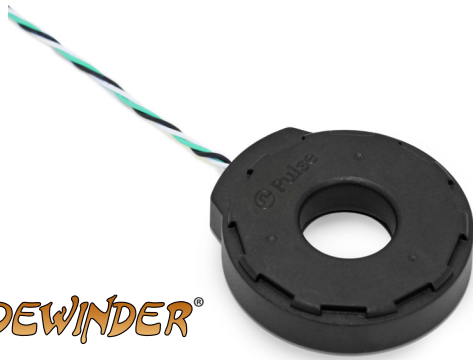


# SIDEWINDER® - CURRENT SENSOR

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

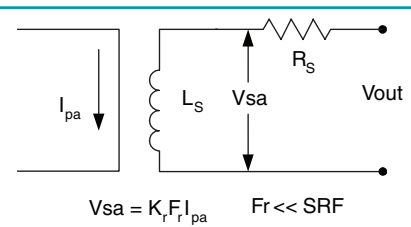
| Electrical Specifications at 25°C Temp Range -40°C to 130°C |                             |                             |                           |                          |                            |                           | Actual Secondary Output Voltage (V <sub>sa</sub> ) |                             |
|---|-----------------------------|-----------------------------|---------------------------|--------------------------|----------------------------|---------------------------|--|-----------------------------|
| 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:**

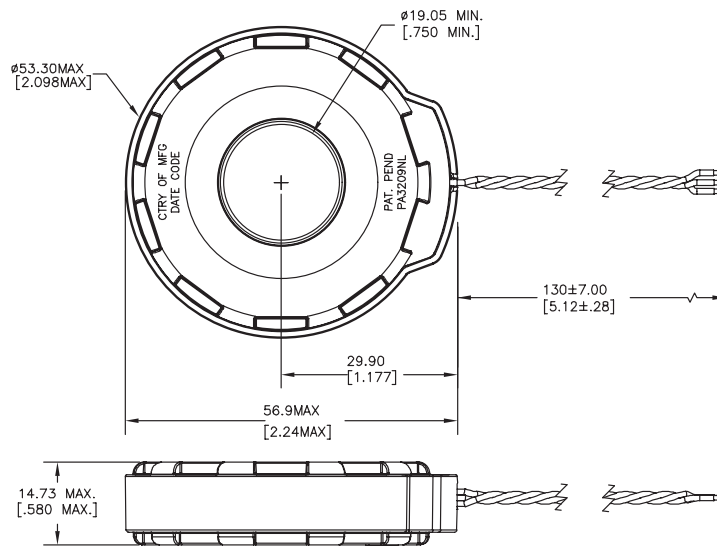
1. Output Voltage is proportional to the derivative (di/dt) of the input current based on the Rogowski Coil principle.
2. All current and voltages assumed to be sinusoidal waveforms at F<sub>r</sub>, the constant rated frequency in Hz, measured as RMS values.
3. Accuracy Class per IEC 60044-1 Table 11 where:
  - Percentage current error = ((K<sub>r</sub>•F<sub>r</sub>•I<sub>pa</sub> - V<sub>out</sub>) / V<sub>out</sub>) x 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. K<sub>r</sub> = Rated transformation constant
5. L<sub>s</sub> = Secondary winding inductance
6. R<sub>s</sub> = 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



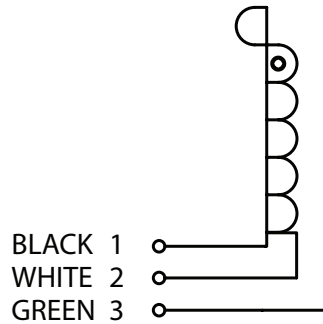
# SIDEWINDER® - CURRENT SENSOR

PA3209NL Series



## Schematic

PA3209NL



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