Applications Notes

Application #1   Monitoring Loads 300 Amps or Less


A.C. Power Supply

CT   Max Load 300 Amps

Power Supply
24 Vdc ± 10%

Receiver
(R_L)

Application #2   Monitoring Loads from a Current Transformer Secondary

37000

From 5A Secondary of
Current Transformer (CT)

Power Supply
24 Vdc ± 10%

Receiver
(R_L)
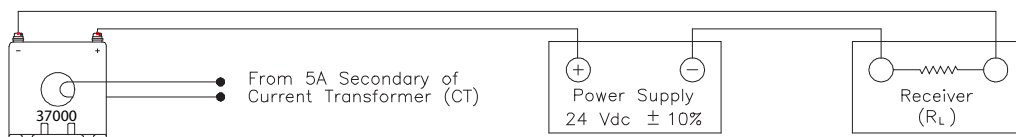
Example

When used with a 2000:5 CT $I_{in} = 2000 \times \left(\dfrac{I_o - 4}{16}\right)$

If $I_o = 10mA$ then $I_{in} = 2000 \times \left(\dfrac{10 - 4}{16}\right) = 750$ amps

Application #3   Energizing multiple transducers from a single power supply

CT

Receiver
(R_L)

Power Supply
24 Vdc ± 10%

CT

Receiver
(R_L)

CT

Receiver
(R_L)
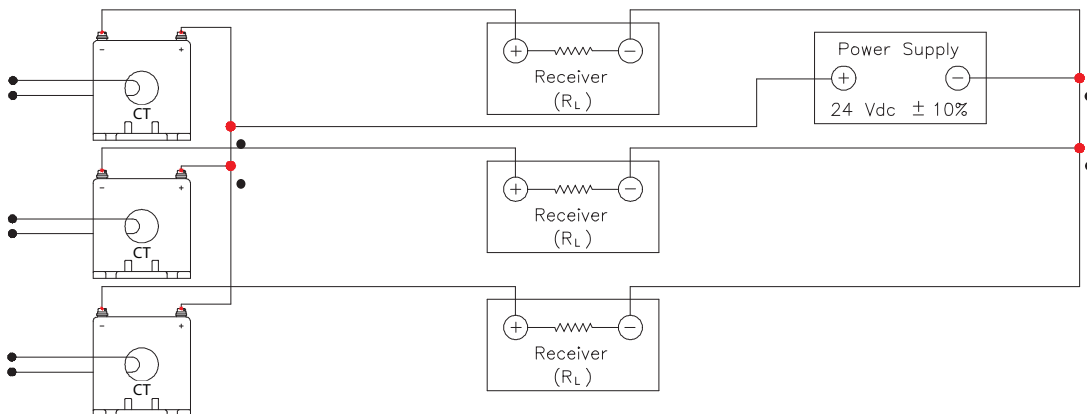
Application

Calculating I_{in} = = ac Amps measured

I_o = mA dc out of PCL

Rated Input   CT Primary Rating (when monitoring a CT)
Rated Input   PCL Primary Rating (when monitoring direct)

Where: $I_{in} = $ Rated input X $\left(\dfrac{I_o - 4}{16}\right)$

NOTE: Output current of each CT is limited to 30mA max. From this the required by using capacity of the D.C. supply can be calculated by multiplying the total number of CT's times 0.03A to find the maximum requirement output capacity of the supply.

It is possible to achieve an output close to full scale increase output resolution by using multiple turns through the window of the CT. The following equation would apply:

$$I_{in} = \frac{\text{Rated input Amps}}{\text{No. of Turns}} \times \left(\frac{I_o - 4}{16}\right)$$

EXAMPLE: A 37000 5 is used with two turns and is monitoring a 2A load.

If $I_o = 16.8$ mA then $I_{in} = \dfrac{5}{2}$ X $\left(\dfrac{16.8 - 4}{16}\right) = 2$ Amps