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**HIOKI**



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# AC/DC CURRENT PROBE CT6841/CT6843

Clamp sensor 

## Consistent, high-precision current testing across a wide temperature range



+85°C

-40°C



**GOOD DESIGN  
 AWARD 2014**

**Broad  
 temperature  
 range**

Operating  
 temperature range  
 -40°C to 85°C

**Easy-to-use**

Clamp type  
 No need  
 to cut wires

**High  
 accuracy**

Basic amplitude  
 accuracy  
 of ±0.3% rdg.



CT6841  
 20A AC/DC  
 DC to 1MHz



CT6843  
 200A AC/DC  
 DC to 500kHz



Compatible with  
 the Power Analyzer 3390!



ISO 9001  
 JMI-0216



ISO 14001  
 JQA-E-90091



HIOKI company overview, new products, environmental considerations and other information are available on our website.



- High-accuracy measurement with a clamp-type design
- Compact form enables single-handed operation, even with tangled wiring
- Excellent heat resistance facilitates measurement inside automobile engine compartments
- Use as a replacement for legacy HIOKI models  
**UNIVERSAL CLAMP ON CT 9277/9278:**
  - Improved accuracy (9277/9278 basic accuracy : ±0.5% rdg.)
  - Improved frequency characteristics (9277/9278 frequency characteristics : DC to 100kHz)

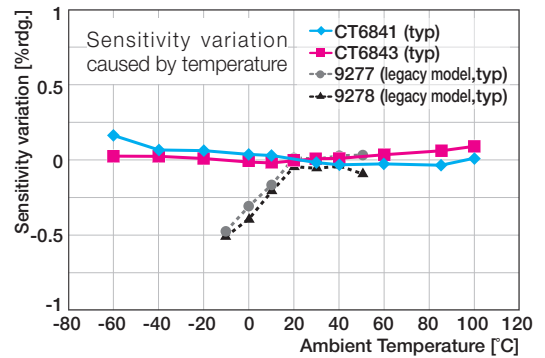
# Operating temperature range -40°C to 85°C

## Compact, high-accuracy clamp current sensor

Broad temperature range

### Ideal for use in environmental testing

The CT6841 and CT6843 feature broad temperature characteristics and an operating temperature range of -40°C to 85°C, allowing them to be used in operational evaluations of devices and inside equipment that are subject to extreme temperature changes. The current sensors' tough performance helps ensure you can make the measurements you need.



Simple operation

### Single-handed operation, even in confined spaces

The CT6841/CT6843 feature a smaller sensor head and grip than previous models, making single-handed operation easy. Each sensor also features a robust locking mechanism so that external shocks won't knock it off the wire being measured.



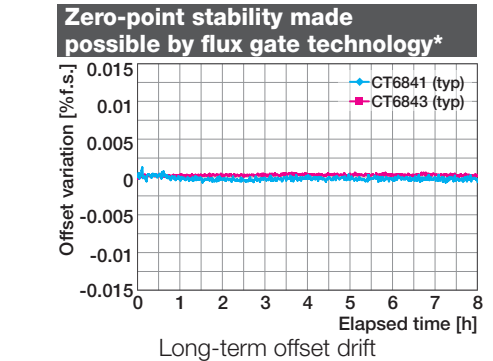
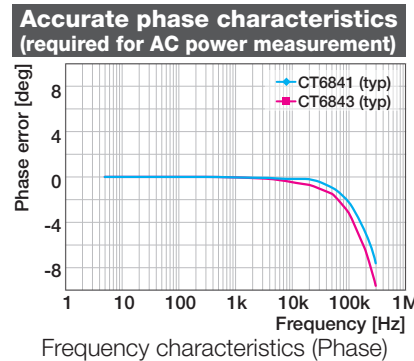
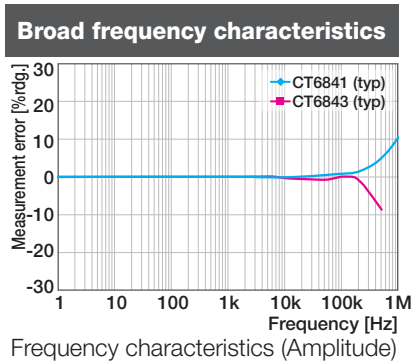
**GOOD DESIGN AWARD 2014**

The CT6841 and CT6843 were highly praised for the ease at which they can be opened and closed with just one hand using the slide of the thumb over the innovative locking system.



