

PROGRESSIVE  
**Innovative**  
Solutions



# HPS IMPERATOR<sup>®</sup>

Encapsulated Machine Tool  
Industrial Control Transformers

- Lifetime Warranty
- Unique Terminal Block
- Innovative Fusing Method
  - Patented Design



Hammond Power  
Solutions Inc.

# HPS IMPERATOR®

## Encapsulated Machine Tool Industrial Control Transformers

### OUR COMPANY

Hammond Power Solutions (HPS) was established in 1917 in Guelph, Ontario and has grown from a small family owned business in the short wave radio market, to the industry leader in magnetic transformer design and manufacturing. HPS has 6 manufacturing facilities and currently has 10 regional distribution centers throughout North America.

### INNOVATIVE DESIGN

The HPS Imperator® series is a unique innovative and compact design that provides the ideal solution for any industrial control application and will change the way the industrial machine tool industry looks at the control transformer.

**The HPS Imperator's unique terminal block design allows for the quick and easy installation of standard secondary or optional primary 13/32" x 1 1/2" midget/type CC fuse clips on every unit. This is the simplest and most inexpensive fusing installation provided on any industrial control transformer in the market today.**

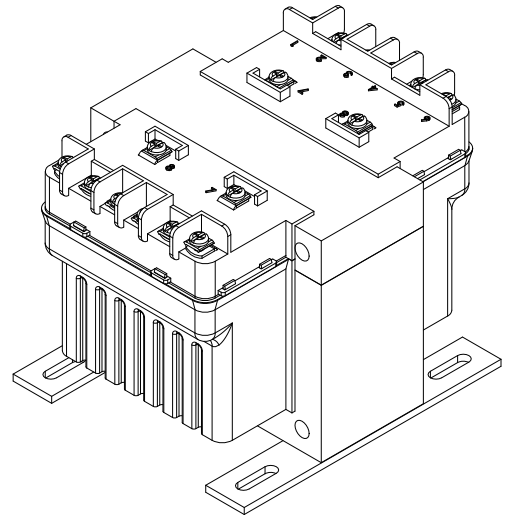
The windings and internal terminations of the HPS Imperator are encapsulated which protects them from moisture, dirt and other airborne contaminants. The custom molded coil covers with their unique 'fin shaped' design combine superior transformer cooling properties with a clean bold look.

The HPS Imperator utilizes custom serrated terminals, in combination with standard SEMS washer screws making assembly easier and quicker to install; and provides superior connection strength when connecting with bare, solid or stranded wire. It also allows for ring or spade termination connectors.

### THE PERFECT SOLUTION

The HPS Imperator series of machine tool rated industrial control transformers are specifically designed to meet the high inrush industrial applications where electromagnetic components such as relays, solenoids and magnetic motor starters are used.

**With 11 standard voltage groups, a VA range from 50VA to 1500VA and available with standard secondary and optional primary fuse kits, the HPS Imperator series provides the perfect solution for any application.**



ENGINEERING

Precision



## APPLICATIONS

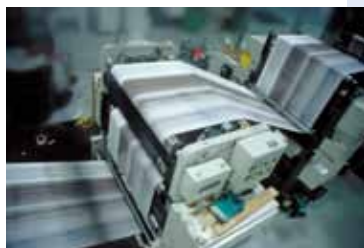
- Automation
- Panel Shops
- Machines
- Panel Boards
- Solenoids
- Control Applications
- Timers



PERFORMANCE  
Value  
Quality

## INDUSTRIES

- Paper Mills
- Printing
- Automotive
- Packaging Systems
- Process Automation



## SUPERIOR QUALITY & VALUE

The HPS Imperator series design, utilizing superior insulation systems and being constructed with high quality silicon steel laminations for optimum performance, will meet or exceed UL and CE standards.

**Backed by an industry leading LIFETIME warranty, the HPS Imperator industrial control transformer line offers superior performance, quality and value.**



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# HPS IMPERATOR®

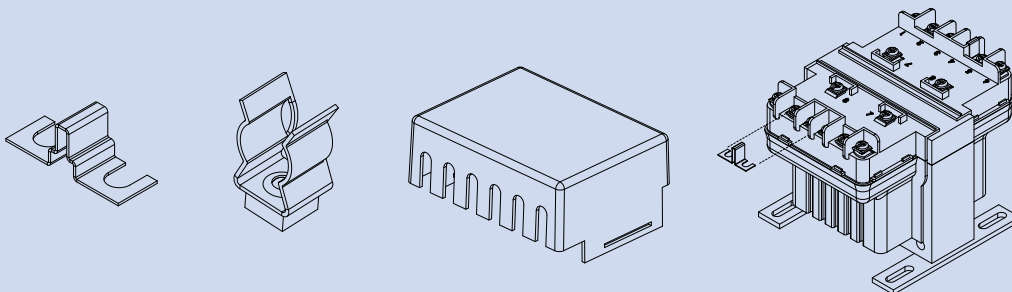
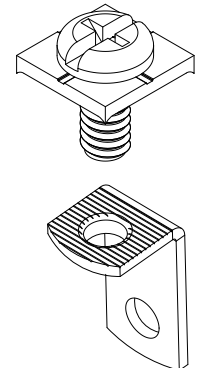
## Encapsulated Machine Tool Industrial Control Transformers

### FEATURES & BENEFITS

- 600V class, machine tool rated industrial control transformers
- 11 standard multi primary and secondary voltage groups available<sup>1</sup>
- 50/60 Hertz (60Hz on PH\*\*\*AJ & PH\*\*\*AR)
- VA range from 50 up to 1500<sup>1</sup>
- Superior insulation system
  - 50-150VA, temperature rise 55°C, insulation class 105°C
  - 250-1500VA, temperature rise 80°C, insulation class 130°C
- Constructed with high quality silicon steel laminations that provide optimum performance and reliability
- Encapsulated coils encased in a custom injection molded cover, protect coils and terminations from moisture, dirt and other industrial airborne contaminants.
- Mounting Feet: made of heavy steel and welded or bolted to the core, these mounting feet provide superior strength in a compact design.
- Termination: combination slot/Philips #6 screw, complete with SEMS washer (suitable for 18 AWG to 14 AWG solid or 14 AWG stranded wire)
- Standard SEMS washers - supplied on all units<sup>2</sup>
- Standard secondary fuse kits -utilizing 13/32" x 1 1/2" midget/type CC fuse clips (supplied with all units)
- Optional primary fuse kits available utilizing 13/32" x 1 1/2" midget/type CC fuse clips
- Optional finger safe terminal covers available on all units
- UL Listed (approved for U.S. and Canada)
- CE Mark standard on all units (excluding PH\*\*\*AJ & PH\*\*\*AR)
- LIFETIME Warranty (Limited)
- RoHS Compliant

<sup>1</sup> special voltages and VA sizes available upon request

<sup>2</sup> excluding PH750PG, PH1000PG, PH750MLI, PH1000MLI



WARRANTY

Lifetime



Terminal connection numbers molded into terminal block and correspond to nameplate and wiring diagrams, make connecting the HPS Imperator quick and simple.

SEMS washer allows for easy connection of supply or load wires with or without terminal connectors

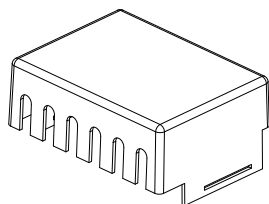


Innovative terminal block design provides for easy hook-up and installation of fuse clips.

Standard secondary and optional primary fuse kits utilizing 13/32" x 1 1/2" midget/type CC fuse clips provide an economical solution to your fusing requirements (fuses not available).



Optional removable finger safe terminal covers available on all standard units.



Custom injection molded coil cover with its unique "fin shaped" design combine superior cooling properties with a clean, bold look.



Made of heavy steel and welded or bolted to the core, these mounting feet provide superior strength in a compact design.



Hammond Power  
Solutions Inc.

# HPS IMPERATOR®

## Encapsulated Machine Tool Industrial Control Transformers

### Group A

Primary Voltage: **600** || 575 || 550  
 Secondary Voltage: **120 x 240** || 115 x 230 || 110 x 220



60 Hertz

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions |      |      | Mounting Centers |      | Mounting Slot<br>G X H | Height with Finger Guard | Depth with Finger Guard | Approx. Ship Weight Lbs. | Optional Primary Fuse Kit P/N |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------------------------|--------------------------|-------------------------|--------------------------|-------------------------------|
|           |                |           |             | A                  | B    | C    | D                | E    |                        |                          |                         |                          |                               |
| 50        | PH50AJ         | A         | 0.42/0.21   | 3.00               | 3.81 | 3.19 | 2.50             | 2.25 | 0.22 x 0.44            | 4.00                     | 5.25                    | 2.70                     | PFK1                          |
| 75        | PH75AJ         | A         | 0.63/0.31   | 3.25               | 3.69 | 3.56 | 2.63             | 2.50 | 0.22 x 0.44            | 4.37                     | 5.13                    | 2.80                     | PFK1                          |
| 100       | PH100AJ        | A         | 0.83/0.42   | 3.25               | 4.06 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44            | 4.44                     | 5.50                    | 4.10                     | PFK1                          |
| 150       | PH150AJ        | B         | 1.25/0.63   | 4.00               | 4.63 | 3.81 | 3.38             | 2.75 | 0.22 x 0.75            | 4.50                     | 6.13                    | 4.90                     | PFK2                          |
| 250       | PH250AJ        | B         | 2.08/1.04   | 4.50               | 5.25 | 3.81 | 3.75             | 3.13 | 0.22 x 0.75            | 4.50                     | 6.75                    | 6.97                     | PFK2                          |
| 350       | PH350AJ        | B         | 2.92/1.46   | 4.50               | 4.88 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75            | 4.94                     | 6.38                    | 8.30                     | PFK3                          |
| 500       | PH500AJ        | B         | 4.17/2.08   | 4.75               | 5.56 | 4.31 | 4.06             | 3.44 | 0.31 x 0.94            | 4.81                     | 7.06                    | 11.6                     | PFK3                          |
| 750       | PH750AJ        | B         | 6.25/3.13   | 5.13               | 6.38 | 4.31 | 4.38             | 4.00 | 0.31 x 0.81            | 4.81                     | 7.88                    | 16.6                     | PFK3                          |
| 1000      | PH1000AJ       | B         | 8.33/4.17   | 5.25               | 6.50 | 4.94 | 4.50             | 4.09 | 0.31 x 0.81            | 5.56                     | 8.00                    | 21.0                     | PFK3                          |
| 1500      | PH1500AJ       | B         | 12.5/6.25   | 5.25               | 7.56 | 4.94 | 4.50             | 5.44 | 0.38 x 1.00            | 5.56                     | 9.06                    | 30.0                     | PFK3                          |

Secondary fuse clips, fuse clip mounting screws and primary and secondary voltage links/jumpers supplied standard with transformers.  
 Please refer to page 14 for dimensional drawings. Special voltages and VA sizes available upon request.

All dimensions in inches

### Group B

Primary Voltage: **600** || 575 || 550  
 Secondary Voltage: **12 x 24** || 11.5 x 23 || 11 x 22



60 Hertz

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions |      |      | Mounting Centers |      | Mounting Slot<br>G X H | Height with Finger Guard | Depth with Finger Guard | Approx. Ship Weight Lbs. | Optional Primary Fuse Kit P/N |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------------------------|--------------------------|-------------------------|--------------------------|-------------------------------|
|           |                |           |             | A                  | B    | C    | D                | E    |                        |                          |                         |                          |                               |
| 50        | PH50AR         | A         | 4.17/2.08   | 3.00               | 3.81 | 3.19 | 2.50             | 2.25 | 0.22 x 0.44            | 4.00                     | 5.25                    | 2.70                     | PFK1                          |
| 75        | PH75AR         | A         | 6.25/3.13   | 3.25               | 3.69 | 3.56 | 2.63             | 2.50 | 0.22 x 0.44            | 4.37                     | 5.13                    | 2.80                     | PFK1                          |
| 100       | PH100AR        | A         | 8.33/4.17   | 3.25               | 4.19 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44            | 4.44                     | 5.63                    | 4.50                     | PFK1                          |
| 150       | PH150AR        | B         | 12.5/6.25   | 4.00               | 4.94 | 3.81 | 3.38             | 2.75 | 0.22 x 0.75            | 4.50                     | 6.44                    | 5.70                     | PFK2                          |
| 250       | PH250AR        | B         | 20.8/10.4   | 4.50               | 5.44 | 3.81 | 3.75             | 3.13 | 0.22 x 0.75            | 4.50                     | 6.94                    | 7.50                     | PFK2                          |
| 350       | PH350AR        | B         | 29.2/14.6   | 4.50               | 4.88 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75            | 4.94                     | 6.38                    | 8.30                     | PFK3                          |
| 500       | PH500AR        | B         | 41.7/20.8   | 4.75               | 5.56 | 4.31 | 4.06             | 3.44 | 0.31 x 0.94            | 4.81                     | 7.06                    | 11.6                     | PFK3                          |

Secondary fuse clips, fuse clip mounting screws and primary and secondary voltage links/jumpers supplied with transformers.  
 Please refer to page 14 for dimensional drawings. Special voltages and VA sizes available upon request.

