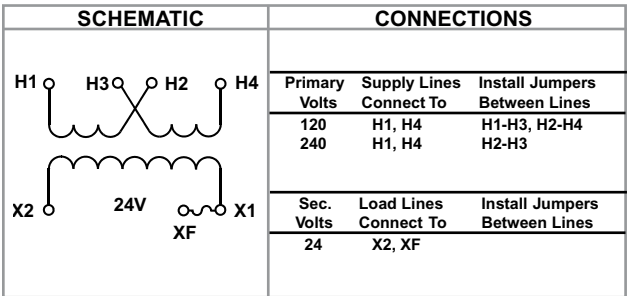


For detailed mounting dimensions by VA size, please refer to diagrams on Page 46.

FIGURE A

Group DD

| | |
|--------------------------|---------|
| Primary Voltage | 120/240 |
| Secondary Voltage | 24 |
| 50/60 Hertz | |



| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25PG | A | 1.04 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PT50PG | A | 2.08 | 3.00 | 3.75 | 2.75 | 2.50 | 2.25 | 3.41 | .22 X .75 | 3.60 |
| 75 | PT75PG | A | 3.13 | 3.00 | 4.00 | 2.75 | 2.50 | 2.44 | 3.31 | .22 X .50 | 4.35 |
| 100 | PT100PG | A | 4.17 | 3.00 | 4.50 | 2.75 | 2.50 | 2.63 | 3.50 | .22 X .50 | 5.15 |
| 150 | PT150PG | A | 6.25 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 6.15 |
| 200 | PT200PG | A | 8.33 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 7.75 |
| 250 | PT250PG | A | 10.40 | 4.50 | 4.50 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 9.50 |
| 300 | PT300PG | A | 12.50 | 4.50 | 4.75 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 x .75 | 10.75 |
| 350 | PT350PG | A | 14.60 | 5.00 | 5.00 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | .22 X .75 | 11.75 |
| 500 | PT500PG | A | 20.80 | 5.25 | 5.00 | 4.50 | 3.75/4.38 | 4.00 | 5.00 | .31 X .75 | 14.75 |
| 750 | PT750PG | A | 31.30 | 5.63 | 5.88 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | .31 X 1.13 | 21.95 |

Height dimension (C) does not include secondary fuse clip.
 Primary jumpers and Secondary fuse clips for 13/32" X 1 1/2" fuse are included.
 All dimensions in inches unless otherwise specified.

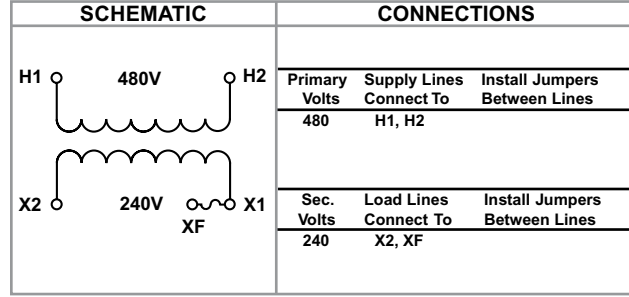
SECTION 1 PT SERIES CONTROL TRANSFORMERS



SECTION 1

Group EE

| | |
|--------------------------|-----|
| Primary Voltage | 480 |
| Secondary Voltage | 240 |
| 50/60 Hertz | |



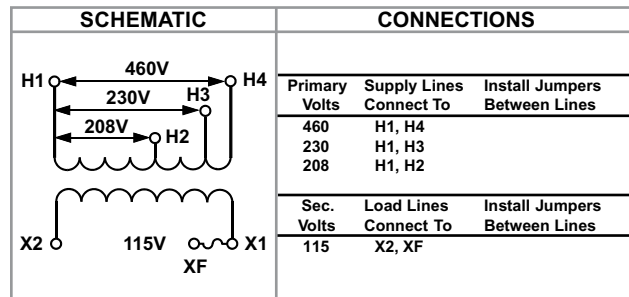
| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25CM | A | 0.10 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PT50CM | A | 0.21 | 3.00 | 3.75 | 2.75 | 2.50 | 2.25 | 3.41 | .22 X .75 | 3.60 |
| 75 | PT75CM | A | 0.31 | 3.00 | 4.00 | 2.75 | 2.50 | 2.44 | 3.31 | .22 X .50 | 4.35 |
| 100 | PT100CM | A | 0.42 | 3.00 | 4.50 | 2.75 | 2.50 | 2.63 | 3.50 | .22 X .50 | 5.15 |
| 150 | PT150CM | A | 0.63 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 6.15 |
| 200 | PT200CM | A | 0.83 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 7.75 |
| 250 | PT250CM | A | 1.04 | 4.50 | 5.00 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 9.50 |
| 350 | PT350CM | A | 1.46 | 5.00 | 5.00 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | .22 X .75 | 11.75 |
| 500 | PT500CM | A | 2.08 | 5.25 | 5.00 | 3.85 | 3.75/4.38 | 4.00 | 5.00 | .31 X .75 | 14.75 |
| 750 | PT750CM | A | 3.13 | 5.63 | 5.88 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | .31 X 1.13 | 21.75 |
| 1000 | PT1000CM | A | 4.17 | 5.63 | 6.38 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | .31 X 1.13 | 29.95 |

Height dimension (C) does not include secondary fuse clip.
Secondary fuse clips for 13/32" X 1 1/2" fuse are included. Primary jumpers not applicable.

All dimensions in inches unless otherwise specified.

Group FF

| | |
|--------------------------|---------------|
| Primary Voltage | 460, 230, 208 |
| Secondary Voltage | 115 |
| 50/60 Hertz | |



| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25MLI | A | 0.22 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PT50MLI | A | 0.43 | 3.00 | 3.75 | 2.75 | 2.50 | 2.25 | 3.41 | .22 X .75 | 3.60 |
| 75 | PT75MLI | A | 0.65 | 3.00 | 4.00 | 2.75 | 2.50 | 2.44 | 3.31 | .22 X .50 | 4.35 |
| 100 | PT100MLI | A | 0.87 | 3.00 | 4.50 | 2.75 | 2.50 | 2.63 | 3.50 | .22 X .50 | 5.15 |
| 150 | PT150MLI | A | 1.30 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 6.15 |
| 200 | PT200MLI | A | 1.74 | 4.50 | 4.00 | 3.85 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 7.75 |
| 250 | PT250MLI | A | 2.17 | 4.50 | 4.75 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 9.50 |
| 300 | PT300MLI | A | 2.61 | 4.50 | 4.75 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 10.75 |
| 350 | PT350MLI | A | 3.04 | 5.00 | 5.00 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | .22 X .75 | 11.75 |
| 500 | PT500MLI | A | 4.35 | 5.25 | 5.00 | 4.50 | 3.75/4.38 | 4.00 | 5.00 | .31 X .75 | 14.75 |
| 750 | PT750MLI | A | 6.52 | 5.63 | 6.38 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | .31 X 1.13 | 21.75 |
| 1000 | PT1000MLI | A | 8.70 | 6.00 | 6.38 | 5.07 | 4.38/5.31 | 5.00 | 6.50 | .31 X 1.13 | 28.95 |

Height dimension (C) does not include secondary fuse clip.
Secondary fuse clips for 13/32" X 1 1/2" fuse are included. Primary jumpers not applicable.

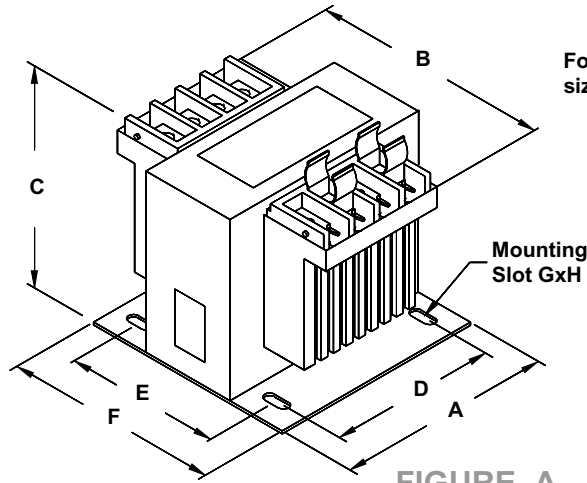
All dimensions in inches unless otherwise specified.



SECTION 1 PT SERIES CONTROL TRANSFORMERS



SECTION 1



For detailed mounting dimensions by VA size, please refer to diagrams on Page 46.

FIGURE A

Group GG

| | |
|--------------------------|---------------|
| Primary Voltage | 600, 575, 550 |
| Secondary Voltage | 120, 115, 110 |
| 50/60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|------|---------------|-------------------------|-------------------------------|
| | 600V | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | 575V | 600 | H1, H2 | |
| | 550V | 575 | H1, H2 | |
| | 120V | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | 115V | 120 | X2, XF | |
| | 110V | 115 | X2, XF | |
| | XF | 110 | X2, XF | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25MAMJ | A | 0.22 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.25 |
| 50 | PT50MAMJ | A | 0.43 | 3.00 | 3.75 | 2.75 | 2.50 | 2.25 | 3.41 | .22 X .75 | 3.50 |
| 75 | PT75MAMJ | A | 0.65 | 3.00 | 4.00 | 2.75 | 2.50 | 2.44 | 3.31 | .22 X .50 | 4.25 |
| 100 | PT100MAMJ | A | 0.87 | 3.00 | 4.50 | 2.75 | 2.50 | 2.63 | 3.50 | .22 X .50 | 5.00 |
| 150 | PT150MAMJ | A | 1.30 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 6.00 |
| 200 | PT200MAMJ | A | 1.74 | 4.50 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 7.50 |
| 250 | PT250MAMJ | A | 2.17 | 4.50 | 4.50 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 9.25 |
| 300 | PT300MAMJ | A | 2.61 | 4.50 | 4.75 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 x .75 | 10.50 |
| 350 | PT350MAMJ | A | 3.04 | 5.00 | 5.00 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | .22 X .75 | 11.50 |
| 500 | PT500MAMJ | A | 4.35 | 5.25 | 5.00 | 4.50 | 3.75/4.38 | 4.00 | 5.00 | .31 X .75 | 14.50 |
| 750 | PT750MAMJ | A | 6.52 | 5.63 | 5.88 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | .31 X 1.13 | 21.50 |
| 1000 | PT1000MAMJ | A | 8.70 | 5.63 | 6.38 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | .31 X 1.13 | 29.50 |

Height dimension (C) does not include secondary fuse clip. Secondary fuse clips for 13/32" X 1 1/2" fuse are included. Primary jumpers not applicable.

The output amps listed above are based on a 115V secondary. All dimensions in inches unless otherwise specified.

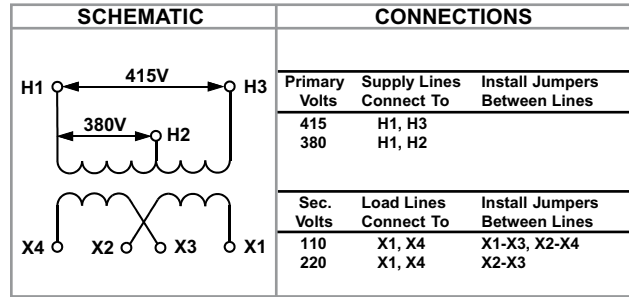




Group HH

| | |
|--------------------------|----------|
| Primary Voltage | 415, 380 |
| Secondary Voltage | 110/220 |

50/60 Hertz



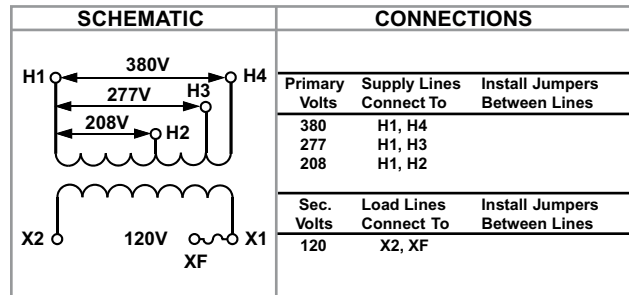
| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25MDMX | A | 0.23/0.11 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PT50MDMX | A | 0.45/0.23 | 3.00 | 3.75 | 2.75 | 2.50 | 2.25 | 3.41 | .22 X .75 | 3.60 |
| 75 | PT75MDMX | A | 0.68/0.34 | 3.00 | 4.00 | 2.75 | 2.50 | 2.44 | 3.31 | .22 X .50 | 4.35 |
| 100 | PT100MDMX | A | 0.91/0.45 | 3.00 | 4.50 | 2.75 | 2.50 | 2.63 | 3.50 | .22 X .50 | 5.15 |
| 150 | PT150MDMX | A | 1.36/0.68 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 6.15 |
| 200 | PT200MDMX | A | 1.82/0.91 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 7.75 |
| 250 | PT250MDMX | A | 2.27/1.14 | 4.50 | 4.50 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 9.50 |
| 350 | PT350MDMX | A | 3.18/1.59 | 5.00 | 5.00 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | .22 X .75 | 11.75 |
| 500 | PT500MDMX | A | 4.55/2.27 | 5.25 | 5.00 | 3.85 | 3.75/4.38 | 4.00 | 5.00 | .31 X .75 | 14.75 |
| 750 | PT750MDMX | A | 6.82/3.41 | 5.63 | 5.88 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | .31 X 1.13 | 21.74 |
| 1000 | PT1000MDMX | A | 9.09/4.55 | 5.63 | 6.88 | 4.50 | 4.38/5.31 | 5.50 | 7.00 | .31 X 1.13 | 28.95 |

Secondary jumpers are included. Primary jumpers and secondary fuse clips are not applicable. All dimensions in inches unless otherwise specified.

Group II

| | |
|--------------------------|---------------|
| Primary Voltage | 380, 277, 208 |
| Secondary Voltage | 120 |

50/60 Hertz



| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25MGJ | A | 0.21 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PT50MGJ | A | 0.42 | 3.00 | 3.75 | 2.75 | 2.50 | 2.25 | 3.41 | .22 X .75 | 3.60 |
| 75 | PT75MGJ | A | 0.63 | 3.00 | 4.00 | 2.75 | 2.50 | 2.44 | 3.31 | .22 X .50 | 4.35 |
| 100 | PT100MGJ | A | 0.83 | 3.00 | 4.00 | 2.75 | 2.50 | 2.63 | 3.50 | .22 X .50 | 5.15 |
| 150 | PT150MGJ | A | 1.25 | 4.25 | 4.50 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 6.15 |
| 200 | PT200MGJ | A | 1.67 | 4.50 | 4.00 | 3.85 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 7.75 |
| 250 | PT250MGJ | A | 2.08 | 4.50 | 4.00 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 9.50 |
| 300 | PT300MGJ | A | 2.50 | 4.50 | 4.75 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 10.75 |
| 350 | PT350MGJ | A | 2.92 | 5.00 | 4.75 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | .22 X .75 | 11.75 |
| 500 | PT500MGJ | A | 4.17 | 5.25 | 5.00 | 4.50 | 3.75/4.38 | 4.00 | 5.00 | .31 X .75 | 14.75 |
| 750 | PT750MGJ | A | 6.25 | 5.63 | 5.00 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | .31 X 1.13 | 21.75 |
| 1000 | PT1000MGJ | A | 8.33 | 5.63 | 6.38 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | .31 X 1.13 | 28.95 |

Height dimension (C) does not include secondary fuse clip. All dimensions in inches unless otherwise specified. Secondary fuse clips for 13/32" X 1 1/2" fuse are included. Primary jumpers not applicable.



SECTION 1 PT SERIES CONTROL TRANSFORMERS

SECTION 1

For detailed mounting dimensions by VA size, please refer to diagrams on Page 46.

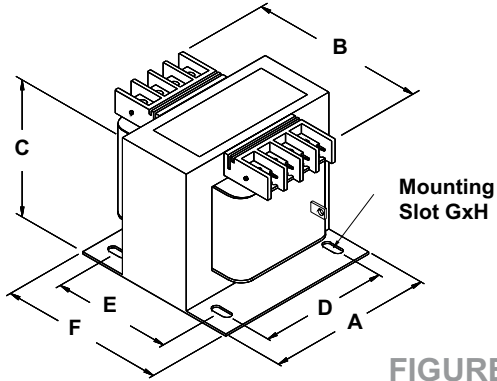


FIGURE C

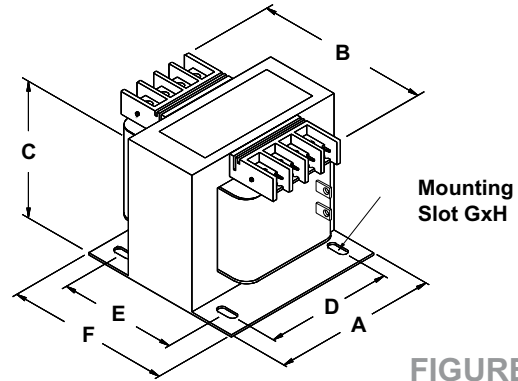


FIGURE D

Group JJ (Universal, Open Style Transformer)

| | |
|--------------------------|--------------------|
| Primary Voltage | 600, 480, 416, 240 |
| Secondary Voltage | 130, 120, 99 |
| 50/60 Hertz | |

| SCHEMATIC | | CONNECTIONS | |
|---|---------------|-------------------------|-------------------------------|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | 600 | H1, H5 | |
| | 480 | H1, H4 | |
| | 416 | H1, H3 | |
| 240 | H1, H2 | | |
| <td>Sec. Volts</td> <td>Load Lines Connect To</td> <td>Install Jumpers Between Lines</td> | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | 130 | X1, X4 | |
| | 120 | X1, X3 | |
| 99 | X1, X2 | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | | Mtg. Slot | Shipping |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-----------|----------|
| | | | | "A" | "B" | "C" | "D" | "E" | "F" | "G X H" | Wt/Lbs |
| 50 | PT50MRMA | C | 0.42 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.41 | .22 X .44 | 3.98 |
| 75 | PT75MRMA | C | 0.63 | 3.00 | 4.25 | 2.75 | 2.50 | 2.44 | 3.31 | .22 X .50 | 4.82 |
| 100 | PT100MRMA | C | 0.83 | 3.00 | 4.25 | 2.75 | 2.50 | 2.63 | 3.50 | .22 X .50 | 5.36 |
| 150 | PT150MRMA | C | 1.25 | 4.25 | 3.75 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 6.38 |
| 200 | PT200MRMA | C | 1.67 | 4.50 | 4.50 | 3.85 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 8.20 |
| 250 | PT250MRMA | C | 2.08 | 4.50 | 4.75 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 9.90 |
| 350 | PT350MRMA | C | 2.92 | 5.00 | 5.50 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | .22 X .75 | 12.33 |
| 500 | PT500MRMA | C | 4.17 | 5.25 | 5.75 | 4.50 | 3.75/4.38 | 4.00 | 5.00 | .31 X .75 | 16.23 |

Primary and Secondary jumpers, and Secondary fuse clips are not applicable. Group JJ open style units from (50VA to 500VA) do not carry the CE mark.

The output amps listed above are based on a 120V secondary. All dimensions in inches unless otherwise specified.

Group KK (Universal, Open Style Transformer)

| | |
|--------------------------|-------------------------|
| Primary Voltage | 480, 380, 277, 240, 208 |
| Secondary Voltage | 24 |
| 50/60 Hertz | |

| SCHEMATIC | | CONNECTIONS | |
|---|---------------|-------------------------|-------------------------------|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | 480 | H1, H6 | |
| | 380 | H1, H5 | |
| | 277 | H1, H4 | |
| | 240 | H1, H3 | |
| 208 | H1, H2 | | |
| <td>Sec. Volts</td> <td>Load Lines Connect To</td> <td>Install Jumpers Between Lines</td> | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| 24 | X2, XF | | |

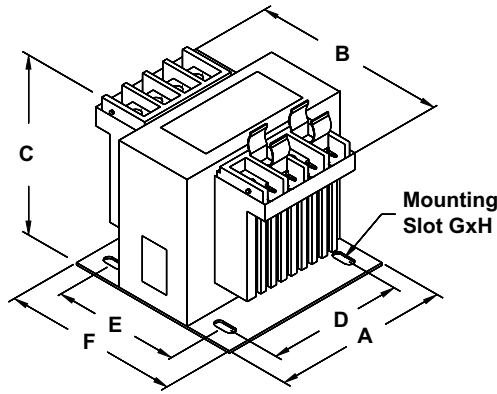
| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | | Mtg. Slot | Shipping |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-----------|----------|
| | | | | "A" | "B" | "C" | "D" | "E" | "F" | "G X H" | Wt/Lbs |
| 50 | PT50MSG | D | 2.08 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.41 | .22 X .44 | 3.98 |
| 75 | PT75MSG | D | 3.13 | 3.00 | 4.25 | 2.75 | 2.50 | 2.44 | 3.31 | .22 X .50 | 4.82 |
| 100 | PT100MSG | D | 4.17 | 3.00 | 4.25 | 2.75 | 2.50 | 2.63 | 3.50 | .22 X .50 | 5.36 |
| 150 | PT150MSG | D | 6.25 | 4.25 | 3.75 | 3.25 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 6.38 |
| 200 | PT200MSG | D | 8.33 | 4.50 | 4.50 | 3.85 | 3.13/3.75 | 2.75 | 3.63 | .22 X .75 | 8.20 |
| 250 | PT250MSG | D | 10.42 | 4.50 | 4.75 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 9.90 |
| 350 | PT350MSG | D | 14.58 | 5.00 | 5.50 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | .22 X .75 | 12.33 |
| 500 | PT500MSG | D | 20.83 | 5.25 | 5.75 | 4.50 | 3.75/4.38 | 4.00 | 5.00 | .31 X .75 | 16.23 |

Height dimension (C) does not include secondary fuse clip. Secondary fuse clips for 13/32" X 1 1/2" fuse are included. Primary jumpers not applicable. Group KK open style units (50VA to 500VA) do not carry the CE mark.

All dimensions in inches unless otherwise specified.



SECTION 1 PT SERIES CONTROL TRANSFORMERS



For detailed mounting dimensions by VA size, please refer to diagrams on Page 46.

FIGURE A

SECTION 1

Group LL

Primary Voltage 240/480

Secondary Voltage 12/24

50/60 Hertz

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 480 | H1, H4 | H2-H3 |
| | | 240 | H1, H4 | H1-H3, H2-H4 |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 12 | X1, X4 | X1-X3, X2-X4 |
| | | 24 | X1, X4 | X2-X3 |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25QR | A | 2.08/1.04 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PT50QR | A | 4.17/2.08 | 3.00 | 3.75 | 2.75 | 2.50 | 2.25 | 3.41 | .22 X .75 | 3.60 |
| 75 | PT75QR | A | 6.25/3.13 | 3.00 | 4.00 | 2.75 | 2.50 | 2.44 | 3.31 | .22 X .50 | 4.35 |
| 100 | PT100QR | A | 8.33/4.17 | 3.00 | 4.50 | 2.75 | 2.50 | 2.63 | 3.50 | .22 X .50 | 5.15 |
| 150 | PT150QR | A | 12.5/6.25 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.63 | 3.63 | .22 X .75 | 6.15 |
| 200 | PT200QR | A | 16.7/8.33 | 4.25 | 4.00 | 3.25 | 3.13/3.75 | 2.63 | 3.63 | .22 X .75 | 7.75 |
| 250 | PT250QR | A | 20.8/10.4 | 4.50 | 4.50 | 3.85 | 3.13/3.75 | 3.00 | 4.00 | .22 X .75 | 9.50 |

Primary and Secondary jumpers are included. Secondary fuse clips are not applicable.

All dimensions in inches unless otherwise specified.

Group MM

Primary Voltage 415, 400, 380

Secondary Voltage 110/220

50/60 Hertz

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 415V | H1, H4 | |
| | | 400V | H1, H3 | |
| | | 380V | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 110V | X1, X4 | X1-X3, X2-X4 |
| | | 220V | X1, X4 | X2-X3 |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25MEMX | A | 1.04/0.22 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | 0.22 x 0.44 | 2.35 |
| 50 | PT50MEMX | A | 2.08/0.43 | 3.00 | 3.75 | 2.75 | 2.50 | 2.25 | 3.41 | 0.22 x 0.75 | 3.60 |
| 75 | PT75MEMX | A | 3.13/0.65 | 3.00 | 4.00 | 2.75 | 2.50 | 2.44 | 3.31 | 0.22 x 0.50 | 4.35 |
| 100 | PT100MEMX | A | 4.17/0.87 | 3.00 | 4.50 | 2.75 | 2.50 | 2.63 | 3.50 | 0.22 x 0.50 | 5.15 |
| 150 | PT150MEMX | A | 6.25/1.30 | 4.25 | 4.13 | 3.25 | 3.13/3.75 | 2.75 | 3.75 | 0.22 x 0.75 | 6.15 |
| 200 | PT200MEMX | A | 8.33/1.74 | 4.25 | 4.13 | 3.25 | 3.13/3.75 | 2.75 | 3.75 | 0.22 x 0.75 | 7.75 |
| 250 | PT250MEMX | A | 10.42/2.17 | 4.50 | 4.88 | 3.85 | 3.12/3.75 | 3.00 | 4.00 | 0.22 x 0.75 | 9.50 |
| 350 | PT350MEMX | A | 14.58/3.04 | 4.88 | 5.38 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | 0.22 x 0.75 | 11.75 |
| 500 | PT500MEMX | A | 20.83/4.35 | 5.25 | 5.00 | 3.85 | 3.75/4.38 | 4.00 | 5.00 | 0.22 x 0.75 | 14.75 |
| 750 | PT750MEMX | A | 31.25/6.52 | 6.00 | 6.00 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | 0.31 x 1.13 | 21.74 |
| 1000 | PT1000MEMX | A | 41.67/8.70 | 6.00 | 7.00 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | 0.31 x 1.13 | 28.95 |

Primary jumpers and Secondary fuse clips are not applicable. Secondary jumpers are included.

All dimensions are inches unless otherwise specified.

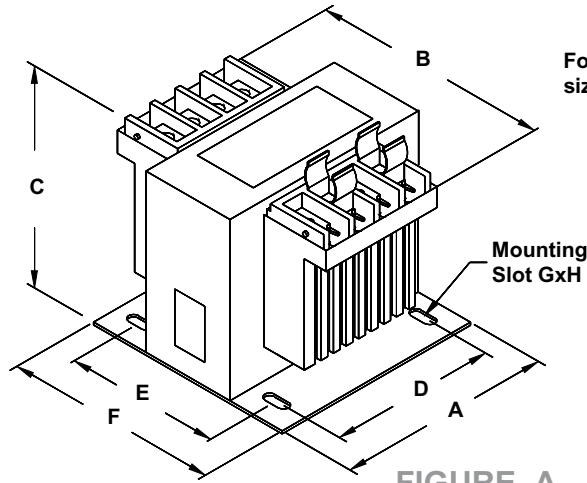
*Hammond does not offer European style metric fuse clips.



SECTION 1 PT SERIES CONTROL TRANSFORMERS



SECTION 1



For detailed mounting dimensions by VA size, please refer to diagrams on Page 46.

FIGURE A

Group NN

| | |
|--------------------------|--------------------|
| Primary Voltage | 460, 230, 208, 200 |
| Secondary Voltage | 24, 115 |
| 50/60 Hertz | |

| SCHEMATIC | | CONNECTIONS | |
|------------|-----------------------|-------------------------------|-------------------------------|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | 460V | H1, H4 | |
| | 230V | H1, H3 | |
| | 208V | H1, H2 | |
| 200V | H1, H2 | | |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| 115V | X1, X3 | | |
| 24 | X1, X2 | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25MHMC | A | 1.04/0.21 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | 0.22 x 0.44 | 3.60 |
| 50 | PT50MHMC | A | 2.08/0.42 | 3.00 | 3.50 | 2.75 | 2.50 | 2.25 | 3.41 | 0.22 x 0.75 | 4.35 |
| 75 | PT75MHMC | A | 3.13/0.63 | 3.00 | 4.50 | 2.75 | 2.50 | 2.88 | 3.75 | 0.22 x 0.50 | 5.15 |
| 100 | PT100MHMC | A | 4.17/0.83 | 3.75 | 4.13 | 3.25 | 3.12 | 2.75 | 3.50 | 0.22 x 0.56 | 5.61 |
| 150 | PT150MHMC | A | 6.25/1.25 | 4.50 | 4.38 | 3.85 | 3.12/3.75 | 2.63 | 3.63 | 0.22 x 0.75 | 6.15 |
| 200 | PT200MHMC | A | 8.33/1.67 | 4.50 | 4.88 | 3.85 | 3.12/3.75 | 2.63 | 3.63 | 0.22 x 0.75 | 7.75 |
| 250 | PT250MHMC | A | 10.42/2.08 | 4.50 | 5.38 | 3.85 | 3.12/3.75 | 3.00 | 4.00 | 0.22 x 0.75 | 9.40 |
| 350 | PT350MHMC | A | 14.58/2.92 | 4.88 | 5.88 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | 0.22 x 0.75 | 11.75 |
| 500 | PT500MHMC | A | 20.83/4.17 | 5.50 | 5.00 | 3.85 | 3.75/4.38 | 4.00 | 5.00 | 0.22 x 0.75 | 14.75 |

Height dimension (C) does not include secondary fuse clip.
 Secondary fuse clips for 13/32" x 1 1/2" fuse included. Primary jumpers not applicable.

