

Rogowski AC Current Probes

FCP Series



Product Overview

ZLPROBE's FCP series Rogowski AC current probes deliver 2% high accuracy, covering frequencies from 0.1Hz to 30MHz and current levels from mA to kA, suitable for various testing scenarios from weak currents to high currents.

Featuring a flexible Rogowski coil design, these probes are lightweight, bendable, and easy to connect/disconnect. They can be routed into hard-to-reach positions where rigid probes cannot fit. With an insertion inductance of min. 2pH, the probes have negligible impact on the circuit under test.

Equipped with standard BNC outputs, they're easily connect to oscilloscopes, data acquisition systems, and digital multimeters for clear current waveform observation. Dual BNC outputs are available, providing identical waveforms for applications requiring dual-channel output.

FCP1608 series: Coil cross section $\varnothing$ 1.6mm, coil voltage 1kVpk, coil length* 80mm.

FCP40xx series: Coil cross section $\varnothing$ 4.0mm, coil voltage 5KVpk, coil length* 100/200mm.

FCP80xx series: Coil cross section $\varnothing$ 8.0mm, coil voltage 10KVpk, coil length* 300/600mm.

* Coil length are customizable on request.

Applications

- Measurement of power frequency (50/60 Hz) and higher-order harmonic currents.
- Detection of high-frequency sinusoidal, pulsed, and transient currents.
- Measurement of sinusoidal phase shift, ripple, and pulsating currents.
- Semiconductor switching devices (IGBT, MOSFET, SiC, GaN) test and power loss analysis.
- Current and power quality analysis in motor drives, UPS, and Switch-Mode Power Supplies.
- Distributed current monitoring, measurement of power busbars and 3-phase supply systems.
- Capacitor discharge test and current measurement in small inductive/capacitive/snubber circuits.
- Measuring small AC currents in the presence of large DC currents.

Specifications

● HFCP1608 Series - High Frequency Models

Model	Sensitivity (mV/A)	Peak Current (A)	Noise (mVp-p)	Droop (%/ms)	LF Bandwidth -3dB(Hz)	Peak di/dt (kA/ μ s)	HF Bandwidth -3dB(MHz)	Delay (ns)
HFCP16081A60	100	60	20	65	75	4	50	18
HFCP16081A120	50	120	15	35	34	8	50	
HFCP16081A300	20	300	15	9	15	20	50	
HFCP16081A600	10	600	10	6	10	40	50	
HFCP16081A1200	5.0	1200	10	3	6	70	50	
HFCP16081A3K	2.0	3K	5	2	4	70	50	
HFCP16081A6K	1.0	6K	5	2	4	70	50	
HFCP16081A12K	0.5	12K	5	1.8	2	70	50	

● FCP1608 Series - Original Models

Model	Sensitivity (mV/A)	Peak Current (A)	Noise (mVp-p)	Droop (%/ms)	LF Bandwidth -3dB(Hz)	Peak di/dt (kA/μs)	HF Bandwidth -3dB(MHz)	Delay (ns)
FCP16081A60	100	60	20	65	75	4	30	18
FCP16081A120	50	120	15	35	34	8	30	
FCP16081A300	20	300	15	9	15	20	30	
FCP16081A600	10	600	10	6	10	40	30	
FCP16081A1200	5.0	1200	10	3	6	70	30	
FCP16081A3K	2.0	3K	5	2	4	70	30	
FCP16081A6K	1.0	6K	5	2	4	70	30	
FCP16081A12K	0.5	12K	5	1.8	2	70	30	