All dimensions in inches



## Group C

Primary Voltage: **240 x 480** || 230 x 460 || 220 x 440  
 Secondary Voltage: **120 x 240** || 115 x 230 || 110 x 220



50/60 Hertz

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions |      |      | Mounting Centers |      | Mounting Slot<br>G X H | Height with Finger Guard | Depth with Finger Guard | Approx. Ship Weight Lbs. | Optional Primary Fuse Kit P/N |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------------------------|--------------------------|-------------------------|--------------------------|-------------------------------|
|           |                |           |             | A                  | B    | C    | D                | E    |                        |                          |                         |                          |                               |
| 50        | PH50MQMJ       | A         | 0.42/0.21   | 3.00               | 4.38 | 3.19 | 2.50             | 2.25 | 0.22 x 0.44            | 4.00                     | 5.82                    | 3.50                     | PFK1                          |
| 75        | PH75MQMJ       | A         | 0.63/0.31   | 3.25               | 3.88 | 3.56 | 2.63             | 2.50 | 0.22 x 0.44            | 4.37                     | 5.32                    | 3.54                     | PFK1                          |
| 100       | PH100MQMJ      | A         | 0.83/0.42   | 3.25               | 4.19 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44            | 4.44                     | 5.63                    | 4.50                     | PFK1                          |
| 150       | PH150MQMJ      | B         | 1.25/0.63   | 4.00               | 4.94 | 3.81 | 3.38             | 2.75 | 0.22 x 0.75            | 4.50                     | 6.44                    | 5.70                     | PFK2                          |
| 250       | PH250MQMJ      | B         | 2.08/1.04   | 4.50               | 5.44 | 3.81 | 3.75             | 3.13 | 0.22 x 0.75            | 4.50                     | 6.94                    | 7.50                     | PFK2                          |
| 350       | PH350MQMJ      | B         | 2.92/1.46   | 4.50               | 5.19 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75            | 4.94                     | 6.69                    | 10.1                     | PFK3                          |
| 500       | PH500MQMJ      | B         | 4.17/2.08   | 4.75               | 5.94 | 4.31 | 4.06             | 3.81 | 0.31 x 0.94            | 4.81                     | 7.44                    | 14.2                     | PFK3                          |
| 750       | PH750MQMJ      | B         | 6.25/3.13   | 5.13               | 6.69 | 4.31 | 4.38             | 4.31 | 0.31 x 0.81            | 4.81                     | 8.19                    | 16.6                     | PFK3                          |
| 1000      | PH1000MQMJ     | B         | 8.33/4.17   | 5.25               | 6.81 | 4.94 | 4.50             | 4.44 | 0.31 x 0.81            | 5.56                     | 8.31                    | 23.6                     | PFK3                          |
| 1500      | PH1500MQMJ     | B         | 12.5/6.25   | 5.25               | 8.19 | 4.94 | 4.50             | 6.06 | 0.38 x 1.00            | 5.56                     | 9.69                    | 32.0                     | PFK3                          |

Secondary fuse clips, fuse clip mounting screws and primary and secondary voltage links/jumpers supplied standard with transformers.  
 Please refer to page 14 for dimensional drawings. Special voltages and VA sizes available upon request.

All dimensions in inches

## Group D

Primary Voltage: **240 x 480** || 230 x 460 || 220 x 440  
 Secondary Voltage: **12 x 24** || 11.5 x 23 || 11 x 22



50/60 Hertz

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions |      |      | Mounting Centers |      | Mounting Slot<br>G X H | Height with Finger Guard | Depth with Finger Guard | Approx. Ship Weight Lbs. | Optional Primary Fuse Kit P/N |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------------------------|--------------------------|-------------------------|--------------------------|-------------------------------|
|           |                |           |             | A                  | B    | C    | D                | E    |                        |                          |                         |                          |                               |
| 50        | PH50QR         | A         | 4.17/2.08   | 3.00               | 4.38 | 3.19 | 2.50             | 2.25 | 0.22 x 0.44            | 4.00                     | 5.82                    | 3.50                     | PFK1                          |
| 75        | PH75QR         | A         | 6.25/3.13   | 3.25               | 3.88 | 3.56 | 2.63             | 2.50 | 0.22 x 0.44            | 4.37                     | 5.32                    | 3.54                     | PFK1                          |
| 100       | PH100QR        | A         | 8.33/4.17   | 3.25               | 4.19 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44            | 4.44                     | 5.63                    | 4.50                     | PFK1                          |
| 150       | PH150QR        | B         | 12.5/6.25   | 4.00               | 4.94 | 3.81 | 3.38             | 2.75 | 0.22 x 0.75            | 4.50                     | 6.44                    | 5.70                     | PFK2                          |
| 250       | PH250QR        | B         | 20.8/10.4   | 4.50               | 5.44 | 3.81 | 3.75             | 3.13 | 0.22 x 0.75            | 4.50                     | 6.94                    | 7.50                     | PFK2                          |
| 350       | PH350QR        | B         | 29.2/14.6   | 4.50               | 5.19 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75            | 4.94                     | 6.69                    | 10.1                     | PFK3                          |
| 500       | PH500QR        | B         | 41.7/20.8   | 4.75               | 5.94 | 4.31 | 4.06             | 3.81 | 0.31 x 0.94            | 4.81                     | 7.44                    | 14.2                     | PFK3                          |

Secondary fuse clips, fuse clip mounting screws and primary and secondary voltage links/jumpers supplied standard with transformers.  
 Please refer to page 14 for dimensional drawings. Special voltages and VA sizes available upon request.

All dimensions in inches



Hammond Power Solutions Inc.

# HPS IMPERATOR®

## Encapsulated Machine Tool Industrial Control Transformers

### Group E

Primary Voltage: **208 x 416** || 200 x 400 || 190 x 380  
 Secondary Voltage: **120 x 240** || 115 x 230 || 110 x 220



50/60 Hertz

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions |      |      | Mounting Centers |      | Mounting Slot<br>G X H | Height with Finger Guard | Depth with Finger Guard | Approx. Ship Weight Lbs. | Optional Primary Fuse Kit P/N |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------------------------|--------------------------|-------------------------|--------------------------|-------------------------------|
|           |                |           |             | A                  | B    | C    | D                | E    |                        |                          |                         |                          |                               |
| 50        | PH50SP         | A         | 0.42/0.21   | 3.00               | 4.38 | 3.19 | 2.50             | 2.25 | 0.22 x 0.44            | 4.00                     | 5.82                    | 3.50                     | PFK1                          |
| 75        | PH75SP         | A         | 0.63/0.31   | 3.25               | 3.88 | 3.56 | 2.63             | 2.50 | 0.22 x 0.44            | 4.37                     | 5.32                    | 3.54                     | PFK1                          |
| 100       | PH100SP        | A         | 0.83/0.42   | 3.25               | 4.19 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44            | 4.44                     | 5.63                    | 4.50                     | PFK1                          |
| 150       | PH150SP        | B         | 1.25/0.63   | 4.00               | 4.94 | 3.81 | 3.38             | 2.75 | 0.22 x 0.75            | 4.50                     | 6.44                    | 5.70                     | PFK2                          |
| 250       | PH250SP        | B         | 2.08/1.04   | 4.50               | 5.44 | 3.81 | 3.75             | 3.13 | 0.22 x 0.75            | 4.50                     | 6.94                    | 7.50                     | PFK2                          |
| 350       | PH350SP        | B         | 2.92/1.46   | 4.50               | 5.19 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75            | 4.94                     | 6.69                    | 10.1                     | PFK3                          |
| 500       | PH500SP        | B         | 4.17/2.08   | 4.75               | 5.94 | 4.31 | 4.06             | 3.81 | 0.31 x 0.94            | 4.81                     | 7.44                    | 14.2                     | PFK3                          |
| 750       | PH750SP        | B         | 6.25/3.13   | 5.13               | 6.69 | 4.31 | 4.38             | 4.31 | 0.31 x 0.81            | 4.81                     | 8.19                    | 16.6                     | PFK3                          |
| 1000      | PH1000SP       | B         | 8.33/4.17   | 5.25               | 6.81 | 4.94 | 4.50             | 4.44 | 0.31 x 0.81            | 5.56                     | 8.31                    | 23.6                     | PFK3                          |

Secondary fuse clips, fuse clip mounting screws and primary and secondary voltage links/jumpers supplied standard with transformers.  
 Please refer to page 14 for dimensional drawings. Special voltages and VA sizes available upon request.

All dimensions in inches

### Group F

Primary Voltage: **120 x 240** || 115 x 230 || 110 x 220  
 Secondary Voltage: **120 x 240** || 115 x 230 || 110 x 220



50/60 Hertz

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions |      |      | Mounting Centers |      | Mtg. Slot<br>G X H | Height with Finger Guard | Depth with Finger Guard | Approx. Ship Weight Lbs. | Optional Primary Fuse Kit P/N |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|--------------------|--------------------------|-------------------------|--------------------------|-------------------------------|
|           |                |           |             | A                  | B    | C    | D                | E    |                    |                          |                         |                          |                               |
| 50        | PH50PP         | A         | 0.42/0.21   | 3.00               | 4.38 | 3.19 | 2.50             | 2.25 | 0.22 x 0.44        | 4.00                     | 5.82                    | 3.50                     | PFK1                          |
| 75        | PH75PP         | A         | 0.63/0.31   | 3.25               | 3.88 | 3.56 | 2.63             | 2.50 | 0.22 x 0.44        | 4.37                     | 5.32                    | 3.54                     | PFK1                          |
| 100       | PH100PP        | A         | 0.83/0.42   | 3.25               | 4.19 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44        | 4.44                     | 5.63                    | 4.50                     | PFK1                          |
| 150       | PH150PP        | B         | 1.25/0.63   | 4.00               | 4.94 | 3.81 | 3.38             | 2.75 | 0.22 x 0.75        | 4.50                     | 6.44                    | 5.70                     | PFK2                          |
| 250       | PH250PP        | B         | 2.08/1.04   | 4.50               | 5.44 | 3.81 | 3.75             | 3.13 | 0.22 x 0.75        | 4.50                     | 6.94                    | 7.50                     | PFK2                          |
| 350       | PH350PP        | B         | 2.92/1.46   | 4.50               | 5.19 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75        | 4.94                     | 6.69                    | 10.1                     | PFK3                          |
| 500       | PH500PP        | B         | 4.17/2.08   | 4.75               | 5.94 | 4.31 | 4.06             | 3.81 | 0.31 x 0.94        | 4.81                     | 7.44                    | 14.2                     | PFK3                          |
| 750       | PH750PP        | B         | 6.25/3.13   | 5.13               | 6.69 | 4.31 | 4.38             | 4.31 | 0.31 x 0.81        | 4.81                     | 8.19                    | 16.6                     | PFK3                          |
| 1000      | PH1000PP       | B         | 8.33/4.17   | 5.25               | 6.81 | 4.94 | 4.50             | 4.44 | 0.31 x 0.81        | 5.56                     | 8.31                    | 23.6                     | PFK3                          |
| 1500      | PH1500PP       | B         | 12.5/6.25   | 5.25               | 8.19 | 4.94 | 4.50             | 6.06 | 0.38 x 1.0         | 5.56                     | 9.69                    | 32.0                     | PFK3                          |

Secondary fuse clips, fuse clip mounting screws and primary and secondary voltage links/jumpers supplied standard with transformers.  
 Please refer to page 14 for dimensional drawings. Special voltages and VA sizes available upon request.

All dimensions in inches



## Group G

Primary Voltage: **120 x 240** || **115 x 230** || **110 x 220**  
 Secondary Voltage: **12 x 24** || **11.5 x 23** || **11 x 22**



**CE** 50/60 Hertz

| VA Rating | Catalog Number  | Mtg. Fig. | Output Amps | Overall Dimensions |      |      | Mounting Centers |      | Mounting Slot<br>G X H | Height with Finger Guard | Depth with Finger Guard | Approx. Ship Weight Lbs. | Optional Primary Fuse Kit P/N |
|-----------|-----------------|-----------|-------------|--------------------|------|------|------------------|------|------------------------|--------------------------|-------------------------|--------------------------|-------------------------------|
|           |                 |           |             | A                  | B    | C    | D                | E    |                        |                          |                         |                          |                               |
| 50        | <b>PH50PG</b>   | A         | 4.17/2.08   | 3.00               | 4.38 | 3.19 | 2.50             | 2.25 | 0.22 x 0.44            | 4.00                     | 5.82                    | 3.50                     | PFK1                          |
| 75        | <b>PH75PG</b>   | A         | 6.25/3.13   | 3.25               | 3.88 | 3.56 | 2.63             | 2.50 | 0.22 x 0.44            | 4.37                     | 5.32                    | 3.54                     | PFK1                          |
| 100       | <b>PH100PG</b>  | A         | 8.33/4.17   | 3.25               | 4.19 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44            | 4.44                     | 5.63                    | 4.50                     | PFK1                          |
| 150       | <b>PH150PG</b>  | B         | 12.5/6.25   | 4.00               | 4.94 | 3.81 | 3.38             | 2.75 | 0.22 x 0.75            | 4.50                     | 6.44                    | 5.70                     | PFK2                          |
| 250       | <b>PH250PG</b>  | B         | 20.8/10.4   | 4.50               | 5.44 | 3.81 | 3.75             | 3.13 | 0.22 x 0.75            | 4.50                     | 6.94                    | 7.50                     | PFK2                          |
| 350       | <b>PH350PG</b>  | B         | 29.2/14.6   | 4.50               | 5.19 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75            | 4.94                     | 6.69                    | 10.1                     | PFK3                          |
| 500       | <b>PH500PG</b>  | B         | 41.7/20.8   | 4.75               | 5.94 | 4.31 | 4.06             | 3.81 | 0.31 x 0.94            | 4.81                     | 7.44                    | 14.2                     | PFK3                          |
| 750       | <b>PH750PG</b>  | C         | 62.5/31.3   | 5.13               | 6.69 | 4.31 | 4.38             | 4.31 | 0.31 x 0.81            | 4.81                     | 8.19                    | 16.6                     | PFK3                          |
| 1000      | <b>PH1000PG</b> | C         | 83.3/41.7   | 5.25               | 6.81 | 4.94 | 4.50             | 4.44 | 0.31 x 0.81            | 5.56                     | 8.31                    | 23.6                     | PFK3                          |