All dimensions are inches unless otherwise specified.
 *Hammond does not offer European style metric fuse clips.





Group OO

| | |
|--------------------------|---------------|
| Primary Voltage | 380, 277, 208 |
| Secondary Voltage | 24, 120 |
| 50/60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 380V 277V 208V | H1, H4 H1, H3 H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120V 24V | X1, X3 X1, X2 | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25MGMD | A | 1.04/0.21 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | 0.22 x 0.44 | 3.60 |
| 50 | PT50MGMD | A | 2.08/0.42 | 3.00 | 4.00 | 2.75 | 2.50 | 2.25 | 3.41 | 0.22 x 0.75 | 4.35 |
| 75 | PT75MGMD | A | 3.13/0.63 | 3.00 | 4.50 | 2.75 | 2.50 | 2.88 | 3.75 | 0.22 x 0.50 | 5.15 |
| 100 | PT100MGMD | A | 4.17/0.83 | 3.75 | 4.13 | 3.25 | 3.12 | 2.75 | 3.50 | 0.22 x 0.56 | 5.61 |
| 150 | PT150MGMD | A | 6.25/1.25 | 4.50 | 4.38 | 3.85 | 3.12/3.75 | 2.63 | 3.63 | 0.22 x 0.75 | 6.15 |
| 200 | PT200MGMD | A | 8.33/1.67 | 4.50 | 4.88 | 3.85 | 3.12/3.75 | 2.63 | 3.63 | 0.22 x 0.75 | 7.75 |
| 250 | PT250MGMD | A | 10.42/2.08 | 4.50 | 5.38 | 3.85 | 3.12/3.75 | 3.00 | 4.00 | 0.22 x 0.75 | 9.40 |
| 350 | PT350MGMD | A | 14.58/2.92 | 4.88 | 5.88 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | 0.22 x 0.75 | 11.75 |
| 500 | PT500MGMD | A | 20.83/4.17 | 5.50 | 5.00 | 3.85 | 3.75/4.38 | 4.00 | 5.00 | 0.22 x 0.75 | 14.75 |

Height dimension (C) does not include secondary fuse clip.
Secondary fuse clips for 13/32" x 1 1/2" fuse included. Primary jumpers not applicable.

All dimensions are inches unless otherwise specified.
*Hammond does not offer European style metric fuse clips.

Group PP

| | |
|--------------------------|---------------|
| Primary Voltage | 415, 400, 240 |
| Secondary Voltage | 24, 120 |
| 50/60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 415V 400V 240V | H1, H4 H1, H3 H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120V 24 | X1, X3 X1, X2 | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25MCMD | A | 1.04/0.21 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | 0.22 x 0.44 | 3.60 |
| 50 | PT50MCMD | A | 2.08/0.42 | 3.00 | 4.00 | 2.75 | 2.50 | 2.25 | 3.41 | 0.22 x 0.75 | 4.35 |
| 75 | PT75MCMD | A | 3.13/0.63 | 3.00 | 4.50 | 2.75 | 2.50 | 2.88 | 3.75 | 0.22 x 0.50 | 5.15 |
| 100 | PT100MCMD | A | 4.17/0.83 | 3.75 | 4.13 | 3.25 | 3.12 | 2.75 | 3.50 | 0.22 x 0.56 | 5.61 |
| 150 | PT150MCMD | A | 6.25/1.25 | 4.50 | 4.38 | 3.85 | 3.12/3.75 | 2.63 | 3.63 | 0.22 x 0.75 | 6.15 |
| 200 | PT200MCMD | A | 8.33/1.67 | 4.50 | 4.88 | 3.85 | 3.12/3.75 | 2.63 | 3.63 | 0.22 x 0.75 | 7.75 |
| 250 | PT250MCMD | A | 10.42/2.08 | 4.50 | 5.38 | 3.85 | 3.12/3.75 | 3.00 | 4.00 | 0.22 x 0.75 | 9.40 |
| 350 | PT350MCMD | A | 14.58/2.92 | 4.88 | 5.88 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | 0.22 x 0.75 | 11.75 |
| 500 | PT500MCMD | A | 20.83/4.17 | 5.50 | 5.00 | 3.85 | 3.75/4.38 | 4.00 | 5.00 | 0.22 x 0.75 | 14.75 |

Height dimension (C) does not include secondary fuse clip.
Secondary fuse clips for 13/32" x 1 1/2" fuse included. Primary jumpers not applicable.

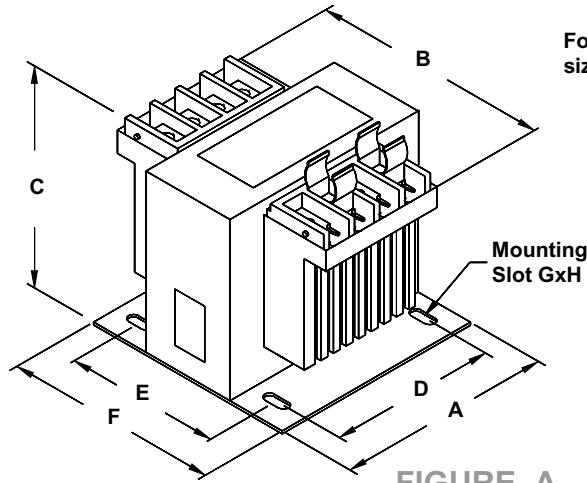
All dimensions are inches unless otherwise specified.
*Hammond does not offer European style metric fuse clips.



SECTION 1 PT SERIES CONTROL TRANSFORMERS



SECTION 1



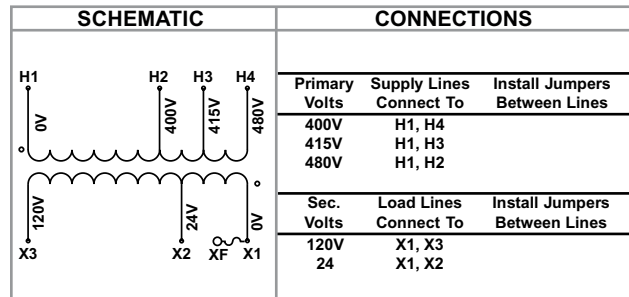
For detailed mounting dimensions by VA size, please refer to diagrams on Page 46.

FIGURE A

Group QQ

| | |
|--------------------------|---------------|
| Primary Voltage | 480, 415, 400 |
| Secondary Voltage | 24, 120 |

50/60 Hertz



| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25MFMD | A | 1.04/0.21 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | 0.22 x 0.44 | 3.60 |
| 50 | PT50MFMD | A | 2.08/0.42 | 3.00 | 4.00 | 2.75 | 2.50 | 2.25 | 3.41 | 0.22 x 0.75 | 4.35 |
| 75 | PT75MFMD | A | 3.13/0.63 | 3.00 | 4.50 | 2.75 | 2.50 | 2.88 | 3.75 | 0.22 x 0.50 | 5.15 |
| 100 | PT100MFMD | A | 4.17/0.83 | 3.75 | 4.13 | 3.25 | 3.12 | 2.75 | 3.50 | 0.22 x 0.56 | 5.61 |
| 150 | PT150MFMD | A | 6.25/1.25 | 4.50 | 4.38 | 3.85 | 3.12/3.75 | 2.63 | 3.63 | 0.22 x 0.75 | 6.15 |
| 200 | PT200MFMD | A | 8.33/1.67 | 4.50 | 4.88 | 3.85 | 3.12/3.75 | 2.63 | 3.63 | 0.22 x 0.75 | 7.75 |
| 250 | PT250MFMD | A | 10.42/2.08 | 4.50 | 5.38 | 3.85 | 3.12/3.75 | 3.00 | 4.00 | 0.22 x 0.75 | 9.40 |
| 350 | PT350MFMD | A | 14.58/2.92 | 4.88 | 5.88 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | 0.22 x 0.75 | 11.75 |
| 500 | PT500MFMD | A | 20.83/4.17 | 5.50 | 5.00 | 3.85 | 3.75/4.38 | 4.00 | 5.00 | 0.22 x 0.75 | 14.75 |

Height dimension (C) does not include secondary fuse clip.
Secondary fuse clips for 13/32" x 1 1/2" fuse included. Primary jumpers not applicable.

All dimensions are inches unless otherwise specified.
*Hammond does not offer European style metric fuse clips.





Group RR

| | |
|--------------------------|---------|
| Primary Voltage | 240/480 |
| Secondary Voltage | 120/240 |
| 50/60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 240 480 | H1, H4 H1, H4 | H1-H3, H2-H4 H2-H3 |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25QP | A | 0.21/0.10 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | 0.22 x 0.44 | 2.25 |
| 50 | PT50QP | A | 0.42/0.21 | 3.00 | 3.75 | 2.75 | 2.50 | 2.25 | 3.41 | 0.22 x 0.75 | 3.50 |
| 75 | PT75QP | A | 0.63/0.31 | 3.00 | 4.00 | 2.75 | 2.50 | 2.44 | 3.31 | 0.22 x 0.50 | 4.25 |
| 100 | PT100QP | A | 0.83/0.42 | 3.00 | 4.50 | 2.75 | 2.50 | 2.63 | 3.50 | 0.22 X 0.50 | 5.00 |
| 150 | PT150QP | A | 1.25/0.63 | 4.25 | 4.25 | 3.25 | 3.12/3.75 | 2.75 | 3.75 | 0.22 x 0.75 | 6.00 |
| 200 | PT200QP | A | 1.67/0.83 | 4.50 | 4.38 | 3.85 | 3.12/3.75 | 2.63 | 3.63 | 0.22 x 0.75 | 7.25 |
| 250 | PT250QP | A | 2.08/1.04 | 4.50 | 4.88 | 3.85 | 3.12/3.75 | 3.00 | 4.00 | 0.22 x 0.75 | 9.25 |
| 300 | PT300QP | A | 2.50/1.25 | 4.50 | 4.88 | 3.85 | 3.12/3.75 | 3.00 | 4.00 | 0.22 x 0.75 | 10.50 |
| 350 | PT350QP | A | 2.92/1.46 | 4.88 | 5.38 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | 0.22 x 0.75 | 11.50 |
| 500 | PT500QP | A | 4.17/2.08 | 5.25 | 5.13 | 4.50 | 3.75/4.38 | 4.00 | 5.00 | 0.22 x 0.75 | 14.50 |
| 750 | PT750QP | A | 6.25/3.13 | 6.00 | 5.88 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | 0.31 x 1.13 | 21.50 |
| 1000 | PT1000QP | A | 8.33/4.17 | 6.00 | 6.92 | 4.50 | 3.75/4.38 | 5.50 | 7.00 | 0.31 x 1.13 | 29.58 |

Height dimension (C) does not include secondary fuse clip.
Secondary fuse clips for 13/32" X 1 1/2" fuse are included. Primary jumpers not applicable.

All dimensions in inches unless otherwise specified.



Group SS

| | |
|--------------------------|---------|
| Primary Voltage | 120/240 |
| Secondary Voltage | 120/240 |
| 50/60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 120 240 | H1, H4 H1, H4 | H1-H3, H2-H4 H2-H3 |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PT25PP | A | 0.21/0.10 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | 0.22 x 0.44 | 2.25 |
| 50 | PT50PP | A | 0.42/0.21 | 3.00 | 3.75 | 2.75 | 2.50 | 2.25 | 3.41 | 0.22 x 0.75 | 3.50 |
| 75 | PT75PP | A | 0.63/0.31 | 3.00 | 4.00 | 2.75 | 2.50 | 2.44 | 3.31 | 0.22 x 0.50 | 4.25 |
| 100 | PT100PP | A | 0.83/0.42 | 3.00 | 4.50 | 2.75 | 2.50 | 2.63 | 3.50 | 0.22 X 0.50 | 5.00 |
| 150 | PT150PP | A | 1.25/0.63 | 4.25 | 4.25 | 3.25 | 3.12/3.75 | 2.75 | 3.75 | 0.22 x 0.75 | 6.00 |
| 200 | PT200PP | A | 1.67/0.83 | 4.50 | 4.38 | 3.85 | 3.12/3.75 | 2.63 | 3.63 | 0.22 x 0.75 | 7.25 |
| 250 | PT250PP | A | 2.08/1.04 | 4.50 | 4.88 | 3.85 | 3.12/3.75 | 3.00 | 4.00 | 0.22 x 0.75 | 9.25 |
| 300 | PT300PP | A | 2.50/1.25 | 4.50 | 4.88 | 3.85 | 3.12/3.75 | 3.00 | 4.00 | 0.22 x 0.75 | 10.50 |
| 350 | PT350PP | A | 2.92/1.46 | 4.88 | 5.38 | 3.85 | 3.75/4.38 | 3.56 | 4.56 | 0.22 x 0.75 | 11.50 |
| 500 | PT500PP | A | 4.17/2.08 | 5.25 | 5.13 | 4.50 | 3.75/4.38 | 4.00 | 5.00 | 0.22 x 0.75 | 14.50 |
| 750 | PT750PP | A | 6.25/3.13 | 6.00 | 5.88 | 4.50 | 4.38/5.31 | 5.00 | 6.50 | 0.31 x 1.13 | 21.50 |
| 1000 | PT1000PP | A | 8.33/4.17 | 6.00 | 6.92 | 4.50 | 3.75/4.38 | 5.50 | 7.00 | 0.31 x 1.13 | 29.58 |

Height dimension (C) does not include secondary fuse clip.
Secondary fuse clips for 13/32" X 1 1/2" fuse are included. Primary jumpers not applicable.

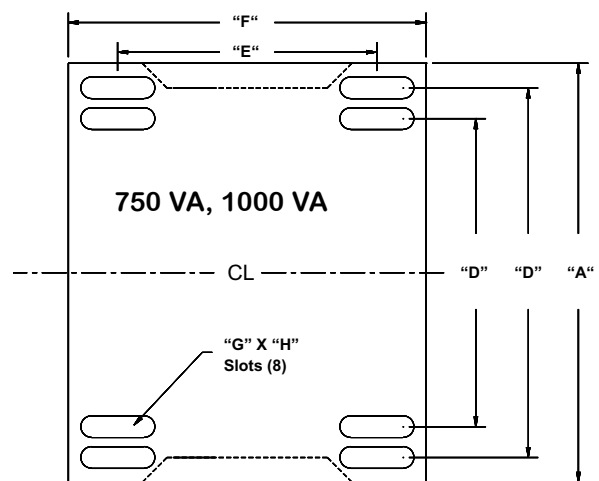
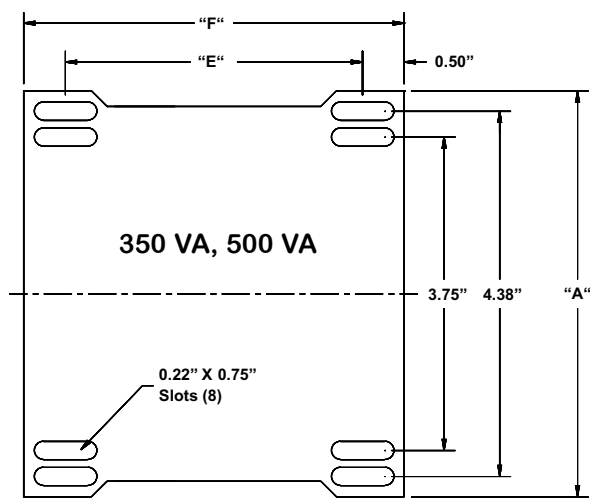
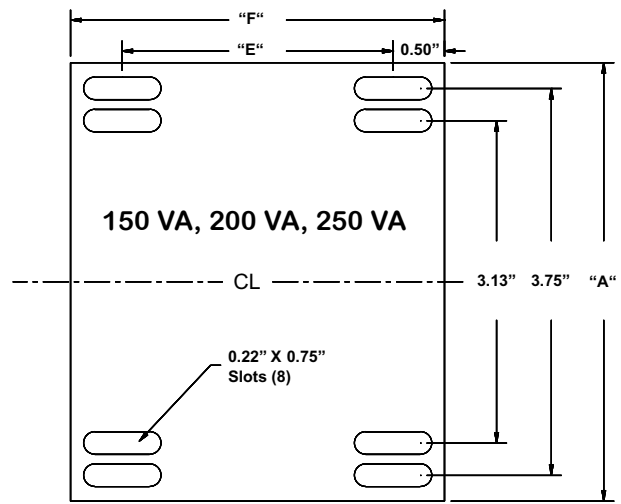
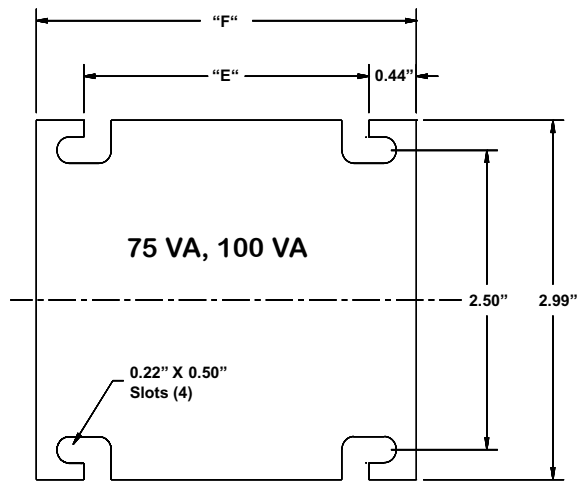
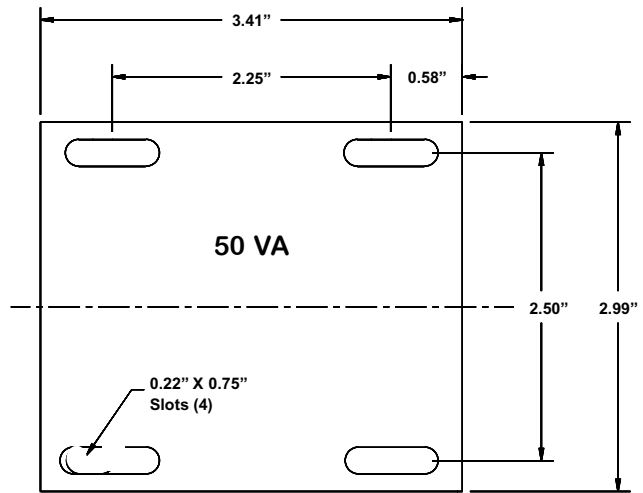
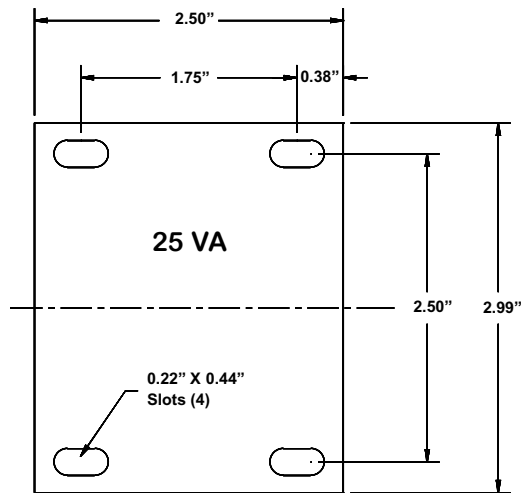
All dimensions in inches unless otherwise specified.



Detailed Mounting Dimensions



SECTION 1



Mounting plates for units larger than 1000VA are not illustrated. Please consult customer service for any information you require.

All dimensions in inches unless otherwise specified.







PH Series Control Transformer - Applications

The Hammond “PH” series of machine tool transformers are specifically designed for high inrush applications requiring reliable output voltage stability. Designed to meet industrial applications where electromagnetic devices such as relays, solenoids, etc. are used, the Hammond “PH” series transformers maximize inrush capability and output voltage regulation when electromagnetic devices are initially energized.

SECTION 1



| STANDARDS | | |
|--|--------|---------|
| Hammond Industrial and Machine Tool Control and Instrument Transformers meet or exceeds the standards established by UL, CSA, IRC, ANSI, NEMA. | | |
| Standard | File # | VA Size |
| UL (ANSI/UL 506) | E50394 | All PH |
| CSA (C22-2 No. 66) | LR3902 | All PH |
| NEMA (ST-1) | | All PH |

At HAMMOND, we rate the VA capacity of our transformers at the output where it counts. Other transformer manufacturers rate their capacity on the input side of the transformer, which can result in a 5% to 20% lower actual VA at the output.





Features

CORE & COILS

- High quality, high permeability silicon steel laminations.
- All-welded construction.
- Computer designed copper wound coils with optimum turns ratio.

INSULATION

- Mylar, Nomex and other insulating materials are used for phase to phase and layer to layer insulation.
- The “PH” series transformers have the following insulation systems:
 - Up to 200 VA ; class A, 55°C rise, 105°C class.
 - 250 to 1000 VA ; class B, 80°C rise, 150°C class.
 - 1500 VA and up ; class F, 115°C rise, 180°C class.

VACUUM IMPREGNATION

- All Hammond Control Transformers are Vacuum Impregnated with “VT” (vinyl-toluene) Polyester Resin”.
- Oven cured after vacuum impregnating.

MOLDED CONSTRUCTION

- All PH series transformers, up to 1000 VA, are molded in a UL 94 flame retardant polyester compound.
- These units have a thermal plastic, injection molded cover with distinctive cooling fins.

TERMINAL BLOCKS

- Fabricated from molded “high-impact” resin, finished in black.
- Combination Phillips (#2) and Robertson (# 2) Red terminal screws with #9 head, 8-32 UNF threads.
- Terminals are tinned brass and chrome plated, and all connections are soldered.
- Terminals are torque tested with automatic drivers.

NAMEPLATE

- Black letters on white background including terminal markings, schematic and CSA and UL logos.
- Polyester, nonconductive material.

MOUNTING PLATE

- Offers the traditional Hammond Mounting plate made of heavy steel, and welded to the core.

FINGER SAFE TERMINAL COVERS

- Finger safe terminal covers for both fused and unfused terminals, in a clear, see through finish, are available for all molded PH series units.

STANDARD SECONDARY FUSE CLIPS

- Each “PH” series transformer, that has a single secondary, comes with a factory installed secondary fuse kit (fuses not included).

Benefits

CORE & COILS

- Provides optimum performance and reliability.
- Rugged one-piece assembly with low noise.
- Enhanced voltage regulation with excellent thermal characteristics.

INSULATION

- Provides the best insulated control transformer in the industry.
- Insulation materials are of the highest rating available for the temperature class.
- Assures long life and reliable performance.

VACUUM IMPREGNATION

- Impregnating the entire unit provides a strong mechanical bond and offers protection against environmental conditions.
- Seals the surface and eliminates moisture.

MOLDED CONSTRUCTION

- Completes the protection process by sealing the core and coils against moisture, dirt and other airborne contaminants.
- Strong and durable, yet still dissipates heat quickly and efficiently.

TERMINAL BLOCKS

- Easy access to terminals while separation barriers prevent unintentional contact.
- Versatile screw head with optimum torque and retention ability.
- Assures integrity and strength of connections and terminals
- Withstands any manual installation method.

NAMEPLATE

- Ease of readability results in easier installation.
- Safe for other conductors, even in close proximity.

MOUNTING PLATE

- Provides direct interchangeability with many other popular control transformers.

FINGER SAFE TERMINAL COVERS

- This ensures your protection against electric shock or accidental contact of any kind.

STANDARD SECONDARY FUSE CLIPS

- Accommodates 13/32” X 1 1/2” Midget Fuse.



SECTION 1 PH SERIES CONTROL TRANSFORMERS



SECTION 1

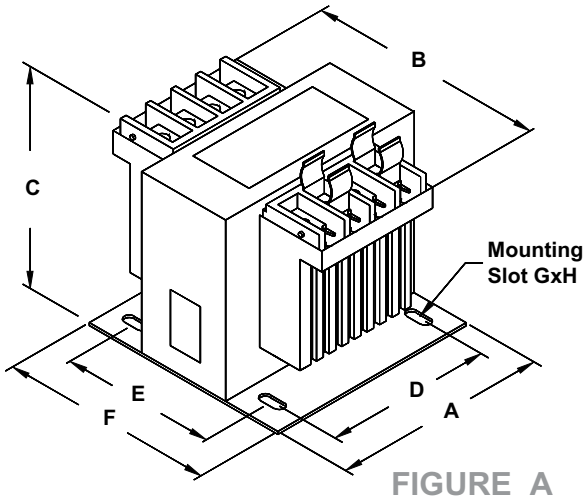


FIGURE A

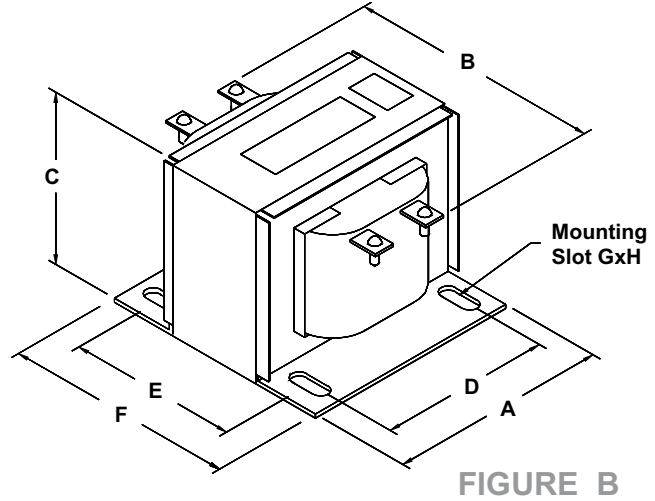
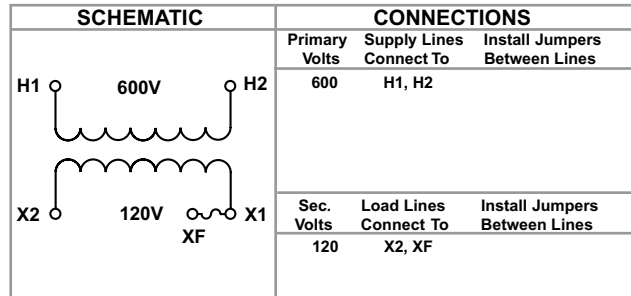


FIGURE B

Group A

| | |
|--------------------------|-----|
| Primary Voltage | 600 |
| Secondary Voltage | 120 |
| 60 Hertz | |



| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|--------------|-------------------|--------------|----------------|--------------------|------|------|------------------|------|------|----------------------|--------------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25AJ | A | 0.21 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50AJ | A | 0.42 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75AJ | A | 0.63 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100AJ | A | 0.83 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150AJ | A | 1.25 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200AJ | A | 1.67 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250AJ | A | 2.08 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |
| 350 | PH350AJ | A | 2.92 | 4.50 | 5.13 | 3.85 | 3.75 | 3.75 | 4.63 | .22 X .56 | 9.43 |
| 500 | PH500AJ | A | 4.17 | 5.63 | 5.00 | 4.50 | 5.00 | 3.38 | 4.38 | .31 X .62 | 13.10 |
| 750 | PH750AJ | A | 6.25 | 5.63 | 6.00 | 4.50 | 5.00 | 4.25 | 5.25 | .31 X .62 | 17.80 |
| 1000 | PH1000AJ | A | 8.33 | 5.63 | 6.50 | 4.50 | 5.00 | 4.63 | 5.63 | .31 X .62 | 23.47 |
| 1500 | PH1500AJ | B | 12.50 | 7.00 | 5.75 | 5.50 | 4.50/6.00 | 4.38 | 5.75 | .38 X 1.0 | 26.00 |
| 2000 | PH2000AJ | B | 16.67 | 7.00 | 6.63 | 5.50 | 4.50/6.00 | 5.13 | 6.50 | .38 X 1.0 | 37.88 |
| 3000 | PH3000AJ | B | 25.00 | 7.50 | 8.25 | 6.38 | 4.50/6.00 | 6.38 | 7.75 | .38 X 1.0 | 58.00 |

Height dimension (C) does not include secondary fuse clip (applicable up to 1000VA). All dimensions in inches unless otherwise specified.
 Secondary fuse clips for 13/32" X 1 1/2" fuse included up to 1000VA. Primary jumpers not applicable.



SECTION 1 PH SERIES CONTROL TRANSFORMERS



SECTION 1



Group B

| | |
|--------------------------|-----|
| Primary Voltage | 480 |
| Secondary Voltage | 120 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 480 | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 | X2, XF | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25CJ | A | 0.21 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50CJ | A | 0.42 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75CJ | A | 0.63 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100CJ | A | 0.83 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150CJ | A | 1.25 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200CJ | A | 1.67 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250CJ | A | 2.08 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |
| 350 | PH350CJ | A | 2.92 | 4.50 | 5.13 | 3.85 | 3.75 | 3.75 | 4.63 | .22 X .56 | 9.43 |
| 500 | PH500CJ | A | 4.17 | 5.63 | 5.00 | 4.50 | 5.00 | 3.38 | 4.38 | .31 X .62 | 13.10 |
| 750 | PH750CJ | A | 6.25 | 5.63 | 6.00 | 4.50 | 5.00 | 4.25 | 5.25 | .31 X .62 | 17.80 |
| 1000 | PH1000CJ | A | 8.33 | 5.63 | 6.50 | 4.50 | 5.00 | 4.63 | 5.63 | .31 X .62 | 23.47 |
| 1500 | PH1500CJ | B | 12.50 | 7.00 | 5.75 | 5.50 | 4.50/6.00 | 4.38 | 5.75 | .38 X 1.0 | 26.00 |
| 2000 | PH2000CJ | B | 16.67 | 7.00 | 6.63 | 5.50 | 4.50/6.00 | 5.13 | 6.50 | .38 X 1.0 | 37.88 |

Height dimension (C) does not include secondary fuse clip (applicable up to 1000VA). All dimensions in inches unless otherwise specified.
 Secondary fuse clips for 13/32" X 1 1/2" fuse included up to 1000VA. Primary jumpers not applicable.



