



Germany IF Design Award

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



+85°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.



-40°C



CT6841  
20A AC/DC  
DC to 1MHz



CT6843  
200A AC/DC  
DC to 500kHz



Compatible with  
the Power Analyzer 3390!

- 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)



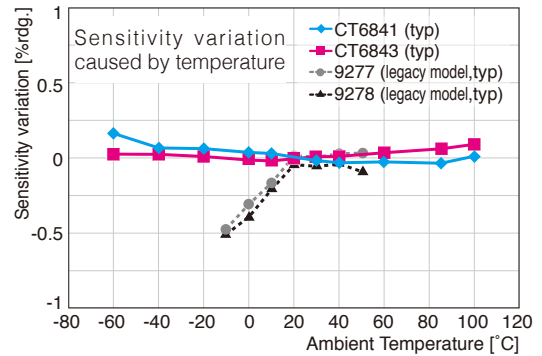
# Operating temperature range -40°C to 85°C

## 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.



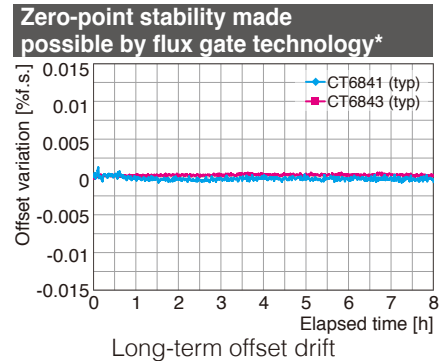
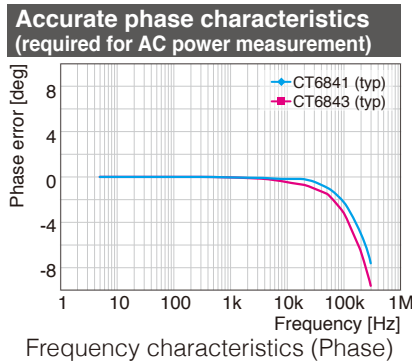
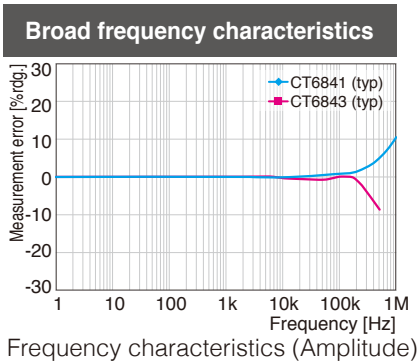
### GOOD DESIGN AWARD 2014

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

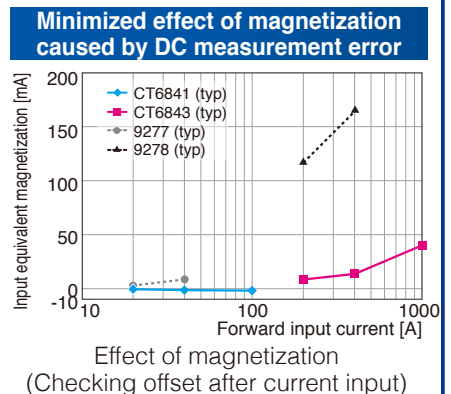
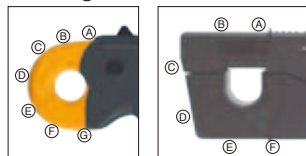
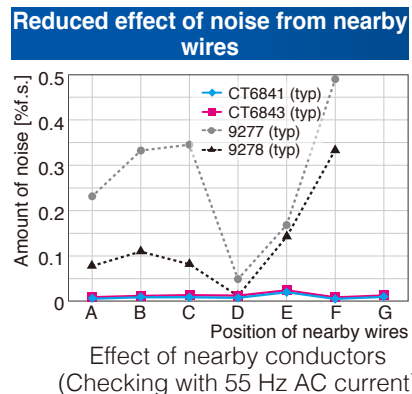
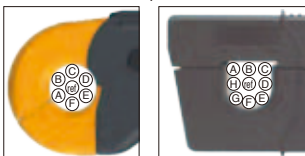
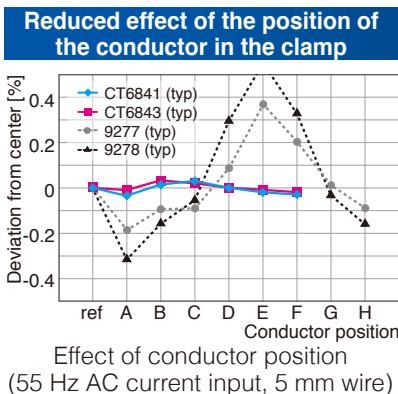
### Reliable track record and high accuracy of ±0.3% rdg.



