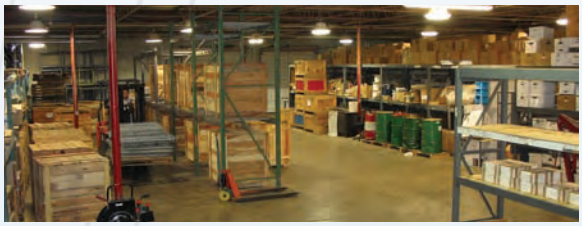
AMRAN

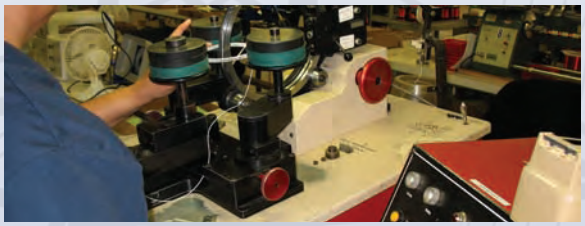
INSTRUMENT TRANSFORMERS

www.amranit.com

Features

- ISO 9001:2000 certified production plants
- ISO 14000 certified production plants
- ANSI IEEE C57.13 Compliance
- IEC 60044 Compliance
- UL and cUL Recognized Products
- 100% Testing - Routine & ype test records
- Complete Traceability of Records
- RoHS Compliance
- Standard products and custom capabilities



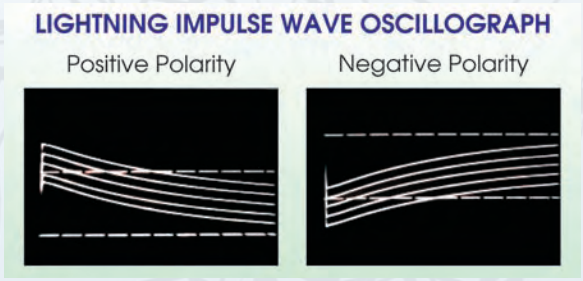


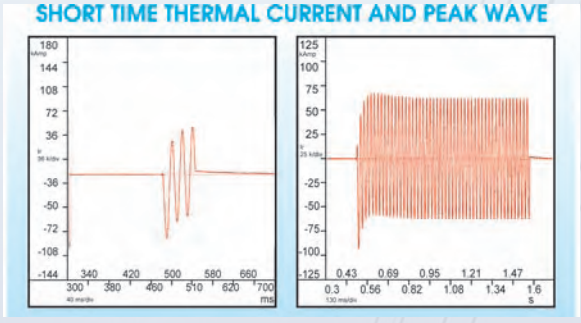
Manufacturing

- Off-shore and US based production plants.
- Over 50,000 square feet of manufacturing space.
- 225+ Employees with strong management and engineering team.
- In-house Core Manufacturing with multiple core winding machines, annealing furnaces
- Toroidal and Rectangle winding machines, Coil winding machines, Automatic Resin Casting Equipment, APG machines, Vacuum Casting & heating Chambers, Varnish Impregnation Ovens, Oil filtration facilities

Testing

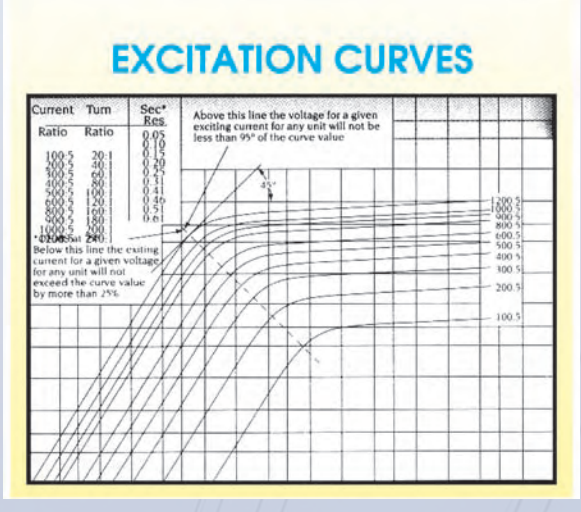
- Microprocessor based Accuracy test brides to test Accuracies
- Partial discharge test facility
- BIL test lab
- High-voltage test lab
- Digital Oscilloscopes, VI characteristics test benches, Calibrated standard CTs and PTs
- High capacity current sources
- Products tested per ANSI IEEE C57.13, IEC 60044, BS 3938, IS 2705

