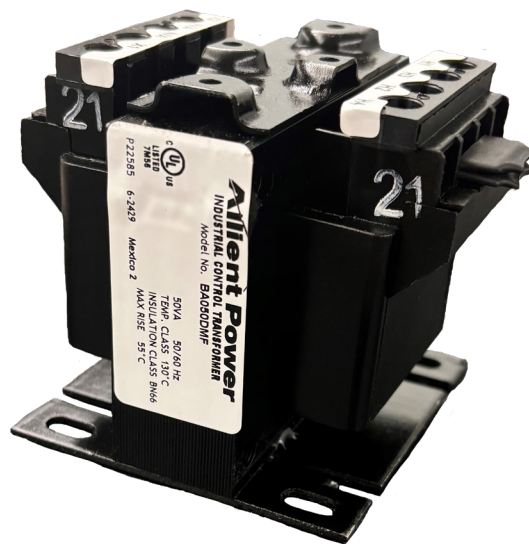


Industrial Control Transformer

CPT

Transforming tomorrow.



Automated manufacturing facilities around the world are using Allient Power's transformers for their reliability to deliver innovation and increase their speed to market.





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Industrial Control Transformers

Allient Power's Industrial Control Transformers are specially designed to accommodate the momentary current inrush caused when electromagnetic components are energized.

Our CPTs meet or exceed the standards established by UL and cUL over the widest VA range in the industry. The rugged construction and quality electrical characteristics ensure reliable operation of electromagnetic devices and trouble-free performance.

FINGER-SAFE TERMINALS

Terminals are molded into the transformer for extra durability and are finger safe. The deep terminal channels help prevent short circuits from stray wires.

MOUNTING ADAPTOR FOR FUSE BLOCKS

Included on all transformers.

WIRING DIAGRAM

All control power transformers come with wiring diagrams for ease of installation.

QUALITY MATERIALS

High-grade silicon steel laminations and fine quality copper magnet wire reduce core losses and ensure high efficiency.

ENVIRONMENTAL PROTECTION

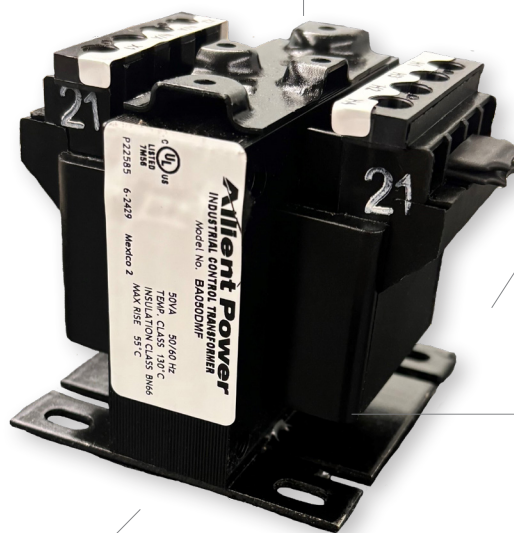
Rugged construction with fully encapsulated windings protect the transformer from harsh environments for a long life.

PRODUCT LABEL

All control power transformers come labeled with power specifications, agency listings, and manufacturing date codes.

FLEXIBLE MOUNTING

Heavy gauge steel mounting foot ensures a secure installation. Slotted holes allow for flexible mounting locations.



Product Features

- ✓ Enclosed coils (50-5kVA); Completely encloses the transformer coils to protect against moisture, dirt, dust and industrial contaminants for maximum protection in industrial environments.
- ✓ Finger Safe Terminals integrally built in. Up to 30% greater terminal contact area permits low-loss connections. Extra deep barriers reduce the chance of shorts from frayed leads or careless wiring. Pressure plate terminals designed to accept bare wire, ferrules, spade or ring lugs.
- ✓ Attractive black matte finish and easy to read label with complete wiring diagram.
- ✓ Terminals are molded into the transformer for a robust, compact design. A full quarter inch of thread on the terminal screws prevents stripping and pullout.
- ✓ Mounting plate is heavy gauge steel to add strength to core construction and provide stability. Slotted mounting feet permit easy and flexible installation.
- ✓ Two parallel jumper links come standard with transformers when required so they can be wired for dual primary voltages.

