

# CPT SERIES CONTROL TRANSFORMERS

**Get years of reliable service from a quality transformer at a practical price**



480 VAC Primary  
120 VAC Secondary

## CPT transformers for industrial applications

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

## Quality construction improves performance

The CPT series of control transformers uses Mylar, Nomex and other high-quality insulating materials. Insulation is used to electrically insulate turn to turn windings, layer to layer windings, primary to secondary windings and ground.

All CPT transformers are vacuum impregnated with VT polyester resin and oven-cured, which seals the surface and eliminates moisture. Filling the entire unit provides a strong mechanical bond and offers protection from the environment.

## Control transformer selection

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

**Total steady-state “sealed” VA** is the total amount of VA that the transformer must supply to the load circuit for an extended length of time. Calculate by adding the total steady-state VA of all devices in your control circuit. *(The operating VA data for the devices should be available from the manufacturers.)*

The **inrush VA** is the amount of VA that the transformer must supply for all components in the control circuit that are energized together. Consideration for the start-up sequence may be required. *(Inrush VA data should be obtained from the device manufacturers.)*

The **inrush load power factor** is difficult to determine without detailed vector analysis of all the control components. In the absence of such information, we recommend that a 40% power factor be utilized.

## Six easy steps

Once the three circuit variables have been determined, follow these steps to select the proper transformer.

1. Determine your primary (supply) and secondary (output) voltage requirements, as well as the required frequency (i.e. 60 Hz).
2. Calculate the total sealed VA of your circuit.
3. Calculate the inrush VA by adding the inrush VA of all components being energized together. Remember to add the sealed VA of all components that do not have inrush VA (lamps, timers, etc.), as they do present a load to the transformer during maximum inrush. If the inrush for your components is unknown, assume a 40% inrush power factor.
4. Calculate the total inrush VA using one of two methods:

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

or

$$\text{Total Inrush VA} = \text{VA Sealed} + \text{VA Inrush}$$

5. If the nominal supply voltage does not fluctuate more than 5%, then reference the 90% secondary voltage column in the Regulation Data Table for the correct VA rating.  
If the supply voltage varies up to 10%, the 95% secondary voltage column should be used to size the transformer.
6. Using the regulation data table below, select the appropriate VA rated transformer:
  - A. With a continuous VA rating that is equal to or greater than the value in Step 3.
  - B. With a maximum inrush VA equal to or greater than the value obtained in Step 5.

Transformer Regulation Data Tab				
Part Number	Continuous VA Transformer Nameplate	Inrush VA @ 40% Power Factor		
		85% Secondary Voltage	90% Secondary Voltage	95% Secondary Voltage
CPT115-100-F	100	655	520	370
CPT115-150-F	150	1300	1010	700
CPT115-200-F	200	1975	1500	1020
CPT115-250-F	250	2680	2030	1340
CPT115-300-F	300	2970	2270	1510
CPT115-500-F	500	6300	5035	3305