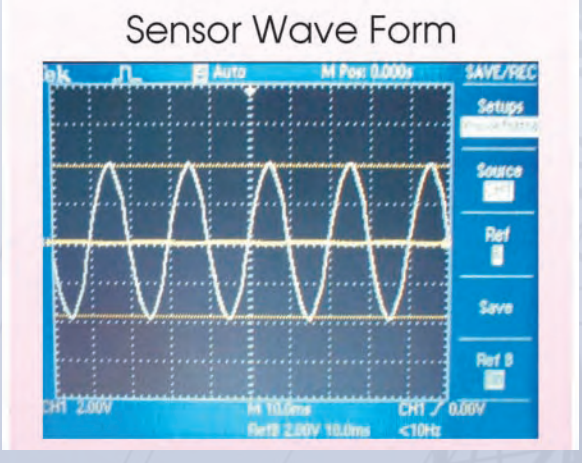




Quality & Process

- ISO 9001; 2000 & ISO 14000 based processes
- Six Sigma Techniques – DMAIC, Process control, Process Capability Data, X Bar & Histrogram Monitoring, Process Capability Index Cpk
- MTM study based lean manufacturing lines
- Work instructions based on FMEA and control plans
- Routine Training Schedules





LOW VOLTAGE CURRENT TRANSFORMERS

Miniature CTs

Applications: Current measurement, relaying, power and energy monitoring devices, energy meters, relays, ground fault etc.

- Low cost CTs for instrumentation and current measurement purpose.
- Highly accurate and linear CTs using special Nickel-Iron (Ni-fe) and amorphous core constructions.
- Can be supplied with or without secondary resistor
- Wide range of Constructions options are available – Plastic cased, Resin Casted, Resin dipped, Tape Insulated etc.
- Available in many different sizes with various secondary options – leads, PCB mountable pins, terminals, with our without connectors & housings.

General Purpose (Commercial/ Instrumentation) CTs

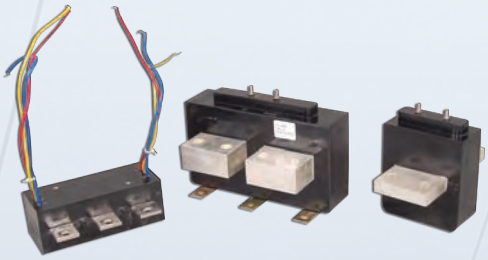
Applications: Panel boards, Relay/Control panels, Engine Generators, Switchgear and Circuit breakers

- Low cost current transformers with center window type (donut style) constructions.
- Wide range of Ratios – 50:5 to 2500:5 (1 Amp Secondary possible)
- Can be supplied with or without secondary resistor
- Wide range of round, rectangle or composite windows available
- Available in many different sizes, with or without mounting feet.
- Plastic case or encapsulated construction
- Secondary can be leads, terminals or pins

Tape Insulated CTs

Applications: Panel boards, Relay/Control panels, Engine Generators, Metering or Protection Panels, Switchboard

- Various outer tape insulation options: Polyester, Fiberglass cloth, cotton (varnished or un-varnished) etc. depending on customer requirement.
- Secondary Leads or Terminals
- Low cost current transformers with wide range of round or rectangle windows
- Wide range of Ratios – 50:5 to 8000:5 (1 Amp Secondary possible)
- Can be supplied with or without secondary resistor
- Available in many different sizes, with or without mounting feet.



