

# HIOKI

## AC/DC CURRENT SENSOR CT7000 Series DISPLAY UNIT CM7290, CM7291



Robust support for current measurement through outstanding interoperability with Memory HiCorders and data loggers

## Measurement

Extensive selection of sensors for new current measurement possibilities

## Display

Immediate confirmation of measured values in the field

## Output

Smooth configuration and setup

## Recording

Outputting of data to Memory HiCorders and data loggers for extended recording

## Analysis

Outputting of data to Memory HiCorders and data loggers for waveform observation



Please see [www.hioki.com](http://www.hioki.com) for list of supported regions.

For CM7291 only



\*Only the Display Unit CM7290 / CM7291 features a drop-proof design.



## Current measurement

Choose from an extensive lineup of sensors designed for various applications. AC/DC auto-zero current sensors are ideal for long-term recording.



## Display

Check measured values in the field with the Display Unit. It's also easy to output data to Memory HiCorders and data loggers.



## Output

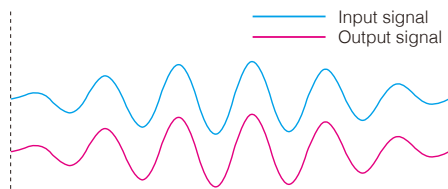
Generate four types of output depending on your application. The ability to convert the measured waveform prior to output to suit the parameter being observed simplifies analysis.

# Output measurement results to a Memory HiCorder or logger for analysis.



## WAVE: Waveform output

Output the waveform without modification.



Record the amount of current generated by solar panels in 1 week

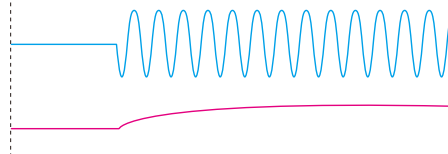
### Example devices used

- Display Unit CM7290
- AC/DC Auto-zero Current Sensor CT7731
- Output Cord L9095
- Memory HiCorder MR8870

## RMS: RMS output

Convert input to output as a series of RMS values.

FAST: 45 Hz or greater  
NORMAL: 10 Hz or greater  
SLOW: 3 Hz or greater



Record and monitor RMS current values at a manufacturing plant

### Example devices used

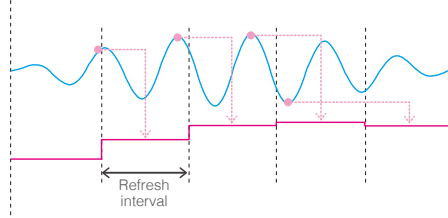
- Display Unit CM7290
- AC/DC Auto-zero Current Sensor CT7742
- Output Cord L9095
- Memory HiCorder MR8880

## PEAK: Peak output

Sample the waveform at the rate of 2 kS/s and output the peak value for each interval as an absolute value.

### Refresh intervals

FAST: 50 updates per sec. (0.02 sec.)  
NORMAL: 5 updates per sec. (0.2 sec.)  
SLOW: 1 update every sec. (1 sec.)



Measure and monitor the maximum power supply rating for a piece of equipment

### Example devices used

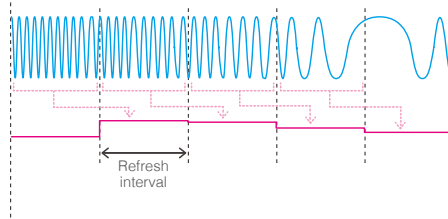
- Display Unit CM7290
- AC/DC Auto-zero Current Sensor CT7736
- Output Cord L9096
- Memory HiLogger LR8431

## FREQ: Frequency output

Count the frequency and output it for each interval.

### Refresh intervals

FAST: 5 updates per sec. (0.2 sec.)  
NORMAL: 5 updates per sec. (0.2 sec.)  
SLOW: 1 update every 3 sec.



Check the frequency of a compressor and motor

### Example devices used

- Display Unit CM7290
- AC/DC Current Sensor CT7631
- Output Cord L9096
- Memory HiLogger LR8431

# Extensive lineup of sensors designed for various applications

## AC/DC AUTO-ZERO CURRENT SENSOR

Frequency band:

Sensor alone: DC to 5 kHz

When combined with CM7290 or CM7291:

DC, 3 Hz to 1 kHz (Guaranteed accuracy)

DC to 5 kHz (Waveform output (WAVE OUT))

Make measurements over extended periods of time without the need to perform zero-adjustment, even in locations with temperature variations.



**CT7731**  
AC/DC100A  
φ33mm (1.3 in)

**CT7736**  
AC/DC 600A  
φ33mm (1.3 in)

**CT7742**  
AC/DC 2000A  
φ55mm (2.17 in)



Perform measurement without shifts in the zero-point, even during extended waveform recording or in locations where the temperature varies during measurement.

## AC/DC CURRENT SENSOR (Standard sensor)

Frequency band:

Sensor alone: DC to 10 kHz

When combined with CM7290 or CM7291:

DC, 3 Hz to 1 kHz (Guaranteed accuracy)

DC to 10 kHz (Waveform output (WAVE OUT))

AC/DC current sensors for observing instantaneous waveforms



**CT7631**  
AC/DC100A  
φ33mm (1.3 in)

**CT7636**  
AC/DC 600A  
φ33mm (1.3 in)

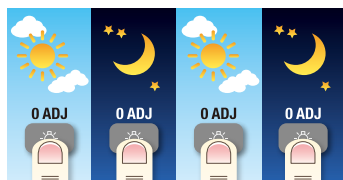
**CT7642**  
AC/DC 2000A  
φ55mm (2.17 in)



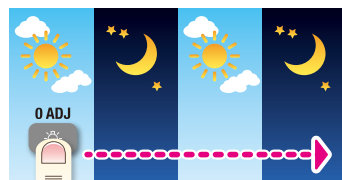
Use to observe instantaneous waveforms and make short-term measurement in locations without temperature variations.

