

NEW

Industrial Control Transformers

- Why use an Industrial Control Transformer
- Features
- Applications



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Why Use an ICT?

- Reduce supply voltages to 240V or less (typically 120v or 24v) for control power
- Operate electromagnetic devices such as contactors, solenoids, relays, etc.
- Especially designed to accommodate momentary inrush current of such devices
- Able to maintain needed secondary voltage under high inrush demands
- Assures reliable operation of electromagnetic components
- Exceeds NEMA standards for secondary voltage regulation
- Typically used inside equipment control panels to supply control power
- Generally open core and coil construction (*ie, no enclosure*)



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Applications

- Motor starters
- Contactors
- Solenoids
- Timer Circuits
- Relays
- Control Panels
- Robotics



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How to size an ICT

- Electromagnetic devices have two demand characteristics
- 1. Sealed VA (power required to hold device in its current state)
- 2. Inrush VA (power required to activate or pull in the device)
- ICT must be able to handle both of these conditions and maintain 90% or more of its rated output voltage
- Typically if a customer specifies a VA rating for the unit he is referring to sealed VA which would equate to the nameplate VA of the unit
- Inrush VA ratings for the ICT units is available upon request if needed



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TB Series Features

- 50 – 5000 VA 50/60 hertz
- Fifteen voltage groups cover most applications
- Epoxy encapsulated coil
- Integrally-molded terminal blocks with isolation barriers to prevent arc over
- TB series does not include protective terminal covers (optional kit available)
- Copper windings on all groups
- UL Listed, CSA certified, or cUL (Canadian UL)
- Twenty year warranty
- **Assembled in the USA of imported and domestic components**



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TB Series Options

- Primary fuse kits available (These kits accept Class CC fuses)
- Part numbers ending in the letter “C” have secondary fuse clips factory installed (These clips accept “Midget” style fuses)
- Add F2 to part number not ending in “C” for factory installed 2-pole primary fuse block
- Add F4 to part number ending in “C” for factory installed 2-pole primary fuse block and secondary fuse clips. (F4 replaces the “C” in the part number)
- Protective covers available for transformer terminals and fuse blocks when finger safe rating is needed.



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How to Overcurrent protect Primary of an ICT

- Divide nameplate VA by rated input voltage to obtain full load amps
- Example: 500 VA divided by 208 volts equals 2.4 amps
- Follow NEC guidelines for OCP ratings (Article 450-3b)
- If full load amps is equal to or less than 2.0 amps size OCP at 300%
- If full load amps is greater than 2 amps but less than 9 amps OCP at 167%
- If full load amps is greater than 9 amps OCP at 125%
- Exception: If secondary OCP is used then the 167% and 125% can be 250%



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How to Overcurrent protect Secondary of an ICT

- Divide nameplate VA by rated output voltage to obtain full load amps
- Example: 500 VA divided by 120 volts equals 4.2 amps
- Follow NEC guidelines for OCP ratings (Article 450-3b)
- If full load amps is less than 9.0 amps size OCP at 167%
- If full load amps is equal to or greater than 9 amps OCP at 125%



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Typical TB Transformer



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CE Series Features

- 50 – 5000 VA 50/60 Hertz
- Epoxy encapsulated coil protects unit from damaging contaminants
- Integrally molded terminal blocks with isolation barriers to prevent arc over
- CE unit are supplied with protective terminal covers
- Heavy gauge mounting feet
- UL Listed, CSA approved, and CE marked (EN61558-2-2)
- Twenty year warranty
- **Assembled in the USA of imported and domestic components**



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CE Series Applications

- CE series units are designed for when CE mark is required
- Meets Low Voltage Directive 2006/95/EC
- Meets Electromagnetic Compatibility Directive (2004/108/EC)
- General applications are the same as for the TB series
- Ten voltage combinations fit most voltage requirements
- Terminal covers are included on all CE units
- Primary fuse kits are available for field installation only (Accept Class CC fuses)
- Secondary fuse clips are not available for CE units
- Protective covers available for primary fuse kits



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Typical CE Transformer



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ICT for Harsh Environments

- For applications where the ICT is mounted outside the control panel
- Fully encapsulated and enclosed
- Copper windings
- Available in 1000, 2000, 3000, 5000, and 10000 VA sizes
- Two voltage combinations available
- Voltage regulation exceeds NEMA requirements
- UL and UL-3R Listed
- CSA certified
- Ten year limited warranty
- No factory fusing options available for these units



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Typical Harsh Environment ECT Transformer



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Questions or Comments

Tech Service contact number:
800-334-5214 option 1



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