Group C

| | |
|--------------------------|-----|
| Primary Voltage | 240 |
| Secondary Voltage | 120 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 240 | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 | X2, XF | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25MJ | A | 0.21 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50MJ | A | 0.42 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75MJ | A | 0.63 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100MJ | A | 0.83 | 3.00 | 4.10 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150MJ | A | 1.25 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200MJ | A | 1.67 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250MJ | A | 2.08 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |
| 350 | PH350MJ | A | 2.92 | 4.50 | 5.00 | 3.85 | 3.75 | 3.75 | 4.63 | .22 X .56 | 9.43 |
| 500 | PH500MJ | A | 4.17 | 5.63 | 6.00 | 4.50 | 5.00 | 3.38 | 4.38 | .31 X .62 | 13.10 |
| 750 | PH750MJ | A | 6.25 | 5.63 | 6.50 | 4.50 | 5.00 | 4.25 | 5.25 | .31 X .62 | 17.80 |

Height dimension (C) does not include secondary fuse clip. All dimensions in inches unless otherwise specified.
 Secondary fuse clips for 13/32" X 1 1/2" fuse included. Primary jumpers not applicable.



SECTION 1 PH SERIES CONTROL TRANSFORMERS



SECTION 1

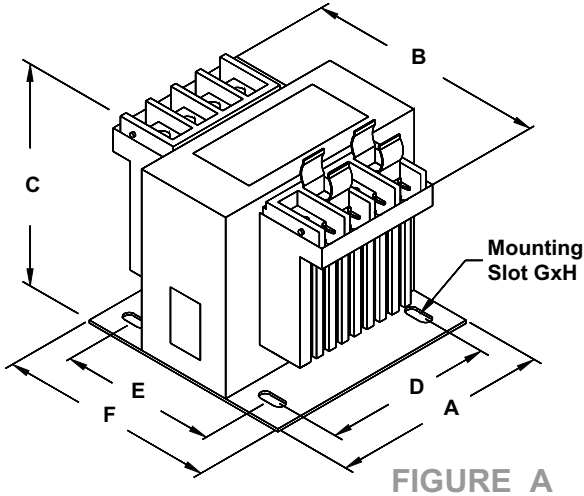


FIGURE A

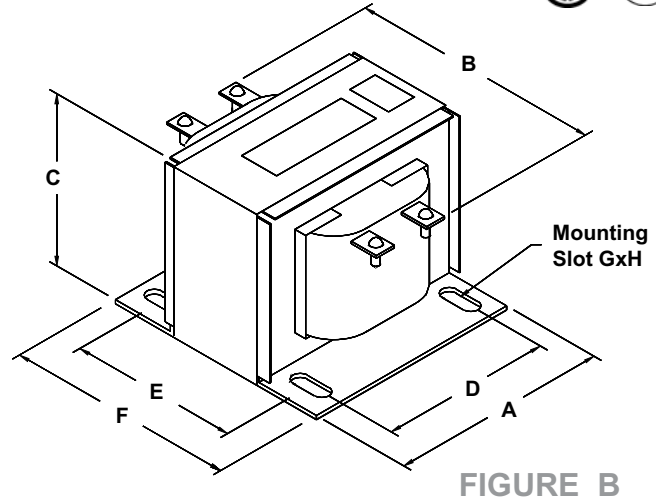


FIGURE B



Group D

| | |
|--------------------------|-----|
| Primary Voltage | 208 |
| Secondary Voltage | 120 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|------------------|----------------------------|----------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 208 | H1, H2 | | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| | 120 | X2, XF | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|--------------|-------------------|--------------|----------------|--------------------|------|------|------------------|------|------|----------------------|--------------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25LJ | A | 0.21 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50LJ | A | 0.42 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75LJ | A | 0.63 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100LJ | A | 0.83 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150LJ | A | 1.25 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200LJ | A | 1.67 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250LJ | A | 2.08 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |
| 350 | PH350LJ | A | 2.92 | 4.50 | 5.13 | 3.85 | 3.75 | 3.75 | 4.63 | .22 X .56 | 9.43 |
| 500 | PH500LJ | A | 4.17 | 5.63 | 5.00 | 4.50 | 5.00 | 3.38 | 4.38 | .31 X .62 | 13.10 |

Height dimension (C) does not include secondary fuse clip.
Secondary fuse clips for 13/32" X 1 1/2" fuse included. Primary jumpers not applicable.

All dimensions in inches unless otherwise specified.



SECTION 1 PH SERIES CONTROL TRANSFORMERS



Group E

| | |
|--------------------------|---------|
| Primary Voltage | 600 |
| Secondary Voltage | 120/240 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 600 | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|-------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25AP | A | .21/.10 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50AP | A | .42/.21 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75AP | A | .63/.31 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100AP | A | .83/.42 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150AP | A | 1.25/.63 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200AP | A | 1.67/.83 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250AP | A | 2.08/1.04 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |
| 350 | PH350AP | A | 2.92/1.46 | 4.50 | 5.00 | 3.85 | 3.75 | 3.75 | 4.63 | .22 X .56 | 9.43 |
| 500 | PH500AP | A | 4.17/2.08 | 5.63 | 5.00 | 4.50 | 5.00 | 3.38 | 4.38 | .31 X .62 | 13.10 |
| 750 | PH750AP | A | 6.25/3.13 | 5.63 | 5.88 | 4.50 | 5.00 | 4.25 | 5.25 | .31 X .62 | 17.80 |
| 1000 | PH1000AP | A | 8.33/4.17 | 5.63 | 6.38 | 4.50 | 5.00 | 4.63 | 5.63 | .31 X .62 | 23.47 |
| 1500 | PH1500AP | B | 12.5/6.25 | 7.00 | 5.88 | 5.50 | 4.50/6.00 | 4.38 | 5.75 | .38 X 1.0 | 26.00 |
| 2000 | PH2000AP | B | 16.7/8.33 | 7.00 | 6.63 | 5.50 | 4.50/6.00 | 5.13 | 6.50 | .38 X 1.0 | 37.88 |
| 3000 | PH3000AP | B | 25.0/12.5 | 7.50 | 8.25 | 5.50 | 4.50/6.00 | 6.38 | 7.75 | .38 X 1.0 | 58.00 |
| 5000 | PH5000AP | B | 41.7/20.8 | 9.00 | 9.25 | 7.50 | 5.25/7.00 | 6.50 | 8.00 | .44 X 1.0 | 103.00 |
| 7500 | PH7500AP | B | 62.5/31.3 | 9.00 | 12.00 | 7.50 | 5.25/7.00 | 8.38 | 9.88 | .44 X 1.0 | 135.00 |

Primary jumpers and Secondary fuse clips are not applicable. Secondary jumpers are included. All dimensions in inches unless otherwise specified.



Group F

| | |
|--------------------------|---------|
| Primary Voltage | 240/480 |
| Secondary Voltage | 120/240 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 240 480 | H1, H4 H1, H4 | H2-H3 H1-H3, H2-H4 |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|-------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25QP | A | .21/.10 | 3.00 | 3.00 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50QP | A | .42/.21 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75QP | A | .63/.31 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100QP | A | .83/.42 | 3.00 | 4.13 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150QP | A | 1.25/.63 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200QP | A | 1.67/.83 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250QP | A | 2.08/1.04 | 4.50 | 4.38 | 3.85 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |
| 350 | PH350QP | A | 2.92/1.46 | 4.50 | 5.00 | 3.85 | 3.75 | 3.75 | 4.63 | .22 X .56 | 9.43 |
| 500 | PH500QP | A | 4.17/2.08 | 6.00 | 4.00 | 5.10 | 5.00 | 3.38 | 4.38 | .31 X .62 | 13.10 |
| 750 | PH750QP | A | 6.25/3.13 | 6.00 | 5.00 | 5.10 | 5.00 | 4.25 | 5.25 | .31 X .62 | 17.80 |
| 1000 | PH1000QP | A | 8.33/4.17 | 6.00 | 5.63 | 5.10 | 5.00 | 4.63 | 5.63 | .31 X .62 | 23.47 |
| 1500 | PH1500QP | B | 12.5/6.25 | 7.50 | 6.75 | 6.25 | 6.00 | 4.38 | 5.75 | .38 X 1.0 | 26.00 |
| 2000 | PH2000QP | B | 16.7/8.33 | 7.50 | 7.25 | 6.25 | 6.00 | 5.13 | 6.50 | .38 X 1.0 | 37.88 |
| 3000 | PH3000QP | B | 25.0/12.5 | 7.50 | 8.75 | 6.25 | 6.00 | 5.13 | 6.50 | .38 X 1.0 | 58.00 |
| 5000 | PH5000QP | B | 41.7/20.8 | 9.00 | 10.25 | 7.50 | 7.00 | 6.50 | 8.00 | .44 X 1.0 | 103.00 |
| 7500 | PH7500QP | B | 62.5/31.3 | 9.00 | 12.00 | 7.50 | 7.00 | 8.38 | 9.88 | .44 X 1.0 | 135.00 |

Primary and Secondary jumpers are included. Secondary fuse clips are not applicable. All dimensions in inches unless otherwise specified.



SECTION 1 PH SERIES CONTROL TRANSFORMERS



SECTION 1

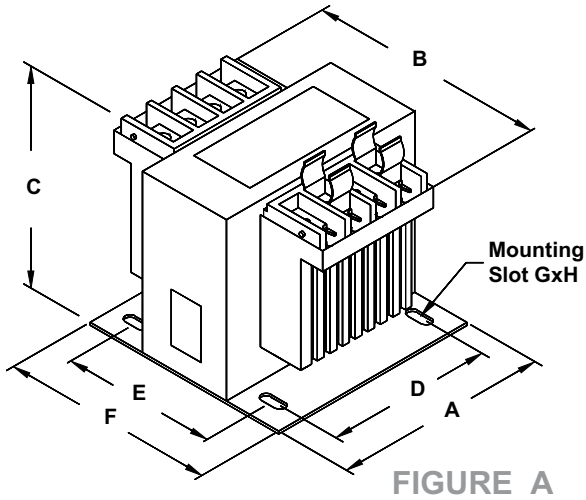


FIGURE A

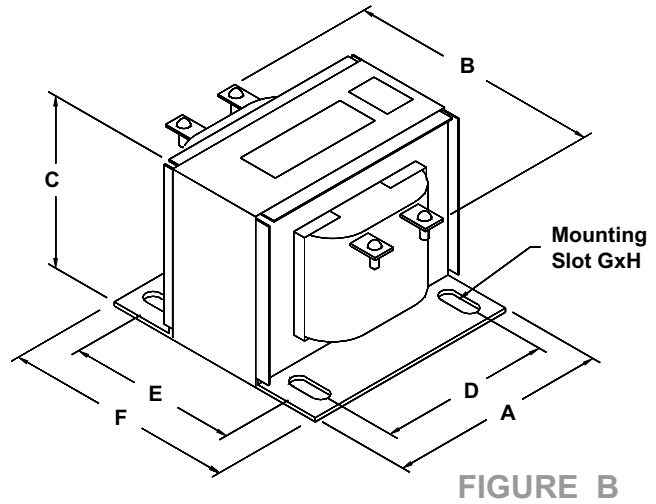


FIGURE B



Group G

| | |
|--------------------------|---------|
| Primary Voltage | 120/240 |
| Secondary Voltage | 120/240 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|---------------|-------------------------|-------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 120 240 | H1, H4 H1, H4 | H1-H3, H2-H4 H2-H3 | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| | 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25PP | A | .21/.10 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50PP | A | .42/.21 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75PP | A | .63/.31 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100PP | A | .83/.42 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150PP | A | 1.25/.63 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200PP | A | 1.67/.83 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250PP | A | 2.08/1.04 | 4.50 | 4.25 | 3.85 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |
| 350 | PH350PP | A | 2.92/1.46 | 4.50 | 5.13 | 3.85 | 3.75 | 3.75 | 4.63 | .22 X .56 | 9.43 |
| 500 | PH500PP | A | 4.17/2.08 | 5.63 | 5.00 | 4.50 | 5.00 | 3.38 | 4.38 | .31 X .62 | 13.10 |
| 750 | PH750PP | A | 6.25/3.13 | 5.63 | 6.00 | 4.50 | 5.00 | 4.25 | 5.25 | .31 X .62 | 17.80 |
| 1000 | PH1000PP | A | 8.33/4.17 | 5.63 | 6.50 | 4.50 | 5.00 | 4.63 | 5.63 | .31 X .62 | 23.47 |
| 1500 | PH1500PP | B | 12.5/6.25 | 7.00 | 5.75 | 5.50 | 4.50/6.00 | 4.38 | 5.75 | .38 X .63 | 26.00 |
| 2000 | PH2000PP | B | 16.7/8.33 | 7.00 | 6.63 | 5.50 | 4.50/6.00 | 5.13 | 6.50 | .38 X .63 | 37.88 |

Primary and Secondary jumpers are included. Secondary fuse clips are not applicable.

All dimensions in inches unless otherwise specified.





Group H

| | |
|--------------------------|---------|
| Primary Voltage | 208/416 |
| Secondary Voltage | 120/240 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 208 416 | H1, H4 H1, H4 | H1-H3, H2-H4 H2-H3 |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25SP | A | .21/.10 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50SP | A | .42/.21 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75SP | A | .63/.31 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100SP | A | .83/.42 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150SP | A | 1.25/.63 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200SP | A | 1.67/.83 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250SP | A | 2.08/1.04 | 4.50 | 4.25 | 3.85 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |
| 350 | PH350SP | A | 2.92/1.46 | 4.50 | 5.00 | 3.85 | 3.75 | 3.75 | 4.63 | .22 X .56 | 9.43 |
| 500 | PH500SP | A | 4.17/2.08 | 5.63 | 5.00 | 4.50 | 5.00 | 3.38 | 4.38 | .31 X .62 | 13.10 |
| 750 | PH750SP | A | 6.25/3.13 | 5.63 | 5.88 | 4.50 | 5.00 | 4.25 | 5.25 | .31 X .62 | 17.80 |
| 1000 | PH1000SP | A | 8.33/4.17 | 5.63 | 6.38 | 4.50 | 5.00 | 4.63 | 5.63 | .31 X .62 | 23.47 |
| 1500 | PH1500SP | B | 12.5/6.25 | 7.00 | 5.88 | 5.50 | 4.50/6.00 | 4.38 | 5.75 | .38 X 1.0 | 26.00 |
| 2000 | PH2000SP | B | 16.7/8.33 | 7.00 | 6.63 | 5.50 | 4.50/6.00 | 5.13 | 6.50 | .38 X 1.0 | 37.88 |
| 3000 | PH3000SP | B | 25.0/12.5 | 7.50 | 8.25 | 5.50 | 4.50/6.00 | 6.38 | 7.75 | .38 X 1.0 | 58.00 |
| 5000 | PH5000SP | B | 41.7/20.8 | 9.00 | 9.25 | 7.50 | 5.25/7.00 | 6.50 | 8.00 | .44 X 1.0 | 103.00 |

Primary and Secondary jumpers are included. Secondary fuse clips are not applicable.

All dimensions in inches unless otherwise specified.

Group I

| | |
|--------------------------|---------|
| Primary Voltage | 347 |
| Secondary Voltage | 120/240 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 347 | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25KP | A | .21/.10 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50KP | A | .42/.21 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75KP | A | .63/.31 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100KP | A | .83/.42 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150KP | A | 1.25/.63 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200KP | A | 1.67/.83 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250KP | A | 2.08/1.04 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |
| 350 | PH350KP | A | 2.92/1.46 | 4.50 | 5.13 | 3.85 | 3.75 | 3.75 | 4.63 | .22 X .56 | 9.43 |
| 500 | PH500KP | A | 4.17/2.08 | 5.63 | 5.00 | 4.50 | 5.00 | 3.38 | 4.38 | .31 X .62 | 13.10 |
| 750 | PH750KP | A | 6.25/3.13 | 5.63 | 6.00 | 4.50 | 5.00 | 4.25 | 5.25 | .31 X .62 | 17.80 |
| 1000 | PH1000KP | A | 8.33/4.17 | 5.63 | 6.50 | 4.50 | 5.00 | 4.63 | 5.63 | .31 X .62 | 23.47 |
| 1500 | PH1500KP | B | 12.5/6.25 | 7.00 | 5.75 | 5.50 | 4.50/6.00 | 4.38 | 5.75 | .38 X 1.0 | 26.00 |
| 2000 | PH2000KP | B | 16.7/8.33 | 7.00 | 6.63 | 5.50 | 4.50/6.00 | 5.13 | 6.50 | .38 X 1.0 | 37.88 |

Primary and Secondary jumpers are included. Secondary fuse clips are not applicable.

All dimensions in inches unless otherwise specified.

SECTION 1



SECTION 1 PH SERIES CONTROL TRANSFORMERS



SECTION 1

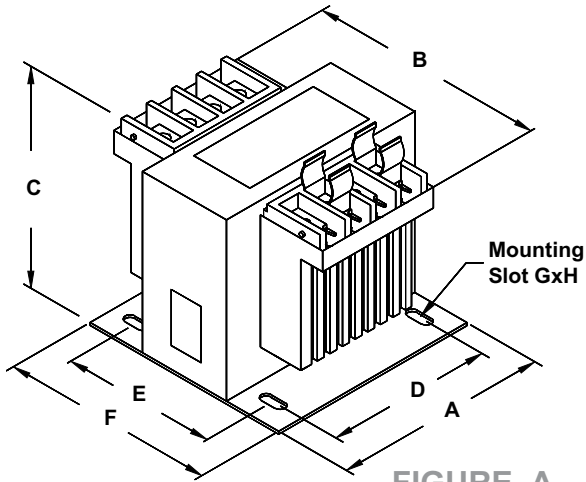


FIGURE A

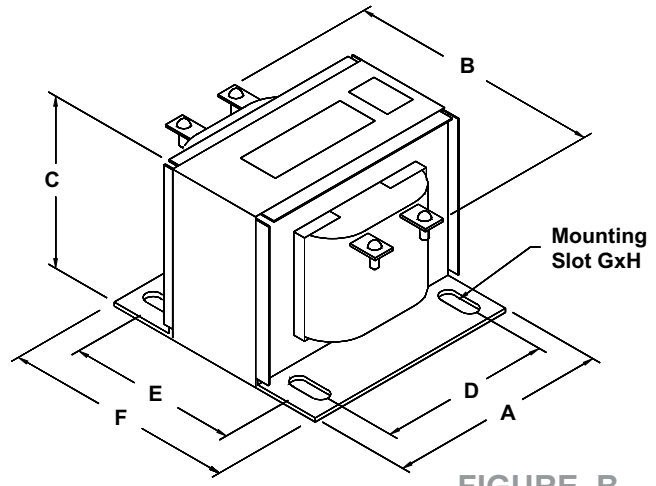


FIGURE B

Group J

| | |
|--------------------------|-----|
| Primary Voltage | 600 |
| Secondary Voltage | 240 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|---------------|-------------------------|-------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 600 | H1, H2 | | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| | 240 | X2, XF | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25AM | A | 0.10 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50AM | A | 0.21 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75AM | A | 0.31 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100AM | A | 0.42 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150AM | A | 0.63 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200AM | A | 0.83 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250AM | A | 1.04 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |
| 350 | PH350AM | A | 1.46 | 4.50 | 5.13 | 3.85 | 3.75 | 3.75 | 4.63 | .22 X .56 | 9.43 |
| 500 | PH500AM | A | 2.08 | 5.63 | 5.00 | 4.50 | 5.00 | 3.38 | 4.38 | .31 X .62 | 13.10 |
| 750 | PH750AM | A | 3.13 | 5.63 | 6.00 | 4.50 | 5.00 | 4.25 | 5.25 | .31 X .62 | 17.80 |
| 1000 | PH1000AM | A | 4.17 | 5.63 | 6.50 | 4.50 | 5.00 | 4.63 | 5.63 | .31 X .62 | 23.47 |
| 1500 | PH1500AM | B | 6.25 | 7.00 | 5.75 | 5.50 | 4.50/6.00 | 4.38 | 5.75 | .38 X 1.0 | 26.00 |

Height dimension (C) does not include secondary fuse clip (applicable up to 1000VA).

All dimensions in inches unless otherwise specified.

Secondary fuse clips for 13/32" X 1 1/2" fuse included up to 1000VA. Primary jumpers not applicable.





Group K

| | |
|--------------------------|-----|
| Primary Voltage | 600 |
| Secondary Voltage | 24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 600 | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 24 | X2, XF | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25AG | A | 1.04 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50AG | A | 2.08 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75AG | A | 3.13 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100AG | A | 4.17 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150AG | A | 6.25 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200AG | A | 8.33 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250AG | A | 10.42 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |

Height dimension (C) does not include secondary fuse clip.

All dimensions in inches unless otherwise specified.

Secondary fuse clips for 13/32" X 1 1/2" fuse included. Primary jumpers not applicable.



Group L

| | |
|--------------------------|-----|
| Primary Voltage | 480 |
| Secondary Voltage | 24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 480 | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 24 | X2, XF | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25CG | A | 1.04 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50CG | A | 2.08 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75CG | A | 3.13 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100CG | A | 4.17 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150CG | A | 6.25 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200CG | A | 8.33 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250CG | A | 10.42 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |

Height dimension (C) does not include secondary fuse clip.

All dimensions in inches unless otherwise specified.

Secondary fuse clips for 13/32" X 1 1/2" fuse included. Primary jumpers not applicable.



SECTION 1 PH SERIES CONTROL TRANSFORMERS



SECTION 1

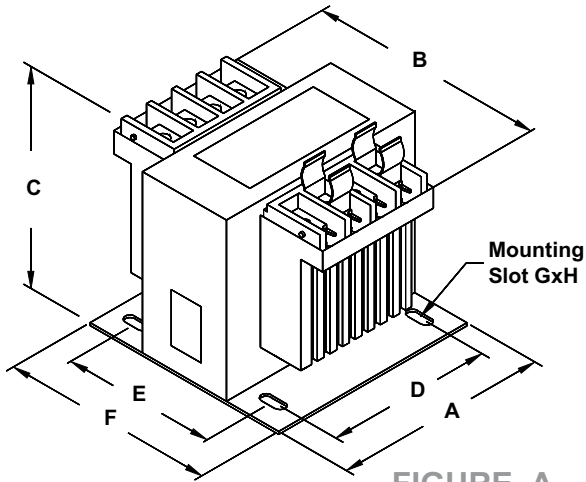


FIGURE A

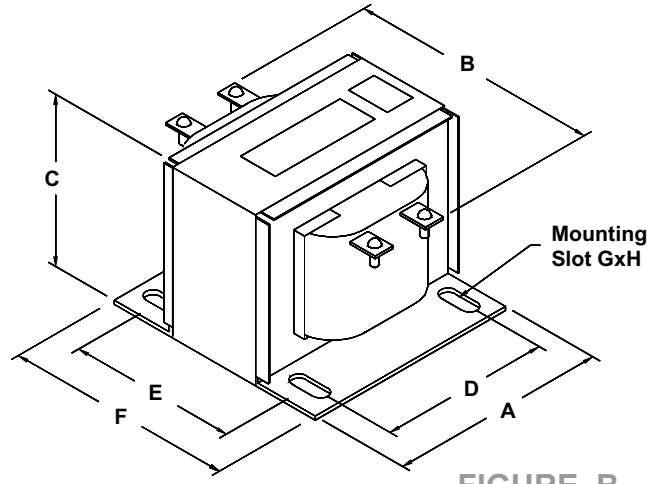


FIGURE B

Group M

| | |
|--------------------------|-----|
| Primary Voltage | 240 |
| Secondary Voltage | 24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|------------------|----------------------------|----------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 240 | H1, H2 | | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| | 24 | X2, XF | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|--------------|-------------------|--------------|----------------|--------------------|------|------|------------------|------|------|----------------------|--------------------|
| | | | | "A" | "B" | "C" | "D" | "E" | "F" | | |
| 25 | PH25MG | A | 1.04 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50MG | A | 2.08 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75MG | A | 3.13 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100MG | A | 4.17 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150MG | A | 6.25 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200MG | A | 8.33 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250MG | A | 10.42 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |

Height dimension (C) does not include secondary fuse clip.
Secondary fuse clips for 13/32" X 1 1/2" fuse included. Primary jumpers not applicable.

All dimensions in inches unless otherwise specified.





Group N

| | |
|--------------------------|-----|
| Primary Voltage | 120 |
| Secondary Voltage | 24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 120 | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 24 | X2, XF | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25JG | A | 1.04 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50JG | A | 2.08 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75JG | A | 3.13 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100JG | A | 4.17 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150JG | A | 6.25 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200JG | A | 8.33 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250JG | A | 10.42 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |

Height dimension (C) does not include secondary fuse clip.
 Secondary fuse clips for 13/32" X 1 1/2" fuse included. Primary jumpers not applicable.

All dimensions in inches unless otherwise specified.



Group O

| | |
|--------------------------|-----|
| Primary Voltage | 120 |
| Secondary Voltage | 12 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 120 | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 12 | X2, XF | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25JE | A | 2.08 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50JE | A | 4.17 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75JE | A | 6.25 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100JE | A | 8.33 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150JE | A | 12.5 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200JE | A | 16.67 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250JE | A | 20.83 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |

Height dimension (C) does not include secondary fuse clip.
 Secondary fuse clips for 13/32" X 1 1/2" fuse included. Primary jumpers not applicable.

All dimensions in inches unless otherwise specified.



SECTION 1 PH SERIES CONTROL TRANSFORMERS



SECTION 1

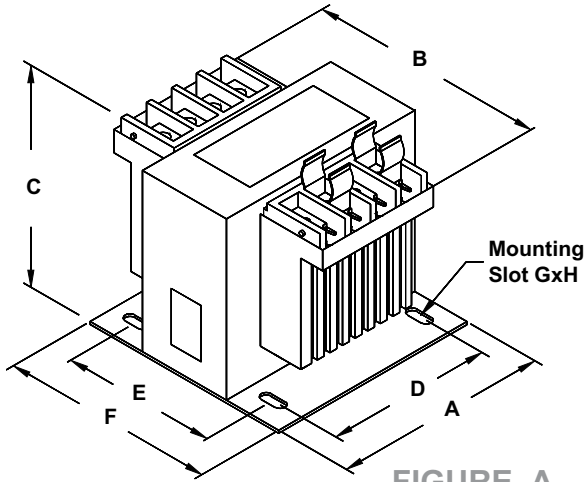


FIGURE A

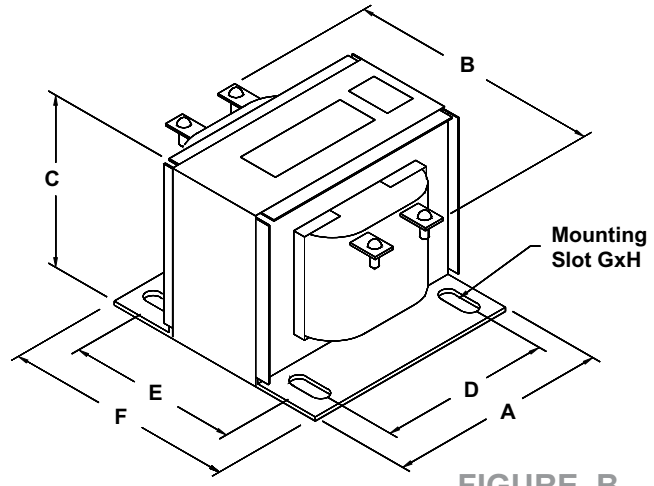


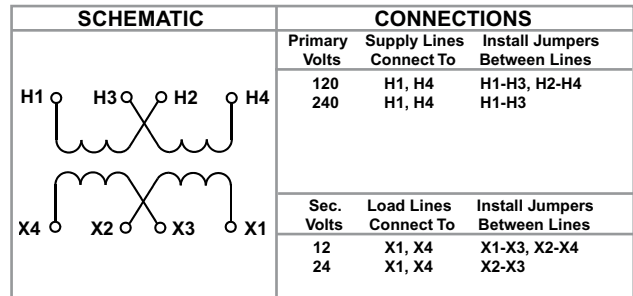
FIGURE B

Group P

Primary Voltage 120/240

Secondary Voltage 12/24

60 Hertz



| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25PR | A | 2.08/1.04 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50PR | A | 4.17/2.08 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75PR | A | 6.25/3.13 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100PR | A | 8.33/4.17 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150PR | A | 12.5/6.25 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200PR | A | 16.7/8.33 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250PR | A | 20.8/10.4 | 4.50 | 4.25 | 3.85 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |
| 350 | PH350PR | A | 29.2/14.6 | 4.50 | 5.13 | 3.85 | 3.75 | 3.75 | 4.63 | .22 X .56 | 9.43 |
| 500 | PH500PR | A | 41.7/20.8 | 5.63 | 5.00 | 4.50 | 5.00 | 3.38 | 4.38 | .31 X .62 | 13.10 |
| 750 | PH750PR | A | 62.5/31.3 | 5.63 | 6.00 | 4.50 | 5.00 | 4.25 | 5.25 | .31 X .62 | 17.80 |
| 1000 | PH1000PR | A | 83.3/41.7 | 5.63 | 6.50 | 4.50 | 5.00 | 4.63 | 5.63 | .31 X .62 | 23.47 |
| 1500 | PH1500PR | B | 125/62.5 | 7.00 | 5.75 | 5.50 | 4.50/6.00 | 4.38 | 5.75 | .38 X 1.0 | 26.00 |
| 2000 | PH2000PR | B | 167/83.3 | 7.00 | 6.63 | 5.50 | 4.50/6.00 | 5.13 | 6.50 | .38 X 1.0 | 37.88 |
| 3000 | PH3000PR | B | 250/125 | 7.50 | 8.25 | 5.50 | 4.50/6.00 | 6.38 | 7.75 | .38 X 1.0 | 58.00 |

Primary and Secondary jumpers are included. Secondary fuse clips are not applicable.

