Combined Voltage and Current Post Insulator Sensors

Lindsey combined voltage and current post insulator sensors consist of both high accuracy (better than 1%) current and voltage sensors contained in a body with full electrical and mechanical post insulator ratings. All models provide excellent harmonic response for voltages, and all current sensors except for the Multicore style are flat though the 40th harmonic.

This sensor is available in four terminal packages:

- **Multicore-style** design allows the conductor to be lifted into the sensor, eliminating the need to cut the conductor or make a jumper. This style sensor is not recommended for applications requiring accurate harmonic current measurements.
- **Busbar-style** design is fitted with standard 2- or 4-hole NEMA pads, ideal for many substation applications.
- **Tube-type** design for where a conductor can be threaded through and clamped to the stainless steel tube; practical for many switchgear and substation applications.
- **Clamp-top style** eliminates the need to cut the phase conductor while providing flat-frequency response up the 40th harmonic. Clamp-top style sensors can be used in place of any horizontal or vertical line post insulator.

### Ordering Table

**Part Number Sequence 96AB/CDEFGH**

Where:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Options</th>
</tr>
</thead>
</table>
| A    | Insulation Class | 5=15kV (110kV BIL)  
6=25kV (150kV BIL)  
7=35kV (200kV BIL)  
8=46kV (250kV BIL) |
| B    | Leakage Distance | 0=Standard  
13" for 15kV, 20" for 25kV,  
29" for 35kV, 33" for 46kV  
330mm for 15kV, 510mm  
for 25kV, 740mm for 35kV,  
840mm for 46kV |
| C    | Top Configuration | C=Clamp-top/Tube-Top  
E=Multicore (Only available with 600A/10V output option)  
S=Substation/Busbar |
| D    | Current Output Signal | 1 = 600A:10V (required when selecting Multicore top)  
2 = 600A:6V  
3 = 600A:5A  
4 = 600A:1A  
5 = 300A:5A  
6 = 300A:10V  
X = Special |
| E    | Voltage Divider Ratio | 1=1400:1  
2=2200:1  
3=3300:1  
4=10,000:1  
5=60:1  
6=120:1  
7=166:1  
8=200:1  
X=Special |
| F    | Clamp-Option | 0 = No clamp top choke  
C = Clamp-top choke (required when selecting clamp-top option) |
| G    | Terminal Option | 0 = 1.875” ID. stainless steel tube  
1 = 1.875” ID. stainless steel (SS) tube with SS bonding clamp  
2 = Aluminum Bus Bar, 2 Hole Pads  
3 = Aluminum Bus Bar, 4 Hole Pads  
4 = Std. Conductor Keeper (required when selecting Multicore top) |
| H    | Connector | Blank = Standard ITT Cannon Connector  
C = Cast-in cable  
G = 20” Cable with Amphenol Connector & Strain Relief  
A = Amphenol Connector |

Example: 9660/E1204 is a 25kV, standard leakage distance, Multicore top style, with 600A:10V current and 2200:1 voltage output ratios, and supplied with a standard Cannon connector.
Post Insulator Sensor Specifications

**ELECTRICAL RATINGS:**

<table>
<thead>
<tr>
<th></th>
<th>15kV</th>
<th>25kV</th>
<th>35kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSULATION CLASS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMPULSE (BIL)</td>
<td>110kV</td>
<td>150kV</td>
<td>200kV</td>
</tr>
<tr>
<td>LEAKAGE DISTANCE (in.)</td>
<td>15.8</td>
<td>24.5</td>
<td>36.5</td>
</tr>
<tr>
<td>DRY ARC DISTANCE (in.)</td>
<td>8.8</td>
<td>12.6</td>
<td>17.2</td>
</tr>
<tr>
<td>OVERALL HEIGHT (in.)</td>
<td>13.2</td>
<td>16.6</td>
<td>21.8</td>
</tr>
<tr>
<td>WITHSTAND* (60Hz, 1 min.)</td>
<td>34kV</td>
<td>40kV</td>
<td>50kV</td>
</tr>
<tr>
<td>CORONA (extinction)</td>
<td>11kV</td>
<td>19kV</td>
<td>26kV</td>
</tr>
<tr>
<td>LOW FREQ. DRY FLASHOVER</td>
<td>70kV</td>
<td>100kV</td>
<td>125kV</td>
</tr>
<tr>
<td>LOW FREQ. WET FLASHOVER</td>
<td>50kV</td>
<td>70kV</td>
<td>95kV</td>
</tr>
</tbody>
</table>

*NOTE: Withstand test is not performed on sensors with a voltage divider. Specify 50Hz, 60Hz.

**CURRENT SIGNAL OUTPUT:**

- RATIO: 600 Amps: 10 Volt
- OUTPUT BURDEN / LOAD: Calibrated for a 10,000 or greater load
- ACCURACY: +/- 1%
- PHASE SHIFT: 0 degrees nominal, +/- 1.5 degrees
- OPEN CIRCUIT VOLTAGE: 10 Volts at 600 Amps line current

**VOLTAGE SIGNAL OUTPUT:**

- OUTPUT IMPEDANCE: Calibrated for a 1 meohm load
- ACCURACY: +/- 1% (+/- 0.5% available upon request)
- PHASE SHIFT: 0 degrees nominal, +/- 1.5 degrees

*Calibration of current and voltage signals is virtually unaffected by conductor material, size temperature, armor rod, adjacent phases, line angle or insulator contamination.

**MECHANICAL:**

<table>
<thead>
<tr>
<th></th>
<th>15kV</th>
<th>25kV</th>
<th>35kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSULATION CLASS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CANTILEVER STRENGTH (Ult. lbs.)</td>
<td>2,800</td>
<td>2,800</td>
<td>2,800</td>
</tr>
<tr>
<td>WEIGHT (lbs.)</td>
<td>37</td>
<td>48</td>
<td>59</td>
</tr>
<tr>
<td>SHIPPING WEIGHT (lbs.)</td>
<td>48</td>
<td>58</td>
<td>64</td>
</tr>
</tbody>
</table>

**OPERATING TEMPERATURE:**

Temperature range: -40°C to +65°C

**CONDUCTOR DIAMETER RANGE:**

The two sided keeper is made of aluminum and can accommodate a 0.25 inch to 1.25 inch diameter conductor.

**BASIC CONSTRUCTION:**

The Multicore Sensor is molded from POLYSIL, a high dielectric strength, anti-tracking polymer developed by Lindsey Manufacturing Company under EPRI contract.