\*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.

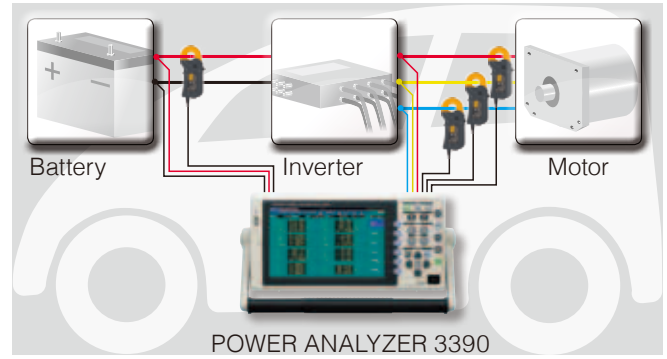


9277 / 9278 representative characteristics  
 Rated primary current : 20A (9277) / 200A(9278)  
 Frequency characteristics : DC to 100kHz  
 Operating temperature range : 0°C to 40°C

## Applications

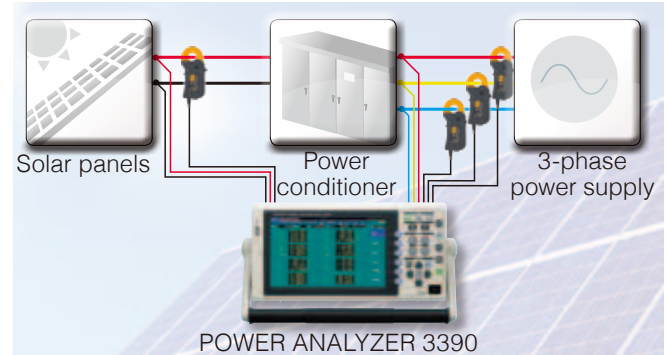
### 1 Measuring the charge and discharge efficiency of EV/HEV batteries

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.



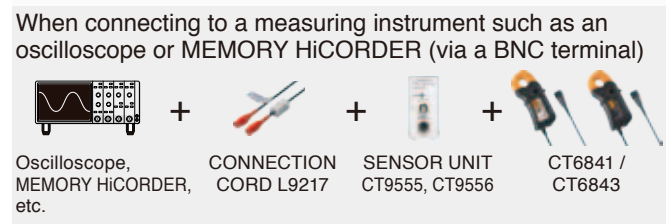
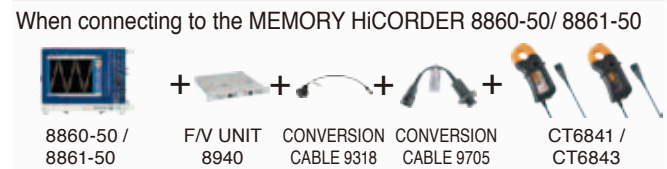
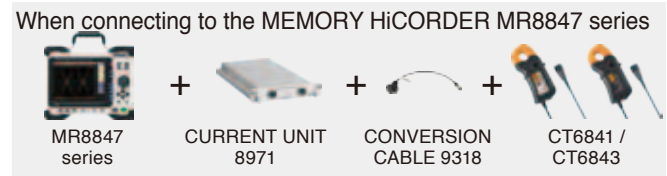
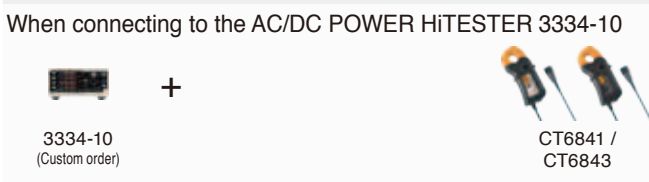
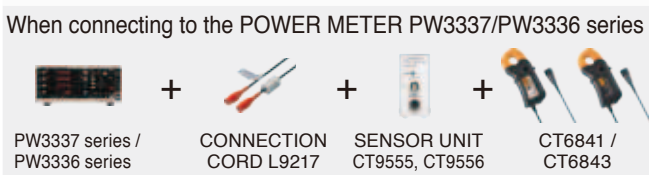
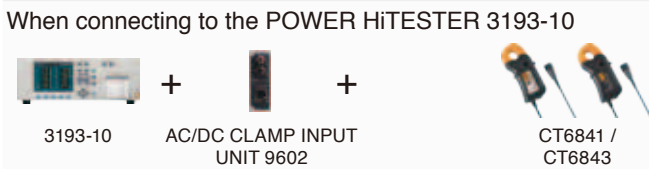
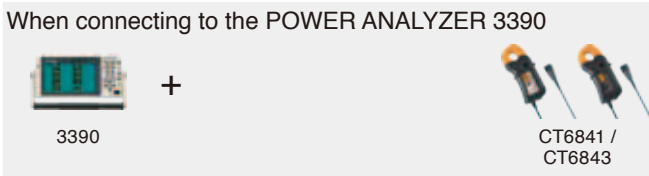
### 3 Evaluating fuel cells, contactless power supply circuitry, and other next generation devices

