

tyco

Electronics

Energy Division

Tyco Electronics Corporation
Crompton Instruments
1610 Cobb International Parkway, Unit #4
Kennesaw, GA 30152
Tel. 770-425-8903
Fax. 770-423-7194

TRANSFORMER TYPES

Instrument transformers

Instrument transformers comprise a large category of current and potential transformers for various voltage, frequency and physical size ranges. We have broken them up into several different groupings: low voltage, which are system voltages under 15kV; high frequency, operating frequency over 1kHz; and size ranges from board mount parts up to current transformers with window sizes of 254mm by 610mm. Read through the different types we supply below and use our Instrument Transformer RFQ Form to request a specific part to meet your requirements.



Potential Transformers

Used primarily in a step down environment to monitor voltage. They are designed for connection line-to-line or line-to-neutral in the same manner as ordinary voltmeters. The secondary voltage bears a fixed relation with the primary voltage so that any change in potential in the primary circuit will be accurately reflected in the meters or other devices connected across the secondary terminals.



Potential transformers can be used with voltmeters for voltage measurements or they can be used in combination with current transformers for watt-meter or watt-hour meter measurements. They are used also to operate protective relays and devices, and for many other applications, Since they are used in a monitoring capacity, they generally require much greater accuracy in design.

Metering Toroidal Current Transformers



Traditional, window type current transformers for measuring 50-400HZ currents of 5A to 15000A with secondaries of 0.1A, 1A and 5A (special secondary currents are available). Burden: B 0.1 through 1.8 (2.5VA to 50 VA) with Accuracy class: 0.2 to class 5.0 as per IEC 185 or class 0.3, 0.6 or 1.2 as per ANSI C 57.13. Inside diameters of up to 8.00". Many models are available as U.L. recognized devices. Applications include:

- UPS systems
- Transfer switches
- Motor-generator sets
- Commercial sub-metering,
- 3 CT 's in one package for 3-phase metering
- Accurate measuring for metering/WATT/VAR
- Current sensing, recording, monitoring & control
- Control panels and drives
- Standard CT used as measuring standard for comparison
- Winding temperature indicator (WTI) for power transformers
- Summation current transformers.

Large Frame Current Transformers

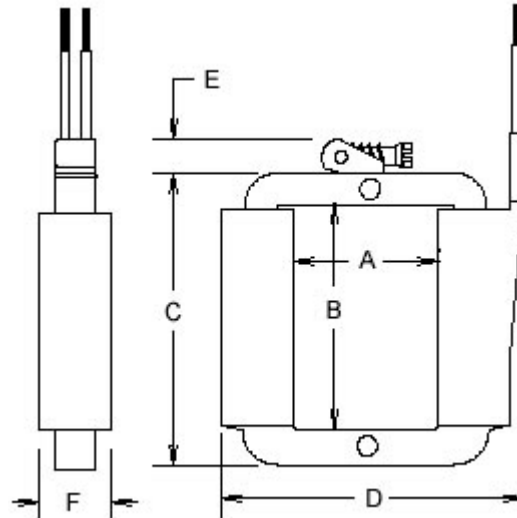
For measuring 50-400HZ currents in bus bar and other large conductor systems. Typical configuration is 400A to 12000A primary current with secondary of 1A or 5A (special secondary currents are also available).



Inside areas as small as 3.00" X 7.00" and as large as 7.00" X 27.00" and 10.00" X 24.00". All models are available with optional mounting plates for "bulk-head" mounting. Some models are U.L. recognized devices.

Split-Core Current Transformers

This type of current transformer is available to measure AC currents from 100A to 600A, at 50 to 400HZ. They are very popular in sub-metering applications where existing systems are being upgraded and it is impractical to isolate the primary conductor. It is even possible to install this type of transformer while the conductor is energized, however it is paramount that certain safety precautions be followed under such conditions. Rectangular in shape, standard split-core models are available with window dimensions up to 4.00" X 7.50". Even larger, custom designed sizes are available by special order. Secondary ratings of 5A, 1A, and 100ma are all common in split-core current transformers.



Two model groups are available, SP and SPS. The former is provided with a stainless steel screw-clamp band securing the two core halves; the latter has a UV resistant nylon band. All ratios are available in either type. Electrical and magnetic performance is identical for the two groups.

Miniature Current Transformers

These are constructed using one of the following methods: Plastic casing, Resin casted, Resin dipped, Tape insulated,. Typical turns ratio: 4000 : 1 to 500 : 1 and Accuracy: Class 0.1 to Class 1.0. Applications include:

- Energy meters for accurate current measurement
- Current control
- Current signature of motors
- Load sensing
- Ground fault sensing



- Monitoring of process parameters
- AC level to logic conversation & bar graph
- As a transducer in instrumentation

Relay Class Protection Current Transformers



This type of CT includes oil-immersed bussing and Resin molded versions. Primary current range from 5 Amp to 5000 Amp with secondary current 5A, 1A , or 01.A. Typical Burden B 0.1 through B 4.0 (2.5VA to 50 VA & more) and Accuracy Class As per ANSI C 57.13 and IEC 185. Applications include:

- Protection relays/Relay panels
- Earth fault protection
- Bussing type, oil-immersed CT in power transformer
- Control panes and switch boards
- Air/Gas circuit breakers
- Motor control cubicles
- Power control centers
- Bus bar protection systems
- Differential protection systems



Medium voltage Instrument Transformers

These are used with a system voltage 3.3kV to 25kV and BIL 4.5 to 125 full wave crest kV. They are reliably constructed using vacuum cast with epoxy resin/polyurethane resin and are able to withstand heavy fault conditions but are not made for exposure to sunlight.. Single CT's can be built with multiple cores; for example - one for measuring and another for relaying are possible. Also multi-tap secondaries can be provided (up to 4). Typical primary current 5 Amp to 3000 Amp and secondary current 5A/1A/01.A. Applications include:



- Metering and Relaying
- Energy meter panels
- Medium voltage switch gears and control panels
- Medium voltage circuit breakers
- Motor Control Panels

PC mount 50 to 400Hz Current Transformers

These offer a small footprint for the design engineer looking to sensor current on board. They can also be used for Metering Class (Burden from B 0.1 to B 1.8 with accuracy class from 0.3 to 2.4 as per customer requirement. (As per ANSI C 57.13 and IEC 185) and for Relay Class Burden from B 1.0 to B 4.0 and relay voltage class from C 10 to C 400 or T200 as per customer requirement. (As per ANSI C 57.13 and IEC 185) Secondary current range from 0.1 to 5 amp. Typical constructions are plastic casing or resin molded. Applications include:

- Sensing current overload
- Ground fault detection
- Metering

PC mount 20kHz to 200kHz Current Transformers

These are used for measuring high frequency primary currents up to 15 Amps with primary to secondary isolated to 2500 VAC and have optimum performance over designated current and frequency ranges. Applications include:

- Isolated current feed-back signal in switch mode power supplies
- Motor current load/overload
- Lighting
- Switch controls
- Ultra-sound current
- High resolution sonar current
- Isolated bi-directional current sensor with full wave bridge