Transformer Selection Process

Selecting a transformer for industrial control circuit applications requires knowledge of the following terms:

Inrush VA is the product of load voltage (V) multiplied by the current (A) that is required during circuit start-up. It is calculated by adding the in-rush VA requirements of all devices (contactors, timers, relays, pilot lights, solenoids, etc.), which will be energized together. Inrush VA requirements are best obtained from the component manufacturer.

Sealed VA is the product of load voltage (V) multiplied by the current (A) after initial start-up or under normal operating conditions. It is calculated by adding the sealed VA requirements of all electrical components that will be energized at any given time. Sealed VA requirements are best obtained from the component manufacturer. Sealed VA is also referred to as steady state VA.

Primary Voltage is the voltage available from the electrical distribution system and its operational frequency, which is connected to the transformer supply voltage terminals.

Secondary Voltage is the voltage required for load operation which is connected to the transformer load voltage terminals.

INRUSH REGULATION DATA CHART

INRUSH VA @ 0.4 POWER FACTOR

| Continuous VA Transformer Nameplate Rating | 85% Secondary Voltage | 90% Secondary Voltage | 95% Secondary Voltage |
|--|-----------------------|-----------------------|-----------------------|
| 25 | 125 | 100 | 75 |
| 50 | 200 | 167 | 131 |
| 75 | 311 | 257 | 200 |
| 100 | 471 | 377 | 276 |
| 150 | 923 | 716 | 491 |
| 200 | 1125 | 883 | 622 |
| 250 | 1944 | 1476 | 970 |
| 300 | 2040 | 1547 | 1020 |
| 350 | 3300 | 2400 | 1400 |
| 500 | 3191 | 2500 | 1745 |
| 750 | 6025 | 4520 | 2915 |
| 1000 | 8100 | 5600 | 3000 |
| 1500 | 16000 | 12000 | 6600 |
| 2000 | 19500 | 13500 | 7300 |
| 3000 | 25500 | 18250 | 10500 |
| 5000 | 75000 | 56000 | 33000 |



Once the circuit variables have been determined, transformer selection is a simple 5-step process.

1

Determine the application inrush VA by using the following industry accepted formula:

$$\text{Application Inrush VA} = \sqrt{(\text{Inrush VA})^2 + (\text{Sealed VA})^2}$$

2

Refer to the Regulation Data Chart. If the primary voltage is basically stable and does not vary by more than 5% from nominal, the 90% secondary voltage column should be used. If the primary voltage varies between 5% and 10% of nominal, the 95% secondary voltage column should be used.

3

After determining the proper secondary voltage column, read down until a value equal to or greater than the application inrush VA is found. In no case should a figure less than the application inrush VA be used.

4

Read left to the Transformer VA Rating column to determine the proper transformer for this application. As a final check, make sure that the Transformer VA Rating is equal to or greater than the total sealed requirements. If not, select a transformer with a VA rating equal to or greater than the total sealed VA.

5

Refer to the following pages to determine the proper catalog number based on the transformer VA, and primary and secondary voltage requirements.

Voltage Groups

CPT Industrial Control Transformers are available in a wide variety of primary and secondary voltages, many displayed below. If you do not see the voltages required for your application, contact us about a customized option.