High accuracy

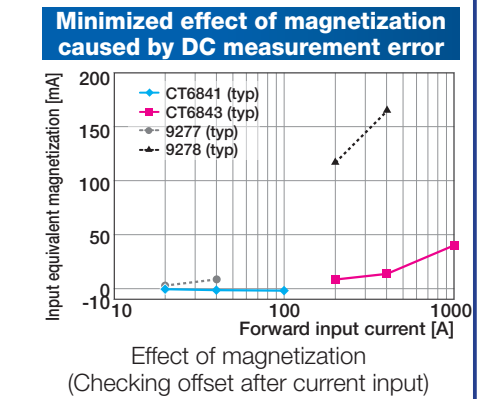
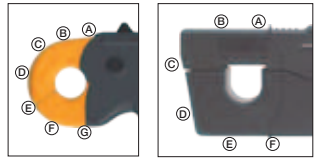
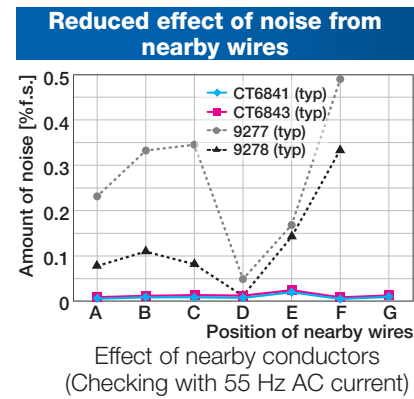
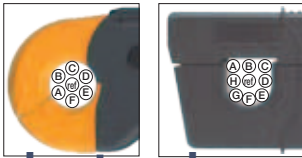
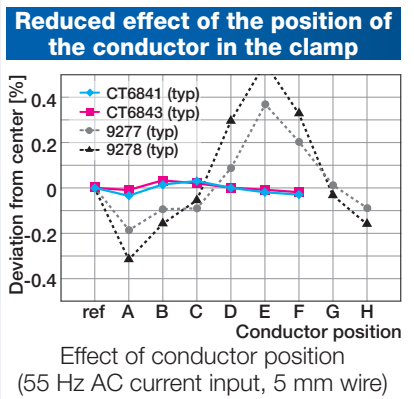
### Reliable track record and high accuracy of ±0.3% rdg.



\*Flux gate: An AC/DC current detection method. Compared to sensors that use the Hall element, flux gate sensors exhibit less offset drift.

## Dramatic improvements

Compared to the legacy UNIVERSAL CLAMP ON CT 9277/9278, the CT6841/CT6843 deliver dramatically improved characteristics.

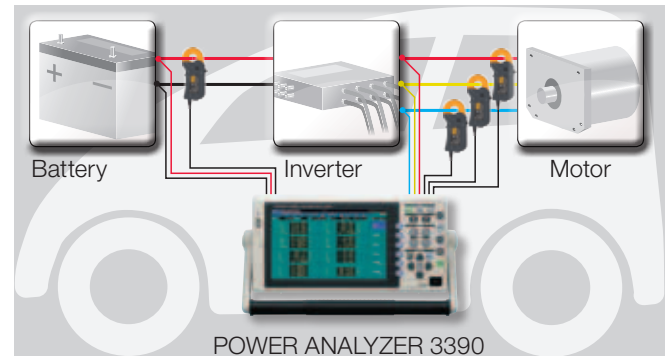


9277 / 9278 representative characteristics  
 Rated primary current : 20A (9277) / 200A(9278)  
 Frequency characteristics : DC to 100kHz  
 Operating temperature range : 0°C to 40°C

