

## **Frequently Asked Question on Magnelab Standard Series**

**The following is applicable to the SCT (split-core Transformer) and UCT (solid-core Transformer) series products unless otherwise specified**

**Q- Can an SCT-0750-005 Current Sensor be used on a 30, 50 or even 200 Amp circuit?**

*A- Magnelab SCT-0750 Current Transformers can function safely from zero to 200 Amps. A 5 Amp unit will have an output of 0.333 Volt at 5 Amps and the same unit used at 200 Amps will have an ideal output of 13.33 Volts. The temperature rise at 200 Amps will be only a few degrees due to low current in the secondary winding. Therefore, an SCT-0750-005 (5 Amp unit) could be used at 200 Amps since the core does not saturate and the temperature increase is minimal.*

**Q- What is the linearity of Magnelab Current Sensors?**

*A- Magnelab current sensors provide an output voltage proportional to the current input. For example, the SCT-1250-600 will have an output of 0.111 Volt at 200 Amps, and 0.333 Volt at 600 Amps, and output of 0.444 Volt at 800 Amps. Magnelab guaranties that the actual (measured) output voltage will be within one percent of calculated output voltage from 10% to 130% of rated current (from 60 Amps to 780 Amps).*

**Q- What is the maximum length of black and white lead wires?**

*A- The current passing through the standard lead wires of the Magnelab current sensors very low, therefore, there is insignificant voltage drop due to the length of lead wires. In practice, the units have been tested up to 7,500 feet and the output voltage and phase angle shift were within the listed specifications.*

**Q- What does UL say about the heat generated from Magnelab current sensors?**

*A- UL file indicates “presence of these transformers within equipment has negligible heating effects.”*

**Q- What method was used to measure the temperature?**

**A-** *UL file indicates “All temperatures were measured by thermocouples. Due to the insignificant temperature rise, measurements by the change-of-resistance method were not deemed necessary.”*

**Q- Can I use the SCT and UCT series in an outdoor environment?**

**A-** *The SCT and UCT series is not designed for outdoor use.*

**Q- What is the expected temperature rise of the SCT and UCT series?**

**A-** *Magnelab UL file indicates “These devices have been investigated for ambient temperatures not exceeding 55° degree Celsius. The rise on the winding at 55°C ambient was 30°C or less.” Magnelab internal testing has shown that the temperature rise is only a few degrees at the maximum current.*

**Q- What is the main difference between the SCT and UCT series and a 5 Amp output transformer (current-to-current)?**

**A-** *The 5 amp current-to-current:*

- *Requires a resistive network provided by the customer to convert the current to a usable voltage*
- *Can not operate output above 5 amps without heating and other performance issues*

*The 0.333 Voltage output SCT and UCT:*

- *Burden resistor is already installed in the current sensor*
- *Can be operated at several times the rated primary current without over-heating or other performance issues*

**Q- What are the primary amperage maximums for various SCT sizes?**

**A-** *Magnelab UL listing provides that the units will not get above 55°C at the following currents regardless of rated current indicated on the unit itself:*

- *SCT-0750 Series up to 200 Amps*

- *SCT-1250 Series up to 600 Amps*
- *SCT-2000 Series up to 1,500 Amps*
- *SCT-3000 Series up to 3,000 Amps*

**Q- What is the temperature range for the SCT and UCT products?**

**A-**

- *Operating Temperature Range: -10 to 55 deg C*
- *Storage Temperature Range: -40 to 70 deg C*

**Q- What are the actual weights of each of the SCT sizes?**

**A-**

- *SCT-0750 Series weigh approx. 0.24 lbs*
- *SCT-1250 Series weigh approx. 0.40 lbs*
- *SCT-2000 Series weigh approx. 1.20 lbs*
- *SCT-3000 Series weigh approx. 2.0 lbs*
- *UCT-0300 series weigh approx. 0.20 lbs*
- *UCT-0500 series weigh approx. 0.20 lbs*
- *UCT-0750 series weigh approx. 0.25 lbs*
- *UCT-1250 series weigh approx. 0.30 lbs*

**Q- I'm trying to decide between the UCT-1250-300 and UCT-1250-400. We would not exceed 130% of 300. Is there any reason to use the 400? (temp rise, high ambient). What's the allowable temp range of these with and without derating?**

**A-** *Magnelab UCT-1250-XXX will work with stated specifications up to 520 Amps regardless of what current rating we choose. These models use the same core and the same winding. Only the burden resistor changes. Therefore, one could use UCT-1250-070 which is a 70 Amp unit and use it up to 520 Amps and the unit will not over heat. The only difference is that the 70 Amp unit output voltage will go to 2.47 Volt at 520 Amps. The only consideration is whether the rest of the control circuitry could handle 2.47 Volts input from the UCT.*