Secondary fuse clips and fuse clip mounting screws supplied standard with transformers up to and including 500VA. Primary and secondary voltage links/jumpers supplied standard with transformers. Please refer to page 14 for dimensional drawings. Special voltages and VA sizes available upon request. All dimensions in inches

## Group H

Primary Voltage: **600/480/240** || **575/460/230** || **550/440/220**  
 Secondary Voltage: **120/100** || **115/95** || **110/90**



**CE** 50/60 Hertz

| VA Rating | Catalog Number    | Mtg. Fig. | Output Amps | Overall Dimensions |      |      | Mounting Centers |      | Mounting Slot<br>G X H | Height with Finger Guard | Depth with Finger Guard | Approx. Ship Weight Lbs. | Optional Primary Fuse Kit P/N |
|-----------|-------------------|-----------|-------------|--------------------|------|------|------------------|------|------------------------|--------------------------|-------------------------|--------------------------|-------------------------------|
|           |                   |           |             | A                  | B    | C    | D                | E    |                        |                          |                         |                          |                               |
| 50        | <b>PH50MBMH</b>   | A         | 0.43        | 3.25               | 4.06 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44            | 4.44                     | 5.50                    | 4.10                     | PFK4                          |
| 75        | <b>PH75MBMH</b>   | A         | 0.65        | 3.25               | 4.19 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44            | 4.44                     | 5.63                    | 4.50                     | PFK5                          |
| 100       | <b>PH100MBMH</b>  | B         | 0.87        | 4.00               | 4.63 | 3.81 | 3.38             | 2.75 | 0.22 x 0.75            | 4.50                     | 6.13                    | 4.90                     | PFK6                          |
| 150       | <b>PH150MBMH</b>  | B         | 1.30        | 4.00               | 5.44 | 3.81 | 3.38             | 2.75 | 0.22 x 0.75            | 4.50                     | 6.94                    | 7.60                     | PFK6                          |
| 250       | <b>PH250MBMH</b>  | B         | 2.17        | 4.50               | 5.19 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75            | 4.94                     | 6.69                    | 10.1                     | PFK6                          |
| 350       | <b>PH350MBMH</b>  | B         | 3.04        | 4.50               | 5.56 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75            | 4.94                     | 7.06                    | 11.0                     | PFK7                          |
| 500       | <b>PH500MBMH</b>  | B         | 4.35        | 4.75               | 6.69 | 4.31 | 4.06             | 4.50 | 0.31 x 0.94            | 4.81                     | 8.19                    | 16.3                     | PFK7                          |
| 750       | <b>PH750MBMH</b>  | B         | 6.52        | 5.25               | 6.81 | 4.94 | 4.50             | 4.44 | 0.31 x 0.81            | 5.56                     | 8.31                    | 23.6                     | PFK7                          |
| 1000      | <b>PH1000MBMH</b> | B         | 8.70        | 5.25               | 8.19 | 4.94 | 4.50             | 5.81 | 0.31 x 0.81            | 5.56                     | 9.69                    | 31.2                     | PFK7                          |
| 1500      | <b>PH1500MBMH</b> | B         | 13.0        | 5.25               | 8.19 | 4.94 | 4.50             | 6.06 | 0.38 x 1.0             | 5.56                     | 9.69                    | 32.0                     | PFK7                          |

Secondary fuse clips, fuse clip mounting screws and primary and secondary voltage links/jumpers supplied standard with transformers. Please refer to page 14 for dimensional drawings. Special voltages and VA sizes available upon request. All dimensions in inches



Hammond Power Solutions Inc.

# HPS IMPERATOR®

## Encapsulated Machine Tool Industrial Control Transformers

### Group I

Primary Voltage: 480/240 || **460/230/208** || 440/220/200  
 Secondary Voltage: 120/25 || **115/24** || 110/23



50/60 Hertz

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions |      |      | Mounting Centers |      | Mounting Slot<br>G X H | Height with Finger Guard | Depth with Finger Guard | Approx. Ship Weight Lbs.s | Optional Primary Fuse Kit P/N |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------------------------|--------------------------|-------------------------|---------------------------|-------------------------------|
|           |                |           |             | A                  | B    | C    | D                | E    |                        |                          |                         |                           |                               |
| 50        | PH50MLI        | A         | 0.43/2.08   | 3.25               | 4.06 | 3.56 | 2.63             | 2.50 | 0.22 x 0.44            | 4.37                     | 5.50                    | 4.00                      | PFK5                          |
| 75        | PH75MLI        | A         | 0.65/3.13   | 3.25               | 4.25 | 3.56 | 2.63             | 2.50 | 0.22 x 0.44            | 4.37                     | 5.69                    | 4.60                      | PFK5                          |
| 100       | PH100MLI       | A         | 0.87/4.17   | 3.25               | 4.69 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44            | 4.44                     | 6.13                    | 5.20                      | PFK5                          |
| 150       | PH150MLI       | B         | 1.30/6.25   | 4.00               | 5.44 | 3.81 | 3.38             | 2.75 | 0.22 x 0.75            | 4.50                     | 6.94                    | 7.60                      | PFK6                          |
| 250       | PH250MLI       | B         | 2.17/10.42  | 4.50               | 5.19 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75            | 4.94                     | 6.69                    | 10.1                      | PFK6                          |
| 350       | PH350MLI       | B         | 3.04/14.58  | 4.50               | 5.56 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75            | 4.94                     | 7.06                    | 11.0                      | PFK7                          |
| 500       | PH500MLI       | B         | 4.35/20.83  | 4.75               | 6.69 | 4.31 | 4.06             | 4.50 | 0.31 x 0.94            | 4.81                     | 8.19                    | 16.3                      | PFK7                          |
| 750       | PH750MLI       | C         | 6.52/31.25  | 5.25               | 6.50 | 4.94 | 4.50             | 4.13 | 0.31 x 0.81            | 5.56                     | 8.00                    | 21.0                      | PFK7                          |
| 1000      | PH1000MLI      | C         | 8.70/41.67  | 5.25               | 8.19 | 4.94 | 4.50             | 5.81 | 0.31 x 0.81            | 5.56                     | 9.69                    | 31.2                      | PFK7                          |

Secondary fuse clips and fuse clip mounting screws supplied standard with transformers up to and including 500VA. Primary and secondary voltage links/jumpers supplied standard with transformers. Please refer to page 14 for dimensional drawings. Special voltages and VA sizes available upon request.

All dimensions in inches

### Group J

Primary Voltage: **415/400/380**  
 Secondary Voltage: **110 x 220**



50/60 Hertz

| VA Rating | Catalog Number | Mtg. Fig. | Output Amps | Overall Dimensions |      |      | Mounting Centers |      | Mounting Slot<br>G X H | Height with Finger Guard | Depth with Finger Guard | Approx. Ship Weight Lbs. | Optional Primary Fuse Kit P/N |
|-----------|----------------|-----------|-------------|--------------------|------|------|------------------|------|------------------------|--------------------------|-------------------------|--------------------------|-------------------------------|
|           |                |           |             | A                  | B    | C    | D                | E    |                        |                          |                         |                          |                               |
| 50        | PH50MEMX       | A         | 0.45/0.23   | 3.00               | 4.38 | 3.19 | 2.50             | 2.25 | 0.22 x 0.44            | 4.00                     | 5.82                    | 3.50                     | PFK4                          |
| 75        | PH75MEMX       | A         | 0.68/0.34   | 3.25               | 4.06 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44            | 4.44                     | 5.50                    | 4.10                     | PFK5                          |
| 100       | PH100MEMX      | A         | 0.91/0.45   | 3.25               | 4.19 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44            | 4.44                     | 5.63                    | 4.50                     | PFK5                          |
| 150       | PH150MEMX      | B         | 1.36/0.68   | 4.00               | 4.94 | 3.81 | 3.38             | 2.75 | 0.22 x 0.75            | 4.50                     | 6.44                    | 5.70                     | PFK6                          |
| 250       | PH250MEMX      | B         | 2.27/1.14   | 4.50               | 5.44 | 3.81 | 3.75             | 3.13 | 0.22 x 0.75            | 4.50                     | 6.94                    | 7.50                     | PFK6                          |
| 350       | PH350MEMX      | B         | 3.18/1.59   | 4.50               | 5.19 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75            | 4.94                     | 6.69                    | 10.1                     | PFK7                          |
| 500       | PH500MEMX      | B         | 4.55/2.27   | 4.75               | 5.94 | 4.31 | 4.06             | 3.81 | 0.31 x 0.94            | 4.81                     | 7.44                    | 14.2                     | PFK7                          |
| 750       | PH750MEMX      | B         | 6.82/3.41   | 5.25               | 6.50 | 4.94 | 4.50             | 4.13 | 0.31 x 0.81            | 5.56                     | 8.00                    | 21.0                     | PFK7                          |
| 1000      | PH1000MEMX     | B         | 9.09/4.55   | 5.25               | 6.81 | 4.94 | 4.50             | 4.44 | 0.31 x 0.81            | 5.56                     | 8.31                    | 23.6                     | PFK7                          |

Secondary fuse clips, fuse clip mounting screws and primary and secondary voltage links/jumpers supplied with transformers. Please refer to page 14 for dimensional drawings. Special voltages and VA sizes available upon request.

All dimensions in inches



## Group K

Primary Voltage: **380/277/208**

Secondary Voltage: **120 x 240**



50/60 Hertz

| VA Rating | Catalog Number   | Mtg. Fig. | Output Amps | Overall Dimensions |      |      | Mounting Centers |      | Mounting Slot<br>G X H | Height with Finger Guard | Depth with Finger Guard | Approx. Ship Weight Lbs. | Optional Primary Fuse Kit P/N |
|-----------|------------------|-----------|-------------|--------------------|------|------|------------------|------|------------------------|--------------------------|-------------------------|--------------------------|-------------------------------|
|           |                  |           |             | A                  | B    | C    | D                | E    |                        |                          |                         |                          |                               |
| 50        | <b>PH50MGJ</b>   | A         | 0.42/0.21   | 3.25               | 3.88 | 3.56 | 2.63             | 2.50 | 0.22 x 0.44            | 4.37                     | 5.32                    | 3.54                     | PFK4                          |
| 75        | <b>PH75MGJ</b>   | A         | 0.63/0.31   | 3.25               | 4.19 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44            | 4.44                     | 5.63                    | 4.50                     | PFK5                          |
| 100       | <b>PH100MGJ</b>  | A         | 0.83/0.42   | 3.25               | 4.69 | 3.63 | 2.63             | 2.63 | 0.22 x 0.44            | 4.44                     | 6.13                    | 5.20                     | PFK5                          |
| 150       | <b>PH150MGJ</b>  | B         | 1.25/0.63   | 4.00               | 5.44 | 3.81 | 3.38             | 2.75 | 0.22 x 0.75            | 4.50                     | 6.94                    | 7.60                     | PFK6                          |
| 250       | <b>PH250MGJ</b>  | B         | 2.08/1.04   | 4.50               | 4.88 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75            | 4.94                     | 6.38                    | 8.30                     | PFK6                          |
| 350       | <b>PH350MGJ</b>  | B         | 2.92/1.46   | 4.50               | 5.56 | 4.44 | 3.75             | 3.75 | 0.22 x 0.75            | 4.94                     | 7.06                    | 11.0                     | PFK7                          |
| 500       | <b>PH500MGJ</b>  | B         | 4.17/2.08   | 4.75               | 6.69 | 4.31 | 4.06             | 4.50 | 0.31 x 0.94            | 4.81                     | 8.19                    | 16.3                     | PFK7                          |
| 750       | <b>PH750MGJ</b>  | B         | 6.25/3.13   | 5.25               | 6.81 | 4.94 | 4.50             | 4.44 | 0.31 x 0.81            | 5.56                     | 8.31                    | 23.6                     | PFK7                          |
| 1000      | <b>PH1000MGJ</b> | B         | 8.33/4.17   | 5.25               | 7.25 | 4.94 | 4.50             | 4.83 | 0.31 x 0.81            | 5.44                     | 8.75                    | 25.5                     | PFK7                          |

Secondary fuse clips, fuse clip mounting screws and primary and secondary voltage links/jumpers supplied with transformers.  
Please refer to page 14 for dimensional drawings. Special voltages and VA sizes available upon request.

All dimensions in inches

## Accessory Kits Available

The HPS Imperator series of machine tool rated industrial control transformers are supplied with standard secondary fuse kits or optional accessories such as primary fuse kits and finger guards.

## Standard Secondary Fuse Kits

All HPS Imperator control transformers are supplied with standard secondary fuse kits which include: 13/32" x 1 1/2" midget/type CC fuse clips, fuse clip mounting screws, primary and secondary voltage links and the PHAK1 instruction sheet (note: secondary fuse clips and fuse clip mounting screws not supplied on the PH750PG, PH1000PG, PH750MLI and PH1000MLI). Please consult the HPS Transformer Products catalog for additional details.

## Optional Primary Fuse Kits

| Kit Part Number                                      | Applicable Transformer Part Number Suffix's           | Applicable VA Sizes                                   | Parts Included in Kit                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PFK1<br>PFK2<br>PFK3<br>PFK4<br>PFK5<br>PFK6<br>PFK7 | <i>Refer to Specification Tables on Pages 5 to 10</i> | <i>Refer to Specification Tables on Pages 5 to 10</i> | 4 fuse clips, 4 mtg. screws, PHAK1 instruction sheet<br>4 fuse clips, 4 mtg. screws, PHAK1 instruction sheet<br>4 fuse clips, 4 mtg. screws, PHAK1 instruction sheet<br>4 fuse clips, 4 mtg. screws, 1 jumper, 1 finger guard, PHAK1 instruction sheet<br>4 fuse clips, 4 mtg. screws, 1 jumper, 1 finger guard, PHAK1 instruction sheet<br>4 fuse clips, 4 mtg. screws, 1 jumper wire, PHAK1 instruction sheet<br>4 fuse clips, 4 mtg. screws, 1 jumper wire, PHAK1 instruction sheet |

Note: Maximum allowable current rating on all primary and secondary fuse kits is 30 amps.



