

Rogowski coil also called differential current sensor, it is a "hollow" circular coil, arranged around the conductor, so that an alternating magnetic field generated by the current induces a voltage in the coil. The coil is actually a transformer coupled to the conductor under test, and the voltage directly output from the coil is proportional to the rate of change of current, e.g. @50Hz/1kA $V_{out}=85mV$, @60Hz/1kA $V_{out}=85*60/50=102mV$. If you want to obtain the current waveform or current value that doesn't matter to frequency also need to add the integral circuit to achieve 90° phase shift compensation and frequency equalization.

RF series is a flexible current sensor based on Rogowski coil principle, which is in small size, light weight and easy to install and offers a choice of different sizes, which can also be customized design of the customer requires a special order. It has no magnetic saturation and a shielding layer to resist the influence of external magnetic field, so stable measurements can be achieved in the range of low current to hundreds of kA. The flexible rogowski coil is an extremely comfortable solution for current measurement, particularly suited to current monitoring and electrical retrofitting, can be used in many cases where a traditional current transformer (CT) is not available, or can replace it. Systems that use an ADC chips([ADS131M04](#)) or a power metering ICs([ADE7753](#)) that support the Rogowski coil principle are even more advantageous.

We provide 4-20mA, 0-5V, 0-1A, 333mV and other integrators suitable for more usage scenarios.

Features

- Light, flexible and easy to install
- Bandwidth range widely
- No hysteresis lag, no saturation
- The secondary open circuit no danger
- Excellent 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



RFSZ series flexible rogowski coil

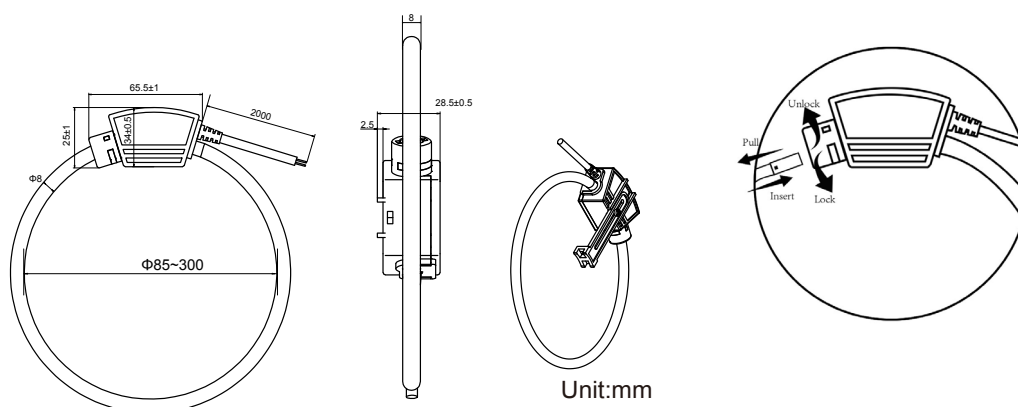
Specification

Model	RFSZ-80-85	RFSZ-105-85	RFSZ-150-85	RFSZ-180-85	RFSZ-240-85	RFSZ-300-85
	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 Size	80mm	105mm	150mm	180mm	240mm	300mm
Weight	124(±5)g	130(±5)g	150(±5)g	155(±5)g	165(±5)g	176(±5)g
Coil resistance	210(±10)Ω	250(±10)Ω	330(±10)Ω	390(±10)Ω	470(±10)Ω	550(±10)Ω
Rated current	≤500kA					
Accuracy	<0.5% 25°C					
Positioning error	±1%					
Output Voltage	85mV/kA@50Hz 102mV/kA@60Hz 100mV/kA@50Hz 120mV/kA@60Hz					
Frequency Range	10Hz to 20kHz					
Linearity	±0.2%					
Phase Shift	≤0.5°					
Connection cable Type	LIYCY(TP) Double shield 2 x 0.25 mm					
Connection cable	Normal 200cm (as required)					
Operating temperature	from -30°C to +80°C					
Storage temperature	from -40°C to +80°C					
Working voltage	1000 VRMS CAT III 600 VRMS CAT IV					
Test voltage	7400 VRMS / 1 min					
Material	Thermoplastic rubber UL94-V0					
Protection degree	IP67					

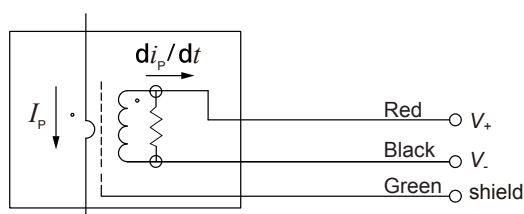
NOTES:

1. According to the Rogowski coil principle, the output voltage is directly related to the conductor (di/dt) of the input current.
2. The output voltages are sine waveforms of a constant rated frequency in Hz and are measured at RMS values.
3. $V_{out} (RMS) = Amps (RMS) \times Hertz \times K \times 10^{-6}$, where K depends on the manufacturer, 85mV model K value is 1.7.

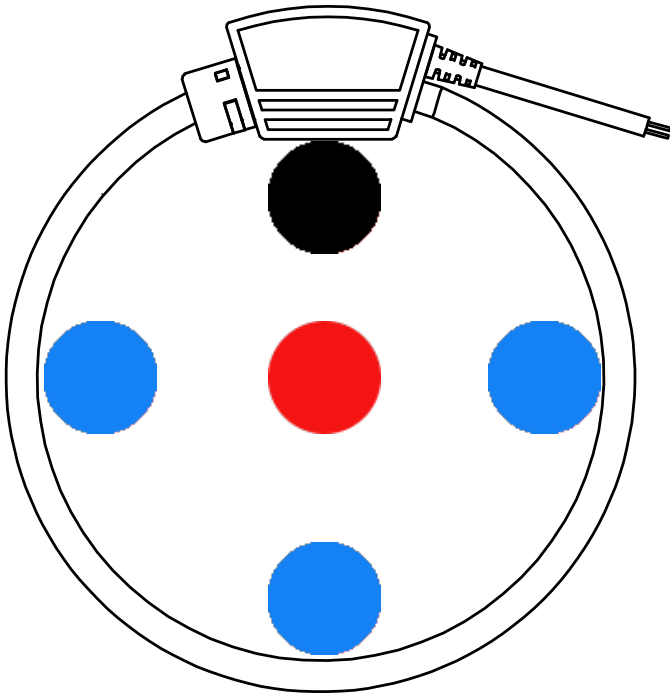
Dimensions






Connection



Position sensitivity



Conductor Position	Typical Error(%)
	$\pm 0.5\%$
	+0.3%
	-0.3%

WARNING!

Do not stress the coil by applying any kind of mechanical force (ie. twisting, puncturing, excessive pressure, tight bending, etc.) which will dramatically degrade the device's accuracy.