

# HPS Imperator®

## Encapsulated Machine Tool Industrial Control Transformers

### Frequently Asked Questions

1. What is a Control Transformer?  
A control transformer is a isolation transformer designed to provide a high degree of secondary voltage stability (regulation) during a brief period of overload condition (also referred to as "inrush current"). Control transformers are also known as Machine Tool Transformers, Industrial Control Transformers or Control Power Transformers
2. What is the difference between "molded" and "encapsulated"?  
There is no major difference between the terms "molded" and "encapsulated". Both terms are used frequently in the control industry. When HPS uses the term "molded" it refers to a control transformer that has a cover (cup) over the coils and is then filled with a resin material. A control transformer with its coils exposed, but having just a molded terminal block should not be considered a molded control transformer.
3. What is the difference between the new Imperator style versus the old PH and PT molded style?  
The HPS Imperator's unique terminal block design (patent pending) has 8 terminations per side, allowing for quick and easy installation of standard secondary or optional primary fuse clips. It utilizes custom serrated terminals, in combination with standard SEMS washer screws, allowing a bare wire without crimp-ons to be inserted. The HPS Imperator has 11 standard voltage groups, a VA range from 50VA to 5000VA and is available with standard secondary and optional primary fuse kits.
4. How do I know if I am ordering the new Imperator style versus the old PH, PT molded style?  
All old PH and PT transformer part numbers are automatically cross-referenced in the HPS system to the new HPS Imperator. Old style (PH, PT) control transformers may be ordered (if stock available) by specifying with customer service the desire to have the old style units. Old style (PH, PT) units are only available while quantities last, as HPS will no longer be building these old style units. Otherwise, any PH control transformers will be shipped as the new Imperator transformer.
5. What accessories are available on the HPS Imperator line?  
The HPS Imperator series of machine tool industrial control transformers are supplied with standard secondary fuse kits or optional accessories such as primary fuse kits and finger guards.
6. What makes the HPS Imperator so innovative?  
The HPS Imperator's unique terminal block design (patent pending) 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.
7. The HPS Imperator only has a cULus approval, is this approved for Canada?  
Yes, cULus is a UL approval for the HPS Imperator as a Machine Tool Industrial Control Transformer for the US and Canada. UL approved marks for Canada are officially accepted by regulatory authorities in all the provinces and territories of Canada including the Federal Government. For further information please go to [www.ul.com/marks\\_labels/mark/index.html](http://www.ul.com/marks_labels/mark/index.html) or [www.ulc.ca/downloads/mark\\_acceptance\\_booklet.pdf](http://www.ulc.ca/downloads/mark_acceptance_booklet.pdf)
8. When installing accessories, what tools are required?  
The terminations and fuse clips will require either a #2 slotted or Philips screwdriver to install the screws. The finger guards do not require a tool for installation. A detailed instruction sheet is provided with accessory kits to make installation easy.
9. What size fuses does HPS recommend for the HPS Imperator?  
Due to application considerations, HPS provides recommendations for overcurrent protection for North American standards (UL and CSA). Tables for primary and secondary recommendations for overcurrent protection can be found on pages 47 and 48 in Section One of the HPS Catalog (HTP-08). Note: HPS does not supply fuses.
10. Are HPS fuse clips midget or type CC rejection style?  
The HPS Imperator Industrial Control Transformer utilizes a custom designed midget/type CC fuse clip. These fuse clips accept both midget and type CC rejection style fuses, but do not incorporate the rejection style feature. This feature provides customers the flexibility of utilizing either midget or type CC fuses.

# HPS Imperator®

## Encapsulated Machine Tool Industrial Control Transformers

11. The finger guards that are supplied with the kits, are they designed for the primary or secondary side?  
They are designed for the secondary side because of the higher current.
12. What is the difference between a voltage link and a jumper lead?  
A voltage link function is similar to that of a jumper lead. It provides a connection between two separate termination points. A voltage link is a small piece of formed metal that has two spade like receptacles which when installed properly, are positioned under the SEMS washer and screw or fuse clip (depending on the installation requirement).  
  
A jumper lead wire is a short piece of insulated wire, which usually has two crimp on spade connectors on either end. The installation of this is similar to that of a voltage link.
13. What does the molded numbers on the terminal block mean?  
The unique terminal block design (patent pending) features terminal connection numbers that correspond to the nameplate and wiring diagrams, making connecting the HPS Imperator quick and simple.
14. Does the HPS Imperator overall dimensions and mounting dimensions match other competitor's products?  
The HPS Imperator is replacing the old style PH, PT, and SL lines and was also designed to compete against no less than 8 major North American competitors. All three of the old HPS lines as well as the 8 major competitors all have different mounting and overall dimensions. When finalizing the designs for the HPS Imperator, the overall dimensions were designed as small as possible, keeping in mind that HPS has incorporated a terminal block that features 8 terminations per side as opposed to 4 terminations per side. In designing the mounting feet/plates of the HPS Imperator line, we made certain to address two issues:
  1. Mounting feet/plates and dimensions are as small as possible for each unit.
  2. Mounting holes/slots are always accessible with a screw driver.
15. Why is there multiple voltage ratios listed for each group in the Catalog and Imperator brochure?  
In a control transformer, the relationship of primary to secondary turns that affects voltage change is referred to as the "ratio of a transformer". The number of turns in each of the primary and secondary coils determines the ratio. The system voltage to which the unit is connected determines the input voltage for the primary winding, the output voltage of the transformer (the voltage the load requires) is determined by the ratio of the secondary winding to the primary winding. By varying the input voltage, the inherent voltage ratio will reduce the secondary voltage accordingly. For example, Group A has a 600V primary to a 120 x 240V secondary. By reducing the primary voltage to 575V, the secondary voltage (due to the transformers voltage ratio) will be reduced to 115 x 230V. Note: at no time should a transformer be operated at voltages higher than nameplate unless the taps are provided.
16. There are 11 standard voltages listed in the Catalog and Imperator brochure, are those the only voltages manufactured?  
No, HPS has the capability to manufacture any voltage or VA size upon request. Please contact your HPS customer service representative for special order requests.
17. Where can I get more information on the HPS Imperator line?  
Detailed information on the HPS Imperator line can be found in the HPS Standard Product Catalog and the HPS Imperator Brochure, and on our website ([www.hammondpowersolutions.com](http://www.hammondpowersolutions.com)). The catalog and brochure can be found on our website or by contacting HPS directly.
18. What is the UL file number for the HPS Imperator?  
The UL file number for the HPS Imperator is E50394.