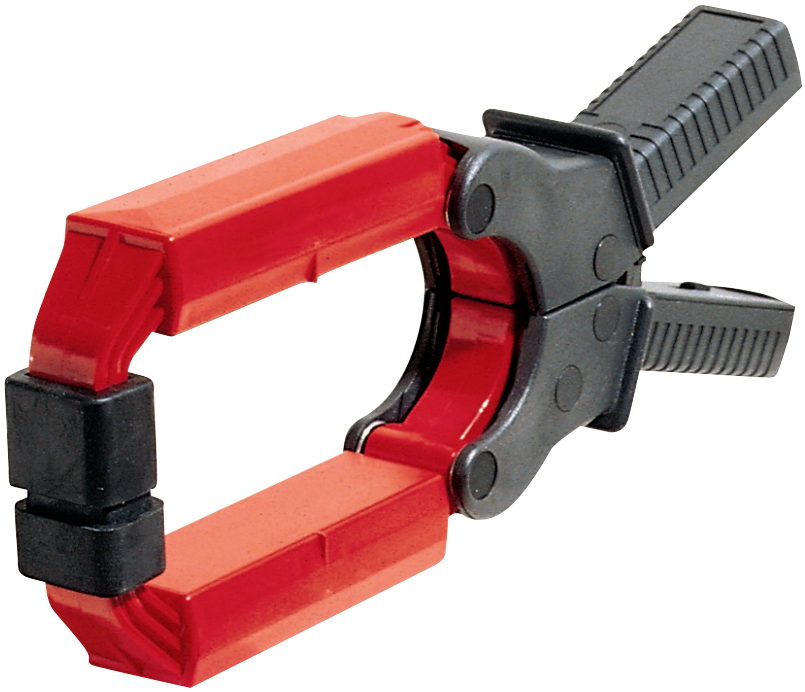
CURRENT CLAMPS FOR AC CURRENT



DN SERIES

The DN series comprises a range of high-performance clamp-on AC current probes designed for high current measurements. Their excellent current transformation ratios and low phase shift, combined with a broad frequency response, allows highly accurate current and power measurements. High-quality magnetic cores and windings mean high precision current measurement up to 3,000 A AC. The rectangular jaws can be used to clamp large-diameter cables or busbars.

The DN series clamps provide true RMS measurement values and faithful signal reproduction.

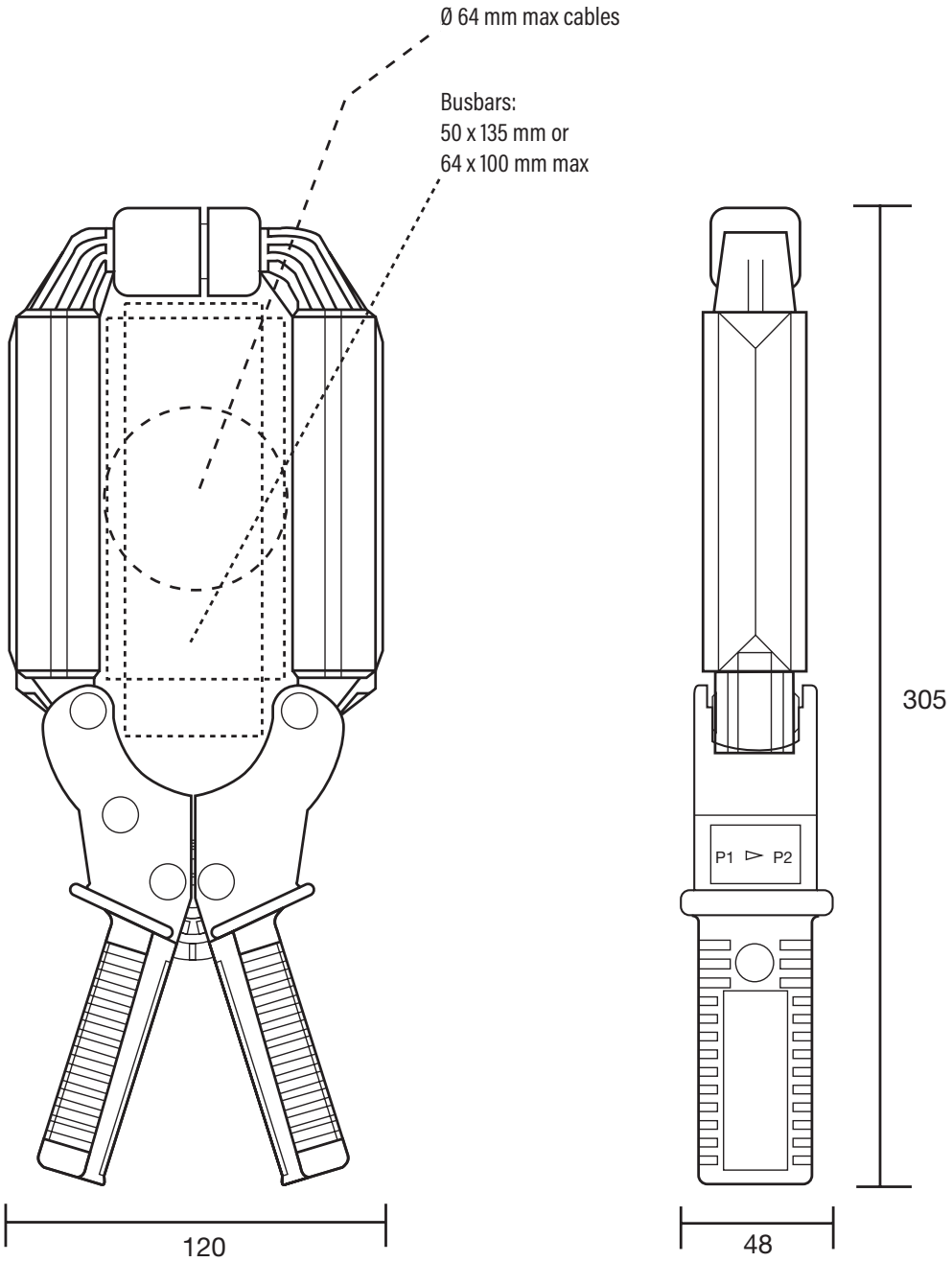
Two types are available. The first acts as a traditional current transformer with a current output (mA) and a wide range of turns ratios.

These clamps may also be used with multimeters, harmonic and power measurement equipment, logging apparatus or other instruments allowing AC current input.

The second type of model gives a voltage output with precise proportion to the measured current (1 mV/A, 10 mV/A or 100 mV/A). This voltage output enables instruments that do not have a current channel to measure, display or store values via their voltage channel.

Model D38N has been specifically designed for use with oscilloscopes, or other instruments with a BNC input.

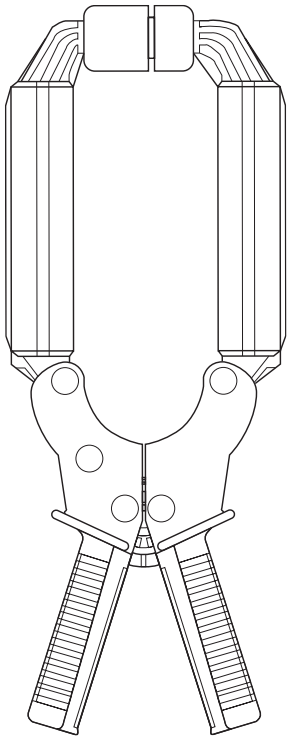
CURRENT CLAMPS FOR AC CURRENT



CURRENT CLAMPS FOR AC CURRENT

Models D30N and D30CN

Current	2,400 A AC
Ratio	3,000:1
Output	0.333 mA / A



Electrical specifications

- **Current range:**
  1 A AC .. 2,400 A AC
  (3,000 A for temperature < 35 °C)
- **Turns Ratio:**
  3,000:1
- **Output signal:**
  0.333 mA / A AC (1 A to 3,000 A)
- **Accuracy and phase shift** (1)**:**

Primary current:	150 A	600 A	3,000 A
Accuracy in % of output signal	1.5 %	0.75 %	0.5 %
Phase shift	1.5°	0.75°	0.5°

