



AmpFLEX™ series

These flexible current probes are as at home measuring low AC currents of a few hundred mA as they are measuring high currents of several tens of kA.

Their main point of interest is their flexibility and the ease with which electrical conductors of all shapes and sizes (cables, busbars) and degrees of accessibility can be gripped.

They have a number of other advantages; they are lightweight (no magnetic circuit), they do not suffer from the saturation effect and their high level of accuracy combined with minimal phase shift make them perfect for power measurement applications.

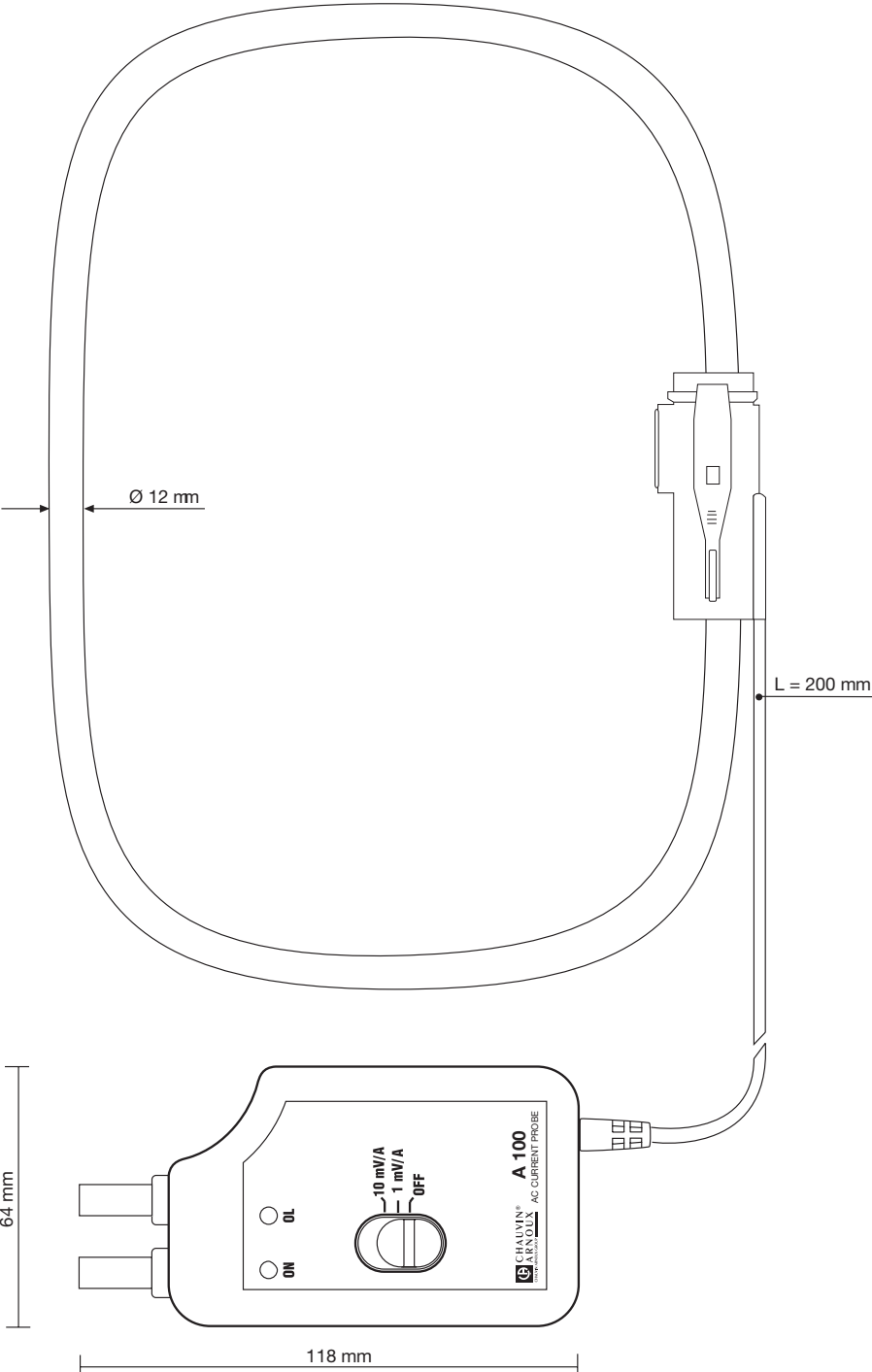
■ AmpFLEX™ A100 series:

The A100 (pictured above) has a flexible toroid which connects, via a screened lead, to a small unit containing all the processing electronics and a standard 9 V battery.

The unit can be connected directly to any multimeter, wattmeter or recording device. With either one or two calibres, the A100 models give an AC voltage output of 0.1 - 1 - 10 or 100 mV/A. As well as the standard models (45, 80, or 120 cm's), there are also models available on request for which you can choose the sensor length and sensitivity.

■ AmpFLEX™ A101 series:

The A101 has exactly the same specification as the A100 models but comes without the electronic unit. These sensors are used by other manufacturers and integrated into their own test and measurement products.