VOLTAGE TABLE

| Group | Primary | Secondary | VA Sizes |
|-------|-----------------------------------|---------------|------------|
| A | 220x440, 230x460, 240x480 | 110, 115, 120 | 50 - 5,000 |
| G | 200/220/440, 208/230/460, 240/480 | 110, 115, 120 | 50 - 5,000 |

VOLTAGE GROUP A

240x480, 230x460, 220x440 PRIMARY VOLTS: 110/115/120 SECONDARY VOLTS 50/60 Hz

Approximate Dimensions and Weight

| VA Rating | Part # | Max. Depth (A) | Max. Width (in.) (B) | Max. Height (in.) (C) | Mounting Depth (in.) (D) | Mounting Width (in.) (E) | Mounting Hole Depth | Mounting Hole Width | Shipping Weight (lbs.) |
|-----------|----------|----------------|----------------------|-----------------------|--------------------------|--------------------------|---------------------|---------------------|------------------------|
| 50 | BA050DMF | 3.23 | 3.00 | 2.79 | 2.00 | 2.50 | 0.203 | 0.406 | 2.6 |
| 75 | BA075DMF | 3.73 | 3.00 | 2.79 | 2.50 | 2.50 | 0.203 | 0.406 | 3.5 |
| 100 | BA100DMF | 4.23 | 3.38 | 3.10 | 2.38 | 2.81 | 0.203 | 0.406 | 4.2 |
| 150 | BB150DMF | 4.18 | 3.75 | 3.41 | 2.88 | 3.13 | 0.203 | 0.406 | 6.7 |
| 200 | BB200DMF | 3.96 | 4.50 | 4.04 | 2.50 | 3.75 | 0.203 | 0.406 | 8.5 |
| 250 | BB250DMF | 4.46 | 4.50 | 4.04 | 2.88 | 3.75 | 0.203 | 0.406 | 10.0 |
| 300 | BB300DMF | 4.46 | 4.50 | 4.04 | 3.25 | 3.75 | 0.203 | 0.406 | 11.3 |
| 350 | BB350DMF | 5.19 | 4.50 | 4.04 | 3.75 | 3.75 | 0.203 | 0.406 | 13.6 |
| 500 | BB500DMF | 5.17 | 5.25 | 4.66 | 4.25 | 4.38 | 0.313 | 1.063 | 19.2 |
| 750 | BB750DMF | 6.42 | 5.25 | 4.66 | 5.38 | 4.38 | 0.313 | 1.063 | 28.1 |
| 1,000 | BH1K0DMF | 6.23 | 7.00 | 5.65 | 4.00 | 6.13 | 0.313 | 1.063 | 29.8 |
| 1,500 | BH1K5DMF | 7.23 | 7.00 | 5.65 | 4.50 | 6.13 | 0.313 | 1.063 | 30.0 |
| 2,000 | BH2K0DMF | 7.98 | 7.00 | 5.65 | 5.13 | 6.13 | 0.313 | 1.063 | 38.0 |
| 3,000 | BH3K0DMF | 7.82 | 9.00 | 7.62 | 4.25 | 6.50 | 0.438 | 1.000 | 53.0 |
| 5,000 | BH5K0DMF | 8.81 | 9.00 | 7.62 | 7.25 | 7.50 | 0.438 | 1.000 | 89.0 |

