RFSZ Flexible Rogowski coil

YHDC ®

Introduction to Rogowski coil

The Roche coil is also called a differential current sensor and it is an "empty Core" ring coil, Arrange a ring around the conductor, Thus 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 the current.For example :@50Hz/1kA Vout=85mV, @60Hz/1kA Vout=85*60/50=102mV.If you want to get current waveform or frequency independent current value,It is necessary to addintegral circuit to realize 90° phase shift compensation and frequency equalization.

The RF series is a current sensor based on the principles of Rogowski coils, It is light in weight and cheap in price and comes in different sizes, Can also according to customer design requirements for special order. Non-magnetic saturation and shielded against the effects of external magnetic fields allows stable measurements from low currents to hundreds of kA.Provides accurate measurements forsmart meters, industrial motor control and power monitoring applications.Systems using ADC chips (ADS131M04) or power metering chips (ADE7753) that support the principle of Rogowski coils are more advantageous.

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

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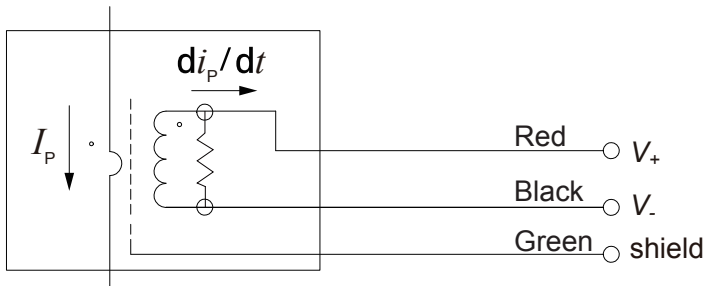
features

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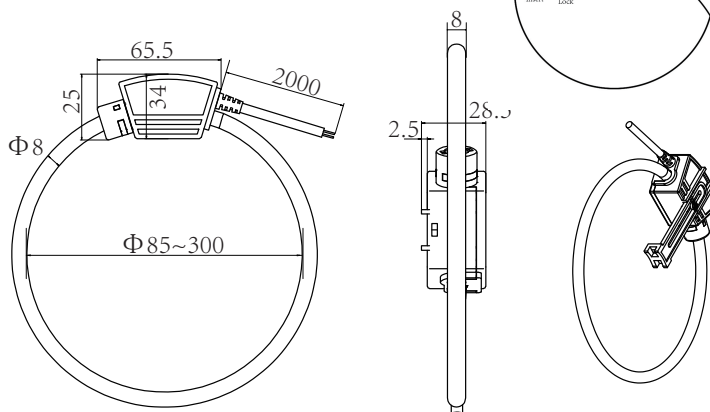Multiple sizes can be customized

application

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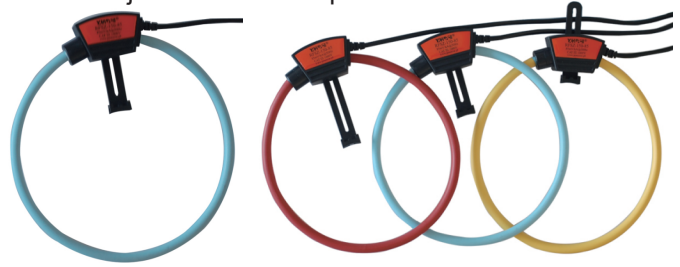Harmonic and transient monitoring
Power meter
Power analyzer sensor

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

Model	RFSZ-80-85	RFSZ-105-85	RFSZ-150-85	RFSZ-180-85	RFSZ-240-85	RFSZ-300-85
coil length	293mm	493mm	593mm	723mm	723mm	943mm
Window diameter	80mm	150mm	180mm	240mm	240mm	300mm
Weight	100~180g					
coil resistance	150~650 Ω					
Rated current	≤500KA					
accuracy	<5% 25℃					
position error	±1%					
output voltage	85mV/KA@50Hz 102mV/KA@60Hz					
Frequency range	10Hz~20KHz					
Linearity	±0.2% （10%~100%rated value）					
Phase shift	≤0.5°					
Specification of signal line	LIYCY(TP)Shielded double stranded cable					
Signal line length	2m （default）					
Working temperature	-30℃~+80℃					
Storage temperature	-40℃~+80℃					
Working voltage	1000VRMS CATIII/600VRMS CAT IV					
Electric strength	7400VRMS/1min					
material	TPR UL97-V0					
Protection grade	IP67					

Connection diagram

$d i_P/dt$

I_P

Red V_+
Black V_-
Green shield

Outline size: (in:mm±1)

65.5
2000
25
34
Φ8
Φ85~300

8
2.5
28.5

notice:

1.According to Rogowski coil principle, the output voltage is proportional to the derivative of the input current (DI/DT)。

2.The output voltage is a sinusoidal waveform of constant rated frequency in Hz, measured by RMS values.

3.Vout(RMS)=Amps(RMS)×Hertz×K×10^{-6},Where K depends on the manufacturer, the K value of 85mV model is 1.7.

warning:

Do not apply any form of mechanical force(For example, twisting, piercing, excessive pressure, excessive bending, etc) apply pressure to the coil,this greatly reduces the accuracy of the device.