Flexible probe for AC current

Model A100 20-200 / 2

AmpFLEX™ series

Current	20 A AC	200 A AC
Output	100 mV/A	10 mV/A

Electrical specifications

Current calibres:

0.5 A AC ... 20 A AC

0.5 A AC ... 200 A AC

Output signal:

100 mVAC/A AC (2 V for 20 A)

10 mVAC/A AC (2 V for 200 A)

Accuracy ⁽¹⁾:

Calibre	20 A		200 A	
Primary current	0.5 A...5 A	5...20 A	0.5 A...5 A	0.5 A...200 A
% Accuracy of output signal	not specified	≤ 1 %	not specified	≤ 1 %
Phase shift	≤ 1.3°	≤ 1.3°	≤ 1.3°	≤ 1.3°

Bandwidth:

10 Hz ... 20 kHz

Crest factor:

2.25 at rated current

Max. current / Max. output voltage:

No current limit, but maximum output is 4.5 V peak

Load impedance:

≥ 1 MΩ

Influence of Z load impedance:

≤ 0.1 % / Z, (Z in MΩ)

Output impedance:

1 kΩ

DC voltage shift at output:

■ 20 A calibre: ≤ 50 mV DC

■ 200 A calibre: ≤ 5 mV DC

Operating voltage:

1000 V rms

Influence of adjacent conductor:

≤ 1 % interference current at 50 Hz

(≤ 2 % near click-lock system)

Influence of conductor position in loop:

≤ 1 % (≤ 4 % near click-lock system)

Influence of sensor shape:

≤ 1 % for an oblong shape

Battery:

9 V alkaline battery (NEDA 1604A, IEC 6LR61)

Battery life:

≥ 150 hrs continuous,

≥ 1000 x 1 minute measurements

Low battery signal:

Green LED: battery OK

Flashing green LED: low battery

No green LED: battery discharged

Overload signal:

red LED

Mechanical specifications

Operating temperature:

-10 °C to +55 °C, (maximum temperature for sensor is 90 °C)

Storage temperature:

-40 °C to +70 °C

Influence of temperature:

≤ 0.5 % of output signal per 10 °K

Relative humidity for operation:

0 to 95 % RH with a linear decrease above 35 °C

Influence of relative humidity:

< 0.2 % of output signal from 10 % to 85 % RH

Operating altitude:

0 to 2,000 m

Casing protection rating:

Casing: IP40 (IEC 529)

Flexible sensor: IP65 (IEC 529)

Drop test:

1 m (IEC 68-2-32)

Shock resistance:

100 g (IEC 68-2-27)

Vibration resistance (IEC 68-2-6):

5/15/5 1.5 mm

15/25/15 1 mm

25/55/25 0.25 mm

Self-extinguishing capability:

Casing, flexible sensor and click-lock system: UL94 V0

Dimensions:

Casing: 140 x 64 x 28 mm (overall)

Connector lead: 2 m (connects sensor to casing)

Flexible sensor: Ø 12 mm ± 0.5 mm

Weight:

Casing: < 200 g

Flexible sensor: approx. 30 g per 10 cm length

Bending radius:

≥ 15 mm

Colours:

Casing and connection leads: dark grey, red flexible sensor with dark grey click-lock system

Output:

2 safety sockets (4 mm) spacing 19 mm

Safety specifications

Electrical safety:

Double insulation or reinforced insulation between primary, secondary and outer parts of casing liable to be handled, IEC 1010-1 - 1000 V category III, pollution degree 2

Electromagnetic compatibility (EMC):

EN 50081-1: compliant

EN 50082-2:

- Electrostatic discharge: IEC 1000-4-2

- Radiated field: IEC 1000-4-3

- Fast transients: IEC 1000-4-4

- Electrical shocks: IEC 1000-4-5

- Magnetic field at 50/60 Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 5 °K, 20 % to 75 % RH, battery voltage: 9 V ± 0.5 V, external DC magnetic field < 40 A/m, no external magnetic or electrical field, conductor centred for measurement, sinusoidal signal: 10 ... 100 Hz.

To order	Reference
AmpFLEX™ 20-200/2, length 45 cm with operating manual	P01120503

Flexible probe for AC current

Model A100 2000/2

AmpFLEX™ series

Current	2000 A AC
Output	1 mV/A

Electrical specifications

Current calibre:

0.5 A AC ... 2000 A AC

Output signal:

1 mVAC/A AC (2 V for 2000 A)

Accuracy ⁽¹⁾:

Primary current	0.5 A...5 A	5 A...2000 A
% Accuracy of output signal	not specified	≤ 1 %
Phase shift	≤ 0.7°	≤ 0.7°

Bandwidth:

10 Hz ... 20 kHz

Crest factor:

2.25 at rated current

Max. current / Max. output voltage:

No current limit, but maximum output is 4.5 V peak

Load impedance:

≥ 1 MΩ

Influence of Z load impedance:

≤ 0.1 %/Z, (Z in MΩ)

Output impedance:

1 kΩ

DC voltage shift at output:

≤ 2 mV DC

Operating voltage:

1000 V rms

Influence of adjacent conductor:

≤ 1 % interference current at 50 Hz
(≤ 2 % near click-lock system)

Influence of conductor position in loop:

≤ 1 % (≤ 4 % near click-lock system)

Influence of sensor shape:

≤ 1 % for an oblong shape

Battery:

9 V alkaline battery (NEDA 1604A, IEC 6LR61)

Battery life:

≥ 150 hrs continuous,
≥ 1000 x 1 minute measurements

Low battery signal:

Green LED: battery OK
Flashing green LED: low battery
No green LED: battery discharged

Overload signal:

red LED

Mechanical specifications

Operating temperature:

-10 °C to +55 °C, (maximum temperature for sensor is 90 °C)

Storage temperature:

-40 °C to +70 °C

Influence of temperature:

≤ 0.5 % of output signal per 10 °K

Relative humidity for operation:

0 to 95 % RH with a linear decrease above 35 °C

Influence of relative humidity:

< 0.2 % of output signal from 10 % to 85 % RH

Operating altitude:

0 to 2,000 m

Casing protection rating:

Casing: IP40 (IEC 529)
Flexible sensor: IP65 (IEC 529)

Drop test:

1 m (IEC 68-2-32)

Shock resistance:

100 g (IEC 68-2-27)

Vibration resistance (IEC 68-2-6):

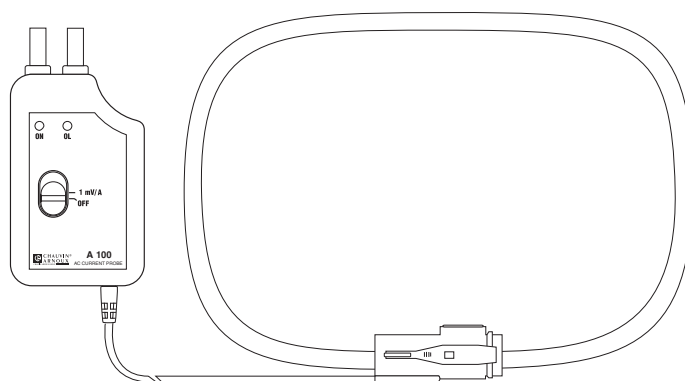
5/15/5 1.5 mm
15/25/15 1 mm
25/55/25 0.25 mm

Self-extinguishing capability:

Casing, flexible sensor and click-lock system:
UL94 V0

Dimensions:

Casing: 140 x 64 x 28 mm (overall)
Connector lead: 2 m (connects sensor to casing)
Flexible sensor: Ø 12 mm ± 0.5 mm



Weight:

Casing: < 200 g

Flexible sensor: approx. 30 g per 10 cm length

Bending radius:

≥ 15 mm

Colours:

Casing and connection leads: dark grey,
red flexible sensor with dark grey click-lock system

Output:

2 safety sockets (4 mm) spacing 19 mm

Safety specifications

Electrical safety:

Double insulation or reinforced insulation between primary, secondary and outer parts of casing liable to be handled, IEC 1010-1- 1000 V category III, pollution degree 2

Electromagnetic compatibility (EMC):

EN 50081-1: compliant
EN 50082-2:
- Electrostatic discharge: IEC 1000-4-2
- Radiated field: IEC 1000-4-3
- Fast transients: IEC 1000-4-4
- Electrical shocks: IEC 1000-4-5
- Magnetic field at 50/60 Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 5 °K, 20 to 75 % RH, battery voltage: 9 V ± 0.5 V, external DC magnetic field < 40 A/m, no external magnetic or electrical field, conductor centred for measurement, sinusoidal signal: 10 ... 100 Hz.

To order	Reference
AmpFLEX™ 2000/2, length 45 cm with operating manual	P01120501
AmpFLEX™ 2000/2, length 80 cm with operating manual	P01120502

Flexible probe for AC current

Model A100 20-2000/2

AmpFLEX™ series

Current	200 A AC	2000 A AC
Output	10 mV/A	1 mV/A

Electrical specifications

Current calibres:

0.5 A AC ... 200 A AC

0.5 A AC ... 2000 A AC

Output signal:

10 mVAC/A AC (2 V for 200 A)

1 mVAC/A AC (2 V for 2000 A)

Accuracy ⁽¹⁾:

Calibre	200 A		2000 A	
Primary current	0.5 A...5 A	5 A...200 A	0.5 A...5 A	0.5 A...2000 A
% Accuracy of output signal	not specified	≤ 1 %	not specified	≤ 1 %
Phase shift	≤ 0.7°	≤ 0.7°	≤ 0.7°	≤ 0.7°

Bandwidth:

10 Hz ... 20 kHz

Crest factor:

2.25 at rated current

Max. current/Max. output voltage:

No current limit, but maximum output is 4.5 V peak

Load impedance:

≥ 1 MΩ

Influence of Z load impedance:

≤ 0.1 %/Z, (Z in MΩ)

Output impedance:

1 kΩ

DC voltage shift at output:

■ 200 A calibre: ≤ 5 mV DC

■ 2000 A calibre: ≤ 2 mV DC

Operating voltage:

1000 V rms

Influence of adjacent conductor:

≤ 1 % interference current at 50 Hz

(≤ 2 % near click-lock system)

Influence of conductor position in loop:

≤ 1 % (≤ 4 % near click-lock system)

Influence of sensor shape:

≤ 1 % for an oblong shape

Battery:

9 V alkaline battery (NEDA 1604A, IEC 6LR61)

Battery life:

≥ 150 hrs continuous,

≥ 1000 x 1 minute measurements

Low battery signal:

Green LED: battery OK

Flashing green LED: low battery

No green LED: battery discharged

Overload signal:

Red LED

Mechanical specifications

Operating temperature:

-10 °C to +55 °C, (maximum temperature for sensor is 90 °C)

Storage temperature:

-40 °C to +70 °C

Influence of temperature:

≤ 0.5 % of output signal per 10 °K

Relative humidity for operation:

0 to 95 % RH with a linear decrease above 35 °C

Influence of relative humidity:

< 0.2 % of output signal from 10 % to 85 % RH

Operating altitude:

0 to 2,000 m

Casing protection rating:

Casing: IP40 (IEC 529)

Flexible sensor: IP65 (IEC 529)

Drop test:

1 m (IEC 68-2-32)

Shock resistance:

100 g (IEC 68-2-27)

Vibration resistance (IEC 68-2-6):

5/15/5 1.5 mm

15/25/15 1 mm

25/55/25 0.25 mm

Self-extinguishing capability:

Casing, flexible sensor and click-lock system:

UL94 V0

Dimensions:

Casing: 140 x 64 x 28 mm (overall)

Connector lead: 2 m (connects sensor to casing)

Flexible sensor: Ø 12 mm ± 0.5 mm

Weight:

Casing: < 200 g

Flexible sensor: approx. 30 g per 10 cm length

Bending radius:

≥ 15 mm

Colours:

Casing and connection leads: dark grey, red flexible sensor with dark grey click-lock system

Output:

2 safety sockets (4 mm) spacing 19 mm

Safety specifications

Electrical safety:

Double insulation or reinforced insulation between primary, secondary and outer parts of casing liable to be handled, IEC 1010-1- 1000 V category III, pollution degree 2

Electromagnetic compatibility (EMC):

EN 50081-1: compliant

EN 50082-2:

- Electrostatic discharge: IEC 1000-4-2

- Radiated field: IEC 1000-4-3

- Fast transients: IEC 1000-4-4

- Electrical shocks: IEC 1000-4-5

- Magnetic field at 50/60 Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 5 °K, 20 % to 75 % RH, battery voltage: 9 V ± 0.5 V, external DC magnetic field < 40 A/m, no external magnetic or electrical field, conductor centred for measurement, sinusoidal signal: 10 ... 100 Hz.

To order	Reference
AmpFLEX™ 200-2000/2, length 45 cm with operating manual	P01120504
AmpFLEX™ 200-2000/2, length 80 cm with operating manual	P01120505

Flexible probe for AC current

Model A100 300-3000 / 3

AmpFLEX™ series

Current	300 A AC	3000 A AC
Output	10 mV/A	1 mV/A

Electrical specifications

Current calibres:

0.5 A AC...300 A AC
0.5 A AC...3000 A AC

Output signal:

10 mVAC/A AC (3 V for 300 A)
1 mVAC/A AC (3 V for 3000 A)

Accuracy ⁽¹⁾:

Calibre	300 A		3000 A	
Primary current	0.5 A...5 A	5 A...300 A	0.5 A...5 A	0.5 A...3000 A
% Accuracy of output signal	not specified	≤ 1 %	not specified	≤ 1 %
Phase shift	≤ 0.7°	≤ 0.7°	≤ 0.7°	≤ 0.7°

Bandwidth:

10 Hz...20 kHz

Crest factor:

1.5 at rated current

Max. current / Max. output voltage:

No current limit, but maximum output is 4.5 V peak

Load impedance:

≥ 1 MΩ

Influence of Z load impedance:

≤ 0.1 % / Z, (Z in MΩ)

Output impedance:

1 kΩ

DC voltage shift at output:

- 300 A calibre: ≤ 5 mV DC
- 3000 A calibre: ≤ 2 mV DC

Operating voltage:

1000 V rms

Common mode voltage:

600 V category III and pollution degree 2

Influence of adjacent conductor:

≤ 1 % interference current at 50 Hz
(≤ 2 % near click-lock system)

Influence of conductor position in loop:

≤ 1 % (≤ 4 % near click-lock system)

Influence of sensor shape:

≤ 1 % for an oblong shape

Battery:

9 V alkaline battery (NEDA 1604A, IEC 6LR61)

Battery life:

≥ 150 hrs continuous,
≥ 1000 x 1 minute measurements

Low battery signal:

Green LED: battery OK
Flashing green LED: low battery
No green LED: battery discharged

Overload signal:

Red LED

Mechanical specifications

Operating temperature:

-10 °C to +55 °C, (maximum temperature for sensor is 90 °C)

Storage temperature:

-40 °C to +70 °C

Influence of temperature:

≤ 0.5 % of output signal per 10 °K

Relative humidity for operation:

0 to 95 % RH with a linear decrease above 35 °C

Influence of relative humidity:

< 0.2 % of output signal from 10 % to 85 % RH

Operating altitude:

0 to 2,000 m

Casing protection rating:

Casing: IP40 (IEC 529)
Flexible sensor: IP65 (IEC 529)

Drop test:

1 m (IEC 68-2-32)

Shock resistance:

100 g (IEC 68-2-27)

Vibration resistance:

5/15/5 1.5 mm
15/25/15 1 mm
25/55/25 0.25 mm
(IEC 68-2-6)

Self-extinguishing capability:

Casing, flexible sensor and click-lock system:
UL94 V0

Dimensions:

Casing: 140 x 64 x 28 mm (overall)
Connector lead: 2 m (connects sensor to casing)
Flexible sensor: Ø 12 mm ±0.5 mm

Weight:

Casing: < 200 g
Flexible sensor: 30 g per 10 cm length

Bending radius:

≥ 15 mm

Colours:

Case and connection leads: dark grey, red
flexible sensor with dark grey click-lock system

Output:

2 safety sockets (4 mm) spacing 19 mm

Safety specifications

Electrical safety:

Double insulation or reinforced insulation between primary, secondary and outer parts of casing liable to be handled, IEC 1010-1-1000 V category III, pollution degree 2

Electromagnetic compatibility (EMC):

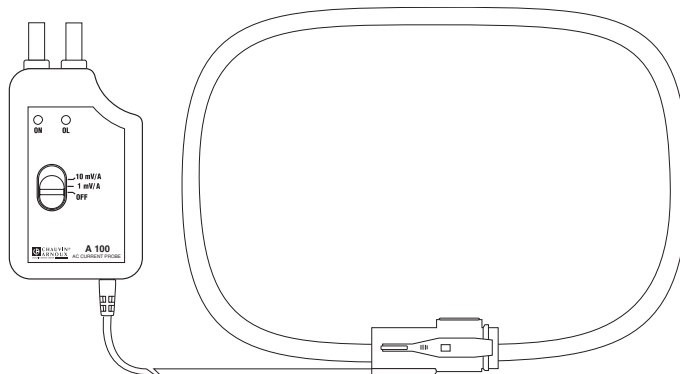
EN 50081-1: compliant

EN 50082-2:

- Electrostatic discharge: IEC 1000-4-2
- Radiated field: IEC 1000-4-3
- Fast transients: IEC 1000-4-4
- Electrical shocks: IEC 1000-4-5
- Magnetic field at 50/60 Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 5 °K, 20 % to 75 % RH, battery voltage: 9 V ± 0.5 V, external DC magnetic field < 40 A/m, no external magnetic or electrical field, conductor centred for measurement, sinusoidal signal: 10...100 Hz.

To order	Reference
AmpFLEX™ 300-3000/3, length 45 cm with operating manual	P01120506
AmpFLEX™ 300-3000/3, length 80 cm with operating manual	P01120507
AmpFLEX™ 300-3000/3, length 120 cm with operating manual	P01120508



Flexible probe for AC current

Model A100 1000-10000/1

AmpFLEX™ series

Current	1000 AAC	10000 AAC
Output	1 mV/A	0.1 mV/A

Electrical specifications

Current calibres:
0.5 A AC ... 1000 A AC
0.5 A AC ... 10000 A AC

Output signal:
1 mVAC/A AC (1 V for 1000 A)
0.1 mVAC/A AC (1 V for 10000 A)

Accuracy ⁽¹⁾:

Calibre	1000 A		10000 A	
Primary current	0.5 A...5 A	5 A...1000 A	0.5 A...50 A	0.5 A...10000 A
% Accuracy of output signal	not specified	≤ 1 %	not specified	≤ 1 %
Phase shift	≤ 0.5°	≤ 0.5°	≤ 0.5°	≤ 0.5°

Bandwidth:
10 Hz ... [45 ... 65] ... 20 kHz

Crest factor:
4.5 at rated current

Max. current / Max. output voltage:
No current limit, but maximum output is 4.5 V peak.

Load impedance:
≥ 1 MΩ

Influence of Z load impedance:
≤ 0.1 %/Z, (Z in MΩ)

Output impedance:
1 kΩ

DC voltage shift at output:
■ 1000 A calibre: ≤ 2 mV DC
■ 10000 A calibre: ≤ 1 mV DC

Operating voltage: 1000 V_{rms}

Influence of adjacent conductor:
≤ 1 % interference current at 50 Hz
(≤ 2 % near click-lock system)

Influence of conductor position in loop:
≤ 1 % (≤ 4 % near click-lock system)

Influence of sensor shape:
≤ 1 % for an oblong shape

Battery:
9 V alkaline battery (NEDA 1604A, IEC 6LR61)

Battery life:
≥ 150 hrs continuous,
≥ 1000 x 1 minute measurements

Low battery signal:
Green LED: battery OK
Flashing green LED: low battery
No green LED: battery discharged

Overload signal:
Red LED

Mechanical specifications

Operating temperature:
-10 °C to +55 °C, (maximum temperature for sensor is 90 °C)

Storage temperature:
-40 °C to +70 °C

Influence of temperature:
≤ 0.5 % of output signal per 10 °K

Relative humidity for operation:
0 to 95 % RH with a linear decrease above 35 °C

Influence of relative humidity:
≤ 0.2 % of output signal from 10 % to 85 % RH

Operating altitude:
0 to 2,000 m

Casing protection rating:
Casing: IP40 (IEC 529)
Flexible sensor: IP65 (IEC 529)

Drop test: 1 m (IEC 68-2-32)

Shock resistance:
100 g (IEC 68-2-27)

Vibration resistance:
5/15/5 1.5 mm
15/25/15 1 mm
25/55/25 0.25 mm
(IEC 68-2-6)

Self-extinguishing capability:
Casing, flexible sensor and click-lock system:
UL94 V0

