

HIOKI

AC CLAMP POWER METER CM3286

NEW

Precisely identify electricity theft



Info	
Page	
Constant	
Values	
Predicted Value	
Difference	-0.03
Ratio	95
Integration Start	2017-04-19 17:03:56
Integration Stop	2017-04-19 17:04:01



CM3286-01 only



Bluetooth
Please see www.hioki.com for list of supported regions.
For CM3286-01

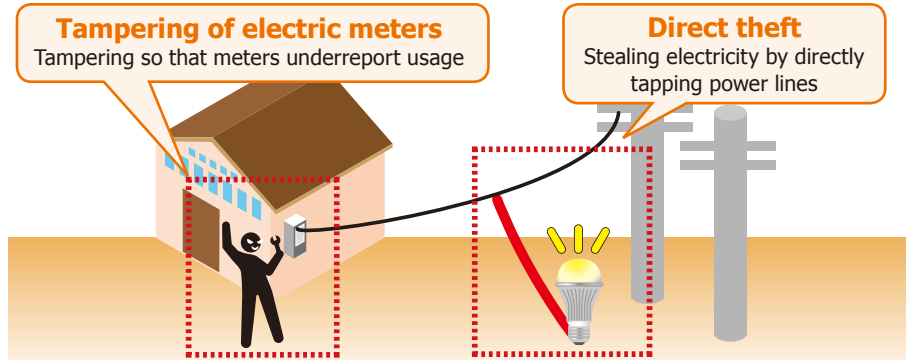
CAT IV 600V
CAT III 1000V
Operating temperature
-25°C to +65°C

*Harmonic can be displayed with the GENNECT Cross dedicated application software at a future update.

Accurately detect electricity theft



- The CM3286 is ideal for verifying electricity theft since it can measure both AC power and current.
- The instrument's electricity theft detection-and-report function can be used to quickly and easily make measurements and generate reports (CM3286-01 only).



Meter tampering

Detect by comparing electric meter readings and measurements

Proper operation of electric meters can be confirmed by comparing meter readings and actual values.

Mechanical meter
or
Electronic meter

L1/R/A
N

CONNECTION CORD L9257

Choose the type of probe that best suits your measurement location (see options)

[Proper operation]

Energy ratio (Measured value/theoretical value)
Energy difference (Measured value - theoretical value)

MEASURED 0.31 Wk
EXPECTED 0.31 Wk

Energy (Measured value) Energy (Theoretical value)

[Faulty operation]

MEASURED 0.47 Wk
EXPECTED 0.31 Wk

Result The energy ratio is greater than 100%.

Direct theft

Detect by measuring current

Electricity theft can be detected by measuring current on the power supply side of the illegal connection.

Illegal connection

Power supply side

Measure currents as low as 60 mA simply by clamping the instrument to two lines at once, ensuring you'll detect any theft.

[Proper operation]

Current frequency
Current value
Current peak value

0.000 Hz
0.000 A
0.000 IPEAK A

[Faulty operation]

Current detected.

50.0 Hz
2.100 A
2.97 IPEAK A

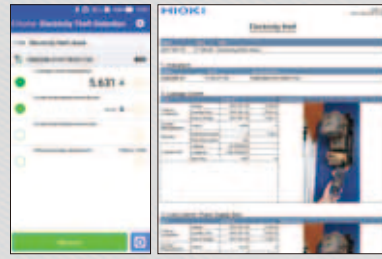
*Screen values represent example measurements.

Use the Bluetooth-equipped CM3286-01 for even more convenient measurement.

Quick and easy data recording Hold measured values to send them to a smartphone



When you freeze the measured value, it is automatically transferred to a smartphone or tablet, eliminating the need to jot down readings by hand. You can also create a simple PDF report right there in the field, and save data in CSV format for later editing in Excel.



Electricity theft detection-and-report function

Simply follow the measurement procedure to take measurements and photographs at four locations and the instrument will automatically generate a report, complete with photos.

Since the report is generated automatically in the field based on captured measurement data, it's impossible for others to alter the data.

Delivering a broad range of measurements at sites from manufacturing plants to households

- Accurately measure power from 5 W at a current as low as 60 mA to 360 kW at a maximum of 600 A (single-phase power measurement).
- In addition to current, voltage, and power, measure simple integral power consumption and phase sequence.
- Obtain accurate readings with true RMS measurement.

