



## K SERIES

The K series is a new product range with exceptional measurement capabilities.

Extremely compact in design, these "micro-probes" are designed for highly accurate measurement of very low currents.

Their small dimensions and shape make them ideal for probing into tight spaces where access is limited, as is the case on most switchboards, 4-20 A process loops or vehicle wiring looms for example.

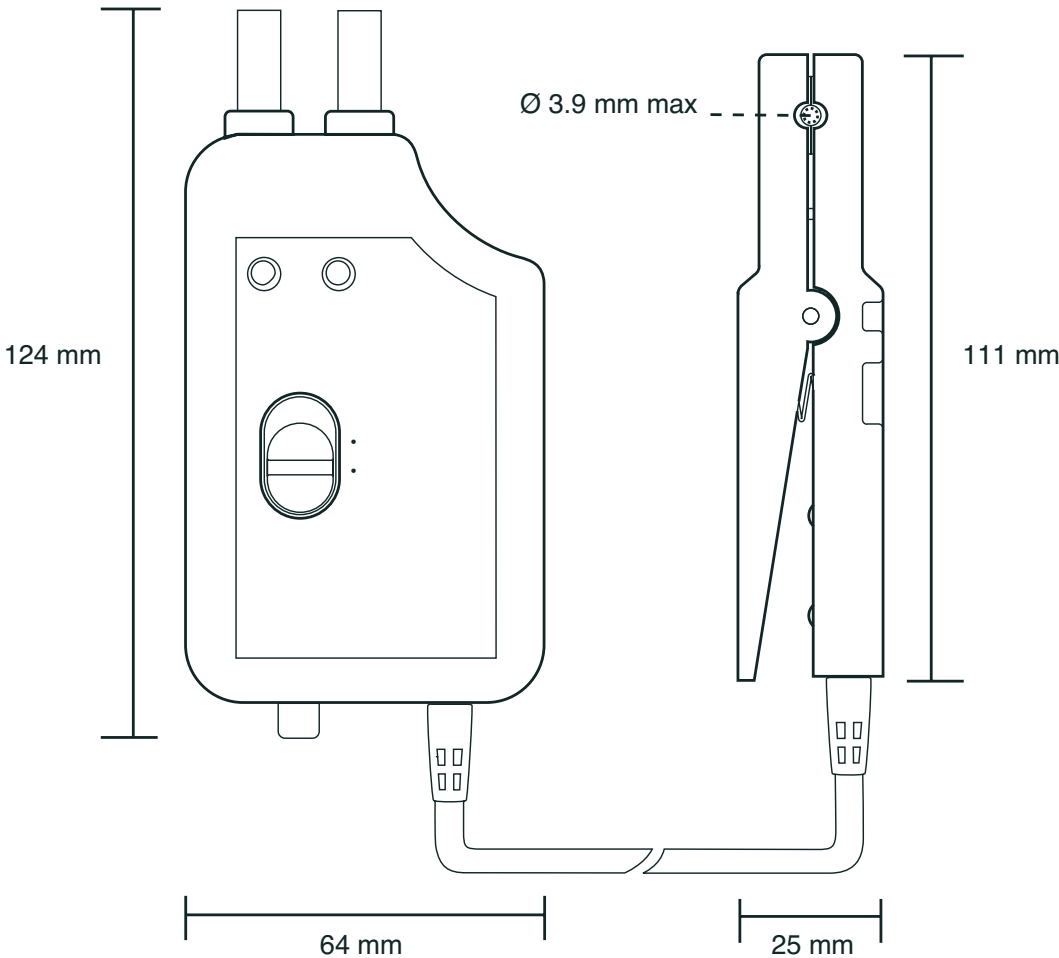
These "K" series current probes make excellent work companions for multimeters and any other instrument able to make use of their high sensitivity, dynamic range and ability to indicate the shapes of signals and waveforms.

They give an AC+DC output signal that is proportional to the measured current, without needing to change the range or filter the signal. RMS measurements are possible with DC+AC components.

There are two different types of K series current probes available.

Model K1 gives a 1 mV/mA output and lends itself to a variety of different applications, oriented towards low-current measurement.

Model K2 has a greater level of sensitivity with its 10 mV/mA output.



# Model K1

<b>Current</b>	4500 mA DC 3000 mA AC
<b>Output</b>	1 mV/mA

### DESCRIPTION

The K1 model measures currents as low as 100  $\mu$ A AC or DC. The clamp provides a proportional output signal enabling direct readings on multimeters.

