Clamp-on ammeter for AC current

MINI Series

Small, compact and particularly resistant, this range of miniature clamps is designed for measurements from a few milli-amperes to 150 A ac. Their shape makes them very practical in confined spaces, such as circuit-breaker boards, control panels or control boxes. They are ideal for use with multimeters.

There are two types of MINI clamps.

The first type operates like a traditional current transformer and provides a current output (mA) which can be used with multimeters, loggers or instruments with current calibres.

The second provides a voltage output proportional to the current measured.

This voltage output enables instruments with AC voltage calibres to display or store current values.

There is also a model with a DC voltage output.

The MINI clamps give True RMS results when used with a True RMS instrument.
Clamp-on ammeter for AC current
MINI 01 model

<table>
<thead>
<tr>
<th>Calibre</th>
<th>150 A AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>1 mA/A (1,000/1)</td>
</tr>
</tbody>
</table>

**Main specifications**

- **Calibre**: 150 A
- **Measurement range**: 2 A ... 150 A
- **Accuracy in %**: ≤ 2.5 % + 0.15 A (1 Ω load)  
  ≤ 3 % + 0.15 A (10 Ω load)
- **Phase shift**: Not specified
- **Output signal**: 1 mA AC/AAC (1000/1)  
  (150 mA at 150 A)

**Mechanical specifications**

- **Operating temperature**: -10°C to +50°C
- **Storage temperature**: -40°C to +80°C
- **Relative humidity for operation**: from 0 to 85 % RH decreasing linearly above 35 °C
- **Operating altitude**: 0 to 2,000 m
- **Casing protection rating (leakproofing)**: IP40 (EN 60529 Ed. 1995)
- **Fall height**: 1.5 m (IEC 68-2-32)
- **Shock protection**: 100 g / 6 ms / half-period (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 UL94 V2
- **Dimensions**: 130 x 37 x 25 mm
- **Weight**: approx. 180 g
- **Colours**: black casing

**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 EN 61010-1 Ed. 2:2001, EN 61010-2-031 Ed. 2002 & EN 61010-2-032 Ed. 2003
  - 600 V category III, pollution degree 2
  - 300 V category IV, pollution degree 2
- **Electromagnetic compatibility**: CE-certified equipment compliant with standard EN 61326-1 (Ed. 97) + A1 (Ed. 98) + A2 (Ed. 01)
  - Emission: stipulations for Class B equipment (domestic use).
  - Immunity: stipulations for equipment used intermittently on industrial sites.

**Electrical specifications**

- **Load impedance**: ≤ 10 Ω
- **Maximum currents**: I < 150 A permanent from 48 Hz ... 500 Hz
- **Influence of temperature**: ≤ 0.2 % per 10 °K
- **Influence of adjacent conductor**: ≤ 2 mA/A at 50 Hz
- **Influence of conductor position in jaws**: ≤ 0.1 % at 50/60 Hz
- **Influence of frequency**: ≤ 2 % from 65 Hz to 500 Hz
- **Maximum output voltage (secondary open)**: 30 V

**Output**

- Double-insulated cable 1.5 m long, terminated by 2 insulated elbowed male banana connectors Ø 4 mm
- Bandwidth: 48 Hz ... 500 Hz
- Clamping capacity: Cable Ø max 10 mm

**Description**

Small and compact, the MINI 01 clamp-on ammeter is the ideal complement for any multimeter to measure AC currents in low-power tertiary or industrial applications.

If there is a current in the conductor clamped, the MINI 01 clamp is protected against overvoltages during disconnection from the measurement instrument.

**Order Reference**

- MINI 01 clamp-on AC ammeter with operating manual
- P01105101Z

(1) Conditions of reference: 23 °C ± 3 °K, 20 to 75 % RH, sinusoidal signal with frequency of 48 Hz to 500 Hz, distortion factor < 1 % with no DC component, external DC magnetic field < 40 A/m, no external AC magnetic field, no external conductor with circulating current, conductor centred for measurement, measurement instrument load impedance ≤ 10 Ω.

(2) With clamp closed.

(3) Vibrations expressed in mm peak, scanning of 1 octave/minute for 10 minutes on 3 axes.
Clamp-on ammeter for AC current
MINI 03 model

Calibre | 100 A AC
Sensitivity | 1 mV/A

Description
Small and compact, the MINI 03 clamp-on ammeter is the ideal complement for any multimeter to measure AC currents in low-power tertiary or industrial applications.
When used with an AC voltmeter, it allows you to directly read the current measured on the voltmeter.

