

# HIOKI

## AC CLAMP POWER METER CM3286

*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

**AC RMS V**  
Voltage

**AC RMS A**  
Current

**W**  
 $V \times I$   
Power

**COS**  
 $\phi$   
Power factor

**L1 L2 L3**  
Phase detection

**Wh**  
Simple integral power consumption

**Hz**  
Frequency

**Peak value**  
Peak

CM3286-01 only  
**Harmonics**  
Harmonics



**3 year**  
Warranty

**Bluetooth**  
Please see [www.hioki.com](http://www.hioki.com) for list of supported regions.  
For CM3286-01

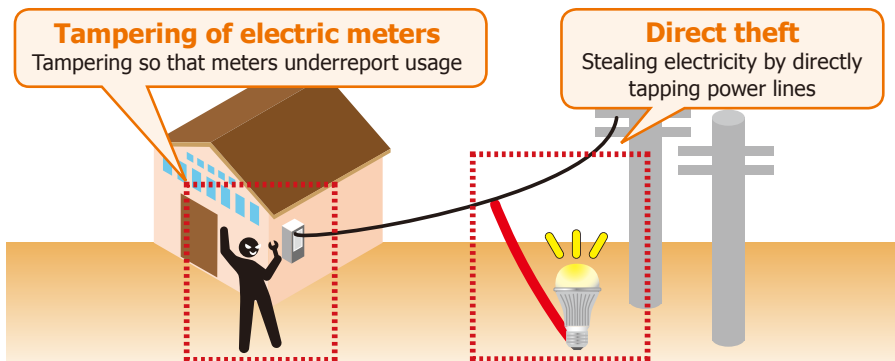
**CAT IV 600 V**  
**CAT III 1000 V**

Operating temperature  
**-25°C to +65°C**

\*Harmonic can be displayed with the GENNECT Cross dedicated application software.

# Accurately detect electricity theft

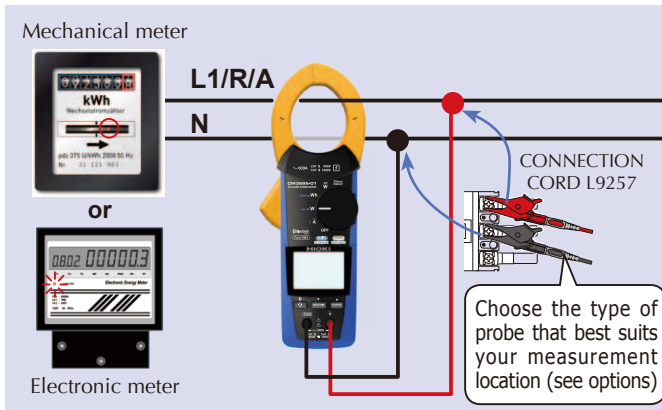
- The CM3286 is ideal for verifying electricity theft since it can measure both AC power and current.
- The instrument's electricity theft detection-and-report function can be used to quickly and easily make measurements and generate reports (CM3286-01 only).



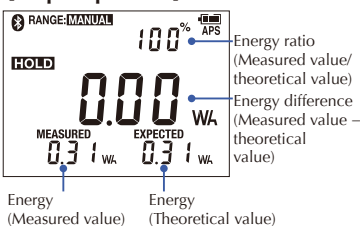
## Meter tampering

## Detect by comparing electric meter readings and measurements

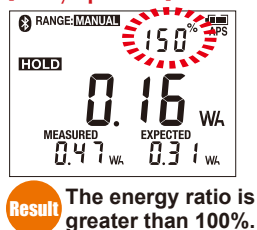
Proper operation of electric meters can be confirmed by comparing meter readings and actual values.



### [Proper operation]



### [Faulty operation]



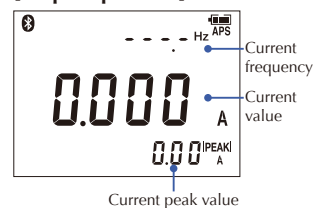
## Direct theft

## Detect by measuring current

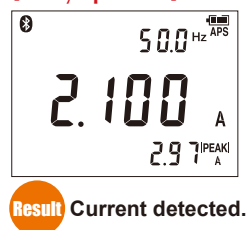
Electricity theft can be detected by measuring current on the power supply side of the illegal connection.



### [Proper operation]



### [Faulty operation]



\*Screen values represent example measurements.