## AC/DC auto-zero current sensors

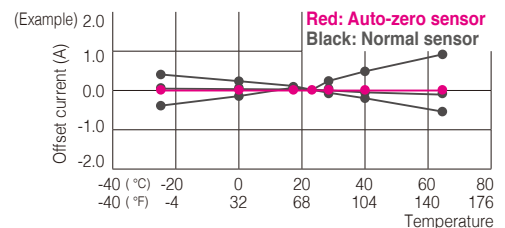
Take measurements without shifts in the zero-point, even during extended recording with temperature variations



**Normal sensor**



**New auto-zero sensor**



Because measured values acquired using standard sensors exhibit shifts in the zero-point caused by temperature variations, their use in recording data over extended periods of time has required regular zero-adjustment. This issue is caused by the effects of the Hall elements used in the sensor's detection circuitry. Hioki's new auto-zero sensors feature a new, switching-based offset cancellation circuit that was developed to address this issue. This circuit minimizes shifts in the zero-point to enable extended recording without constant zero-adjustment.

## AC FLEXIBLE CURRENT SENSOR

Frequency band:

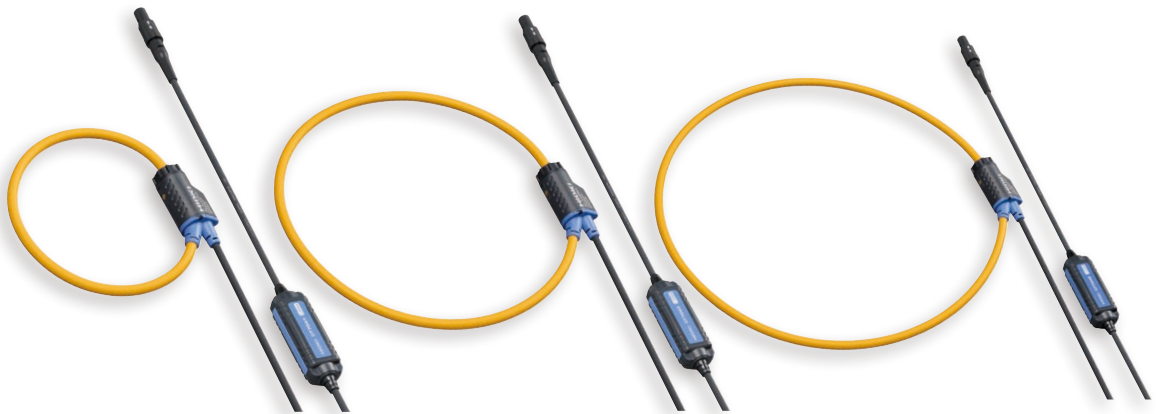
Sensor alone: 10 Hz to 50 kHz

When combined with CM7290 or CM7291:

10 Hz to 1 kHz (Guaranteed accuracy)

10 Hz to 30 kHz\* (Waveform output (WAVE OUT)) \*Reference value

Easy to route through confined locations and around thick cables



### CT7044

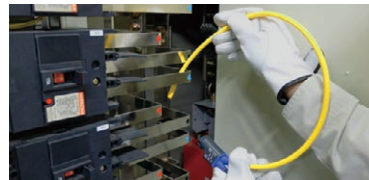
600 A AC / 6000 A AC  
φ100 mm (3.93 in)

### CT7045

600 A AC / 6000 A AC  
φ180 mm (7.08 in)

### CT7046

600 A AC / 6000 A AC  
φ254 mm (10 in)



These sensors can be easily routed through confined locations and between cables. The tapered tip is designed so that it can be fed readily through tangled wires. In addition, a magnetic strap\* frees both hands for other tasks.

\*Magnetic strap sold separately.

## CT7000 series sensors: Featuring improved durability and ease of use



### Dustproof and waterproof performance

Measurement functionality continues to operate even when the sensor is exposed to fine particulate matter such as dust or water droplets.

\*Photograph depicts dust- and water-resistance testing.



### -25°C to 65°C (-13°F to 149°F)

A broader operating temperature range lets you use the sensors even in subfreezing temperatures and on hot summer days.



### CAT IV 600V

A maximum input-to-ground voltage of 600 V allows sensors to safely measure service drops and wires in distribution panels.



### Damage-resistant jaws, loops

The strength of the measurement portion of the sensor has been increased to accommodate 30,000 open-close cycles for jaws and 10,000 cycles for flexible loops.

\*Jaws (the current sensor portion) provide IP50 protection. Although water resistance allows retention of measurement functionality, use of the sensor while wet increases the risk of electric shock when measuring hazardous live contacts.

# Identify signal levels in the field

## Intuitive output settings



### Automatic sensor detection and configuration

When a sensor is connected to the connector, the display unit detects it and automatically sets the sensor type.



### Efficiency in the field

The separate, backlit display is easy to read, and a magnetic strap frees up both hands to perform other work.



Press and hold button for 1 sec. after configuration.

### Retention of measurement settings

The same settings will remain in effect when the unit is turned on next, streamlining work by letting you start measurement immediately.



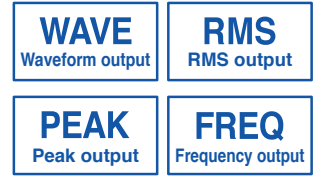
### Convenient support for external power supplies for easy embedding

When power is supplied to the AC adapter, the unit is automatically ready to begin measurement.