All dimensions in inches unless otherwise specified.





Group Q

| | |
|--------------------------|-----|
| Primary Voltage | 120 |
| Secondary Voltage | 120 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 120 | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 | X2, XF | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25JJ | A | 0.21 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50JJ | A | 0.42 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75JJ | A | 0.63 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100JJ | A | 0.83 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150JJ | A | 1.25 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 250 | PH250JJ | A | 2.08 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |

Height dimension (C) does not include secondary fuse clip.
Secondary fuse clips for 13/32" X 1 1/2" fuse included. Primary jumpers not applicable.

All dimensions in inches unless otherwise specified.



Group R

| | |
|--------------------------|-----|
| Primary Voltage | 347 |
| Secondary Voltage | 24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 347 | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 24 | X2, XF | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25KG | A | 1.04 | 3.00 | 3.00 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50KG | A | 2.08 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75KG | A | 3.13 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100KG | A | 4.17 | 3.00 | 3.25 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150KG | A | 6.25 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200KG | A | 8.33 | 3.75 | 4.00 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.00 |
| 250 | PH250KG | A | 10.42 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 7.00 |

Height dimension (C) does not include secondary fuse clip.
Secondary fuse clips for 13/32" X 1 1/2" fuse included. Primary jumpers not applicable.

All dimensions in inches unless otherwise specified.



SECTION 1 PH SERIES CONTROL TRANSFORMERS

SECTION 1

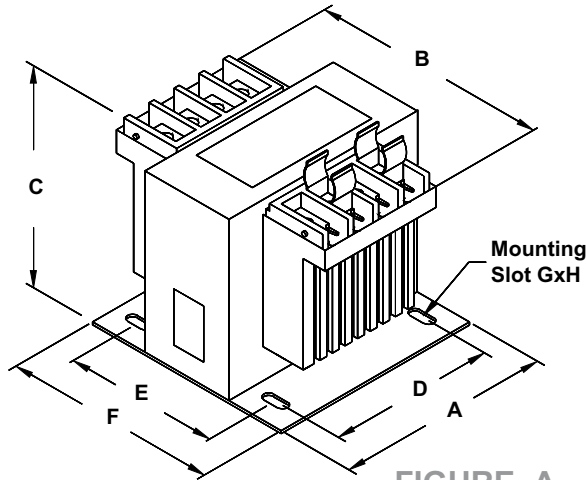


FIGURE A

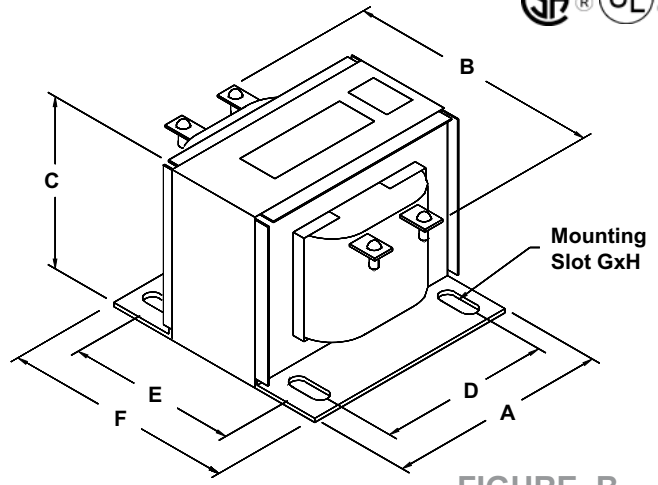


FIGURE B

Group S

| | |
|--------------------------|-----|
| Primary Voltage | 208 |
| Secondary Voltage | 24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|---------------|-------------------------|-------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 208 | H1, H2 | | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| | 24 | X2, XF | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25LG | A | 1.04 | 3.00 | 3.00 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50LG | A | 2.08 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75LG | A | 3.13 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100LG | A | 4.17 | 3.00 | 3.25 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150LG | A | 6.25 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200LG | A | 8.33 | 3.75 | 4.00 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.00 |
| 250 | PH250LG | A | 10.42 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 7.00 |

Height dimension (C) does not include secondary fuse clip. Secondary fuse clips for 13/32" X 1 1/2" fuse included. Primary jumpers not applicable.

All dimensions in inches unless otherwise specified.

Group X

| | |
|--------------------------|-------|
| Primary Voltage | 600 |
| Secondary Voltage | 12/24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|---------------|-------------------------|-------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 600 | H1, H2 | | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| | 12 24 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Mounting Centers | | "F" | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------|-------------------|-----------------|
| | | | | "A" | "B" | "C" | "D" | "E" | | | |
| 25 | PH25AR | A | 2.08/1.04 | 3.00 | 3.25 | 2.75 | 2.50 | 1.75 | 2.50 | .22 X .44 | 2.35 |
| 50 | PH50AR | A | 4.17/2.08 | 3.00 | 3.25 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 2.50 |
| 75 | PH75AR | A | 6.25/3.13 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | .22 X .44 | 3.60 |
| 100 | PH100AR | A | 8.33/4.17 | 3.00 | 4.00 | 2.75 | 2.50 | 3.00 | 3.75 | .22 X .44 | 4.35 |
| 150 | PH150AR | A | 12.5/6.25 | 3.75 | 4.25 | 3.25 | 3.13 | 2.75 | 3.50 | .22 X .56 | 6.00 |
| 200 | PH200AR | A | 16.67/8.33 | 3.75 | 4.25 | 3.25 | 3.13 | 3.50 | 4.25 | .22 X .56 | 6.15 |
| 250 | PH250AR | A | 20.83/10.42 | 4.25 | 4.25 | 3.25 | 3.75 | 3.13 | 4.00 | .22 X .56 | 6.50 |

Primary jumpers and Secondary fuse clips are not applicable. Secondary jumpers are included.

All dimensions in inches unless otherwise specified.





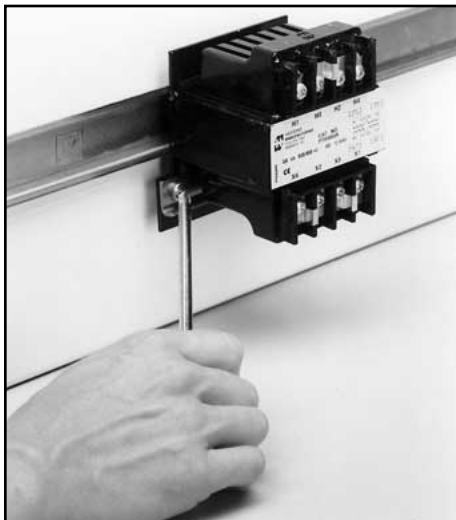


DIN Rail Mount PT & PH Series Control Transformers

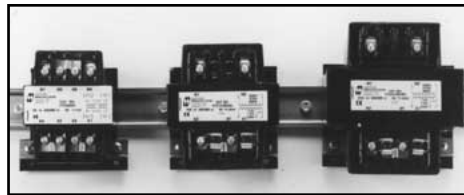
The Hammond DIN rail mount “PT” and “PH” series of machine tool transformers are designed to meet the requirements for ‘panel mounted’ industrial control applications. This line offers the same features as our standard PT and PH units except the base has been configured for mounting on DIN rail.

Hammond is pleased to introduce the NEW ‘PTD’ and ‘PHD’ series . . . the first DIN rail mountable industrial control transformers offered in the market. The benefits of the DIN rail mounting includes:

- No incorrect back-plate holes
- Flexibility in locating the transformer virtually anywhere in the panel.
- No drilling necessary.
- No metal shavings to dispose.
- Substitute or replace any transformer quickly and efficiently.
- All products installed in the control panel can now be bench work assembled.
- All the same great features of the PT and PH series with the ease of DIN rail mounting.
- Optional ‘antivibration’ bracket for high vibration applications and long range shipments.

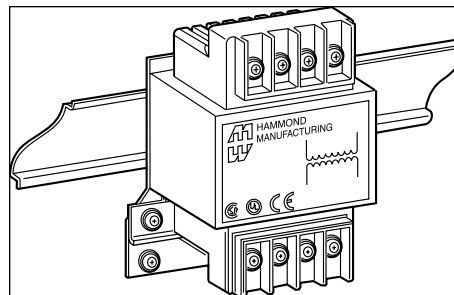
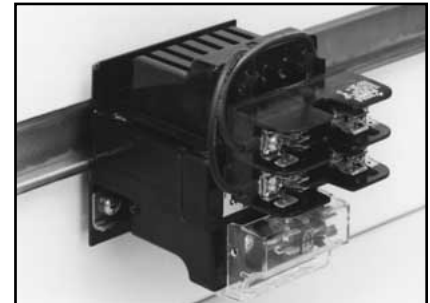


The transformer hooks on to the top edge of the DIN rail. The clamping plate is tightened up under the bottom edge of the rail.



Shows 3 sizes of PTD DIN Rail units mounted in Panel.

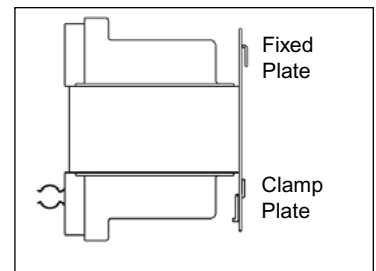
Shows a PTD DIN Rail unit mounted in a panel complete with both primary and secondary fusing options installed.



STANDARDS

Hammond Industrial and Machine Tool Control and Instrument Transformers meet or exceeds the standards established by UL, CSA, IRC, ANSI, NEMA.

| Standard | File # | VA Size |
|--------------------|--------|------------------|
| UL (ANSI/UL 506) | E50394 | All PTD & PHD |
| CSA (C22-2 No. 66) | LR3902 | All PTD & PHD |
| IEC 989 | | All Molded PTD's |
| NEMA (ST-1) | | All PTD & PHD |



SECTION 1



Features

CORE & COILS

- High quality, high permeability silicon steel laminations.
- All-welded construction.
- Computer designed copper wound coils with optimum turns ratio.

INSULATION

- Mylar, Nomex and other insulating materials are used for phase to phase and layer to layer insulation.
- The “PTD” and the “PHD” series transformers have the following insulation systems:
 - Up to 200 VA ; class A, 55°C rise, 105°C class.
 - 250 to 1000 VA ; class B, 80°C rise, 150°C class.
 - 1500 VA and up ; class F, 115°C rise, 180°C class.

VACUUM IMPREGNATION

- All Hammond Control Transformers are Vacuum Impregnated with “VT” (vinyl-toluene) Polyester Resin”.
- Oven cured after vacuum impregnating.

MOLDED CONSTRUCTION

- All PTD and PHD series transformers, up to 1000 VA, are molded in a UL 94 flame retardant polyester compound.
- These units have a thermal plastic, injection molded cover with distinctive cooling fins.

TERMINAL BLOCKS

- Fabricated from molded “high-impact” resin, finished in black.
- Combination Phillips (#2) and Robertson (# 2) Red terminal screws with #9 head, 8-32 UNF threads.
- Terminals are tinned brass and chrome plated, and all connections are soldered.
- Terminals are torque tested with automatic drivers.

NAMEPLATE

- Black letters on white background including terminal markings, schematic and CE mark(PTD series only).
- Polyester, nonconductive material.

DIN RAIL MOUNTING

- Offers a 2-way Din Rail mounting system. A welded mounting plate and an adjustable clamping plate.

FINGER SAFE TERMINAL COVERS

- Finger safe terminal covers for both fused and unfused terminals, in a clear, see through finish, are available for all molded PTD and PHD units.

STANDARD SECONDARY FUSE CLIPS

- Each “PTD” and “PHD” series transformer, that has a single secondary, comes with a factory installed secondary fuse kit (fuses not included).

Benefits

CORE & COILS

- Provides optimum performance and reliability.
- Rugged one-piece assembly with low noise.
- Enhanced voltage regulation with excellent thermal characteristics.

INSULATION

- Provides the best insulated control transformer in the industry.
- Insulation materials are of the highest rating available for the temperature class.
- Assures long life and reliable performance.

VACUUM IMPREGNATION

- Impregnating the entire unit provides a strong mechanical bond and offers protection against environmental conditions.
- Seals the surface and eliminates moisture.

MOLDED CONSTRUCTION

- Completes the protection process by sealing the core and coils against moisture, dirt and other airborne contaminants.
- Strong and durable, yet still dissipates heat quickly and efficiently.

TERMINAL BLOCKS

- Easy access to terminals while separation barriers prevent unintentional contact.
- Versatile screw head with optimum torque and retention ability.
- Assures integrity and strength of connections and terminals
- Withstands any manual installation method.

NAMEPLATE

- Ease of readability results in easier installation.
- Safe for other conductors, even in close proximity.

DIN RAIL MOUNTING

- Provides for easy and quick installation onto standard DIN rail systems with no drilling and few tools.

FINGER SAFE TERMINAL COVERS

- This ensures your protection against electric shock or accidental contact of any kind, and complies with IEC and CE requirements.

STANDARD SECONDARY FUSE CLIPS

- Accommodates 13/32” X 1 1/2” Midget Fuse.



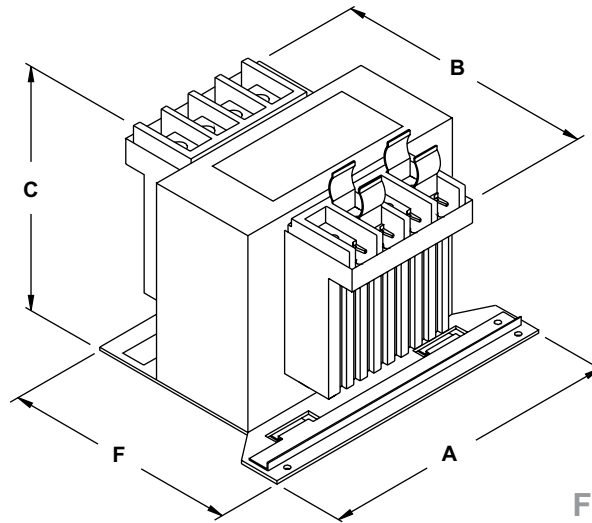


FIGURE A

Group PTD-AA

| | |
|--------------------------|---------------------------|
| Primary Voltage | 240/480, 230/460, 220/440 |
| Secondary Voltage | 120, 115, 110 |
| CE | 50/60 Hertz |

| SCHEMATIC | | CONNECTIONS | | |
|------------|-----------------------|-------------------------------|-------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 240 | H1, H4 | H1-H3, H2-H4 | |
| | 230 | H1, H4 | H1-H3, H2-H4 | |
| | 220 | H1, H4 | H1-H3, H2-H4 | |
| | 480 | H1, H4 | H3-H2 | |
| | 460 | H1, H4 | H3-H2 | |
| 440 | H1, H4 | H3-H2 | | |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 120 | X2, XF | | | |
| 115 | X2, XF | | | |
| 110 | X2, XF | | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Shipping Wt/Lbs | |
|-----------|----------------|-----------|-------------|--------------------|------|------|-----------------|-------|
| | | | | "A" | "B" | "C" | | |
| 25 | PTD25MQMJ | A | 0.22 | 3.75 | 3.25 | 2.75 | 3.80 | 2.35 |
| 50 | PTD50MQMJ | A | 0.43 | 3.75 | 3.75 | 2.75 | 3.80 | 3.60 |
| 75 | PTD75MQMJ | A | 0.65 | 3.75 | 4.00 | 2.75 | 3.80 | 4.35 |
| 100 | PTD100MQMJ | A | 0.87 | 3.75 | 4.50 | 2.75 | 3.80 | 5.15 |
| 150 | PTD150MQMJ | A | 1.30 | 3.75 | 4.25 | 3.25 | 3.80 | 6.15 |
| 200 | PTD200MQMJ | A | 1.74 | 3.75 | 4.25 | 3.25 | 3.80 | 7.75 |
| 250 | PTD250MQMJ | A | 2.17 | 4.50 | 4.88 | 3.85 | 3.80 | 9.50 |
| 300 | PTD300MQMJ | A | 2.61 | 4.50 | 4.88 | 3.85 | 3.80 | 10.75 |
| 350 | PTD350MQMJ | A | 3.04 | 4.50 | 5.38 | 3.85 | 3.80 | 11.75 |
| 500 | PTD500MQMJ | A | 4.35 | 5.25 | 5.13 | 4.50 | 3.80 | 14.75 |

Height dimension (C) does not include secondary fuse clips. Primary jumpers and Secondary fuse clips for 13/32" X 1 1/2" fuse are included.

The output amps are based on a 115V secondary. All dimensions in inches unless otherwise specified.





Group PTD-DD

| | |
|--------------------------|--------------------|
| Primary Voltage | 120/240 |
| Secondary Voltage | 24 |
| CE | 50/60 Hertz |

| SCHEMATIC | | CONNECTIONS | | |
|-------------------|------------------------------|--------------------------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 120 240 | H1, H4 H1, H4 | H1-H3, H2-H4 H2-H3 |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 24 | X2, XF | | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | "F" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------|-----------------|
| | | | | "A" | "B" | "C" | | |
| 25 | PTD25PG | A | 1.04 | 3.75 | 3.25 | 2.75 | 3.80 | 2.35 |
| 50 | PTD50PG | A | 2.08 | 3.75 | 3.75 | 2.75 | 3.80 | 3.60 |
| 75 | PTD75PG | A | 3.13 | 3.75 | 4.00 | 2.75 | 3.80 | 4.35 |
| 100 | PTD100PG | A | 4.17 | 3.75 | 4.50 | 2.75 | 3.80 | 5.15 |
| 150 | PTD150PG | A | 6.25 | 3.75 | 4.25 | 3.25 | 3.80 | 6.15 |
| 200 | PTD200PG | A | 8.33 | 3.75 | 4.25 | 3.25 | 3.80 | 7.75 |
| 250 | PTD250PG | A | 10.40 | 4.50 | 4.88 | 3.85 | 3.80 | 9.50 |
| 300 | PTD300PG | A | 12.50 | 4.50 | 4.88 | 3.85 | 3.80 | 10.75 |
| 350 | PTD350PG | A | 14.60 | 4.50 | 5.38 | 3.85 | 3.80 | 11.75 |
| 500 | PTD500PG | A | 20.80 | 5.25 | 5.13 | 4.50 | 3.80 | 14.75 |

Height dimension (C) does not include secondary fuse clips. Primary jumpers and Secondary fuse clips for 13/32" X 1 1/2" fuse are included.

All dimensions in inches unless otherwise specified.

Group PTD-LL

| | |
|--------------------------|--------------------|
| Primary Voltage | 240/480 |
| Secondary Voltage | 12/24 |
| CE | 50/60 Hertz |

| SCHEMATIC | | CONNECTIONS | | |
|-------------------|------------------------------|--------------------------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 240 480 | H1, H4 H1, H4 | H1-H3, H2-H4 H2-H3 |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 12 24 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | "F" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------|-----------------|
| | | | | "A" | "B" | "C" | | |
| 25 | PTD25QR | A | 2.08/1.04 | 3.75 | 3.25 | 2.75 | 3.80 | 2.35 |
| 50 | PTD50QR | A | 4.17/2.08 | 3.75 | 3.75 | 2.75 | 3.80 | 3.60 |
| 75 | PTD75QR | A | 6.25/3.13 | 3.75 | 4.00 | 2.75 | 3.80 | 4.35 |
| 100 | PTD100QR | A | 8.33/4.17 | 3.75 | 4.50 | 2.75 | 3.80 | 5.15 |
| 150 | PTD150QR | A | 12.5/6.25 | 3.75 | 4.25 | 3.25 | 3.80 | 6.15 |
| 200 | PTD200QR | A | 16.7/8.33 | 3.75 | 4.25 | 3.25 | 3.80 | 7.75 |
| 250 | PTD250QR | A | 20.8/10.4 | 4.50 | 4.88 | 3.85 | 3.80 | 9.50 |

Primary and Secondary jumpers are included. Secondary fuse clips are not applicable.

All dimensions in inches unless otherwise specified.

SECTION 1





SECTION 1

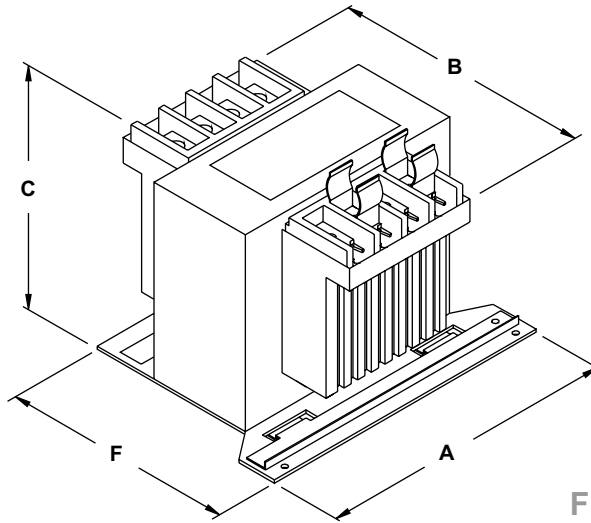


FIGURE A

Group PTD-SS

| | |
|--------------------------|--------------------|
| Primary Voltage | 120/240 |
| Secondary Voltage | 120/240 |
| CE | 50/60 Hertz |

| SCHEMATIC | | CONNECTIONS | |
|-----------|----------------------|--------------------------------|--------------------------------------|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | 120 | H1, H4 | H1-H3, H2-H4 |
| | 240 | H1, H4 | H2-H3 |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | 120 | X1, X4 | X1-X3, X2-X4 |
| | 240 | X1, X4 | X2-X3 |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | Shipping Wt/Lbs | |
|-----------|----------------|-----------|-------------|--------------------|------|------|-----------------|-------|
| | | | | "A" | "B" | "C" | | |
| 25 | PTD25PP | A | 0.21/0.10 | 3.75 | 3.25 | 2.75 | 3.80 | 2.35 |
| 50 | PTD50PP | A | 0.42/0.21 | 3.75 | 3.75 | 2.75 | 3.80 | 3.60 |
| 75 | PTD75PP | A | 0.63/0.31 | 3.75 | 4.00 | 2.75 | 3.80 | 4.35 |
| 100 | PTD100PP | A | 0.83/0.42 | 3.75 | 4.50 | 2.75 | 3.80 | 5.15 |
| 150 | PTD150PP | A | 1.25/0.63 | 3.75 | 4.25 | 3.25 | 3.80 | 6.15 |
| 200 | PTD200PP | A | 1.67/0.83 | 3.75 | 4.25 | 3.25 | 3.80 | 7.75 |
| 250 | PTD250PP | A | 2.08/1.04 | 4.50 | 4.88 | 3.85 | 3.80 | 9.50 |
| 300 | PTD300PP | A | 2.50/1.25 | 4.50 | 4.88 | 3.85 | 3.80 | 10.75 |
| 350 | PTD350PP | A | 2.92/1.46 | 4.50 | 5.38 | 3.85 | 3.80 | 11.75 |
| 500 | PTD500PP | A | 4.17/2.08 | 5.25 | 5.06 | 4.50 | 3.80 | 14.75 |

Primary and Secondary jumpers are included.
Secondary fuse clips are not applicable.

All dimensions in inches unless otherwise specified.





Group PTD-TT

| | |
|--------------------------|---------|
| Primary Voltage | 120/240 |
| Secondary Voltage | 12/24 |
| 50/60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 120 240 | H1, H4 H1, H4 | H1-H3, H2-H4 H2-H3 |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 12 24 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | "F" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------|-----------------|
| | | | | "A" | "B" | "C" | | |
| 25 | PTD25PR | A | 2.08/1.04 | 3.75 | 3.25 | 2.75 | 3.80 | 2.35 |
| 50 | PTD50PR | A | 4.17/2.08 | 3.75 | 3.75 | 2.75 | 3.80 | 3.60 |
| 75 | PTD75PR | A | 6.25/3.13 | 3.75 | 4.00 | 2.75 | 3.80 | 4.35 |
| 100 | PTD100PR | A | 8.33/4.17 | 3.75 | 4.50 | 2.75 | 3.80 | 5.15 |
| 150 | PTD150PR | A | 12.5/6.25 | 3.75 | 4.25 | 3.25 | 3.80 | 6.15 |
| 200 | PTD200PR | A | 16.7/8.33 | 3.75 | 4.25 | 3.25 | 3.80 | 7.75 |
| 250 | PTD250PR | A | 20.8/10.4 | 4.50 | 4.88 | 3.85 | 3.80 | 9.50 |
| 300 | PTD300PR | A | 29.2/14.6 | 4.50 | 4.88 | 3.85 | 3.80 | 10.75 |
| 350 | PTD350PR | A | 41.7/20.8 | 4.50 | 5.38 | 3.85 | 3.80 | 11.75 |
| 500 | PTD500PR | A | 62.5/31.3 | 5.25 | 5.06 | 4.50 | 3.80 | 14.75 |

Primary and Secondary jumpers are included.
Secondary fuse clips are not applicable.

All dimensions in inches unless otherwise specified.

Group PHD-A

| | |
|--------------------------|-----|
| Primary Voltage | 600 |
| Secondary Voltage | 120 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 600 | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 | X2, XF | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | "F" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------|-----------------|
| | | | | "A" | "B" | "C" | | |
| 25 | PHD25AJ | A | 0.21 | 3.75 | 3.25 | 2.75 | 3.80 | 2.00 |
| 50 | PHD50AJ | A | 0.42 | 3.75 | 3.25 | 2.75 | 3.80 | 3.00 |
| 75 | PHD75AJ | A | 0.63 | 3.75 | 3.75 | 2.75 | 3.80 | 4.00 |
| 100 | PHD100AJ | A | 0.83 | 3.75 | 4.00 | 2.75 | 3.80 | 4.00 |
| 150 | PHD150AJ | A | 1.25 | 3.75 | 4.25 | 3.25 | 3.80 | 5.00 |
| 200 | PHD200AJ | A | 1.67 | 3.75 | 4.25 | 3.25 | 3.80 | 6.00 |
| 250 | PHD250AJ | A | 2.08 | 3.75 | 4.25 | 3.25 | 3.80 | 7.00 |
| 350 | PHD350AJ | A | 2.92 | 4.50 | 5.06 | 3.85 | 3.80 | 13.00 |
| 500 | PHD500AJ | A | 4.17 | 5.25 | 5.06 | 4.50 | 3.80 | 18.00 |

Height dimension (C) does not include secondary fuse clips. Primary jumpers and Secondary fuse clips for 13/32" X 1 1/2" fuse are included.

All dimensions in inches unless otherwise specified.





SECTION 1

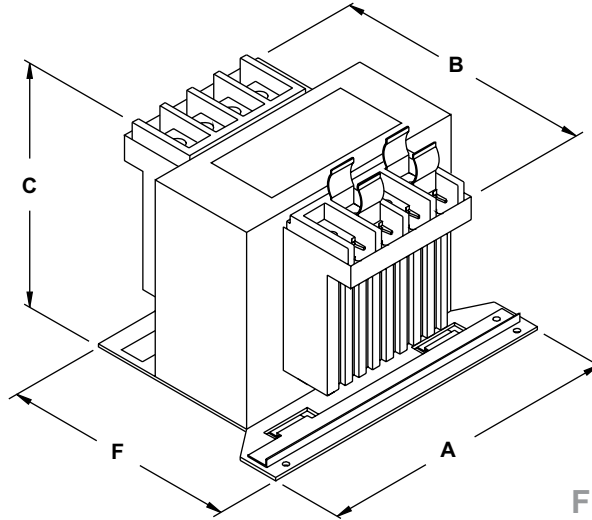


FIGURE A

Group PHD-F

| | |
|--------------------------|---------|
| Primary Voltage | 240/480 |
| Secondary Voltage | 120/240 |

60 Hertz

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 240 480 | H1, H4 H1, H4 | H1-H3, H2-H4 H2-H3 |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------|-----------------|
| | | | | "A" | "B" | "C" | "F" | |
| 25 | PHD25QP | A | 0.21/0.10 | 3.75 | 3.25 | 2.75 | 3.80 | 2.00 |
| 50 | PHD50QP | A | 0.42/0.21 | 3.75 | 3.75 | 2.75 | 3.80 | 3.00 |
| 75 | PHD75QP | A | 0.63/0.31 | 3.75 | 4.00 | 2.75 | 3.80 | 4.00 |
| 100 | PHD100QP | A | 0.83/0.42 | 3.75 | 4.50 | 2.75 | 3.80 | 4.00 |
| 150 | PHD150QP | A | 1.25/0.63 | 3.75 | 4.25 | 3.25 | 3.80 | 5.00 |
| 200 | PHD200QP | A | 1.67/0.83 | 3.75 | 4.25 | 3.25 | 3.80 | 6.00 |
| 250 | PHD250QP | A | 2.08/1.04 | 4.50 | 4.38 | 3.85 | 3.80 | 7.00 |
| 350 | PHD350QP | A | 2.92/1.46 | 4.50 | 4.88 | 3.85 | 3.80 | 13.00 |
| 500 | PHD500QP | A | 4.17/2.08 | 5.25 | 5.06 | 3.85 | 3.80 | 18.00 |

Primary and Secondary jumpers are included.
Secondary fuse clips are not applicable.