Dimensions:
Casing: 140 x 64 x 28 mm (overall)
Connector lead: 2 m (connects sensor to casing)
Flexible sensor: Ø 12 mm ± 0.5 mm

Weight:

- Casing: < 200 g
- Flexible sensor: approx. 30 g per 10 cm length

Bending radius:
≥ 15 mm

Colours:
Casing and connection leads: dark grey,
red flexible sensor with dark grey click-lock system

Output:
2 safety sockets (4 mm) spacing 19 mm

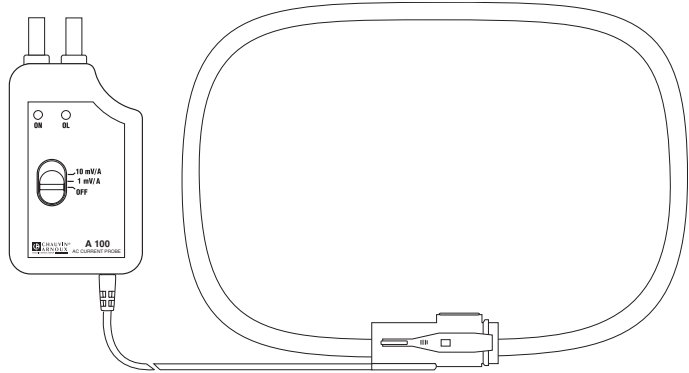
Safety specifications

Electrical safety:
Double insulation or reinforced insulation between primary, secondary and outer parts of casing liable to be handled, IEC 1010-1- 1000 V category III, pollution degree 2

Electromagnetic compatibility (EMC):
EN 50081-1: compliant
EN 50082-2:
- Electrostatic discharge: IEC 1000-4-2
- Radiated field: IEC 1000-4-3
- Fast transients: IEC 1000-4-4
- Electrical shocks: IEC 1000-4-5
- Magnetic field at 50/60 Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 5 °K, 20 % to 75 % RH, battery voltage: 9 V ± 0.5 V, external DC magnetic field < 40 A/m, no external magnetic or electrical field, conductor centred for measurement, sinusoidal signal: 10 ... 100 Hz.

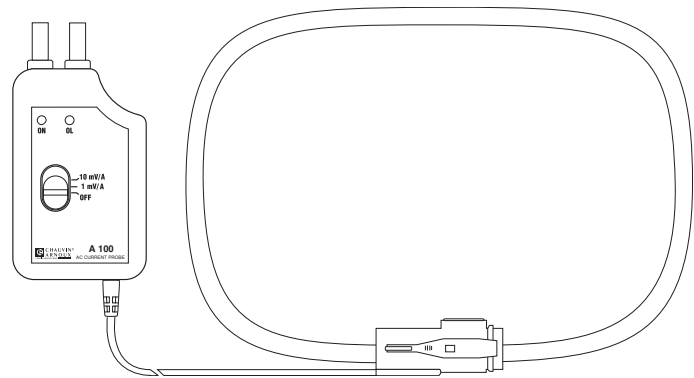
To order	Reference
AmpFLEX™ 1000-10000/1, length 120 cm with operating manual	P01120509



Flexible probe for AC current

Model A100 on request

AmpFLEX™ series



To complete the comprehensive range of standard models presented on the preceding pages, Chauvin Arnoux also offers to make special models to meet your particular needs.

In this way it is possible to define AmpFLEX™ flexible current sensors with sensitivities and lengths corresponding to your applications.

To do so, it is necessary to give a reference as follows:

A 1 0 0 **A** **B B B** **C C C** **D D D**

with:

A : Number of ranges

BBB : Max. range value, in Amperes

CCC : Max. range sensitivity in mV/A

DDD : Length of flexible sensor in cm (min X 40 = 40 cm, max = 990 cm) for a section of 10 cm

Currently available values:

Model	A 1 0 0	A	B B B	C C C	D D D
20-200 A/2 V	A 1 0 0	2	2 0 0	X 1 0	
2000 A/2 V	A 1 0 0	1	2 K 0	X X 1	
200-2000 A/2 V	A 1 0 0	2	2 K 0	X X 1	
300-3000 A/3 V	A 1 0 0	2	3 K 0	X X 1	
1000-10000 A/1 V	A 1 0 0	2	1 0 K	0 . 1	

Example 1:

An AmpFLEX™ A100 flexible sensor, with 2 ranges 200-2000 A and length 5 m would be represented by:

A 1 0 0 **2** **2 K 0** **X X 1** **5 0 0**

2 ranges

Max. range 2000 (second range is 10 times smaller)

Sensitivity 1 mV/A (sensitivity of second range is 10 times greater)

Length of sensor in cm = 500

Example 2:

An AmpFLEX™ flexible sensor, range 2000 A, length 90 cm would be represented by:

A 1 0 0 **1** **2 K 0** **X X 1** **x 9 0**

1 range

Max. range 2000

Sensitivity 1 mV/A

Length of sensor in cm = x 90

As Chauvin Arnoux is always seeking to improve its products, do not hesitate to contact us for other configurations.