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






# Specifications

(Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year)

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

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


## Products Lineup



12-pin terminal (\*\*-05 model)  
Insulated conductor

**Model : AC/DC CURRENT PROBE CT6841**

| Model No. (Order Code) | (Note)                        |
|------------------------|-------------------------------|
| CT6841                 | (20 A AC/DC)                  |
| CT6841-05              | (20 A AC/DC, 12 pin terminal) |



12-pin terminal (\*\*-05 model)  
Insulated conductor

**Model : AC/DC CURRENT PROBE CT6843**

| Model No. (Order Code) | (Note)                         |
|------------------------|--------------------------------|
| CT6843                 | (200 A AC/DC)                  |
| CT6843-05              | (200 A AC/DC, 12 pin terminal) |

## Options

|   |  |  |  |
|---|--|--|--|
| <b>Options A</b><br>SENSOR UNIT CT9555 Power supply for current sensors (1ch, with Waveform output)<br>SENSOR UNIT CT9556 Power supply for current sensors (1ch, with Waveform/RMS output)<br>SENSOR UNIT CT9557 Power supply for current sensors (4ch, with Waveform/Total Waveform/Total RMS output)                          |  | <b>CONNECTION CORD L9217</b><br>Cord has insulated BNC connectors at both ends, 1.6 m (5.25 ft) length   | <b>CONNECTION CORD 9165</b><br>Cord has metallic BNC connectors at both ends, use at metallic terminal, 1.5 m (4.92 ft) length |
| <b>Options B</b><br>The CT9903 connects up to 2 cables in series. Cannot be used in combination with the 9277 to 9279<br><b>CONVERSION CABLE CT9900</b><br>HIOKI PL23 (10 pin) to HIOKI ME15W (12 pin) connector<br><b>EXTENSION CABLE CT9903</b><br>5 m (16.41 ft) length, HIOKI PL23 (10 pin) - HIOKI PL23 (10 pin) connector | <b>Options C</b><br>The CT9902 connects up to 2 cables in series<br><b>CONVERSION CABLE CT9901</b><br>HIOKI ME15W (12 pin) to HIOKI PL23 (10 pin) connector<br><b>EXTENSION CABLE CT9902</b><br>5 m (16.41 ft) length, HIOKI ME15W (12 pin) - HIOKI ME15W (12 pin) connector | <b>Options D</b><br>For connecting to the F/V Unit 8940 or Current Unit 8971<br><b>CONVERSION CABLE 9705</b><br>0.2 m (0.66 ft) length, to connect the CT6841-6846, CT6863/6865, 9709, 9272-10 to the F/V Unit 8940, Cannot be used in combination with the CT6862<br><b>CONVERSION CABLE 9318</b><br>To connect the CT6841-6846, CT6865/63, 9277/78/79, 9270/71/72 to the 8971/40/51, 38 cm (14.96 in) length |  |

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



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