

Current clamps for AC current

C100 series



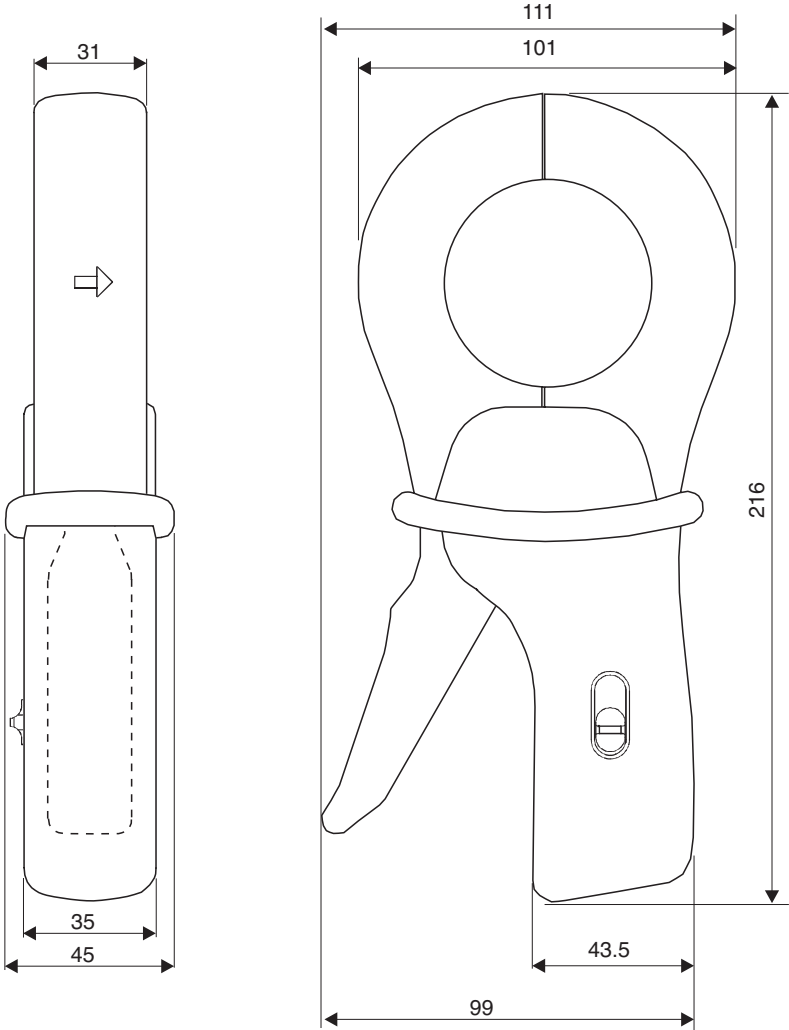
"C 100" SERIES

The "C100" series is a range of thirteen transformer clamps with all the advantages of our old "C30" series clamps whilst incorporating considerable improvements, particularly in the field of safety, ergonomics and performance:

- 1,000 A measurement, excellent metrology, high accuracy, high level of linearity, symmetrical coil windings for minimum phase shift, pendular adjusting system for magnetic elements, maximum conductor diameter Ø 52 mm and also some models with μ metal core specially made for wattmeter use.
- Innovative design: excellent ergonomics, handle with finger grips, assisted opening system for jaws (patented system), IEC 1010 600 V cat. III safety (industry and services), antislip protection, conductor anti-pinching system,...

All this technology and manufacturing quality has been combined to provide the best measurement possible without any complications.

A "C100" series clamp is compatible with any instrument (multimeter, wattmeter, recorder, oscilloscope...) for safe measurement of AC currents without shutting down the installation.



Current clamp for AC current

Model C100

C100 series

Current	1,000 A
Ratio	1000/1
Output	1 mA/A

ELECTRICAL SPECIFICATIONS

- Current range:**
0.1 A AC .. 1,200 A AC
- Current transformation ratio:**
1000:1
- Output signal:**
1 mA AC/A AC (1 A to 1,000 A)
- Accuracy and phase shift ⁽¹⁾:**

Primary current	0.1 A .. 10 A	10 A	50 A ⁽²⁾	200 A ⁽²⁾	1,000 A ⁽²⁾	1,200 A ⁽²⁾
% Accuracy of output signal	≤ 3% + 0.1 mA	≤ 3%	≤ 1.5%	≤ 0.75%	≤ 0.5%	≤ 0.5%
Phase shift	not specified	≤ 3°	≤ 1.5°	≤ 0.75°	≤ 0.5°	≤ 0.5°

- Bandwidth:**
30 Hz .. 10 kHz (-3 dB)
- Crest factor:**
≤ 6 for a current ≤ 3,000 A peak (500 A_{RMS})
- Maximum currents:**
1,000 A continuous for a frequency ≤ 1 kHz (limitation proportional to the inverse of frequency beyond)
1,200 A for 40 minutes max (interval between measurements > 20 minutes)
- Load impedance:**
≤ 15 Ω
- Operating voltage:**
600 V_{RMS}
- Common mode voltage:**
600 V category III and pollution degree 2
- Influence of adjacent conductor:**
≤ 1 mA/A at 50 Hz
- Influence of conductor position in jaws:**
≤ 0.1 % of output signal for frequencies ≤ 400 Hz
- Load influence:**
From 5 Ω to 15 Ω
< 0.5 % on measurement
< 0.5° on phase
- Influence of frequency ⁽³⁾:**
< 1 % of output signal from 30 Hz .. 48 Hz
< 0.5 % of output signal from 65 Hz .. 1 kHz
< 1 % of output signal from 1 kHz .. 5 kHz
- Influence of crest factor:**
< 1 % of output signal for crest factor ≤ 6 with current ≤ 3,000 A peak (500 A_{RMS})

- Influence of DC current superimposed on rated current:**
< 1 % of output signal for a current ≤ 30 A DC

MECHANICAL SPECIFICATIONS

- Operating temperature:**
-10 °C to +50 °C
- Storage temperature:**
-40 °C to +70 °C
- Influence of temperature:**
≤ 0.1 % of output signal per 10 °K
- Relative humidity for operation:**
0 to 85 % RH decreasing linearly above 35 °C
- Influence of relative humidity:**
< 0.1 % of output signal from 10 % to 85 % RH
- Operating altitude:**
0 to 2,000 m
- Max. jaw opening:**
53 mm
Patented progressive opening system
- Clamping capacity:**
Cable: Ø max 52 mm
Busbar: 1 busbar of 50 x 5 mm / 4 busbars of 30 x 5 mm
- Casing protection rating:**
IP40 (IEC 529)
- Drop test:**
1 m (IEC 68-2-32)
- Shock resistance:**
100 g (IEC 68-2-27)

- Vibration resistance:**
5/15 Hz 1.5 mm
15/25 Hz 1 mm
25/55 Hz 0.25 mm
(IEC 68-2-6)
- Self-extinguishing capability:**
Casing and jaws: UL94 V0
- Dimensions:**
216 x 111 x 45 mm
- Weight:**
550 g
- Colours:**
Dark grey case with red jaws
- Output:**
Safety sockets (4 mm)

SAFETY SPECIFICATIONS

- Electrical safety:**
Instrument with double insulation or reinforced insulation between the primary the secondary and the grippable part located under the guard as per IEC 1010-1 & IEC 1010-2-032
- 600 V category III, pollution degree 2
- 300 V category IV, pollution degree 2
- Electromagnetic compatibility (EMC):**
EN 50081-1: class B
EN 50082-2:
- Electrostatic discharge: IEC 1000-4-2
- Radiated field: IEC 1000-4-3
- Fast transients: IEC 1000-4-4
- Magnetic field at 50/60 Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 3 °K, 20 % to 75 % RH, signal sinus, frequency of 48 Hz to 65 Hz, distortion factor < 1 %, no DC components, external magnetic field < 40 A/m, no AC magnetic field, conductor centred for measurement, load impedance 5 Ω (5 VA)

(2) Accuracy class in accordance with IEC 185: 5 VA - class 0.5 - 48 Hz .. 65 Hz

(3) Out of frequency domain

To order	Reference
AC current clamp model C100 with operating manual	P01120301

Current clamps for AC current

Models C102 and C103

C100 series



Current	1,000 A
Ratio	1000/1
Output	1 mA/A

DESCRIPTION

An electronic voltage limiter protects the output of the clamp, if the secondary circuit is opened accidentally.

ELECTRICAL SPECIFICATIONS

- Current range:**
0.1 A AC .. 1,200 A AC
- Current transformation ratio:**
1000:1
- Output signal:**
1 mA AC / A AC (1 A to 1,000 A)
- Accuracy and phase shift ⁽¹⁾:**

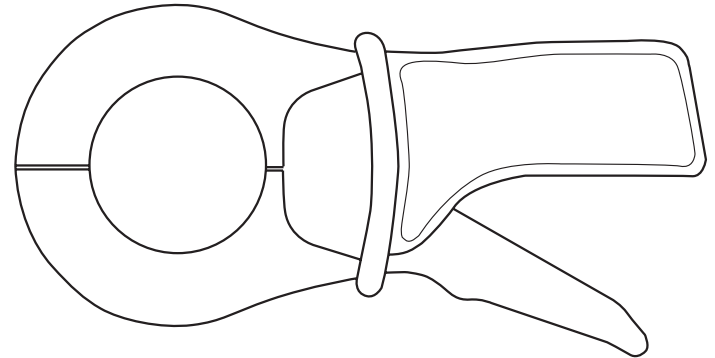
Primary current	0.1 A .. 10 A	10 A	50 A ⁽²⁾	200 A ⁽²⁾	1,000 A ⁽²⁾	1,200 A ⁽²⁾
% Accuracy of output signal	≤ 3% + 0.1 mA	≤ 3%	≤ 1.5%	≤ 0.75%	≤ 0.5%	≤ 0.5%
Phase shift	not specified	≤ 3°	≤ 1.5°	≤ 0.75°	≤ 0.5°	≤ 0.5°

- Bandwidth:**
30 Hz .. 10 kHz (-3 dB)
- Crest factor:**
≤ 6 for a current ≤ 3,000 A peak (500 A_{RMS})
- Maximum currents:**
1,000 A continuous for a frequency ≤ 1 kHz (limitation proportional to the inverse of frequency beyond)
1,200 A for 40 minutes max (interval between measurements > 20 minutes)
- Load impedance:**
≤ 15 Ω
- Max. voltage output:**
Electronic protection circuit limiting voltage to 30 V peak max
- Operating voltage:**
600 V_{RMS}
- Common mode voltage:**
600 V category III and pollution degree 2
- Influence of adjacent conductor:**
≤ 1 mA/A at 50 Hz
- Influence of conductor position in jaws:**
≤ 0.1 % of output signal for frequencies ≤ 400 Hz
- Load influence:** from 5 Ω to 15 Ω
< 0.5 % on measurement
< 0.5° on phase
- Influence of frequency ⁽³⁾:**
< 1 % of output signal from 30 Hz .. 48 Hz
< 0.5 % of output signal from 65 Hz .. 1 kHz
< 1 % of output signal from 1 kHz .. 5 kHz