- **Overload:**
  3600 A for 5 minutes
- **Maximum output voltage (secondary open):**
  Electronic protection circuit limiting voltage to 42 V peak max.
- **Accuracy:**
  In accordance with IEC 185-26-27, 5 VA, class 0.5 from 48 Hz to 1,000 Hz
- **Bandwidth:**
  30 Hz to 5 kHz (in continuous use above 1 kHz, the max. measurement current is limited)
- **Ampere second product:**
  90 A.s
- **Load impedance:**
  < 5 Ω
- **Operating voltage:**
  600 V AC
- **Common mode voltage:**
  600 V AC
- **Influence of adjacent conductor:**
  0.005 A / A AC
- **Influence of conductor position in jaws:**
  1 % ± 0.1 A

Mechanical specifications

- **Operating temperature:**
  -10°C to +50°C
- **Storage temperature:**
  -25°C to +80°C
- **Influence of temperature:**
  < 0.1 % per 10 °K
- **Max. jaw opening:**
  90 mm
- **Clamping capacity:**
  Cable: 64mm
  Group of wires: 50 x 135 mm - 64 x 100 mm
- **Casing protection rating:**
  IP20 in accordance with IEC 529
- **Drop test:**
  500 mm (IEC 68-2-32)
- **Shock resistance:**
  100 g, in accordance with IEC 68-2-27
- **Vibration resistance:**
  10 / 55/10 Hz, 0.15 mm test in accordance with IEC 68-2-6
- **Self-extinguishing capability:**
  Casing: UL94 V0
  Jaws: UL94 V2
- **Dimensions:**
  120 x 315 x 48 mm
- **Weight:**
  1,200 g
- **Colour:**
  Dark grey case with red jaws
- **Output:**
  D30N: two safety sockets (4 mm)
  D30CN: Two-wire cable with reinforced insulation or double insulation, 1.5 m in length, terminated with 2 elbowed male safety plug connectors (4 mm)

Safety specifications

- **Electrical safety:**
  Double or reinforced insulation between the primary and secondary circuits and the outer casing in accordance with 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 50/60Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 5 °K, 20 % to 75 % RH, 48 Hz to 65 Hz, external magnetic field < 40 A/m, no DC component, no current-carrying conductor nearby, centred test sample, load impedance 5 Ω.

To order	Reference
AC current clamp model **D30N** with operating manual	P01120049A
AC current clamp model **D30CN** with operating manual	P01120064

CURRENT CLAMPS FOR AC CURRENT

Model D31N

Current	500 A AC	1,000 A AC	1,500 A AC
Ratio	500:1	1,000:1	1,500:1
Output	2 mA / A	1 mA / A	0.66 mA / A

Electrical specifications

- **Current range:**
  1 A AC .. 500 A AC
  1 A AC .. 1,000 A AC
  1 A AC .. 1,500 A AC
- **Turns Ratio:**
  500:1, 1,000:1, 1,500:1
- **Output signal:**
  2 mA / A AC (1 A for 500 A)
  1 mA / A AC (1 A for 1,000 A)
  0.66 mA / A AC (1 A for 1,500 A)
- **Accuracy and phase shift** (1)**:**
- 500 A calibre:

Primary current:	25 A	100 A	500 A
Accuracy in % of output signal	4 %	3 %	3 %
Phase shift	4°	3.5°	2°

Load impedance: 5 Ω
Overload: 700 A for 10 minutes
Ampere second product: 6 A.s
Accuracy: in accordance with IEC 185-26-27, 5 VA, Class 3 from 48 Hz to 1,000Hz

- 1,000 A calibre:

Primary current:	50 A	200 A	1,000 A
Accuracy in % of output signal	3 %	1.5 %	1 %
Phase shift	3°	1.5°	1°

Load impedance: 5 Ω
Overload: 1,400 A for 10 minutes
Ampere second product: 30 A.s
Accuracy: in accordance with IEC 185-26-27, 5 VA, Class 1 from 48 Hz to 1,000Hz

- 1,500 A calibre:

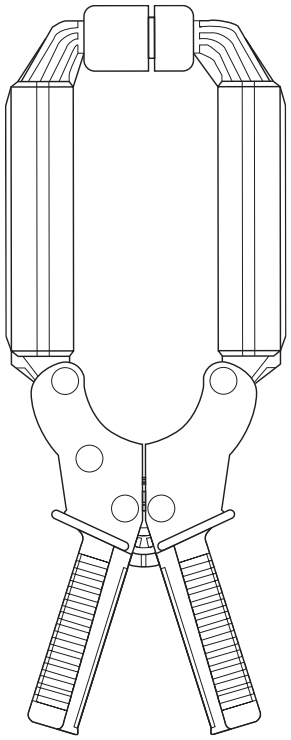
Primary current:	75 A	300 A	1,500 A
Accuracy in % of output signal	1.5 %	0.75 %	0.5 %
Phase shift	1.5°	0.75°	0.5°

Load impedance: 5 Ω
Overload: 1,800 A for 10 minutes
Ampere second product: 65 A.s
Accuracy: in accordance with IEC 185-26-27, 5 VA
Class 0.5 from 48 Hz to 1,000 Hz

- **Bandwidth:**
  30 Hz to 1,500 Hz (in continuous use above 1 kHz the max. measurement current is limited)
- **Load impedance:**
  < 5 Ω
- **Operating voltage:**
  600 V AC
- **Common mode voltage:**
  600 V AC
- **Maximum output voltage (secondary open):**
  Limited to 42 V peak max.
- **Influence of adjacent conductor:**
  0.005 A / A AC
- **Influence of conductor position in jaws:**
  1.5 % ± 0.2 A on the 500:1 ratio
  1 % ± 0.2 A on the 1,000:1 ratio
  1 % ± 0.2 A on the 1,500:1 ratio

Mechanical specifications

- **Operating temperature:**
  -10°C to +50°C
- **Storage temperature:**
  -25°C to +80°C
- **Influence of temperature:**
  < 0.1 % per 10 °K
- **Max. jaw opening:**
  90 mm
- **Clamping capacity:**
  Cable: 64mm
  Group of wires: 50 x 135 mm - 64 x 100 mm
- **Casing protection rating:**
  IP20 in accordance with IEC 529
- **Drop test:**
  500 mm (IEC 68-2-32)
- **Shock resistance:**
  100 g, in accordance with IEC 68-2-27
- **Vibration resistance:**
  10 / 55/10 Hz, 0.15 mm test in accordance with IEC 68-2-6
- **Self-extinguishing capability:**
  Casing: UL94 V0
  Jaws: UL94 V2
- **Dimensions:**
  120 x 315 x 48 mm
- **Weight:**
  1,200 g



- **Colour:**
  Dark grey case with red jaws
- **Output:**
  2 safety sockets (4 mm)

Safety specifications

- **Electrical safety:**
  Double or reinforced insulation between the primary and secondary circuits and the outer casing in accordance with 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 50/60Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 5 °K, 20 % to 75 % RH, 48 Hz to 65 Hz, external magnetic field < 40 A/m, no DC component, no current-carrying conductor nearby, centred test sample.