Main specifications

<table>
<thead>
<tr>
<th>Calibre</th>
<th>100 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement range</td>
<td>1 A...100 A</td>
</tr>
<tr>
<td>Accuracy in %</td>
<td>≤ 2 % + 50 mA</td>
</tr>
<tr>
<td>Phase shift</td>
<td>Not specified</td>
</tr>
<tr>
<td>Output signal</td>
<td>1 mA AC/AAC (100 mV at 100 A)</td>
</tr>
</tbody>
</table>

Output:
Double-insulated cable 1.5 m long, terminated by 2 insulated elbowed male banana connectors Ø 4 mm
Bandwidth: 48 Hz ... 500 Hz
Clamping capacity:
Cable Ø max 10 mm

Electrical specifications

Maximum currents:
I < 150 A permanent from 48 Hz ... 500 Hz
Influence of temperature:
≤ 0.2 % per 10 K
Influence of adjacent conductor:
≤ 2 mA/A at 50 Hz
Influence of conductor position in jaws:
≤ 0.1 % at 50/60 Hz
Influence of frequency:
≤ 1 % from 65 Hz to 500 Hz

Mechanical specifications

Operating temperature:
-10 °C to +50 °C
Storage temperature:
-40 °C to +80 °C
Relative humidity for operation:
0 to 85 % RH decreasing linearly above 35 °C
Operating altitude:
0 to 2,000 m
Casing protection rating (leakproofing):
IP40 (EN 60529 Ed. 1995)
Fall height: 1.5 m (IEC 68-2-32)
Shock protection:
100 g / 6 ms / half-period (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 UL94 V2
Dimensions: 130 x 37 x 25 mm
Weight: approx. 180 g
Colours: black casing

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 EN 61010-1 Ed. 2:2001, EN 61010-2-031 Ed. 2002 & EN 61010-2-032 Ed. 2003
- 600 V category III, pollution degree 2
- 300 V category IV, pollution degree 2
Electromagnetic compatibility:
CE-certified equipment compliant with standard EN61326-1 (Ed. 97) + A1 (Ed. 98) + A2 (Ed. 01)
- Emission: stipulations for Class B equipment (domestic use).
- Immunity: stipulations for equipment used intermittently on industrial sites.

Calibre 100 A
Sensitivity 1 mV/A

To order
MINI 03 clamp-on AC ammeter with operating manual

Reference
P01105103Z

(1) Conditions of reference: 23 °C ± 3 °K, 20 to 75 % RH, sinusoidal signal with frequency of 48 Hz to 500 Hz, distortion factor < 1 % with no DC component, external DC magnetic field < 40 A/m, no external AC magnetic field, no external conductor with circulating current, conductor centred for measurement, measurement instrument load impedance ≥ 10 kΩ.
(2) With clamp closed.
(3) Vibrations expressed in mm peak, scanning of 1 octave/minute for 10 minutes on 3 axes.
Clamp-on ammeter for AC current

MINI 05 model

<table>
<thead>
<tr>
<th>Calibres</th>
<th>10 A AC</th>
<th>100 A AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivities</td>
<td>1 mV/mA</td>
<td>1 mV/A</td>
</tr>
</tbody>
</table>

■ Description

Small and compact, the MINI 05 clamp-on ammeter is the ideal complement for any multimeter to measure AC currents in low-power tertiary or industrial applications.

With its 2 calibres, it offers excellent resolution for measuring AC intensities from 5 mA to 100 A.

■ Main specifications (1)

<table>
<thead>
<tr>
<th>Calibre</th>
<th>10 A</th>
<th>100 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement range</td>
<td>5 mA...10 A</td>
<td>1 A...100 A</td>
</tr>
<tr>
<td>Accuracy in %</td>
<td>≤ 3 % + 0.15 mA</td>
<td>≤ 2 % + 50 mA</td>
</tr>
<tr>
<td>Phase shift</td>
<td>Not specified</td>
<td></td>
</tr>
<tr>
<td>Output signal</td>
<td>1 mV AC/mA AC (10 V at 10 A)</td>
<td>1 mV AC/AAC (100 mV at 100 A)</td>
</tr>
</tbody>
</table>

Output:

- Double-insulated cable 1.5 m long, terminated by 2 insulated elbowed male banana connectors Ø 4 mm
- Bandwidth: 48 Hz…500 Hz
- Clamping capacity: Cable Ø max 10 mm

■ Electrical specifications

Maximum currents:
- 100 A calibre:
  - I ≤ 150 A permanent from 48 Hz…500 Hz
  - I < 15 A permanent from 48 Hz…500 Hz
- 10 A calibre:
  - I < 15 A permanent from 48 Hz…500 Hz

Influence of temperature:
- ≤ 0.2 % per 10 K

Influence of adjacent conductor:
- ≤ 2 mA/A at 50 Hz

Influence of conductor position in jaws:
- ≤ 0.1 % at 50/60 Hz

Influence of frequency:
- 100 A calibre:
  - ≤ 1 % from 65 Hz to 500 Hz
- 10 A calibre:
  - ≤ 3 % from 65 Hz to 500 Hz