- Influence of crest factor:**
< 1 % of output signal for crest factor ≤ 6 with current ≤ 3,000 A peak (500 A_{RMS})
- Influence of DC current superimposed on rated current:**
< 1 % of output signal for a current ≤ 30 A DC

MECHANICAL SPECIFICATIONS

- Operating temperature:**
-10 °C to +50 °C
- Storage temperature:**
-40 °C to +70 °C
- Influence of temperature:**
≤ 0.1 % of output signal per 10 °K
- Relative humidity for operation:**
0 to 85 % RH with a linear decrease above 35 °C
- Influence of relative humidity:**
< 0.1 % of output signal from 10 % to 85 % RH
- Operating altitude:**
0 to 2,000 m
- Max. jaw opening:**
53 mm, patented progressive opening system
- Clamping capacity:**
Cable: Ø max 52 mm
Busbar: 1 busbar of 50 x 5 mm /
4 busbars of 30 x 5 mm
- Casing protection rating:**
IP40 (IEC 529)
- Drop test:**
1 m (IEC 68-2-32)



- Shock resistance:**
100 g (IEC 68-2-27)
- Vibration resistance:**
5/15 Hz 1.5 mm - 15/25 Hz 1 mm - 25/55 Hz 0.25 mm (IEC 68-2-6)
- Self-extinguishing capability:**
Casing and jaws: UL94 V0
- Dimensions:**
216 x 111 x 45 mm
- Weight:**
550 g
- Colours:**
Dark grey case with red jaws
- Output:**
C102: Safety sockets (4 mm)
C103: two-wire cable with reinforced insulation or double insulation, length 1.5 m, terminated by 2 insulated elbowed male banana plugs (4 mm)

SAFETY SPECIFICATIONS

- Electrical safety:**
Instrument with double insulation or reinforced insulation between the primary the secondary and the grippable part located under the guard as per IEC 1010-1 & IEC 1010-2-032
- 600 V category III, pollution degree 2
- 300 V category IV, pollution degree 2
- Electromagnetic compatibility (EMC):**
EN 50081-1: class B
EN 50082-2:
- Electrostatic discharge: IEC 1000-4-2
- Radiated field: IEC 1000-4-3
- Fast transients: IEC 1000-4-4
- Magnetic field at 50/60 Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 3 °K, 20 % to 75 % RH, signal sinus, frequency of 48 Hz to 65 Hz, distortion factor < 1 %, no DC components, external magnetic field < 40 A/m, no AC magnetic field, conductor centred for measurement, load impedance 5 Ω (5 VA).

(2) Accuracy class in accordance with IEC 185: 5 VA - class 0.5 - 48 .. 65 Hz.

(3) Out of reference domain.

To order	Reference
AC current clamp model C102 with operating manual	P01120302
AC current clamp model C103 with operating manual	P01120303

Current clamps for AC current

Models C106 and C107

C100 series

Current	1,000 A
Output	1 mV/A

ELECTRICAL SPECIFICATIONS

- **Current range:**
0.1 A AC .. 1,200 A AC
- **Output signal:**
1 mV AC/A AC (1 V for 1,000 A)
- **Accuracy and phase shift (1):**

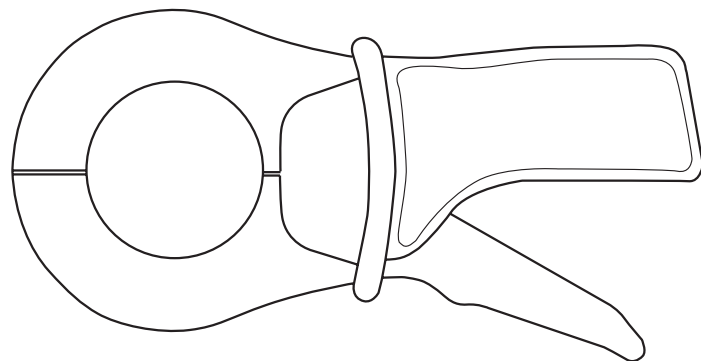
Primary current	0.1 A .. 10 A	10 A	50 A	200 A	1,000 A	1,200 A
% Accuracy of output signal	≤ 3% + 0.1 mV	≤ 3%	≤ 1.5%	≤ 0.75%	≤ 0.5%	≤ 0.5%
Phase shift	not specified	≤ 3°	≤ 1.5°	≤ 0.75°	≤ 0.5°	≤ 0.5°

- **Bandwidth:**
30 Hz .. 10 kHz
- **Crest factor:**
≤ 6 for a current ≤ 3,000 A peak (500 A_{RMS})
- **Maximum currents:**
1,000 A continuous for a frequency ≤ 1 kHz (limitation proportional to the inverse frequency beyond)
1,200 A for 40 minutes max (interval between measurements > 20 minutes)
- **Output impedance:**
1 Ω ± 1%
- **Load impedance:**
≥ 1 MΩ and ≤ 100 pF
- **Operating voltage:**
600 V_{RMS}
- **Common mode voltage:**
600 V category III and pollution degree 2
- **Influence of adjacent conductor:**
≤ 1 μV/A at 50 Hz
- **Influence of conductor position in jaws:**
≤ 0.1% of output signal for frequencies ≤ 400 Hz
- **Load influence:**
On receiver, for an input impedance of 100 Ω:
≤ 1% on measurement, no measurement on phase
On receiver, for an input impedance of 1 kΩ:
≤ 0.1% on measurement, no measurement on phase
- **Influence of frequency (2):**
< 1% of output signal from 30 Hz .. 48 Hz
< 0.5% of output signal from 65 Hz .. 1 kHz
< 1% of output signal from 1 kHz .. 5 kHz

- **Influence of crest factor:**
< 1% of output signal for crest factor ≤ 6 with current ≤ 3,000 A peak (500 A_{RMS})
- **Influence of DC current superimposed on rated current:**
< 1% of output signal for a current ≤ 30 A DC

MECHANICAL SPECIFICATIONS

- **Operating temperature:**
-10 °C to +50 °C
- **Storage temperature:**
-40 °C to +70 °C
- **Influence of temperature:**
≤ 0.1% of output signal per 10 °K
- **Relative humidity for operation:**
0 to 85% RH decreasing linearly above 35 °C
- **Influence of relative humidity:**
< 0.1% of output signal from 10% to 85% RH
- **Operating altitude:**
0 to 2,000 m
- **Max. jaw opening:**
53 mm
Patented progressive opening system
- **Clamping capacity:**
Cable: Ø max 52 mm
Busbar: 1 busbar of 50 x 5 mm / 4 busbars of 30 x 5 mm
- **Casing protection rating:**
IP40 (IEC 529)
- **Drop test:**
1 m (IEC 68-2-32)
- **Shock resistance:**
100 g (IEC 68-2-27)



- **Vibration resistance:**
5/15 Hz 1.5 mm
15/25 Hz 1 mm
25/55 Hz 0.25 mm
(IEC 68-2-6)
- **Self-extinguishing capability:**
Casing and jaws: UL94 V0
- **Dimensions:**
216 x 111 x 45 mm
- **Weight:**
550 g
- **Colours:**
Dark grey case with red jaws
- **Output:**
C106: Safety sockets (4 mm)
C107: two-wire cable with reinforced insulation or double insulation, length 1.5 m, terminated by 2 insulated elbowed male banana plugs (4 mm)

SAFETY SPECIFICATIONS

- **Electrical safety:**
Instrument with double insulation or reinforced insulation between the primary the secondary and the grippable part located under the guard as per IEC 1010-1 & IEC 1010-2-032
- 600 V category III, pollution degree 2
- 300 V category IV, pollution degree 2
- **Electromagnetic compatibility (EMC):**
EN 50081-1: class B
EN 50082-2:
- Electrostatic discharge: IEC 1000-4-2
- Radiated field: IEC 1000-4-3
- Fast transients: IEC 1000-4-4
- Magnetic field at 50/60 Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 3 °K, 20% to 75% RH, signal sinus, frequency of 48 Hz to 65 Hz, distortion factor < 1%, no DC components, external magnetic field < 40 A/m, no AC magnetic field, conductor centred for measurement.

(2) Out of reference domain.

To order	Reference
AC current clamp model C106 with operating manual	P01120304
AC current clamp model C107 with operating manual	P01120305

Current clamps for AC current

Models C112 and C113

C100 series



Current	1,000 A
Ratio	1000/1
Output	1 mA/A

DESCRIPTION

Thanks to their excellent technical performance (phase shift and linearity), these μ -metal core clamps are highly recommended for wattmeter use. These clamps are protected at output against overvoltages.