All dimensions in inches unless otherwise specified.





Group PHD-K

| | |
|--------------------------|-----|
| Primary Voltage | 600 |
| Secondary Voltage | 24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-------------------|------------------------------|--------------------------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 600 | H1, H2 | |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 24 | X2, XF | | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | "F" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------|-----------------|
| | | | | "A" | "B" | "C" | | |
| 25 | PHD25AG | A | 1.04 | 3.75 | 3.25 | 2.75 | 3.80 | 2.00 |
| 50 | PHD50AG | A | 2.08 | 3.75 | 3.25 | 2.75 | 3.80 | 3.00 |
| 75 | PHD75AG | A | 3.13 | 3.75 | 3.75 | 2.75 | 3.80 | 4.00 |
| 100 | PHD100AG | A | 4.17 | 3.75 | 4.00 | 2.75 | 3.80 | 4.00 |
| 150 | PHD150AG | A | 6.25 | 3.75 | 4.25 | 3.25 | 3.80 | 5.00 |
| 200 | PHD200AG | A | 8.33 | 3.75 | 4.25 | 3.25 | 3.80 | 6.00 |
| 250 | PHD250AG | A | 10.42 | 3.75 | 4.25 | 3.25 | 3.80 | 7.00 |

Height dimension (C) does not include secondary fuse clips. Primary jumpers and Secondary fuse clips for 13/32" X 1 1/2" fuse are included.

All dimensions in inches unless otherwise specified.

Group PHD-N

| | |
|--------------------------|-----|
| Primary Voltage | 120 |
| Secondary Voltage | 24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-------------------|------------------------------|--------------------------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 120 | H1, H2 | |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 24 | X2, XF | | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | "F" | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------|-----------------|
| | | | | "A" | "B" | "C" | | |
| 25 | PH25DJG | A | 1.04 | 3.75 | 3.25 | 2.75 | 3.80 | 2.00 |
| 50 | PHD50JG | A | 2.08 | 3.75 | 3.25 | 2.75 | 3.80 | 3.00 |
| 75 | PHD75JG | A | 3.13 | 3.75 | 3.75 | 2.75 | 3.80 | 4.00 |
| 100 | PHD100JG | A | 4.17 | 3.75 | 4.00 | 2.75 | 3.80 | 4.00 |
| 150 | PHD150JG | A | 6.25 | 3.75 | 4.25 | 3.25 | 3.80 | 5.00 |
| 200 | PHD200JG | A | 8.33 | 3.75 | 4.25 | 3.25 | 3.80 | 6.00 |
| 250 | PHD250JG | A | 10.42 | 3.75 | 4.25 | 3.25 | 3.80 | 7.00 |

Height dimension (C) does not include secondary fuse clips. Primary jumpers and Secondary fuse clips for 13/32" X 1 1/2" fuse are included.

All dimensions in inches unless otherwise specified.



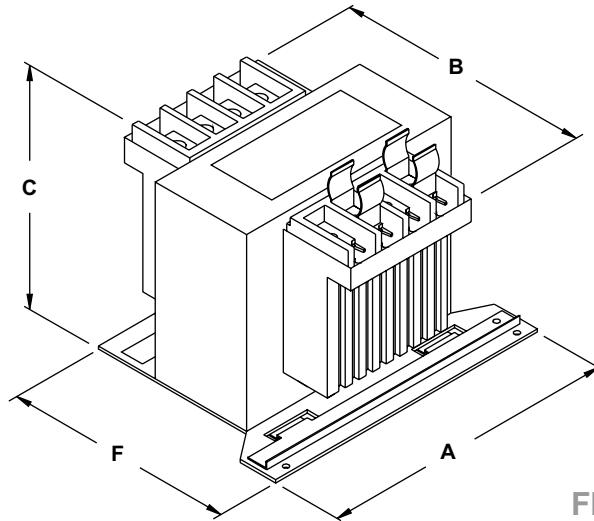


FIGURE A

Group PHD-X

| | |
|--------------------------|-------|
| Primary Voltage | 600 |
| Secondary Voltage | 12/24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-------------------|------------------------------|--------------------------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 600 | H1, H2 | |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 12 | X1, X4 | X1-X3, X2-X4 | | |
| 24 | X1, X4 | X2-X3 | | |

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions | | | | Shipping Wt/Lbs |
|-----------|----------------|-----------|-------------|--------------------|------|------|------|-----------------|
| | | | | "A" | "B" | "C" | "F" | |
| 25 | PHD25AR | A | 2.08/1.04 | 3.75 | 3.25 | 2.75 | 3.80 | 2.00 |
| 50 | PHD50AR | A | 4.17/2.08 | 3.75 | 3.25 | 2.75 | 3.80 | 3.00 |
| 75 | PHD75AR | A | 6.25/3.13 | 3.75 | 3.75 | 2.75 | 3.80 | 4.00 |
| 100 | PHD100AR | A | 8.33/4.17 | 3.75 | 4.00 | 2.75 | 3.80 | 4.00 |
| 150 | PHD150AR | A | 12.5/6.25 | 3.75 | 4.25 | 3.25 | 3.80 | 5.00 |
| 200 | PHD200AR | A | 16.67/8.33 | 3.75 | 4.25 | 3.25 | 3.80 | 6.00 |
| 250 | PHD250AR | A | 20.83/10.42 | 3.75 | 4.25 | 3.25 | 3.80 | 7.00 |

Secondary jumpers are included. Primary jumpers and Secondary fuse clips are not applicable.

All dimensions in inches unless otherwise specified.





PT, PH, PHT and PHD Series Fusing Options

- The PT, PH, PTD and PHD Control Transformers , with terminal covers installed comply with IEC requirements for a “finger safe” device . These control units can be sized directly to meet both North American and IEC Standards.
- All PT, PH, PTD and PHD series control transformers **with a single secondary**, come standard with 13/32” X 1 1/2” midget fuse clips on the secondary.
- Fusing options are available on all PT, PH, PTD and PHD series control transformers, **up to 5000VA on factory installed fuse kits**, and 1000VA on all field installed fuse kits.

FIELD INSTALLED FUSING OPTIONS

| Field Installed Fuse Kits | | | | | | |
|----------------------------|-----------------------------|--|------|-----------|--|---------------------------------|
| Primary (block mounted) | Secondary (clip mounted) | Maximum Applicable VA Secondary Voltage | | | Fuse Kit Catalog No. (Refer to Note 1) | Minimum Quantity Purchase |
| | | 12 V | 24 V | 120V & up | | |
| (none) | 1/4" x 1 1/4" glass | 250 | 500 | 1000 | FK-1-10 | 1 kit (of 10) |
| (none) | 13/32" x 1 1/2" midget | 250 | 500 | 1000 | FK-2-10 | 1 kit (of 10) |
| Dual Rejection | 13/32" x 1 1/2" midget | 250 | 500 | 1000 | FK-3 | 1 box |
| Dual Rejection | 1/4" x 1 1/4" glass | 250 | 500 | 1000 | FK-6 | 1 box |
| Single Rejection | 1/4" x 1 1/4" glass | 250 | 500 | 1000 | FK-9 | 1 box |
| Single Rejection | 13/32" x 1 1/2" midget | 250 | 500 | 1000 | FK-10 | 1 box |
| Dual Rejection | Not Included | 1000 | 1000 | 1000 | FK-11 | 1 box |
| Dual Midget | Not Included | 1000 | 1000 | 1000 | FK-12 | 1 box |
| Dual Rejection | Single Midget (block mount) | 1000 | 1000 | 1000 | FK-14 (Note 2) | 1 box |

Notes:
 (1) Secondary fuse clips for 13/32 x 11/2" midget fuse are standard on all single secondary voltages.
 (2) Uses one “triple” pole fuse block containing: two rejection clips for the primary and one single midget (13/32" X 1 1/2") fuse clip for the secondary. This will allow for the fusing of most transformers containing multiple secondary voltages.

| Field and Factory Installed Fuse Kit Height Dimension Adders For PT and PH Control Transformers | | | | |
|---|-------------------------------|-------------------------------|--|--|
| VA Size | Current PT “C” Dim. Height | Current PH “C” Dim. Height | Field Installed Kit “C” Dim. Height Adder | Factory Installed Kit “C” Dim. Height Adder |
| 25 | 2.75" | 2.75" | 1.50" | 1.50" |
| 50 | 2.75" | 2.75" | 1.50" | 1.50" |
| 75 | 2.75" | 2.75" | 1.50" | 1.50" |
| 100 | 2.75" | 2.75" | 1.50" | 1.33" |
| 150 | 3.25" | 3.25" | 1.50" | 1.33" |
| 200 | 3.25" | 3.25" | 1.50" | 1.45" |
| 250 | 3.85" | 3.85" | 1.50" | 1.45" |
| 350 | 3.85" | 3.85" | 1.50" | 1.50" |
| 500 | 4.50" | 5.10" | 1.30" | 1.50" |
| 750 | 4.50" | 5.10" | 1.30" | 1.50" |
| 1000 | 4.50" | 5.10" | 1.30" | 1.50" |
| 1500 | 5.50" | 6.25" | N/A | 1.50" |
| 2000 | 5.50" | 6.25" | N/A | 1.50" |
| 3000 | 6.38" | 6.25" | N/A | 1.50" |
| 5000 | 7.63" | 7.50" | N/A | 1.50" |
| 7500 | NA | 7.50" | N/A | N/A |

SECTION 1



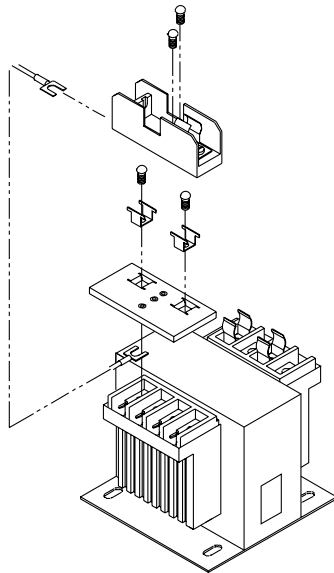


PT, PH, PTD, PHD Series Fusing Options con't ...

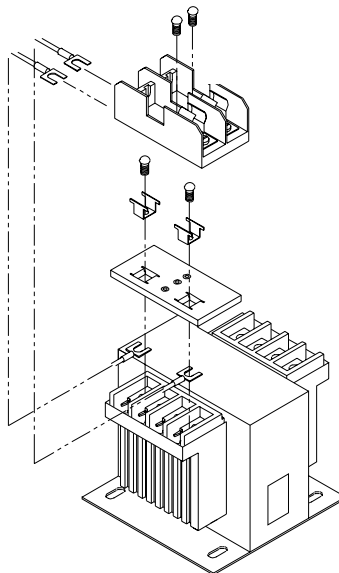
FIELD INSTALLED PRIMARY FUSE KITS

Convenient and versatile primary fuse kits are available to suit any nominal supply voltage. Assembled as a single pole primary fuse block, line to neutral voltage such as 120 volts, can be accommodated. As a double pole fuse block, line to line voltage can be fused, including 600, 480, 240 volts. Either the safety-rejection type or the standard midget style fuse can be used by selecting the appropriate fuse kit below. All Hammond pre-engineered primary fuse kits includes a fuse block, lead wire harness, mounting plate and clips, and all necessary mounting hardware.

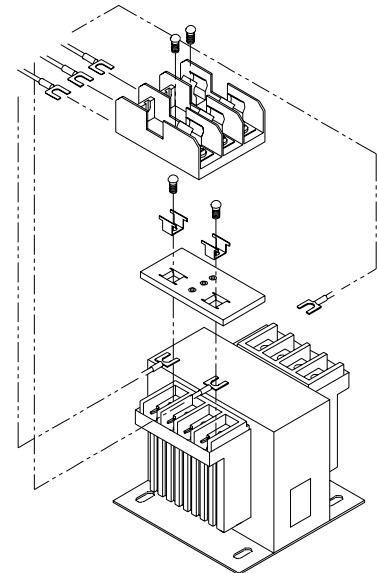
Single Pole Fuse Kit (for units up to 1000VA)



Double Pole Fuse Kit (for units up to 1000VA)

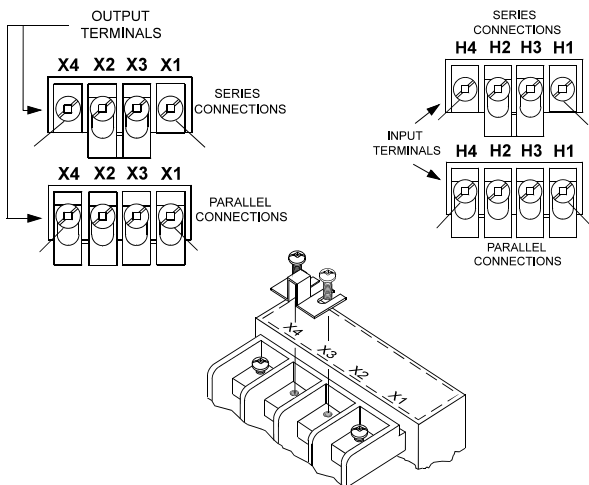


Triple Pole Fuse Kit (for units up to 1000VA)



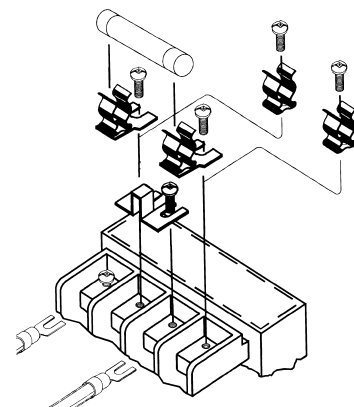
Voltage Links

- Voltage links are separately packaged for user installation to ensure links are installed on the correct voltage combination. The links are included at **no charge**.



Field Installed Secondary Fuse Kits

- Secondary Fuse kits consist of all necessary fuse clips, hardware and voltage links.
- Fuse clips are easy to install in the terminal block (see diagram below). Fuses are then easily snapped into place. (Fuses not included)



SECTION 1



Factory Installed Fusing Options

- When factory installed fusing options are selected by adding the appropriate suffix, transformers will be shipped with the corresponding primary and secondary fusing as indicated in the chart below.

| Factory Installed Fused Kits | | | | | |
|------------------------------|-----------------------------|--|------|-----------|--|
| Primary (block mounted) | Secondary (clip mounted) | Maximum Applicable VA Secondary Voltage | | | Add 'Suffix' to Catalog Part Number (Min. order 10 pieces) |
| | | 12 V | 24 V | 120V & up | |
| (none) | Not Installed | - | - | - | -0 |
| (none) | 1/4" x 1 1/4" glass | 250 | 500 | 1000 | -1 |
| (none) | 13/32" x 1 1/2" midget | 250 | 500 | 1000 | Standard (Note 1) |
| Dual Rejection | 13/32" x 1 1/2" midget | 250 | 500 | 1000 | -3 (Note 2) |
| Dual Rejection | 1/4" x 1 1/4" glass | 250 | 500 | 1000 | -4 |
| Single Rejection | 1/4" x 1 1/4" glass | 250 | 500 | 1000 | -5 |
| Single Rejection | 13/32" x 1 1/2" midget | 250 | 500 | 1000 | -6 |
| Dual Rejection | Not included | 5000 | 5000 | 5000 | -7 |
| Dual Midget | Not included | 5000 | 5000 | 5000 | -8 |
| Dual Rejection | Single Midget (block mount) | 5000 | 5000 | 3000 | -9 (Note 3) |

Notes:

(1) Secondary fuse clips for 13/32 x 11/2" midget fuse are standard on all single secondary voltages.

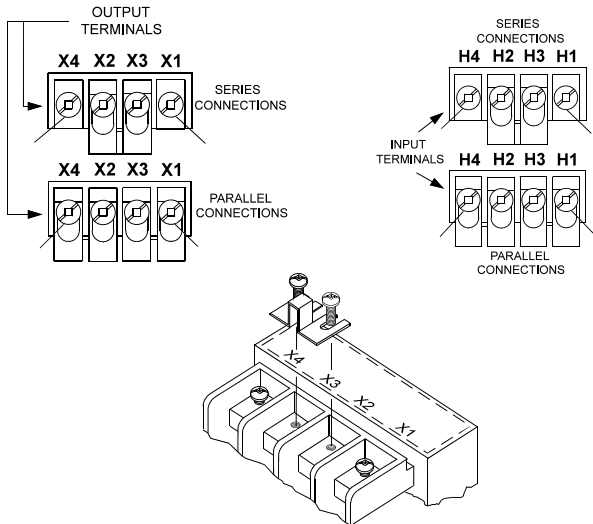
(2) Primary Dual Rejection/Secondary Midget fuse kits (-3) are stocked in the following voltage combination:

| | |
|---------------------------|--|
| Group AA (PT___MQMJ) | > Primary 240/480 volts, Secondary 120 volts |
| Group CC (PT___QG) | > Primary 240/480 volts, Secondary 24 volts |
| Group A (PH___AJ) | > Primary 600 volts, Secondary 120 volts |
| Group PTD-AA (PTD___MQMJ) | > Primary 240/480 volts, Secondary 120 volts |
| Group PHD-A (PHD___AJ) | > Primary 600 volts, Secondary 120 volts |

(3) Uses one "triple" pole fuse block containing: two rejection clips for the primary and one single midget (13/32" X 1 1/2") fuse clip for the secondary. This will allow for the fusing of most transformers containing multiple secondary voltages.

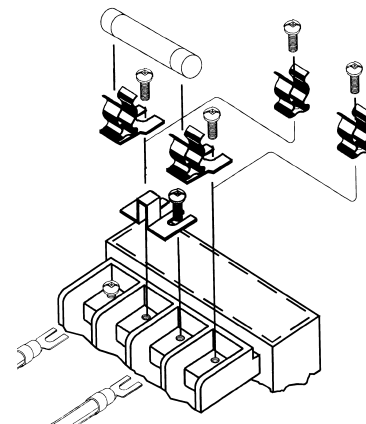
Voltage Links

- Voltage links are separately packaged for user installation to ensure links are installed on the correct voltage combination. The links are included at **no charge**.



Factory Installed Secondary Fuse Kits

- Secondary Fuse kits consist of all necessary fuse clips, hardware and voltage links.
- Fuse clips are easy to install in the terminal block (see diagram below). Fuses are then easily snapped into place. (Fuses not included)



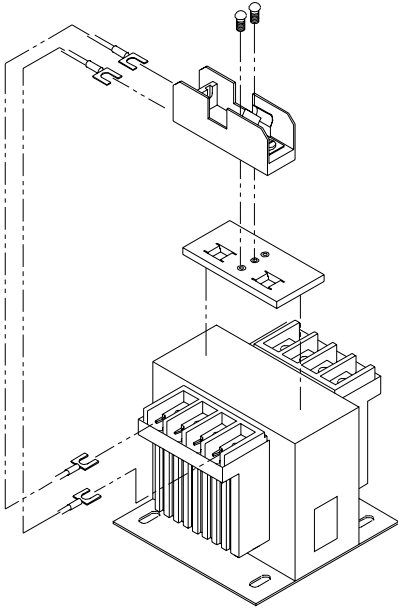


PT, PH, PTD, PHD Series Fusing Options can't ...

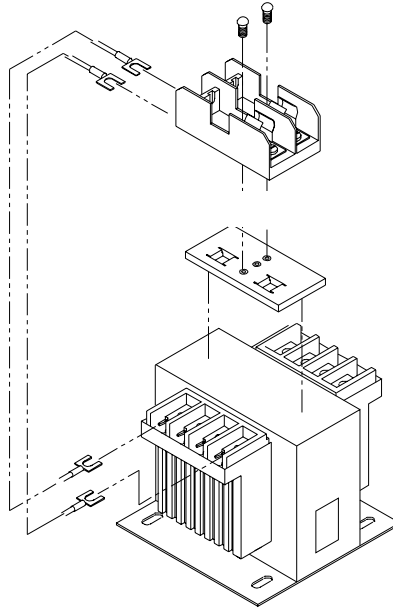
FACTORY INSTALLED PRIMARY FUSE KITS

Our pre-engineered factory installed primary fuse kits, **now mounted directly onto the transformer core**, includes the fuse block, lead wire harness, mounting plate and hardware.

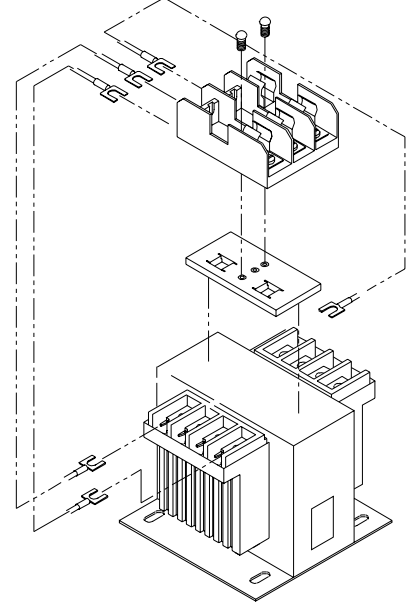
Single Pole Fuse Kit
(for units up to 1000VA)



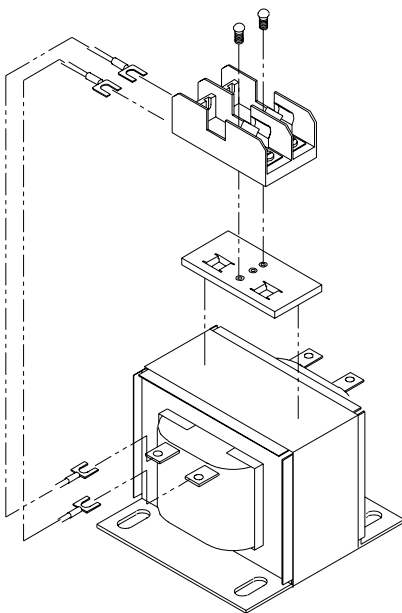
Double Pole Fuse Kit
(for units up to 1000VA)



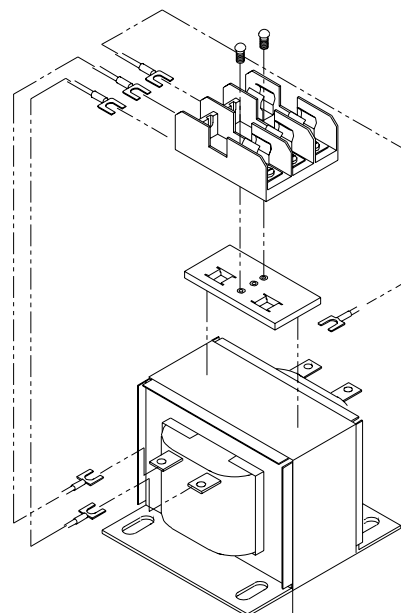
Triple Pole Fuse Kit
(for units up to 1000VA)



Double Pole Fuse Kit
(for Open Style units over 1000VA)



Triple Pole Fuse Kit
(for Open Style units over 1000VA)



SECTION 1





Recommendations For Overcurrent Protection

UL AND CSA (NORTH AMERICAN) STANDARDS

North American standards, including UL 508, National Electric Code 450 and the Canadian Electrical Code Part I, require overcurrent protection on all control circuit transformers. There are two options for overcurrent protection:

Option 1

Provide an overcurrent device in the primary circuit rated to the current of the transformer. The overcurrent limits are as follows:

- Primary 9 amps or more; no more than 125% of rated current.
- Primary 2 to 9 amps; no more than 167% of rated current.
- Primary less than 2 amps; no more than 300% of rated current for power circuits.
no more than 500% of rated current for control circuits.

This method is considered less desirable as start-up inrush to the transformer can frequently surpass the current rating of the device and result in nuisance interruptions.

Option 2

The second option is to install overcurrent devices in both the primary and secondary circuits of the transformer. In this option, the secondary device must be rated no more than 125% of rated current of the transformer and the primary no more than 250%. (CEC permits 300% overcurrent on the primary for this option).

In both options listed, it is recommended that **time delay** fuses be considered to avoid unnecessary interruptions.

Secondary

The overcurrent protection listed below, in amperes, is 125% of the rated current of the transformer. Choose the next higher fuse rating if these numbers do not correspond with standard fuse selections.

| Sec. Voltage | VA RATING | | | | | | | | | | | | | | | |
|--------------|-----------|--------|-------|--------|-------|--------|--------|-------|--------|--------|--------|------|------|------|------|------|
| | 25 | 50 | 75 | 100 | 150 | 200 | 250 | 300 | 350 | 500 | 750 | 1000 | 1500 | 2000 | 3000 | 5000 |
| 12 | 3-1/2 | 7 | 10 | 15 | 20 | 30 | - | - | - | - | - | - | - | - | - | - |
| 24 | 1-6/10 | 3-2/10 | 5 | 6-1/4 | 10 | 12 | 15 | 20 | 20 | 30 | - | - | - | - | - | - |
| 90 | 4/10 | 8/10 | 1-1/4 | 1-8/10 | 2-1/2 | 3-1/2 | 4-1/2 | 5 | 6-1/4 | 9 | 12 | 15 | 30 | 30 | - | - |
| 95 | 4/10 | 8/10 | 1-1/4 | 1-6/10 | 2-1/2 | 3-1/2 | 4 | 5 | 6 | 8 | 12 | 15 | 20 | 30 | - | - |
| 100 | 4/10 | 8/10 | 1-1/4 | 1-6/10 | 2-1/2 | 3-2/10 | 4 | 5 | 5-6/10 | 8 | 12 | 15 | 20 | 30 | - | - |
| 110 | 3/10 | 3/4 | 1-1/8 | 1-1/2 | 2-1/4 | 3 | 3-1/2 | 4-1/2 | 5 | 7-1/2 | 10 | 15 | 20 | 30 | - | - |
| 115 | 3/10 | 6/10 | 1 | 1-4/10 | 2 | 2-8/10 | 3-1/2 | 4 | 5 | 7 | 10 | 15 | 20 | 30 | - | - |
| 120 | 3/10 | 6/10 | 1 | 1-1/4 | 2 | 2-1/2 | 3-2/10 | 4 | 4-1/2 | 6-1/4 | 10 | 15 | 20 | 20 | - | - |
| 220 | 15/100 | 3/10 | 1/2 | 3/4 | 1-1/8 | 1-1/2 | 1-8/10 | 2-1/4 | 2-1/2 | 3-1/2 | 5-6/10 | 7 | 9 | 15 | 20 | 30 |
| 230 | 15/100 | 3/10 | 1/2 | 6/10 | 1 | 1-4/10 | 1-8/10 | 2 | 2-1/2 | 3-1/2 | 5 | 7 | 8 | 15 | 20 | 30 |
| 240 | 15/100 | 3/10 | 1/2 | 6/10 | 1 | 1-1/4 | 1-6/10 | 2 | 2-1/4 | 3-2/10 | 5 | 7 | 8 | 12 | 20 | 30 |





Recommendations For Overcurrent Protection con't...

Primary (UL and CSA)

To assist in the selection of fuses, the following chart recommends the maximum primary fuse rating, in amperes. The first number shown is the maximum overcurrent protection when the primary current is less than 2 amps and the overcurrent protection device is rated for 300%. The second number shown (in brackets) is recommended when the primary is less than 2 amps and the overcurrent device is to be rated at 500% of rated current. Where only one number is indicated, the primary is 2 amps or more and one rating of over current protection is shown as optimal. Choose the next higher fuse rating if these numbers do not correspond with standard fuse selections.

