**Full load current for a 30MVA, 11.5 kV Y/69 kV ∆ power transformers**

CT ratio =

Then CT secondary current, 2.51A

Since 11.5 kV side is star connected, CT secondaries will be delta connected.

Hence current fed into pilot wire from 11.5 kV side CT secondary’s is √3×2.51=4.35A

CT secondary of this side is connected in Y; hence current in CT secondary is equal to the current in the pilot wires. CT secondary should be 4.35A

So, CT ratio 57.7; select a CT ratio of 60 secondary current is 5A; so, primary current=60×5=300A. Therefore, CT on 69kV ratio is 300/5.

* IS1:  The basic differential current setting
* K1:  The lower percentage bias setting
* IS2:  The bias current threshold setting
* K2:  The higher percentage bias setting
* The inputs to this component are the magnitudes of the two current signals **I1M** and **I2M**, along with the corresponding phase values **I1P** and **I2P**.
* The tripping criteria can be formulated as:
* CASE 1:

4.4 < 4.5

6 > K1\*4.4 + 0.2

* CASE 2:

* The relay output will be '1' only if the trip condition is satisfied for more than the 'hold time' specified in the parameters.