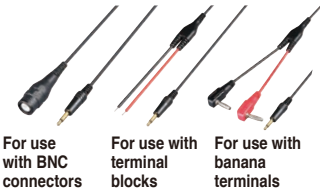
### Dual-value display for at-a-glance confirmation

The unit displays the frequency and output rate along with the measured value, simplifying the process of setting the rate when outputting measurement data.



### Single-touch selection of output format

The unit can generate four types of output for data loggers and Memory HiCorders. The format can be switched with a single button.



For use with BNC connectors    For use with terminal blocks    For use with banana terminals

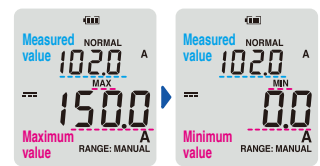
### Simple output connectivity

Three output cords are available for use depending on the application, making it easy to connect the unit to a data logger or Memory HiCorder.



### Battery power for convenient testing

The unit can be used with two AA alkaline batteries. This cord-free mode of operation delivers outstanding ease of use in the field.



Single-button display switching

### Analysis display with maximum, minimum, and average values

When the analysis display is activated, the unit displays the maximum, minimum, and average values as well as the maximum and minimum crest values since the start of measurement.

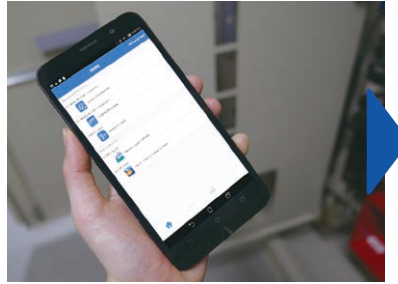
# Transfer data wirelessly for smoother measurement

Display Unit CM7291 only

Send measurement data to a smartphone or tablet using Bluetooth® wireless technology and use the GENNECT Cross dedicated app to display and review measured values and waveforms in real time.



Connect the sensor to the Display Unit CM7291 and clamp in around the cable to be measured.



Launch the GENNECT Cross dedicated app on a tablet.



Measurement results will be sent to the tablet wirelessly and displayed.

## Downloading and setting up the GENNECT Cross dedicated app

### STEP1



for free from Google Play or the App Store.

### STEP2



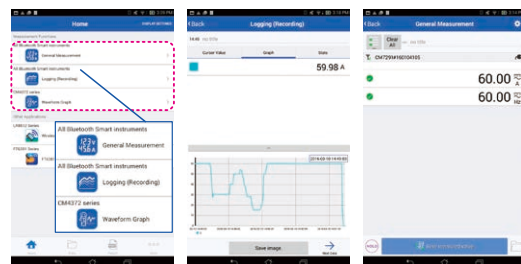
Configure settings:  
Home screen > Other  
> Instrument Settings.

### STEP3



The app will automatically detect instruments performing measurement. Check the connection status.

### STEP4

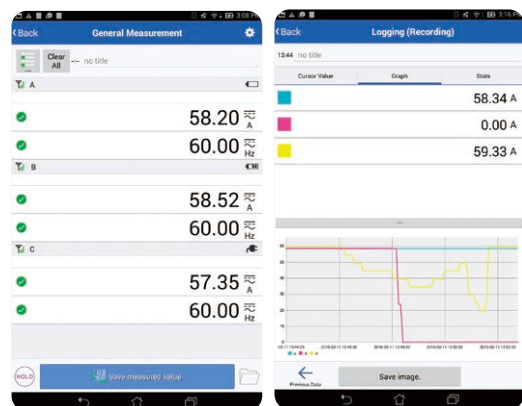


Home screen    Logging display    Standard measurement display

Return to the home screen and select a measurement function to display the corresponding measured values.



**Collecting and reviewing measurement data**



Review + + measurement data on a tablet with the distribution panel closed. You can also collect and review data measured at multiple locations, for example A, B, and C in the figure above. The app also provides simple logging functionality.

\*The line-of-sight communications range is about 10 m. Communications conditions vary with the performance of the connected device and the quality of the connection.

# Display Unit Specifications

(Guaranteed accuracy period: 3 years)

## Input/output and measurement specifications

Measured parameters	DC, AC, DC+AC, frequency (Hz)
Measurement method	True RMS measurement
Output methods	WAVE, RMS, PEAK, FREQ
Output impedance	50 Ω (±5%)
Input connector	HIOKI PL14
Display refresh times	FAST: 0.2 sec. / NORMAL: 0.2 sec. / SLOW: 1.0 sec. (when using the Hz output method, SLOW: 3 sec.)
Output refresh times	<b>PEAK</b> ---FAST: 0.02 sec. / NORMAL: 0.2 sec. / SLOW: 1 sec. <b>FREQ</b> ---FAST: 0.2 sec. / NORMAL: 0.2 sec. / SLOW: 3.0 sec. (WAVE and RMS use analog output.)
Peak detection interval	2 ms or greater (with PEAK MAX, PEAK MIN, or PEAK output)
Zero display range	29 count or less for AC and DC+AC RMS values
Crest factor	3 at 5000 count or 2.5 at 6000 count for AC and AC+DC
Typical accuracy (display)	<b>DC:</b> ±0.3% rdg. ±8 dgt. / <b>AC:</b> ±0.3% rdg. ±8 dgt. (RMS) / <b>DC+AC:</b> ±0.3% rdg. ±12 dgt. (RMS) / <b>Frequency:</b> ±0.1% rdg. ±0.01 Hz
Typical accuracy (output)	<b>DC:</b> ±0.5% rdg. ±0.8 mV / <b>Current:</b> ±0.5% rdg. ±0.8 mV / <b>DC+AC:</b> ±0.5% rdg. ±1.2 mV / <b>Frequency:</b> ±0.3% rdg. ±2.2 mV

\*For range and output rates, see pages 10 and 11.