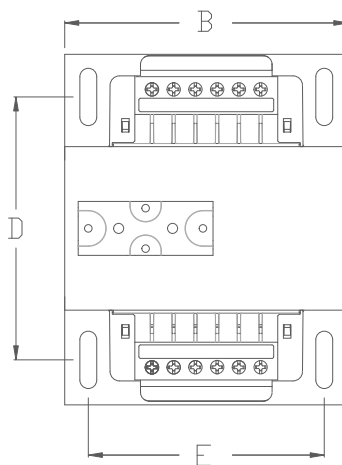
VOLTAGE GROUP G

460/230/208,480/240,440/220/200 PRIMARY VOLTS: 110/115/120 SECONDARY VOLTS 50/60Hz

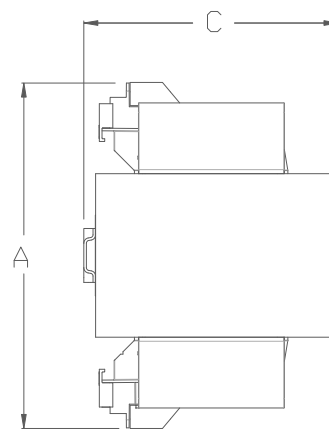
Approximate Dimensions and Weight

| VA Rating | Part # | Max. Depth (A) | Max. Width (B) | Max. Height (C) | Mounting Depth (D) | Mounting Width (E) | Mounting Hole Depth | Mounting Hole Width | Shipping Weight (lbs.) |
|-----------|----------|----------------|----------------|-----------------|--------------------|--------------------|---------------------|---------------------|------------------------|
| 50 | BA050CMF | 3.23 | 3.00 | 2.79 | 2.00 | 2.50 | 0.203 | 0.406 | 2.6 |
| 75 | BA075CMF | 3.73 | 3.00 | 2.79 | 2.50 | 2.50 | 0.203 | 0.406 | 3.5 |
| 100 | BA100CMF | 4.23 | 3.38 | 3.10 | 2.38 | 2.81 | 0.203 | 0.406 | 4.2 |
| 150 | BB150CMF | 4.18 | 3.75 | 3.41 | 2.88 | 3.13 | 0.203 | 0.406 | 6.7 |
| 200 | BB200CMF | 3.96 | 4.50 | 4.04 | 2.50 | 3.75 | 0.203 | 0.406 | 8.5 |
| 250 | BB250CMF | 4.46 | 4.50 | 4.04 | 2.88 | 3.75 | 0.203 | 0.406 | 10.0 |
| 300 | BB300CMF | 4.46 | 4.50 | 4.04 | 3.25 | 3.75 | 0.203 | 0.406 | 11.3 |
| 350 | BB350CMF | 5.19 | 4.50 | 4.04 | 3.75 | 3.75 | 0.203 | 0.406 | 13.6 |
| 500 | BB500CMF | 5.17 | 5.25 | 4.66 | 4.25 | 4.38 | 0.313 | 1.063 | 19.2 |
| 750 | BB750CMF | 6.42 | 5.25 | 4.66 | 5.38 | 4.38 | 0.313 | 1.063 | 28.1 |
| 1,000 | BH1K0CMF | 6.23 | 7.00 | 5.65 | 4.00 | 6.13 | 0.313 | 1.063 | 29.8 |
| 1,500 | BH1K5CMF | 7.23 | 7.00 | 5.65 | 4.50 | 6.13 | 0.313 | 1.063 | 30.0 |
| 2,000 | BH2K0CMF | 7.98 | 7.00 | 5.65 | 5.13 | 6.13 | 0.313 | 1.063 | 38.0 |
| 3,000 | BH3K0CMF | 7.82 | 9.00 | 7.62 | 4.25 | 6.50 | 0.438 | 1.000 | 53.0 |
| 5,000 | BH5K0CMF | 8.81 | 9.00 | 7.62 | 7.25 | 7.50 | 0.438 | 1.000 | 89.0 |

Image is a general representation of a typical Allient Power Control Transformer without fusing accessories or jumper links. Transformers 50VA - 350VA have 4 terminals per side, and units 500VA and higher have 6 terminals per side.



Top view



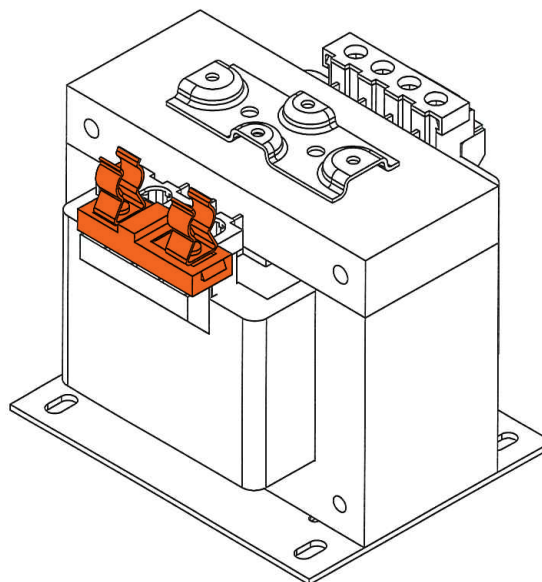
Side view

Fusing Accessories

FACTORY INSTALLED OPTION: 0

(FA-06 or FA-07 Kit)

