



Measurement Method

Preliminary Checks

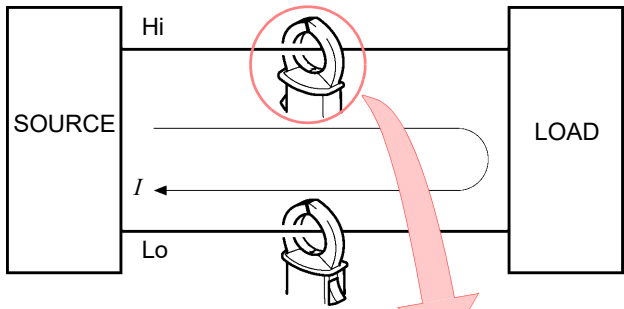
Before using the device the first time, verify that it operates normally to ensure that the no damage occurred during storage or shipping. If you find any damage, contact your dealer or Hioki representative.

Measurement procedure

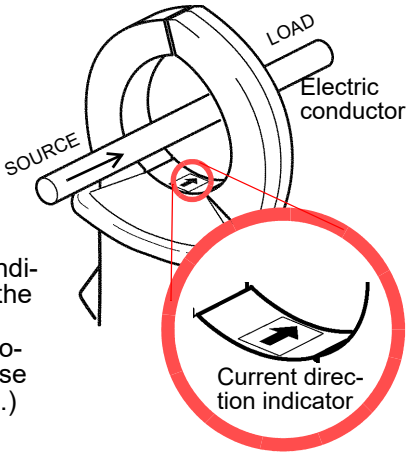
At the start of measurement

1. Attach the device to the host instrument that is powered off.
2. Turn on the host instrument.
3. Set the panel range switch to the appropriate current range.
4. Clamp the jaws of the sensor onto the conductor so that the current direction on the clamp points in the direction of the load, and so that the conductor is approximately centered between the jaws. Make sure that the jaws of the clamp are fully closed.

Wiring example



Position the jaws with the current direction indicator pointing toward the load side.
(If installed in the opposite direction, the phase deviates 180 degrees.)



When measurement is complete

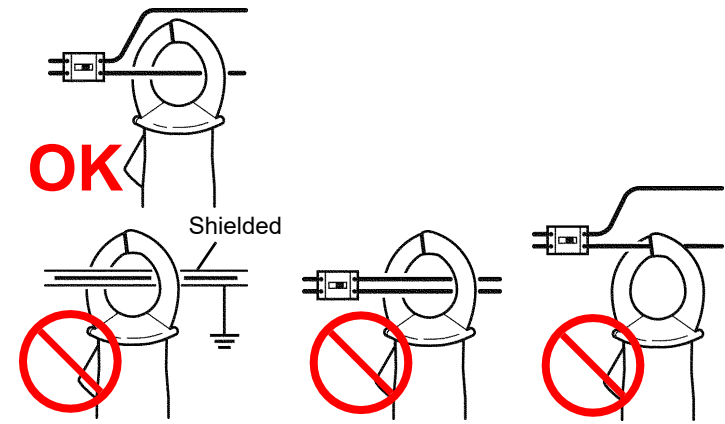
1. Remove the jaws from the conductor.
2. Turn off the host instrument.
3. Detach the device from the host instrument.

CAUTION

In case of applying exceeded 430 A input such as rush current (it may reach more than ten times of rated current) while the power of the measured unit is on, release the jaws to be stationary condition (300 A max.) and then clamp it or use with the Model 9290-10 Clamp on Adapter.

NOTE

- Note that a DC component will result in an erroneous reading.
- Also note that operation will not be correct if the power frequency is very low (less than about 1 Hz).
- Ground-shielded conductors cannot be accurately measured.
- The circuit is such that a DC voltage is output briefly after the power is turned on. Stabilization of the output takes about 30 seconds.
- Also read the instruction manual for whichever device you connect to.
- Attach the clamp around only one conductor. Single-phase (2-wire) or three-phase (3-wire) cables clamped together will not produce any reading.



Phase Compensation Value

Enter the following compensation values (representative values) when performing phase compensation on equipment with a phase correction function.

20 A Range: -3.34°
200 A Range: -4.18°

Specifications

f.s.: maximum display value or scale length (Rated current)
rdg: reading value (The value currently being measured and indicated on the measuring device.)

1. General Specifications

Operating environment	Indoors, Pollution degree 2, Up to 2000 m (6562ft) ASL
Operating temperature and humidity	0°C to 50°C (32 °F to 122°F), 80%RH max. (no condensation)
Storage temperature and humidity	-10°C to 60°C (14°F to 140°F), 80%RH max. (no condensation)
Maximum rated current	200 A rms AC
Maximum rated voltage to earth	600 V rms AC (50 Hz/60 Hz) Measurement category III (anticipated transient overvoltage 6000 V)
Applicable Standards	Safety EN61010 EMC EN61326 Class A
Product warranty period	1 year

2. Specifications

-1. 20 A range Specifications

Rated current	20 A rms AC
Output voltage	2 V/20 A
Maximum input current	50 A rms (71 A peak, continuous, 50 Hz/60 Hz, within a derating)

-2. 200 A range Specifications

Rated current	200 A rms AC
Output voltage	2 V/200 A
Maximum input current	300 A rms (430 A peak, continuous, 50 Hz/60 Hz, within a derating)