ELECTRICAL SPECIFICATIONS

- **Current range:**
0.001 A AC .. 1,200 A AC
- **Current transformation ratio:**
1000:1
- **Output signal:**
1 mA AC / A AC (1 A for 1,000 A)
- **Accuracy and phase shift⁽¹⁾:**

Primary current	0.1 A .. 100 mA	0.1 A .. 1 A	1 A .. 10 A	10 A .. 100 A	100 A .. 1,200 A
% Accuracy of output signal	$\leq 3\% + 5 \mu\text{A}$	$\leq 2\% + 3 \mu\text{A}$	$\leq 1\%$	$\leq 0.5\%$	$\leq 0.3\%$
Phase shift	not specified	not specified	$\leq 2^\circ$	$\leq 1^\circ$	$\leq 0.7^\circ$

- **Bandwidth:**
30 Hz .. 10 kHz
- **Crest factor:**
 ≤ 6 for a current $\leq 2,000$ A peak (300 A_{RMS})
- **Maximum currents:**
1,000 A continuous for a frequency ≤ 1 kHz (limitation proportional to the inverse of frequency beyond)
1,200 A for 40 minutes max (interval between measurements > 20 minutes)
- **Load impedance:**
 $\leq 1 \Omega$
- **Max. voltage output:**
Electronic protection circuit limiting voltage to 30 V peak max
- **Operating voltage:**
600 V_{RMS}
- **Common mode voltage:**
600 V category III and pollution degree 2
- **Influence of adjacent conductor:**
 ≤ 0.5 mA/A at 50 Hz
- **Influence of conductor position in jaws:**
 $\leq 0.1\%$ of output signal for frequencies ≤ 400 Hz
- **Load influence:**
From 1Ω to 5Ω
 $< 0.1\%$ on measurement
 $< 0.2^\circ$ on phase
- **Influence of frequency⁽²⁾:**
 $< 0.5\%$ of output signal from 30 Hz .. 48 Hz
 $< 1\%$ of output signal from 65 Hz .. 1 kHz
 $< 2\%$ of output signal from 1 kHz .. 5 kHz

- **Influence of crest factor:**
 $< 1\%$ of output signal for crest factor ≤ 6 with current $\leq 2,000$ A peak (300 A_{RMS})
- **Influence of DC current superimposed on rated current:**
 $< 1\%$ of output signal for a current ≤ 15 A DC

MECHANICAL SPECIFICATIONS

- **Operating temperature:**
 -10°C to $+50^\circ\text{C}$
- **Storage temperature:**
 -40°C to $+70^\circ\text{C}$
- **Influence of temperature:**
 $\leq 0.2\%$ of output signal per 10°C
- **Relative humidity for operation:**
0 to 85 % RH with a linear decrease above 35°C
- **Influence of relative humidity:**
 $< 0.1\%$ of output signal from 10 % to 85 % RH
- **Operating altitude:**
0 to 2,000 m
- **Max. jaw opening:**
53 mm, patented progressive opening system
- **Clamping capacity:**
Cable: \varnothing max 52 mm
Busbar: 1 busbar of 50×5 mm / 4 busbars of 30×5 mm
- **Casing protection rating:**
IP40 (IEC 529)
- **Drop test:**
1 m (IEC 68-2-32)
- **Shock resistance:**
100 g (IEC 68-2-27)

- **Vibration resistance:**
5/15 Hz 1.5 mm, 15/25 Hz 1 mm, 25/55 Hz 0.25 mm (IEC 68-2-6)
- **Self-extinguishing capability:**
Casing and jaws: UL94 V0
- **Dimensions:**
216 x 111 x 45 mm
- **Weight:**
550 g
- **Colours:**
Dark grey case with red jaws
- **Output:**
C112: Safety sockets (4 mm)
C113: two-wire cable with reinforced insulation or double insulation, length 1.5 m, terminated by 2 insulated elbowed male banana plugs (4 mm)

SAFETY SPECIFICATIONS

- **Electrical safety:**
Instrument with double insulation or reinforced insulation between the primary the secondary and the grippable part located under the guard as per IEC 1010-1 & IEC 1010-2-032
- 600 V category III, pollution degree 2
- 300 V category IV, pollution degree 2
- **Electromagnetic compatibility (EMC):**
EN 50081-1: class B
EN 50082-2:
- Electrostatic discharge: IEC 1000-4-2
- Radiated field: IEC 1000-4-3
- Fast transients: IEC 1000-4-4
- Magnetic field at 50/60 Hz: IEC 1000-4-8

(1) Conditions of reference: $23^\circ\text{C} \pm 3^\circ\text{K}$, 20 % to 75 % RH, signal sinus, frequency of 48 Hz to 65 Hz, distortion factor $< 1\%$, no DC components, external magnetic field < 40 A/m, no AC magnetic field, conductor centred for measurement, load impedance 1Ω (1 VA)

(2) Out of reference domain.

To order	Reference
AC current clamp model C112 with operating manual	P01120314
AC current clamp model C113 with operating manual	P01120315

Current clamps for AC current

Models C116 and C117

C100 series

Current	1,000 A
Output	1 mV/A

DESCRIPTION

Thanks to their excellent technical performance (phase shift and linearity), these μ -metal core clamps are highly recommended for wattmeter use.

ELECTRICAL SPECIFICATIONS

- Current range:**
0.001 A AC .. 1,200 A AC
- Output signal:**
1 mVAC/A AC (1 V for 1,000 A)
- Accuracy and phase shift ⁽¹⁾:**

Primary current	1 mA .. 100 mA	0.1 A .. 1 A	1 A .. 10 A	10 A .. 100 A	100 A .. 1,200 A
% Accuracy of output signal	$\leq 3\% + 5 \mu\text{A}$	$\leq 2\% + 3 \mu\text{A}$	$\leq 1\%$	$\leq 0.5\%$	$\leq 0.3\%$
Phase shift	not specified	not specified	$\leq 2^\circ$	$\leq 1^\circ$	$\leq 0.7^\circ$

- Bandwidth:**
30 Hz .. 10 kHz
- Crest factor:**
 ≤ 6 for a current $\leq 2,000$ A peak (300 A_{RMS})
- Maximum currents:**
1,000 A continuous for a frequency ≤ 1 kHz (limitation proportional to the inverse of frequency beyond)
1,200 A for 40 minutes max (interval between measurements > 20 minutes)
- Output impedance:**
1 $\Omega \pm 1\%$
- Load impedance:**
 ≥ 1 M Ω and ≤ 100 pF
- Operating voltage:**
600 V_{RMS}
- Common mode voltage:**
600 V category III and pollution degree 2
- Influence of adjacent conductor:**
 ≤ 0.5 mA/A at 50 Hz
- Influence of conductor position in jaws:**
 $\leq 0.1\%$ of output signal for frequencies ≤ 400 Hz
- Load influence:**
On receiver, for an input impedance of 100 Ω :
 $\leq 1\%$ on measurement, no measurement on phase.
On receiver, for an input impedance of 1 k Ω :
 $\leq 0.1\%$ on measurement, no measurement on phase.
- Influence of frequency ⁽²⁾:**
 $< 0.5\%$ of output signal from 30 Hz .. 48 Hz
 $< 1\%$ of output signal from 65 Hz .. 1 kHz
 $< 2\%$ of output signal from 1 kHz .. 5 kHz

- Influence of crest factor:**
 $< 1\%$ of output signal for crest factor ≤ 6 with current $\leq 2,000$ A peak
- Influence of DC current superimposed on rated current:**
 $< 1\%$ of output signal for a current ≤ 15 A DC

MECHANICAL SPECIFICATIONS

- Operating temperature:**
-10 °C to +50 °C
- Storage temperature:**
40 °C to +70 °C
- Influence of temperature:**
 $\leq 0.2\%$ of output signal per 10 °K
- Relative humidity for operation:**
0 to 85 % RH decreasing linearly above 35 °C
- Influence of relative humidity:**
 $< 0.1\%$ of output signal from 10 % to 85 % RH
- Operating altitude:**
0 to 2,000 m
- Max. jaw opening:**
53 mm
Patented progressive opening system
- Clamping capacity:**
Cable: \varnothing max 52 mm
Busbar: 1 busbar of 50 x 5 mm /
4 busbars of 30 x 5 mm
- Casing protection rating:**
IP40 (IEC 529)
- Drop test:** 1 m (IEC 68-2-32)
- Shock resistance:**
100 g (IEC 68-2-27)

- Vibration resistance:**
5/15 Hz 1.5 mm
15/25 Hz 1 mm
25/55 Hz 0.25 mm
(IEC 68-2-6)
- Self-extinguishing capability:**
Casing and jaws: UL94 V0
- Dimensions:**
216 x 111 x 45 mm
- Weight:**
550 g
- Colours:**
Dark grey case with red jaws
- Output:**
C116: Safety sockets (4 mm)
C117: two-wire cable with reinforced insulation or double insulation, length 1.5 m, terminated by 2 insulated elbowed male banana plugs, \varnothing 4 mm

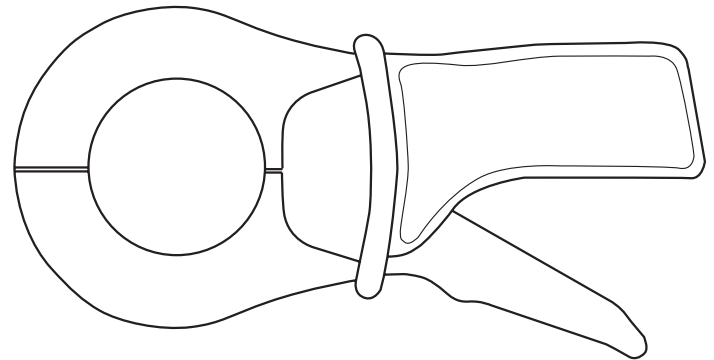
SAFETY SPECIFICATIONS

- Electrical safety:**
Instrument with double insulation or reinforced insulation between the primary the secondary and the grippable part located under the guard as per IEC 1010-1 & IEC 1010-2-032
- 600 V category III, pollution degree 2
- 300 V category IV, pollution degree 2
- Electromagnetic compatibility (EMC):**
EN 50081-1: class B
EN 50082-2:
- Electrostatic discharge: IEC 1000-4-2
- Radiated field: IEC 1000-4-3
- Fast transients: IEC 1000-4-4
- Magnetic field at 50/60 Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C \pm 3 °K, 20 % to 75 % RH, signal sinus, frequency of 48 Hz to 65 Hz, distortion factor $< 1\%$, no DC components, external magnetic field < 40 A/m, no AC magnetic field, conductor centred for measurement, load impedance ≥ 1 M Ω and ≤ 100 pF

(2) Out of reference domain

To order	Reference
AC current clamp model C116 with operating manual	P01120316
AC current clamp model C117 with operating manual	P01120317



Current clamp for AC current

Model C122

C100 series

Current	1,000 A
Ratio	1000/5
Output	5 mA/A

DESCRIPTION

An electronic voltage-limiting system protects output of clamp when operating, if the secondary circuit is opened accidentally.