SECTION 1

| Pri. Volt | VA RATING | | | | | | | | | | | | | | | | |
|----------------------|------------------|-------------------|------------------|-------------------|-------------------|-------------------|--------------------|-------------------|-------------------|------------------|--------|-------|-------|------|------|------|------|
| | 25 | 50 | 75 | 100 | 150 | 200 | 250 | 300 | 350 | 500 | 750 | 1000 | 1500 | 2000 | 3000 | 5000 | 7500 |
| 115 (1) | 6/10 (2) | 1-1/4 (3-2/10) | 1-8/10 (4) | 2-1/2 (6-1/4) | 3-1/2 (8) | 5 | 4 | 5 | 5 | 8 | 10 | 15 | 20 | 25 | - | - | - |
| 120 (1) | 6/10 (2) | 1-1/4 (3) | 1-8/10 (4) | 2-1/4 (6-1/4) | 3-1/2 (8) | 5 | 4 | 5 | 5 | 8 | 10 | 15 | 15 | 20 | - | - | - |
| 200 (6/10) | 3/10 (1-1/4) | 3/4 (1-8/10) | 1-1/8 (2-1/2) | 1-1/2 (3-1/2) | 2-1/4 (5) | 3 | 3-1/2 (7-1/2) | 4-1/2 (8) | 5 | 4-1/2 | 7 | 9 | 15 | 15 | 20 | - | - |
| 208 (6/10) | 3/10 (1-1/8) | 6/10 (1-8/10) | 1 (2-1/4) | 1-4/10 (3-1/2) | 2 (4-1/2) | 2-8/10 (6) | 3-1/2 (7) | 4 (8) | 5 | 4 | 6 | 8 | 12 | 15 | 20 | 30 | - |
| 220 (1/2) | 3/10 (1-1/8) | 6/10 (1-6/10) | 1 (2-1/4) | 1-1/4 (3-2/10) | 2 (4-1/2) | 2-1/2 (5-6/10) | 3-2/10 (6-1/4) | 4 (7-1/2) | 4-1/2 | 4 | 6 | 8 | 12 | 15 | 20 | 30 | - |
| 230 (1/2) | 3/10 (1) | 6/10 (1-6/10) | 8/10 (2) | 1-1/4 (3-2/10) | 1-8/10 (4) | 2-1/2 (5) | 3-2/10 (6-1/4) | 3-1/2 (7-1/2) | 4-1/2 | 4 | 6 | 8 | 10 | 15 | 20 | 30 | - |
| 240 (1/2) | 3/10 (1) | 6/10 (1-1/2) | 8/10 (2) | 1-1/4 (3) | 1-8/10 (4) | 2-1/4 (5) | 3 (6-1/4) | 3-1/2 (7) | 4 | 3-1/2 | 5 | 7 | 10 | 15 | 15 | 30 | - |
| 277 (4/10) | 1/4 (8/10) | 1/2 (1-1/4) | 8/10 (1-8/10) | 1 (2-1/2) | 1-6/10 (3-1/2) | 2 (4-1/2) | 2-1/2 (5) | 3-2/10 (6-1/4) | 3-1/2 (9) | 5 | 5 | 6 | 9 | 12 | 15 | 25 | - |
| 347 (4/10) | 1/4 (8/10) | 1/2 (1-1/4) | 8/10 (1-8/10) | 1 (2-1/2) | 1-6/10 (3-1/2) | 2 (4-1/2) | 2-1/2 (5) | 3-2/10 (6-1/4) | 3-1/2 (9) | 5 | 6-1/4 | 5 | 7-1/2 | 10 | 15 | 20 | 30 |
| 380 (3/10) | 3/16 (6/10) | 3/10 (8/10) | 1/2 (1-1/4) | 3/4 (1-8/10) | 1-1/8 (2-1/2) | 1-1/2 (3-2/10) | 1-8/10 (3-1/2) | 2-1/4 (4-1/2) | 2-1/2 (6-1/4) | 3-1/2 (9) | 5-6/10 | 4-1/2 | 6-1/4 | 9 | 15 | 20 | 25 |
| 400 (3/10) | 3/16 (6/10) | 3/10 (8/10) | 1/2 (1-1/4) | 3/4 (1-8/10) | 1-1/8 (2-1/2) | 1-1/2 (3) | 1-8/10 (3-1/2) | 2-1/4 (4) | 2-1/2 (6-1/4) | 3-1/2 (9) | 5-6/10 | 4-1/2 | 6-1/4 | 9 | 12 | 15 | 20 |
| 416 (3/10) | 15/100 (6/10) | 3/10 (8/10) | 1/2 (1-1/8) | 6/10 (1-8/10) | 1 (2-1/4) | 1-4/10 (3) | 1-8/10 (3-1/2) | 2 (4) | 2-1/2 (6) | 3-1/2 (9) | 5 | 4 | 6 | 8 | 12 | 15 | 20 |
| 440 (1/4) | 15/100 (1/2) | 3/10 (8/10) | 1/2 (1-1/8) | 6/10 (1-6/10) | 1 (2-1/4) | 1-1/4 (2-8/10) | 1-6/10 (3-2/10) | 2 (3-1/2) | 2-1/4 (5-6/10) | 3-2/10 (8) | 5 | 4 | 6 | 8 | 12 | 15 | 20 |
| 460 (1/4) | 15/100 (1/2) | 3/10 (8/10) | 4/10 (1) | 6/10 (1-6/10) | 8/10 (2) | 1-1/4 (2-1/2) | 1-6/10 (3-2/10) | 1-8/10 (3-1/2) | 2-1/4 (5) | 3-2/10 (8) | 4-1/2 | 3-1/2 | 6 | 8 | 12 | 15 | 20 |
| 480 (1/4) | 15/100 (1/2) | 3/10 (3/4) | 4/10 (1) | 6/10 (1-1/2) | 8/10 (2) | 1-1/4 (2-1/2) | 1-1/2 (3) | 1-8/10 (3-1/2) | 2 (5) | 3 (7-1/2) | 4-1/2 | 3-1/2 | 5 | 7 | 10 | 15 | 20 |
| 550 (2/10) | 1/8 (4/10) | 1/4 (6/10) | 4/10 (8/10) | 1/2 (1-1/4) | 8/10 (1-8/10) | 1 (2-1/4) | 1-1/4 (2-1/2) | 1-6/10 (3) | 1-8/10 (4-1/2) | 2-1/2 (6-1/4) | 4 | 5 | 4-1/2 | 6 | 9 | 15 | 15 |
| 575 (2/10) | 1/8 (4/10) | 1/4 (6/10) | 3/10 (8/10) | 1/2 (1-1/4) | 3/4 (1-6/10) | 1 (2) | 1-1/4 (2-1/2) | 1-1/2 (3) | 1-8/10 (4) | 2-1/2 (6-1/4) | 3-1/2 | 5 | 4-1/2 | 6 | 9 | 15 | 15 |
| 600 (2/10) | 1/8 (4/10) | 2/10 (6/10) | 3/10 (8/10) | 1/2 (1-1/4) | 3/4 (1-6/10) | 8/10 (2) | 1-1/4 (2-1/2) | 1-1/2 (2-8/10) | 1-6/10 (4) | 2-1/4 (6-1/4) | 3-1/2 | 5 | 4 | 6 | 9 | 15 | 15 |

References:
UL 508, 32.7
UL 845, 11.16 and 11.17
NEC 430-72 (c) exception #2
NEC 450-3 (b) 1 and 2
CEC Part I, 26-256





IEC (EUROPEAN) STANDARDS

IEC (European) Standards are very different from UL (North American) standards including fuses and fuse selection guidelines. As the electrical characteristics of these fuses are different, UL and IEC rated fuses are **NOT interchangeable**. Of significance is the time current characteristics. Fuses built to North American standards **DO NOT MEET** European Standards.

Unlike North American standards whereby overcurrent protection is to be 125% of the rated current of the transformer (25% derated), **no derating** is required for IEC Fusing applications.

Secondary (IEC)

| Sec. Volt | MAXIMUM RECOMMENDED IEC FUSE RATING | | | | | | | | | | | |
|--------------|-------------------------------------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| | 25VA | 50VA | 75VA | 100VA | 150VA | 200VA | 250VA | 300VA | 350VA | 500VA | 750VA | 1000VA |
| 12 V | 2.08 A | 4.17 A | 6.25 A | 8.33 A | 9.00 A | 16.67 A | 20.83 A | 25.00 A | 29.17 A | 41.67 A | 62.50 A | 83.33 A |
| 24 V | 1.04 A | 2.08 A | 3.13 A | 4.17 A | 1.08 A | 8.33 A | 10.42 A | 12.50 A | 14.58 A | 20.83 A | 31.25 A | 41.67 A |
| 90 V | 0.28 A | 0.56 A | 0.83 A | 1.11 A | 0.49 A | 2.22 A | 2.78 A | 3.33 A | 3.89 A | 5.56 A | 8.33 A | 11.11 A |
| 95 V | 0.26 A | 0.53 A | 0.79 A | 1.05 A | 0.23 A | 2.11 A | 2.63 A | 3.16 A | 3.68 A | 5.26 A | 7.89 A | 10.53 A |
| 100 V | 0.25 A | 0.50 A | 0.75 A | 1.00 A | 0.12 A | 2.00 A | 2.50 A | 3.00 A | 3.50 A | 5.00 A | 7.50 A | 10.00 A |
| 110 V | 0.23 A | 0.45 A | 0.68 A | 0.91 A | 0.06 A | 1.82 A | 2.27 A | 2.73 A | 3.18 A | 4.55 A | 6.82 A | 9.09 A |
| 115 V | 0.22 A | 0.43 A | 0.65 A | 0.87 A | 0.04 A | 1.74 A | 2.17 A | 2.61 A | 3.04 A | 4.35 A | 6.52 A | 8.70 A |
| 120 V | 0.21 A | 0.42 A | 0.63 A | 0.83 A | 0.02 A | 1.67 A | 2.08 A | 2.50 A | 2.92 A | 4.17 A | 6.25 A | 8.33 A |
| 220 V | 0.11 A | 0.23 A | 0.34 A | 0.45 A | 0.02 A | 0.91 A | 1.14 A | 1.36 A | 1.59 A | 2.27 A | 3.41 A | 4.55 A |
| 230 V | 0.11 A | 0.22 A | 0.33 A | 0.43 A | 0.03 A | 0.87 A | 1.09 A | 1.30 A | 1.52 A | 2.17 A | 3.26 A | 4.35 A |
| 240 V | 0.10 A | 0.21 A | 0.31 A | 0.42 A | 0.03 A | 0.83 A | 1.04 A | 1.25 A | 1.46 A | 2.08 A | 3.13 A | 4.17 A |

Note: IEC publication 127, Sheet III, Type M fuses are recommended.

Primary (IEC)

| Pri. Volt | MAXIMUM RECOMMENDED IEC FUSE RATING | | | | | | | | | | | |
|--------------|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 25VA | 50VA | 75VA | 100VA | 150VA | 200VA | 250VA | 300VA | 350VA | 500VA | 750VA | 1000VA |
| 230 V | 0.11 A | 0.22 A | 0.33 A | 0.43 A | 0.03 A | 0.87 A | 1.09 A | 1.30 A | 1.52 A | 2.17 A | 3.26 A | 4.35 A |
| 240 V | 0.10 A | 0.21 A | 0.31 A | 0.42 A | 0.03 A | 0.83 A | 1.04 A | 1.25 A | 1.46 A | 2.08 A | 3.13 A | 4.17 A |
| 115 V | 0.31 A | 0.57 A | 0.78 A | 1.10 A | 1.57 A | 1.98 A | 2.50 A | 2.92 A | 3.44 A | 5.01 A | 7.25 A | 9.44 A |
| 120 V | 0.30 A | 0.55 A | 0.75 A | 1.05 A | 1.50 A | 1.90 A | 2.40 A | 2.80 A | 3.30 A | 4.80 A | 6.95 A | 9.05 A |
| 200 V | 0.18 A | 0.33 A | 0.45 A | 0.63 A | 0.90 A | 1.14 A | 1.44 A | 1.68 A | 1.98 A | 2.88 A | 4.17 A | 5.43 A |
| 208 V | 0.17 A | 0.32 A | 0.43 A | 0.61 A | 0.87 A | 1.10 A | 1.38 A | 1.62 A | 1.90 A | 2.77 A | 4.01 A | 5.22 A |
| 220 V | 0.16 A | 0.30 A | 0.41 A | 0.57 A | 0.82 A | 1.04 A | 1.31 A | 1.53 A | 1.80 A | 2.62 A | 3.79 A | 4.94 A |
| 230 V | 0.16 A | 0.29 A | 0.39 A | 0.55 A | 0.78 A | 0.99 A | 1.25 A | 1.46 A | 1.72 A | 2.50 A | 3.63 A | 4.72 A |
| 240 V | 0.15 A | 0.28 A | 0.38 A | 0.53 A | 0.75 A | 0.95 A | 1.20 A | 1.40 A | 1.65 A | 2.40 A | 3.47 A | 4.53 A |
| 277 V | 0.13 A | 0.24 A | 0.32 A | 0.45 A | 0.65 A | 0.82 A | 1.04 A | 1.21 A | 1.43 A | 2.08 A | 3.01 A | 3.92 A |
| 347 V | 0.10 A | 0.19 A | 0.26 A | 0.36 A | 0.52 A | 0.66 A | 0.83 A | 0.97 A | 1.14 A | 1.66 A | 2.40 A | 3.13 A |
| 380 V | 0.09 A | 0.17 A | 0.24 A | 0.33 A | 0.47 A | 0.60 A | 0.76 A | 0.88 A | 1.04 A | 1.52 A | 2.19 A | 2.86 A |
| 400 V | 0.09 A | 0.17 A | 0.23 A | 0.32 A | 0.45 A | 0.57 A | 0.72 A | 0.84 A | 0.99 A | 1.44 A | 2.08 A | 2.71 A |
| 416 V | 0.09 A | 0.16 A | 0.22 A | 0.30 A | 0.43 A | 0.55 A | 0.69 A | 0.81 A | 0.95 A | 1.38 A | 2.00 A | 2.61 A |
| 440 V | 0.08 A | 0.15 A | 0.20 A | 0.29 A | 0.41 A | 0.52 A | 0.65 A | 0.76 A | 0.90 A | 1.31 A | 1.90 A | 2.47 A |
| 460 V | 0.08 A | 0.14 A | 0.20 A | 0.27 A | 0.39 A | 0.50 A | 0.63 A | 0.73 A | 0.86 A | 1.25 A | 1.81 A | 2.36 A |
| 480 V | 0.07 A | 0.14 A | 0.19 A | 0.26 A | 0.38 A | 0.47 A | 0.60 A | 0.70 A | 0.82 A | 1.20 A | 1.74 A | 2.26 A |
| 550 V | 0.07 A | 0.12 A | 0.16 A | 0.23 A | 0.33 A | 0.41 A | 0.52 A | 0.61 A | 0.72 A | 1.05 A | 1.52 A | 1.97 A |
| 575 V | 0.06 A | 0.11 A | 0.16 A | 0.22 A | 0.31 A | 0.40 A | 0.50 A | 0.58 A | 0.69 A | 1.00 A | 1.45 A | 1.89 A |
| 600 V | 0.06 A | 0.11 A | 0.15 A | 0.21 A | 0.30 A | 0.38 A | 0.48 A | 0.56 A | 0.66 A | 0.96 A | 1.39 A | 1.81 A |

Note: IEC publication 127, Sheet I, Type T fuses are recommended.





SL Series Control Transformers

Applications

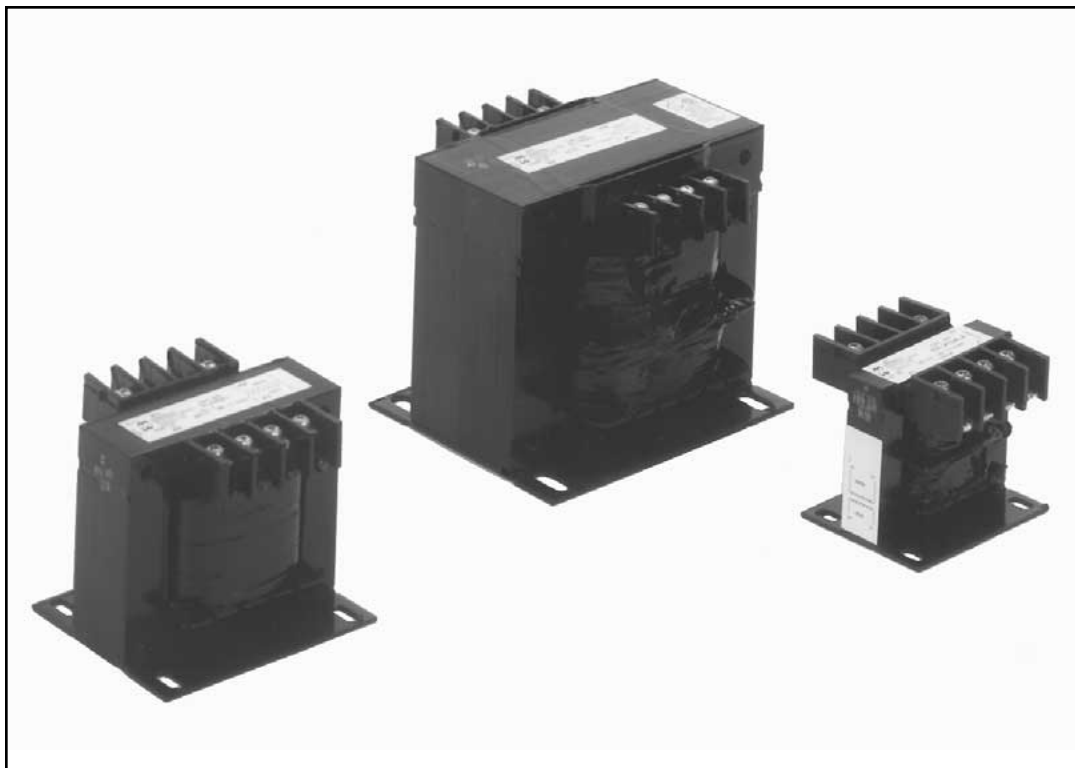
Hammond is pleased to introduce a line of specialty control transformers ideally suited for general purpose, industrial, light duty loads. Designed for applications where high inrush or machine tool duty are not necessary, the SL control transformer offers an efficient and economical solution. These units are well suited for HVAC applications, signal and alarm systems, small motors, lighting and circuit isolation.

The SL control transformer is an open style unit with molded terminal blocks, but available with a full array of features including 10 fusing options, multiple primary and secondary voltages and optional clear plastic 'finger safe' terminal covers.

For an economical approach for control transformers, the SL is the transformer of choice.

Features

- CSA Certified (file LR3902 and LR38216), UL Listed (file E50394).
- Meets NEMA and ANSI standards.
- Molded terminal blocks for primary and secondary connections up to 1000 VA. Open terminals over 1000 VA.
- 60 Hz Operation
- Welded core construction
- Coils with high dielectric strength insulation.
- All SL Series Transformers are Vacuum Impregnated with "VT" (vinyl-toluene) Polyester Resin and oven cured.
- Mylar®, Nomex® and other insulating materials are used. The SL series transformers have the following insulation systems:
 - Up to 250 VA: 55°C rise, 105°C temperature class (A)
 - 250 VA to 1500 VA: 80°C rise, 130°C temperature class (B)
 - 2000 VA to 5000 VA: 115°C rise, 180°C temperature class (F)





SL Series Selection Tables

SECTION 1

| Primary Voltage | Secondary Voltage | PART NUMBERS | | | | | | | |
|-----------------|-------------------|--------------|--------|--------|---------|---------|---------|---------|---------|
| | | 25 VA | 50 VA | 75 VA | 100 VA | 150 VA | 200 VA | 250 VA | 350 VA |
| 600 | 240 | SL25AM | SL50AM | SL75AM | SL100AM | SL150AM | SL200AM | SL250AM | SL350AM |
| 600 | 120/240 | SL25AP | SL50AP | SL75AP | SL100AP | SL150AP | SL200AP | SL250AP | SL350AP |
| 600 | 120 | SL25AJ | SL50AJ | SL75AJ | SL100AJ | SL150AJ | SL200AJ | SL250AJ | SL350AJ |
| 600 | 24 | SL25AG | SL50AG | SL75AG | SL100AG | SL150AG | SL200AG | SL250AG | SL350AG |
| 600 | 12/24 | SL25AR | SL50AR | SL75AR | SL100AR | SL500AR | SL200AR | SL250AR | SL350AR |
| 600 | 12 | SL25AE | SL50AE | SL75AE | SL100AE | SL150AE | SL200AE | SL250AE | SL350AE |
| 480 | 240 | SL25CM | SL50CM | SL75CM | SL100CM | SL150CM | SL200CM | SL250CM | SL350CM |
| 480 | 120 | SL25CJ | SL50CJ | SL75CJ | SL100CJ | SL150CJ | SL200CJ | SL250CJ | SL350CJ |
| 480 | 24 | SL25CG | SL50CG | SL75CG | SL100CG | SL150CG | SL200CG | SL250CG | SL350CG |
| 480 | 12/24 | SL25CR | SL50CR | SL75CR | SL100CR | SL150CR | SL200CR | SL250CR | SL350CR |
| 347 | 120/240 | SL25KP | SL50KP | SL75KP | SL100KP | SL150KP | SL200KP | SL250KP | SL350KP |
| 240/480 | 120 | SL25QJ | SL50QJ | SL75QJ | SL100QJ | SL150QJ | SL200QJ | SL250QJ | SL350QJ |
| 240/480 | 120/240 | SL25QP | SL50QP | SL75QP | SL100QP | SL150QP | SL200QP | SL250QP | SL350QP |
| 240/480 | 12/24 | SL25QR | SL50QR | SL75QR | SL100QR | SL150QR | SL200QR | SL250QR | SL350QR |
| 240 | 120 | SL25MJ | SL50MJ | SL75MJ | SL100MJ | SL150MJ | SL200MJ | SL250MJ | SL350MJ |
| 208 | 120 | SL25LJ | SL50LJ | SL75LJ | SL100LJ | SL150LJ | SL200LJ | SL250LJ | SL350LJ |
| 208 | 24 | SL25LG | SL50LG | SL75LG | SL100LG | SL150LG | SL200LG | SL250LG | SL350LG |
| 120/240 | 24 | SL25PG | SL50PG | SL75PG | SL100PG | SL150PG | SL200PG | SL250PG | SL350PG |
| 120 | 12/24 | SL25JR | SL50JR | SL75JR | SL100JR | SL150JR | SL200JR | SL250JR | SL350JR |
| 120 | 24 | SL25JG | SL50JG | SL75JG | SL100JG | SL150JG | SL200JG | SL250JG | SL350JG |
| 120 | 12 | SL25JE | SL50JE | SL75JE | SL100JE | SL150JE | SL200JE | SL250JE | SL350JE |

| Primary Voltage | Secondary Voltage | PART NUMBERS | | | | | | |
|-----------------|-------------------|--------------|---------|----------|----------|----------|----------|----------|
| | | 500 VA | 750 VA | 1000 VA | 1500 VA | 2000 VA | 3000 VA | 5000 VA |
| 600 | 240 | SL500AM | SL750AM | SL1000AM | SL1500AM | SL2000AM | | |
| 600 | 120/240 | SL500AP | SL750AP | SL1000AP | SL1500AP | SL2000AP | | |
| 600 | 120 | SL500AJ | SL750AJ | SL1000AJ | SL1500AJ | SL2000AJ | SL3000AJ | SL5000AJ |
| 600 | 24 | SL500AG | | | | | | |
| 600 | 12/24 | SL500AR | | | | | | |
| 600 | 12 | SL500AE | | | | | | |
| 480 | 240 | SL500CM | SL750CM | SL1000CM | SL1500CM | SL2000CM | | |
| 480 | 120 | SL500CJ | SL750CJ | SL1000CJ | SL1500CJ | SL2000CJ | SL3000CJ | |
| 480 | 24 | SL500CG | | | | | | |
| 480 | 12/24 | SL500CR | | | | | | |
| 347 | 120/240 | SL500KP | SL750KP | SL1000KP | SL1500KP | SL2000KP | | |
| 240/480 | 120 | SL500QJ | SL750QJ | SL1000QJ | SL1500QJ | SL2000QJ | | |
| 240/480 | 120/240 | SL500QP | SL750QP | SL1000QP | SL1500QP | SL2000QP | | |
| 240/480 | 12/24 | SL500QR | | | | | | |
| 240 | 120 | SL500MJ | SL750MJ | SL1000MJ | SL1500MJ | SL2000MJ | | |
| 208 | 120 | SL500LJ | SL750LJ | SL1000LJ | SL1500LJ | SL2000LJ | | |
| 208 | 24 | SL500LG | | | | | | |
| 120/240 | 24 | SL500PG | | | | | | |
| 120 | 12/24 | SL500JR | | | | | | |
| 120 | 24 | SL500JG | | | | | | |
| 120 | 12 | SL500JE | | | | | | |



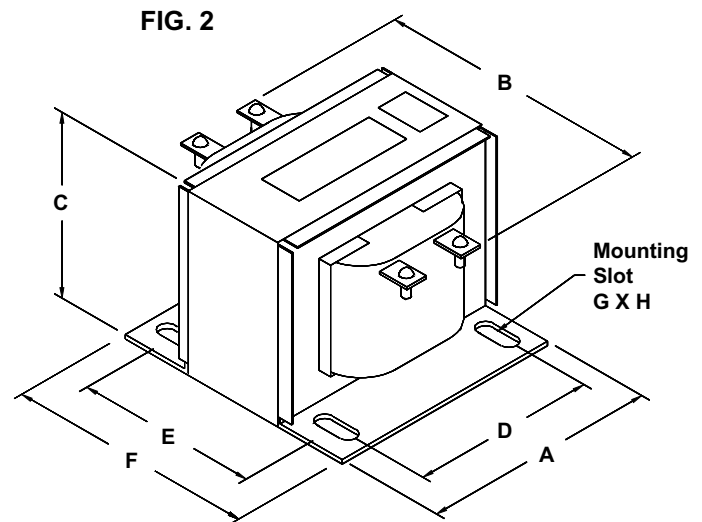
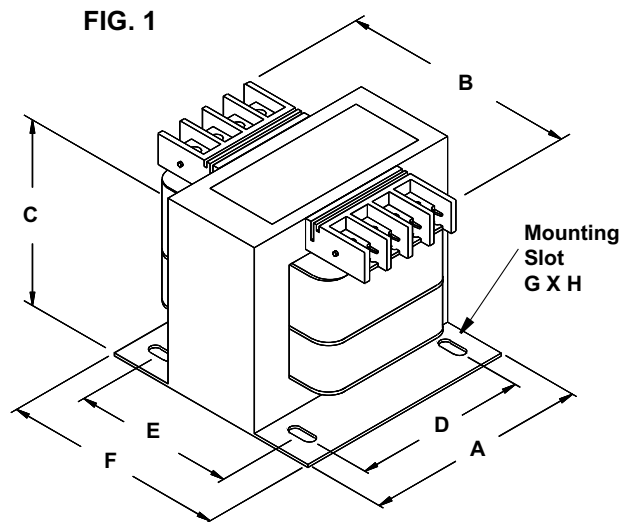


SL Series Dimensional Data

| VA Size | Fig. No. | SL Dimensions | | | | | | | Weight (Lbs.) |
|---------|----------|---------------|------|------|-----------|------|------|-------------|---------------|
| | | A | B | C | D | E | F | Slot G X H | |
| 25 VA | 1 | 3.00 | 3.00 | 2.75 | 2.50 | 1.75 | 2.50 | 0.22 X 0.44 | 2.00 |
| 50 VA | 1 | 3.00 | 3.00 | 2.75 | 2.50 | 1.75 | 2.50 | 0.22 X 0.44 | 2.10 |
| 75 VA | 1 | 3.00 | 3.50 | 2.75 | 2.50 | 2.50 | 3.25 | 0.22 X 0.44 | 3.40 |
| 100 VA | 1 | 3.00 | 3.75 | 2.75 | 2.50 | 2.50 | 3.25 | 0.22 X 0.44 | 3.90 |
| 150 VA | 1 | 3.00 | 4.25 | 2.75 | 2.50 | 3.00 | 3.75 | 0.22 X 0.44 | 4.70 |
| 200 VA | 1 | 3.75 | 3.63 | 3.25 | 3.13 | 2.75 | 3.50 | 0.22 X 0.56 | 4.90 |
| 250 VA | 1 | 3.75 | 3.63 | 3.25 | 3.13 | 2.75 | 3.50 | 0.22 X 0.56 | 5.20 |
| 350 VA | 1 | 3.75 | 4.75 | 3.25 | 3.13 | 3.50 | 4.25 | 0.22 X 0.56 | 7.90 |
| 500 VA | 1 | 4.50 | 4.63 | 3.85 | 3.75 | 3.13 | 4.00 | 0.28 X 0.56 | 8.80 |
| 750 VA | 1 | 5.25 | 4.88 | 4.50 | 4.38 | 3.56 | 4.56 | 0.31 X 0.75 | 14.90 |
| 1000 VA | 1 | 5.25 | 5.38 | 4.50 | 4.38 | 3.56 | 4.56 | 0.31 X 0.75 | 18.20 |
| 1500 VA | 2 | 7.00 | 5.75 | 5.50 | 4.50/6.00 | 4.38 | 5.75 | 0.31 X 1.00 | 26.60 |
| 2000 VA | 2 | 7.00 | 8.25 | 5.50 | 4.50/6.00 | 5.13 | 6.50 | 0.38 X 1.00 | 32.30 |
| 3000 VA | 2 | 7.00 | 8.25 | 5.50 | 4.50/6.00 | 6.25 | 6.50 | 0.38 X 1.00 | 42.90 |
| 5000 VA | 2 | 9.00 | 9.75 | 7.50 | 5.25/7.00 | 6.25 | 8.00 | 0.44 X 1.00 | 88.60 |

All Dimensions In Inches

- Note:**
- with a primary fuse kit installed, the depth 'B' and height 'C' dimensions will increase as follows:
depth: 'B' + 0.5" height: 'C' + 1.5"
 - with a secondary fuse kit installed, the height 'C' dimension will increase as follows: 'C' + 0.5"
 - all dimensions are +/- 0.060" unless otherwise noted.