### ELECTRICAL SPECIFICATIONS

- Current calibres:**
  - 1 mA DC ..  $\pm$  4.5 A DC
  - 1 mA RMS .. 3 A RMS (sinusoidal)
  - 1 mA .. 4.5 A peak, square and steps
- Output (output voltage):** 1 mV/mA
- Resolution:**
  - DC: 50  $\mu$ A typical
  - AC: 100  $\mu$ A typical
- Accuracy <sup>(1)</sup>:**
  - DC current

Primary current	1 mA .. 10 mA	10 mA .. 120 mA	120 mA .. 4500 mA
% Accuracy of output signal	2% $\pm$ 0.2 mV	2% $\pm$ 0.1 mV	1%

- AC current from 45 Hz to 65 Hz

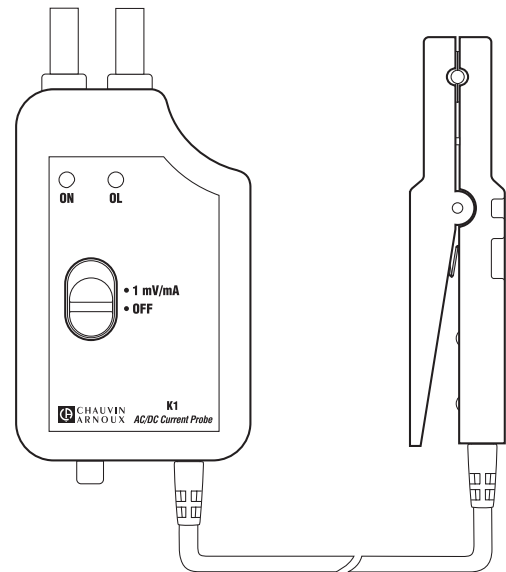
Primary current	1 mA .. 10 mA	10 mA .. 120 mA	120 mA .. 3000 mA
% Accuracy of output signal	3% $\pm$ 0.3 mV	3% $\pm$ 0.1 mV	1%

- Frequency response:** DC to 2 kHz (at -3 dB)
- Load impedance:**  $\geq$  1 M $\Omega$  and  $\leq$  100 pF
- Output noise:** < 100  $\mu$ V, DC to 3 kHz
- Output impedance:** 220  $\Omega$
- Inductance of clamp:** < 1  $\mu$ H
- Rise time:** < 200  $\mu$ s, 10% at 90%
- Fall time:** < 200  $\mu$ s, 90% at 10%
- Influence of adjacent conductors:** (50 Hz at 23 mm from the clamp): < 100  $\mu$ A/A
- Influence of earth field:** < 120  $\mu$ A
- Battery:** Alkaline 9 V, NEDA 1604, 6LR61 or IEC 6 LF22
- Low battery signal:** Green LED when battery voltage > 6.5 V
- Battery charge life:** Approximately 20 hours

- Overload indication:** Red LED indicating momentary or continuous overload
- Max. current:** 200 A AC or DC with current limitation according to with frequency, above 400 Hz

### MECHANICAL SPECIFICATIONS

- Operating temperature:** -10  $^{\circ}$ C to +55  $^{\circ}$ C
- Storage temperature:** -40  $^{\circ}$ C to +80  $^{\circ}$ C
- Influence of temperature:** < 1,000 ppm/ $^{\circ}$ K or 1% /10  $^{\circ}$ C
- Humidity:** < 95% for < 35  $^{\circ}$ C, 75% at +55  $^{\circ}$ C
- Operating altitude:** 0 to 2,000 m
- Adjustment of DC zero:** approximately  $\pm$ 25 mA by turning the button on the bottom of the housing
- Max. jaw insertion capacity:**  $\varnothing$  3.9 mm
- Protection rating:** Casing: IP 40 in accordance with IEC 529



- Drop test:** 1.0 in accordance with IEC 68-2-32
- Shock resistance:** 100 g in accordance with IEC 68-2-27
- Vibration resistance:** in accordance with IEC 68-2-6
- Frequency range:**
  - 5 to 15 Hz, amplitude: 1.5 mm
  - 15 to 25 Hz: amplitude: 1 mm
  - 25 to 55 Hz: amplitude: 0.25 mm
- Dimensions:**
  - Electronic module: 124 x 64 x 28 mm
  - Probe: 111 x 15 x 25 mm
- Cable length:** 1.5 m
- Weight:** 250 g
- Colour:** Dark grey
- Output:** Two 4 mm safety terminals 19 mm apart. (standard)

### SAFETY SPECIFICATIONS

- Operating voltage:** 300 V in accordance with IEC 1010-1 Cat. II
- Electromagnetic compatibility:**
  - Immunity (EN 50082-1): class A
  - DC: 15 mV for 0
  - AC (60 Hz): 2 dB from 10 mA .. 4.5 A
  - Emissivity (EN 50081-1): negligible

(1) Conditions of reference: 23  $^{\circ}$ C  $\pm$  3  $^{\circ}$ C, 20% to 75% RH, batteries 9 V  $\pm$  0.1 V, earth's magnetic field < 40 A/m, no AC field, DC or sinusoidal current from 45 Hz to 65 Hz

To order	Reference
AC/DC current clamp model <b>K1</b> in carrying case with battery and user's manual	P01120067A

# Model K2

<b>Current</b>	450 mA DC 300 mA AC
<b>Output</b>	10 mV/mA

### DESCRIPTION

The K2 model measures currents as low as 100  $\mu$ A AC or DC. The probe has a proportional output for direct readings on multimeters.