Flexible probe for AC current

Model A101

AmpFLEX™ series

CAUTION

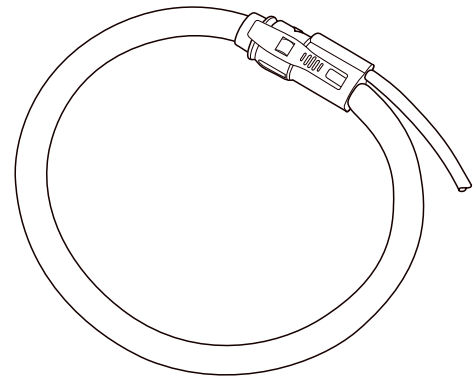
These products are only offered under certain conditions (quantity, etc.) to manufacturers of measurement, location and detection instruments.

The AmpFLEX™ offers perfect linearity, low phase shift, a wide range of measurements (up to several kA) and unrivalled ease of use.
The A101 series is Chauvin Arnoux's response to all the measurement instrument manufacturers wishing to integrate AmpFLEX™ solutions into their product lines.

■ Description

The A101 AmpFLEX™ sensor is composed of an active element (Rogowski coil) and a connection lead. It is necessary to add on an electronic processing system (not included), in order to complete this measurement device.

Chauvin Arnoux has added an extra step to the manufacturing process of the A101 probe which guarantees their interchangeability. This is essential in applications such as three-phase measurements where several identical probes are used.



■ Electrical specifications

Voltage at sensor terminals:

46 $\mu\text{V/A}$ (-15 % ... +10 %) at 50 Hz

Linearity *:

< 0.3 %

Phase shift *:

$\leq 0.5^\circ$ at 50 Hz

Interchangeability error:

≤ 0.5 % (maximum error between 2 sensors for the same measurement point).

Frequency range:

Depends on the electronics with which it is used.

Operating voltage:

1000 V rms or DC

■ Mechanical specifications

Operating temperature:

-20 °C to +60 °C

Storage temperature:

-0 °C to + 80 °C

Max temperature of measured cable:

≤ 90 °C

Operating altitude:

0 to 2,000 m

Maximum conductor size:

Depending on sensor length.

Casing protection rating:

IP65 in accordance with EN 60529

Self-extinguishing capability:

External cover, click-lock system, connection lead: UL94 V0

Dimensions:

$\varnothing$ of sensor: 12 mm

Weight:

Approx. 30 g per 10 cm length

Colour:

Sensor: red

Click-lock system: dark grey

Output:

According to configuration (refer to § Connections)

Connexions:

According to configuration (refer to § Connections)

■ Safety specifications

Electrical safety:

Double insulation or reinforced insulation between primary, secondary and outer parts of casing liable to be handled, IEC 1010-1 & IEC 1010-2-032, 1000 V category III, pollution degree 2

Electromagnetic compatibility (EMC):

EN 50081-1: class B

EN 50082-2:

- Electrostatic discharge: IEC 61000-4-2
- Radiated field: IEC 61000-4-3
- Fast transients: IEC 61000-4-4
- Magnetic field at 50/60 Hz: IEC 61000-4-8

* Conditions of reference: 23 °C $\pm$ 6 K, 20 % to 75 % RH, frequency 10 Hz to 100 Hz, sinusoidal signal, no external AC magnetic field, external magnetic field ≤ 40 A/m (earth field), conductor centred for measurement.

Flexible probe for AC current Model A101

*Amp***FLEX**TM series

■ Configurations

Level 1

A	1	0	1									
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- **Category** (fixed field)
- **Lead length in decimetres**
Min value: **05** (50 cm)
Max value: **99** (9.9 m)
Increment per 1 dm section (10 cm)
- **Length of connection lead in decimetres**
Min value: **05** (50 cm)
Max value: **99** (9.9 m)
Increment per section of 1 dm (10 cm)
- **Measurement range** (refer to additional information)

0: without	2: electronic diagram CA2
1: electronic diagram CA1 or C.A 833X and C.A 823X	3: electronic diagram CA3 4: diagram suited for C.A 8310
- **Connections**
X: lead without connection unit
C: specific lead
- **Calibration for interchangeability** (refer to additional information)
N: without
O: with
- **Special feature**
X1: plain sensor without CHAUVIN ARNOUX logo, with standard and Amp**FLEX™** inscriptions,
plain packing with instruction manual
X2: plain sensor without CHAUVIN ARNOUX logo, with standard and Amp**FLEX™** inscriptions, plastic bag packing,
instruction manual stapled on the plastic bag
C1: same as CHAUVIN ARNOUX sensor plain packing box with instruction manual
C2: same as CHAUVIN ARNOUX sensor plastic bag packing, instruction manual stapled on the plastic bag

Level 2

[illegible]

- **Connections** (refer to additional information)
 - XXX1:** circular lead 2 conductors + bare and tinned
 - BNC1:** coaxial lead + insulated coaxial plug
 - FRB1:** circular lead 2 conductors + screening with FRB connector
D01 model, type 1 (male pins)
 - FRB2:** circular lead 2 conductors + screening with FRB connector
D01 model, type 2 (sockets)
 - 833X:** specific connections for Qualistar C.A 833X and C.A 823X
- **Colour of connector** (refer to additional information)