ELECTRICAL SPECIFICATIONS

- Current range:**
1 A AC .. 1,200 A AC
- Current transformation ratio:**
1000:5
- Output signal:**
5 mA AC / A AC (5 A for 1,000 A)
- Accuracy and phase shift ⁽¹⁾:**

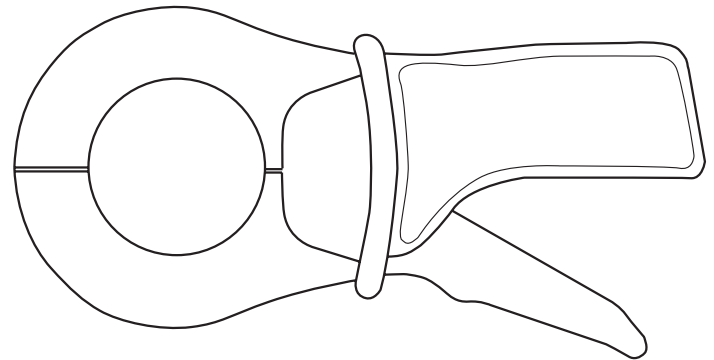
Primary current	1 A .. 20 A	20 A	50 A ⁽²⁾	200 A ⁽²⁾	1,000 A ⁽²⁾	1,200 A ⁽²⁾
Accuracy en %	≤ 6% + 0.5 mA	≤ 5%	≤ 3%	≤ 1.5%	≤ 1%	≤ 1%
Phase shift	not specified	≤ 3°	≤ 3°	≤ 1.5°	≤ 1°	≤ 1°

- Bandwidth:**
30 Hz .. 10 kHz
- Crest factor:**
≤ 6 for a current ≤ 3,000 A peak (500 A_{RM})
- Maximum currents:**
1,000 A continuous for a frequency ≤ 1 kHz (limitation proportional to the inverse of frequency beyond)
1,200 A for 30 minutes max (interval between measurements > 15 minutes)
- Load impedance:**
≤ 0.6 Ω
- Impedance of connection leads:**
≤ 40 mΩ
- Maximum output voltage (secondary open):**
Electronic protection circuit limiting voltage to 30 V peak max
- Operating voltage:**
600 V_{RM}
- Common mode voltage:**
600 V category III and pollution degree 2
- Influence of adjacent conductor:**
≤ 1 mA/A at 50 Hz
- Influence of conductor position in jaws:**
≤ 0.2 % of output signal for frequencies ≤ 400 Hz
- Load influence:**
From 0.2 Ω to 0.6 Ω
< 0.5 % on measurement
< 0.5° on phase
- Influence of frequency ⁽³⁾:**
< 1 % of output signal from 30 Hz .. 48 Hz
< 0.5 % of output signal from 65 Hz .. 1 kHz
< 1 % of output signal from 1 kHz .. 5 kHz

- Influence of crest factor:**
< 1 % of output signal for crest factor ≤ 6 with current ≤ 3,000 A peak (500 A_{RM})
- Influence of DC current superimposed on rated current:**
< 1 % of output signal for a current ≤ 30 A DC

MECHANICAL SPECIFICATIONS

- Operating temperature:**
-10 °C to +50 °C
- Storage temperature:**
-40 °C to +70 °C
- Influence of temperature:**
≤ 0.1 % of output signal per 10 °K
- Relative humidity for operation:**
0 to 85 % 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
- Max. jaw opening:**
53 mm
Patented progressive opening system
- Clamping capacity:**
- Cable: Ø max 52 mm
- Busbar: 1 busbar of 50 x 5 mm / 4 busbars of 30 x 5 mm
- Casing protection rating:**
IP40 (IEC 529)
- Drop test:**
1 m (IEC 68-2-32)



- Shock resistance:**
100 g (IEC 68-2-27)
- Vibration resistance:**
5/15 Hz 1.5 mm
15/25 Hz 1 mm
25/55 Hz 0.25 mm (IEC 68-2-6)
- Self-extinguishing capability:**
Casing and jaws: UL94 V0
- Dimensions:**
216 x 111 x 45 mm
- Weight:**
550 g
- Colours:**
Dark grey case with red jaws
- Output:**
Safety sockets (4 mm)

SAFETY SPECIFICATIONS

- Electrical safety:**
Instrument with double insulation or reinforced insulation between the primary the secondary and the grippable part located under the guard as per IEC 1010-1 & IEC 1010-2-032
- 600 V category III, pollution degree 2
- 300 V category IV, pollution degree 2
- Electromagnetic compatibility (EMC):**
EN 50081-1: class B
EN 50082-2:
- Electrostatic discharge: IEC 1000-4-2
- Radiated field: IEC 1000-4-3
- Fast transients: IEC 1000-4-4
- Magnetic field at 50/60 Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 3 °K, 20 % to 75 % RH, signal sinus, frequency of 48 Hz to 65 Hz, distortion factor < 1 %, no DC components, external magnetic field < 40 A/m, no AC magnetic field, conductor centred for measurement, load impedance 0.2 Ω (5 VA)

(2) Accuracy class in accordance with IEC 185: 5 VA - class 1 - 48 .. 65 Hz

(3) Out of reference domain

To order AC current clamp model C122 with operating manual	Reference P01120306
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Current clamp for AC current

Model C148

C100 series



Current	250 A AC	500 A AC	1,000 A AC
Ratio	250:5	500:5	1000:5
Output	20 mA/A	10 mA/A	5 mA/A

DESCRIPTION

An electronic voltage-limiting system protects output of clamp when operating if the secondary circuit is opened accidentally.

ELECTRICAL SPECIFICATIONS

- **Current range:**
1 A AC .. 300 A AC
1 A AC .. 600 A AC
1 A AC .. 1,200 A AC
- **Current transformation ratio**
250:5
500:5
1000:5
- **Output signal:**
20 mA AC / A AC (5 A for 250 A)
10 mA AC / A AC (5 A for 500 A)
5 mA AC / A AC (5 A for 1,000 A)

- **Accuracy and phase shift ⁽¹⁾:**

- 250 A calibre

Primary current	1 A .. 5 A	5 A	12,5 A ⁽²⁾	50 A ⁽²⁾	250 A ⁽²⁾	300 A ⁽²⁾
Accuracy en %	≤ 10% + 2 mA	≤ 10%	≤ 5%	≤ 2.5%	≤ 2%	≤ 2%
Phase shift	not specified	not specified	≤ 10°	≤ 10°	≤ 10°	≤ 10°

- 500 A calibre

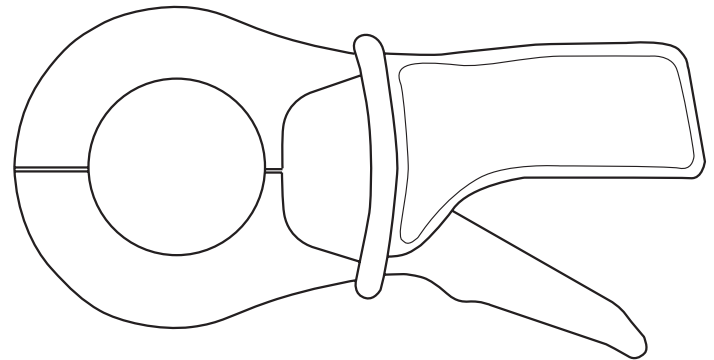
Primary current	1 A .. 10 A	10 A	25 A ⁽³⁾	100 A ⁽³⁾	500 A ⁽³⁾	600 A ⁽³⁾
Accuracy en %	≤ 6% + 1 mA	≤ 6%	≤ 3%	≤ 2%	≤ 1%	≤ 1%
Phase shift	not specified	≤ 6°	≤ 4°	≤ 3°	≤ 2.5°	≤ 2.5°

- 1,000 A calibre

Primary current	1 A .. 20 A	20 A	50 A ⁽⁴⁾	200 A ⁽⁴⁾	1,000 A ⁽⁴⁾	1,200 A ⁽⁴⁾
Accuracy en %	≤ 6% + 0.5 mA	≤ 5%	≤ 3%	≤ 1.5%	≤ 1%	≤ 1%
Phase shift	not specified	≤ 5°	≤ 3°	≤ 1.5°	≤ 1°	≤ 1°

- **Bandwidth:**
48 Hz .. 1 kHz
- **Crest factor:**
 - 250 A calibre:
≤ 6 with current ≤ 750 A peak
 - 500 A calibre:
≤ 6 with current ≤ 1,500 A peak
 - 1,000 A calibre:
≤ 6 with current ≤ 3,000 A peak
- **Maximum currents:**
1,200 A for frequencies ≤ 1 kHz for 30 minutes max
(interval between measurements > 15 minutes)
- **Load impedance:**
 - 250 A calibre: ≤ 0.2 Ω
 - 500 A calibre: ≤ 0.4 Ω
 - 1,000 A calibre: ≤ 0.4 Ω
- **Impedance of connection leads:**
≤ 40 mΩ

- **Maximum output voltage (secondary open):**
Electronic protection circuit limiting voltage to 30 V peak max
- **Operating voltage:**
600 V_{RMS}
- **Common mode voltage:**
600 V category III and pollution degree 2
- **Influence of adjacent conductor:**
 - 250 A calibre: ≤ 15 mA/A at 50 Hz
 - 500 A calibre: ≤ 10 mA/A at 50 Hz
 - 1,000 A calibre: ≤ 1 mA/A at 50 Hz
- **Influence of conductor position in jaws:**
For frequencies ≤ 400 Hz
 - 250 A calibre: ≤ 0.6% of output signal
 - 500 A calibre: ≤ 0.4% of output signal
 - 1,000 A calibre: ≤ 0.2% of output signal



- **Load influence:**
 - 250 A calibre: from 25 mΩ to 0.2 Ω
< 2% on measurement
< 4° on phase
 - 500 A calibre: from 50 mΩ to 0.4 Ω
< 1% on measurement
< 2° on phase
 - 1,000 A calibre: from 50 mΩ to 0.4 Ω
< 0.5% on measurement
< 0.5° on phase
- **Influence of frequency ⁽⁵⁾:**
 - 250 A calibre:
< 1% of output signal from 65 Hz .. 100 Hz
< 5% of output signal from 100 Hz .. 1 kHz
 - 500 A calibre:
< 1% of output signal from 65 Hz .. 1 kHz
 - 1,000 A calibre:
< 0.5% of output signal from 65 Hz .. 100 Hz
< 1% of output signal from 100 Hz .. 1 kHz
- **Influence of crest factor:**
< 1% of output signal for crest factor ≤ 6 with current:
≤ 750 A peak (calibre 250 A)
≤ 1,500 A peak (calibre 500 A)
≤ 3,000 A peak (1,000 A calibre)
- **Influence of DC current superimposed on rated current:**
< 1% of output signal for a current ≤ 30 A DC

Current clamp for AC current

Model C148

C100 series



MECHANICAL SPECIFICATIONS

- **Operating temperature:**
-10 °C to +50 °C
- **Storage temperature:**
-40 °C to +70 °C
- **Influence of temperature:**
≤ 0.15 % of output signal per 10 °K
- **Relative humidity for operation:**
0 to 85 % RH decreasing linearly above 35 °C
- **Influence of relative humidity:**
From 10 % to 85 % RH
 - 250 A calibre:
< 0.6 % of output signal and < 2° on phase
 - 500 A calibre:
< 0.4 % of output signal and < 0.6° on phase
 - 1,000 A calibre:
< 0.2 % of output signal and < 0.2° on phase
- **Operating altitude:**
0 to 2,000 m
- **Max. jaw opening:**
53 mm
Patented progressive opening system

