- **Product Name : 20 AMP. CURRENT TRANSFORMER**
- **Model : SET2106-2500-20A**
- **Product Type : CURRENT TRANSFORMER**
- **Features :**
  - **Designed and developed as per European Standards IEC : 62053-21 / IS: 13779**
  - **Current Transformer with PC Housing for better insulation and environmental protection.**
  - **Variants available in Self Wire (Flying Leads) or PCB Mounting Type CT.**
- **Applications:**
  - **Energy Meters**
  - **Electronic Circuit Breaker**
  - **Current Sensors**
  - **Motor Speed Controllers**
- **Specifications:**

1) **Basic Primary Current (I_b) : 1 Amp.**
2) **Maximum Primary Current (I_{max}) : 20 Amp.**
3) **Secondary Current : 8 mA.**
4) **Winding Ratio : 1:2500**
5) **Frequency : 50 Hz**
6) **Accuracy Class : 1.0**
7) **Recommended Burden Resistance (Ru) : 125 Ohms @ Vout = 1 Volts. Maximum Value: 440 Ohms. (As per Eqn. R = Vct X N / Ip)*.**
8) **Recommended Burden Resistance (Ra) : Maximum Value: 917 Ohms. For Analog Interface using bridge rectifier and bulk capacitor.**
9) **Insulation – Pri & Sec : 5000V**
10) **Insulation – Pri,Sec & Earth : ≥ 1000 MΩ**
11) **Operating & Storage Temp. : -40°C ~ +85°C**
12) **Humidity : ≤90%**
13) **Mounting Type / Housing (Optional) : Self (Flying) Wire-Without Dabbi / Self (Flying) Wire-With Dabbi / PCB Mounting-With Dabbi.**
14) **Dimensions (I.D. X O.D. X H in mm.) : (Without Dabbi)- 10 X 28.5 X 23.3 / (With Dabbi)- 29.5 X 26.5 X 12**
15) **Application :**

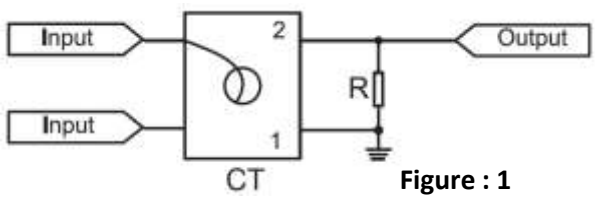

Figure : 1

To ensure optimum performance and accuracy it is not recommended to use method as per Figure 1 for an output voltage above 1V. For Vo >1V secondary burden resistance value increases, as a result the ratio error and phase error of CT will increase, the linearity will decrease, and the linearity range will be narrowed down, and will even cause saturation and output waveform distortion. For all practical purposes ;here the resistance R should have low temperature drift 50PPm.

In order to increase the load capacity of CT Secondary one can connect CT secondary output to the operational amplifier I/V converting circuit shown in Figure - 2. Here the CT works on zero load state. One can obtain desired output voltage(Vo) value by adjusting the value of feedback resistor R. The capacitance C and adjustable resistor r are used to compensate phase shift, to get the required compensation accuracy by adjusting the compensation resistor r value. When there is no need to compensate phase shift, the capacitance C and adjustable resistor r can be disconnected. Recommended Parts: IC: OP07, DIODES 1 & 2: 1N4148, C1: 10uF.

1. The value of feedback resistor R: Feedback resistor R= Vo/Is. Where Is = Iprimary / N(Ratio)
If the output voltage needs to be very accurate, we can choose value of R that is slightly smaller than Vo/Is and connect an adjustable resistor in series to adjust finely to get the required accuracy.

2. The value of capacitance C and adjustable resistor r: The empirical value of C is usually between 0.01~0.033μF.
If the C is 0.033μF, then r = 95 x sqrt[(22R/Φc) - 1]
If the C is 0.022μF, then r = 143 x sqrt[(15R/Φc) -1]
And the unit of feedback resistor R is KΩ; Φc is the phase error of rated point when the CT is in zero load state, the unit is minute; the unit of counted compensation resistor r is KΩ.

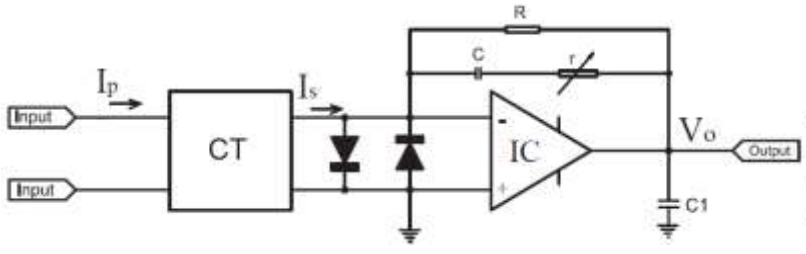

Figure : 2 (I to V)

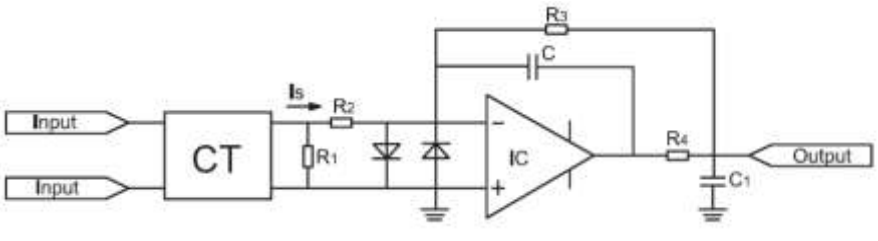

Figure : 3 (V to V)

Specifications subject to change without prior notice.