

# SIDEWINDER® - CURRENT SENSOR

PA3209NL Series



- ⊕ Dynamic Range from 0.1 to 1000 Amps
- ⊕ Meets ANSI C12.20 Accuracy Class 0.2
- ⊕ Meets IEC 62053-21 class 1
- ⊕ Phase error < 0.05 degree
- ⊕ Bandwidth 100KHz
- ⊕ Immune to external AC magnetic fields
- ⊕ Immune to DC current & magnetic field
- ⊕ Low temperature coefficient
- ⊕ Patent pending

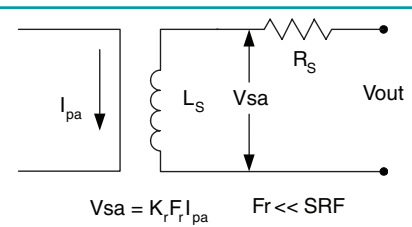
Electrical Specifications at 25°C Temp Range -40°C to 130°C							Actual Secondary Output Voltage (V <sub>sa</sub> )	
Part Number	Accuracy Class <sup>3</sup>	Kr <sup>4</sup> (μΩ/Hz typ)	Pri-Sec Isolation (V min)	Ls <sup>5</sup> (mH typ)	Rs <sup>6</sup> (Ohms typ)	SRF <sup>7</sup> (Hz typ)	@ 50 Hz (μV/A) <sup>1</sup>	@ 60 Hz (μV/A) <sup>1</sup>
PA3209NL	0.2	9.26	6,000	3.0	96.0	80,000	463	556

EQUATIONS:  $V_{sa} = K_r F_r I_{pa}$   
 $F_r \ll SRF$

**NOTES:**

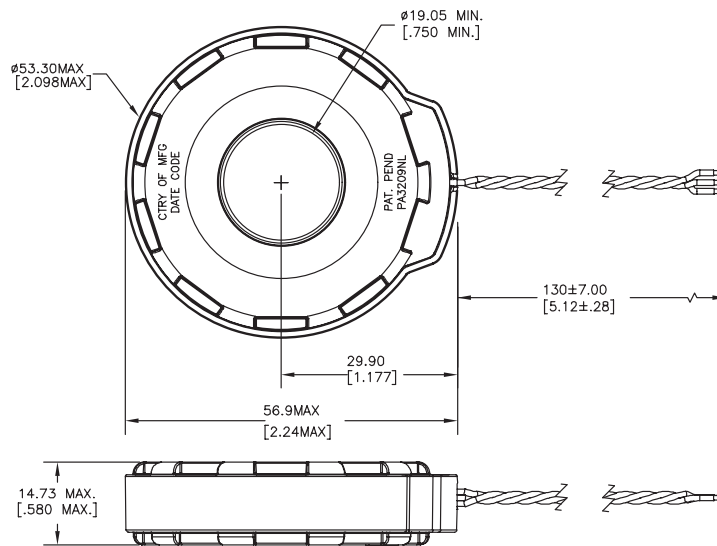
1. Output Voltage is proportional to the derivative (di/dt) of the input current based on the Rogowski Coil principle.
2. All current and voltages assumed to be sinusoidal waveforms at Fr, the constant rated frequency in Hz, measured as RMS values.
3. Accuracy Class per IEC 60044-1 Table 11 where:
  - Percentage current error =  $((K_r \cdot F_r \cdot I_{pa} - V_{out}) / V_{out}) \times 100$
  - Phase displacement = the difference between the primary current (I<sub>pa</sub>) phase vector and the (secondary voltage (V<sub>out</sub>)) phase vector minus 90 degrees), in minutes
4. Kr = Rated transformation constant
5. Ls = Secondary winding inductance
6. Rs = Secondary winding resistance
7. SRF = Self Resonate Frequency
8. I<sub>pa</sub> = Actual primary current
9. V<sub>sa</sub> = Actual secondary output voltage

**Low Frequency Equivalent Circuit**



**Mechanical**

**PA3209NL**



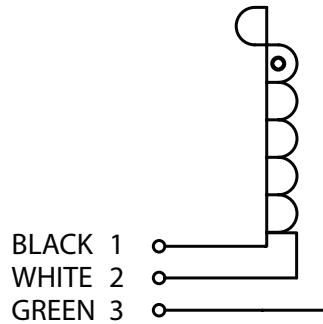
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## Schematic

PA3209NL



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