Bar Type CTs

Applications: Panel boards, Relay/Control panels, Engine Generators, Metering or Protection Panels, Energy Meters

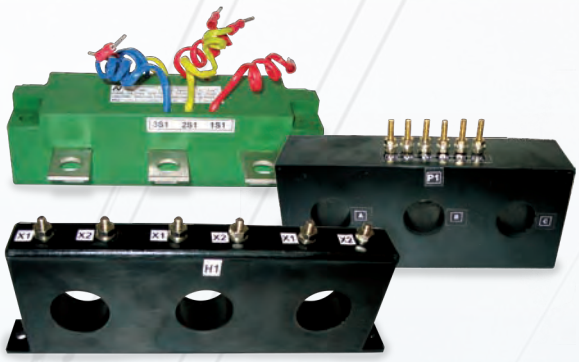
- Resin Cast Construction with secondary leads or terminals
- Easy installation with various mounting options
- Wide range of Ratios – 50:5 to 4000:5 (1 Amp Secondary possible)
- Can be supplied with or without secondary resistor
- Available in many different sizes, with or without mounting feet.

LOW VOLTAGE CURRENT TRANSFORMERS

IEEE C57.13 and IEC 60044 Class CTs

Applications: Metering and Relaying/Protection equipments, Switchgear, MCCs, Switchboards, Panels.

- Designed to meet the requirement of ANSI IEEE C57.13 standard or IEC 60044 standard.
- Single ratio or multi ratio models are available with various secondary termination options (leads, terminals etc.).
- Wide range of Ratios: 50:5 to 6000:5.
- Various secondary currents are available.



Three Phase CTs

Applications: 3 phase metering, motor overload protection, Energy meters

- Compact size and easy installation
- Window type or Bar type models available
- Plastic Cased or Resin Molded
- Terminals/lead wire for secondary
- Wide range of ratios available

Rectangle CTs/Ground Fault Sensors

Applications: Metering and Relaying Equipment, Ground fault sensing, Power Distribution Monitors

- Extensive range available with many different sizes and ratios
- For use with primary bus bar or cables
- Various secondary options are available – leads, terminals etc.
- Custom mounting options are available

Split Core CTs

Applications: Metering applications, Energy management applications, Sub-metering, load surveys

- Easy installation on long primary conductors
- Small to Large sizes with different windows
- Many different ratios 50:5 Amp to 8000:5 Amp
- Voltage Output possible with built in resistor

LOW VOLTAGE CURRENT TRANSFORMERS

Switchgear Style CTs

Applications: For specific mounting applications on Circuit breaker used in MV Switchgears. (Usually 5, 15 and 27kV switchgear)

- Can be slipped over primary bushings in MV Swittchgears
- Integrated mounting holes for easy installation
- Single or Multi ratios available.
- As per IEEE/ANSI C57.13 or IEC 60044-1 accuracy classes for metering or relaying
- Wide range of windows and sizes
- Ratios 50:5 to 6000:5. Supplied with leads or terminals
- Multi core for metering and relaying, possible in the single unit

Auxiliary/Summation CTs

Applications: For use in the secondary of main current transformers

- Wound primary upto 50 Amp
- As per IEEE/ANSI C57.13 or IEC 60044-1 accuracy classes for metering or relaying
- Summation CTs can have many different secondaries
- Various sizes and ratios available.

Bushing CTs

Applications: Medium and High voltage circuit breakers, Mega-VA Power Transformers, Motor Controls

- For Gas insulated or Oil-immerse Applications
- Fiberglass varnished taped/ Cotton tape wound (varnished or un-varnished)/polyester film or paper insulation.
- Single or Multi Ratios – secondary leads or terminals
- High accuracies possible for Relaying or Metering applications
- Single core or multi core designs possible

Generator Style CTs (High Current Applications)

Applications: For mounting and stacking over the bushings and bus duct of large generators, metering or relaying applications

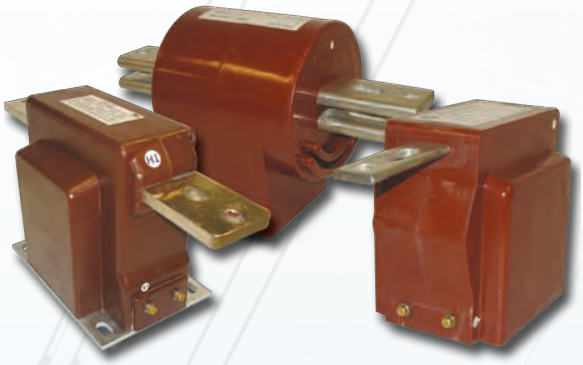
- Designed specifically for high current application inside large generators. Mounted on a round or rectangle bus bars.
- Current rating of 5000 to 30000 Amps.
- Tape Insulated or Resin Cast construction depending on application/use
- Specific mounting is provided - Special mounting boards, mounting brackets, wall or floor mountable models are available
- Can be supplied with leads or Terminals. Terminal box can also be provided.
- Shielded winding design available

MEDIUM VOLTAGE CURRENT TRANSFORMERS

Window Style CTs

Applications: Metering panels, Relay/Control panels, Generators, Switchgears, Circuit breakers, Motor Starters, Resistor manufacturers etc.