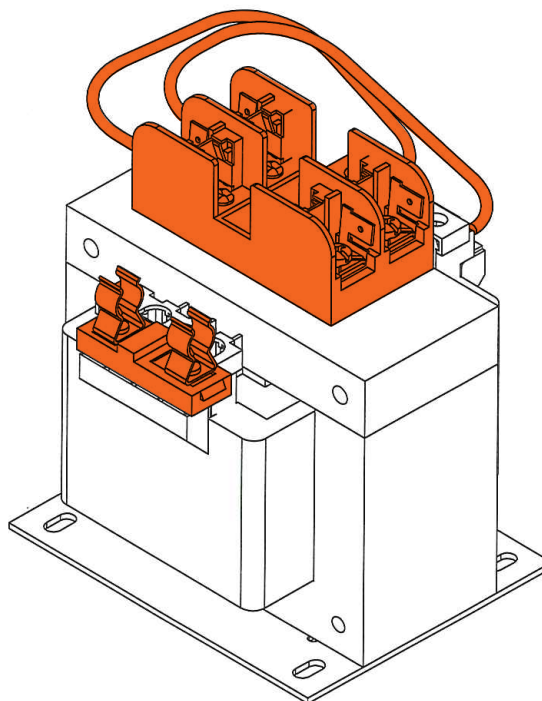
Secondary Fuse Clip
(13/32" x 1 1/2" Midget Fuse)



FACTORY INSTALLED OPTION: 4

(FA-11 Kit)

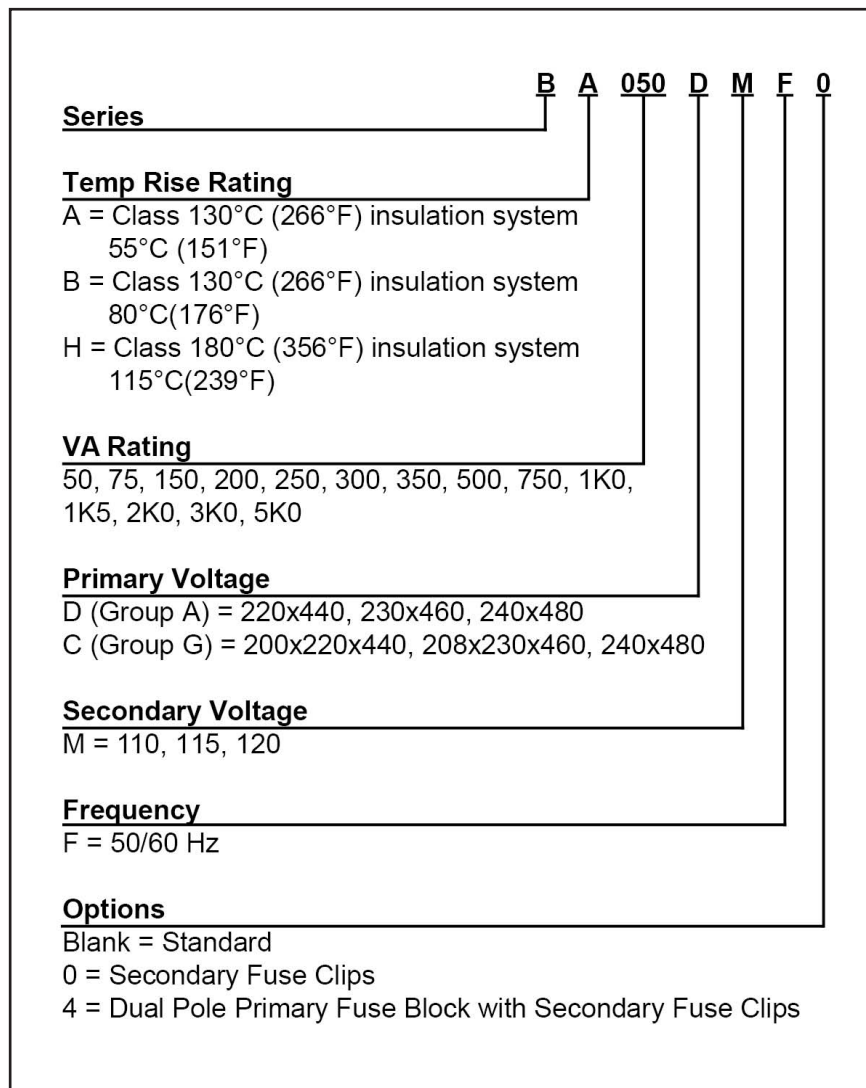
Primary Fuse Block & Secondary
Fuse Clips (Class CC Fuses (PRI))
& 13/32" x 1 1/2" Midget Fuse (SEC))