Hammond Power Solutions Inc.

# HPS IMPERATOR®

## Encapsulated Machine Tool Industrial Control Transformers

### Factory Installed Primary and Secondary Fuse Kits

HPS now stocks some HPS Imperator series voltage groups with FACTORY INSTALLED primary and secondary fuse clips. To order, just add the suffix “-FK” to the end of the standard part number.

Factory installed primary and secondary fuse clips are only available on the following voltage groups:

**Group C (p/n: PH\*\*\*MQMJ-FK) | Group G (p/n: PH\*\*\*PG-FK) | Group I (p/n: PH\*\*\*MLI-FK)**

On PH750PG-FK, PH1000PG-FK, PH750MLI-FK, and PH1000MLI-FK, only primary fuse clips are included on factory installed units. Secondary fuse clips are not included or available on these units.

***Note:** All factory installed fuse kits are pre-wired at the transformers highest primary voltage and the lowest secondary voltage. To hook up at a different primary or secondary voltage, please refer to the wiring instruction sheet included with the transformer.*

### Optional Unfused Finger Guard Kits

| Kit Part Number | Applicable Transformer Part Number Suffix's                 | Applicable VA Sizes | Parts Included in Kit                             |
|-----------------|-------------------------------------------------------------|---------------------|---------------------------------------------------|
| <b>FG1</b>      | AJ, AR, MQMJ, MEMX, QR, SP, PG, PP                          | 50                  | 1 finger guard (unfused), PHAK1 instruction sheet |
| <b>FG2</b>      | MBMH, MGJ, MLI                                              | 50                  | 1 finger guard (unfused), PHAK1 instruction sheet |
| <b>FG2</b>      | All                                                         | 75                  | 1 finger guard (unfused), PHAK1 instruction sheet |
| <b>FG2</b>      | All (excluding PH100MBMH)<br>refer to FG3, FG4 or FG5 below | 100<br>150 to 1500  | 1 finger guard (unfused), PHAK1 instruction sheet |

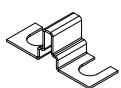
### Optional Fused Finger Guard Kits

|             |                                    |            |                                                 |
|-------------|------------------------------------|------------|-------------------------------------------------|
| <b>FGF1</b> | AJ, AR, MQMJ, MEMX, QR, SP, PG, PP | 50         | 1 finger guard (fused), PHAK1 instruction sheet |
| <b>FGF2</b> | MBMH, MGJ, MLI                     | 50         | 1 finger guard (fused), PHAK1 instruction sheet |
| <b>FGF2</b> | All                                | 75         | 1 finger guard (fused), PHAK1 instruction sheet |
| <b>FGF2</b> | All (excluding PH100MBMH)          | 100        | 1 finger guard (fused), PHAK1 instruction sheet |
| <b>FG3</b>  | MBMH                               | 100        | 1 finger guard, PHAK1 instruction sheet         |
| <b>FG3</b>  | All                                | 150        | 1 finger guard, PHAK1 instruction sheet         |
| <b>FG3</b>  | AJ, AR, MQMJ, MEMX, QR, SP, PG, PP | 250        | 1 finger guard, PHAK1 instruction sheet         |
| <b>FG4</b>  | MBMH, MGJ, MLI                     | 250        | 1 finger guard, PHAK1 instruction sheet         |
| <b>FG4</b>  | All                                | 350, 500   | 1 finger guard, PHAK1 instruction sheet         |
| <b>FG4</b>  | AJ, AR, MQMJ, QR, SP, PP           | 750        | 1 finger guard, PHAK1 instruction sheet         |
| <b>FG5</b>  | MBMH, MEMX, MGJ, MLI, PG           | 750        | 1 finger guard, PHAK1 instruction sheet         |
| <b>FG5</b>  | All                                | 1000, 1500 | 1 finger guard, PHAK1 instruction sheet         |

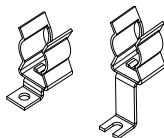
Note: Each finger guard kit supplies either the primary or secondary side.



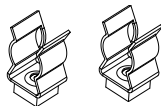
## Sample Accessory Drawings



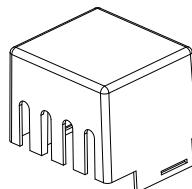
**Voltage Link**



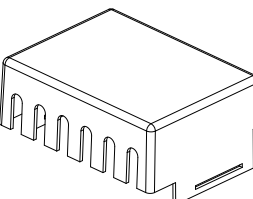
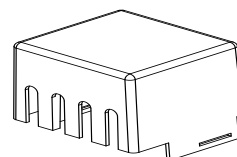
**Fuse Clips**  
(for 50, 75 and 100VA)



**Fuse Clips**  
(for 150VA to 1500VA)

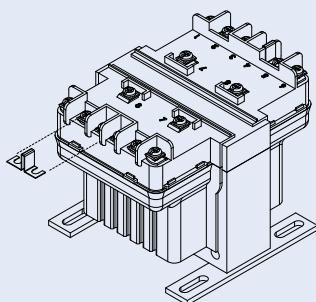


**Fused & Unfused Finger Guard**  
(for 50, 75 and 100VA)

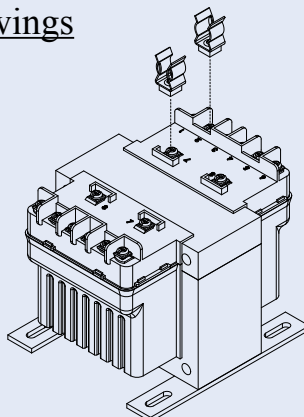


**Finger Guard**  
(for 150VA to 1500VA)

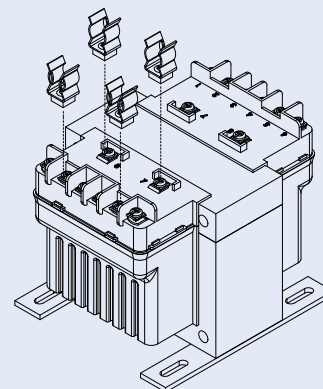
## Sample Accessory Assembly Drawings



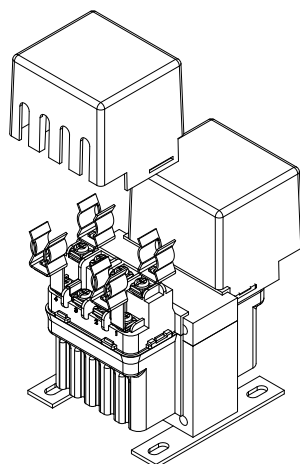
**Sample Assembly Drawing for  
Voltage Link Installation**



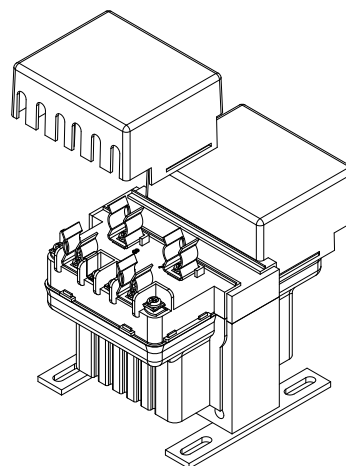
**Sample Assembly Drawing for  
Secondary Fuse Clip Installation**  
(for 150VA to 1500VA)



**Sample Assembly Drawing for  
Primary Fuse Clip Installation**  
(for 150VA to 1500VA)



**Sample Assembly Drawing for  
Finger Guard Installation**  
(for 50, 75 and 100VA)



**Sample Assembly Drawing for  
Finger Guard Installation**  
(for 150VA to 1500VA)



# HPS IMPERATOR®

## Encapsulated Machine Tool Industrial Control Transformers

### Overcurrent Protection

#### 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.<br>Voltage | VA Rating |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |
|-----------------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
|                 | 25        | 50  | 75  | 100 | 150 | 200 | 250 | 300 | 350 | 500 | 750 | 1000 | 1500 | 2000 | 3000 | 5000 |
| 12              | 2.7       | 5.3 | 7.9 | 11  | 16  | 21  | 27  | -   | -   | -   | -   | -    | -    | -    | -    | -    |
| 24              | 1.4       | 2.7 | 4.0 | 5.3 | 7.9 | 11  | 14  | 16  | 19  | 27  | -   | -    | -    | -    | -    | -    |
| 90              | 0.4       | 0.7 | 1.1 | 1.4 | 2.1 | 2.8 | 3.5 | 4.2 | 4.9 | 7.0 | 11  | 14   | 21   | 28   | -    | -    |
| 95              | 0.4       | 0.7 | 1.0 | 1.4 | 2.0 | 2.7 | 3.3 | 4.0 | 4.7 | 6.6 | 9.9 | 14   | 20   | 27   | -    | -    |
| 100             | 0.4       | 0.7 | 1.0 | 1.3 | 1.9 | 2.5 | 3.2 | 3.8 | 4.4 | 6.3 | 9.4 | 13   | 19   | 25   | -    | -    |
| 110             | 0.3       | 0.6 | 0.9 | 1.2 | 1.8 | 2.3 | 2.9 | 3.5 | 4.0 | 5.7 | 8.6 | 12   | 18   | 23   | -    | -    |
| 115             | 0.3       | 0.6 | 0.9 | 1.1 | 1.7 | 2.2 | 2.8 | 3.3 | 3.9 | 5.5 | 8.2 | 11   | 17   | 22   | -    | -    |
| 120             | 0.3       | 0.6 | 0.8 | 1.1 | 1.6 | 2.1 | 2.7 | 3.2 | 3.7 | 5.3 | 7.9 | 11   | 16   | 21   | -    | -    |
| 220             | 0.15      | 0.3 | 0.5 | 0.6 | 0.9 | 1.2 | 1.5 | 1.8 | 2.0 | 2.9 | 4.3 | 5.7  | 8.6  | 12   | 18   | 29   |
| 230             | 0.14      | 0.3 | 0.5 | 0.6 | 0.9 | 1.1 | 1.4 | 1.7 | 2.0 | 2.8 | 4.1 | 5.5  | 8.2  | 11   | 17   | 28   |
| 240             | 0.14      | 0.3 | 0.4 | 0.6 | 0.8 | 1.1 | 1.4 | 1.6 | 1.9 | 2.7 | 4.0 | 5.3  | 7.9  | 11   | 16   | 27   |

#### Primary

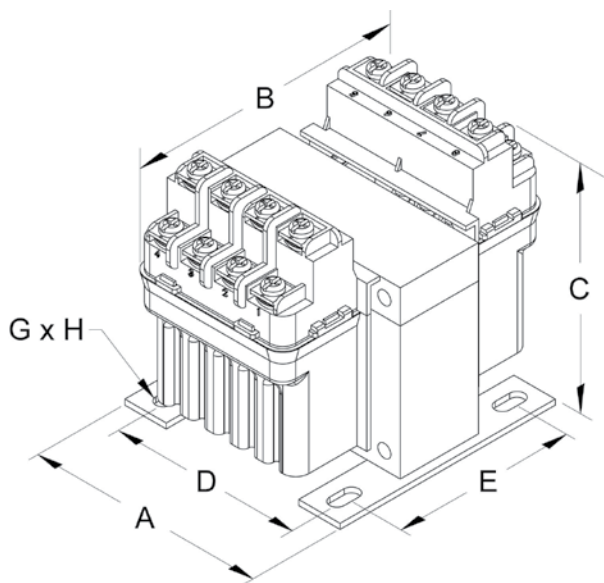
To assist in the selection of fuses, the following chart recommends the maximum primary fuse rating in amperes. The number shown is the maximum overcurrent protection when the primary current is less than 2 amps and the overcurrent protection device is rated for 300%. Choose the next higher fuse rating if these numbers do not correspond with standard fuse selections.