Measurement line

Measure power in single-phase to balanced three-phase circuits (with estimated values)
 1-phase/ 2-wire
 balanced 3-phase/ 3-wire
 balanced 3-phase/ 4-wire

**The instrument generates estimated power values when measuring 3-phase circuits.*

Rotary switch that can be turned with a single hand

White backlight

All related parameters are shown on a single screen

[Power display]

PF 0.999
 0.100 kW
 100.0 V 1.000 A

Power factor
 Active power
 Voltage RMS value
 Current RMS value

[Current display]

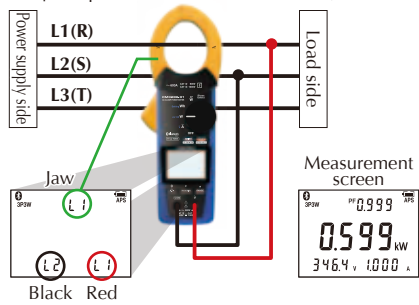
60.0 Hz
 10.00 A
 1.42 PEAK A

Current frequency
 Current value
 Current peak value

Simple wiring guide

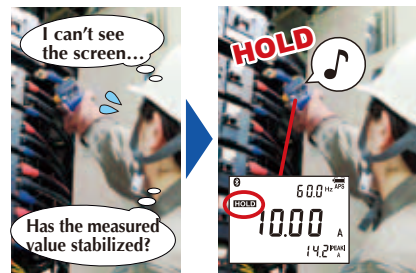
The CM3286 provides a simple on-screen guide indicating how to connect it to a 3-phase circuit.

Example: 3-phase AC measurement (3P3W, balanced)



AUTO HOLD

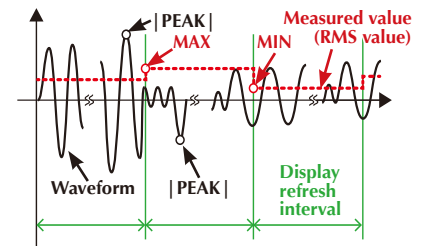
The clamp meters beep when the measured value stabilizes and then automatically hold the display value. This is useful when using the instrument in locations where it is difficult to see the display or press the hold button.



Easily check power supply fluctuations

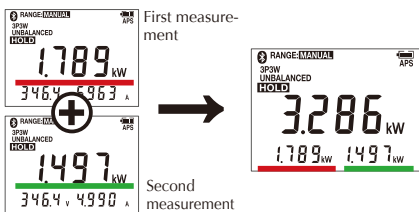
Since it can display maximum (MAX), minimum (MIN), and average (AVG) values, the CM3286 is useful when you need to ascertain the magnitude of fluctuations.

And since it can also measure crest (PEAK) values, you can use it to check fluctuations at the crest value level.



Quickly check for unbalance

The CM3286 can measure unbalanced power in a 3-phase/ 3-wire circuit by measuring the single-phase power twice and then automatically adding the results. (The instrument can also measure 3-phase/4-wire circuits in three separate measurements.)



Double warnings with sound and light

When the clamp power meter detects excessively over current or voltage input during a continuity check, it alerts you with a red backlight and beeping tone in order to help prevent accidents.



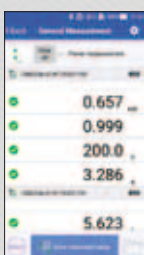
CAT IV 600 V

The CM3286 can safely measure service wires with a wire-to-ground voltage of up to 600 V as well as wires found in distribution panels.

The clamp meters also feature a safe design that can withstand a transient overvoltage of 8 kV in case of a lightning strike.

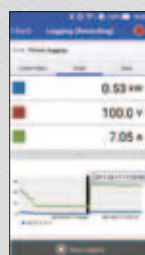


GENNECT Cross (freeware) is required to use instruments with a smartphone or tablet. GENNECT Cross available from the Google Play or Apple Store.



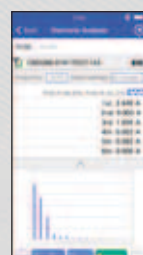
General measurement

Tap "Save measured value" in the app or press the HOLD key on the measuring instrument to save the data. Measured values from multiple channels can be saved.



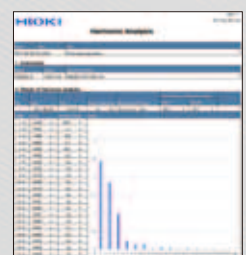
Simple logging function

Convenient for observing fluctuations over a short period of time when it's not practical to set up large-scale recording equipment.



Harmonic measurement function

The CM3286-01 can measure the harmonic level, content percentage, and total harmonic distortion of voltage or current for the 1st through 30th orders. Android support scheduled for fall 2017. iOS support scheduled for 2018. Prototype screen shown.