## General specifications

Operating and storage temperature and humidity range	-25 °C to 65 °C ( -13 °F to 149 °F ) , 80% RH (non-condensing, with batteries removed)
Dust and water resistance	IP54 (with sensor connected and caps fitted to AC adapter and power connector)
Standard compliance	Safety: EN61010 EMC: EN61326, EN61000
Power supply	AA alkaline battery (LR6) × 2 / 5 V to 15 V external power supply
Maximum rated output	2.5 VA
Continuous operating time	Max. approx. 16 hours (with backlight off using WAVE or RMS output and CT7631, CT7636, or CT7642 sensor)
External dimensions and mass	Approx. 52 mm (2 in) W × 163 mm (6.4 in) H × 37 mm (1.5 in) D, approx. 220 g (7.76 oz)(with protector and batteries)
Accessories	AA alkaline battery (LR6) × 2, protector (attach to unit), instruction manual

## Functions

<b>Auto-range function</b>	Automatic configuration of optimal range (can also be set manually)	<b>Display value hold function</b>	YES
<b>Zero-adjustment at power-on</b>	Automatic zero-adjustment when powered on	<b>Backlight</b>	YES
<b>Analysis display</b>	Display of maximum, minimum, and average values as well as maximum and minimum crest values since activation of analysis display	<b>Auto-power off</b>	YES
<b>Filter</b>	180 Hz low-pass filter, on/off pass band setting	<b>Configuration save function</b>	YES
<b>Output amplification</b>	Output at ×10 normal level	<b>Key lock function</b>	YES
<b>Wireless data communications</b>	Wireless transmission of measurement data using Bluetooth® (CM7291 only)		

## Bluetooth® specifications (CM7291 only)

<b>Display</b>	Display of measured values on an iOS or Android handset using Bluetooth® communications
<b>Interface</b>	Bluetooth® 4.0 LE
<b>Communications range</b>	10 m, line of sight
<b>Communications profile</b>	GATT(Generic Attribute Profile)
<b>Supported devices</b>	iOS (iPhone 5, third-generation iPad, iPad mini, iPad Pro, and fifth-generation iPod touch or later) Android (Bluetooth® Smart-ready and Bluetooth® Smart-compatible models only)
<b>Supported OS</b>	iOS 8 or later, Android™ 4.3 or later

## GENNECT Cross dedicated app specifications

<b>Interface</b>	Bluetooth® 4.0LE (Bluetooth® SMART)
<b>Supported devices</b>	iOS (iPhone®5, 3rd generation iPad®, iPad mini™, iPad Pro™, 5th generation iPod Touch® or later) Android™ (Only for Bluetooth® SMART READY or Bluetooth® SMART model)
<b>Supported OS</b>	iOS 8 or later, Android™ 4.3 or later
<b>No. of controllable devices</b>	For data logging, up to 8 devices can be connected (up to 8 measured values can be logged) at once Only 1 device can be used at any one time when using the CM7291 as a current waveform monitor current waveform

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\*The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by HIOKI E.E. CORPORATION is under license.




\*For the latest information about countries and regions where wireless operation is currently supported, please visit the Hioki website.



# Sensor specifications





	CT7631 / CT7731	CT7636 / CT7736	CT7642 / CT7742
			
Frequency band	CT7631, CT7636, CT7642: DC to 10 kHz (-3 dB) / CT7731, CT7736, CT7742: DC to 5 kHz (-3 dB)		
Rated measurement current	100 A AC/DC	600 A AC/DC	2000 A AC/DC
Measurable conductor diameter	ø 33 mm (1.3 in) or less		ø 55 (2.17 in) mm or less
Output connector	HIOKI PL14		
Typical accuracy (continuous input)	±1.0% rdg. ±0.5% f.s. (DC, 45 to 66 Hz) ±2.0% rdg. ±0.5% f.s. (66 Hz to 500 Hz)	±2.0% rdg. ±0.5% f.s. (DC, 45 to 66 Hz) ±3.0% rdg. ±0.5% f.s. (66 Hz to 1 kHz)	±1.5% rdg. ±0.5% f.s. (DC, 45 to 66 Hz) ±2.5% rdg. ±1.0% f.s. (66 Hz to 1 kHz)
Typical accuracy (phase)	±1.8 deg. (up to 66 Hz)	±1.8 deg. (up to 66 Hz)	±2.3 deg. (up to 66 Hz)
Operating and storage temperature and humidity range	-25°C to 65°C ( -13 °F to 149 °F ) , 80% RH (non-condensing)		
Dust and water resistance	IP40	Jaws and barriers: IP50 / Grip: IP54 (when measuring insulated conductors only) (Do not use when wet.)	
Standard compliance	Safety: EN61010 EMC: EN61326		
Maximum rated input-to-ground voltage <sup>1</sup>	600 V AC/DC (CAT IV)	1000 V AC/DC (CAT III) / 600 V AC/DC (CAT IV)	
External dimensions and mass <sup>2</sup>	Approx. 58 mm (2.28 in) Wx132 mm (5.19 in) Hx18 mm (0.7 in) D Approx. 250 g (8.8 oz)	Approx. 64 mm (2.51 in) Wx160 mm (6.29 in) Hx34 mm (1.33 in) D Approx. 320 g (11.2 oz)	Approx. 64 mm (2.51 in) Wx195 mm (7.67 in) Hx34 mm (1.33 in) D Approx. 510 g (17.9 oz)
Jaw dimensions	Approx. 66 mm (2.6 in) W x 13 mm (0.5 in) D	Approx. 69 mm (2.7 in) W x 14 mm (0.6 in) D	Approx. 92 mm (3.6 in) W x 18 mm (0.7 in) D
Cable length	Approx. 2.5 m (8.2 ft) (extendable to max. of 100 m (328 ft) with optional products; subject to limits imposed by connected device)		