To order	Reference
AC current clamp model **D31N** with operating manual	P01120050A

CURRENT CLAMPS FOR AC CURRENT

Model D32N

Current	1,000 A AC	2,000 A AC	2,400 A AC
Ratio	1,000:1	2,000:1	3,000:1
Output	1 mA / A	0.5 mA / A	0.333 mA / A

Electrical specifications

- **Current range:**
  1 A AC .. 1,000 A AC
  1 A AC .. 2,000 A AC
  1 A AC .. 24,00 A AC
- **Turns Ratio:**
  1,000:1, 2,000:1, 3,000:1
- **Output signal:**
  1 mA / A AC (1 A for 1,000 A)
  0.5 mA / A AC (1 A for 2,000 A)
  0.333 mA / A AC (1 A for 3,000 A)
- **Accuracy and phase shift** (1)**:**

- 1,000 A calibre:

Primary current:	50 A	200 A	1,000 A
Accuracy in % of output signal	3 %	1.5 %	1 %
Phase shift	3°	1.5°	1°

Load impedance: 2.5 Ω
Overload: 1,400 A for 10 minutes
Ampere second product: 25 A.s
Accuracy: in accordance with IEC 185-26-27, 2.5 VA, class 1 from 48 Hz to 1,000 Hz

- 2,000 A calibre:

Primary current:	100 A	400 A	2,000 A
Accuracy in % of output signal	1.5 %	0.75 %	0.5 %
Phase shift	1.5°	0.75°	0.5°

Load impedance: 5 Ω
Overload: 2,400 A for 10 minutes
Ampere second product: 60 A.s
Accuracy: in accordance with IEC 185-26-27, 5 VA, class 0.5 from 48 Hz to 1,000 Hz

- 3,000 A calibre:

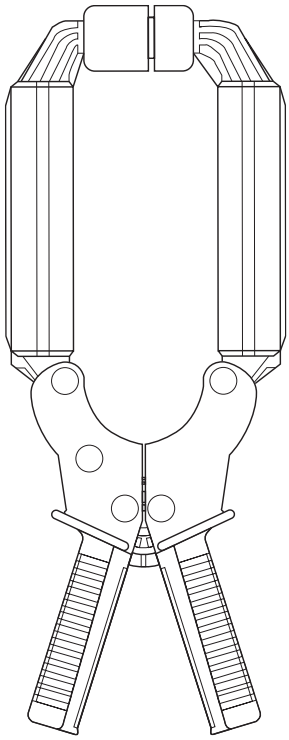
Primary current:	150 A	600 A	3,000 A
Accuracy in % of output signal	1.5 %	0.75 %	0.5 %
Phase shift	1.5°	0.75°	0.5°

Load impedance: 10 Ω
Overload: 3400 A for 10 minutes
Ampere second product: 90 A.s
Accuracy: in accordance with IEC 185-26-27, 10 VA
Class 0.5 from 48 Hz to 1,000 Hz

- **Bandwidth:**
  30 Hz to 1,000 Hz (in continuous use above 600 Hz the max. measurement current is limited)
- **Load impedance:**
  < 10 Ω
- **Operating voltage:**
  600 V AC
- **Common mode voltage:**
  600 V AC
- **Maximum output voltage (secondary open):**
  Limited to 42 V peak max.
- **Influence of adjacent conductor:**
  0.005 A / A AC
- **Influence of conductor position in jaws:**
  1.5 % ± 0.2 A on the 1,000:1 ratio
  1 % ± 0.2 A on the 2,000:1 ratio
  1 % ± 0.2 A on the 3,000:1 ratio

Mechanical specifications

- **Operating temperature:**
  -10°C to +50°C
- **Storage temperature:**
  -25°C to +80°C
- **Influence of temperature:**
  < 0.1 % per 10 °K
- **Max. jaw opening:**
  90 mm
- **Clamping capacity:**
  Cable: 64mm
  Group of wires: 50 x 135 mm - 64 x 100 mm
- **Casing protection rating:**
  IP20 in accordance with IEC 529
- **Drop test:**
  500 mm (IEC 68-2-32)
- **Shock resistance:**
  100 g, in accordance with IEC 68-2-27
- **Vibration resistance:**
  10 / 55/10 Hz, 0.15 mm test in accordance with IEC 68-2-6
- **Self-extinguishing capability:**
  Casing: UL94 V0
  Jaws: UL94 V2
- **Dimensions:**
  120 x 315 x 48 mm
- **Weight:**
  1,200 g



- **Colour:**
  Dark grey case with red jaws
- **Output:**
  2 safety sockets (4 mm)

Safety specifications

- **Electrical safety:**
  Double or reinforced insulation between the primary and secondary circuits and the outer casing in accordance with 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 50/60Hz: IEC 1000-4-8

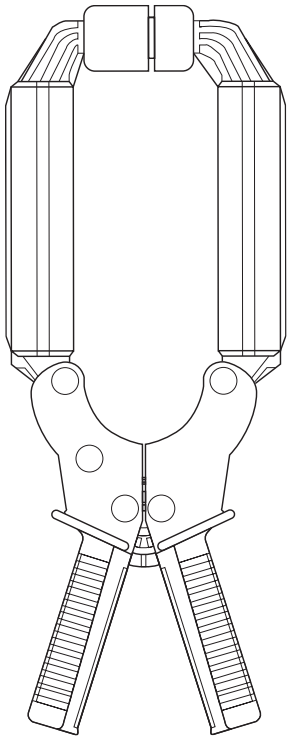
(1) Conditions of reference: 23 °C ± 5 °K, 20 % to 75 % RH, 48 Hz to 65 Hz, external magnetic field < 40 A/m, no DC component, no current-carrying conductor nearby, centred test sample.

To order	Reference
AC current clamp model **D32N** with operating manual	P01120051A

CURRENT CLAMPS FOR AC CURRENT

Model D33N

Current	2,400 A AC
Ratio	3,000:5
Output	1.666 mA / A



Electrical specifications

- **Current range:**
  1 A AC .. 2,400 A AC
  (3,000 A for temperature < 35 °C)
- **Turns Ratio:**
  3,000:5
- **Output signal:**
  1.666 mA / A AC (5 A to 3,000 A)
- **Accuracy and phase shift** (1)**:**

Primary current:	150 A	600 A	3,000 A
Accuracy in % of output signal	3 %	1.5 %	1 %
Phase shift	3°	1.5°	1°

- **Overload:**
  3600 A for 10 minutes
- **Accuracy:**
  In accordance with IEC 185-26-27, 5 VA class 1 from 48 Hz to 1,000 Hz
- **Bandwidth:**
  30 Hz to 5 kHz (in continuous use above 1 kHz the max. measurement current is limited)
- **Ampere second product:**
  90 A.s
- **Load impedance:**
  < 1 Ω
- **Operating voltage:**
  600 V AC
- **Common mode voltage:**
  600 V AC
- **Maximum output voltage (secondary open):**
  Limited to 42 V peak max.
- **Influence of adjacent conductor:**
  0.005 A / A AC
- **Influence of conductor position in jaws:**
  1 % ± 0.1 A

Mechanical specifications

- **Operating temperature:**
  -10°C to +50°C
- **Storage temperature:**
  -25°C to +80°C
- **Influence of temperature:**
  < 0.1 % per 10 °K
- **Max. jaw opening:**
  90 mm
- **Clamping capacity:**
  Cable: 64mm
  Group of wires: 50 x 135 mm - 64 x 100 mm
- **Casing protection rating:**
  IP20 in accordance with IEC 529
- **Drop test:**
  500 mm (IEC 68-2-32)
- **Shock resistance:**
  100 g, in accordance with IEC 68-2-27
- **Vibration resistance:**
  10 / 55/10 Hz, 0.15 mm test in accordance with IEC 68-2-6
- **Self-extinguishing capability:**
  Casing: UL94 V0
  Jaws: UL94 V2
- **Dimensions:**
  120 x 315 x 48 mm
- **Weight:**
  1,200 g
- **Colour:**
  Dark grey case with red jaws
- **Output:**
  2 safety sockets (4 mm)

Safety specifications

- **Electrical safety:**
  Double or reinforced insulation between the primary and secondary circuits and the outer casing in accordance with 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 50/60Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 5 °K, 20 % to 75 % RH, 48 Hz to 65 Hz, external magnetic field < 40 A/m, no DC component, no current-carrying conductor nearby, centred test sample, load impedance 0.2 Ω

To order	Reference
AC current clamp model **D33N** with operating manual	P01120052A

CURRENT CLAMPS FOR AC CURRENT

Model D34N

Current	500 A AC	1,000 A AC	1,500 A AC
Ratio	500:5	1,000:5	1,500:5
Output	10 mA / A	5 mA / A	3.33 mA / A

Electrical specifications

- **Current range:**
  1 A AC .. 500 A AC
  1 A AC .. 1,000 A AC
  1 A AC .. 1,500 A AC
- **Turns Ratio:**
  500:5, 1,000:5, 1,500:5
- **Output signal:**
  10 mA / A AC (5 A for 500 A)
  5 mA / A AC (5 A for 1,000 A)
  3.33 mA / A AC (5 A for 1,500 A)
- **Accuracy and phase shift** (1)**:**