- **Clamping capacity:**
Cable: Ø max 52 mm
Busbar: 1 busbar of 50 x 5 mm /
4 busbars of 30 x 5 mm
- **Casing protection rating:**
IP40 (IEC 529)
- **Drop test:**
1 m (IEC 68-2-32)
- **Shock resistance:**
100 g (IEC 68-2-27)
- **Vibration resistance:**
5/15 Hz 1.5 mm
15/25 Hz 1 mm
25/55 Hz 0.25 mm
(IEC 68-2-6)
- **Self-extinguishing capability:**
UL94 V0
- **Dimensions:**
216 x 111 x 45 mm
- **Weight:**
550 g
- **Colours:**
Dark grey case with red jaws
- **Output:**
Safety jacks (4 mm)

SAFETY SPECIFICATIONS

- **Electrical safety:**
Instrument with double insulation or reinforced insulation between the primary the secondary and the grippable part located under the guard as per IEC 1010-1 & IEC 1010-2-032
 - 600 V category III, pollution degree 2
 - 300 V category IV, pollution degree 2
- **Electromagnetic compatibility (EMC):**
EN 50081-1: class B
EN 50082-2:
 - Electrostatic discharge: IEC 1000-4-2
 - Radiated field: IEC 1000-4-3
 - Fast transients: IEC 1000-4-4
 - Magnetic field at 50/60 Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 3 °K, 20 % to 75 % RH, signal sinus, frequency of 48 Hz to 65 Hz, distortion factor < 1 %, external magnetic field < 40 A/m, no AC magnetic field, conductor centred for measurement, load impedance:

- 250 A calibre: 0.1 Ω (2.5 VA)
- 500 A calibre: 0.2 Ω (5 VA)
- 1,000 A calibre: 0.2 Ω (5 VA)

(2) Accuracy class in accordance with IEC 185: 2.5 VA - class 3 - 48-65 Hz

(3) Accuracy class in accordance with IEC 185: 5 VA - class 3 - 48-65 Hz

(4) Accuracy class in accordance with IEC 185: 5 VA - class 1 - 48-65 Hz

(5) Out of reference domain

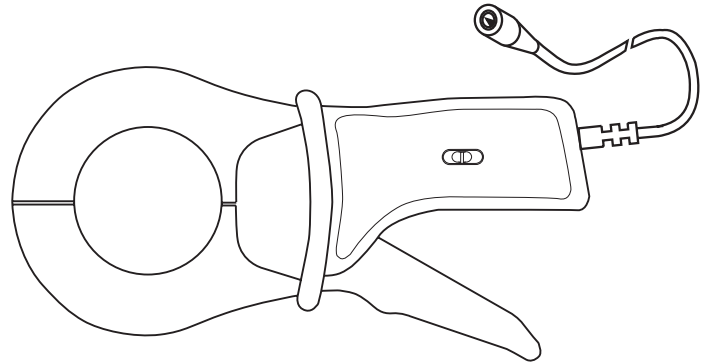
To order	Reference
AC current clamp model C148 with operating manual	P01120307

Model C160 (insulated AC current probe)

Current	30 A peak	300 A peak	2,000 A peak
Output	100 mV/A	10 mV/A	1 mV/A

DESCRIPTION

This 1,000 A AC clamp can be used for easy display and measurement of current curves. Equipped with a coaxial cable terminated by a BNC connector, it is ideal for use with any oscilloscope. It outputs a signal in mV directly proportional to the current. It offers 3 different sensitivities.



ELECTRICAL SPECIFICATIONS

- **Current range:**
0.1 A AC .. 10 A AC (30 A peak)
1 A AC .. 100 A AC (300 A peak)
1 A AC .. 1,000 A AC (2,000 A peak)

- **Output signal:**
100 mV AC / A AC (1 V for 10 A)
10 mV AC / A AC (1 V for 100 A)
1 mA AC / A AC (1 V for 1,000 A)

- **Accuracy and phase shift ⁽¹⁾:**

- 10 A calibre

Primary current	0.1 A .. 0.5 A	0.5 A .. 2 A	2 A .. 10 A	10 A .. 12 A
% Accuracy of output signal	≤ 3% + 10 mV	≤ 3% + 10 mV	≤ 3% + 10 mV	≤ 3% + 10 mV
Phase shift	not specified	not specified	≤ 15°	≤ 15°

- 100 A calibre

Primary current	0.1 A .. 5 A	5 A .. 20 A	20 A .. 100 A	100 A .. 120 A
% Accuracy of output signal	≤ 2% + 5 mV	≤ 2% + 5 mV	≤ 2% + 5 mV	≤ 2% + 5 mV
Phase shift	not specified	≤ 15°	≤ 10°	≤ 5°

- 1,000 A calibre

Primary current	1 A .. 50 A	50 A .. 200 A	200 A .. 1,000 A	1,000 A .. 1,200 A
% Accuracy of output signal	≤ 1% + 1 mV	≤ 1% + 1 mV	≤ 1% + 1 mV	≤ 1% + 1 mV
Phase shift	not specified	≤ 3°	≤ 2°	≤ 1°

- **Bandwidth:**
10 Hz .. 100 kHz (-3 dB)
(depending on current value)
- **Rise/fall time from 10 % to 90 %:**
3.5 μs
- **10 % delay time:**
0.5 μs
- **Ampere second product:**
 - 10 A calibre: 3.2 A.s
 - 100 A calibre: 26 A.s
 - 1,000 A calibre: 64 A.s

- **Maximum currents:**
1,000 A permanent
1,200 A for 40 minutes max. / > 20 minutes shutdown for a frequency ≤ 1 kHz (limitation proportional to the inverse of one third of the frequency beyond that)
- **Insertion impedance (at 400 Hz / 10 kHz)**
 - 10 A calibre: < 0.3 mΩ / < 6.6 mΩ
 - 100 A calibre: < 0.3 mΩ / < 2 mΩ
 - 1,000 A calibre: < 0.3 mΩ / < 1.6 mΩ
- **Output impedance at 1 kHz:**
 - 10 A calibre: ≤ 515 Ω ± 10 %
 - 100 A calibre: ≤ 515 Ω ± 10 %
 - 1,000 A calibre: ≤ 515 Ω ± 10 %

- **Influence of temperature:**
≤ 150 ppm / k or 0.15 % of output signal per 10 °K
- **Influence of relative humidity:**
< 0.1 % of output signal
- **Influence of adjacent conductor:**
≤ 1 mA / A at 50 Hz
- **Influence of DC current ≤ 30 A superimposed on rated current:**
< 1 %
- **Influence of conductor position in jaws:**
≤ 0.1 % of output signal for frequencies ≤ 400 Hz
- **Influence of frequency ⁽²⁾:**
 - 10 A calibre:
< 10 % of output signal from 10 Hz .. 1 kHz
< 5 % of output signal from 1 kHz .. 10 kHz
< 20 % of output signal from 10 kHz .. 50 kHz
3 dB of output signal from 50 kHz .. 100 kHz
 - 100 A calibre:
< 5 % of output signal from 10 Hz .. 1 kHz
< 3 % of output signal from 1 kHz .. 10 kHz
< 20 % of output signal from 10 kHz .. 50 kHz
3 dB of output signal from 50 kHz .. 100 kHz
 - 1,000 A calibre:
< 1 % of output signal from 10 Hz .. 1 kHz
< 2 % of output signal from 1 kHz .. 10 kHz
< 10 % of output signal from 10 kHz .. 50 kHz
3 dB of output signal from 50 kHz .. 100 kHz
- **Influence of crest factor:**
< 1 % of output signal for crest factor ≤ 6 with current
 - 10 A calibre: ≤ 30 A peak
 - 100 A calibre: ≤ 300 A peak
 - 1,000 A calibre: ≤ 3,000 A peak

MECHANICAL SPECIFICATIONS

- **Max. jaw opening:**
53 mm
- **Clamping capacity:**
Cable: Ø max 52 mm
Busbar: 1 busbar of 50 x 5 mm/
4 busbars of 30 x 5 mm
- **Operating temperature:**
-10 °C to +55 °C
- **Storage temperature:**
-40 °C to +70 °C
- **Relative humidity for operation:**
0 to 85 % RH decreasing linearly above 35 °C
- **Operating altitude:**
0 to 2,000 m
- **Casing protection rating:**
IP30 with clamp open (IEC 529)
IP40 with clamp closed (IEC 529)
- **Drop test:**
1 m (IEC 68-2-32)

- **Shock resistance:**
100 g / 6 ms / half-period (IEC 68-2-27)
- **Protection against impacts:**
IK04 0.5 J (EN 50102)
- **Vibration resistance:**
5/15 Hz 1.5 mm peak
15/25 Hz 1 mm peak
25/55 Hz 0.25 mm peak
(IEC 68-2-6)
- **Self-extinguishing capability:**
Casing and jaws: UL94 V0
- **Dimensions:**
216 x 111 x 45 mm
- **Weight:**
550 g
- **Colours:**
Dark grey case with red jaws
- **Output:**
Via 2 m coaxial cable terminated by insulated BNC plug

SAFETY SPECIFICATIONS

- **Electrical safety:**
Instrument with double insulation or reinforced insulation between the primary the secondary and the grippable part located under the guard as per IEC 1010-1 & IEC 1010-2-032
- 600 V category III, pollution degree 2
- 300 V category IV, pollution degree 2
- **Electromagnetic compatibility (EMC):**
EN 50081-1: class B
EN 50082-2:
- Electrostatic discharge: IEC 1000-4-2
without disturbance: 4 kV class 2
non-destructive: 15 kV class 4
- Radiated field: IEC 1000-4-3
without disturbance: 10 V/m performance criterion A
- Fast transients: IEC 1000-4-4
without disturbance: 1 kV class 2
non-destructive: 2 kV class 3
- Magnetic field at 50/60 Hz: IEC 1000-4-8
field of 400 A/m at 50 Hz: < 1 A

(1) Conditions of reference: 23 °C ± 3 °K, 20 % to 75 % RH, signal sinus, frequency of 48 Hz à 1,000 Hz, distortion factor < 1 % with no DC component, external magnetic field < 40 A/m, no DC components, no external conductor with circulating current, conductor centred for measurement, load impedance: ≥ 1 MΩ and < 100 pF

