

FR100R series Rogowski coil current sensor



I. Product Introduction

FR100R series Rogowski coil current sensor is a toroidal coil that is wound evenly over non-ferromagnetic material. It has no hysteresis effect, almost zero phase error, no magnetic saturation, and good linearity. The output signal is the differential of current vs. time. By integrating the output voltage signal, the input current can be truly restored, and its measurement current range can range from milliamperes to millions of amperes. Mainly used for AC leakage current, high current, high harmonic current, complex waveform current, transient inrush current, phase, electric power, power, power factor and other detection. With integrator, easy to integrate into other equipment, such as: electric energy meter field calibrator, multi-function energy meter, oscilloscope, digital multimeter, cable identification instrument, cable fault detector, double clamp grounding resistance tester, double clamp phase voltmeters, digital current recorders, etc., can measure and compare a variety of electrical parameters in an uninterrupted state.

FR100R flexible coil current sensor coil part without any exposed metal conductor, non-contact measurement, safe and reliable; it's small size, light weight, exquisite appearance, soft and flexible, suitable for narrow environments and cable intensive places; wide measurement range, high precision, reliability, wide response frequency bandwidth(0.1Hz-10MHz), users can customize coil length according to demand. Widely used in electricity, communications, meteorology, railways, oil fields, construction, measurement, research and teaching units, industrial and mining enterprises and other fields. Particularly suitable for industrial environments such as relay protection, thyristor rectification, frequency control, semiconductor switches, power electronics conversion equipment, arc welding and other serious signal distortion.

II. Model specification

Model Number	FR100R	FR200R	FR300R
Coil Length	315mm	630mm	950mm
Coil Inside Dia.	φ 100mm	φ 200mm	φ 300mm
Weight	80g	100g	120g

III. Technical Specification

Function	Test AC leakage current, high current, high harmonic current, complex waveform current, transient inrush current, phase, power, power, power factor, etc.
Test mode	Flexible CT: The output signal is the current-to-time differential. By integrating the output voltage signal, the input current can be truly restored.
Coil diameter	φ 8mm
Range	0A~10kA

Output	100mV/1kA(Optional integrator can be customized to other parameter output)
Resolution	0.1A
Accuracy level	$\pm 1.0\%$ FS (50Hz/60Hz); $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$, below 70%RH, the wire is at the center of the coil)
Phase error	$\leq 1^{\circ}$ (50Hz/60Hz; $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$)
Initial phase	90°
Output interface	BNC connector (optional audio plug, banana plug, bare wire)
Output line length	2m
Electric field interference	No hysteresis effect, no external electric field interference
Wire position	The tested wire is at the center of the coil, and the position error affects $\leq \pm 0.3\%$ FS
Response frequency	0.1Hz~10MHz
Line voltage	Tested below AC 1000V
Working temperature and humidity	$-20^{\circ}\text{C} \sim 50^{\circ}\text{C}$; below 80%rh
Storage temperature and humidity	$-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$; below 70%rh
Insulation strength	AC 2000V/rms(Both ends of the coil)
Suitable for safety regulations	IEC1010-1、IEC1010-2-032、pollution level 2、CAT IV 1000V
Random attachment	Sensor: 1 piece



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