ACCESSORIES

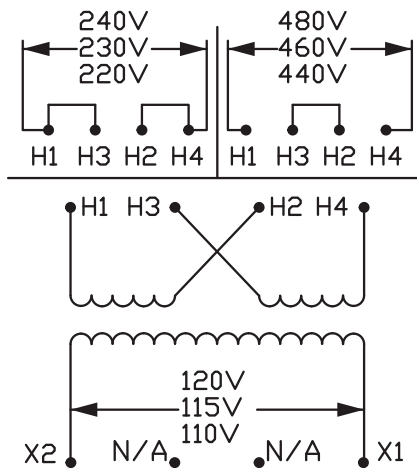
| Part # | SKU # | Fusing Options |
|--------|--------|--|
| FA-00 | P23722 | Primary Fuse Cover with Puller - fits any fuse block |
| FA-01 | P24286 | Primary Fuse Cover with Puller - fits any fuse block (25 pack) |
| FA-02 | P23724 | Primary Fuse Cover with Puller - fits any fuse block (50 pack) |
| FA-03 | P24290 | Secondary Fuse Cover - fits any secondary fuse clup |
| FA-04 | P24291 | Secondary Fuse Cover - fits any secondary fuse clip (25 pack) |
| FA-05 | P24292 | Secondary Fuse Cover - fits any secondary fuse clip (25 pack) |
| FA-06 | P23725 | Secondary Fuse Clip fits 50-750VA |
| FA-07 | P24665 | Secondary Fuse Clip fits 1-5VA |
| FA-08 | P24084 | Single Pole Secondary Fuse Block - fits all models |
| FA-09 | P23721 | Dual Pole Primary Fuse Block - fits all models |
| FA-10 | P24085 | Dual Pole Primary Fuse Block and Secondary Fuse Block - fits 150V A+ |
| FA-11 | P24086 | Dual Pole Primary Fuse Block and Secondary Fuse Clip |
| FA-12 | P25073 | Terminal Covers 4 Position W/O Fuse, 50-350V A Frame (25 pack) |
| FA-13 | P25074 | Terminal Covers 4 Position W/Fuse, 50-350V A Frame (25 pack) |
| FA-14 | P25075 | Terminal Covers 6 Position W/O Fuse, 500-750V A Frame (25 pack) |
| FA-15 | P25076 | Terminal Covers 6 Position W.Fuse, 500-750V A Frame (25 pack) |
| FA-16 | P25077 | Terminal Covers 6 Position, 1000-5000V A Frame (25 pack) |

Part Numbering System

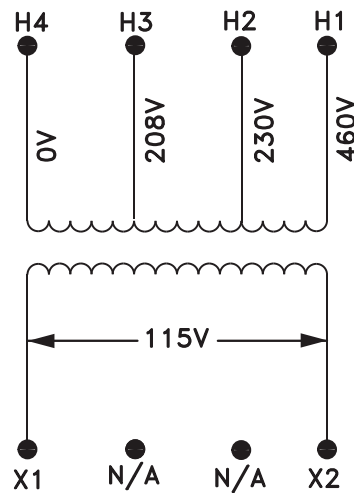


Connection Diagrams

GROUP A



GROUP G



Learn more about how our products can positively impact your operation.

www.transcoil.com | marketing@transcoil.com | 800-824-8282