Rogowski Coil Current Sensor

The YUANXING iProbe Series of flexible, split-core Rogowski Coil current sensors are designed for fast and easy installation on existing primary conductors/BUS bars. The split coil design permits the non-contact AC current or DC current pulse measurement without requiring that the primary conductor be taken offline and disconnected for the current sensor installation. This method provides for the safe, easy, and portable measurement of current.

A current sensor that is based upon the Rogowski Coil sensor principle offers significant advantages over the standard magnetic core current transformer products.

- The sensor does not incorporate a magnetic core which can saturate when the primary conductor current significantly exceeds the rated primary current of the sensor. Magnetic core saturation is the point at which the incremental increase in magnetic flux is not reflected in a proportional increase in secondary signal output.
- Lacking a magnetic core, energy is not stored in the sensor. Opening the sensor while the primary conductor is live will not result in the release of stored energy.

Features:
Flexible loop able to accommodate different primary conductor cross section configurations.
Wide AC measurement operating range and DC pulse measurement.
Wide frequency response range.

Specifications:
Measurement Range: 0.1A to 300kA
Frequency: 1 Hz to 20MHz
Operating Voltage: 600V RMS maximum
Dielectric Withstand: 5,000 VAC (coil)
Operating Temperature: -25°C to +70°C

Construction:
- Coil – Thermoplastic rubber coating
- Coupling – PA6, polyamide (Black), flame retardant rating UL 94 V-0

Output Cable: 2.0m (6.6FT), 600V
- PVC insulated reinforced coaxial cable
- PVC insulated jacket cable with shielding.

Cable Termination: BNC connector or Stripped & tinned
IP66
CAT III, 600V
Safety Standards: EN61010-1, EN61010-2-032
RoHS Compliant.

Performance:
Sensor Output – 7.3mm: 0.041mV/ A @ 50Hz
- 0.049m V/ A @ 60Hz
Sensor Output – 12mm: 0.088mV/ A @ 50Hz
- 0.105m V/ A @ 60Hz
Accuracy: 0.5%
Linearity: 0.2%
Primary Conductor Position Accuracy: ± 1.5%
Temperature Drift: ± 0.08%/ °C maximum
(-25 °C to +70 °C)
### Available Models:

<table>
<thead>
<tr>
<th>Model</th>
<th>Coil OD</th>
<th>iProbe Opening</th>
<th>Secondary Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>iProbe-R2060</td>
<td>7.3mm</td>
<td>60mm/ 2.36”</td>
<td>0.041mV/ Ampere</td>
</tr>
<tr>
<td>iProbe-R2080</td>
<td>7.3mm</td>
<td>80mm/ 3.15”</td>
<td>0.041mV/ Ampere</td>
</tr>
<tr>
<td>iProbe-R1180</td>
<td>12mm</td>
<td>180mm/ 7.09”</td>
<td>0.088mV/ Ampere</td>
</tr>
<tr>
<td>iProbe-R1200</td>
<td>12mm</td>
<td>200mm/ 7.87”</td>
<td>0.088mV/ Ampere</td>
</tr>
</tbody>
</table>

Custom opening sizes can be designed and manufactured to meet the specific application requirements. Please provide the specific application requirements to Application Engineering at engineering@tichenassociates.com or at the address below.

### Accuracy Relative to Primary Conductor Position:

<table>
<thead>
<tr>
<th>Conductor Position</th>
<th>Typical Error(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjacent to the inside coil edge</td>
<td>&lt; 1%</td>
</tr>
<tr>
<td>Adjacent to the clip together mechanism</td>
<td>&lt; 2%</td>
</tr>
<tr>
<td>Central in the Rogowski loop</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

### Options:

Voltage integrator option is available with a variety of power supply options.

**Application Notes** are available by contacting Application Engineering at engineering@tichenassociates.com or at the address below.

**Technical Support:** For a no obligation technical evaluation of specific performance requirements, please provide the specific requirements to ApplicationEngineering@tichenassociates.com or the address below.