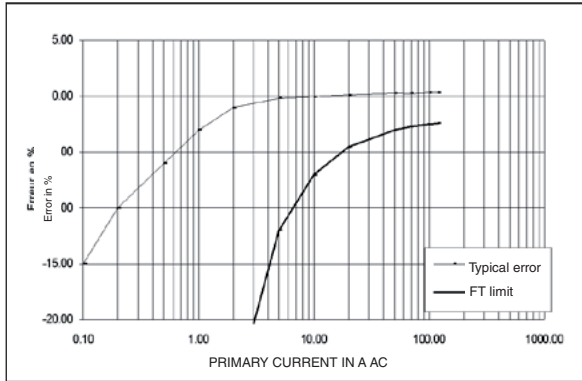
(2) Out of reference domain

To order	Reference
AC current clamp model C160 with operating manual	P01120308

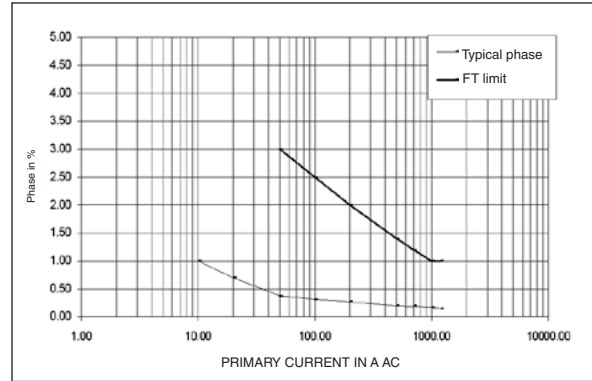
CURVES AT 50 Hz

1,000 A calibre

Error on measurement

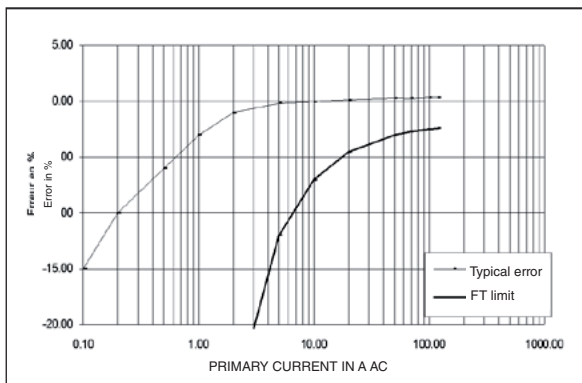


Phase shift

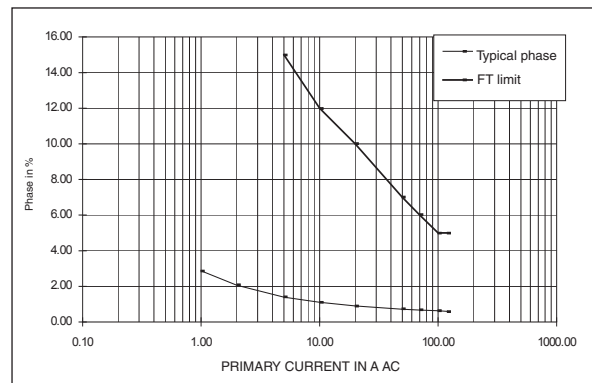


100 A calibre

Error on measurement

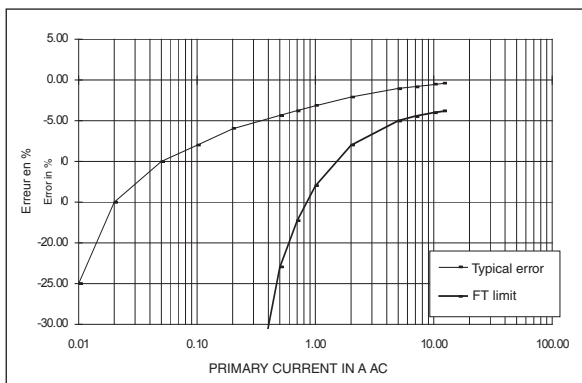


Phase shift

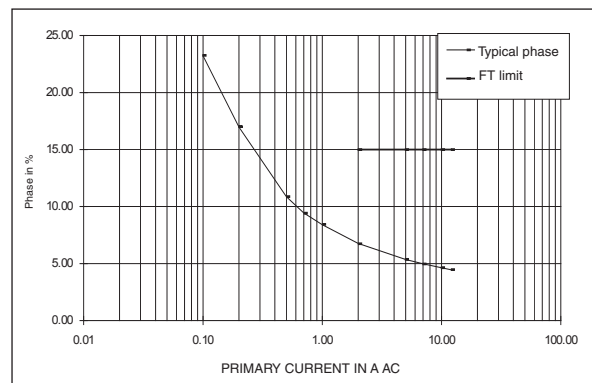


10 A calibre

Error on measurement

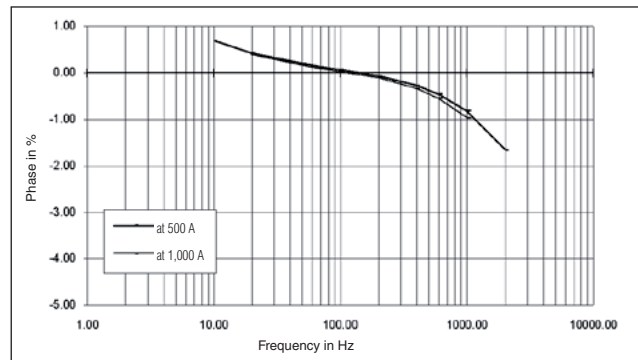
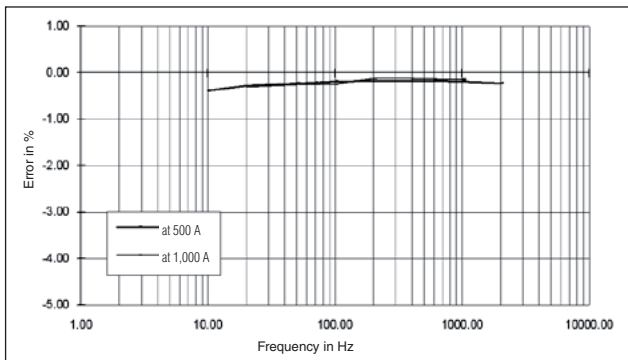
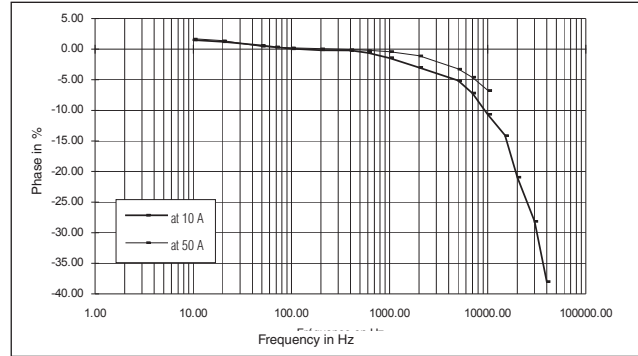
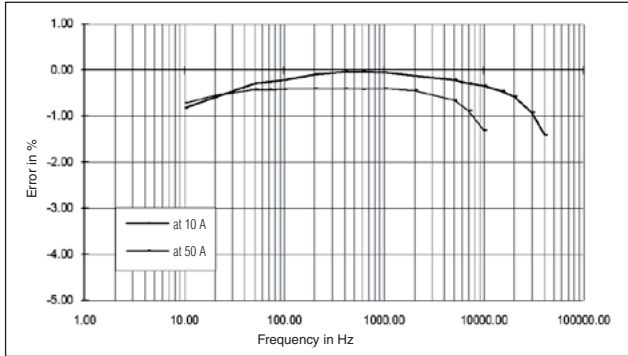


Phase shift

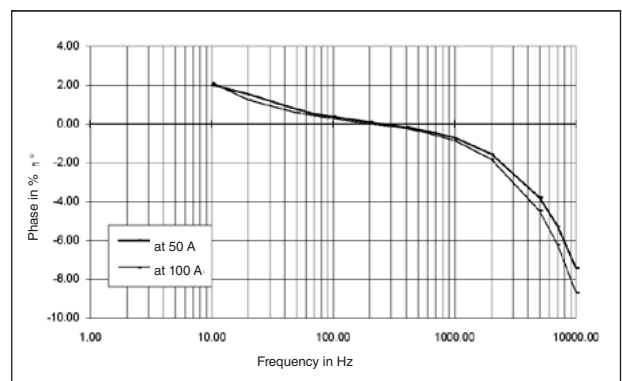
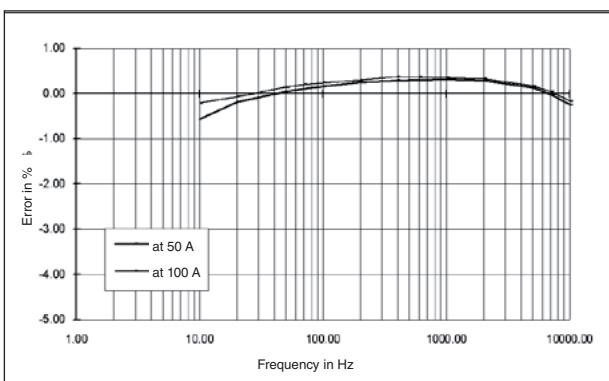
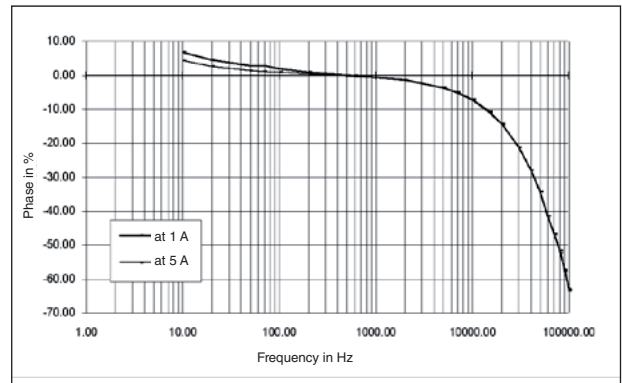
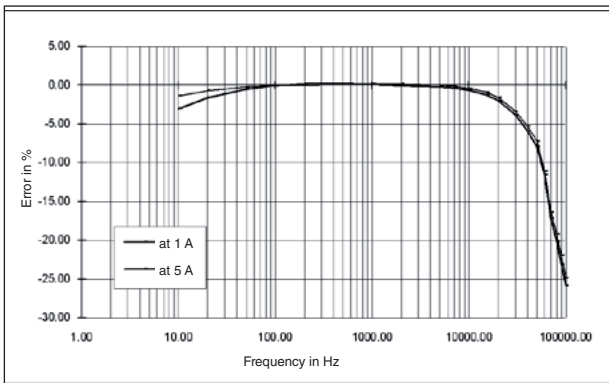


FREQUENCY RESPONSE (CONT.)