\*1: Anticipated transient overvoltage: 8000 V \*2: Not including dimensions of protruding parts, lever, or jaws. (Guaranteed accuracy period: 3 years)

	CT7044	CT7045	CT7046
			
Frequency band	10 Hz to 50 kHz (Within ±3 dB)		
Rated measurement current	AC 6000 A		
Measurable conductor diameter	ø 100 mm (3.93 in) or less	ø 180 mm (7.08 in) or less	ø 254 mm (10 in) or less
<b>Available ranges*1</b>	600 A AC / 6000 A AC *Range selection is controlled by a supported instrument.		
Output connector	HIOKI PL14		
Typical accuracy (continuous input)	±1.5% rdg. ±0.25% f.s. (f.s. is determined by the internal range) (45 to 66 Hz, in center of flexible loop)		
Typical accuracy (phase)	Within ±1.0° (45 to 66 Hz)		
Operating and storage temperature and humidity range	-25°C to 65°C ( -13 °F to 149 °F ) Humidity: Under 40°C, 80% RH or less; from 40°C to 65°C, maximum relative humidity reduces linearly from 80% RH at 40°C to 25% RH at 65°C (non-condensing).		
Dust and water resistance	IP54 (when connected to a supported instrument) (Do not make measurements when wet.)		
Standard compliance	Safety : EN61010 EMC : EN61326		
Maximum rated input-to-ground voltage <sup>2</sup>	1000 V AC (CAT III) AC 600 V AC (CATIV)		
Dimensions (circuit box) and weight	Approx. 25 mm (0.98 in) Wx72 mm (2.83 in) Hx20 mm (0.78 in) D Approx. 160 g (5.64 oz)	Approx. 25 mm (0.98 in) Wx72 mm (2.83 in) Hx20 mm (0.78 in) D Approx. 174 g (6.13 oz)	Approx. 25 mm (0.98 in) Wx72 mm (2.83 in) Hx20 mm (0.78 in) D Approx. 186 g (6.56 oz)
Flexible loop length and cross-sectional diameter	Approx. 390 mm (15.3 in) Cross-section : Approx. ø7.4mm (0.29 in) Tip cap : Approx. ø9.9mm (0.38 in)	Approx. 630 mm (24.8 in) Cross-section : Approx. ø7.4mm (0.29 in) Tip cap : Approx. ø9.9mm (0.38 in)	Approx. 870 mm (34.2 in) Cross-section : Approx. ø7.4mm (0.29 in) Tip cap : Approx. ø9.9mm (0.38 in)
Cable length	Approx. 2300 mm (90.5 in) (between flexible loop and circuit box) Approx. 210 mm (8.26 in) (output cable)		

The CT7044, CT7045, CT7046 are a flexible current sensor for measuring large currents. There are not suitable for measuring minute current such as leakage current.

\*1 : Sensor alone \*2 : Anticipated transient overvoltage: 8000 V (Guaranteed accuracy period: 1 years)

	CT7126	CT7131	CT7136	CT7116
				
Frequency band	Accuracy specified to 20 kHz			40 kHz to 5 kHz
Rated measurement current	AC 60 A	AC 100 A	AC 600 A	AC 6 A
Measurable conductor diameter	ø 15 mm (0.59 in) or less		ø 46 mm (1.8 in) or less	ø 40 mm (1.57 in) or less, insulated conductor
Output connector	HIOKI PL14			
Typical accuracy (continuous input)	±0.3% rdg ±0.01% f.s. (45 to 66Hz)	±0.3% rdg ±0.02% f.s. (45 to 66Hz)	±0.3% rdg ±0.01% f.s. (45 to 66Hz)	±1.0% rdg ±0.05% f.s. (45 to 66Hz)
Typical accuracy (phase)	±2.0 deg.	±1.0 deg.	±0.5 deg.	±3 deg.
Operating and storage temperature and humidity range	Operating : -10°C to 50°C ( 14 °F to 122 °F ) 80% RH or less , Storage : -20°C to 60°C ( -4 °F to 140 °F ) 80% RH or less , (non-condensing)			-25°C to 65°C ( -13 °F to 149 °F ) 80% RH or less , (non-condensing)
Dust and water resistance	IP40			
Standard compliance	Safety : EN61010 EMC : EN61326			
Maximum rated input-to-ground voltage <sup>1</sup>	AC300V (CATIII)		AC1000V (CATIII) AC600V (CATIV)	insulated conductor
Dimensions (circuit box) and weight <sup>2</sup>	Approx. 46 mm (1.8 in) Wx135 mm (5.31 in) Hx21 mm (0.82 in) D Approx. 190 g (6.7 oz)		Approx. 78 mm (3.07 in) Wx152 mm (5.98 in) Hx42 mm (1.65 in) D Approx. 350 g (12.3 oz)	Approx. 74 mm (2.91 in) Wx145 mm (5.7 in) Hx42 mm (1.65 in) D Approx. 350 g (12.3 oz)
Cable length	Approx. 2.5 m (8.2 ft) (extendable to max. of 100 m (328 ft) with optional products; subject to limits imposed by connected device)			

\*1: Anticipated transient overvoltage: (CT7126,CT7131) 4000V(CT7136)8000V \*2: Not including dimensions of protruding parts, lever, or jaws. (Guaranteed accuracy period: 1 years)