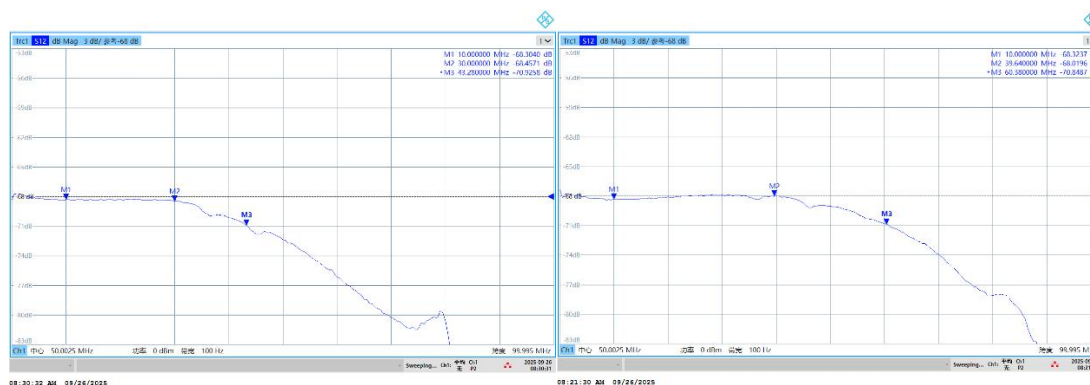
● FCP4000 Series

Model	Sensitivity (mV/A)	Peak Current (A)	Noise (mVp-p)	Droop (%/ms)	LF Bandwidth -3dB(Hz)	Peak di/dt (kA/μs)	HF Bandwidth -3dB(MHz)		Delay (ns)
							100mm	200mm	
FCP40XX1A120	50	120	15	4.8	8	2	10	5	24
FCP40XX1A300	20	300	12	3.6	6	2.5	20	10	
FCP40XX1A600	10	600	10	1.8	4	5	20	10	
FCP40XX1A1200	5.0	1200	10	0.8	2	10	20	10	
FCP40XX1A3K	2.0	3K	8	0.4	2	25	20	10	
FCP40XX1A6K	1.0	6K	7	0.25	2	40	20	10	
FCP40XX1A12K	0.5	12K	5	0.2	1	40	20	10	
FCP40XX1A30K	0.2	30K	5	0.1	1	40	20	10	
FCP40XX1A60K	0.1	60K	5	0.1	0.4	40	20	10	
FCP40XX1A120K	0.05	120K	5	0.1	0.4	40	20	10	

● FCP8000 Series

Model	Sensitivity (mV/A)	Peak Current (A)	Noise (mVp-p)	Droop (%/ms)	LF Bandwidth -3dB(Hz)	Peak di/dt (kA/μs)	HF Bandwidth -3dB(MHz)		Delay (ns)
							300mm	600mm	
FCP80XX1A120	50	120	18	20	25	2	16	10	78
FCP80XX1A300	20	300	18	10	10	4	16	10	
FCP80XX1A600	10	600	14	0.9	3	4	16	10	
FCP80XX1A1200	5.0	1200	14	0.9	3	8	16	10	
FCP80XX1A3K	2.0	3K	7	0.7	1	20	16	10	
FCP80XX1A6K	1.0	6K	5	0.5	0.6	40	16	10	
FCP80XX1A12K	0.5	12K	3.5	0.35	0.4	40	16	10	
FCP80XX1A30K	0.2	30K	3	0.7	0.2	40	16	10	
FCP80XX1A60K	0.1	60K	3	0.1	0.1	40	16	10	
FCP80XX1A120K	0.05	120K	3	0.06	0.05	40	16	10	
FCP80XX1A300K	0.02	300K	3	0.03	0.05	40	16	10	