1,000 A calibre

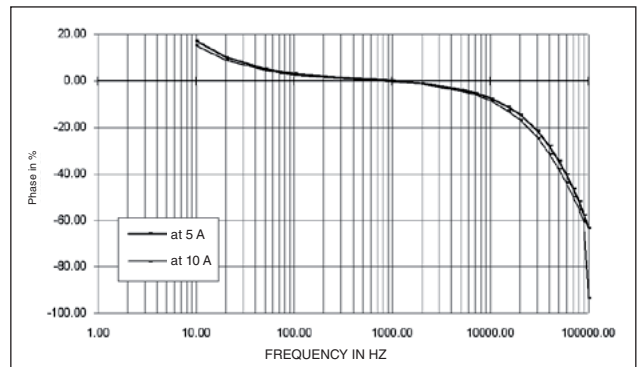
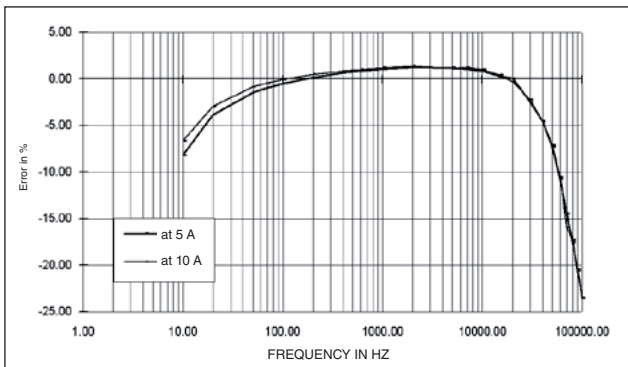
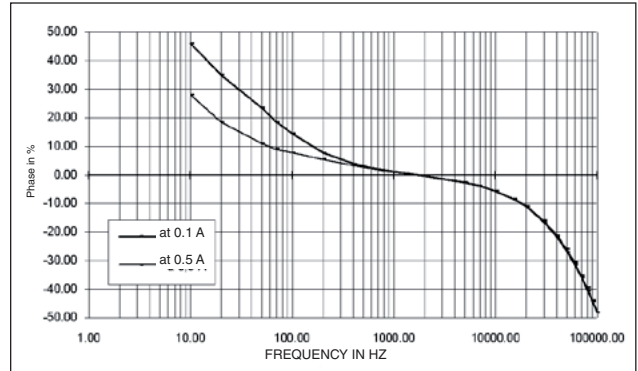
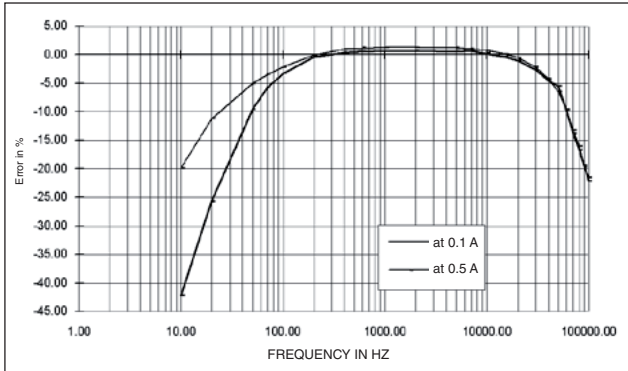


100 A calibre



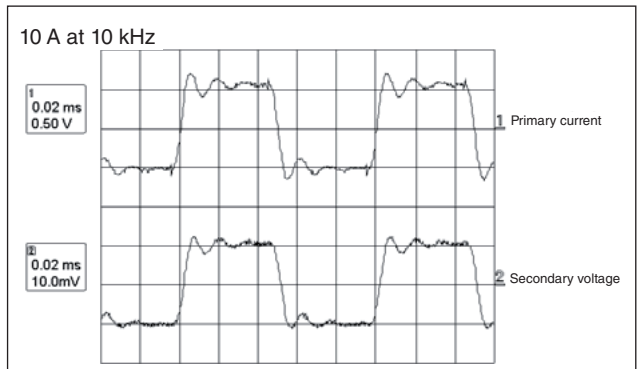
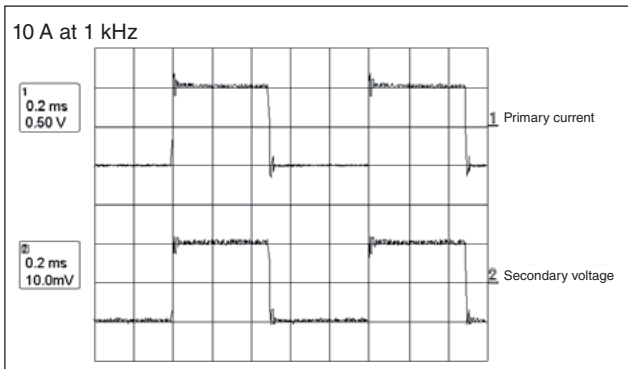
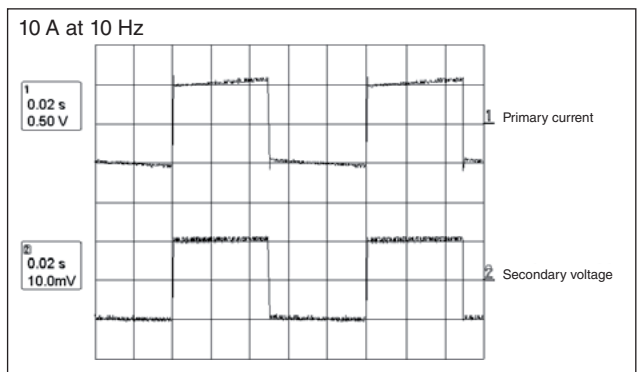
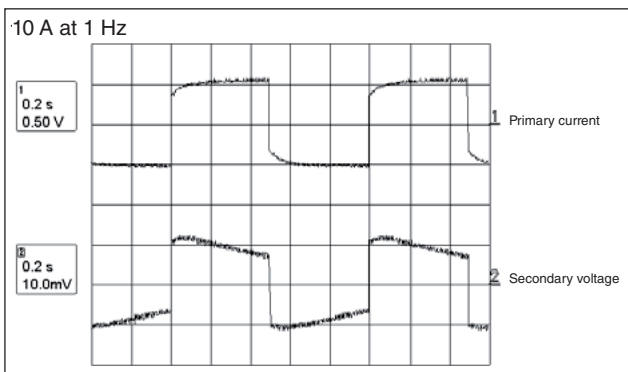
FREQUENCY RESPONSE (CONT.)

10 A calibre



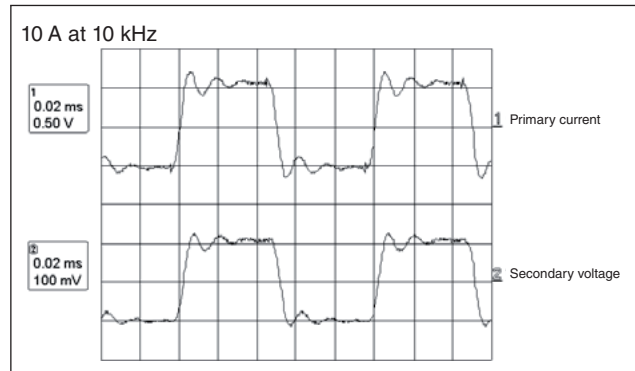
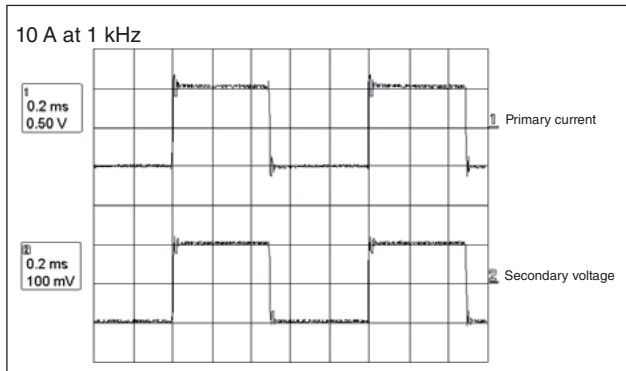
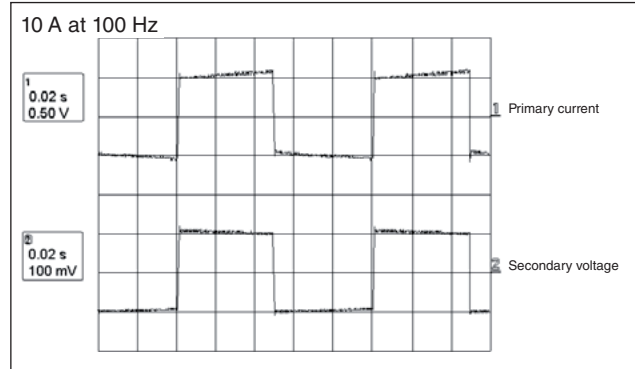
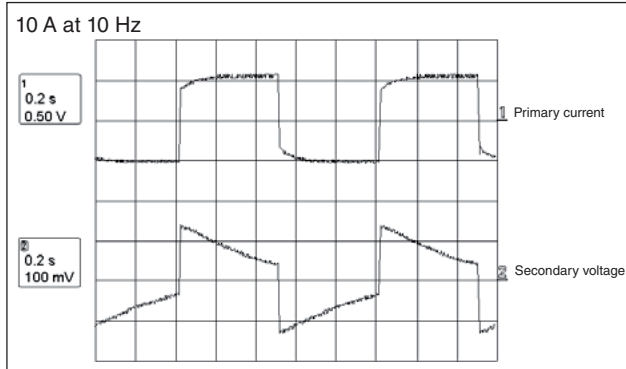
RESPONSE TO A SQUARE SIGNAL

