Donut Current Transformers



UL File # E93779

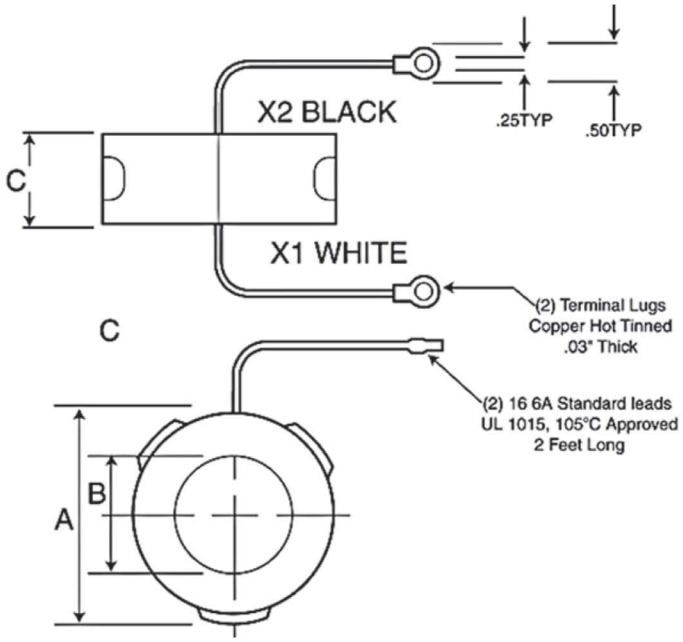
- *Meets A.S.A C57.13 Standard*
- *Molded from impact and abrasive resistance black nylon for rugged construction*

Catalog Number	Turns Ratio	Accuracy For 2 VA Burden
01293	10:1	2%
01306	15:1	2%
01297	20:1	1%
01298	30:1	1%
01299	40:1	1%
01313	50:1	.8%
01300	60:1	.6%
01305	80:1	.5%
01301	100:1	.5%
02303	120:1	.5%
02459	150:1	.3%
02304	200:1	.3%

Ordering Information

Ampere		Turns	Catalog	Dimensions		
Primary	Secondary	Ratio	Number	A	B	C
50	5	10:1	01293			
75	5	15:1	01306	3.56”	1.56”	1.10”
100	5	20:1	01297			
150	5	30:1	01298			
200	5	40:1	01299			
250	5	50:1	01313			
300	5	60:1	01300	3.56”	2.06”	1.10”
400	5	80:1	01305			
500	5	100:1	01301			
600	5	120:1	02303			
750	5	150:1	02459	4.50”	3.00”	1.09”
1000	5	200:1	02304			

Dimensions



Donut Current Transformer Wrapping Information

Primary Turn Ratio Modification

Formula: Ka = Kn x Nn / Na

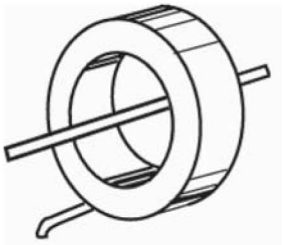
Where:
Ka = Actual Transformer Ratio
Kn = Nameplate Transformer Ratio
Na = Actual Number of Primary Turns
Nn = Nameplate Number of Primary Turns

The ratio of the current transformer can be modified by adding more primary turns to the transformer. By adding primary turns, the current required to maintain five amps on the secondary is reduced.

Example: A 100:5 current transformer designed for one primary turn.

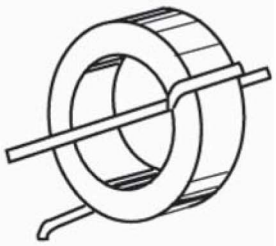
1 Primary Turn

Nameplate Ratio	Actual Ratio
100:5	100:5



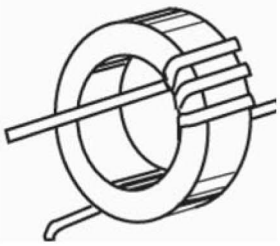
2 Primary Turns

Nameplate Ratio	Actual Ratio
100:5	50:5



4 Primary Turns

Nameplate Ratio	Actual Ratio
100:5	25:5



Primary Turn Ratio Modification

Formula: $\frac{Ip}{Is} = \frac{Ns}{Np}$

Where:
Ip - Primary Current
Is - Secondary Current
Np - Number of Primary Turns
Ns - Number of Secondary Turns

Example: A 300:5 Current Transformer.

$$\frac{300p}{5s} = \frac{60s}{1p}$$

(In practicality one turn is dropped from the secondary as a ratio correction factor.)

The ratio of the current transformer can be modified by altering the number of secondary turns by forward or backwinding the secondary lead through the window of the current transformer. By adding secondary turns, the same primary current will result in a decrease in secondary output. By subtracting turns, the same primary current will result in greater secondary output.

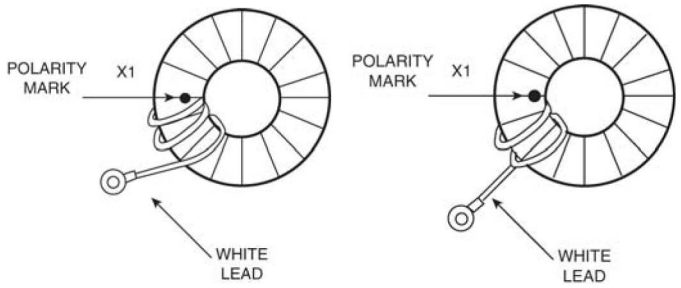
Again using the 300:5 example adding five secondary turns will require 325 amps on the primary to maintain the 5 amp secondary output or

$$\frac{325p}{5s} = \frac{65s}{1p}$$

Deducting 5 secondary turns will only require 275 amps on the primary to maintain the 5 amp secondary output or

$$\frac{325p}{5s} = \frac{65s}{1p}$$

The above ratio modifications are achieved in the following manner:



Donut Current Transformer Wire Length Table

As the distance between the transformer and the meter increases, the signal intensity falls.

For all of the current transformers the maximum distance is determined by it VA burden and also the VA burden of the meter being used.

Here is a table of the maximum recommended wire length for all of our current transformers using the recommended 16 gauge copper wire.

Catalog Number	CT Ratio	Burden VA	Analog (.2 VA)	Digital (1 VA)
01293	50 :5	2 VA	9 FT.	5 FT.
01306	75 :5	2 VA	9 FT.	5 FT.
01297	100 :5	2 VA	9 FT.	5 FT.
01298	150 :5	2 VA	9 FT.	5 FT.
01299	200 :5	2 VA	9 FT.	5 FT.
01313	250 :5	2 VA	9 FT.	5 FT.
01300	300 :5	2 VA	9 FT.	5 FT.
01305	400 :5	2 VA	9 FT.	5 FT.
01301	500 :5	2 VA	9 FT.	5 FT.
02303	600 :5	2 VA	9 FT.	5 FT.
02459	750 :5	2 VA	9 FT.	5 FT.
02304	1000 :5	2 VA	9 FT.	5 FT.
37020	100 :5	2 VA	9 FT.	5 FT.
37021	150 :5	5 VA	24 FT.	20 FT.
37022	200 :5	5 VA	24 FT.	20 FT.
37023	300 :5	12.5 VA	61 FT.	57 FT.
37024	500 :5	20 VA	98 FT.	95 FT.
37025	1000 :5	25 VA	123 FT.	119 FT.

Note:
A different set up using model 186 CT can achieve a greater distance up to 500 ft. Call Simpson Technical Support for the details.