TOROTRANS

(An ISO 9001:2015 Certified Company)

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We introduce ourselves as one of the leading manufacturers of high quality Low loss grade LOW VOLTAGE CURRENT TRANSFORMERS of Metering, Protection, Class PS and Bushing C.T.

TOROTRANS was founded in 1994. We are a small scale industrial unit situated in Pune, 180 Km South East from Mumbai, which is the vital industrial capital of India. Our factory is measuring 3500 Sq. feet and is equipped with the following machinery:

- Toroidal core winding machines
- Spot welding transformers
- Electric heating furnace for annealing of CRGO cores
- Toroidal winding machines
- Testing bench etc.

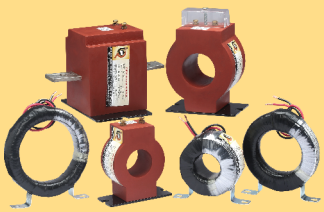
We manufacture Toroidal Low tension Current Transformers of any rating in tape wound as well as resin cast. Many industries are already benefited by the same. They name it as "Economical, good quality, smaller size and smaller weight". We are committed to total customer satisfaction by emphasizing on:

- Research and development
- Total quality management
- Competitive pricing
- Timely deliveries

Toroidal CURRENT Transformers

TOROIDAL CURRENT TRANSFORMER :

Current transformers are used along with electrical measuring instruments and / or electrical protective devices. They are very useful in high power circuits where the current is large. Current transformers are subdivided into main categories.

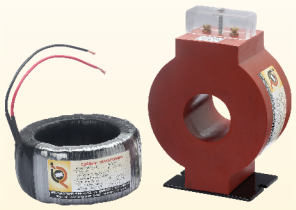


MEASURING CURRENT TRANSFORMER :

These transformers are used in measuring and indicating current, that is to reduce the line current to a value which is suitable for standard measuring instruments, relays etc. Measuring CT is connected to measuring instruments such as ammeter.

PROTECTION CURRENT TRANSFORMER :

These transformers are used for over current protection in power circuit.
protective CT is connected to protective relay.
When short circuit occurs, it is expected that CT is not saturated at high primary current because this CT current is used to drive a relay that will activate circuit breaker. ALF applies to protective CT.
Normally specified as Class 5P or 10P to indicate their accuracy at fault current, followed by the fault current limit at which the accuracy required.
(example : 5P10, 10P15 and so on)



CLASS PS CURRENT TRANSFORMER :

PS stands for protection special which is defined by knee point voltage of current transformer Vk and excitation current Ie at Vk/4.
Special Class is called Class PS. (PS is the abbreviation of the French Word "Protection Speciale")

BUSHING CURRENT TRANSFORMER :

Bushing Current Transformers are ring type Current Transformer of big size. Which are used inside high voltage bushing of oil cooled power transformer. They measure high voltage line current and also used for differential protection of transformer.

We also manufacture Winding Temperature indicator Current Transformer, to be used in oil cooled distribution and Power Transformer to measure temperature of winding of transformers. The above CT's are suitable for use in hot transformer oil.

TYPE :

Current Transformers are normally categorized as Ring / Bar type and Wound Primary.

Ring / Bar type current transformer : A current transformer where primary winding is provided by the user.

Wound primary current transformer : A current transformer having a primary winding of more than one full turn wound on core.

Current Transformers are wound on Toroidal cores which virtually eliminates error due to leakage flux. Adjusting the number of secondary turns may compensate for some errors.

Electrical Specifications

Type	:	Ring and wound type Tape insulated ring type and Epoxy resin potting type.
Primary Current	:	50 - 3000 Amp./ As per customer requirement
Secondary Current	:	5 or 1 Amp. (other on request)
Burden	:	1 – 30 VA. (other on request)
Accuracy Class	:	0.2S, 0.5S, 0.1, 0.2, 0.5, 1.0, 3.0, 5.0
Frequency	:	50 - 60 Hz
Operating Temp.	:	- 10 deg. C to 40 deg. C.
Conforms to	:	IS 2705 / IS 16227 – 2012

Limits of current error and phase displacements for measuring current transformers (Classes from 0.1 to 1)

Accuracy Class	Ratio Error ± %				Phase Displacement ± Minutes			
	At current (% of rated)				At current (% of rated)			
	5	20	100	120	5	20	100	120
0.1	0.4	0.2	0.1	0.1	15	8	5	5
0.2	0.75	0.35	0.2	0.2	30	15	10	10
0.5	1.5	0.75	0.5	0.5	90	45	30	30
1	3	1.5	1	1	180	90	60	60

Limits of ratio error and phase displacement for measuring current transformers (Classes 0.2S and 0.5S)

Accuracy Class	Ratio Error ± %					Phase Displacement ± Minutes				
	At current (% of rated)					At current (% of rated)				
	1	5	20	100	120	1	5	20	100	120
0.2S	0.75	0.35	0.2	0.2	0.2	30	15	10	10	10
0.5S	1.5	0.75	0.5	0.5	0.5	90	45	30	30	30

Limits of ratio error for measuring current transformers (Classes 3 and 5)

Class	Ratio Error ± %	
	At current (% of rated)	
	50	120
3	3	3
5	5	5

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Toroidal Current Transformers

Specification :

Primary Current	: 10 – 3000 Amp. / As per customer requirement
Secondary Current	: 0.005 – 5 Amp. / As per customer requirement
VA Rating	: 0.0125 – 15 VA. / As per customer requirement
Accuracy Class	: 0.2 – 5 / As per customer requirement
Frequency	: 50 / 60 Hz
Secondary Voltage	: Depends upon Load resistance w.r.t. VA rating
H.V. Test	: Between Primary to secondary 2 KV
Winding	: Class F
Insulation	: Class B
Operating Temperature	: -15 to 70 Deg. Celsius
Termination	: Flying flexible wire or with connector / Lug
Mounting	: Various options available

HIGHER EFFICIENCY, BETTER PERFORMANCE...

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Features / Applications

Current transformers are used for electrical measuring instruments and / or electrical protective devices. They are very useful in high power circuits where the current is large.

- Current transformers are subdivided into two main categories :
  MEASURING CURRENT TRANSFORMERS
  These transformers are used in measuring and indicating current, that is to reduce the line current to a value which is suitable for standard measuring instruments, relays etc.
  PROTECTIVE CURRENT TRANSFORMERS
  These transformers are used for over current and undercurrent relaying for power circuit protection.
- **TYPE :** Current Transformers are normally categorized as Ring / Bar type and Wound Primary.
  Ring / Bar type current transformer : A current transformer where primary winding is provided by 'the user.
  Wound primary current transformer : A current transformer having a primary winding of more than one full turn wound on core.
- Current Transformers are wound on Toroidal cores which virtually eliminates error due to leakage flux. Adjusting the number of secondary turns may compensate for some errors.