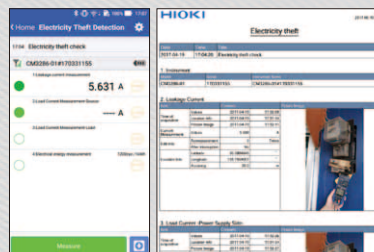
Use the Bluetooth-equipped CM3286-01 for even more convenient measurement.

Available for Android and iOS devices



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.

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



### 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  
 1-phase/ 3-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 100.0 A  
 Voltage RMS value Current RMS value

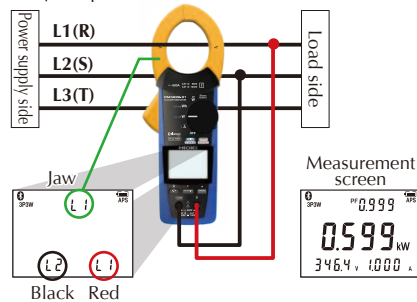
### [Current display]

60.0 Hz  
 10.00 A  
 1.42 PEAK A  
 Current frequency Current value Current peak value

## Simple wiring guide

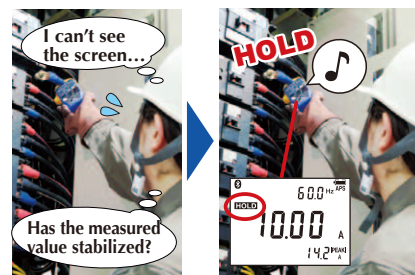
The CM3286 provides a simple on-screen guide indicating how to connect it to a 3-phase circuit.

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



## AUTO HOLD

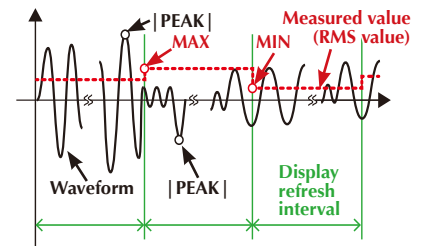
The clamp meters beep when the measured value stabilizes and then automatically hold the display value. This is useful when using the instrument in locations where it is difficult to see the display or press the hold button.



## Easily check power supply fluctuations

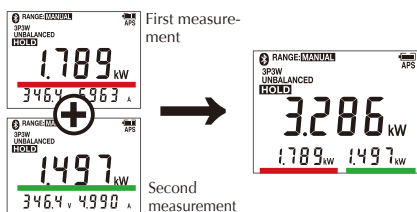
Since it can display maximum (MAX), minimum (MIN), and average (AVG) values, the CM3286 is useful when you need to ascertain the magnitude of fluctuations.

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 under a continuity check, it alerts you with a red backlight and beeping tone in order to help prevent accidents.

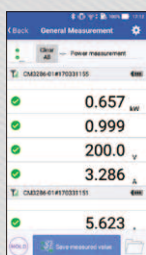


## CAT IV 600 V

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.

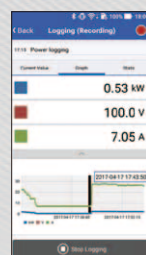


GENNECT Cross (freeware) is required to use instruments with a smartphone or tablet. GENNECT Cross available from the Google Play or Apple Store.



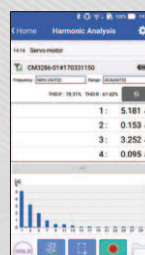
### General measurement

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

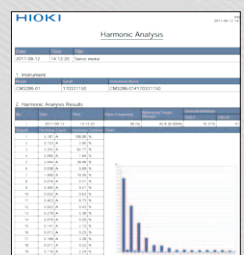
Convenient for observing fluctuations over a short period of time when it's not practical to set up large-scale recording equipment.



### 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.

Instantly create reports



# Specifications

Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year, Product warranty period for 3 years

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. $\pm 3$ 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. $\pm 3$ 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. $\pm 7$ 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. $\pm 10$ dgt. (50/ 60 Hz, Power factor=1) [Balanced three-phase 4-wire] 0.040 kW to 1080 kW Basic accuracy: $\pm 2.0\%$ rdg. $\pm 3$ 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).

\*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)



### GENNECT Cross (Freeware)

Interface	Bluetooth® 4.0LE
Communication distance	10 m (line of sight)
Supported Android™ devices	Android™ 4.3 or later (Bluetooth® low energy enabled devices)
Supported iOS devices	iOS 10 or later (Bluetooth® low energy enabled devices)

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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, φ55 mm,  
CT ratio of 10:1)



#### Options (Test leads)

TEST LEAD  
L9207-10



#### Connection app (CM3286-01 only)

GENNECT  
Cross  
(freeware)



Note: Company names and Product names appearing in this catalog are trademarks or registered trademarks of various companies.

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