# Combined accuracy

## CT7631 / CT7731 + CM7290 or CM7291

### Display accuracy

CM7290 range	Amplitude		DC function	AC function	AC + DC function	
	DC	AC / AC+DC	DC	45 Hz ≤ f ≤ 66Hz	DC	45 Hz ≤ f ≤ 66Hz
60.00 A	I ≤ 60 A	3 A ≤ I ≤ 60 A	±1.3% rdg. ±0.58 A	±1.3% rdg. ±0.58 A	±2.5% rdg. ±0.65 A	±1.3% rdg. ±0.62 A
100.0 A	I ≤ 100 A	30 A ≤ I ≤ 100 A	±1.3% rdg. ±1.3 A	±1.3% rdg. ±1.3 A	±2.5% rdg. ±2.0 A	±1.3% rdg. ±1.7 A

### Output accuracy

CM7290 range (Output rate)	Amplitude		DC function	AC function		
	WAVE	RMS	WAVE output	WAVE output	RMS output	
			DC	45 Hz ≤ f ≤ 66Hz		
60.00 A (10 mV / A)	I ≤ 60 A	3 A ≤ I ≤ 60 A	±1.5% rdg. ±5.8 mV	±1.5% rdg. ±5.8 mV (±2.0°)	±1.8% rdg. ±5.8 mV	
100.0 A (1 mV / A)	I ≤ 100 A	30 A ≤ I ≤ 100 A	±1.5% rdg. ±1.3 mV	±1.5% rdg. ±1.3 mV (±2.0°)	±1.8% rdg. ±1.3 mV	

CM7290 range (Output rate)	Amplitude		AC + DC function			
	WAVE	RMS	WAVE output (phase)		RMS output	
			DC	45 Hz ≤ f ≤ 66Hz	DC	45 Hz ≤ f ≤ 66Hz
60.00 A (10 mV / A)	I ≤ 60 A	3 A ≤ I ≤ 60 A	±2.5% rdg. ±6.2 mV	±1.5% rdg. ±6.2 mV (±2.0°)	±2.7% rdg. ±6.2 mV	±1.8% rdg. ±6.2 mV
100.0 A (1 mV / A)	I ≤ 100 A	30 A ≤ I ≤ 100 A	±2.5% rdg. ±1.7 mV	±1.5% rdg. ±1.7 mV (±2.0°)	±2.7% rdg. ±1.7 mV	±1.8% rdg. ±1.7 mV

## CT7636 / CT7736 + CM7290 or CM7291

### Display accuracy

CM7290 range	Amplitude		DC function	AC function	AC + DC function	
	DC	AC / AC+DC	DC	45 Hz ≤ f ≤ 66Hz	DC	45 Hz ≤ f ≤ 66Hz
60.00 A	I ≤ 60 A	3 A ≤ I ≤ 60 A	±2.3% rdg. ±3.08 A	±2.3% rdg. ±3.08 A	±3.5% rdg. ±3.15 A	±2.3% rdg. ±3.12 A
600.0 A	I ≤ 600 A	30 A ≤ I ≤ 600 A	±2.3% rdg. ±3.8 A	±2.3% rdg. ±3.8 A	±3.5% rdg. ±4.5 A	±2.3% rdg. ±4.2 A

### Output accuracy

CM7290 range (Output rate)	Amplitude		DC function	AC function		
	WAVE	RMS	WAVE output	WAVE output	RMS output	
			DC	45 Hz ≤ f ≤ 66Hz		
60.00 A (10 mV / A)	I ≤ 60 A	3 A ≤ I ≤ 60 A	±2.5% rdg. ±30.8 mV	±2.5% rdg. ±30.8 mV (±2.0°)	±2.8% rdg. ±30.8 mV	
600.0 A (1 mV / A)	I ≤ 600 A	30 A ≤ I ≤ 600 A	±2.5% rdg. ±3.8 mV	±2.5% rdg. ±3.8 mV (±2.0°)	±2.8% rdg. ±3.8 mV	

CM7290 range (Output rate)	Amplitude		AC + DC function			
	WAVE	RMS	WAVE output (phase)		RMS output	
			DC	45 Hz ≤ f ≤ 66Hz	DC	45 Hz ≤ f ≤ 66Hz
60.00 A (10 mV / A)	I ≤ 60 A	3 A ≤ I ≤ 60 A	±3.5% rdg. ±31.2 mV	±2.5% rdg. ±31.2 mV (±2.0°)	±3.7% rdg. ±31.2 mV	±2.8% rdg. ±31.2 mV
600.0 A (1 mV / A)	I ≤ 600 A	30 A ≤ I ≤ 600 A	±3.5% rdg. ±4.2 mV	±2.5% rdg. ±4.2 mV (±2.0°)	±3.7% rdg. ±4.2 mV	±2.8% rdg. ±4.2 mV

## CT7642 / CT7742 + CM7290 or CM7291

### Display accuracy

CM7290 range	Amplitude		DC function	AC function	AC + DC function		
	DC	AC / AC+DC	DC	45 Hz ≤ f ≤ 66Hz	DC	45 Hz ≤ f ≤ 66Hz	
600.0 A	I ≤ 600 A	30 A ≤ I ≤ 600 A	±1.8% rdg. ±10.8 A	±1.8% rdg. ±10.8 A	±3.0% rdg. ±11.5 A	±1.8% rdg. ±11.2 A	
2000 A	I ≤ 2000 A	300 A ≤ I ≤ 1800 A		±1.8% rdg. ±18 A		±3.0% rdg. ±25 A	±1.8% rdg. ±22 A
		1800 A < I ≤ 2000 A		±2.3% rdg. ±18 A			±2.3% rdg. ±22 A