1,000 A calibre

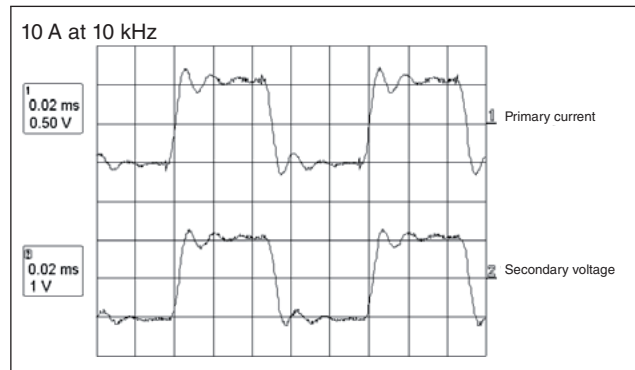
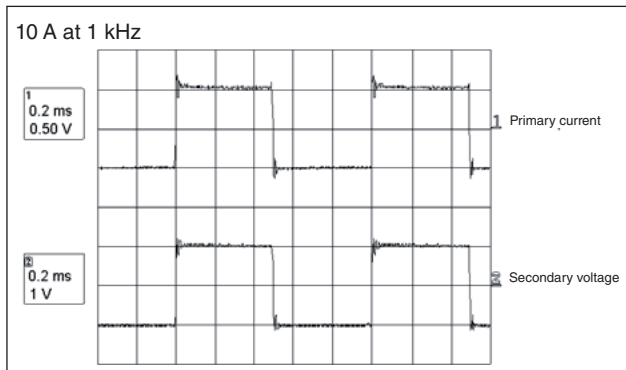
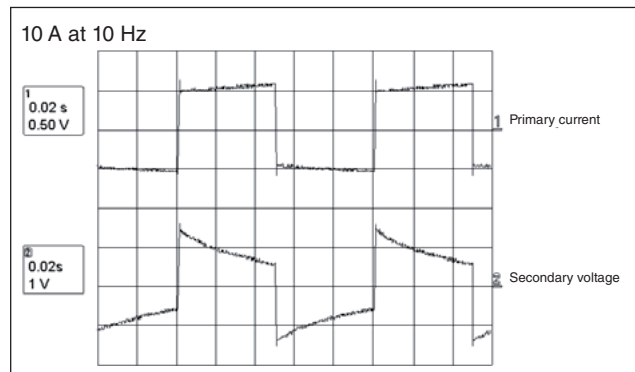
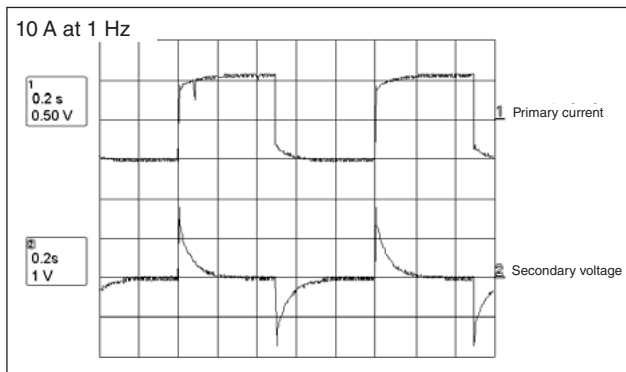


RESPONSE TO A SQUARE SIGNAL (CONT.)

100 A calibre



10 A calibre



Current clamp for AC current

Model C173 (probe for leakage currents)

C100 series



Current	1 A	10 A	100 A	1,000 A
Output	1 V/A	100 mV/A	10 mV/A	1 mV/A

DESCRIPTION

The C173 clamp measures leakage or differential currents from 1 mA upwards and can also be used with multimeters equipped with a range in mV AC. The C173 clamp measures earth-loop currents and leakage currents. It also locates faults in circuits of single and three-phase networks. For unearthed three-phase systems, use the optional Artificial Neutral.

ELECTRICAL SPECIFICATIONS

- **Current range:**
0.001 A AC .. 1.2 A AC
0.01 A AC .. 12 A AC
0.1 A AC .. 120 A AC
1 A AC .. 1,200 A AC
- **Output signal:**
1 VAC/A AC (1 V for 1 A)
100 mVAC/A AC (1 V for 10 A)
10 mVAC/A AC (1 V for 100 A)
1 mVAC/A AC (1 V for 1,000 A)

- **Accuracy and phase shift⁽¹⁾:**

- 1 A calibre

Primary current	0.001 A .. 0.01 A	0.01 A .. 0.1 A	0.1 A .. 1 A	1 A .. 1.2 A
% Accuracy of output signal	≤ 3% + 1 mV	≤ 3% + 1 mV	≤ 0.7% + 1 mV	≤ 0.7% + 1 mV
Phase shift	not specified	not specified	≤ 10°	≤ 10°

- 10 A calibre

Primary current	0.01 A .. 0.1 A	0.1 A .. 1 A	1 A .. 10 A	10 A .. 12 A
% Accuracy of output signal	≤ 1% + 0.2 mV	≤ 0.5% + 0.2 mV	≤ 0.5%	≤ 0.5%
Phase shift	not specified	≤ 5°	≤ 2°	≤ 2°

- 100 A calibre

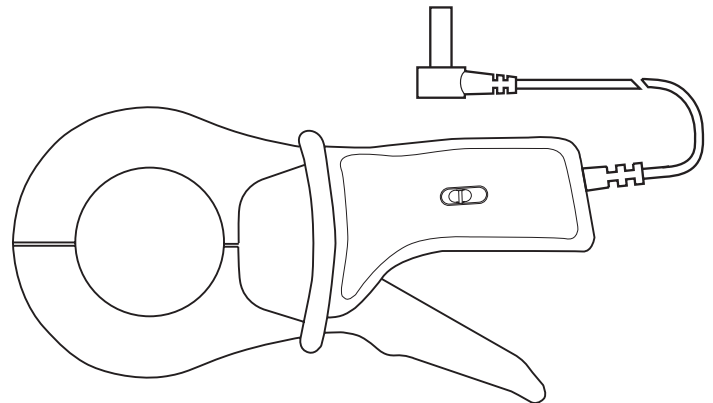
Primary current	0.1 A .. 1 A	1 A .. 10 A	10 A .. 100 A	100 A .. 120 A
% Accuracy of output signal	≤ 1% + 0.2 mV	≤ 0.5% + 0.2 mV	≤ 0.3%	≤ 0.2%
Phase shift	not specified	≤ 2°	≤ 1°	≤ 1°

- 1,000 A calibre

Primary current	1 A .. 10 A	10 A .. 100 A	100 A .. 1,000 A	1,000 A .. 1,200 A
% Accuracy of output signal	≤ 1% + 0.2 mV	≤ 0.5% + 0.2 mV	≤ 0.2%	≤ 0.2%
Phase shift	not specified	≤ 2°	≤ 1°	≤ 1°

- **Bandwidth:**
10 Hz .. 3 kHz
- **Crest factor:**
 - 1 A calibre:
≤ 3 for I ≤ 3 A peak (1 A_{RMS})
 - 10 A calibre:
≤ 3 for I ≤ 30 A peak (10 A_{RMS})
 - 100 A calibre:
≤ 3 for I ≤ 300 A peak (100 A_{RMS})
 - 1,000 A calibre:
≤ 3 for I ≤ 1700 A peak (500 A_{RMS})

- **Maximum currents:**
1,000 A continuous for a frequency ≤ 500 Hz (limitation proportional to the inverse of 1/2 of frequency beyond)
- **Load impedance:**
≥ 10 MΩ and ≤ 47 pF
- **Output impedance:**
 - 1 A calibre: 10 kΩ ± 10%
 - 10 A calibre: 1 kΩ ± 10%
 - 100 A calibre: 100 Ω ± 10%
 - 1,000 A calibre: 100 Ω ± 10%



- **Operating voltage:**
600 V_{RMS}
- **Common mode voltage:**
600 V category III and pollution degree 2
- **Influence of adjacent conductor:**
≤ 1 mA/A at 50 Hz
- **Influence of conductor position in jaws:**
≤ 0.3% of output signal for frequencies ≤ 400 Hz
- **Influence of frequency⁽²⁾:**
 - 1 A calibre:
< 2% of output signal 30 Hz .. 48 Hz and 65 Hz .. 1 kHz
< 10% of output signal 1 kHz .. 3 kHz
 - 10 A calibre:
< 2% of output signal 10 Hz .. 48 Hz and 65 Hz .. 3 kHz
 - 100 A calibre:
< 1.5% of output signal 10 Hz .. 48 Hz and 65 Hz .. 3 kHz
 - 1,000 A calibre:
< 1% of output signal 10 Hz .. 48 Hz and 65 Hz .. 1 kHz
- **Influence of crest factor:**
≤ 0.5% for crest factor limited to 3
- **Influence of DC current superimposed on rated current:**
≤ 10% at 1,000 A for a current DC from 10 A

Model C173 (probe for leakage currents)

MECHANICAL SPECIFICATIONS

- **Operating temperature:**
-10 °C .. +50 °C
- **Storage temperature:**
-40 °C .. +70 °C
- **Influence of temperature:**
≤ 0.15 % of output signal per 10 °K from -10 °C .. +40 °C
≤ 0.2 % of output signal per 10 °K from +40 °C .. +50 °C
- **Relative humidity for operation:**
From 0 .. 85 % from RH decreasing linearly above 35 °C
- **Influence of relative humidity:**
< 0.1 % of output signal from 10 .. 85 % from RH
- **Operating altitude:**
0 to 2,000 m
- **Max. jaw opening:**
53 mm
Patented progressive opening system

- **Clamping capacity:**
Cable: Ø max 52 mm
Busbar: 1 busbar of 50 x 5 mm or 4 busbars of 30 x 5 mm
- **Casing protection rating:**
IP40 (IEC 529)
- **Drop test:**
1 m (IEC 68-2-32)
- **Shock resistance:**
100 g (IEC 68-2-27)
- **Vibration resistance:**
5/15 Hz 1.5 mm
15/25 Hz 1 mm
25/55 Hz 0.25 mm (IEC 68-2-6)
- **Self-extinguishing capability:**
UL94 V0
- **Dimensions:**
216 x 111 x 45 mm
- **Weight:**
550 g

- **Colours:**
Dark grey case with red jaws
- **Output:**
1.5 m two-wire lead with double or reinforced insulation terminated by 2 elbowed male safety plugs (4 mm)

SAFETY SPECIFICATIONS

- **Electrical safety:**
Instrument with double insulation or reinforced insulation between the primary the secondary and the grippable part located under the guard as per IEC 1010-1 & IEC 1010-2-032
- 600 V category III, pollution degree 2
- 300 V category IV, pollution degree 2
- **Electromagnetic compatibility (EMC):**
EN 50081-1: class B
EN 50082-2:
- Electrostatic discharge: IEC 1000-4-2
- Radiated field: IEC 1000-4-3
- Fast transients: IEC 1000-4-4
- Magnetic field at 50/60 Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 3 °K, 20 % to 75 % RH, signal sinus, frequency of 48 Hz to 65 Hz, distortion factor < 1 %, no DC components, external magnetic field < 40 A/m, no AC magnetic field, conductor centred for measurement, load impedance: ≥ 10 MΩ and ≤ 47 pF

(2) Out of reference domain

To order	Reference
AC current clamp model C173 with operating manual	P01120309
Accessory: AN1 artificial neutral box (see chapter 12) Bag n°11	P01197201 P01100120

Non-contractual document
906131102D - Ed 1

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