- 500 A calibre:

Primary current:	25 A	100 A	500 A
Accuracy in % of output signal	5 %	3 %	3 %
Phase shift	6°	4°	4°

Load impedance: 0.2 Ω
Overload: 700 A for 10 minutes
Ampere second product: 3.5 A.s
Accuracy: in accordance with IEC 185-26-27, 5 VA
Class 3 from 48 Hz to 1,000Hz

- 1,000 A calibre:

Primary current:	50 A	200 A	1,000 A
Accuracy in % of output signal	3 %	1.5 %	1 %
Phase shift	3°	1.5°	1°

Load impedance: 0.1 Ω
Overload: 1,400 A for 10 minutes
Ampere second product: 18 A.s
Accuracy: in accordance with IEC 185-26-27, 5 VA, class 1 from 48 Hz to 1,000 Hz

- 1,500 A calibre:

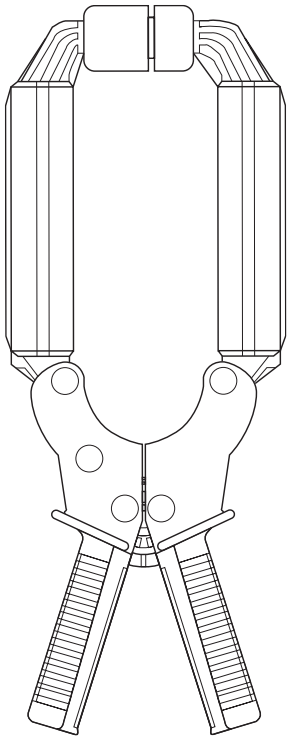
Primary current:	75 A	300 A	1,500 A
Accuracy in % of output signal	1.5 %	0.75 %	0.5 %
Phase shift	1.5°	0.75°	0.5°

Load impedance: 0.1 Ω
Overload: 1,800 A for 10 minutes
Ampere second product: 40 A.s
Accuracy: in accordance with IEC 185-26-27, 2.5 VA
Class 0.5 from 48 Hz to 1,000 Hz

- **Bandwidth:**
  30 Hz to 1,500 Hz (in continuous use above 1.5 kHz the max. measurement current is limited)
- **Load impedance:**
  < 1 Ω max
- **Operating voltage:**
  600 V AC
- **Common mode voltage:**
  600 V AC
- **Maximum output voltage (secondary open):**
  Limited to 42 V peak max.
- **Influence of adjacent conductor:**
  0.005 A / A AC
- **Influence of conductor position in jaws:**
  1.5 % ± 0.2 A on the 500:5 ratio
  1 % ± 0.2 A on the 1,000:5 ratio
  1 % ± 0.2 A on the 1,500:5 ratio

Mechanical specifications

- **Operating temperature:**
  -10°C to +50°C
- **Storage temperature:**
  -25°C to +80°C
- **Influence of temperature:**
  < 0.1 % per 10 °K
- **Max. jaw opening:**
  90 mm
- **Clamping capacity:**
  Cable: 64mm
  Group of wires: 50 x 135 mm - 64 x 100 mm
- **Casing protection rating:**
  IP20 in accordance with IEC 529
- **Drop test:**
  500 mm (IEC 68-2-32)
- **Shock resistance:**
  100 g, in accordance with IEC 68-2-27
- **Vibration resistance:**
  10 / 55/10 Hz, 0.15 mm test in accordance with IEC 68-2-6
- **Self-extinguishing capability:**
  Casing: UL94 V0
  Jaws: UL94 V2
- **Dimensions:**
  120 x 315 x 48 mm



- **Weight:**
  1,200 g
- **Colour:**
  Dark grey case with red jaws
- **Output:**
  2 safety sockets (4 mm)

Safety specifications

- **Electrical safety:**
  Double or reinforced insulation between the primary and secondary circuits and the outer casing in accordance with 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 50/60Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 5 °K, 20 % to 75 % RH, 48 Hz to 65 Hz, external magnetic field < 40 A/m, no DC component, no current-carrying conductor nearby, centred test sample.

To order	Reference
AC current clamp model **D34N** with operating manual	P01120053A

CURRENT CLAMPS FOR AC CURRENT

Model D35N

Current	1,000 A AC	2,000 A AC	2,400 A AC
Ratio	1,000:5	2,000:5	3,000:5
Output	5 mA / A	2.5 mA / A	1.666 mA / A

Electrical specifications

- **Current range:**
  1 A AC .. 1,000 A AC
  1 A AC .. 2,000 A AC
  1 A AC .. 2,400 A AC
  (3,000 A for temperature < 35 °C)
- **Turns Ratio:**
  1,000:5, 2,000:5, 3,000:5
- **Output signal:**
  5 mA / A AC (5 A for 1,000 A)
  2.5 mA / A AC (5 A for 2,000 A)
  1,666 mA / A AC (5 A for 3,000 A)
- **Accuracy and phase shift** (1)**:**
- 1,000 A calibre:

Primary current:	50 A	200 A	1,000 A
Accuracy in % of output signal	3 %	1.5 %	1 %
Phase shift	3°	1.5°	1°

Load impedance: 0.1 Ω
Overload: 1,200 A for 10 minutes
Ampere second product: 15 A.s
Accuracy: in accordance with IEC 185-26-27, 2.5 VA Class 1 from 48 Hz to 1,000 Hz

- 2,000 A calibre:

Primary current:	100 A	400 A	2,000 A
Accuracy in % of output signal	1.5 %	0.75 %	0.5 %
Phase shift	1.5°	0.75°	0.5°

Load impedance: 0.2 Ω
Overload: 2,400 A for 10 minutes
Ampere second product: 50 A.s
Accuracy: in accordance with IEC 185-26-27, 5 VA, class 0.5 from 48 Hz to 1,000 Hz

- 3,000 A calibre:

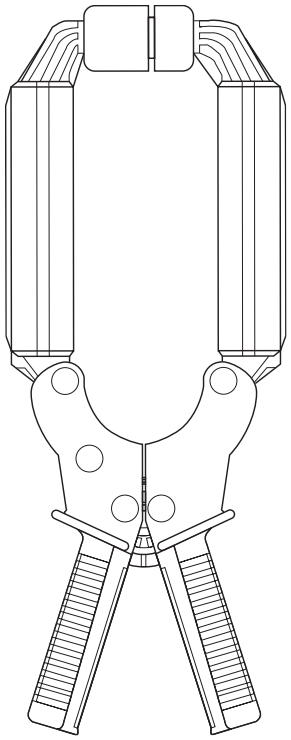
Primary current:	150 A	600 A	3,000 A
Accuracy in % of output signal	1.5 %	0.75 %	0.5 %
Phase shift	1.5°	0.75°	0.5°

Load impedance: 0.4 Ω
Overload: 2,400 A for 10 minutes
Ampere second product: 80 A.s
Accuracy: in accordance with IEC 185-26-27, 10 VA Class 0.5 from 48 Hz to 1,000 Hz

- **Bandwidth:**
  30 Hz to 1,500 Hz (in continuous use above 1.5 kHz the max. measurement current is limited)
- **Load impedance:**
  < 2 Ω max
- **Operating voltage:**
  600 V AC
- **Common mode voltage:**
  600 V AC
- **Influence of adjacent conductor:**
  0.005 A / A AC
- **Influence of conductor position in jaws:**
  1.5 % ± 0.2 A on the 1,000:5 ratio
  1 % ± 0.2 A on the 2,000:5 ratio
  1 % ± 0.2 A on the 3,000:5 ratio

Mechanical specifications

- **Operating temperature:**
  -10°C to +50°C
- **Storage temperature:**
  -25°C to +80°C
- **Influence of temperature:**
  < 0.1 % per 10 °K
- **Max. jaw opening:**
  90 mm
- **Clamping capacity:**
  Cable: 64mm
  Group of wires: 50 x 135 mm - 64 x 100 mm
- **Casing protection rating:**
  IP20 in accordance with IEC 529
- **Drop test:**
  500 mm (IEC 68-2-32)
- **Shock resistance:**
  100 g, in accordance with IEC 68-2-27
- **Vibration resistance:**
  10 / 55/10 Hz, 0.15 mm test in accordance with IEC 68-2-6
- **Self-extinguishing capability:**
  Casing: UL94 V0
  Jaws: UL94 V2
- **Dimensions:**
  120 x 315 x 48 mm
- **Weight:**
  1,200 g



