Current Transformer Ratios

Changing Current Transformer Ratios

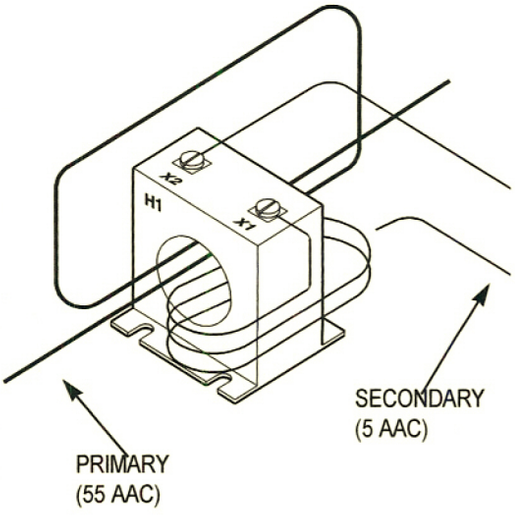
The actual current ratio may be changed from the nameplate ratio by wrapping the primary and/or secondary leads through the window opening.

$$\text{ACTUAL TURNS RATIO} = \frac{\text{NAMEPLATE RATIO} \pm \text{NUMBER OF SECONDARY TURNS THROUGH WINDOW OPENING}}{\text{NUMBER OF PRIMARY TURNS THROUGH WINDOW OPENING}}$$

- \- Wire from X1 terminal is routed through the H1 side
- \+ Wire from X1 terminal is routed through the side opposite the H1 side (H2 side)

Examples

This illustration shows how a current transformer with a nameplate turns ratio of 125:5 can be rescaled to operate as a non-standard 55:5 ratio transformer.



WHERE:

Nameplate ratio = 125 (125/5)

Number of secondary turns through window = - 3

Use -3 because the secondary wire is routed from the X1 terminal first through the H1 side.

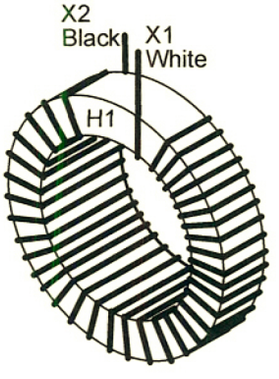
Use + if the wire was routed first through the side opposite the H1 side.

Number of primary turns through window = 2

$$\frac{\frac{125}{5} - 3}{2} = 11$$

TURNS RATIO = 11:1

CURRENT RATIO = 55:5



This illustration shows the internal construction of a current transformer. The outside face of the transformer is identified as H1. The opposite face is identified as H2. The secondary leads are identified as X1 and X2.

Current flowing out of terminal X1 will have the same polarity as current flowing into terminal H1.