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

# CPT SERIES CONTROL TRANSFORMERS SPECIFICATIONS



**NEW!**  
50 and 75 VA models

## CPT transformers for industrial applications

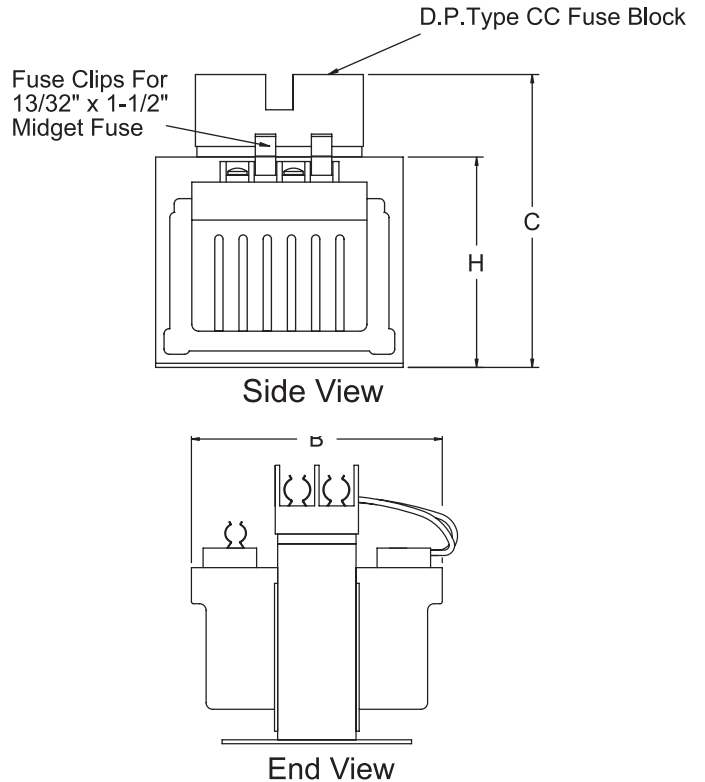
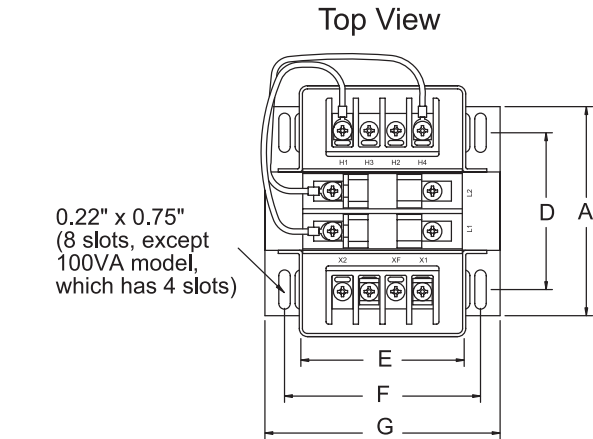
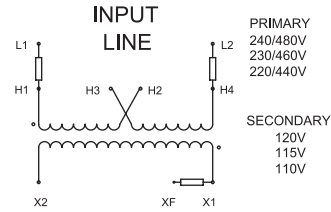
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### Features:

- UL/CSA/CE approved
- 50/60 Hz
- Primary: 240/480, 230/460, 220/440 VAC
- Secondary: 120, 115, 110 VAC
- Copper coils, epoxy encapsulated
- FK-3 fuse block:
  - Primary: 2 x type CC rejection fuses
  - Secondary: One midget fuse
- Compatible with SG2, SG3 and SG4 finger-safe terminal covers
- Universal mounting base

### Notes:

1. All dimensions are +/- 0.06 inches unless otherwise noted.
2. Transformers are CSA Certified (LR38216) and UL Listed (E50394) as Type 3AH.
3. Terminated with #8/32 Robertson/Philips terminal screws.
4. Temperature class: 130, Temperature rise: 80 degrees C.
5. **Fuses not included**
6. Jumper links to make primary series/parallel connections are supplied but not installed.
  - a. For 220-240V primary, jumper H1 to H3 and H2 to H4.
  - b. For 440-480V primary, jumper H2 to H3.



CPT Series Control Transformer Specifications													
Part Number	Volt/Amp Rating	Output Current	Primary Voltage	Secondary Voltage	Shipping Weight (lbs.)	Dimensions (inches)							
						A	B	C	D	E	F	G	H
CPT115-50-F	50	0.43A	240/480, 230/460, 220/440, 50/60Hz	120, 115, 110	3.60	3.41	3.75	4.07	2.50	NA	2.50	3.00	2.75
CPT115-75-F	75	0.65A			4.35	3.31	4.00	4.07	2.44	NA	2.50	3.00	2.75
CPT115-100-F	100	0.87A			5.15	3.50	4.50	4.07	2.63	NA	2.50	3.00	2.75
CPT115-150-F	150	1.30A			6.15	3.75	4.22	4.70	2.75	3.13	3.75	4.25	3.32
CPT115-200-F	200	1.74A			7.75	3.75	4.22	4.70	2.75	3.13	3.75	4.25	3.32
CPT115-250-F	250	2.17A			9.50	4.00	4.80	5.33	3.00	3.13	3.75	4.50	3.83
CPT115-300-F	300	2.61A			10.75	4.00	4.80	5.33	3.00	3.13	3.75	4.50	3.83
CPT115-500-F	500	4.35A			14.75	5.00	5.25	5.45	4.00	3.75	4.37	5.25	4.45