Instantly create reports

Specifications Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year

Measurement line	Single-phase, Three-phase (should be balanced with no distortion)
Measurement items	Voltage, Current, Voltage/ current peak, Active/ reactive/ apparent power, Power factor, Phase angle *1, Frequency, Simple Active Energy Consumption (Single-phase) [CM3286-01 only*2] Voltage/ current harmonic levels
AC voltage	[Measurement range] 80.0 V to 600.0 V, Single range, Basic accuracy 45 Hz - 66 Hz: $\pm 0.7\%$ rdg. ± 3 dgt. (Frequency characteristics: 45 Hz to 1 kHz, True RMS)
AC current	[Measurement range] 0.060 A to 600.0 A, 3 range, Basic accuracy 45 Hz - 66 Hz: $\pm 1.3\%$ rdg. ± 3 dgt. (Frequency characteristics: 45 Hz to 1 kHz, True RMS)
Power	[Single phase] 0.005 kW to 360.0 kW Basic accuracy: $\pm 2.0\%$ rdg. ± 7 dgt. (50/ 60 Hz, Power factor=1) [Balanced three-phase 3-wire] 0.020 kW to 623.5 kW Basic accuracy: $\pm 3.0\%$ rdg. ± 10 dgt. (50/ 60 Hz, Power factor=1) [Balanced three-phase 4-wire] 0.040 kW to 1080 kW Basic accuracy: $\pm 2.0\%$ rdg. ± 3 dgt. (50/ 60 Hz, Power factor=1)
Harmonic (CM3286-01 only *2)	Voltage/ current harmonic levels up to 30th, Content factor, Total harmonic distortion ratio
Other functions	[Phase angle *1] lead -180.0° to lag 179.9°, [Power factor] -1.000 to 1.000 [Frequency] 45.0 Hz to 999.9 Hz, PEAK, phase detection, max/min/avg value display, auto hold, electric meter comparison, unbalanced 3-phase power estimate display, etc.
Maximum rated voltage to earth Maximum rated voltage to terminal	600 V AC (Measurement category IV) 1000 V AC (Measurement category III)
Crest factor	6 A/ 60 A range 3 or less, 600 A/ 600 V range 1.6 or less
Operating and storage temperature and humidity ranges	-25°C to 65°C or less (-13.0°F to 149.0°F) 80% RH or less (no condensation, less than 40°C)
Dustproof and waterproof*3	Grip: IP54 (EN60529), Jaw: IP50 (EN60529)

Standards	Safety: EN61010, EMC: EN61326
Power supply	LR03 Alkaline battery x2
Continuous operating time	Approx. 25 hours (Backlight OFF, Bluetooth® OFF) Approx. 18 hours (Backlight OFF, Bluetooth® ON)
Core jaw diameter	ϕ 46 mm (1.81 in)
Dimensions and Mass	82 mm (3.23in) W x 241 mm (9.49in) H x 37 mm (1.46in) D, 450 g (15.9 oz)

*1) Phase angle obtained from zero cross of current / voltage.
*2) Harmonic can be displayed by dedicated application software (Gennect Cross).
Android support scheduled for fall 2017. iOS support scheduled for 2018.
*3) Although CM3286 is designed to resist the ingress of dust and dripping water, it is not entirely waterproof or dustproof. Therefore, to prevent an electric shock, do not use it in a wet or dusty environment.

*The indicated value for three-phase power is based on the assumption of a balanced condition and sine wave without distortion at 50/60 Hz. Accurate measurement is not possible on an unbalanced or inverter controlled three-phase line. Also, if the phase (zero cross) cannot be detected due to significant waveform distortion, it cannot be measured nor displayed.
*The power factor / phase angle are values obtained from the zero cross of the current and voltage. If the phase (zero cross) cannot be detected due to significant waveform distortion, it cannot be measured nor displayed.

Software specifications (CM3286-01 only)

Interface	Bluetooth® 4.0LE
Name	GENNECT Cross (freeware)
Supported devices	Android™ (Only for Bluetooth® low energy models) iOS (iPhone®5, 3rd generation iPad®, iPad mini™, iPad Pro™, 5th generation iPod Touch® or later)
Supported OS	Android™ 4.3 or later, iOS 8 or later

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Order code/ Options

AC CLAMP POWER METER CM3286

Model No. (Order Code) (Note)

CM3286

CM3286-01 Built-in Bluetooth® wireless technology

Accessories:

CONNECTION CORD L9257 x1
CARRYING CASE C0203 x1
LR03 Alkaline battery x2
Instruction manual x1

[CM3286-01 only]
Precautions Concerning Use of Equipment That Emits Radio Waves

Accessories



CONNECTION CORD L9257 (Combination of L4930 and L4935)



CARRYING CASE C0203

Options (Test leads)



CONNECTION CABLE SET L4930 (1.2m)

EXTENSION CABLE SET L4931 (1.5m, Expands the length of the L4930)

Options (for L9257, L4930, L4931)

Tip options (Red/ Black: 1 each). Attaches to the tip of the banana plug cable.

TEST PIN SET L4938	ALLIGATOR CLIP SET L4935	BUS BAR CLIP SET L4936	MAGNETIC ADAPTER SET L4937
BREAKER PIN SET L4939	TEST PIN SET L4932	GRABBER CLIP 9243	MAGNETIC ADAPTER 9804

Options (Clamp adapter)

CLAMP ON ADAPTER 9290-10 (1000 A AC, $\phi 55$ mm, CT ratio of 10:1)



Options (Test leads)



TEST LEAD L9207-10

Connection app (CM3286-01 only)



GENNECT Cross (freeware)

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