| Pri.<br>Volt | VA Rating |      |       |      |       |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|-----------|------|-------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
|              | 25        | 50   | 75    | 100  | 150   | 200  | 250  | 300  | 350  | 500  | 750  | 1000 | 1500 | 2000 | 3000 | 5000 | 7500 |
| 115          | 0.6       | 1.25 | 1.8   | 2.5  | 3.5   | 5    | 4    | 5    | 5    | 8    | 10   | 15   | 20   | 25   | -    | -    | -    |
| 120          | 0.6       | 1.25 | 1.8   | 2.25 | 3.5   | 5    | 4    | 5    | 5    | 8    | 10   | 15   | 15   | 20   | -    | -    | -    |
| 200          | 0.3       | 0.75 | 1.125 | 1.5  | 2.25  | 3    | 3.5  | 4.5  | 5    | 4.5  | 7    | 9    | 15   | 15   | 20   | -    | -    |
| 208          | 0.3       | 0.6  | 1     | 1.4  | 2     | 2.8  | 3.5  | 4    | 5    | 4    | 6    | 8    | 12   | 15   | 20   | 30   | -    |
| 220          | 0.3       | 0.6  | 1     | 1.25 | 2     | 2.5  | 3.2  | 4    | 4.5  | 4    | 6    | 8    | 12   | 15   | 20   | 30   | -    |
| 230          | 0.3       | 0.6  | 0.8   | 1.25 | 1.8   | 2.5  | 3.2  | 3.5  | 4.5  | 4    | 6    | 8    | 10   | 15   | 20   | 30   | -    |
| 240          | 0.3       | 0.6  | 0.8   | 1.25 | 1.8   | 2.25 | 3    | 3.5  | 4    | 3.5  | 5    | 7    | 10   | 15   | 15   | 30   | -    |
| 277          | 0.25      | 0.5  | 0.8   | 1    | 1.6   | 2    | 2.5  | 3.2  | 3.5  | 5    | 5    | 6    | 9    | 12   | 15   | 25   | -    |
| 347          | 0.25      | 0.5  | 0.8   | 1    | 1.6   | 2    | 2.5  | 3.2  | 3.5  | 5    | 6.25 | 5    | 7.5  | 10   | 15   | 20   | 30   |
| 380          | 0.1875    | 0.3  | 0.5   | 0.75 | 1.125 | 1.5  | 1.8  | 2.25 | 2.5  | 3.5  | 5.6  | 4.5  | 6.25 | 9    | 15   | 20   | 25   |
| 400          | 0.1875    | 0.3  | 0.5   | 0.75 | 1.125 | 1.5  | 1.8  | 2.25 | 2.5  | 3.5  | 5.6  | 4.5  | 6.25 | 9    | 12   | 15   | 20   |
| 416          | 0.15      | 0.3  | 0.5   | 0.6  | 1     | 1.4  | 1.8  | 2    | 2.5  | 3.5  | 5    | 4    | 6    | 8    | 12   | 15   | 20   |
| 440          | 0.15      | 0.3  | 0.5   | 0.6  | 1     | 1.25 | 1.6  | 2    | 2.25 | 3.2  | 5    | 4    | 6    | 8    | 12   | 15   | 20   |
| 460          | 0.15      | 0.3  | 0.4   | 0.6  | 0.8   | 1.25 | 1.6  | 1.8  | 2.25 | 3.2  | 4.5  | 3.5  | 6    | 8    | 12   | 15   | 20   |
| 480          | 0.15      | 0.3  | 0.4   | 0.6  | 0.8   | 1.25 | 1.5  | 1.8  | 2    | 3    | 4.5  | 3.5  | 5    | 7    | 10   | 15   | 20   |
| 550          | 0.125     | 0.25 | 0.4   | 0.5  | 0.8   | 1    | 1.25 | 1.6  | 1.8  | 2.5  | 4    | 5    | 4.5  | 6    | 9    | 15   | 15   |
| 575          | 0.125     | 0.25 | 0.3   | 0.5  | 0.75  | 1    | 1.25 | 1.5  | 1.8  | 2.5  | 3.5  | 5    | 4.5  | 6    | 9    | 15   | 15   |
| 600          | 0.125     | 0.2  | 0.3   | 0.5  | 0.75  | 0.8  | 1.25 | 1.5  | 1.6  | 2.25 | 3.5  | 5    | 4    | 6    | 9    | 15   | 15   |

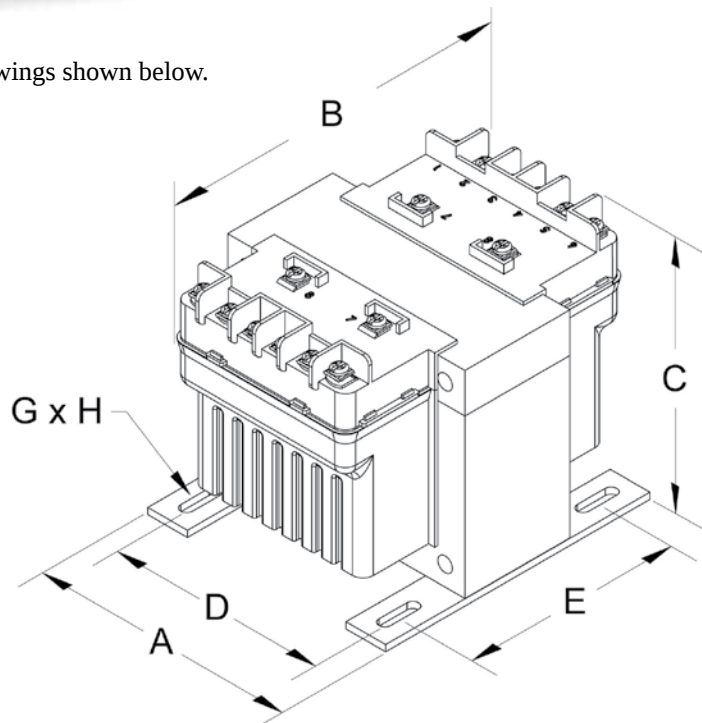


## Dimensional Drawings

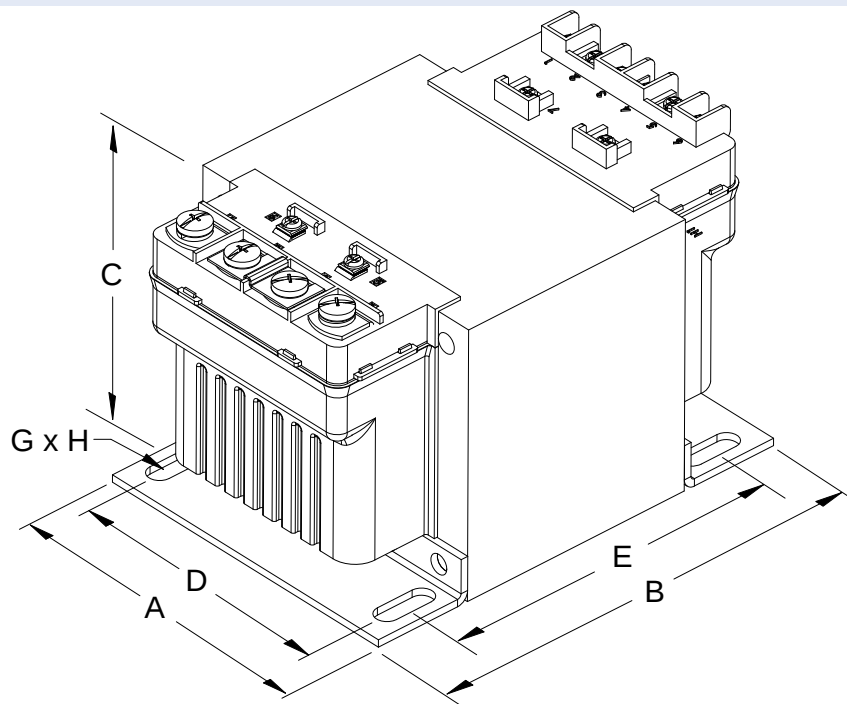
Some actual transformer units may differ from dimensional drawings shown below.



**FIGURE A** (100 VA and less)



**FIGURE B** (150 VA to 1500 VA)

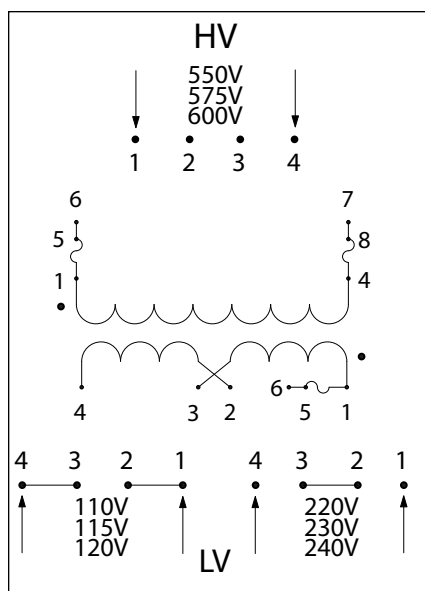


**FIGURE C** (For PH750PG, PH1000PG, PH750MLI & PH1000MLI)



The **HPS IMPERATOR®** series of machine tool industrial molded control transformers are available in many standard offerings. This wiring hook-up instruction sheet refers to all standard **HPS IMPERATOR®** series part number suffixes. (Note: standard secondary fuse kits (not installed) supplied with each transformer unless otherwise indicated; field installed primary fuse kits sold separately; fuses not available from HPS.) If you have any questions regarding these wiring diagrams or are having any difficulty correctly installing our transformers, please contact HPS customer service or technical support in the U.S. at 1-866-705-4684 or in Canada at 1-888-798-8882.

## HPS IMPERATOR® Series - Wiring Schematic Drawings



### PH\*\*\*AJ Schematic for 50, 75 and 100VA Units

#### High Voltage (HV) (Primary Volts)

|     |     |     |
|-----|-----|-----|
| 600 | 575 | 550 |
| 600 | 575 | 550 |

#### Install Supplied Jumpers/ Links Between Terminals

|      |
|------|
| None |
| None |

#### Supply Lines Connect To

|      |
|------|
| 1, 4 |
| 6, 7 |

#### Install Fuse Clips To

|          |
|----------|
| Unfused  |
| 1-5, 4-8 |

#### Low Voltage (LV) (Secondary Volts)

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 240 | 230 | 220 |
| 120 | 115 | 110 |
| 240 | 230 | 220 |

#### Install Supplied Links Between Terminals

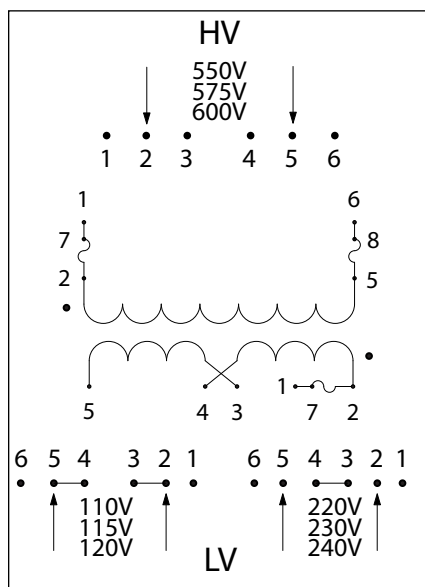
|          |
|----------|
| 3-4, 1-2 |
| 2-3      |
| 3-4, 1-2 |
| 2-3      |

#### Load Lines Connect To

|      |
|------|
| 1, 4 |
| 1, 4 |
| 4, 6 |
| 4, 6 |

#### Install Fuse Clips To

|         |
|---------|
| Unfused |
| Unfused |
| 1-5     |
| 1-5     |



### PH\*\*\*AJ Schematic for 150VA to 1500VA Units

#### High Voltage (HV) (Primary Volts)

|     |     |     |
|-----|-----|-----|
| 600 | 575 | 550 |
| 600 | 575 | 550 |

#### Install Supplied Jumpers/ Links Between Terminals

|      |
|------|
| None |
| None |

#### Supply Lines Connect To

|      |
|------|
| 2, 5 |
| 1, 6 |

#### Install Fuse Clips To

|          |
|----------|
| Unfused  |
| 2-7, 5-8 |

#### Low Voltage (LV) (Secondary Volts)

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 240 | 230 | 220 |
| 120 | 115 | 110 |
| 240 | 230 | 220 |

#### Install Supplied Links Between Terminals

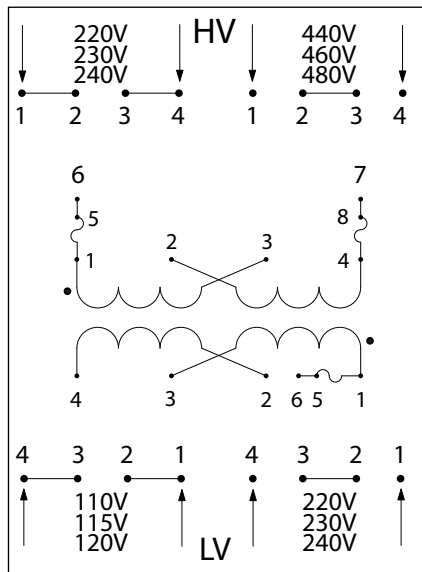
|          |
|----------|
| 4-5, 2-3 |
| 3-4      |
| 4-5, 2-3 |
| 3-4      |

#### Load Lines Connect To

|      |
|------|
| 2, 5 |
| 2, 5 |
| 1, 5 |
| 1, 5 |

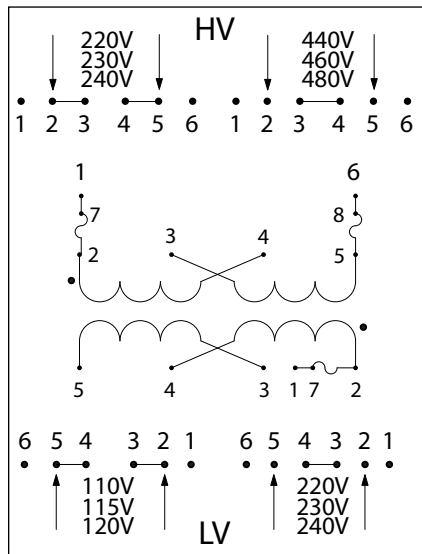
#### Install Fuse Clips To

|         |
|---------|
| Unfused |
| Unfused |
| 2-7     |
| 2-7     |



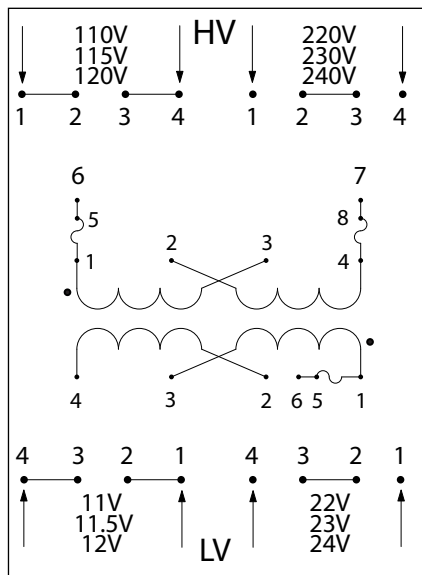
**PH\*\*\*MQMJ Schematic for 50, 75 and 100VA Units**

| High Voltage (HV)<br>(Primary Volts)  | Install Supplied Links<br>Between Terminals | Supply Lines<br>Connect To | Install Fuse<br>Clips To |
|---------------------------------------|---------------------------------------------|----------------------------|--------------------------|
| 240 230 220                           | 1-2, 3-4                                    | 1, 4                       | Unfused                  |
| 480 460 440                           | 2-3                                         | 1, 4                       | Unfused                  |
| 240 230 220                           | 1-2, 3-4                                    | 6, 7                       | 1-5, 4-8                 |
| 480 460 440                           | 2-3                                         | 6, 7                       | 1-5, 4-8                 |
| Low Voltage (LV)<br>(Secondary Volts) | Install Supplied Links<br>Between Terminals | Load Lines<br>Connect To   | Install Fuse<br>Clips To |
| 120 115 110                           | 3-4, 1-2                                    | 1, 4                       | Unfused                  |
| 240 230 220                           | 2-3                                         | 1, 4                       | Unfused                  |
| 120 115 110                           | 3-4, 1-2                                    | 4, 6                       | 1-5                      |
| 240 230 220                           | 2-3                                         | 4, 6                       | 1-5                      |