### ELECTRICAL SPECIFICATIONS

- Current calibres:**
  - 0.1 mA DC ..  $\pm$  450 mA DC
  - 0.1 mA RMS .. 300 mA RMS (sinusoidal)
  - 0.1 mA peak .. 450 mA peak, signal square and steps
- Output (output voltage):**  
10 mV/mA
- Resolution:**  
DC: 50  $\mu$ A typical  
AC: 100  $\mu$ A typical
- Accuracy <sup>(1)</sup>:**

- DC current

Primary current	0.1 mA .. 1 mA	1 mA .. 12 mA	12 mA .. 450 mA
% Accuracy of output signal	3% $\pm$ 2 mV	2% $\pm$ 2 mV	1%

- AC current from 45 Hz to 65 Hz

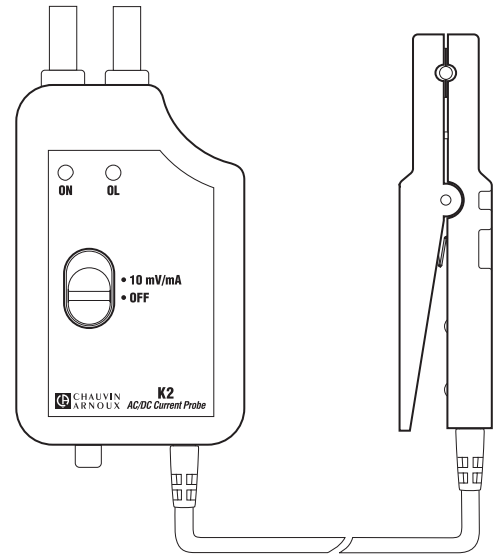
Primary current	0.1 mA .. 1 mA	1 mA .. 12 mA	12 mA .. 300 mA
% Accuracy of output signal	3% $\pm$ 0.5 mV	2% $\pm$ 0.5 mV	1%

- Frequency response:**  
DC to 1.5 kHz (at -3 dB)
- Load impedance:**  
 $\geq$  1 M $\Omega$  and  $\leq$  100 pF
- Output noise:**  
< 100  $\mu$ V DC to 1.5 kHz
- Output impedance:**  
200  $\Omega$
- Inductance of clamp:**  
< 1  $\mu$ H
- Rise time:**  
< 200  $\mu$ s, 10% at 90%
- Fall time:**  
< 200  $\mu$ s, 90% at 10%
- Influence of adjacent conductors:**  
(50 Hz at 23 mm from the clamp): < 100  $\mu$ A / A
- Influence of earth field:**  
< 120  $\mu$ A, 0 .. max
- Battery:**  
Alkaline 9 V, NEDA 1604, 6LR61 or IEC 6 LF22
- Low battery signal:**  
Green LED when battery voltage > 6.5 V
- Battery charge life:**  
Approximately 20 hours

- Overload indication:**  
Red LED indicating momentary or continuous overload
- Max. current:**  
100 A AC RMS or DC with current limitation according to with frequency, above 800 Hz

### MECHANICAL SPECIFICATIONS

- Operating temperature:**  
-10  $^{\circ}$ C to +55  $^{\circ}$ C
- Storage temperature:**  
-40  $^{\circ}$ C to +80  $^{\circ}$ C
- Influence of temperature:**  
< 500 ppm/ $^{\circ}$ K or 0.5% / 10  $^{\circ}$ C
- Humidity:**  
< 95% at < 35  $^{\circ}$ C, 75% at 55  $^{\circ}$ C  
Operating altitude: 0 to 2,000 m
- Adjustment of DC zero:**  
Approximately  $\pm$ 15 mA by turning the button on the bottom of the housing (10 turns)
- Max. jaw insertion capacity:**  
3.9 mm
- Protection rating:**  
IP40 par IEC 529



- Drop test:**  
1.0 in accordance with IEC 68-2-32
- Shock resistance:**  
100 g par IEC 68-2-27
- Vibration resistance:**  
in accordance with IEC 68-2-6
- Frequency range:**  
5 Hz .. 15 Hz, amplitude: 1.5 mm  
15 Hz .. 25 Hz, amplitude: 1 mm  
25 Hz .. 55 Hz, amplitude: 0.25 mm
- Dimensions (electronic module):**  
124 x 64 x 28 mm
- Dimension (probe):**  
111 x 15 x 25 mm
- Cable length:**  
1.5 m
- Weight:**  
250 g
- Colour:**  
Dark grey
- Output:**  
Two 4 mm safety terminals 19 mm apart (standard)

### SAFETY SPECIFICATIONS

- Operating voltage:**  
300 V in accordance with IEC 1010-1 Cat. II
- Electromagnetic compatibility:**  
Immunity (EN 50082-1): class A  
DC: 15 mV for 0  
AC (60 Hz): 2 dB from 10 mA .. 4.5 A  
Emissivity (EN 50081-1): negligible

(1) Conditions of reference: 23  $^{\circ}$ C  $\pm$  3  $^{\circ}$ C, 20  $^{\circ}$ C to 75% RH, batteries 9 V  $\pm$  0.1 V, earth's magnetic field < 40 A/m, no AC field, DC or sinusoidal current from 45 Hz to 65 Hz

<b>To order</b>	<b>Reference</b>
AC/DC current clamp model <b>K2</b> in carrying case with battery and user's manual	P01120074A