### Output accuracy

CM7290 range (Output rate)	Amplitude		DC function	AC function		
	WAVE	RMS	WAVE output	WAVE output (phase)	RMS output	
			DC	45 Hz ≤ f ≤ 66Hz		
600.0 A (1 mV / A)	I ≤ 600 A	30 A ≤ I ≤ 600 A	±2.0% rdg. ±10.8 mV	±2.0% rdg. ±10.8 mV (±2.5°)	±2.3% rdg. ±10.8 mV	
2000 A (0.1 mV / A)	I ≤ 1800 A 1800 A < I ≤ 2000 A	300 A ≤ I ≤ 1800 A	±2.0% rdg. ±1.8 mV	±2.0% rdg. ±1.8 mV (±2.5°)	±2.3% rdg. ±1.8 mV	
		1800 A < I ≤ 2000 A			±2.8% rdg. ±1.8 mV	

CM7290 range (Output rate)	Amplitude		AC + DC function			
	WAVE	RMS	WAVE output (phase)		RMS output	
			DC	45 Hz ≤ f ≤ 66Hz	DC	45 Hz ≤ f ≤ 66Hz
600.0 A (1 mV / A)	I ≤ 600 A	30 A ≤ I ≤ 600 A	±3.0% rdg. ±11.2 mV	±2.0% rdg. ±11.2 mV (±2.5°)	±3.2% rdg. ±11.2 mV	±2.3% rdg. ±11.2 mV
2000 A (0.1 mV / A)	I ≤ 1800 A 1800 A < I ≤ 2000 A	300 A ≤ I ≤ 1800 A	±3.0% rdg. ±2.2 mV	±2.5% rdg. ±2.2 mV (±2.5°)	±3.2% rdg. ±2.2 mV	±2.3% rdg. ±2.2 mV
		1800 A < I ≤ 2000 A				±2.8% rdg. ±2.2 mV

## CT7044 / CT7045 / CT7046 + CM7290 (CM7291)

### Display accuracy

CM7290 range	Amplitude	AC function
		45 Hz ≤ f ≤ 66Hz
60.00 A	3 A ≤ I ≤ 60 A	±1.8% rdg. ±1.58 A
600.0 A	30 A ≤ I ≤ 600 A	±1.8% rdg. ±2.3 A
6000 A	300 A ≤ I ≤ 6000 A	±2.3% rdg. ±23 A

### Output accuracy

CM7290 range (Output rate)	Amplitude		AC function	
	WAVE	RMS	WAVE output (phase)	
			45 Hz ≤ f ≤ 66Hz	
60.00 A (10 mV / A)	I ≤ 60 A	3 A ≤ I ≤ 60 A	±2.0% rdg. ±15.8 mV (±1.2°)	
600.0 A (1 mV / A)	I ≤ 600 A	30 A ≤ I ≤ 600 A	±2.0% rdg. ±2.3 mV (±1.2°)	
6000 A (0.1 mV / A)	I ≤ 6000 A	300 A ≤ I ≤ 6000 A	±2.0% rdg. ±2.3 mV (±1.2°)	

\*For full combination accuracy tables, Details of each sensor, see the product page on the Hioki website

**CT7126 + CM7290 (CM7291)****Display accuracy**

CM7290 range	Amplitude	AC function
		45 Hz ≤ f ≤ 66Hz
600.0 mA	40 mA ≤ I ≤ 600 mA	±1.6% rdg. ±7.3 A
6.000 A	0.300 A ≤ I ≤ 6.000 A	±0.6% rdg. ±0.014 A
60.00 A	3.00 A < I ≤ 60.00 A	±0.6% rdg. ±0.09 A

**Output accuracy**

CM7290 range (Output rate)	Amplitude		AC function	
			WAVE output (phase)	RMS output
	WAVE	RMS	45 Hz ≤ f ≤ 66Hz	
600.0 mA (1 mV / A)	40 mA ≤ I ≤ 600 mA	40 mA ≤ I ≤ 600 mA	±1.8% rdg. ±7.3 mV	±1.8% rdg. ±7.3 mV
6.000 A (100 mV / A)	0.000 A ≤ I ≤ 6.000 A	0.300 A ≤ I ≤ 6.000 A	±0.8% rdg. ±1.4 mV	±1.1% rdg. ±1.4 mV
60.00 A (10 mV / A)	0.00 A ≤ I ≤ 60.00 A	3.00 A < I ≤ 60.00 A	±0.8% rdg. ±0.86 mV	±1.1% rdg. ±0.86 mV

**CT7131 + CM7290 (CM7291)****Display accuracy**

CM7290 range	Amplitude	AC function
		45 Hz ≤ f ≤ 66Hz
60.00 A	3.00 A ≤ I ≤ 60.00 A	±0.6% rdg. ±0.1 A
100.0 A	30.0 A ≤ I ≤ 100.0 A	±0.6% rdg. ±0.82 A

**Output accuracy**

CM7290 range (Output rate)	Amplitude		AC function	
			WAVE output	RMS output
	WAVE	RMS	45 Hz ≤ f ≤ 66Hz	
60.00 mA (10 mV / A)	0.00 A ≤ I ≤ 60.00 A	3.00 A ≤ I ≤ 60.00 A	±0.8% rdg. ±1 mV	±1.1% rdg. ±1 mV
100.0 A (1 mV / A)	0.0 A ≤ I ≤ 100.0 A	30.0 A ≤ I ≤ 100.0 A	±0.8% rdg. ±0.82 mV	±1.1% rdg. ±0.82 mV

**CT7136 + CM7290 (CM7291)****Display accuracy**

CM7290 range	Amplitude	AC function
		45 Hz ≤ f ≤ 66Hz
6.000 A	0.400 A ≤ I ≤ 6.000 A	±1.6% rdg. ±0.073 A
60.00 A	3.00 A ≤ I ≤ 60.00 A	±0.6% rdg. ±0.14 A
600.0 A	30.0 A < I ≤ 600.0 A	±0.6% rdg. ±0.86 A