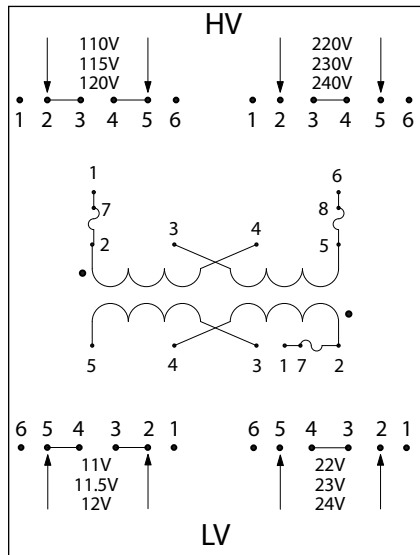
**PH\*\*\*MQMJ Schematic for 150VA to 1500VA Units**

| High Voltage (HV)<br>(Primary Volts)  | Install Supplied Links<br>Between Terminals | Supply Lines<br>Connect To | Install Fuse<br>Clips To |
|---------------------------------------|---------------------------------------------|----------------------------|--------------------------|
| 240 230 220                           | 2-3, 4-5                                    | 2, 5                       | Unfused                  |
| 480 460 440                           | 3-4                                         | 2, 5                       | Unfused                  |
| 240 230 220                           | 2-3, 4-5                                    | 1, 6                       | 2-7, 5-8                 |
| 480 460 440                           | 3-4                                         | 1, 6                       | 2-7, 5-8                 |
| Low Voltage (LV)<br>(Secondary Volts) | Install Supplied Links<br>Between Terminals | Load Lines<br>Connect To   | Install Fuse<br>Clips To |
| 120 115 110                           | 4-5, 2-3                                    | 2, 5                       | Unfused                  |
| 240 230 220                           | 3-4                                         | 2, 5                       | Unfused                  |
| 120 115 110                           | 4-5, 2-3                                    | 1, 5                       | 2-7                      |
| 240 230 220                           | 3-4                                         | 1, 5                       | 2-7                      |



**PH\*\*\*PG Schematic for 50, 75 and 100VA Units**

| High Voltage (HV)<br>(Primary Volts)  | Install Supplied Links<br>Between Terminals | Supply Lines<br>Connect To | Install Fuse<br>Clips To |
|---------------------------------------|---------------------------------------------|----------------------------|--------------------------|
| 120 115 110                           | 1-2, 3-4                                    | 1, 4                       | Unfused                  |
| 240 230 220                           | 2-3                                         | 1, 4                       | Unfused                  |
| 120 115 110                           | 1-2, 3-4                                    | 6, 7                       | 1-5, 4-8                 |
| 240 230 220                           | 2-3                                         | 6, 7                       | 1-5, 4-8                 |
| Low Voltage (LV)<br>(Secondary Volts) | Install Supplied Links<br>Between Terminals | Load Lines<br>Connect To   | Install Fuse<br>Clips To |
| 12 11.5 11                            | 3-4, 1-2                                    | 1, 4                       | Unfused                  |
| 24 23 22                              | 2-3                                         | 1, 4                       | Unfused                  |
| 12 11.5 11                            | 3-4, 1-2                                    | 4, 6                       | 1-5                      |
| 24 23 22                              | 2-3                                         | 4, 6                       | 1-5                      |



**PH\*\*\*PG Schematic for 150VA to 500VA Units**

**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 240 | 230 | 220 |
| 120 | 115 | 110 |
| 240 | 230 | 220 |

**Install Supplied Links  
Between Terminals**

|          |
|----------|
| 2-3, 4-5 |
| 3-4      |
| 2-3, 4-5 |
| 3-4      |

**Supply Lines  
Connect To**

|      |
|------|
| 2, 5 |
| 2, 5 |
| 1, 6 |
| 1, 6 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| Unfused  |
| 2-7, 5-8 |
| 2-7, 5-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|    |      |    |
|----|------|----|
| 12 | 11.5 | 11 |
| 24 | 23   | 22 |
| 12 | 11.5 | 11 |
| 24 | 23   | 22 |

**Install Supplied Links  
Between Terminals**

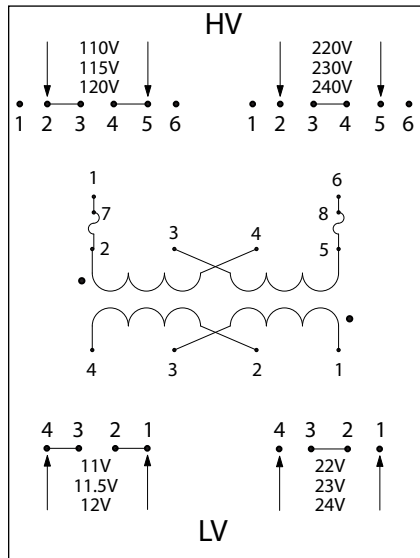
|          |
|----------|
| 4-5, 2-3 |
| 3-4      |
| 4-5, 2-3 |
| 3-4      |

**Load Lines  
Connect To**

|      |
|------|
| 2, 5 |
| 2, 5 |
| 1, 5 |
| 1, 5 |

**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |
| 2-7     |
| 2-7     |



**PH\*\*\*PG Schematic for 750VA and 1000VA Units**

**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 240 | 230 | 220 |
| 120 | 115 | 110 |
| 240 | 230 | 220 |

**Install Supplied Links  
Between Terminals**

|          |
|----------|
| 2-3, 4-5 |
| 3-4      |
| 2-3, 4-5 |
| 3-4      |

**Supply Lines  
Connect To**

|      |
|------|
| 2, 5 |
| 2, 5 |
| 1, 6 |
| 1, 6 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| Unfused  |
| 2-7, 5-8 |
| 2-7, 5-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|    |      |    |
|----|------|----|
| 12 | 11.5 | 11 |
| 24 | 23   | 22 |

**Install Supplied Links  
Between Terminals**

|          |
|----------|
| 3-4, 1-2 |
| 2-3      |

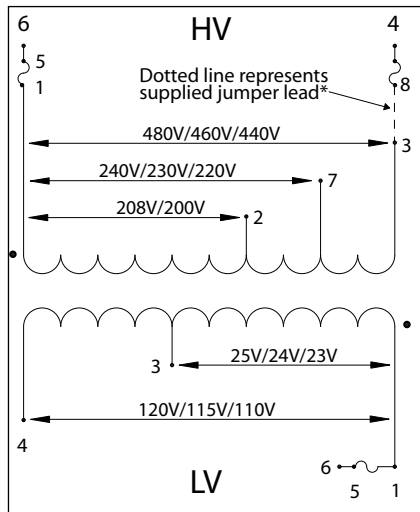
**Load Lines  
Connect To**

|      |
|------|
| 1, 4 |
| 1, 4 |

**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |

Note: secondary fuse clips not available on PH750PG or PH1000PG.



**PH\*\*\*MLI Schematic for 50, 75 and 100VA Units**

**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 480 | 460 | 440 |
| 240 | 230 | 220 |
|     | 208 | 200 |
| 480 | 460 | 440 |
| 240 | 230 | 220 |
|     | 208 | 200 |

**Install Supplied Jumpers  
Between Terminals**

|      |
|------|
| None |
| None |
| None |
| 3-8  |
| 8-7  |
| 2-8  |

**Supply Lines  
Connect To**

|      |
|------|
| 1, 3 |
| 1, 7 |
| 1, 2 |
| 6, 4 |
| 6, 4 |
| 6, 4 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| Unfused  |
| Unfused  |
| 1-5, 4-8 |
| 1-5, 4-8 |
| 1-5, 4-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 25  | 24  | 23  |
| 120 | 115 | 110 |
| 25  | 24  | 23  |

**Install Supplied Jumpers  
Between Terminals**

|      |
|------|
| None |
| None |
| None |
| None |

**Load Lines  
Connect To**

|      |
|------|
| 1, 4 |
| 1, 3 |
| 4, 6 |
| 3, 6 |

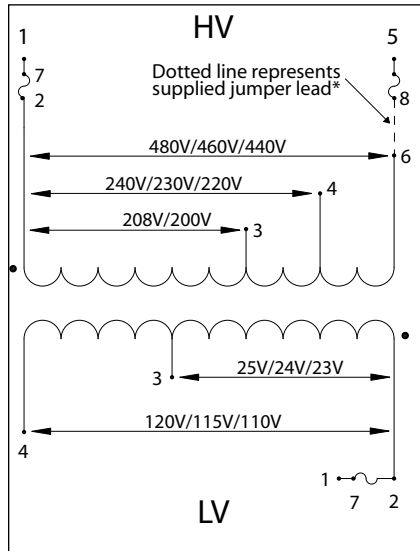
**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |
| 1-5     |
| 1-5     |

\*This primary fuse jumper is supplied with the primary fuse kit only.



**PH\*\*\*MLI Schematic for 150VA to 500VA Units**



**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 480 | 460 | 440 |
| 240 | 230 | 220 |
|     | 208 | 200 |
| 480 | 460 | 440 |
| 240 | 230 | 220 |
|     | 208 | 200 |

**Install Supplied Jumpers  
Between Terminals**

|      |
|------|
| None |
| None |
| None |
| 8-6  |
| 4-8  |
| 3-8  |

**Supply Lines  
Connect To**

|      |
|------|
| 2, 6 |
| 2, 4 |
| 2, 3 |
| 1, 5 |
| 1, 5 |
| 1, 5 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| Unfused  |
| Unfused  |
| 2-7, 5-8 |
| 2-7, 5-8 |
| 2-7, 5-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 25  | 24  | 23  |
| 120 | 115 | 110 |
| 25  | 24  | 23  |

**Install Supplied Jumpers  
Between Terminals**

|      |
|------|
| None |
| None |
| None |
| None |

**Load Lines  
Connect To**

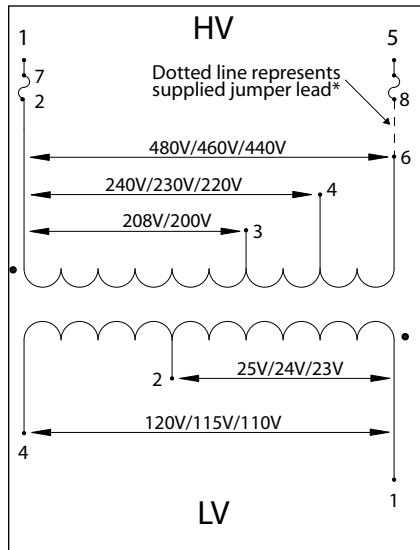
|      |
|------|
| 2, 4 |
| 2, 3 |
| 1, 4 |
| 1, 3 |

**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |
| 2-7     |
| 2-7     |

\*This primary fuse jumper is supplied with the primary fuse kit only.

**PH\*\*\*MLI Schematic for 750VA and 1000VA Units**



**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 480 | 460 | 440 |
| 240 | 230 | 220 |
|     | 208 | 200 |
| 480 | 460 | 440 |
| 240 | 230 | 220 |
|     | 208 | 200 |

**Install Supplied Jumpers  
Between Terminals**

|      |
|------|
| None |
| None |
| None |
| 8-6  |
| 4-8  |
| 3-8  |

**Supply Lines  
Connect To**

|      |
|------|
| 2, 6 |
| 2, 4 |
| 2, 3 |
| 1, 5 |
| 1, 5 |
| 1, 5 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| Unfused  |
| Unfused  |
| 2-7, 5-8 |
| 2-7, 5-8 |
| 2-7, 5-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 25  | 24  | 23  |

**Install Supplied Jumpers  
Between Terminals**

|      |
|------|
| None |
| None |

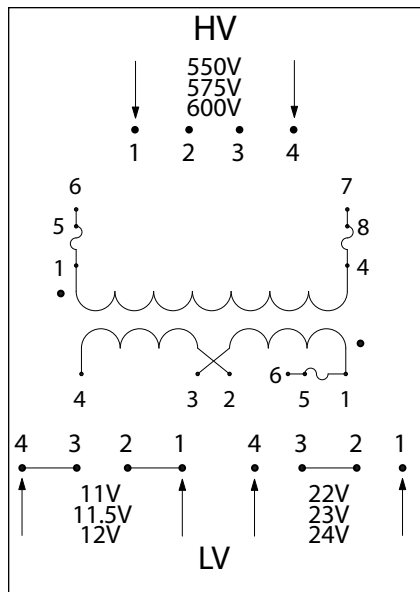
**Load Lines  
Connect To**

|      |
|------|
| 1, 4 |
| 1, 2 |

**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |

Note: secondary fuse clips for 24V tap not available on the PH750MLI or PH1000MLI units.