- Current transformers with center window type constructions.
- Wide range of round, rectangle or composite windows available
- Wide range of Ratios – 50:5 to 25000:5 (1 Amp Secondary possible)
- Up to 36kV Class, 200kV BIL
- Vacuum Resin encapsulated construction (polyurethane/epoxy cast)
- Outdoor compatible models are available
- Can be supplied with or without equi-potential shield in ID of the current transformer.
- Type test data available for BIL, Short time thermal current, Partial discharge etc.
- Multi-ratio options are available.



Bar Type CTs

Applications: Metering Panels, Relay/Control panels, Generators, Switchgears, Circuit breakers, Motor Starters etc.

- Current transformers with bar type Construction for primary.
- Various Primary bar configuration to suite different applications
- Easy installation with various mounting options
- Wide range of Ratios – 50:5 to 4000:5 (1 Amp Secondary possible)
- Up to 36kV Class, 200kV BIL
- Vacuum Resin encapsulated construction
- Outdoor compatible models are available
- Type test data available for BIL, Short time thermal current, Partial discharge etc.
- Multi-ratio options are available.

Wound Primary Type CTs

Applications: Metering Panels, Relay/Control panels, Generators, Switchgears, Circuit breakers, Motor Starters etc.

- These types of CTs have primary or secondary terminals on top or side of the CT.
- Various terminal arrangement possible for easy installation. As well as various mounting options.
- Wide range of Ratios – 50:5 to 4000:5 (1 Amp Secondary possible)
- Up to 36kV Class, 200kV BIL
- Vacuum Resin encapsulated construction (polyurethane/epoxy cast)
- Available in many different sizes, with or without mounting bracket.
- Outdoor compatible models are available
- Type test data available for BIL, Short time thermal current, Partial discharge etc.
- Multi-ratio options are available.

LOW/MEDIUM VOLTAGE POTENTIAL TRANSFORMERS

Low Voltage Potential Transformers

Applications: Voltage measurement in AC Power systems, Metering Panels.

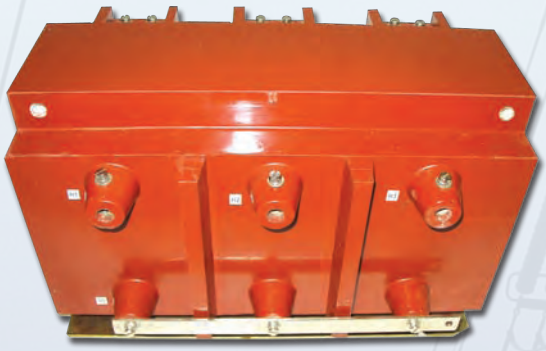
- Wide range of Ratios with secondary voltages 100/110/120V (Different Secondary voltage possible)
- Single Phase or three phase designs are available
- Plastic Cased OR Resin Cast Molded construstion
- Line to line or Line to ground designs
- Can be supplied with or without primary fuses
- Available in many different sizes, with or without mounting bracket.
- Single or multi secondary options are available
- Designed to meet IEEE ANSI C57.13 or IEC 60044 standards

Medium Voltage Potential Transformers

Applications: Metering panels, Relay/Control panels, Generators, Switchgears, Circuit breakers, Motor Starters etc.