SECTION 1



SL Series Fusing Options

Both primary and secondary fuse kits are also available for the 'SL Series' control transformers, either factory installed or field installed from prepackaged kits.

FIELD INSTALLED FUSING OPTIONS

| Field Installed Fuse Kits | | | | | | |
|----------------------------|-----------------------------|-----------------------|------|-----------|-------------------------|---------------------------------|
| Primary (block mounted) | Secondary (clip mounted) | Maximum Applicable VA | | | Fuse Kit Catalog No. | Minimum Quantity Purchase |
| | | Secondary Voltage | | | | |
| | | 12 V | 24 V | 120V & up | | |
| (none) | 1/4" x 1 1/4" glass | 250 | 500 | 1000 | FK-1-10 | 1 kit (of 10) |
| (none) | 13/32" x 1 1/2" midget | 250 | 500 | 1000 | FK-2-10 | 1 kit (of 10) |
| Dual Rejection | 13/32" x 1 1/2" midget | 250 | 500 | 1000 | FK-3 | 1 box |
| Dual Rejection | 1/4" x 1 1/4" glass | 250 | 500 | 1000 | FK-6 | 1 box |
| Single Rejection | 1/4" x 1 1/4" glass | 250 | 500 | 1000 | FK-9 | 1 box |
| Single Rejection | 13/32" x 1 1/2" midget | 250 | 500 | 1000 | FK-10 | 1 box |
| Dual Rejection | Not Included | 1000 | 1000 | 1000 | FK-11 | 1 box |
| Dual Midget | Not Included | 1000 | 1000 | 1000 | FK-12 | 1 box |
| Dual Rejection | Single Midget (block mount) | 1000 | 1000 | 1000 | FK-14 (Note 1) | 1 box |

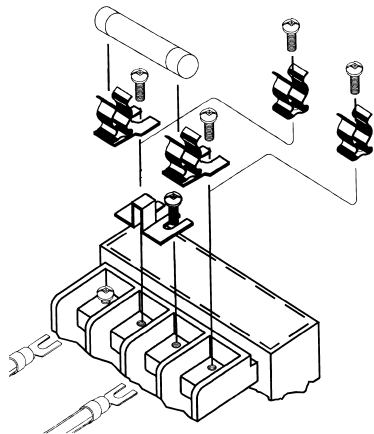
Notes:

(1) Uses one "triple" pole fuse block containing: two rejection clips for the primary and one single midget (13/32" X 1 1/2") fuse clip for the secondary. This will allow for the fusing of most transformers containing multiple secondary voltages.

Secondary Fuse Kits

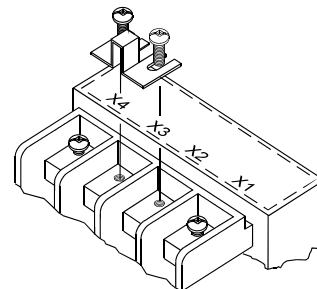
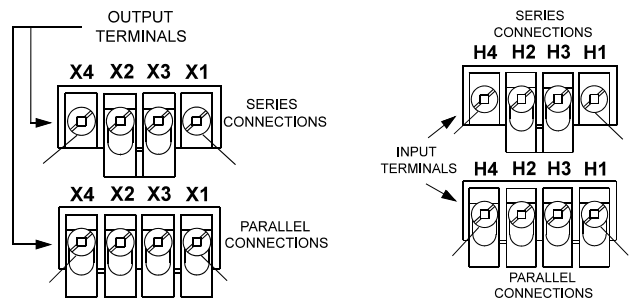
To protect the transformer from the load, secondary fuse kits are available. Fuse clips for either 1/4" X 1 1/4" fuses or 13/32" X 1 1/2" fuses are optional. Both are suitable for single secondary SL series transformers. Secondary Fuse Kits consist of all necessary fuse clips, mounting hardware and voltage links. Fuse kits are easy to install on the terminal block (see diagram below). Fuses are then easily snapped into place.

(Fuses not included).



Voltage Links

Voltage links are separately packaged for user installation to ensure links are installed on the correct voltage combination. The links are included at **no charge**.



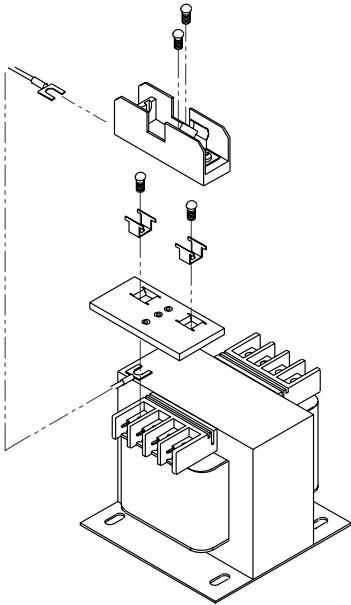


SL Series Fusing Options can't ...

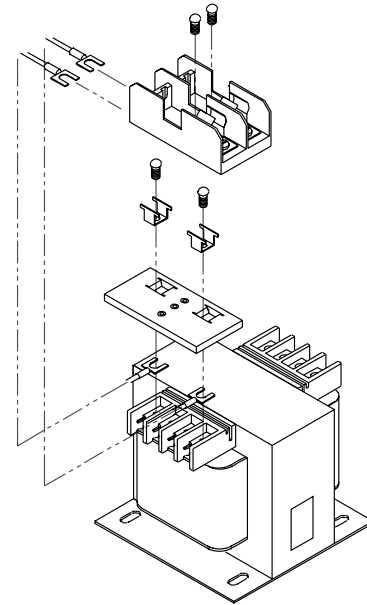
Field Installed Primary Fuse Kits

Convenient and versatile primary fuse kits are available to suit any nominal supply voltage. Assembled as a single pole primary fuse block, line to neutral voltage such as 120 volts, can be accommodated. As a double pole fuse block, line to line voltage can be fused, including 600, 480, 240 volts. Either the safety-rejection type or the standard midget style fuse can be used by selecting the appropriate fuse kit below. All Hammond pre-engineered primary fuse kits includes a fuse block, lead wire harness, mounting plate and clips, and all

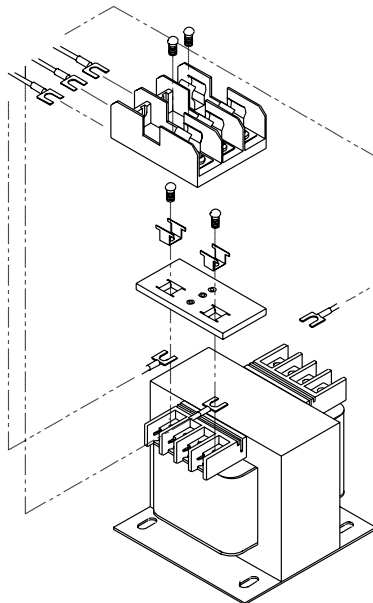
Single Pole Fuse Kit (for units up to 1000VA)



Double Pole Fuse Kit (for units up to 1000VA)



Triple Pole Fuse Kit (for units up to 1000VA)



SECTION 1





FACTORY INSTALLED FUSING OPTIONS

- When factory installed fusing options are selected by adding the appropriate suffix, transformers will be shipped with the corresponding primary and secondary fusing as indicated in the chart below.

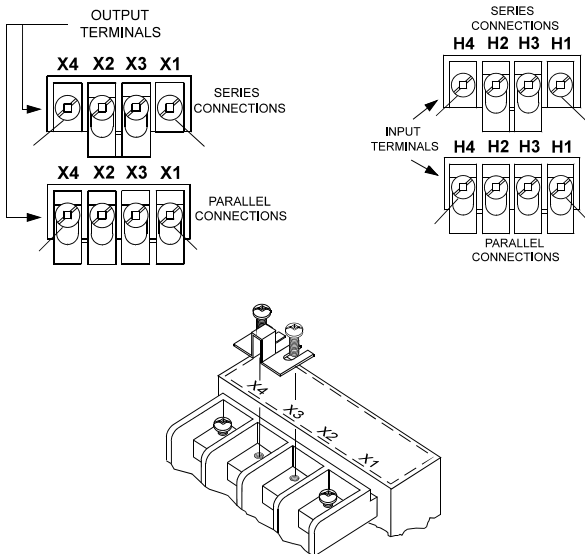
| Factory Installed Fused Kits | | | | | |
|------------------------------|-----------------------------|--|------|-----------|--|
| Primary (block mounted) | Secondary (clip mounted) | Maximum Applicable VA Secondary Voltage | | | Add 'Suffix' to Catalog Part Number (Min. order 10 pieces) |
| | | 12 V | 24 V | 120V & up | |
| (none) | Not Installed | - | - | - | Standard |
| (none) | 1/4" x 1 1/4" glass | 250 | 500 | 1000 | -1 |
| (none) | 13/32" x 1 1/2" midget | 250 | 500 | 1000 | -2 |
| Dual Rejection | 13/32" x 1 1/2" midget | 250 | 500 | 1000 | -3 |
| Dual Rejection | 1/4" x 1 1/4" glass | 250 | 500 | 1000 | -4 |
| Single Rejection | 1/4" x 1 1/4" glass | 250 | 500 | 1000 | -5 |
| Single Rejection | 13/32" x 1 1/2" midget | 250 | 500 | 1000 | -6 |
| Dual Rejection | Not included | 5000 | 5000 | 5000 | -7 |
| Dual Midget | Not included | 5000 | 5000 | 5000 | -8 |
| Dual Rejection | Single Midget (block mount) | 5000 | 5000 | 3000 | -9 (Note 1) |

Notes:

- (1) Uses one "triple" pole fuse block containing: two rejection clips for the primary and one single midget (13/32" X 1 1/2") fuse clip for the secondary. This will allow for the fusing of most transformers containing multiple secondary voltages.

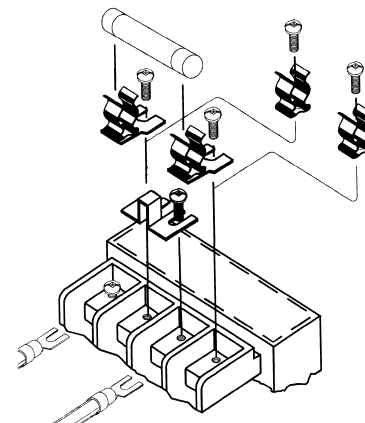
Voltage Links

- Voltage links are separately packaged for user installation to ensure links are installed on the correct voltage combination. The links are included at **no charge**.



Factory Installed Secondary Fuse Kits

- Secondary Fuse kits consist of all necessary fuse clips, hardware and voltage links.
- Fuse clips are easy to install in the terminal block (see diagram below). Fuses are then easily snapped into place. (Fuses not included)



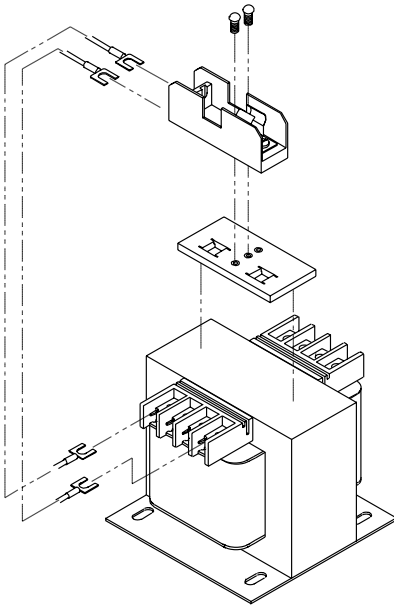


SL Series Fusing Options can't ...

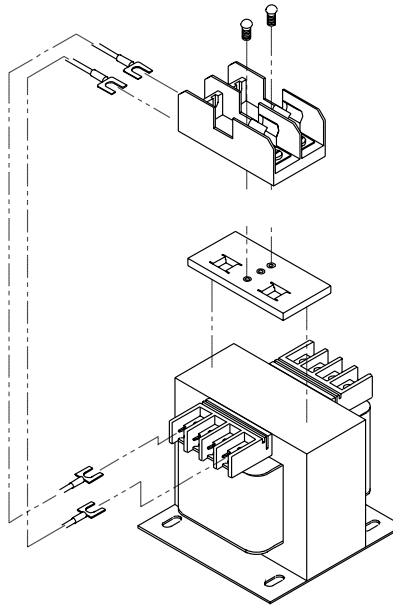
Factory Installed Primary Fuse Kits

Our pre-engineered factory installed primary fuse kits, now mounted directly to the transformer core, includes the fuse block, lead wire harness, mounting plate and hardware.

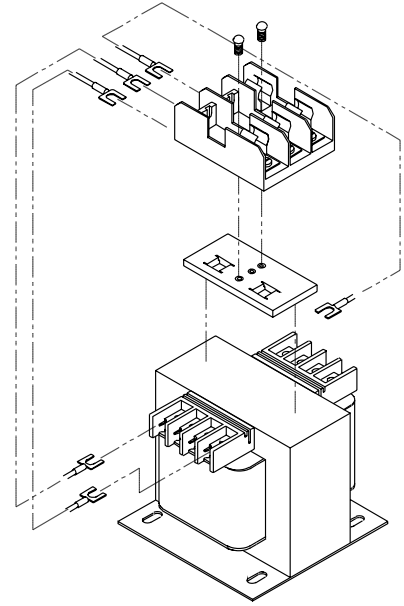
Single Pole Fuse Kit
(for units up to 1000VA)



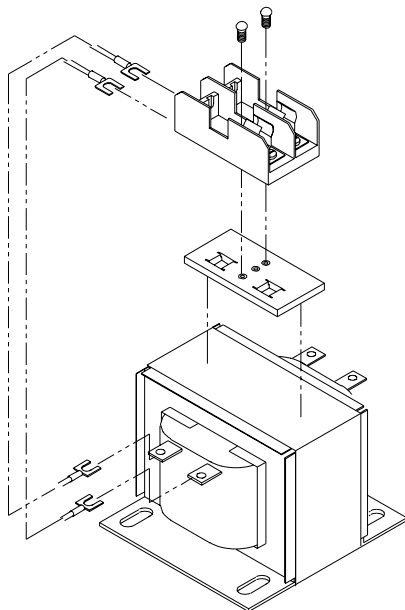
Double Pole Fuse Kit
(for units up to 1000VA)



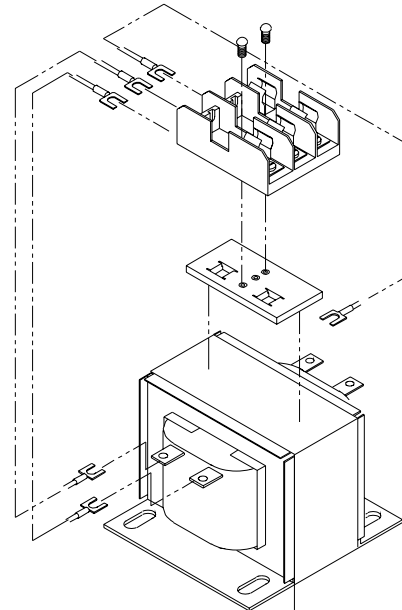
Triple Pole Fuse Kit
(for units up to 1000VA)



Double Pole Fuse Kit
(for Open Style units over 1000VA)



Triple Pole Fuse Kit
(for Open Style units over 1000VA)

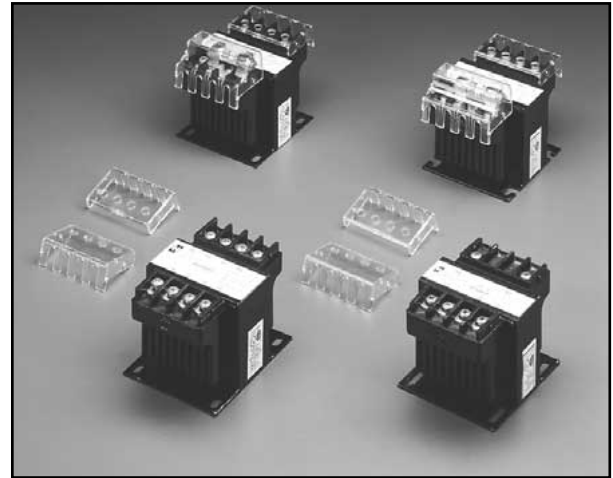


SECTION 1



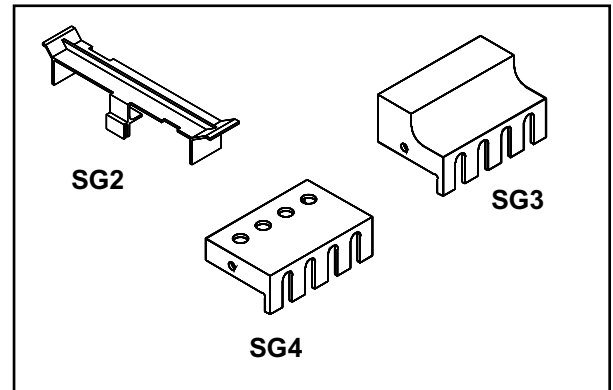
Optional 'Finger Safe' Terminal Covers

- ➔ One piece molded design for easy installation and removal.
- ➔ Molded from strong, yet flexible 'Lexan' polyester plastic, which will not break or chip.
- ➔ Clear, see-through design allows for maximum visibility of both fuse and/or terminal connections.
- ➔ No extra parts like mounting brackets or screws ensure you always have the correct tools for installation or removal.
- ➔ Available in several styles to facilitate fusing or non-fusing options.
- ➔ Retrofittable with all Control Transformers up to 1000 VA (look for the "retrofitable" notation on transformer box labels).

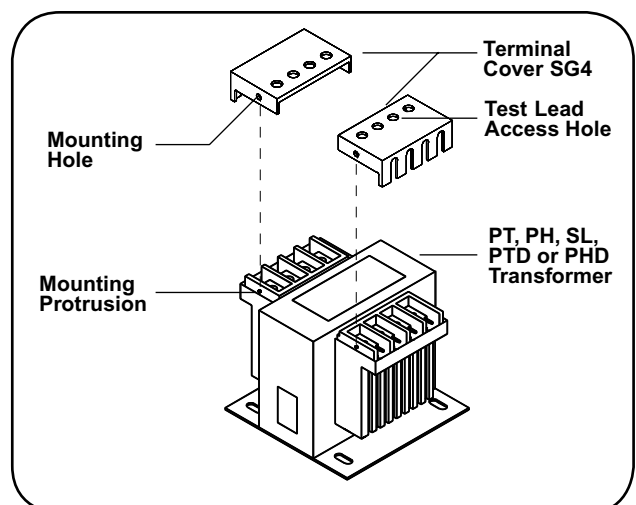
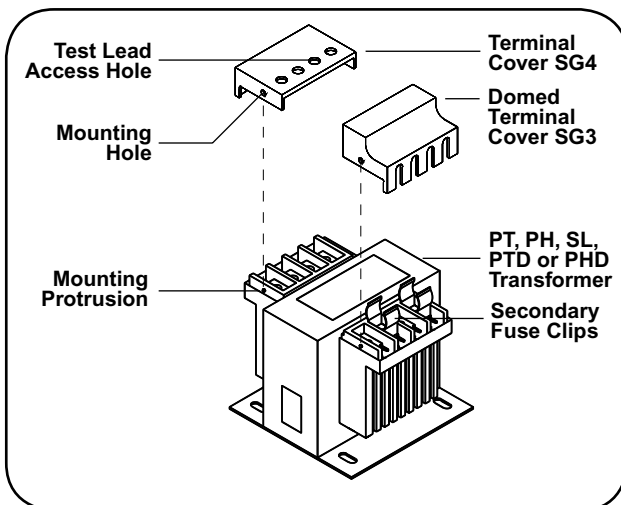


Control Transformers c/w optional Terminal Covers

| Finger Safe Terminal Covers | |
|---|------------|
| Packaged Finger Safe Terminal Covers (minimum order 20 pieces required) | P/N |
| (1) Safety Puller - for primary fuse blocks | SG2 |
| (2) Domed Terminal Cover (for fused secondary) | SG3 |
| (3) Terminal Cover (for unfused primary and/or secondary terminals) | SG4 |



Optional Terminal Covers



Control Transformer Order Form

Please complete the following Quote Form for Hammond PT Series Control Transformers and fax to:
 Canada: (519) 822-9688 or U.S.: (608) 355-7623 or contact Hammond Customer Service Department directly by
 calling: Canada: 1-888-798-8882 or U.S.: 1-866-705-4684.

SECTION 1

Company Name: _____ Date: _____

City: _____ State/Prov.: _____ Zip/Postal: _____

Contact Name: _____ Phone #: _____

Fax Number: _____ E-Mail Address: _____

ORDER SPECIFICATIONS: (please complete the following)

Customer P.O. # : _____

PT, PH, SL, PTD or PHD Series Control Transformers

Type: PT (50/60 Hz) _____ PH (60 Hz) _____ SL (60 Hz) _____ PTD (50/60 Hz) _____ PHD (60 Hz) _____

Quantity: _____ Catalog Part Number: _____

VA Rating: _____

Primary Voltage(s): _____

Secondary Voltage(s): _____

Fusing Options:

Factory Installed Fuse Kit Suffix (add suffix to catalog P/N) - _____ Quantity _____

Field Installed Fuse Kit P/N _____ Quantity _____

Terminal Cover Options:

Safety Puller for primary fuse blocks (P/N SG2) _____ pcs.

Domed Terminal Cover (for fused secondary) (P/N SG3) _____ pcs.

Terminal Cover (for unfused primary/secondary) (P/N SG4) _____ pcs.

Quote # : _____ Quoted By: _____ Date: _____



SINGLE PHASE ENCLOSED INDOOR TRANSFORMER FEATURES

For applications where an indoor, cost effective approach to general purpose loads consider the 'E' series, single phase, indoor enclosed control transformer. These units are specifically designed for the following applications;

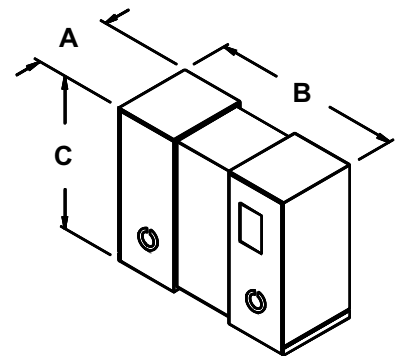
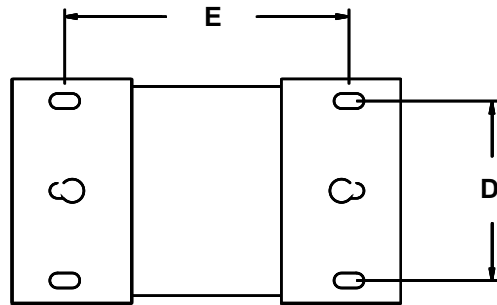
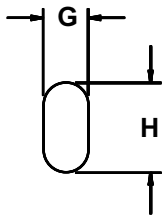
- General purpose enclosed control applications used to adjust a supply voltage to match a load requirement
- Supplying machine tool circuits.
- Actuating relays, bells, signal and alarm systems.
- Operating small motors, valves and dampers.
- Industrial lighting and circuit isolation.

**'E' Style Enclosure
50 to 5000VA**



| FEATURE | 50 to 5000VA | BENEFITS |
|--------------------------|--|--|
| UL Listed | File: E50394 | Assures long life and reliable performance Rugged one-piece assembly with low noise provides optimum performance and reliability. Provides enhanced voltage regulation and excellent thermal characteristics and complements modern winding techniques. Provides a strong mechanical bond and seals the surface from environmental conditions. Meets the heavy industrial trade requirements for enclosed transformers. Ample space for transformer connections. For primary and secondary terminations. Facilitates any installation requirement. |
| CSA Certified | File: LR3902 | |
| Frequency | 60 Hertz | |
| Insulation System | Up to 350VA; Class A, 55°C temperature rise. 500 to 1000VA; Class B, 80°C temperature rise. 1500 to 5000VA; Class F, 115°C temp. rise. | |
| Standard Design | Single Phase, all welded core construction made with high quality, high permeability silicon steel laminations. Computer designed coils, accurately wound with optimum mean turns made from high quality copper magnetic wire with insulation film. | |
| Vacuum Impregnation | All E style control transformer coils are Vacuum Pressure Impregnated and then oven cured. | |
| Enclosure | Rugged Type 1 Enclosure (E style) - dual end bells. | |
| End Bells | Large spacious end bells. Separate terminal compartments. | |
| Mounting | Designed for vertical or horizontal mounting. | |





Group 1

| | |
|--------------------------|-----|
| Primary Voltage | 120 |
| Secondary Voltage | 12 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | |
|-----------|---------------|-------------------------|-------------------------------|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | 120 | H1, H2 | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | 12 | X1, X2 | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE2E | 4.17 | 2.50 | 5.63 | 3.50 | - | 4.75 | .25 dia. | 3 |
| 100 | EG2E | 8.33 | 2.50 | 6.50 | 3.50 | - | 5.63 | .25 dia. | 5 |
| 150 | EH2E | 12.50 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI2E | 16.67 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 8 |
| 250 | EJ2E | 20.83 | 3.75 | 6.69 | 4.88 | 2.75 | 5.81 | .25 X .50 | 10 |
| 350 | EK2E | 29.17 | 3.75 | 7.07 | 4.88 | 2.75 | 6.19 | .25 X .50 | 13 |
| 500 | EL2E | 41.67 | 3.75 | 7.94 | 4.88 | 2.75 | 7.06 | .25 X .50 | 16 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.





Group 2

| | |
|--------------------------|-----|
| Primary Voltage | 120 |
| Secondary Voltage | 24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|------------|-----------------------|-------------------------------|-------------------------|-------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 120 | H1, H2 | |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 24 | X1, X2 | | | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE2G | 2.08 | 2.50 | 5.63 | 3.50 | - | 4.75 | .25 dia. | 3 |
| 100 | EG2G | 4.17 | 2.50 | 6.50 | 3.50 | - | 5.63 | .25 dia. | 5 |
| 150 | EH2G | 6.25 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI2G | 8.33 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 8 |
| 250 | EJ2G | 10.42 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 10 |
| 350 | EK2G | 14.58 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 13 |
| 500 | EL2G | 20.83 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.



Group 3

| | |
|--------------------------|-----|
| Primary Voltage | 208 |
| Secondary Voltage | 24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|------------|-----------------------|-------------------------------|-------------------------|-------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 208 | H1, H2 | |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 24 | X1, X2 | | | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE3G | 2.08 | 2.50 | 5.63 | 3.50 | - | 4.75 | .25 dia. | 3 |
| 100 | EG3G | 4.17 | 2.50 | 6.50 | 3.50 | - | 5.63 | .25 dia. | 5 |
| 150 | EH3G | 6.25 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI3G | 8.33 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 8 |
| 250 | EJ3G | 10.42 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 10 |
| 350 | EK3G | 14.58 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 13 |
| 500 | EL3G | 20.83 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |

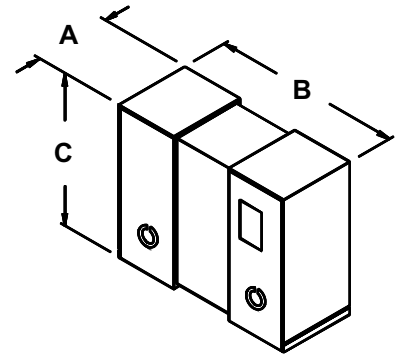
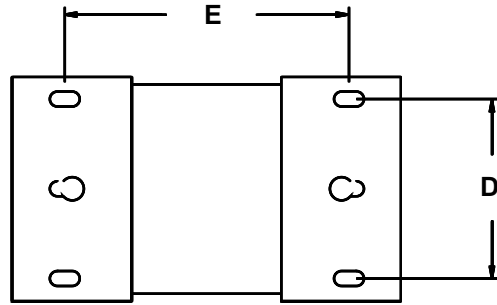
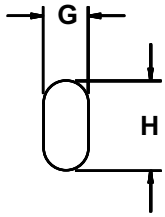
B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.





SECTION 1



Group 4

| | |
|--------------------------|-----|
| Primary Voltage | 240 |
| Secondary Voltage | 24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | |
|-----------|------|---------------|-------------------------|
| | 240V | Primary Volts | Supply Lines Connect To |
| | | 240 | H1, H2 |
| | 24V | Sec. Volts | Load Lines Connect To |
| | | 24 | X1, X2 |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE5G | 2.08 | 2.50 | 5.63 | 3.50 | - | 4.75 | .25 dia. | 3 |
| 100 | EG5G | 4.17 | 2.50 | 6.50 | 3.50 | - | 5.63 | .25 dia. | 5 |
| 150 | EH5G | 6.25 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI5G | 8.33 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 8 |
| 250 | EJ5G | 10.42 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 10 |
| 350 | EK5G | 14.58 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 13 |
| 500 | EL5G | 20.83 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.





Group 5

| | |
|--------------------------|-----|
| Primary Voltage | 480 |
| Secondary Voltage | 24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|---------------|-------------------------|-------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 480 | H1, H2 | | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| | 24 | X1, X2 | | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE7G | 2.08 | 2.50 | 5.63 | 3.50 | - | 4.75 | .25 dia. | 3 |
| 100 | EG7G | 4.17 | 2.50 | 6.50 | 3.50 | - | 5.63 | .25 dia. | 5 |
| 150 | EH7G | 6.25 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI7G | 8.33 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 8 |
| 250 | EJ7G | 10.42 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 10 |
| 350 | EK7G | 14.58 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 13 |
| 500 | EL7G | 20.83 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.