**PH\*\*\*AR Schematic for 50, 75 and 100VA Units**

**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 600 | 575 | 550 |
| 600 | 575 | 550 |

**Install Supplied Jumpers/  
Links Between Terminals**

|      |
|------|
| None |
| None |

**Supply Lines  
Connect To**

|      |
|------|
| 1, 4 |
| 6, 7 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| 1-5, 4-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|    |      |    |
|----|------|----|
| 12 | 11.5 | 11 |
| 24 | 23   | 22 |
| 12 | 11.5 | 11 |
| 24 | 23   | 22 |

**Install Supplied Links  
Between Terminals**

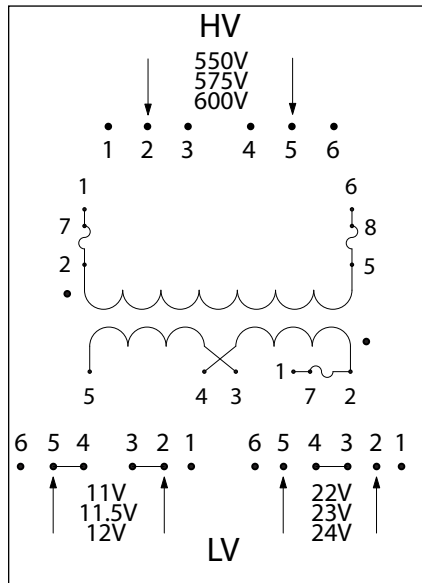
|          |
|----------|
| 3-4, 1-2 |
| 2-3      |
| 3-4, 1-2 |
| 2-3      |

**Load Lines  
Connect To**

|      |
|------|
| 1, 4 |
| 1, 4 |
| 4, 6 |
| 4, 6 |

**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |
| 1-5     |
| 1-5     |



**PH\*\*AR Schematic for 150VA to 500VA Units**

**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 600 | 575 | 550 |
| 600 | 575 | 550 |

**Install Supplied Jumpers/  
Links Between Terminals**

|      |
|------|
| None |
| None |

**Supply Lines  
Connect To**

|      |
|------|
| 2, 5 |
| 1, 6 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| 2-7, 5-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|    |      |    |
|----|------|----|
| 12 | 11.5 | 11 |
| 24 | 23   | 22 |
| 12 | 11.5 | 11 |
| 24 | 23   | 22 |

**Install Supplied Links  
Between Terminals**

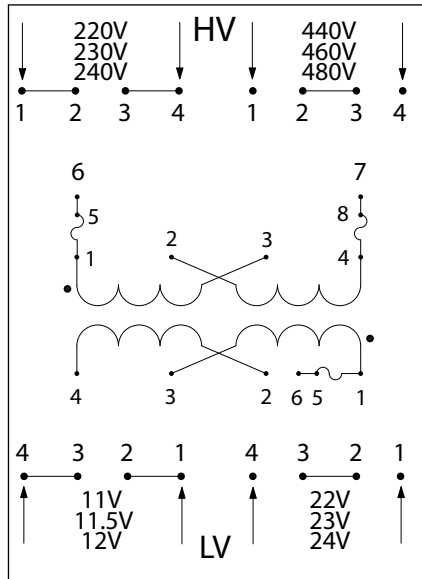
|          |
|----------|
| 4-5, 2-3 |
| 3-4      |
| 4-5, 2-3 |
| 3-4      |

**Load Lines  
Connect To**

|      |
|------|
| 2, 5 |
| 2, 5 |
| 1, 5 |
| 1, 5 |

**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |
| 2-7     |
| 2-7     |



**PH\*\*QR Schematic for 50, 75 and 100VA Units**

**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 240 | 230 | 220 |
| 480 | 460 | 440 |
| 240 | 230 | 220 |
| 480 | 460 | 440 |

**Install Supplied Links  
Between Terminals**

|          |
|----------|
| 1-2, 3-4 |
| 2-3      |
| 1-2, 3-4 |
| 2-3      |

**Supply Lines  
Connect To**

|      |
|------|
| 1, 4 |
| 1, 4 |
| 6, 7 |
| 6, 7 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| Unfused  |
| 1-5, 4-8 |
| 1-5, 4-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|    |      |    |
|----|------|----|
| 12 | 11.5 | 11 |
| 24 | 23   | 22 |
| 12 | 11.5 | 11 |
| 24 | 23   | 22 |

**Install Supplied Links  
Between Terminals**

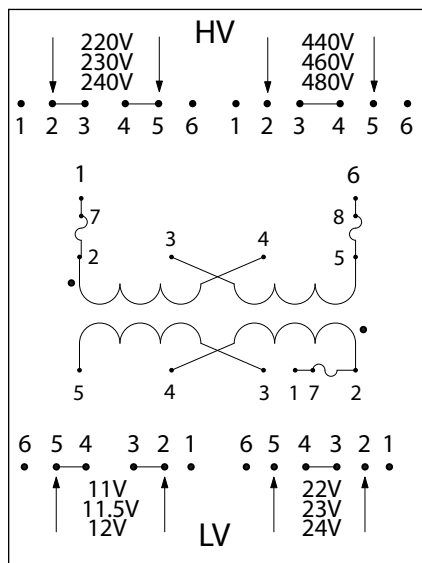
|          |
|----------|
| 3-4, 1-2 |
| 2-3      |
| 3-4, 1-2 |
| 2-3      |

**Load Lines  
Connect To**

|      |
|------|
| 1, 4 |
| 1, 4 |
| 4, 6 |
| 4, 6 |

**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |
| 1-5     |
| 1-5     |



**PH\*\*QR Schematic for 150VA to 500VA Units**

**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 240 | 230 | 220 |
| 480 | 460 | 440 |
| 240 | 230 | 220 |
| 480 | 460 | 440 |

**Install Supplied Links  
Between Terminals**

|          |
|----------|
| 2-3, 4-5 |
| 3-4      |
| 2-3, 4-5 |
| 3-4      |

**Supply Lines  
Connect To**

|      |
|------|
| 2, 5 |
| 2, 5 |
| 1, 6 |
| 1, 6 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| Unfused  |
| 2-7, 5-8 |
| 2-7, 5-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|    |      |    |
|----|------|----|
| 12 | 11.5 | 11 |
| 24 | 23   | 22 |
| 12 | 11.5 | 11 |
| 24 | 23   | 22 |

**Install Supplied Links  
Between Terminals**

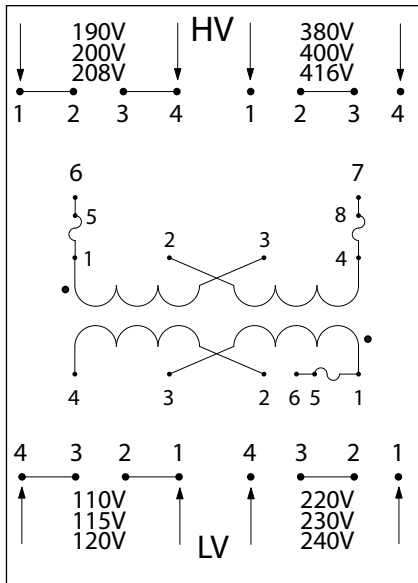
|          |
|----------|
| 4-5, 2-3 |
| 3-4      |
| 4-5, 2-3 |
| 3-4      |

**Load Lines  
Connect To**

|      |
|------|
| 2, 5 |
| 2, 5 |
| 1, 5 |
| 1, 5 |

**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |
| 2-7     |
| 2-7     |



**PH\*\*\*SP Schematic for 50, 75 and 100VA Units**

**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 208 | 200 | 190 |
| 416 | 400 | 380 |
| 208 | 200 | 190 |
| 416 | 400 | 380 |

**Install Supplied Links  
Between Terminals**

|          |
|----------|
| 1-2, 3-4 |
| 2-3      |
| 1-2, 3-4 |
| 2-3      |

**Supply Lines  
Connect To**

|      |
|------|
| 1, 4 |
| 1, 4 |
| 6, 7 |
| 6, 7 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| Unfused  |
| 1-5, 4-8 |
| 1-5, 4-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 240 | 230 | 220 |
| 120 | 115 | 110 |
| 240 | 230 | 220 |

**Install Supplied Links  
Between Terminals**

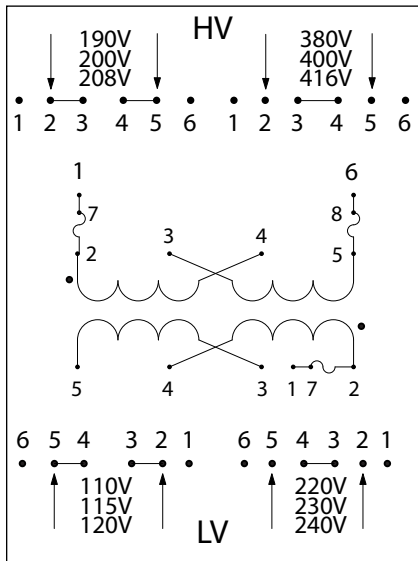
|          |
|----------|
| 3-4, 1-2 |
| 2-3      |
| 3-4, 1-2 |
| 2-3      |

**Load Lines  
Connect To**

|      |
|------|
| 1, 4 |
| 1, 4 |
| 4, 6 |
| 4, 6 |

**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |
| 1-5     |
| 1-5     |



**PH\*\*\*SP Schematic for 150VA to 1000VA Units**

**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 208 | 200 | 190 |
| 416 | 400 | 380 |
| 208 | 200 | 190 |
| 416 | 400 | 380 |

**Install Supplied Links  
Between Terminals**

|          |
|----------|
| 2-3, 4-5 |
| 3-4      |
| 2-3, 4-5 |
| 3-4      |

**Supply Lines  
Connect To**

|      |
|------|
| 2, 5 |
| 2, 5 |
| 1, 6 |
| 1, 6 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| Unfused  |
| 2-7, 5-8 |
| 2-7, 5-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 240 | 230 | 220 |
| 120 | 115 | 110 |
| 240 | 230 | 220 |

**Install Supplied Links  
Between Terminals**

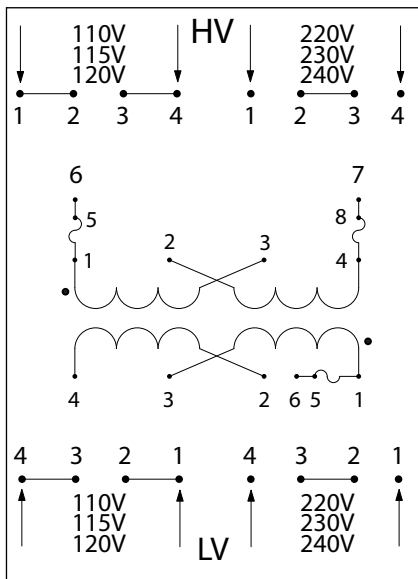
|          |
|----------|
| 4-5, 2-3 |
| 3-4      |
| 4-5, 2-3 |
| 3-4      |

**Load Lines  
Connect To**

|      |
|------|
| 2, 5 |
| 2, 5 |
| 1, 5 |
| 1, 5 |

**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |
| 2-7     |
| 2-7     |



**PH\*\*\*PP Schematic for 50, 75 and 100VA Units**

**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 240 | 230 | 220 |
| 120 | 115 | 110 |
| 240 | 230 | 220 |

**Install Supplied Links  
Between Terminals**

|          |
|----------|
| 1-2, 3-4 |
| 2-3      |
| 1-2, 3-4 |
| 2-3      |

**Supply Lines  
Connect To**

|      |
|------|
| 1, 4 |
| 1, 4 |
| 6, 7 |
| 6, 7 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| Unfused  |
| 1-5, 4-8 |
| 1-5, 4-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 240 | 230 | 220 |
| 120 | 115 | 110 |
| 240 | 230 | 220 |

**Install Supplied Links  
Between Terminals**

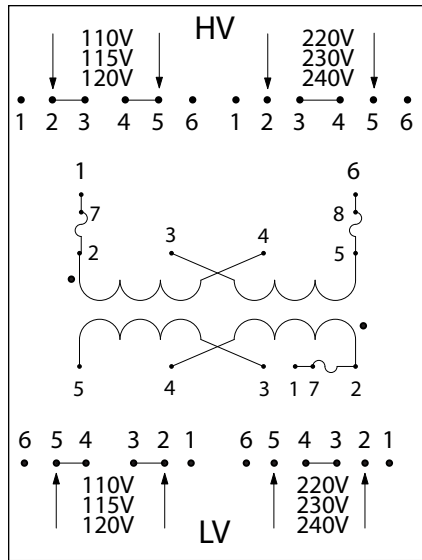
|          |
|----------|
| 3-4, 1-2 |
| 2-3      |
| 3-4, 1-2 |
| 2-3      |

**Load Lines  
Connect To**

|      |
|------|
| 1, 4 |
| 1, 4 |
| 4, 6 |
| 4, 6 |

**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |
| 1-5     |
| 1-5     |



**PH\*\*\*PP Schematic for 150VA to 1500VA Units**

**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 240 | 230 | 220 |
| 120 | 115 | 110 |
| 240 | 230 | 220 |

**Install Supplied Links  
Between Terminals**

|          |
|----------|
| 2-3, 4-5 |
| 3-4      |
| 2-3, 4-5 |
| 3-4      |

**Supply Lines  
Connect To**

|      |
|------|
| 2, 5 |
| 2, 5 |
| 1, 6 |
| 1, 6 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| Unfused  |
| 2-7, 5-8 |
| 2-7, 5-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 240 | 230 | 220 |
| 120 | 115 | 110 |
| 240 | 230 | 220 |