- **Colour:**
  Dark grey case with red jaws
- **Output:**
  2 safety sockets (4 mm)

Safety specifications

- **Electrical safety:**
  Double or reinforced insulation between the primary and secondary circuits and the outer casing in accordance with 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 50/60Hz: IEC 1000-4-8

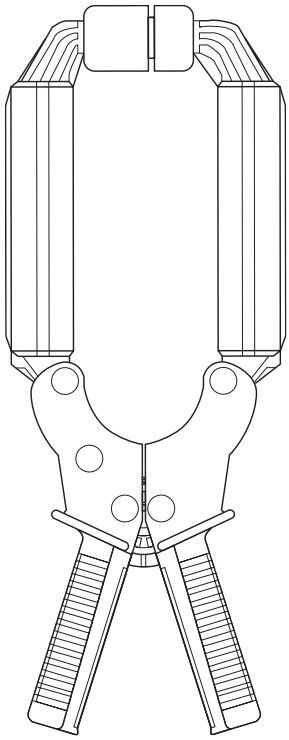
(1) Conditions of reference: 23 °C ± 5 °K, 20 % to 75 % RH, 48 Hz to 65 Hz, external magnetic field < 40 A/m, no DC component, no current-carrying conductor nearby, centred test sample.

To order	Reference
AC current clamp model **D35N** with operating manual	P01120054A

CURRENT CLAMPS FOR AC CURRENT

Model D36N

Current	3,000 A AC
Ratio	3,000:3
Output	1 mA / A



Electrical specifications

- **Current range:**
  1 A AC .. 2,400 A AC
- **Turns Ratio:**
  3,000:3
- **Output signal:**
  1 mA / A AC (3 A for 3,000 A)
- **Accuracy and phase shift (1):**

Primary current:	150 A	600 A	3,000 A
Accuracy in % of output signal	1.5% + 1 mA	0.75 %	0.5 %
Phase shift	1.5°	0.75°	0.5°

- **Accuracy:**
  In accordance with IEC 185-26-27, 5 VA, class 0.5 from 48 Hz to 1,000 Hz
- **Bandwidth:**
  30 Hz to 5 kHz (beyond 400 Hz the output is limited in inverse proportion to the frequency)
- **Overload:**
  3600 A for 5 minutes
- **Maximum output voltage (secondary open):**
  Electronic protection circuit limiting voltage to 42 V peak max
- **Load impedance:**
  < 0.6 Ω
- **Operating voltage:**
  600 V AC
- **Common mode voltage:**
  600 V AC
- **Influence of adjacent conductor:**
  0.005 A / A AC
- **Influence of conductor position in jaws:**
  1 % ± 0.1 A

Mechanical specifications

- **Operating temperature:**
  -10°C to +50°C
- **Storage temperature:**
  -25°C to +80°C
- **Influence of temperature:**
  < 0.1 % per 10 °K
- **Max. jaw opening:**
  90 mm
- **Clamping capacity:**
  Cable: 64 mm
  Group of wires: 50 x 135 mm - 64 x 100 mm
- **Casing protection rating:**
  IP20 in accordance with IEC 529
- **Drop test:**
  500 mm (IEC 68-2-32)
- **Shock resistance:**
  100 g, in accordance with IEC 68-2-27
- **Vibration resistance:**
  10 / 55/10 Hz, 0.15 mm
  test in accordance with IEC 68-2-6
- **Self-extinguishing capability:**
  Casing: UL94 V0
  Jaws: UL94 V2
- **Dimensions:**
  120 x 315 x 48 mm
- **Weight:**
  1,200 g
- **Colour:**
  Dark grey case with red jaws
- **Output:**
  Safety sockets (4mm)

Safety specifications

- **Electrical safety:**
  Double or reinforced insulation between the primary and secondary circuits and the outer casing in accordance with 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 50/60Hz: IEC 1000-4-8

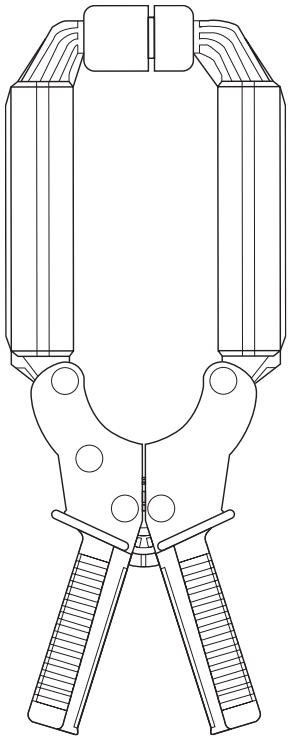
(1) Conditions of reference: 23 °C ± 5 °K, 20 % to 75 % RH, 48 Hz to 65 Hz, external magnetic field < 40 A/m, no DC component, no current-carrying conductor nearby, centred test sample, load impedance 0.55 Ω.

To order	Reference
AC current clamp model **D36N** with operating manual	P01120055A

CURRENT CLAMPS FOR AC CURRENT

Model D37N

Current	30 A AC	300 A AC	3,000 A AC
Output	100 mV / A	10 mV / A	1 mV / A



Electrical specifications

- **Current range:**
  10 mA .. 30 A AC
  1 A AC .. 300 A AC
  1 A AC .. 2,000 A AC
  (2,800 A for temperature < 35 °C)
- **Output signal:**
  100 mV / A AC (3 V for 30 A) 90 A peak
  10 mV / A AC (3 V for 300 A) 900 A peak
  1.666 mV / A AC (3 V for 3,000 A) 9,000 A peak
- **Accuracy and phase shift (1):**
- 30 A calibre:

Primary current:	1.5 A	6 A	30 A
Accuracy in % of output signal	2 % ± 10 mV		
Phase shift	15°	7°	5°

- 300 A calibre:

Primary current:	15 A	60 A	300 A
Accuracy in % of output signal	2 % ± 2 mV		
Phase shift	3°	1.5°	1°

- 3,000 A calibre:

Primary current:	150 A	600 A	3,000 A
Accuracy in % of output signal	2 % ± 0.5 mV		
Phase shift	1.5°	1°	0.5°

- **Overload:**
  3200 A for 5 minutes
- **Ampere second product:**
  100 A.s
- **dV / dt:**
  100 mV AC / A AC: dV / dt = 400 mV / µs
  10 mV AC / A AC: dV / dt = 50 mV / µs
  1 mV AC / A AC: dV / dt = 5 mV / µs
- **Bandwidth:**
  30 Hz to 5 kHz (on the 3,000 A range the max. measurement current is limited above 200 Hz)
- **Load impedance:**
  ≥ 1 MΩ
- **Operating voltage:**
  600 V AC
- **Common mode voltage:**
  600 V AC
- **Influence of adjacent conductor:**
  0.005 A / A AC
- **Influence of conductor position in jaws:**
  1.5 % of the reading
- **Influence of frequency:**
  of 30 Hz to 5 kHz: ± 6 % on all calibres
- **Influence of DC current:**
  0.04 % per A DC

Mechanical specifications

- **Operating temperature:**
  -10°C to +50°C
- **Storage temperature:**
  -25°C to +80°C
- **Influence of temperature:**
  < 0.1 % per 10 °K
- **Max. jaw opening:**
  90 mm
- **Clamping capacity:**
  Cable: 64mm
  Group of wires: 50 x 135 mm - 64 x 100 mm
- **Casing protection rating:**
  IP20 in accordance with IEC 529
- **Drop test:**
  500 mm (IEC 68-2-32)
- **Shock resistance:**
  100 g, in accordance with IEC 68-2-27
- **Vibration resistance:**
  10 / 55/10 Hz, 0.15 mm test in accordance with IEC 68-2-6
- **Self-extinguishing capability:**
  Casing: UL94 V0
  Jaws: UL94 V2
- **Dimensions:**
  120 x 315 x 48 mm
- **Weight:**
  1,200 g
- **Colour:**
  Dark grey case with red jaws
- **Output:**
  2 safety sockets (4 mm)

Safety specifications

- **Electrical safety:**
  Double or reinforced insulation between the primary and secondary circuits and the outer casing in accordance with 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 50/60Hz: IEC 1000-4-8

(1) Conditions of reference: 23 °C ± 5 °K, 20 % to 75 % RH, 48 Hz to 65 Hz, external magnetic field < 40 A/m, no DC component, no current-carrying conductor nearby, centred test sample.