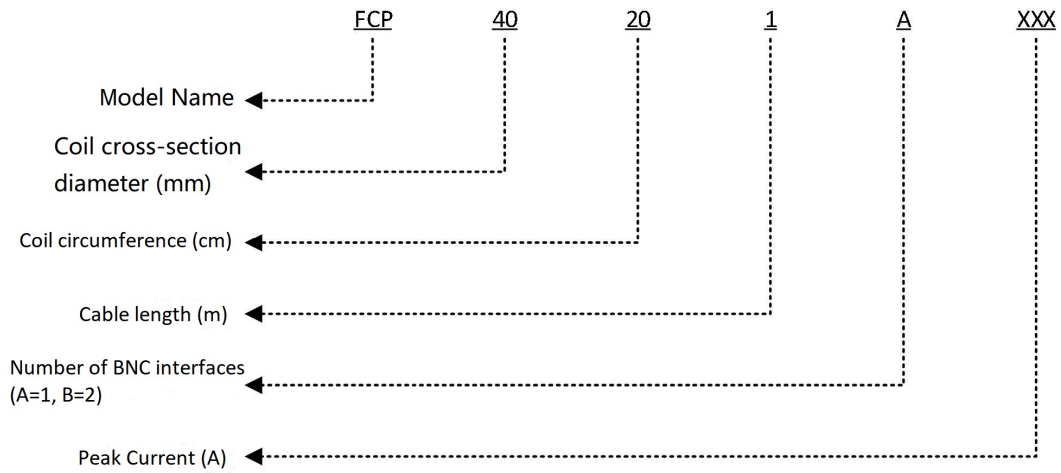
● Current - Frequency Curve



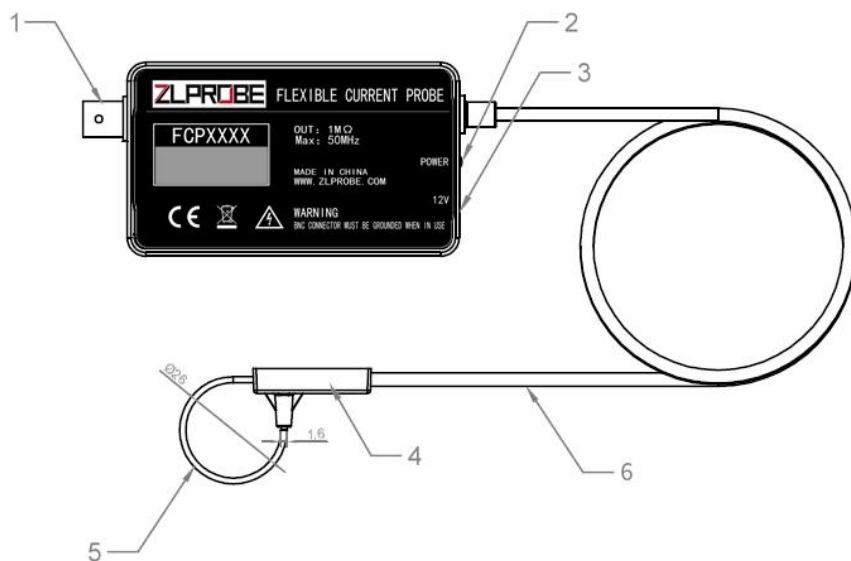
FCP16081A300 Cur.-Fre. Characteristics

HFCP16081A300 Cur.-Fre. Characteristics

- Model Description: e.g. FCP40201A



Appearance



- 1) Output: Standard BNC connector. Use the included BNC cable to connect to any oscilloscope.
- 2) Power Indicator: Light will turn green when the power is on.
- 3) Power Supply: DC 12V
- 4) Current Direction: Current flows in the indicated direction is an positive output; and negative otherwise.
- 5) Coil circumference length: 80/100/200/300/600mm (customization available)
- 6) Cable Length: 1m, length of cable from coil to electronic integrator (customization available).

Electrical Parameters

Temperature (Coil & Cable)	-40°C ~ +150°C (FCP16, FCP40 series)
	-40°C ~ +100°C (FCP80 series)
Temperature (Integrator)	0°C ~ 40°C
Humidity	≤85%RH
DC Offset	±2mV max. @25°C
Power Supply	DC 12V/1A
Max Output Voltage	±6Vpk
Terminal Load	≥100kΩ

Standard parts

Probe Unit Model	1
DC 12V 1A adapter	1
BNC Output Cable	1
User Manual	1
Warranty Card	1
Calibration Certificate	1

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