**Install Supplied Links  
Between Terminals**

|          |
|----------|
| 4-5, 2-3 |
| 3-4      |
| 4-5, 2-3 |
| 3-4      |

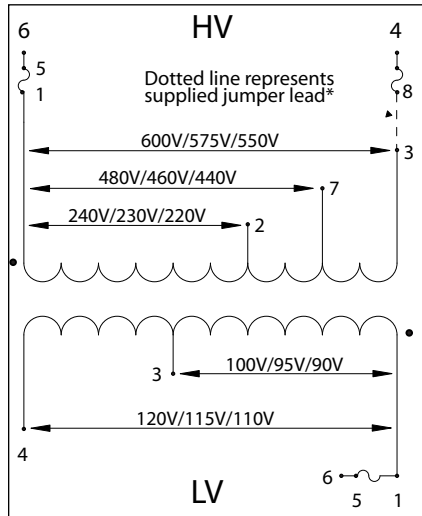
**Load Lines  
Connect To**

|      |
|------|
| 2, 5 |
| 2, 5 |
| 1, 5 |
| 1, 5 |

**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |
| 2-7     |
| 2-7     |

**PH\*\*\*MBMH Schematic for 50 and 75VA Units**



**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 600 | 575 | 550 |
| 480 | 460 | 440 |
| 240 | 230 | 220 |
| 600 | 575 | 550 |
| 480 | 460 | 440 |
| 240 | 230 | 220 |

**Install Supplied Jumpers  
Between Terminals**

|      |
|------|
| None |
| None |
| None |
| 3-8  |
| 8-7  |
| 2-8  |

**Supply Lines  
Connect To**

|      |
|------|
| 1, 3 |
| 1, 7 |
| 1, 2 |
| 6, 4 |
| 6, 4 |
| 6, 4 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| Unfused  |
| Unfused  |
| 1-5, 4-8 |
| 1-5, 4-8 |
| 1-5, 4-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 100 | 95  | 90  |
| 120 | 115 | 110 |
| 100 | 95  | 90  |

**Install Supplied Jumpers/  
Links Between Terminals**

|      |
|------|
| None |
| None |
| None |
| None |

**Load Lines  
Connect To**

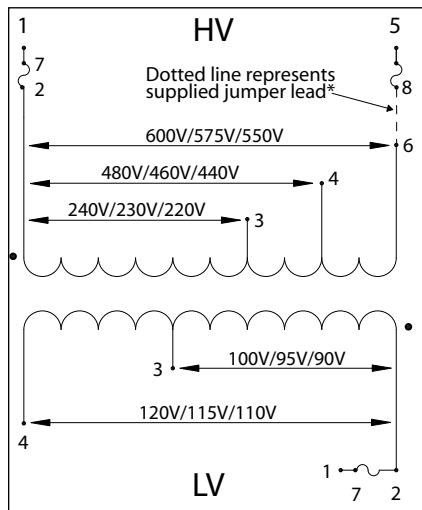
|      |
|------|
| 1, 4 |
| 1, 3 |
| 4, 6 |
| 3, 6 |

**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |
| 1-5     |
| 1-5     |

\*This primary fuse jumper is supplied with the primary fuse kit only.

**PH\*\*\*MBMH Schematic for 100VA to 1500VA Units**



**High Voltage (HV)  
(Primary Volts)**

|     |     |     |
|-----|-----|-----|
| 600 | 575 | 550 |
| 480 | 460 | 440 |
| 240 | 230 | 220 |
| 600 | 575 | 550 |
| 480 | 460 | 440 |
| 240 | 230 | 220 |

**Install Supplied Jumpers  
Between Terminals**

|      |
|------|
| None |
| None |
| None |
| 8-6  |
| 4-8  |
| 3-8  |

**Supply Lines  
Connect To**

|      |
|------|
| 2, 6 |
| 2, 4 |
| 2, 3 |
| 1, 5 |
| 1, 5 |
| 1, 5 |

**Install Fuse  
Clips To**

|          |
|----------|
| Unfused  |
| Unfused  |
| Unfused  |
| 2-7, 5-8 |
| 2-7, 5-8 |
| 2-7, 5-8 |

**Low Voltage (LV)  
(Secondary Volts)**

|     |     |     |
|-----|-----|-----|
| 120 | 115 | 110 |
| 100 | 95  | 90  |
| 120 | 115 | 110 |
| 100 | 95  | 90  |

**Install Supplied Jumpers/  
Links Between Terminals**

|      |
|------|
| None |
| None |
| None |
| None |

**Load Lines  
Connect To**

|      |
|------|
| 2, 4 |
| 2, 3 |
| 1, 4 |
| 1, 3 |

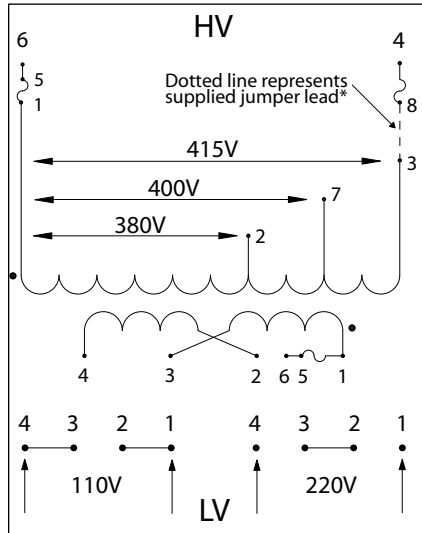
**Install Fuse  
Clips To**

|         |
|---------|
| Unfused |
| Unfused |
| 2-7     |
| 2-7     |

\*This primary fuse jumper is supplied with the primary fuse kit only.



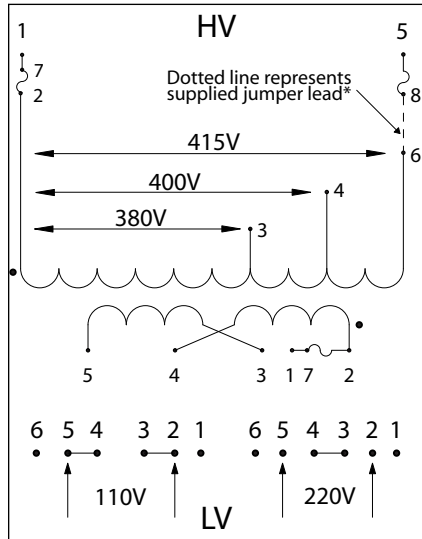
**PH\*\*\*MEMX Schematic for 50, 75 and 100VA Units**



\*This primary fuse jumper is supplied with the primary fuse kit only.

| High Voltage (HV)<br>(Primary Volts)  | Install Supplied Jumpers<br>Between Terminals | Supply Lines<br>Connect To | Install Fuse<br>Clips To |
|---------------------------------------|-----------------------------------------------|----------------------------|--------------------------|
| 415                                   | None                                          | 1, 3                       | Unfused                  |
| 400                                   | None                                          | 1, 7                       | Unfused                  |
| 380                                   | None                                          | 1, 2                       | Unfused                  |
| 415                                   | 3-8                                           | 6, 4                       | 1-5, 4-8                 |
| 400                                   | 8-7                                           | 6, 4                       | 1-5, 4-8                 |
| 380                                   | 2-8                                           | 6, 4                       | 1-5, 4-8                 |
| Low Voltage (LV)<br>(Secondary Volts) | Install Supplied Links<br>Between Terminals   | Load Lines<br>Connect To   | Install Fuse<br>Clips To |
| 110                                   | 3-4, 1-2                                      | 1, 4                       | Unfused                  |
| 220                                   | 2-3                                           | 1, 4                       | Unfused                  |
| 110                                   | 3-4, 1-2                                      | 4, 6                       | 1-5                      |
| 220                                   | 2-3                                           | 4, 6                       | 1-5                      |

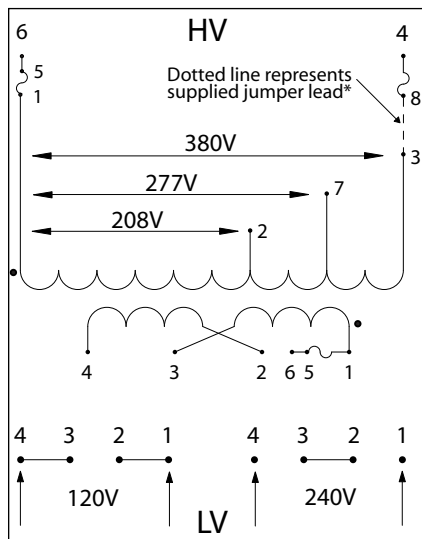
**PH\*\*\*MEMX Schematic for 150VA to 1000VA Units**



\*This primary fuse jumper is supplied with the primary fuse kit only.

| High Voltage (HV)<br>(Primary Volts)  | Install Supplied Jumpers<br>Between Terminals | Supply Lines<br>Connect To | Install Fuse<br>Clips To |
|---------------------------------------|-----------------------------------------------|----------------------------|--------------------------|
| 415                                   | None                                          | 2, 6                       | Unfused                  |
| 400                                   | None                                          | 2, 4                       | Unfused                  |
| 380                                   | None                                          | 2, 3                       | Unfused                  |
| 415                                   | 8-6                                           | 1, 5                       | 2-7, 5-8                 |
| 400                                   | 4-8                                           | 1, 5                       | 2-7, 5-8                 |
| 380                                   | 3-8                                           | 1, 5                       | 2-7, 5-8                 |
| Low Voltage (LV)<br>(Secondary Volts) | Install Supplied Links<br>Between Terminals   | Load Lines<br>Connect To   | Install Fuse<br>Clips To |
| 110                                   | 4-5, 2-3                                      | 2, 5                       | Unfused                  |
| 220                                   | 3-4                                           | 2, 5                       | Unfused                  |
| 110                                   | 4-5, 2-3                                      | 1, 5                       | 2-7                      |
| 220                                   | 3-4                                           | 1, 5                       | 2-7                      |

**PH\*\*\*MGJ Schematic for 50, 75 and 100VA Units**

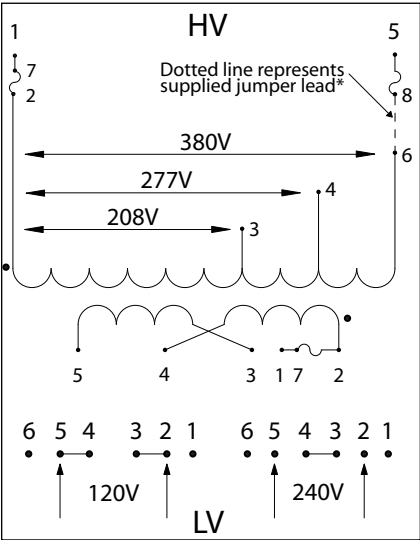


\*This primary fuse jumper is supplied with the primary fuse kit only.

| High Voltage (HV)<br>(Primary Volts)  | Install Supplied Jumpers<br>Between Terminals | Supply Lines<br>Connect To | Install Fuse<br>Clips To |
|---------------------------------------|-----------------------------------------------|----------------------------|--------------------------|
| 380                                   | None                                          | 1, 3                       | Unfused                  |
| 277                                   | None                                          | 1, 7                       | Unfused                  |
| 208                                   | None                                          | 1, 2                       | Unfused                  |
| 380                                   | 3-8                                           | 6, 4                       | 1-5, 4-8                 |
| 277                                   | 8-7                                           | 6, 4                       | 1-5, 4-8                 |
| 208                                   | 2-8                                           | 6, 4                       | 1-5, 4-8                 |
| Low Voltage (LV)<br>(Secondary Volts) | Install Supplied Links<br>Between Terminals   | Load Lines<br>Connect To   | Install Fuse<br>Clips To |
| 120                                   | 3-4, 1-2                                      | 1, 4                       | Unfused                  |
| 240                                   | 2-3                                           | 1, 4                       | Unfused                  |
| 120                                   | 3-4, 1-2                                      | 4, 6                       | 1-5                      |
| 240                                   | 2-3                                           | 4, 6                       | 1-5                      |



PH\*\*\*MGJ Schematic for 150VA to 1000VA Units



\*This primary fuse jumper is supplied with the primary fuse kit only.

| High Voltage (HV)<br>(Primary Volts) | Install Supplied Jumpers<br>Between Terminals | Supply Lines<br>Connect To | Install Fuse<br>Clips To |
|--------------------------------------|-----------------------------------------------|----------------------------|--------------------------|
| 380                                  | None                                          | 2, 6                       | Unfused                  |
| 277                                  | None                                          | 2, 4                       | Unfused                  |
| 208                                  | None                                          | 2, 3                       | Unfused                  |
| 380                                  | 8-6                                           | 1, 5                       | 2-7, 5-8                 |
| 277                                  | 4-8                                           | 1, 5                       | 2-7, 5-8                 |
| 208                                  | 3-8                                           | 1, 5                       | 2-7, 5-8                 |

| Low Voltage (LV)<br>(Secondary Volts) | Install Supplied Links<br>Between Terminals | Load Lines<br>Connect To | Install Fuse<br>Clips To |
|---------------------------------------|---------------------------------------------|--------------------------|--------------------------|
| 120                                   | 4-5, 2-3                                    | 2, 5                     | Unfused                  |
| 240                                   | 3-4                                         | 2, 5                     | Unfused                  |
| 120                                   | 4-5, 2-3                                    | 1, 5                     | 2-7                      |
| 240                                   | 3-4                                         | 1, 5                     | 2-7                      |