To order	Reference
AC current clamp model **D37N** with operating manual	P01120056A

CURRENT CLAMPS FOR AC CURRENT

Model D38N (insulated AC current probe)

Current	90 A peak	900 A peak	9,000 A peak
Output	10 mV / A	1 mV / A	0.1 mV / A

Description

The D38N offers accurate AC current measurement and a voltage output in mV allowing direct readings on oscilloscopes.

A switch with 3 positions on the handle can be used to select the ranges.

The wide opening of the jaws means they can be used on cables and small busbars.

Electrical specifications

- **Current range:**
  1 A AC .. 30 A AC (90 A peak)
  1 A AC .. 300 A AC (900 A peak)
  1 A AC .. 2,400 A AC (9,000 A peak)
  (3,000 A for temperature < 35 °C)
- **Output signal:**
  10 mV / A AC (3 V for 30 A)
  1 mV / A AC (3 V for 300 A)
  0.1 mV / A AC (3 V for 3,000 A)
- **Accuracy and phase shift** (1)**:**

30 A calibre

Primary current:	1.5 A	6 A	30 A	36 A
Accuracy in % of output signal	2 % ± 1 mV			
Phase shift	≤ 20 °	≤ 10 °	≤ 5 °	≤ 5 °

300 A calibre

Primary current:	15 A	60 A	300 A	360 A
Accuracy in % of output signal	2 % ± 0.5 mV			
Phase shift	≤ 3 °	≤ 1.5 °	≤ 1 °	≤ 1 °

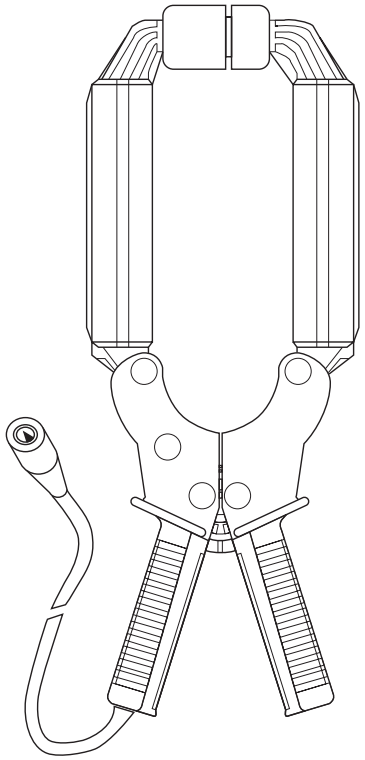
3,000 A calibre

Primary current:	150 A	600 A	3,000 A	3,600 A
Accuracy in % of output signal	2 % ± 0.2 mV			
Phase shift	≤ 3 °	≤ 1.5 °	≤ 1 °	≤ 1 °

- **Bandwidth:**
  10 Hz to 50 kHz (depending on current)
- **Rise/fall time from 10 % to 90 %:**
  4 µs
- **10 % delay time:**
  0.3 µs
- **Ampere second product:**
  30 A calibre: 30 A.s
  300 A calibre: 125 A.s
  3,000 A calibre: 180 A.s
- **Insertion impedance (at 400 Hz / 10 kHz)**
  30 A calibre: < 0.1 mΩ / < 1 mΩ
  300 A calibre: < 0.1 mΩ / < 0.5 mΩ
  3,000 A calibre: < 0.1 mΩ / < 0.4 mΩ
- **Maximum currents:**
  I < 2,400 A permanent
  2,400 A .. 2,800 A for 10 minutes and then 30 minutes shutdown
  2,800 A .. 4,000 A for 5 minutes and then 30 minutes shutdown
- **Output impedance:**
  30 A calibre: ≤ 130 Ω ± 15 %
  300 A calibre: ≤ 140 Ω ± 15 %
  3,000 A calibre: ≤ 140 Ω ± 15 %
- **Influence of temperature:**
  ≤ 0.2 % of output signal per 10 °K
- **Influence of adjacent conductor:**
  ≤ 5 mA/A at 50 Hz
- **Influence of DC current < 10 % of rated calibre superimposed on the rated current:**
  0.05 % / A DC
- **Influence of conductor position in jaws:**
  ≤ 1 % + 0.1 A at 50/60 Hz
- **Influence of frequency** (2)**:**
  30 A calibre: < 1 dB from 10 Hz .. 10 kHz
  300 A calibre: < 1 dB from 10 Hz .. 10 kHz
  3,000 A calibre: < 1 dB from 10 Hz .. 10 kHz

Mechanical specifications

- **Max. jaw opening:**
  90 mm
- **Clamping capacity:**
  Cable: Ø max 64 mm
  Busbars:
  5 busbars from 125 x 5mm
  3 busbars from 100 x 10mm
  (busbars spaced by their thickness)
- **Output:**
  Coaxial cable 2 m long, terminated by an insulated BNC connector
- **Dimensions:**
  310 x 120 x 48 mm
- **Mass:**
  1,200 g
- **Operating temperature:**
  -10°C to +50°C
- **Storage temperature:**
  -25°C to +80°C
- **Relative humidity for operation:**
  0 to 85 % RH with a linear decrease above 35 °C
- **Operating altitude:**
  0 to 2,000 m
- **Casing protection rating:**
  IP 20 (IEC 529)
- **Drop test:**
  0.5 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:**
  10/55/10 Hz, 0.15 mm (IEC 68-2-6)



- **Self-extinguishing capability:**
  Handles: UL94 V0
  Jaws: UL94 V2
- **Colours:**
  Dark grey handles with red jaws

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

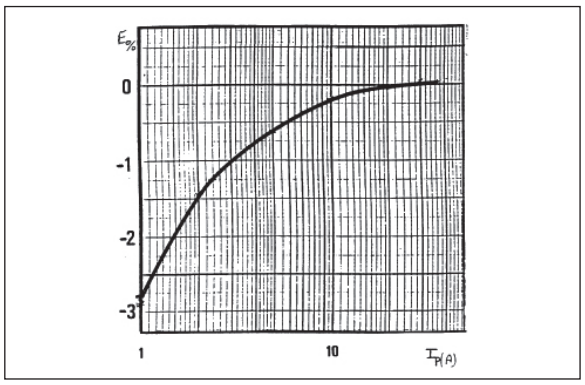
CURRENT CLAMPS FOR AC CURRENT

Model D38N (insulated AC current probe)

