

RFSZ Flexible Rogowski coil



Introduction to Rogowski coil

The Rogowski coil also called a differential current sensor, is an "empty core" toroidal coil arranged around a conductor, so that the alternating magnetic field generated by the current induces a voltage in the coil. The coil is actually a current transformer coupled to the conductor under test, and the voltage output directly from the coil is proportional to the rate of change of the current.

For example: @50Hz/1kA $V_{out}=85mV$, @60Hz/1kA $V_{out}=85*60/50=102mV$.

If you want to obtain the current waveform or frequency independent current value, you need to add an integral circuit to achieve 90° phase shift compensation and frequency equalization.

RF series is a current sensor based on the principle of Rogowski coil. Its light weight and low price are available in different sizes, can also be ordered according to the customer's design requirements. No magnetic saturation and with a shielding layer, it resists the influence of external magnetic fields, so stable measurements can be achieved from low currents to hundreds of kA. Provides accurate measurements in smart meters, industrial motor control and power monitoring applications.

Systems using an ADC chip (ADS131M04) that supports the Rogowski coil principle or a power metering chip (ADE7753) are more advantageous.

We offer integrators such as 4-20mA, 0-5V, 0-1A, 333mV for more use cases.

Product picture print for reference only, subject to the actual product



Electrical parameters: (The following parameters are typical values and actual values will be subject to product testing)

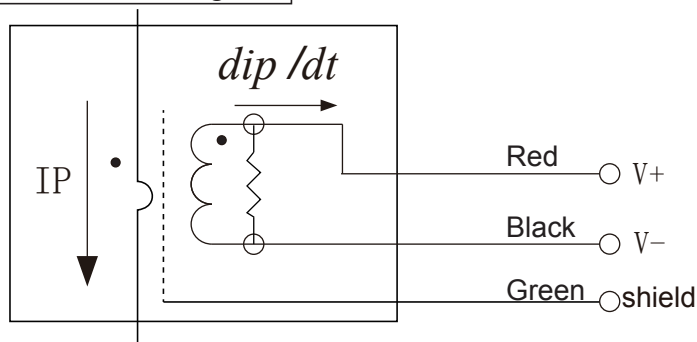
Features

- Light weight and flexible installation
- Wide bandwidth range
- No lag, no saturation
- No danger of second open-circuit
- Good linearity
- Multiple sizes can be customized

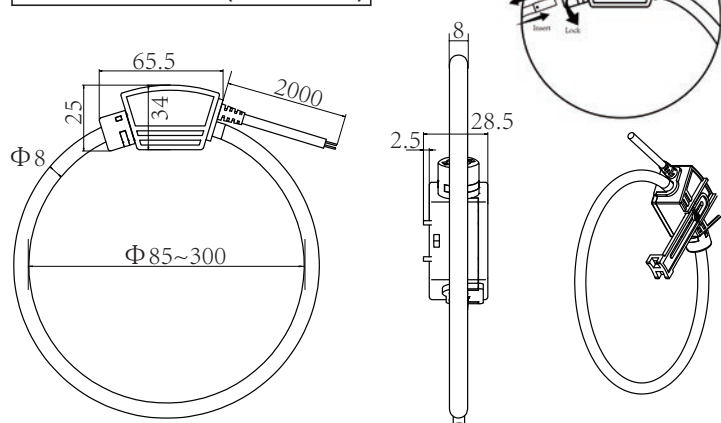
Application

- Measuring instrument, laboratory instrument
- Power monitoring system
- DC ripple measurement
- Harmonic and transient monitoring
- Power meter
- Power analyzer sensor

Connection diagram



Dimensions: (in:mm±1)



Notice:

1. According to the Rogowski coil principle, output voltage is proportional to the derivative of the input current (di/dt).
2. The output voltage is a constant rated frequency sinusoidal waveform in Hz, measured by the RMS value.
3. $V_{out} (RMS) = A_{in} (RMS) \times \text{Hertz} \times K \times 10^{-6}$
the K depends on the manufacturer, for 50mV model the K value is 1.7.

Warning:

Do not apply pressure to the coil by any form of mechanical force (e.g., twisting, piercing, excessive pressure, excessive bending, etc.), which will reduce the accuracy of the device greatly.