Group 6

| | |
|--------------------------|-----|
| Primary Voltage | 600 |
| Secondary Voltage | 24 |
| 60 Hertz | |

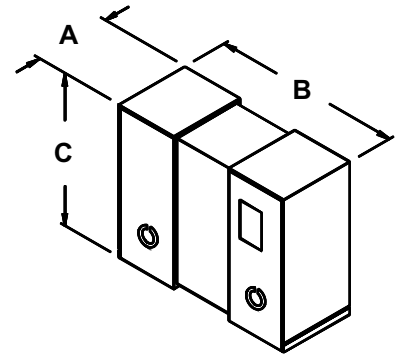
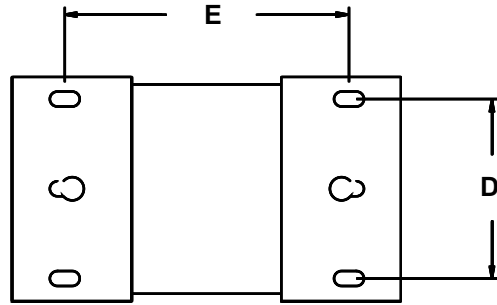
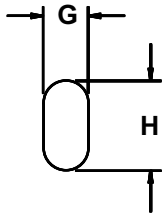
| SCHEMATIC | | CONNECTIONS | | |
|-----------|---------------|-------------------------|-------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 600 | H1, H2 | | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| | 24 | X1, X2 | | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE9G | 2.08 | 2.50 | 5.63 | 3.50 | - | 4.75 | .25 dia. | 3 |
| 100 | EG9G | 4.17 | 2.50 | 6.50 | 3.50 | - | 5.63 | .25 dia. | 5 |
| 150 | EH9G | 6.25 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI9G | 8.33 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 8 |
| 250 | EJ9G | 10.42 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 10 |
| 350 | EK9G | 14.58 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 13 |
| 500 | EL9G | 20.83 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.





Group 7

| | |
|--------------------------|---------|
| Primary Voltage | 208/416 |
| Secondary Voltage | 12/24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | |
|-----------|---------------|-------------------------|-------------------------------|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | 208 416 | H1, H4 H1, H4 | H1-H3, H2-H4 H2-H3 |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | 12 24 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE5EEA | 4.17/2.08 | 2.50 | 5.75 | 3.50 | - | 4.88 | .25 dia. | 4 |
| 100 | EG5EEA | 8.33/4.17 | 2.50 | 6.63 | 3.50 | - | 5.75 | .25 dia. | 6 |
| 150 | EH5EEA | 12.5/6.25 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI5EEA | 16.7/8.33 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 9 |
| 250 | EJ5EEA | 20.8/10.4 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 11 |
| 350 | EK5EEA | 29.2/14.6 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 14 |
| 500 | EL5EEA | 41.7/20.8 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |
| 750 | EM5EEA | 62.5/31.3 | 5.00 | 6.88 | 6.38 | 4.00 | 5.31 | .31 X .63 | 26 |
| 1000 | EN5EEA | 83.3/41.7 | 5.00 | 7.63 | 6.38 | 4.00 | 6.06 | .31 X .63 | 31 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.





Group 8

| | |
|--------------------------|-------|
| Primary Voltage | 600 |
| Secondary Voltage | 12/24 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-------------------|------------------------------|--------------------------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 600 | H1, H2 | |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 12 24 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 | | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE9EA | 4.17/2.08 | 2.50 | 5.63 | 3.50 | - | 4.75 | .25 dia. | 4 |
| 100 | EG9EA | 8.33/4.17 | 2.50 | 6.50 | 3.50 | - | 5.63 | .25 dia. | 6 |
| 150 | EH9EA | 12.5/6.25 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI9EA | 16.7/8.33 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 9 |
| 250 | EJ9EA | 20.8/10.4 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 11 |
| 350 | EK9EA | 29.2/14.6 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 14 |
| 500 | EL9EA | 41.7/20.8 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |
| 750 | EM9EA | 62.5/31.3 | 5.00 | 6.88 | 6.38 | 4.00 | 5.31 | .31 X .63 | 26 |
| 1000 | EN9EA | 83.3/41.7 | 5.00 | 7.63 | 6.38 | 4.00 | 6.06 | .31 X .63 | 31 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.



Group 9

| | |
|--------------------------|-----|
| Primary Voltage | 120 |
| Secondary Voltage | 120 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-------------------|------------------------------|--------------------------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 120 | H1, H2 | |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 120 | X1, X2 | | | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|-------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE2J | 0.42 | 2.50 | 5.63 | 3.50 | - | 4.75 | .25 dia. | 3 |
| 100 | EG2J | 0.83 | 2.50 | 6.50 | 3.50 | - | 5.63 | .25 dia. | 5 |
| 150 | EH2J | 1.25 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI2J | 1.67 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 8 |
| 250 | EJ2J | 2.08 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 10 |
| 350 | EK2J | 2.92 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 13 |
| 500 | EL2J | 4.17 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |
| 750 | EM2J | 6.25 | 5.00 | 6.88 | 6.38 | 4.00 | 5.31 | .31 X .63 | 26 |
| 1000 | EN2J | 8.33 | 5.00 | 7.63 | 6.38 | 4.00 | 6.06 | .31 X .63 | 30 |
| 1500 | EP2J | 12.50 | 5.00 | 8.63 | 6.38 | 4.00 | 7.06 | .31 X .63 | 38 |
| 2000 | EQ2J | 16.67 | 6.25 | 9.13 | 8.13 | 5.00 | 7.50 | .31 X .63 | 49 |
| 3000 | ES2J | 25.00 | 6.25 | 10.63 | 8.13 | 5.00 | 9.00 | .31 X .63 | 69 |

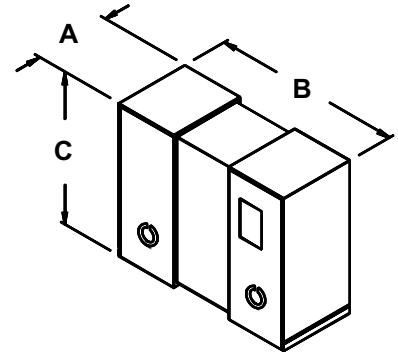
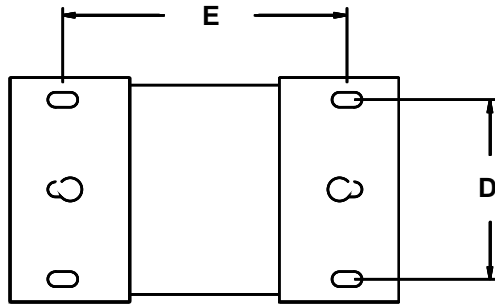
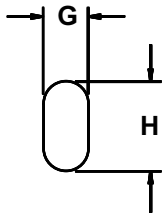
B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.





SECTION 1



Group 10

| | |
|--------------------------|-----|
| Primary Voltage | 208 |
| Secondary Voltage | 120 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|---------------|-------------------------|-------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 208 | H1, H2 | | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| | 120 | X1, X2 | | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE3J | 0.42 | 2.50 | 5.63 | 3.50 | - | 4.75 | .25 dia. | 3 |
| 100 | EG3J | 0.83 | 2.50 | 6.50 | 3.50 | - | 5.63 | .25 dia. | 5 |
| 150 | EH3J | 1.25 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI3J | 1.67 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 8 |
| 250 | EJ3J | 2.08 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 10 |
| 350 | EK3J | 2.92 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 13 |
| 500 | EL3J | 4.17 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.





Group 11

| | |
|--------------------------|-----|
| Primary Voltage | 240 |
| Secondary Voltage | 120 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|---------------|-------------------------|-------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 240 | H1, H2 | | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| | 120 | X1, X2 | | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE5J | 0.42 | 2.50 | 5.63 | 3.50 | - | 4.75 | .25 dia. | 3 |
| 100 | EG5J | 0.83 | 2.50 | 6.50 | 3.50 | - | 5.63 | .25 dia. | 5 |
| 150 | EH5J | 1.25 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI5J | 1.67 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 8 |
| 250 | EJ5J | 2.08 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 10 |
| 350 | EK5J | 2.92 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 13 |
| 500 | EL5J | 4.17 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |
| 750 | EM5J | 6.25 | 5.00 | 6.88 | 6.38 | 4.00 | 5.31 | .31 X .63 | 26 |
| 1000 | EN5J | 8.33 | 5.00 | 7.63 | 6.38 | 4.00 | 6.06 | .31 X .63 | 30 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.



Group 12

| | |
|--------------------------|-----|
| Primary Voltage | 480 |
| Secondary Voltage | 120 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|---------------|-------------------------|-------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 480 | H1, H2 | | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| | 120 | X1, X2 | | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE7J | 0.42 | 2.50 | 5.63 | 3.50 | - | 4.75 | .25 dia. | 3 |
| 100 | EG7J | 0.83 | 2.50 | 6.50 | 3.50 | - | 5.63 | .25 dia. | 5 |
| 150 | EH7J | 1.25 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI7J | 1.67 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 8 |
| 250 | EJ7J | 2.08 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 10 |
| 350 | EK7J | 2.92 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 13 |
| 500 | EL7J | 4.17 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |
| 750 | EM7J | 6.25 | 5.00 | 6.88 | 6.38 | 4.00 | 5.31 | .31 X .63 | 26 |
| 1000 | EN7J | 8.33 | 5.00 | 7.63 | 6.38 | 4.00 | 6.06 | .31 X .63 | 30 |

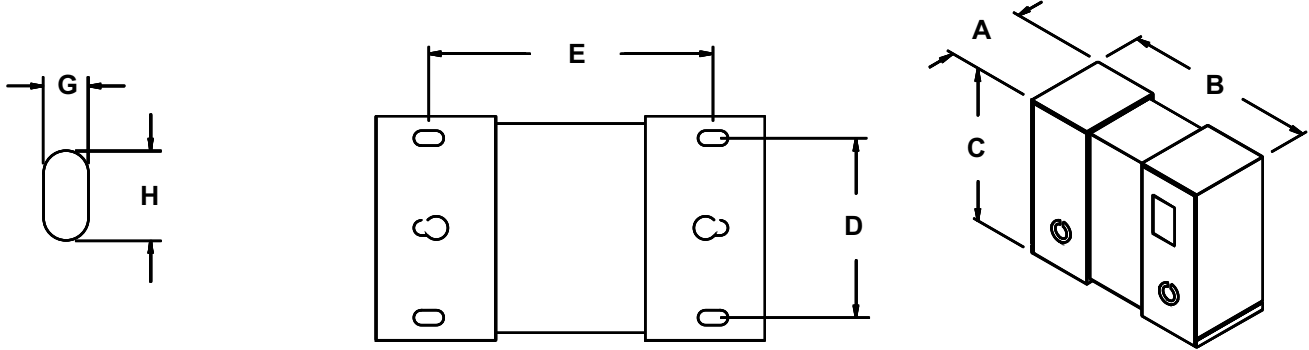
B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.





SECTION 1



Group 13

| | |
|--------------------------|-----|
| Primary Voltage | 600 |
| Secondary Voltage | 120 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|---------------|-------------------------|-------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 600 | H1, H2 | | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| | 120 | X1, X2 | | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE9J | 0.42 | 2.50 | 5.63 | 3.50 | - | 4.75 | .25 dia. | 3 |
| 100 | EG9J | 0.83 | 2.50 | 6.50 | 3.50 | - | 5.63 | .25 dia. | 5 |
| 150 | EH9J | 1.25 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI9J | 1.67 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 8 |
| 250 | EJ9J | 2.08 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 10 |
| 350 | EK9J | 2.92 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 13 |
| 500 | EL9J | 4.17 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |
| 750 | EM9J | 6.25 | 5.00 | 6.88 | 6.38 | 4.00 | 5.31 | .31 X .63 | 26 |
| 1000 | EN9J | 8.33 | 5.00 | 7.63 | 6.38 | 4.00 | 6.06 | .31 X .63 | 30 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.





Group 14

| | |
|--------------------------|-----|
| Primary Voltage | 600 |
| Secondary Voltage | 240 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-------------------|------------------------------|--------------------------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 600 | H1, H2 | |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 240 | X1, X2 | | | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE9M | 0.21 | 2.50 | 5.63 | 3.50 | - | 4.75 | .25 dia. | 3 |
| 100 | EG9M | 0.42 | 2.50 | 6.50 | 3.50 | - | 5.63 | .25 dia. | 5 |
| 150 | EH9M | 0.63 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI9M | 0.83 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 8 |
| 250 | EJ9M | 1.04 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 10 |
| 350 | EK9M | 1.46 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 13 |
| 500 | EL9M | 2.08 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |
| 750 | EM9M | 3.13 | 5.00 | 6.88 | 6.38 | 4.00 | 5.31 | .31 X .63 | 26 |
| 1000 | EN9M | 4.17 | 5.00 | 7.63 | 6.38 | 4.00 | 6.06 | .31 X .63 | 30 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.

Group 15

| | |
|--------------------------|---------|
| Primary Voltage | 277 |
| Secondary Voltage | 120/240 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-------------------|------------------------------|--------------------------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 277 | H1, H2 | |
| Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | | |
| 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 | | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE5AP | .42/.21 | 2.50 | 5.75 | 3.50 | - | 4.88 | .25 dia. | 4 |
| 100 | EG5AP | .83/.42 | 2.50 | 6.63 | 3.50 | - | 5.75 | .25 dia. | 6 |
| 150 | EH5AP | 1.25/.63 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI5AP | 1.67/.83 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 9 |
| 250 | EJ5AP | 2.08/1.04 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 11 |
| 350 | EK5AP | 2.92/1.46 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 14 |
| 500 | EL5AP | 4.17/2.08 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |
| 750 | EM5AP | 6.25/3.13 | 5.00 | 6.88 | 6.38 | 4.00 | 5.31 | .31 X .63 | 26 |
| 1000 | EN5AP | 8.33/4.17 | 5.00 | 7.63 | 6.38 | 4.00 | 6.06 | .31 X .63 | 30 |

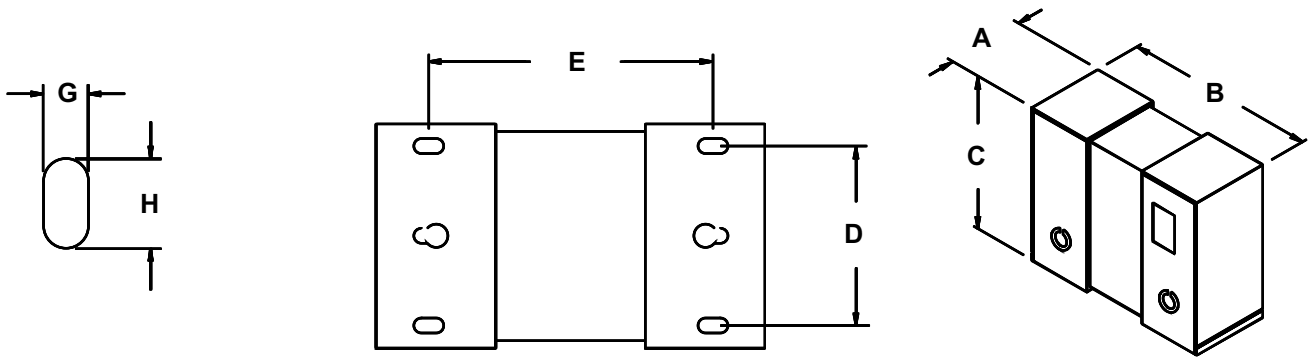
B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.





SECTION 1



Group 16

| | |
|--------------------------|---------|
| Primary Voltage | 347 |
| Secondary Voltage | 120/240 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|----------------------|--------------------------------|--------------------------------------|--|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines | |
| | 347 | H1, H2 | | |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines | |
| | 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 | |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|-------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE5BP | .42/.21 | 2.50 | 5.75 | 3.50 | - | 4.88 | .25 dia. | 4 |
| 100 | EG5BP | .83/.42 | 2.50 | 6.63 | 3.50 | - | 5.75 | .25 dia. | 6 |
| 150 | EH5BP | 1.25/.63 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI5BP | 1.67/.83 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 9 |
| 250 | EJ5BP | 2.08/1.04 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 11 |
| 350 | EK5BP | 2.92/1.46 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 14 |
| 500 | EL5BP | 4.17/2.08 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |
| 750 | EM5BP | 6.25/3.13 | 5.00 | 6.88 | 6.38 | 4.00 | 5.31 | .31 X .63 | 26 |
| 1000 | EN5BP | 8.33/4.17 | 5.00 | 7.63 | 6.38 | 4.00 | 6.06 | .31 X .63 | 30 |
| 1500 | EP5BP | 12.5/6.25 | 5.00 | 8.63 | 6.38 | 4.00 | 7.06 | .31 X .63 | 38 |
| 2000 | EQ5BP | 16.7/8.33 | 6.25 | 9.13 | 8.13 | 5.00 | 7.50 | .31 X .63 | 49 |
| 3000 | ES5BP | 25.0/12.5 | 6.25 | 10.63 | 8.13 | 5.00 | 9.00 | .31 X .63 | 69 |
| 5000 | EU5BP | 41.7/20.8 | 7.50 | 10.88 | 9.56 | 6.00 | 9.25 | .38 X .75 | 103 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.





Group 17

| | |
|--------------------------|---------|
| Primary Voltage | 380 |
| Secondary Voltage | 120/240 |
| 50/60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 380 | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|-------|------|------------------|-------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE5CP | .42/.21 | 2.50 | 6.00 | 3.50 | - | 5.13 | .25 dia. | 4 |
| 100 | EG5CP | .83/.42 | 2.50 | 6.75 | 3.50 | 2.25 | 5.88 | .25 X .50 | 6 |
| 150 | EH5CP | 1.25/.63 | 3.13 | 5.88 | 4.13 | 2.25 | 5.00 | .25 X .50 | 8 |
| 200 | EI5CP | 1.67/.83 | 3.13 | 6.50 | 4.13 | 2.74 | 5.63 | .25 X .50 | 10 |
| 250 | EJ5CP | 2.08/1.04 | 3.75 | 5.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 12 |
| 350 | EK5CP | 2.92/1.46 | 3.75 | 6.50 | 4.88 | 2.75 | 5.63 | .25 X .50 | 15 |
| 500 | EL5CP | 4.17/2.08 | 3.75 | 6.63 | 6.38 | 4.00 | 5.06 | .31 X .63 | 22 |
| 750 | EM5CP | 6.25/3.13 | 5.00 | 7.13 | 6.38 | 4.00 | 5.56 | .31 X .63 | 31 |
| 1000 | EN5CP | 8.33/4.17 | 5.00 | 8.13 | 6.38 | 4.00 | 6.56 | .31 X .63 | 34 |
| 1500 | EP5CP | 12.5/6.25 | 5.00 | 9.13 | 6.38 | 4.00 | 7.56 | .31 X .63 | 40 |
| 2000 | EQ5CP | 16.7/8.33 | 6.25 | 9.88 | 8.13 | 5.00 | 8.25 | .31 X .63 | 61 |
| 3000 | ES5CP | 25.0/12.5 | 7.50 | 9.13 | 9.56 | 6.00 | 7.50 | .38 X .75 | 77 |
| 5000 | EU5CP | 41.7/20.8 | 7.50 | 11.63 | 9.56 | 6.00 | 10.00 | .38 X .75 | 114 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.

Group 18

| | |
|--------------------------|---------|
| Primary Voltage | 208/416 |
| Secondary Voltage | 120/240 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 208 416 | H1, H4 H1, H4 | H1-H3, H2-H4 H2-H3 |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|-------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE5EP | .42/.21 | 2.50 | 5.75 | 3.50 | - | 4.88 | .25 dia. | 4 |
| 100 | EG5EP | .83/.42 | 2.50 | 6.63 | 3.50 | - | 5.75 | .25 dia. | 6 |
| 150 | EH5EP | 1.25/.63 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI5EP | 1.67/.83 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 9 |
| 250 | EJ5EP | 2.08/1.04 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 11 |
| 350 | EK5EP | 2.92/1.46 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 14 |
| 500 | EL5EP | 4.17/2.08 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |
| 750 | EM5EP | 6.25/3.13 | 5.00 | 6.88 | 6.38 | 4.00 | 5.31 | .31 X .63 | 26 |
| 1000 | EN5EP | 8.33/4.17 | 5.00 | 7.63 | 6.38 | 4.00 | 6.06 | .31 X .63 | 30 |
| 1500 | EP5EP | 12.5/6.25 | 5.00 | 8.63 | 6.38 | 4.00 | 7.06 | .31 X .63 | 38 |
| 2000 | EQ5EP | 16.7/8.33 | 6.25 | 9.13 | 8.13 | 5.00 | 7.50 | .31 X .63 | 49 |
| 3000 | ES5EP | 25.0/12.5 | 6.25 | 10.63 | 8.13 | 5.00 | 9.00 | .31 X .63 | 69 |
| 5000 | EU5EP | 41.7/20.8 | 7.50 | 10.88 | 9.56 | 6.00 | 9.25 | .38 X .75 | 103 |

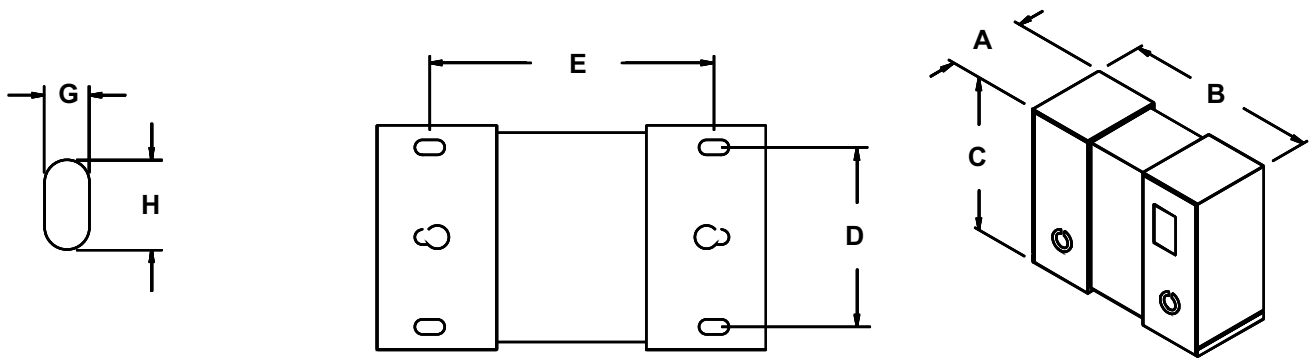
B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.





SECTION 1



Group 19

| | |
|--------------------------|---------|
| Primary Voltage | 240/480 |
| Secondary Voltage | 120/240 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | |
|-----------|---------------|-------------------------|-------------------------------|
| | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | 240 480 | H1, H4 H1, H4 | H1-H3, H2-H4 H2-H3 |
| | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 |

| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|-------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE6P | .42/.21 | 2.50 | 5.75 | 3.50 | - | 4.88 | .25 dia. | 4 |
| 100 | EG6P | .83/.42 | 2.50 | 6.63 | 3.50 | - | 5.75 | .25 dia. | 6 |
| 150 | EH6P | 1.25/.63 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI6P | 1.67/.83 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 9 |
| 250 | EJ6P | 2.08/1.04 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 11 |
| 350 | EK6P | 2.92/1.46 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 14 |
| 500 | EL6P | 4.17/2.08 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |
| 750 | EM6P | 6.25/3.13 | 5.00 | 6.88 | 6.38 | 4.00 | 5.31 | .31 X .63 | 26 |
| 1000 | EN6P | 8.33/4.17 | 5.00 | 7.63 | 6.38 | 4.00 | 6.06 | .31 X .63 | 30 |
| 1500 | EP6P | 12.5/6.25 | 5.00 | 8.63 | 6.38 | 4.00 | 7.06 | .31 X .63 | 38 |
| 2000 | EQ6P | 16.7/8.33 | 6.25 | 9.13 | 8.13 | 5.00 | 7.50 | .31 X .63 | 49 |
| 3000 | ES6P | 25.0/12.5 | 6.25 | 10.63 | 8.13 | 5.00 | 9.00 | .31 X .63 | 69 |
| 5000 | EU6P | 41.7/20.8 | 7.50 | 10.88 | 9.56 | 6.00 | 9.25 | .38 X .75 | 103.00 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.





Group 20

| | |
|--------------------------|---------|
| Primary Voltage | 600 |
| Secondary Voltage | 120/240 |
| 60 Hertz | |

| SCHEMATIC | | CONNECTIONS | | |
|-----------|--|----------------------|--------------------------------|--------------------------------------|
| | | Primary Volts | Supply Lines Connect To | Install Jumpers Between Lines |
| | | 600 | H1, H2 | |
| | | Sec. Volts | Load Lines Connect To | Install Jumpers Between Lines |
| | | 120 240 | X1, X4 X1, X4 | X1-X3, X2-X4 X2-X3 |

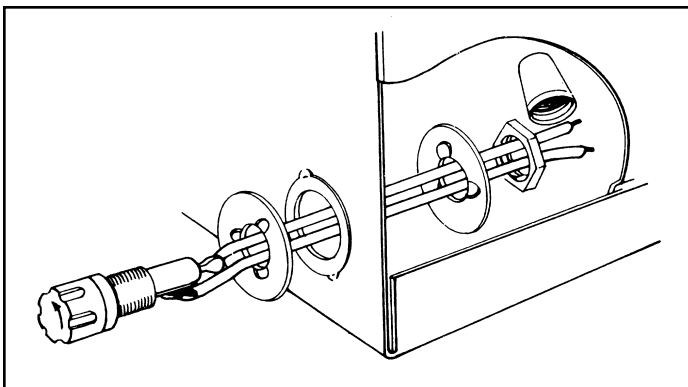
| VA Rating | Catalog Number | Output Amps | Overall Dimensions | | | Mounting Centers | | Mtg. Slot "G X H" | Shipping Wt/Lbs |
|-----------|----------------|-------------|--------------------|-------|------|------------------|------|-------------------|-----------------|
| | | | "A" | "B" | "C" | "D" | "E" | | |
| 50 | EE9P | .42/1.21 | 2.50 | 5.75 | 3.50 | - | 4.88 | .25 dia. | 4 |
| 100 | EG9P | .83/1.42 | 2.50 | 6.63 | 3.50 | - | 5.75 | .25 dia. | 6 |
| 150 | EH9P | 1.25/1.63 | 3.13 | 5.63 | 4.13 | 2.25 | 4.75 | .25 X .50 | 7 |
| 200 | EI9P | 1.67/1.83 | 3.13 | 6.13 | 4.13 | 2.25 | 5.25 | .25 X .50 | 9 |
| 250 | EJ9P | 2.08/1.04 | 3.75 | 5.75 | 4.88 | 2.75 | 4.88 | .25 X .50 | 11 |
| 350 | EK9P | 2.92/1.46 | 3.75 | 6.13 | 4.88 | 2.75 | 5.25 | .25 X .50 | 14 |
| 500 | EL9P | 4.17/2.08 | 3.75 | 7.00 | 4.88 | 2.75 | 6.13 | .25 X .50 | 16 |
| 750 | EM9P | 6.25/3.13 | 5.00 | 6.88 | 6.38 | 4.00 | 5.31 | .31 X .63 | 26 |
| 1000 | EN9P | 8.33/4.17 | 5.00 | 7.63 | 6.38 | 4.00 | 6.06 | .31 X .63 | 30 |
| 1500 | EP9P | 12.5/6.25 | 5.00 | 8.63 | 6.38 | 4.00 | 7.06 | .31 X .63 | 38 |
| 2000 | EQ9P | 16.7/8.33 | 6.25 | 9.13 | 8.13 | 5.00 | 7.50 | .31 X .63 | 49 |
| 3000 | ES9P | 25.0/12.5 | 6.25 | 10.63 | 8.13 | 5.00 | 9.00 | .31 X .63 | 69 |
| 5000 | EU9P | 41.7/20.8 | 7.50 | 10.88 | 9.56 | 6.00 | 9.25 | .38 X .75 | 103 |

B and E dimensions are subject to a 0.13" tolerance.

All dimensions in inches unless otherwise specified.

Type E Fuse Kits

- Rated at 250volts and 15 amps maximum.
- Fuse holder mounts in standard 1/2" knockouts.
- Kit comes complete with fuseholder, wire connector, self centering washers, one glass cartridge fuse 1/4" X 1 1/4", and Instruction Bulletin.
- **Note:** Fuse kits are not available factory installed. They are field installed only.



| Kit Catalog No. | Fuse Amps | Kit Catalog No. | Fuse Amps |
|-----------------|-----------|-----------------|-----------|
| EC0X5 | 0.5 amps | EC2X5 | 2.50 amps |
| EC0X75 | 0.75 amps | EC3 | 3.0 amps |
| EC1 | 1.0 amps | EC5 | 5.0 amps |
| EC1X25 | 1.25 amps | EC6 | 6.0 amps |
| EX1X5 | 1.50 amps | EC10 | 10.0 amps |
| EC1X6 | 1.60 amps | EC12 | 12.0 amps |
| EC2 | 2.0 amps | EC15 | 15.0 amps |