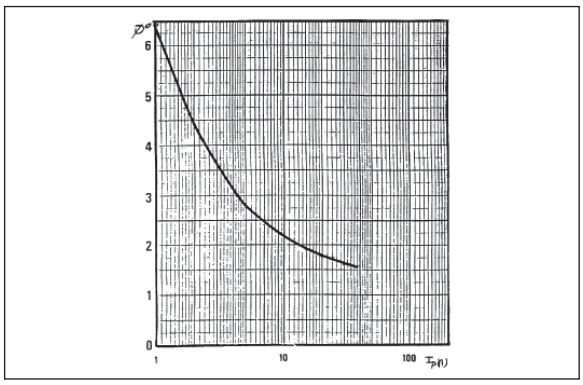
Curves at 50 Hz

30 A calibre

Error on measurement

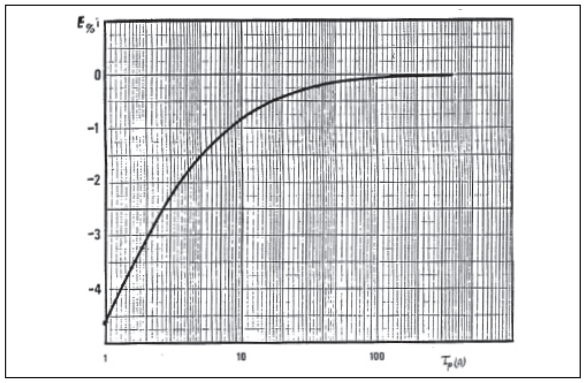


Phase shift

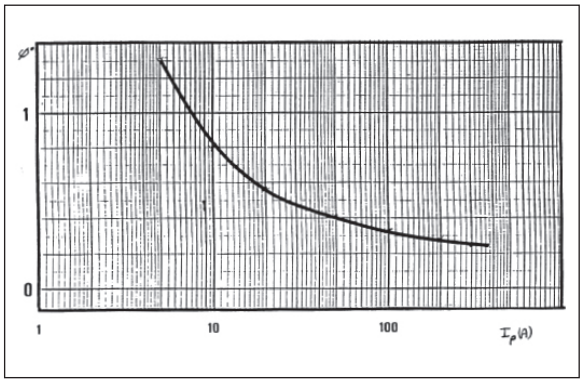


300 A calibre

Error on measurement

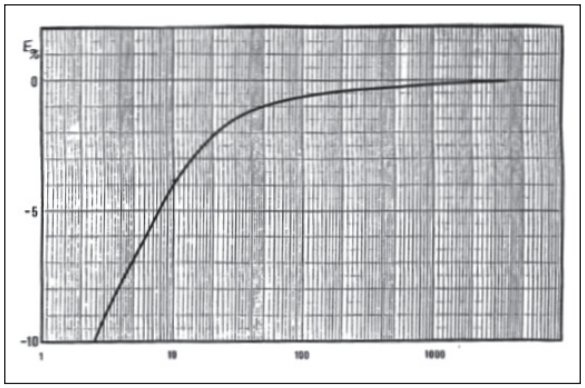


Phase shift

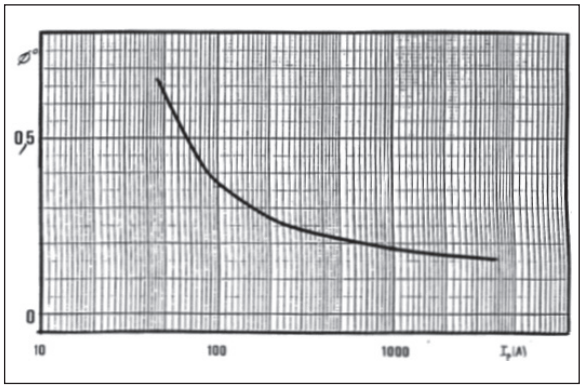


3,000 A calibre

Error on measurement



Phase shift



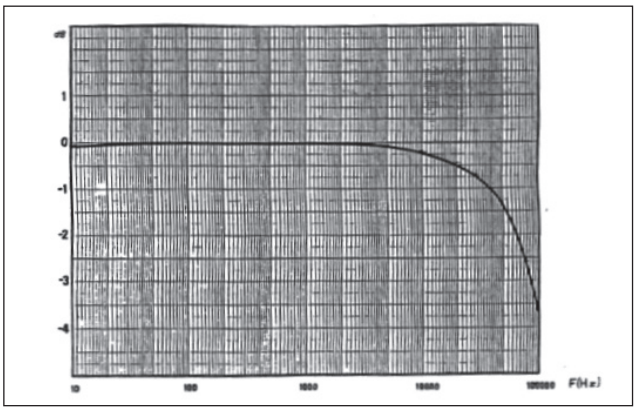
CURRENT CLAMPS FOR AC CURRENT

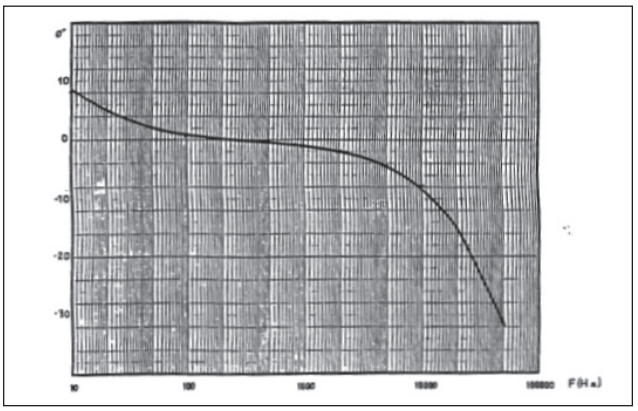
Model D38N (insulated AC current probe)