XX: no connector	GN: green
BK: black	WH: white
RD: red	YE: yellow
BU: blue	
- **+ connection point**
 - 1, 2 or 3:** contact N° connected to +
 - X:** no connector
 - :** for 833X and 823X connection: not concerned
- **- connection point**
 - 1, 2 or 3:** contact N° connected to -
 - X:** no connector
 - :** for 833X and 823X connection: not concerned
- **Connected protection**
 - 1, 2 or 3:** contact N° connected to screening
 - X:** not connected or no connector
 - :** for 833X and 823X connection: not concerned
- **Interchangeability resistors** (refer to additional information)
 - I:** included in sensor
 - F:** resistors supplied
 - D:** values are indicated in the manual included with Amp**FLEX™** (resistors not supplied)
 - X:** no calibration for interchangeability

Flexible probe for AC current

Model A101

AmpFLEX™ series

■ Specific configuration of sensors for C.A 8310 Power & Harmonics Analyser

To complete the range of standard sensors for this product, A190 sensors of different lengths can be used (the A190 is simply a specific type of A101).

Select:

Level 1	A	1	0	1					4	C	O	C	1
Level 2	F	R	B	1					1	3	X	I	

Blank spaces refer to:

- level 1: sensor lengths and connection lead to be chosen
- level 2: colour of connector

■ Additional information

■ Measurement range (electronic diagram)

Choosing the measurement range depends on the sensitivity required and on electronic supply voltages.

Example:

For a supply voltage of ± 5 V, electronic output voltage will be limited to ± 4.5 V peak to peak, that is to say approximately 3 V RMS ($4.5 \text{ V} / \sqrt{2}$) if measured signal is sinusoidal.

The different diagrams refer to sensitivity ranges in accordance with the following chart:

Diagram	CA1	CA2	CA3
Sensitivity	0.1 mV/A...1 mV/A	1 mV/A...10 mV/A	10 mV/A...100 mV/A
Max. measurement range for a ± 5 V supply	3000 A...30000 A	300 A...3000 A	30 A...300 A
Max. measurement range for a ± 15 V supply	9000 A...90000 A	900 A...9000 A	90 A...900 A

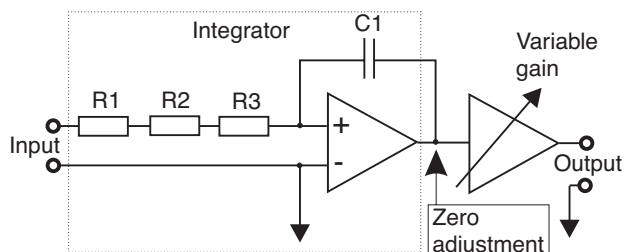
■ Interchangeability calibration

For applications that require the use of several sensors, it is necessary to ensure that all the sensors used on a single measuring instrument have identical output specifications.

Calibration is carried out for a standard electronic circuit (refer to following chart) at input level (integrator).

Associated electronics

This uses the standard diagrams of the input stage, corresponding to the different measurement ranges required.



Values of integrator's resistors and capacitor according to sensitivity.

Diagram	CA1	CA2	CA3
Sensitivity	0.1 mV/A...1 mV/A	1 mV/A...10 mV/A	10 mV/A...100 mV/A
C1	100 nF	10 nF	1 nF
R1 = R2 = R3	4.12 kΩ		

C1 preferably in polycarbonate (tolerance 5 %).

R1, R2 and R3 metallic coating, tolerance 1 %, power 1/8 W temperature coefficient 50 ppm.

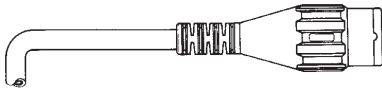
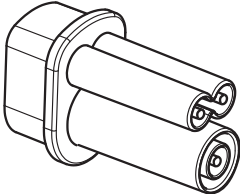
Standard technology or SMD.

Flexible probe for AC current

Model A101

Amp**FLEX**[™] series

■ Connection

Connector	Choice of connections	Colour of the connector
BNC1 Coaxial leads + insulated coaxial plug 		BK: black RD: red ⁽¹⁾ BU: blue ⁽¹⁾
FRB1: FRB D01 model Contact: male FRB2: FRB D01 model Contact: female 		BK: black RD: red BU: blue GN: green ⁽¹⁾ WH: white YE: yellow ⁽¹⁾
Connection for C.A 833x models: IEC 61010 		BK: black RD: red BU: blue GN: green YE: yellow

(1) colour not in stock

■ Interchangeability resistors

In order to enable interchangeability of sensors, the calibration process involves defining the value of a resistor which will be inserted in the measurement circuit.

In fact, these resistors can be integrated into connectors FRB1 or FRB2.

Contact us for details of other types of connectors.

To order	Reference
A101 AmpFLEX without electronic unit Accessories: "Green" click-on adapters (set of 10) "Red" click-on adapters (set of 10) "Purple" click-on adapters (set of 10) "Black" click-on adapters (set of 10) "Blue" click-on adapters (set of 10) "Yellow" click-on adapters (set of 10) "Brown" click-on adapters (set of 10) "White" click-on adapters (set of 10) "Grey" click-on adapters (set of 10) 9 assorted colours (9 sets of 2) Coloured click-on adapters C.A 8310 ("blue", "red", "black" set of 2)	Contact us P01101921 P01101922 P01101923 P01101924 P01101925 P01101926 P01101927 P01101928 P01101929 P01101930 P01101931