-3. 20 A/200 A range Specifications

Output impedance	50 Ω (±5%)
Accuracy guarantee	23°C±5°C (73°F±9°F), 80%RH or less tee for temperature and humidity
Period of guarantee accuracy	1 year (Opening and Closing of the jaws: Maximum 10000 times)
Warm-up time	1 minute
Accuracy	Within rated current for each range and inside of derating range (The following accuracy values are merely design values: amplitude at under 5 Hz and phase at under 10 Hz) Sine wave input, conductor at jaws center position, not including each effect, a measurement instrument with an input resistance of 1 MΩ or more

Frequency	Amplitude accuracy	Phase accuracy
1 Hz ≤ f < 5 Hz	±2.0% rdg ±0.10% f.s.	-
5 Hz ≤ f < 10 Hz	±1.0% rdg ±0.05% f.s.	±1.0°
10 Hz ≤ f < 45 Hz	±0.5% rdg ±0.02% f.s.	±0.5°
45 Hz ≤ f ≤ 66 Hz	±0.3% rdg ±0.01% f.s.	±0.2°
66 Hz < f ≤ 500 Hz	±0.5% rdg ±0.02% f.s.	±0.5°
500 Hz < f ≤ 1 kHz	±0.5% rdg ±0.02% f.s.	±1.0°
1 kHz < f ≤ 5 kHz	±1.0% rdg ±0.05% f.s.	±2.0°
5 kHz < f ≤ 10 kHz	±2.5% rdg ±0.10% f.s.	±3.0°
10 kHz < f ≤ 20 kHz	±5% rdg ±0.1% f.s.	±5.0°
20 kHz < f ≤ 50 kHz	±5% rdg ±0.1% f.s.	±15.0°
50 kHz < f ≤ 100 kHz	±30% rdg ±0.1% f.s.	-

Temperature coefficient	The following numerical values are added to the measurement accuracy according to the temperature difference of 18°C or 28°C if operating temperatures are outside 18°C to 28°C. Amplitude sensitivity: Within ±0.03% rdg /°C
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Effect of conductor position	Within ±0.2% rdg (at 100 A/55 Hz input, using with the conductor 10 mm diameter)
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Effect of external magnetic fields	100 mA equivalent or less (in an AC electromagnetic field of 400 A/m, 60 Hz)
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Effect of radiated radio-frequency electromagnetic field	1% f.s. at 10 V/m
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Measurable conductor diameter	φ46 mm (1.81") or less
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Rated supply voltage	±11 V to ±15 V (Tracking)
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Power supply capacity	Within ±200 mA (200 A/55 Hz measurement, with ±12 V power supply)
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Rated power	5 VA or less (200 A/55 Hz measurement, with ±12 V power supply)
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Interface	Dedicated interface (ME15W)
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Dimensions	Approx. 78 W×188 H×35 D mm Approx. 3.07" W×7.40" H×1.38" D (Without protrusions, cord)
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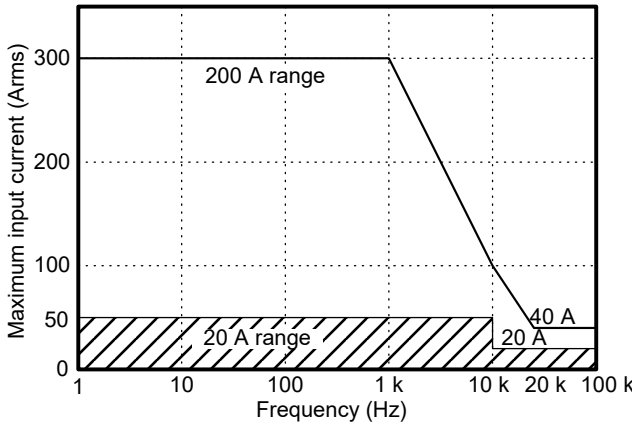
Mass	Approx. 450 g (15.9 oz.)
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Output cable length	Approx. 3 m
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Accessories	Model 9355 Carrying Case Instruction Manual Current Sensor Operating Precautions (0990A901) Mark bands (6)
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Option	CT9902 Extension Cable
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3. Derating



4. Combined accuracy with connectable products

-1. PW8001 Power Analyzer

Combined accuracy = PW8001(U7001/U7005) accuracy + sensor accuracy
Defined after zero adjustment has been performed.
Add accuracy according to each condition in specifications of the power.

-2. PW4001 Power Analyzer

Combined accuracy = PW4001 accuracy + sensor accuracy
Defined after zero adjustment has been performed.
Add accuracy according to each condition in specifications of the power.

-3. PW3390 Power Analyzer

Combined accuracy = PW3390 accuracy + sensor accuracy
Defined after zero adjustment has been performed.
Add accuracy according to each condition in specifications of the power.

-4. CT9555, CT9556, CT9557 Sensor Unit

Sensor accuracy is applicable (with output coaxial cable of length 1.6 m or less).
Add sensor unit accuracy when RMS output or total output is used.
Add accuracy according to each condition in specifications of the products to be connected and sensor.

-5. U8977 3CH Current Unit

Combined accuracy = U8977 accuracy + sensor accuracy
Add accuracy according to each condition in specifications of Memory HiCorder to be connected and sensor.
Defined after zero adjustment has been performed.

-6. M7103 Power Measurement Module

Combined accuracy = M7103 accuracy + sensor accuracy
Add accuracy according to each condition in specifications of Data Logger to be connected and sensor.
Defined after zero adjustment has been performed.