■ Mechanical specifications

Operating temperature:
- -10 °C to +50 °C

Storage temperature:
- -40 °C to +80 °C

Relative humidity for operation:
- 0 to 85% RH decreasing linearly above 35°C

Operating altitude:
- 0 to 2,000 m

Casing protection rating (leakproofing):
- IP40 (EN 60529 Ed. 1995)

Fall height:
- 1.5 m (IEC 68-2-32)

Shock protection:
- 100 g / 6 ms / half-period (IEC 68-2-27)

Vibration resistance (3):
- 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 UL94 V2

Dimensions:
- 130 x 37 x 25 mm

Weight:
- approx. 180 g

Colours:
- black casing

■ 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 EN 61010-1 Ed. 2:2001, EN 61010-2-031 Ed. 2002 & EN 61010-2-032 Ed. 2003
- 600 V category III, pollution degree 2
- 300 V category IV, pollution degree 2

Electromagnetic compatibility:
- CE-certified equipment compliant with standard EN61326-1 (Ed. 97) + A1 (Ed. 98) + A2 (Ed. 01)
- Emission: stipulations for Class B equipment (domestic use).
- Immunity: stipulations for equipment used intermittently on industrial sites.

To order

MINI 05 clamp-on AC ammeter with operating manual

Reference

P01105106Z

(1) Conditions of reference: 23 °C ± 3 °K, 20 to 75 % RH, sinusoidal signal with frequency of 48 Hz to 500 Hz, distortion factor < 1 % with no DC component, external DC magnetic field < 40 A/m, no external AC magnetic field, no external conductor with circulating current, conductor centred for measurement, measurement instrument load impedance ≥ 1 MΩ (10 A calibre) & ≥ 10 kΩ (100 A calibre).

(2) With clamp closed.

(3) Vibrations expressed in mm peak, scanning of 1 octave/minute for 10 minutes on 3 axes.
Clamp-on ammeter for AC current

MINI 09 model

<table>
<thead>
<tr>
<th>Calibre</th>
<th>150 A AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>1 mVrms / A AC</td>
</tr>
</tbody>
</table>

**Description**

Small and compact, the MINI 09 clamp-on ammeter is the ideal complement for any multimeter to measure AC currents in low-power tertiary or industrial applications. Its DC voltage output helps to overcome the low sensitivity of certain AC measurement instruments.

**Main specifications (1)**

<table>
<thead>
<tr>
<th>Calibre</th>
<th>150 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement range</td>
<td>1 A ... 5 A</td>
</tr>
<tr>
<td>Accuracy in %</td>
<td>≤ 10 % + 0.2 A</td>
</tr>
<tr>
<td>Phase shift</td>
<td>Not specified</td>
</tr>
<tr>
<td>Output signal</td>
<td>100 mVrms / A AC (15 Vrms at 150 A)</td>
</tr>
</tbody>
</table>

**Output:**

Double-insulated cable 1.5 m long, terminated by 2 insulated elbowed male banana connectors Ø 4 mm

**Bandwidth:** 48 Hz ... 500 Hz

**Clamping capacity:**

Cable Ø max 10 mm

**Electrical specifications**

**Maximum currents:**

I < 150 A permanent from 65 Hz ... 500 Hz

**Influence of temperature:**

≤ 0.2 % per 10 K

**Influence of adjacent conductor:**

≤ 2 mA/A at 50 Hz

**Influence of conductor position in jaws:**

≤ 0.1 % at 50/60 Hz

**Influence of frequency:**

≤ 3 % from 65 Hz to 500 Hz

**Mechanical specifications**

**Operating temperature:**

-10 °C to +50 °C

**Storage temperature:**

-40 °C to +80 °C

**Relative humidity for operation:**

0 to 85% RH decreasing linearly above 35 °C

**Operating altitude:**

0 to 2,000 m

**Casing protection rating (leakproofing):**


**Fall height:**

1.5 m (IEC 68-2-32)

**Shock protection:**

100 g / 6 ms / half-period (IEC 68-2-27)

**Vibration resistance R1:**

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 UL94 V2

**Dimensions:** 130 x 37 x 25 mm

**Weight:** approx. 180 g

**Colours:** black casing

**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 EN 61010-1 Ed. 2:2001, EN 61010-2-031 Ed. 2002 & EN 61010-2-032 Ed. 2003

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- 300 V category IV, pollution degree 2

**Electromagnetic compatibility:**

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(2) With clamp closed.

(3) Vibrations expressed in mm peak, scanning of 1 octave/minute for 10 minutes on 3 axes.

**To order**

<table>
<thead>
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<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINI 09 clamp-on AC ammeter with operating manual</td>
</tr>
</tbody>
</table>