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 Vout=85mV, @60Hz/1kA Vout=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 inf--luence 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)

F	ea	itu	re	s

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

Power monitoring system

DC ripple measurement

Harmonic and transient monitoring

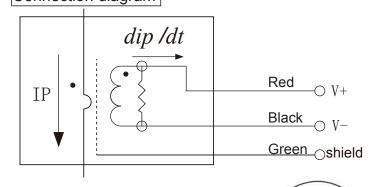
Power meter

Power analyzer sensor

Application

Measuring instrument, laboratory instrument

Connection diagram



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	Model	RFSZ-80-100	RFSZ-105-100	RFSZ-150-100	RFSZ-180-100	RFSZ-240-100	RFSZ-300-100		
	Coil length	293mm	363mm	493mm	593mm	723mm	943mm		
	Window diameter	80mm	105mm	150mm	180mm	240mm	300mm		
	Weight	124(±5)g		150(±5)g	155(±5)g	165(±5)g	176(±5)g		
	Coil internal resistance	210 (±10) Ω	250 (±10) Ω	330 (±10) Ω	390 (±10) Ω	470 (±10) Ω	550 (±10) Ω		
ıt	Rated current	≤500KA							
	Accuracy	<0.5% 25°C							
	Position error			±1	%				
	Output voltage	100mV/KA@50Hz 120mV/KA@60Hz							
	Frequency range								
	Linearity	<u> </u>	value)						
	Phase shift								
	Spec. of signal line	LIYC	Y (TP) Sh	Shielded twisted-pair cable 2×0.25 mm ²					
	Length of signal line	2m (Acquiesce)							
	Working temperature	1 000 1000							
	Storage temperature								
	Working voltage	CAT IV							
	Dielectric strength 7400VRMS/1min								
	Material	TPR UL97-V0							
	Waterproof grade								

Dimensions: (in:mm±1) $\Phi 85 \sim 300$

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. Vout (RMS)=Amps(RMS) \times 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 reduces the accuracy of the device greatly.