Frequency response

30 A calibre

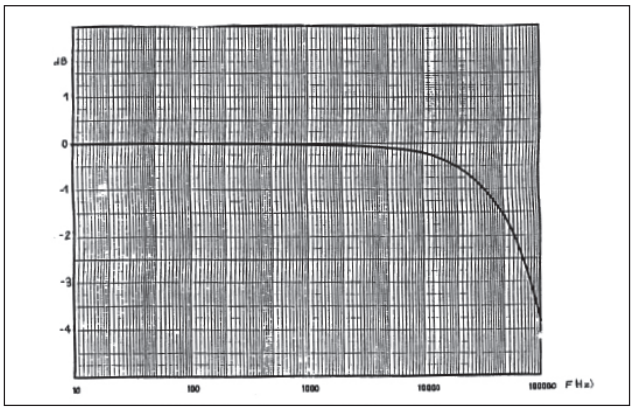
I = 10 A

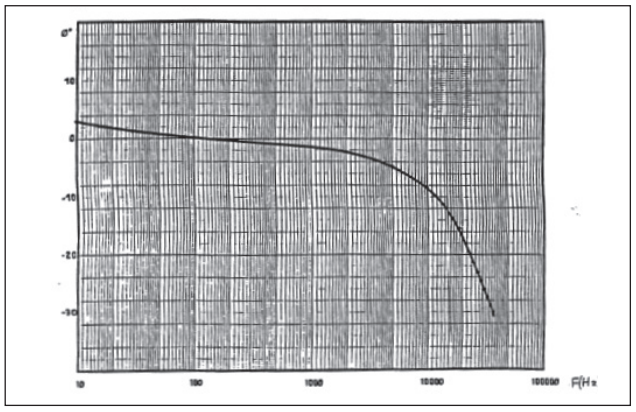




300 A calibre

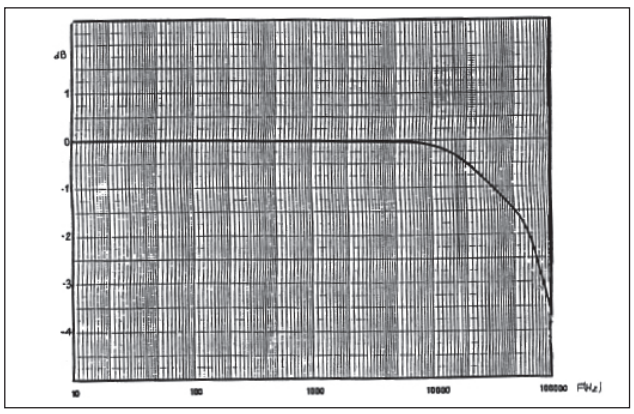
I = 10 A

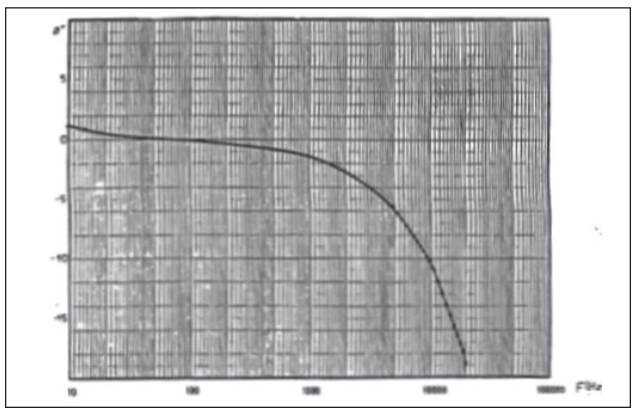




3,000 A calibre

I = 100 A



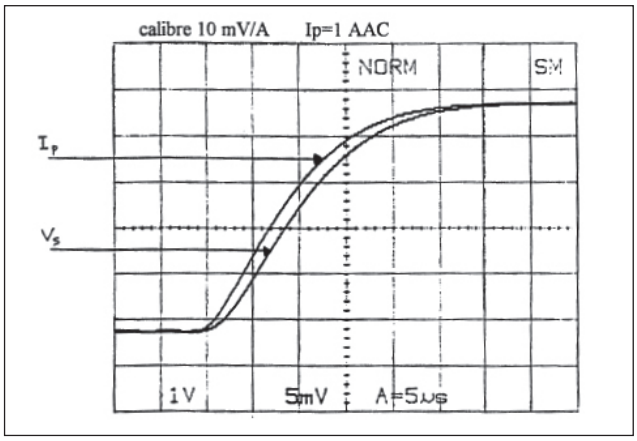


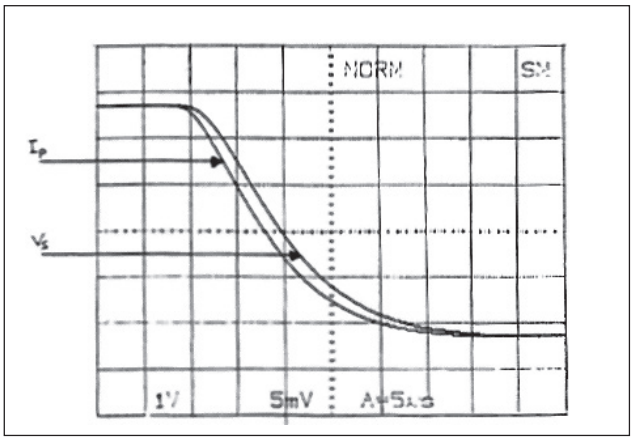
CURRENT CLAMPS FOR AC CURRENT

Model D38N (insulated AC current probe)

Response to a single step (I_p = 1 A)

30 A calibre

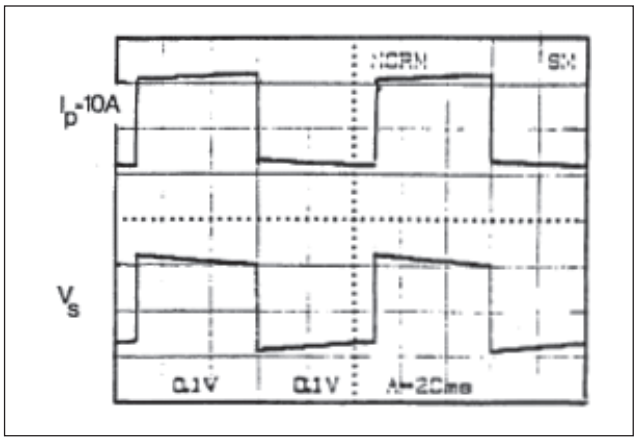




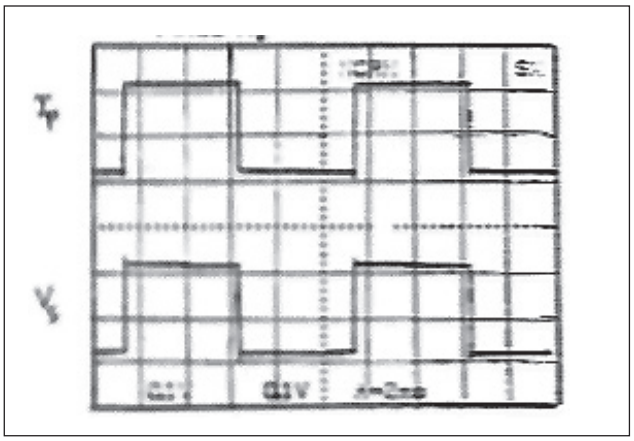
Response to a square signal (I_p = 10 A)

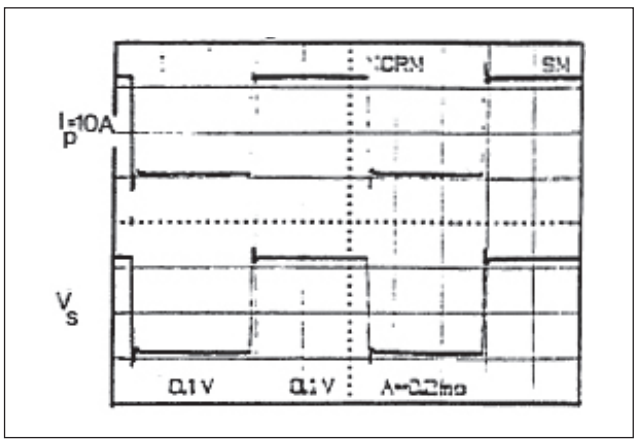
30 A calibre

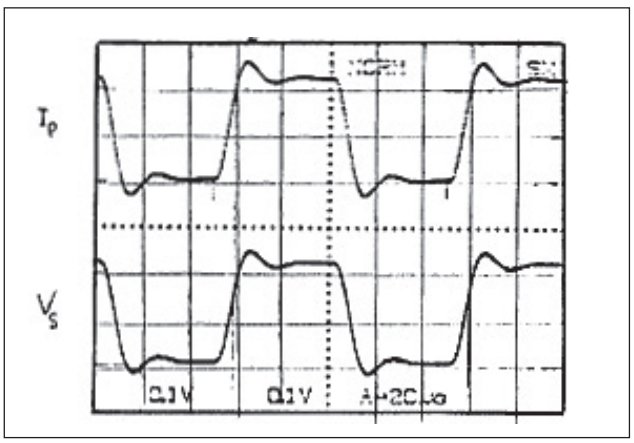
10 Hz



100 Hz



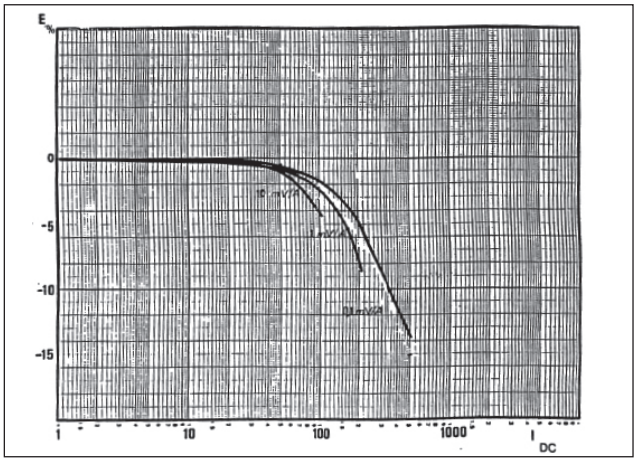




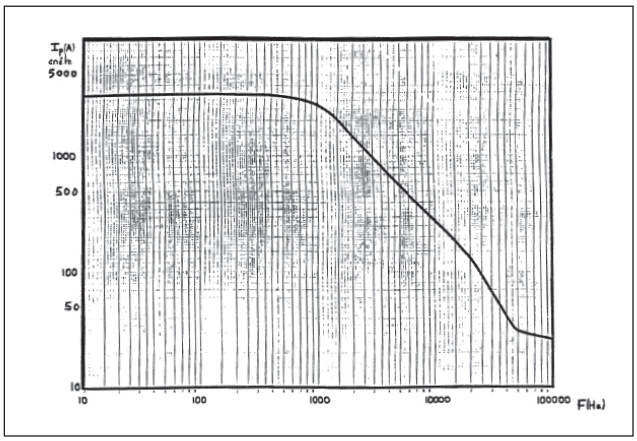
CURRENT CLAMPS FOR AC CURRENT

Model D38N (insulated AC current probe)

Influence of DC current superimposed on the signal



Maximum current according to frequency



(1) Conditions of reference: 23 °C ± 3 °K, 20 % to 75 % RH, sinusoidal signal with frequency of 48 Hz at 65 Hz, external magnetic field < 40 A/m, no DC components, no external conductor with circulating current, conductor centred for measurement, load impedance > 1 MΩ / < 47 pF.

(2) Out of reference domain.

To order	Reference
AC current clamp model **D38N** with operating manual	P01120057A

NOTES