**Output accuracy**

CM7290 range (Output rate)	Amplitude		AC function	
			WAVE output	RMS output
	WAVE	RMS	45 Hz ≤ f ≤ 66Hz	
6.000 A (100 mV / A)	0.400 A ≤ I ≤ 6.000 A	0.400 A ≤ I ≤ 6.000 A	±1.8% rdg. ±7.3 mV	±1.8% rdg. ±7.3 mV
60.00 A (10 mV / A)	0.000 A ≤ I ≤ 60.00 A	3.00 A ≤ I ≤ 60.00 A	±0.8% rdg. ±1.4 mV	±1.1% rdg. ±1.4 mV
600.0 A (1 mV / A)	0.0 A < I ≤ 600.0 A	30.0 A ≤ I ≤ 600.0 A	±0.8% rdg. ±0.86 mV	±1.1% rdg. ±0.86 mV

**CT7116 + CM7290 (CM7291)****Display accuracy**

CM7290 range	Amplitude	AC function
		45 Hz ≤ f ≤ 66Hz
60.00 mA	4.00mA ≤ I ≤ 60.00mA	±2.3%rdg. ±3.13mA
600.0 mA	30.0mA ≤ I ≤ 600.0mA	±1.3%rdg. ±3.8mA
6.000 A	0.300A ≤ I ≤ 6.000A	±1.3%rdg. ±0.011A

**Output accuracy**

CM7290 range (Output rate)	Amplitude		AC function	
			WAVE output	RMS output
	WAVE	RMS	45 Hz ≤ f ≤ 66Hz	
60.00 mA (10mV / mA)	4.00mA ≤ I ≤ 60.00mA	4.00mA ≤ I ≤ 60.00mA	±2.5%rdg. ±31.3mV	±2.5%rdg. ±31.3mV
600.0 mA (1 mV / mA)	0.0mA ≤ I ≤ 600.0mA	30.0mA ≤ I ≤ 600.0mA	±1.5%rdg. ±3.8mV	±1.8%rdg. ±3.8mV
6.000 A (100 mV / A)	0.000A ≤ I ≤ 6.000A	0.300A ≤ I ≤ 6.000A	±1.5%rdg. ±1.1mV	±1.8%rdg. ±1.1mV

# Lineup

## DISPLAY UNIT



CM7290



CM7291



Model : DISPLAY UNIT CM7290

Model No. (Order Code) (Note)

CM7290

CM7291 (with built-in Bluetooth® wireless technology)

Accessories: LR6 alkaline batteries ×2, Protector (attached to unit) ×1, Instruction manual ×1

AC/DC AUTO-ZERO CURRENT SENSOR Frequency band: DC to 5 kHz (-3 dB)



**CT7731**  
100 A AC/DC  
ø33 mm  
(1.3 in)



**CT7736**  
600 A AC/DC  
ø33 mm  
(1.3 in)



**CT7742**  
2000 A AC/DC  
ø55 mm  
(2.17 in)

AC/DC CURRENT SENSOR Frequency band: DC to 10 kHz (-3 dB)



**CT7631**  
100 A AC/DC  
ø33 mm  
(1.3 in)



**CT7636**  
600 A AC/DC  
ø33 mm  
(1.3 in)



**CT7642**  
2000 A AC/DC  
ø55 mm  
(2.17 in)

AC CURRENT SENSOR Frequency band: 40 Hz to 20 kHz



**CT7126**  
60 A AC  
ø15 mm  
(0.59 in)



**CT7131**  
100 A AC  
ø15 mm  
(0.59 in)



**CT7136**  
600 A AC  
ø46 mm  
(1.81 in)



**CT7116**  
6 A AC  
ø40 mm  
(1.57 in)

AC LEAKAGE CURRENT SENSOR  
Frequency band: 40 Hz to 20 kHz

## AC FLEXIBLE CURRENT SENSOR

Frequency band: 10 Hz to 50 kHz (within ±3 dB)



Ideal for use in confined locations.



**CT7044**  
600 A/6000 A AC  
ø100 mm (3.9 in)  
cable diameter ø7.4 mm (0.29 in)



**CT7045**  
600 A/6000 A AC  
ø180 mm (7.0 in)  
cable diameter ø7.4 mm (0.29 in)



**CT7046**  
600 A/6000 A AC  
ø254 mm (10 in)  
cable diameter ø7.4 mm (0.29 in)

Use an AC/DC Auto-zero Current Sensor or AC/DC Current Sensor with the Display Unit and Output Cord to generate output for a Memory HiCorder, data logger, or other instrument.

## OUTPUT CORD

For use with the Display Unit

## PL14 EXTENSION CABLE

For extending the sensor cable to the Display Unit



**OUTPUT CORD L9094**  
φ 3.5 mm (0.14 in) dia. mini plug  
to banana, 1.5 m (4.92 ft) length



**OUTPUT CORD L9095**  
Connect to BNC terminal, 1.5 m  
(4.92 ft) length



**OUTPUT CORD L9096**  
Connect to terminal block, 1.5 m  
(4.92 ft) length



**L0220-01** 2 m (6.6 ft)  
**L0220-02** 5 m (16.4 ft)  
**L0220-03** 10 m (32.8 ft)  
**L0220-04** 20 m (65.6 ft)  
**L0220-05** 30 m (98.4 ft)  
**L0220-06** 50 m (164 ft)  
**L0220-07** 100 m (328 ft)

## Other options



**AC ADAPTER 9445-02**  
100 to 240 V AC



**CARRYING CASE C0220**  
For storing sensor ×1, CM7290 ×1,  
AC adapter ×1, and output cord



**CARRYING CASE C0221**  
For storing sensor ×3, CM7290 ×1,  
AC adapter ×1, output cord, and 30 m  
extension cable



**MAGNETIC STRAP Z5004**

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# HIOKI

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