SINGLE PHASE OR THREE PHASE CONSTRUCTION / SINGLE BUSHING OR TWO BUSHING DESIGNS

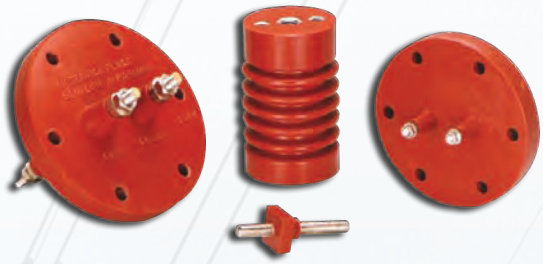
- Up to 25.5kV Class, 175kV BIL
- Wide range of Ratios with secondary voltages 100/110/120V (Different Secondary voltage possible)
- Vacuum Resin encapsulated construction
- Easy installation with various mounting options
- Can be supplied with or without primary fuses
- Available in many different sizes, with or without mounting bracket.
- Outdoor compatible models are available
- Type test data available for BIL, Partial Discharge etc.
- Single or multi secondary options are available in single PT
- Voltage factor upto 1.9 available (Can be designed for specific requirement)
- Unique 3 phase designs are available where space is a constraint.



Rogowski Coils & Sensors

Applications: Circuit breakers, welding equipment, instrumentation, measurement and protection devices, panels, transformers

- Wide current range is available
- Various outer encapsulation options – taped, plastic cased, encapsulated etc.
- Excellent linearity without saturation within small to high current range
- Very high bandwidth to measure switching transient
- High short circuit current withstanding capacity
- Light weight and easy installation
- Rogowski sensor and magnetic core sensor combination units are available



Insulators & Resin Cast Components

Applications: Switchgears, Breakers, Metering and protection panels, control equipment, MCCs, transfer switches etc

- Bus bar supports and Insulators upto 35.5 kV system
- Epoxy or Polyurethane resin cast construction
- Auto Pressure Gelation (APG) based production
- Various size and shapes available
- Rugged construction
- 100% inspection

Custom Coils

Applications: LV and MV Motor controls, relays, contactors, power & control equipment

- Accurate high number of turns using multi-spindle winding machines
- Resin encapsulation, plastic casing, tape insulation, varnish impregnation possible
- Special bobbin sizes and tools can be developed
- Integrated assembly possible
- Various termination options are available – leads, pins, screws etc.
- Built to customer's specifications.

Braided Copper Cables & Connectors

Applications: MCB, MCCB, Relays, Metering and Protection panels, power stations

- Various current carrying capacities
- Custom capabilities
- Various sizes, shapes and end termination available
- Round, flat, square, circular braids
- End termination with ferrules and holes as per requirement
- Various plating options - bare copper / silver plated / tin plated

OTHER PRODUCTS

CUSTOMER SPECIFICATION SHEET FOR INSTRUMENT TRANSFORMERS

Please provide as much information as possible and send to

FAX #: 832-328-3303 ATTN: SALES DEPARTMENT

Company Name						Date:	
Contact Name:						e-mail:	
Address:						Phone:	
City:		State:		Zip:		Fax:	
Customer P/n:				Amran P/n:			
Qty to quote:							

CURRENT TRANSFORMER

System Voltage:	
Frequency	
Ratio (or Primary and Secondary Current):	
Accuracy	
Burden/Load	
Thermal Rating Factor	
Style (Window Style / Bar Type / Wound Primary)	
Window Dimension	
Outer Encapsulation (Plastic, Resin Encapsulated, Taped)	
Secondary Type (Leads, Terminal etc.)	
Lead Length	
Physical Size Limitations:	
Standard (if applicable - IEEE C57.13 or IEC 60044)	
UL Mark Required	
Other Information (special mounting requirement, installation, conditions etc):	

POTENTIAL TRANSFORMER

System Voltage:	
Frequency	
Ratio (or Primary and Secondary Voltage)	
Accuracy	
Burden/Load	
Thermal Rating	
Single Phase or Three phase:	
Single Bushing or Two Bushing (line-ground, line-line etc.)	
Fuse Required (# of fuses):	
Outer Encapsulation (Plastic, Resin Encapsulated, Taped)	
Secondary Type (Leads, Terminal etc.)	
Lead Length	
Physical Size Limitations:	
Fuse Required:	
Standard (if applicable - IEEE C57.13 or IEC 60044)	
UL Mark Required	
Secondary Type (Leads, Terminal etc.)	
Other Information (special mounting requirement, installation, conditions etc):	

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