## Applications

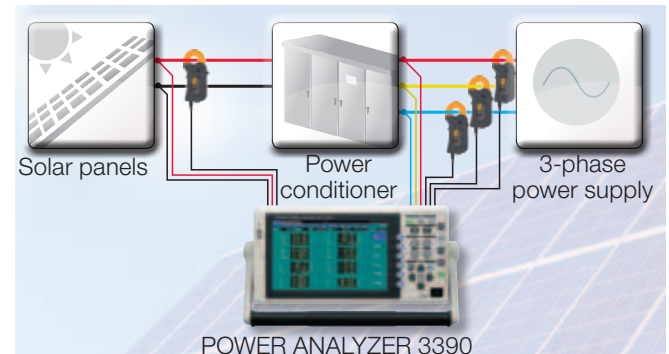
### 1 Measuring the charge and discharge efficiency of EV/HEV batteries

In some cases, it is not possible to use high-accuracy pass-through sensors to evaluate EVs and HEVs since their wiring cannot be easily disconnected. The CT6841/CT6843's clamp-type design simplifies high-accuracy measurement. The resin casing of the clamp is more resistant to deformation from heat than that used in legacy products, allowing you to take measurements inside engine compartments without issue.



### 2 Evaluating inverter and power conditioner efficiency

A current sensor's amplitude accuracy and phase accuracy are both important considerations when you need to accurately measure AC power. Phase accuracy has a particularly large effect on power values when the power factor is low. The CT6841/CT6843 help ensure accurate power measurement by delivering high phase accuracy.



### 3 Evaluating fuel cells, contactless power supply circuitry, and other next generation devices

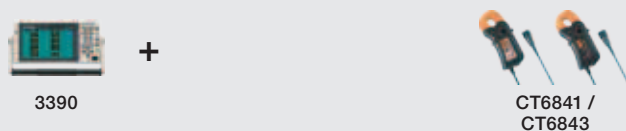
Offset drift\* is characterized by minute variations, but those changes can add up over time, resulting in large errors during long-term measurement. The CT6841/CT6843 are designed to minimize offset drift, allowing them to be used in long-term evaluation of fuel cells. Thanks to their broad frequency characteristics, the sensors can also measure DC ripple current. Additionally, the current sensors can be used to measure power transmission efficiency in contactless power supply circuitry thanks to their DC to 1 MHz frequency band.

\*Offset drift: A phenomenon that occurs when measuring DC current with a clamp-type current sensor. The zero point gradually shifts relative to its position at the start of measurement due to variations in the temperature of the sensor's internal circuitry.

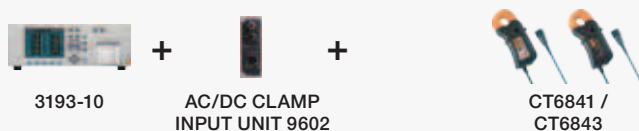


## Connecting the CT6841/CT6843 to supported measuring instruments

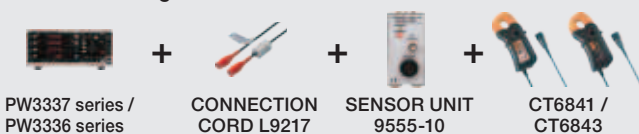
### When connecting to the POWER ANALYZER 3390



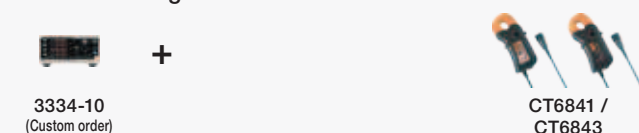
### When connecting to the POWER HiTESTER 3193-10



### When connecting to the POWER METER PW3337/PW3336 series



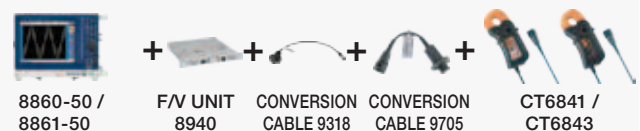
### When connecting to the AC/DC POWER HiTESTER 3334-10



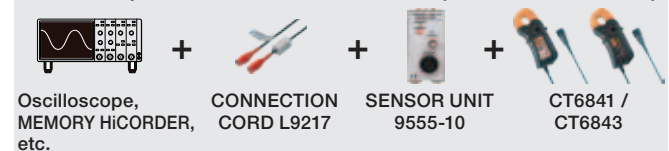
### When connecting to the MEMORY HiCORDER MR8847 series



### When connecting to the MEMORY HiCORDER 8860-50/ 8861-50



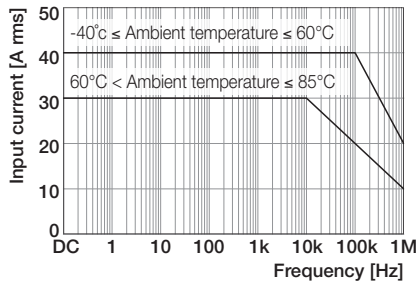
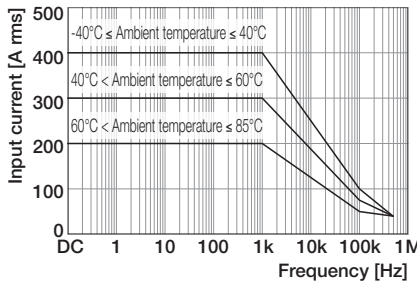
### When connecting to a measuring instrument such as an oscilloscope or MEMORY HiCORDER (via a BNC terminal)





## Specifications

Product warranty period : 1 year

	CT6841	CT6843
Rated primary current	20A AC/DC	200A AC/DC
Maximum input current *	40A rms (57A peak)	400A rms (570A peak)
Frequency characteristics *	DC to 1MHz	DC to 500kHz
Measurable conductor diameter	φ20 mm (0.79") or less	
Output voltage	0.1V/A	0.01V/A
Basic accuracy (DC <math>f \leq 100\text{Hz}</math>)	Amplitude accuracy : $\pm 0.3\%$ rdg. $\pm 0.01\%$ f.s., Phase accuracy : $\pm 0.1$ deg	
Basic accuracy (DC)**	Amplitude accuracy : $\pm 0.3\%$ rdg. $\pm 0.05\%$ f.s.	Amplitude accuracy : $\pm 0.3\%$ rdg. $\pm 0.02\%$ f.s.
Offset adjustment	In DC measurement, adjust offset with a dial	
Temperature and humidity range of guaranteed accuracy	0 to 40°C (32 to 104°F), 80%RH or less	
Temperature coefficient	-40°C to 0°C and 40°C to 85°C (-40 to 32°F and 104 to 185°F) Amplitude sensitivity : $\pm 0.01\%$ rdg./° or less, Offset voltage : $\pm 0.005\%$ f.s./°C or less	
Operating temperature and humidity Storage temperature and humidity	-40 to 85°C (-40 to 185°F), 80% rh or less (non-condensation)	
Derating		
Effect of conductor position	$\pm 0.1\%$ rdg. or less	
Effect of external electromagnetic field	50mA or less (Scaled value, in a DC or 60Hz magnetic field of 400 A/m)	
Magnetic susceptibility	10mA or less (Scaled value, after 20A DC input)	30mA or less (Scaled value, after 200A DC input)
Effect of common-mode voltage	0.05%f.s. or less (1000V rms, DC to 100Hz)	
Power supply voltage	$\pm 11$ to $\pm 15$ V	
Power consumption	5VA or less	6VA or less
Dimensions	Approx. 153W x 67H x 25D mm (Approx. 6.02"W x 2.64"H x 0.98"D)	
Mass	Approx. 350 g (12.3oz),	370 g (13.1oz)
Accessories	Instruction manual, Mark band (6), Carrying Case	

\*Based on the derating characteristics graph \*\*DC accuracy depends on level of offset adjustment

## Lineup and options

### CURRENT PROBE



AC/DC CURRENT PROBE  
CT6841 (20A)



AC/DC CURRENT PROBE  
CT6843 (200A)

### POWER SUPPLY



SENSOR UNIT  
9555-10

Standalone AC/DC current probe use requires a separate power supply.



CONNECTION CORD  
L9217

Insulated BNC to insulated BNC,  
1.5 m

### CABLE



EXTENSION CABLE  
9706

For extending the  
cable length, 5 m



CONVERSION CABLE  
9318

Use when connecting to the  
F/V Unit 8940 or Current Unit 8971



CONVERSION CABLE  
9705

Use when connecting to  
the F/V Unit 8940

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